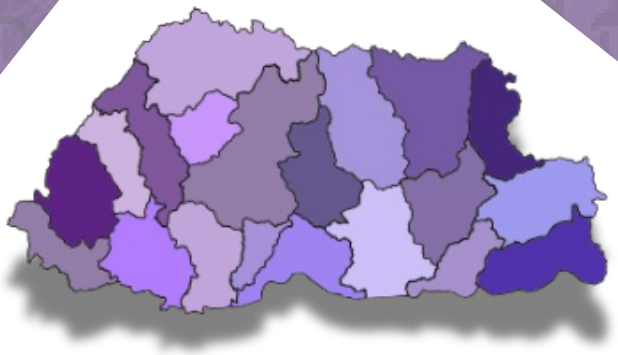
CANCER INCIDENCE AND MORTALITY IN BHUTAN: 2019 – 2022

POPULATION-BASED CANCER REGISTRY (PBCR)

BHUTAN

National Cancer Control Program

Department of Public Health, Ministry of Health



2024 PUBLICATION

Ministry of Health, Bhutan

Jigme Dorji Wangchuck National Referral Hospital, Thimphu, Bhutan

Foreword

Cancer incidence is rising globally, due to external/environmental factors such as consumption of tobacco and alcohol, chemical exposure, consumption of poor diet and carcinogenic food, low physical activity, and by hereditary/genetic factors and cancer causing oncoviruses. Globocan 2022 reported nearly 20 million new cancer cases worldwide, resulting in 9.7 million deaths. In Bhutan, cancer is becoming an increasingly significant contributor to the disease burden putting enormous physical, emotional and financial strain on individuals, families, communities and health systems, even as communicable diseases continue to pose challenges. Over the past decade, the number of cancer cases in Bhutan has nearly doubled, rising from 468 cases annually in 2014 to 819 cases in 2022.

Effectively tackling cancer requires a comprehensive approach that includes early detection, regular screening, and timely intervention to identify and treat the disease at its most manageable stages. Reliable data plays a crucial role in developing evidence-based policies and for efficient resource allocation. To meet these needs, the Population-Based Cancer Registry (PBCR) was instituted to monitor cancer patterns, assess the disease burden, and track trends influenced by changing lifestyles and socio-economic development. The PBCR also enables Bhutan to compare its cancer incidence with other countries, providing valuable insights into the nation's unique cancer landscape.

The release of this report is both timely and crucial. It provides evidence-based policy decision making and informed public health interventions, shaping cancer-related interventions and services across the country. By analyzing cancer incidence and mortality data from 2019 to 2022, the report highlights important trends and provides recommendations, identifies gaps, and prioritizes areas for improvement, including addressing underserved populations. This will enhance Bhutan's efforts to effectively combat cancer.

Karma Jamtsho
Director, Department of Public Health
The Ministry of Health

Cancer Registry Principal Investigator, Co-Principal Investigator and Co-Investigators

Population based Cancer Registry Unit, JDWNRH, Thimphu

Name	Role	Designation
Dr. Ugyen Tshomo	Principal Investigator	Gyne Oncologist
Dr. Phub Tshering	Co Investigator	Head and neck Oncosurgeon
Meera Chhetri	Data abstraction	Colposcopy nurse
Sumitra Suberi	Data abstraction	Cytotechnician
Kinley Wangmo	Data entry	Data assistant

Administration, Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), Thimphu, Bhutan

Name	Role	Designation
Dr. Mimi Lhamo	Administrative Support	President, NMS
Dr. Kuenzang Wangdi	Administrative Support	Director, DCS
Dr. Sonam Tshering	Administrative Support	MS, JDWNRH
Tshewang Norbu	Administrative Support	Chief Administrative Officer
Ugyen Penjore	Data Sharing (IPD)	Medical Records Officer

Mongar and Gelephu Regional Hospitals

Name	Role	Designation
Dr. Palden Wangchuk	Administrative Support	MS, Mongar CRRH
Dr. Choeda Gyaltshen	Administrative Support	MS, Gelephu CRRH

Ministry of Health, Thimphu, Bhutan

Name	Role	Designation
Pemba Wangchuk	Administrative support	Secretary, MOH
Karma Jamtsho	Administrative support	Director of Public Health
Laigden Dzed	Administrative support	Chief, NCDD
Yangdon Yangdon	Overall Coordination	Sr. Program Officer, NCCP
Tshewang Lhaden	Administrative support	Program Officer, NCDD
Sonam Choden	Administrative support	Program Officer, NCDD

Center for Cancer Epidemiology (CCE), ACTREC, Tata Memorial Center, Navi Mumbai, India

Name	Role	Designation
Dr. Sudeep Gupta	Advisor	Director, TMC
Dr. Pankaj Chaturvedi	Advisor	Director, ACTREC
Dr. Rajesh Dikshit	Advisor	Director, CCE – TMC
Dr. Atul Budukh	Co-investigator	Professor Epidemiology
Mrs. Sonali Bagal	Data analysis	Research Co-ordinator
Ms. Sushama Saoba	CanReg5 support	Scientific Assistant
Mr. Pratik Sawant	CanReg5 support	Programmer

International Agency for Research on Cancer (IARC), Lyon, France

Name	Role	Designation
Dr. Freddie Bray	Advisor	Branch Head, Cancer Registry Unit, IARC
Dr. Les Mery	Advisor	Global Program Manager, Cancer surveillance, Cancer Registry Unit, IARC

Suggested Citation:
Tshomo U, Tshering P, Bagal S, Budukh A. Cancer Incidence and Mortality in Bhutan: 2019-2022. National Cancer Control Program, Department of Public Health, Ministry of Health, Thimphu, Bhutan 2024.

Contact:
utshomo509@gmail.com
+975 17612205

Registry Office
PBCR unit
JDWNRH
Thimphu, Bhutan

NCCP Address
National Cancer Control Program
Department of Public Health
Ministry of Health
info@health.gov.bt
Phone number: 02328095
P.O. Box: 726, Kawajangsa
Thimphu, Bhutan

Cover Design by
Kuenley Zam, HPRCD, DoPH, MoH

Abbreviations

AAR : Age-adjuted Rate

BCS : Bhutan Cancer Society

CR : Crude Rate

DCO : Death Certificate-only

GI : Gastrointestinal

HPV Human Papillomavirus

IARC : International Agency for Research on Cancer

ICCC 3 : International Classification of Childhood Cancer, 3rd Edition

ICD : International Classification of Diseases

JDWNRH : Jigme Dorji Wangchuck National Referral Hospital

NCCP : National Cancer Control Program

NHL : Non-Hodgkin Lymphoma

NS : Nervous System

PBCR : Population-based Cancer Registry

RICBL : Royal Insurance Corporation of Bhutan Limited

TMC : TATA Memorial Center

TR : Truncated Rate

SEAR : South-East Asia Region

WHO : World Health Organization

Contents

I. Highlights

» Population-based cancer registry (PBCR) of Bhutan was established in June 2014 at Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), Thimphu with the support of the Ministry of Health and in collaboration with Tata Memorial Hospital, IARC Hub for cancer Registration in South East Asia, Mumbai and International Agency for Research on Cancer.

» The first report of PBCR Bhutan was published in February 2020 for the period 2014-2018 (five years).

» This is the second report of the registry representing the incidence and mortality rate for the year 2019-2022 (four years) along with leading sites among males and females.

» The most common cancers in males include stomach, esophagus, liver, lung, and colon cancers, while in females, the leading cancers are cervical, stomach, breast, lung, and ovarian cancers.

» When cancers of same anatomical sites are clubbed together, the top 5 leading cancers in the Bhutanese population are stomach, cervix, head and neck, colorectal and lung cancers.

» These leading cancers are of major burden to the public health system which needs the right intervention in terms of prevention, screening for early detection and appropriate timely management.

» In the 4 years period from 2019 to 2022, the registry recorded 3,172 new cancer cases; 1,457 in males (45.9%) and 1,715 in females (54.1%).

» The age-adjusted incidence rate for males is 101.7 per 100,000 population and for female is 126.4 per 100,000 population. In Bhutan, cancer burden is more in female.

» The cumulative risk for the age group 0-74 in male is 12.0% (1 in 8 men is at risk of developing cancer in their lifetime) and in female is 14.4% (1 in 7 females is at risk of developing cancer in their lifetime).

» For the year 2019 to 2022, the registry recorded 1,461 cancer deaths, 734 deaths among males (50.2%) and 727 deaths among females (49.8%).

» The age-adjusted mortality rate for male is 51.6 per 100,000 population and for female is 54.2 per 100,000 population.

» The cumulative risk of death due to cancer in the age group 0-74 in male is 6.1% and for female is 6.4% (1 in 16 is at risk of death due to cancer in both sexes).

» The overall mortality-to-incidence ratio is 0.46 (males 0.50 and females 0.42).

» Out of 3,172 cancer cases; 2,616 (82.5%) cases were microscopically verified whereas 177 (5.6%) were registered based on death certificate information and 251 (7.9%) were radiologically verified.

» The tobacco-related cancer burden is 23.0% in males (1 out of 4 cancer cases is tobacco-related) while it is 13.9% in females (1 out of 7 cancer cases is tobacco-related).

» Stomach and cervical cancer rates are highest in Bhutan in comparing to registries of

neighbouring countries.

» Out of 3,172 registered cancer cases, 59 (1.9%) paediatric cases (0-14 age group) were noted. The age-adjusted incidence for boys is 76.5 per million and 94.2 per million for girls.

» The cancer incidence rates among boys and girls were calculated as per the international standards (International Incidence of Childhood Cancer volume III).

» The leading cancer sites in boys are lymphoid leukaemia (23.5), myeloid leukaemia (7.6), Non-Hodgkin Lymphoma (NHL) (7.1), eye (6.5), and testis (6.5). While in girls lymphoid leukaemia (25.2), brain (10.7), bone (10.1), eye (10.1), and myeloid leukaemia (9.5) are the leading cancer sites.

» Among the total cancer cases registered, 60% were in Sharchops and Ngalops and the rest in other ethnic groups.

» The 1 year, 3 year, and 5 year overall relative survival of cervical cancer is 85.5%, 71.6%, and 66.6% respectively. As for stomach cancer the overall survival rate is 48.6%, 27.3%, and 19.4% for the 1 year, 3 year, and 5 year respectively.

» Under the Health Flagship Program, mass screening was initiated for advocacy, early detection and timely treatment of stomach, cervix and breast cancer. Screening coverage of 90.81% for cervical cancer, 90.17% for gastric cancer and 93% for breast cancer was achieved.

» During Bhutan's Covid-19 lockdowns, essential health services including cancer treatments continued uninterrupted with support from various organizations. However, data collection for cancer scheduled for regular intervals was disrupted and hence it was collected at the end of a three year period.

II. Executive Summary

Background

Cancer is becoming an increasingly significant public health concern in Bhutan, driven by rising life expectancy and changing lifestyles. The growing burden of cancer underscores the need for robust data collection and analysis to guide effective public health interventions and policy decisions.

In response to this need, the Population-based Cancer Registry (PBCR) was established in 2014 as a crucial tool for capturing comprehensive cancer data of the country. The data collected by the PBCR has already played a pivotal role in shaping Bhutan's cancer control strategies. The previous report, covering the period from 2014 to 2018 was published in 2020. The report has provided a foundational understanding of cancer burden in the country which has helped in informed policy decision making, enhanced early detection and treatment strategies, and contributed to overall improvements in cancer care.

The current report, focusing on cancer incidence and mortality from 2019 to 2022 will present key trends and recommendations. This report will assist the National Cancer Control Program in identifying gaps in cancer control, prioritizing areas needing improvement, and targeting underserved populations. By doing so, it will guide the development of targeted interventions and resource allocation, thereby strengthening Bhutan's efforts to combat cancer effectively.

Population covered

The Population-Based Cancer Registry in Bhutan provides complete coverage of the entire population in 20 districts, which is 777,224 (2).

Registration method

PBCR office is located within the premises of the JDWNRH. Data is abstracted from different sources at the national referral hospital by the three data abstractors who work on a voluntary basis. They also travel to all the other health centers with admission facilities in the districts to collect data every 12 months. Doubtful cases are kept aside for clarification after which data is entered into the CanReg 5 software by the data assistant. Data is coded as per ICD -10 for specific sites / topography and ICD-O-3 for morphological classification. Data quality is checked every few months by the PI and also by the collaborating center in TMC, Mumbai.

The first part of data is information on a patient's socio-demography. Second part comprises details on data source, date of diagnosis, cancer sites and stages, treatment and finally vital status of patient. The follow up on vital status is updated periodically and at the end of every year the missing information (unknown vital status) is further verified and updated via telephonic contact.

Results

This report is based on the cancer registry data from the year 2019 to 2022. The registry recorded 3,172 new cancer cases, 1,457 in males (45.9%) and 1,715 in females (54.1%). The age-adjusted incidence rate for male is 101.7 per 100,000 population and for females, it is 126.4 per 100,000 population. The cumulative risk for the age group 0-74 in male is 12.0% (1 in 8 men is at risk of developing cancer) and in females, it is 14.4% (1 in 7 females is at risk of developing cancer).
Also the registry recorded 1,461 cancer deaths, 734 among males (50.2%) and 727 among females (49.8%). The age-adjusted mortality rate for male is 51.6 per 100,000 population and for female is 54.2 per 100,000 population. The cumulative risk of death due to cancer in the age group 0-74 in male is 6.1% and for female is 6.4% (1 in 16 irrespective of sexes are at risk of dying from cancer).

Leading cancer sites

Among male, stomach, oesophagus, liver, lung, colon, rectum, other skin, brain, prostate, and gallbladder were the leading cancer sites. Among females, cervix uteri, stomach, breast, lung, ovary, thyroid, liver, gallbladder, brain, and rectum were the leading cancer sites.

The leading cancer sites are mentioned in tables I and II.

Table I: Leading cancer sites in males for the period 2019-2022

ICD 10	Site	Total	%	CR	AAR	TR
C16	Stomach	354	24.3	22.5	25.1	30.2
C15	Oesophagus	104	7.1	6.6	7.5	11.7
C22	Liver	99	6.8	6.3	7.0	8.8
C33-C34	Lung	76	5.2	4.8	5.3	6.5
C18	Colon	72	4.9	4.6	5.2	7.9

CR: Crude Incidence Rate per 100,000, AAR: Age-Adjusted Rate per 100,000, TR: Truncated Incidence Rate per 100,000 Population

Table II: Leading cancer sites in females for the period 2019 -2022

ICD 10	Site	Total	%	CR	AAR	TR
C53	Cervix uteri	272	15.9	18.9	19.5	49.1
C16	Stomach	254	14.8	17.6	18.9	27.7
C50	Breast	135	7.9	9.4	9.9	25.0
C33-34	Lung	103	6.0	7.2	7.7	10.6
C56	Ovary	85	5.0	5.9	6.3	11.8

CR: Crude Incidence Rate per 100,000, AAR: Age-Adjusted Rate per 100,000, TR: Truncated Incidence Rate per 100,000 Population

Primary unknown cases

The population-based cancer registry has recorded 99 (3.1%) cases of metastatic cancers of unknown primary, (53 in male and 46 in female)

More than 40% primary unknown cancer cases were registered in patients who were above 70 years of age.

Comparison of Cancer patterns in Bhutan with Other cancer registries

The cancer incidence rates of Bhutan is lower than that of Sri Lanka, New Delhi, Chennai and Mumbai (India), but higher than that of Chandigarh, Kathmandu (Nepal), Sangrur, and Varanasi (India) cancer registries as shown in figure I.

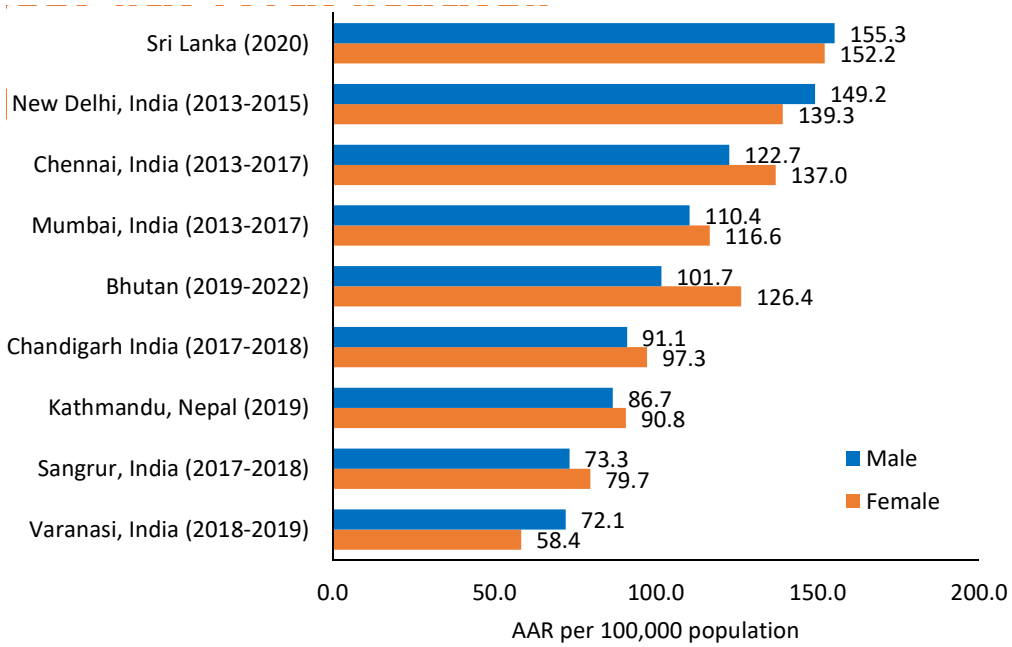


Figure I: All site cancer incidence rate

Pediatric Cancer (0 -14 yrs)

ICCC3 has 12 main groups of paediatric cancers. They are further divided into subgroups and division of selected subgroups. PBCR 2019 - 2022 is also able to report on paediatric cancer cases unlike the previous report (2014 - 2018) .

The age adjusted rate for paediatric cancers in boys is 76.5 per million while in girls it is 94.2 per million. The leading cancer sites in boys are lymphoid leukaemia, myeloid leukaemia, NHL, eye, testis, brain, kidney, liver, and hodgkin disease. In girls, lymphoid leukaemia, brain NS, bone, eye, myeloid leukaemia, connective and soft tissue, kidney, ovary, leukaemia unspecified, and other skin are the leading cancer sites.

Health Flagship Programme in Bhutan

The Health Flagship Program started in 2020 as a comprehensive targeted public health intervention to address the burden of stomach, cervical and breast cancers. The program was designed by the government, as an insert to the 12th Five-Year-Plan, with the requisite weight of the Executive and budget support. The population based screening was initiated for advocacy, early detection and timely treatment. The health flagship was implemented from 2020-2023.

At the end of the program, it made a significant impact through early detection and timely treatment, reaching over 90 percent of the intended target population for all three cancers. As the program ended, the Ministry of Health recognized the significance of consistent preventive measures and early detection in the continual battle against cancer. Considering the essential of continual cancer screening, the Ministry of Health has integrated cervical, stomach and breast cancer screening in the regular health services.

Recommendation based on challenges faced by cancer registry

» Make cancer a notifiable disease so that it will provide real time robust cancer data

» Strengthen follow up by developing linkage with civil society and relevant organizations/ agencies

» Strengthen linkage with insurance companies for more robust cancer related mortality data

» Develop linkages with the local government for vital statistics.

» Strengthen Cancer registry office by recruiting full time staff rather than relying on volunteers and staff on contract which may not be sustainable in the long run.

» Create awareness among all levels of health workers on cancer registry

» Improve data collection on sociodemographic indicators such as education, income, occupation, urban and rural population.

» Cancer register should be integral part of NCCP.

» Follow up of pre-cancer (CIN) to see impact of HPV vaccination

1. Bhutan Country Profile

Bhutan is a small and landlocked Himalayan Kingdom, nestled between China and India. The country has an area of 38,394 Square kilometers, characterized by largely mountainous terrain and is divided into 20 districts. Bhutan's elevation ranges from 160 meters to more than 7,000 meters above sea level. Bhutan has a population projection of 777,224 with a population density of 19.0 and life expectancy of 70.2 (1). The sex ratio in Bhutan is 110 male for every 100 females, indicating a slightly lower number of females in the population (2).

Table 1.1: Bhutan population, literacy, and area in Sq. Km.

Sr. No.	Characteristics	Unit	Value
1	Area	Sq. Km	38,394
2	Districts	Number	20
3	Total Population	No. of people	777,224
4	Density	Per Sq. Km.	19.5
5	Male to female ratio	Number	110
6	Literacy Rate	%	69.4

Risk factors

Bhutan has a predominantly rural population and is engaged in farming and animal husbandry. In highland areas where fresh fruits and vegetables are scarce, people frequently rely on dried vegetables and fresh fruits which are consumed only seasonally. The traditional diet also includes the regular consumption of salted butter tea, particularly during the cold winter months. Additionally, dried or fermented yak meat is a staple food in some highland households. The average daily consumption of fruits and vegetables among individuals aged 15-69 was 1.6 servings for fruits and 3.7 servings for vegetables, totaling a combined intake of 5.3 servings per day. Despite this, 74.6% of the population did not meet the recommended intake of at least five servings per day (3).

Physical activity levels are also concerning, with 18.3% of the population not getting enough exercise. 12.5% of people aged 15-69 years are obese with 16.9% in women and 8.6% in men.

Alcohol consumption is notably high, especially in the eastern and central regions, where it is deeply ingrained as a cultural practice. The National Health Survey (2024) shows that among the population aged 15-69, 40.2% of the population consumes alcohol currently, contributing to an increased risk of cancers associated with alcohol use. Tobacco use is another significant risk factor, with 14.4 % of the population identified as smokers, 21.6 % of men and 6% of women. The use of smokeless tobacco is also prevalent, with 27.9% of men and 13.5% of women reporting its use. In the 15-49 age group, 59.7% of individuals use areca nut or areca nut-containing products (3). Of these users, 45.4% consume betel nut and its products daily. Among Bhutanese youth aged 15-24, more than half (54.7%) are current users. In some parts of the population, areca nut is also taken in combination with dried tobacco leaves.

The survey also highlighted the prevalence of infections that increase cancer risk. The Helicobacter pylori (H. pylori) infection rate in the general population is 32.4%. The prevalence of Hepatitis B

was 2% in 2017.

Early marriage and early childbirth, along with multiple child births are common cultural practices in rural Bhutan. Among women aged 30-65 years, the high-risk Human Papillomavirus (HPV) infection rate is 11.2%,(11821 out of 105653 screened). From 2021, cytology based screening was replaced by HPV based screening. Moreover, more than 90% of girls have received two doses of the quadrivalent HPV vaccine through a school-based program, a critical step in reducing the future burden of cervical cancer (4).

2. Population covered by cancer registry

The Population-Based Cancer Registry in Bhutan ensures that every individual in the country is included in the registry. This comprehensive coverage is possible due to Bhutan's small geographic size and its one health system with free health services. By capturing data on every cancer case within the entire population, the registry provides a complete and accurate picture of cancer incidence and trends across the nation.

For calculation of the incidence rate, we have used the projected population of the year 2020. The estimated average population I of 2019-2022 is presented in Table 2.

Table 2.1: Estimated average population of Bhutan: 2019 – 2022 (mid year 2020)

Age group	Male		Female		Totle	
	Number	%	Number	%	Number	%
0-4	29560	7.5	28826	8.0	58386	7.8
5-9	30034	7.7	28910	8.0	58943	7.8
10-14	32836	8.4	31984	8.9	64820	8.6
15-19	34376	8.8	34157	9.5	68532	9.1
20-24	36146	9.2	33449	9.3	69594	9.2
25-29	41992	10.7	35100	9.8	77091	10.2
30-34	40426	10.3	34699	9.6	75125	10.0
35-39	32845	8.4	28496	7.9	61340	8.2
40-44	26915	6.9	23509	6.5	50423	6.7
45-49	20576	5.2	17937	5.0	38512	5.1
50-54	17370	4.4	15501	4.3	32871	4.4
55-59	13974	3.6	12633	3.5	26607	3.5
60-64	11264	2.9	10724	3.0	21987	2.9
65-69	9030	2.3	8793	2.4	17823	2.4
70-74	6288	1.6	5915	1.6	12204	1.6
75+	8955	2.3	9283	2.6	18238	2.4
Total	392583	100	100	100	752495	100

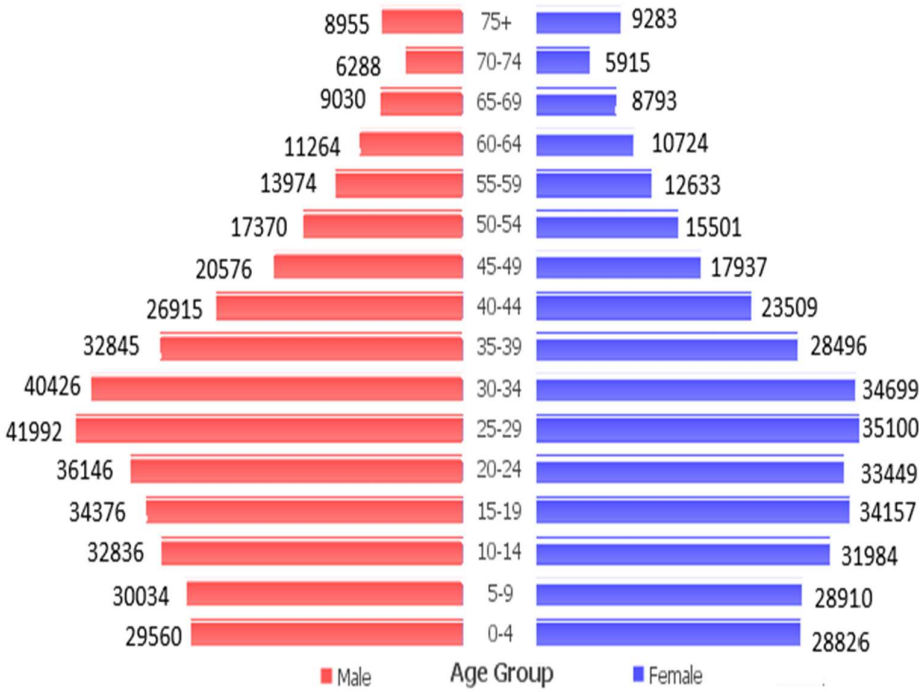


Figure 2.1: Population pyramid of Bhutan: 2019 – 2022 (NSB)

3. Cancer registration method

Cancer incidence cases

The JDWNRH, which houses the cancer registry office, is the main center in Bhutan for all oncology related services. Almost all the cancer cases in the country are ultimately referred to this center for treatment purposes. The three trained data abstractors collect data from different sources within the hospital: Histopathology, cytology, haematology, endoscopy and colposcopy units, oncology ward, Radiology Department, indoor patient medical records, palliative care and patient referral units.

Cancer death sources

The data assistant updates the vital status of patients whenever they visit Hospitals for follow up or admission. Main sources of information for deaths are indoor wards of JDWNRH and other Hospitals, Palliative Care units, Bhutan Cancer Society which looks after socially disadvantaged patients and RICBL. At the end of every year, patients with unknown vital status are followed up through mobile phones.

Prevalent cancer cases

From the establishment of PBCR in 2014 till 31 December 2024, 5,910 new cancer cases were registered. In the 9 years' period, 2,509 cases have died. There are 3, 401 cancer patients alive as of 31 December, 2022.

Data entry

The data is entered into the CanReg 5 software developed by the Internal Agency for Research on Cancer (IARC), Lyon, France. After the necessary quality checks, data is entered by the data assistant on a daily basis.

Data cleaning and data checking

Data was checked using the IARC check program. The quality check of the data is done by the principal investigator who also supervises all other activities related to cancer registry. The data assistant keeps aside all those doubtful cases requiring input from the supervisor without entering into the CanReg Software. Once the data quality is scrutinized by the supervisor, data entry takes place. Data consistency and quality is checked every few months for duplicate entries, missing information, wrong sites, and wrong dates. The data consistency check is also done on age with occupation, sex with names, sex with sites, dates of diagnosis with dates of follow up and deaths. Data Collection of Cancer cases from different hospitals

The data abstractors also collect data from all the health centers with admission facilities within the country once a year. This data helps to update vital status of patients besides catching new cancer cases that have not reached JDWNRH for treatment.

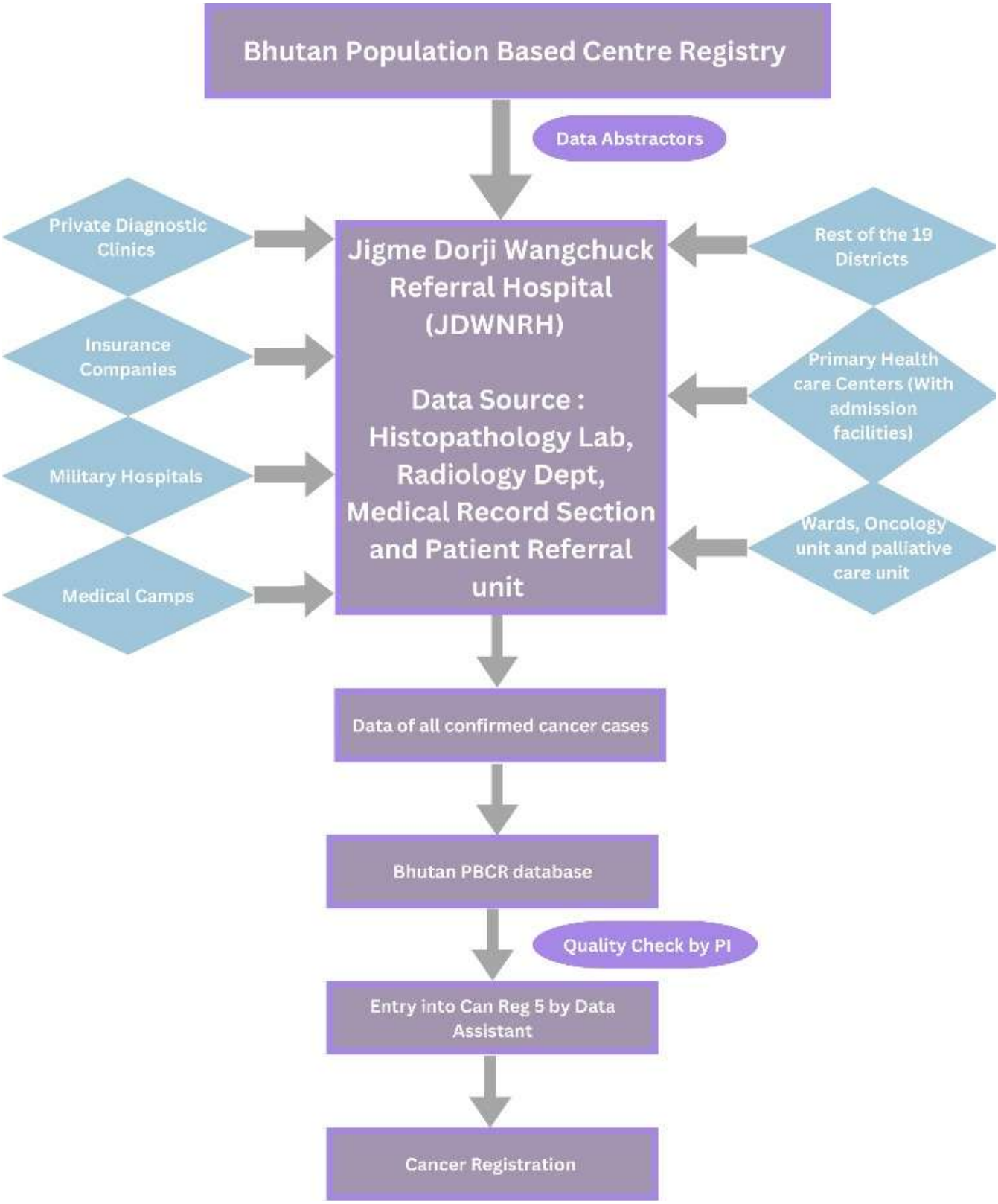


Figure 3.1: Cancer registration method

Cancer registry team verifying data

Cancer registry team complying report

4. Community involvement in the cancer registration process

Although there was no direct face-to-face community involvement in the Cancer Registry, frequent contact was maintained through mobile communication. This was done to confirm diagnosis, confirm types of treatment undergone and mostly to check the vital status of cancer patients at the end of each year, particularly for those who were not previously followed up. If patients were found to be alive, they were advised on where to go for follow-up care. In cases where patients had passed away, the date of death was recorded, and the registry was updated accordingly. After explaining our identity and the purpose of the call, most people responded positively and provided the requested information willingly.

5. Cancer Treatment

Almost all the cancer patients are referred to JDWNRH for further management, which might include further diagnostic workup or definitive management. The most common mode of treatment received was surgery (1, 658 cases or 69% of total cancer treatment) alone or in combination with chemotherapy (as neoadjuvant or adjuvant) or radiation. The second most common mode of treatment was chemotherapy (1,273 cases or 53% of total cancer therapy) alone or with surgery or radiation; and lastly 859 patients (36%) received radiation alone or in combination with surgery or chemotherapy. Around 282 patients received only best supportive care which is delivered as a home based care in Thimphu since 2019. This service became slightly irregular during the 2 years of Pandemic.

Regarding place of treatment, 2,340 cases were treated in Bhutan, 613 patients received treatment outside the country and 76 were treated in both places. In 18 patients, the place of treatment is unknown. The number of patients referred out is less in this period due to availability of radiation in the country from 2018 to 2021 and also due to travel restriction during the Pandemic. Surgery was mainly done in JDWNRH whereas radiation was partly done in JDWNRH and partly outside the country. Chemotherapy is either started in JDWNRH for GI, breast and Gynecological cancers or continued after it is started by Oncologists in Kolkata or elsewhere.

Regarding intention of treatment, 2,177 (71%) patients received it with curative intent and 871 (29%) received it on palliative basis.

Table 5.1. Modalities of treatment

Treatment	Curative (Number)	Curative (%)	Palliative (Number)	Palliative (%)	Total
Surgery	571	80.5	138	19.46	709
Radiation	91	77.7	26	22.2	117
Surgery+radiation	85	87.6	12	13.37	97
Surgery +chemotherapy	425	78.2	118	21.7	543
Surgery+CTRT	309	100	0	0	309
CTRT	261	82.5	55	17.4	316
Chemotherapy	383	52.4	147	20.1	730
Other (hormonal)	0	0	23	100	23
Symptomatic (palliative)	0	0	282	100	282

6. Quality control

Mortality to incidence ratio

The mortality-incidence or MI ratio is an indicator of availability of diagnostic and treatment facilities, completeness and accuracy of cancer registry data. In the year 2019-2022, 3,172 incident cancer cases (1,457 males (45.9%) and 1,715 females (54.1%) have been registered by PBCR Bhutan. For the same period, 1,461 cancer deaths have been registered (734 males (50.2%) and 727 females (49.8%). The overall mortality to incidence ratio is 0.46 (males 0.50 and females 0.42). The MI ratio is comparable to other neighbouring country registries.

Re-abstraction of the cases

The difficult cases were discussed with the clinicians and Pathologists of JDWNRH; after the discussion the required changes were made. Regular virtual calls were conducted with the experts from Cancer Registry Regional Hub, Mumbai, India. During the call, the case abstraction problem faced by the registry staff was discussed as well as the regular quality control of the data was carried out.

Incidence rates of childhood cancers

In the year 2019-2022, we registered 27 new cancer cases in boys and 32 in girls. The age-specific rates reported for paediatric cancer per million are mentioned in table 5.

Table 6.1: Incidence rate of paediatric cancer cases in Bhutan (2019-2022)

Age group	Boys		Girls	
	Number of cases	Age Specific Rate	Number of cases	Age Specific Rate
0-4	14	118.4	17	147.4
5-9	4	33.3	6	51.9
10-14	9	68.5	9	70.3
Age Adjusted Rate per 1,000,000 population	76.5		94.2	

The age-adjusted incidence rate for the paediatric age group (0-14) was 76.5 per million for boys and 94.2 per million for girls. As per the International Incidence of Childhood Cancer volume III, the incidence rate for boys and girls is more than 60 per million. The cancer incidence rates among boys and girls are as per the international standards ICCC-3. Of the total cases registered, 1.9% of them belong to paediatric cancer.

The microscopic confirmation was 96.3% in boys and 87.5% in girls.

Microscopic verification of the cases

In the year 2019-2022, out of 1,457 male cases, 1,160 cases (79.6%) were diagnosed with microscopic verification, 9.1% of cases were diagnosed from radiological findings and 4.4% of

cases were diagnosed clinically.

In females, out of 1,715 cases, we have 1,456 cases (84.9%) diagnosed with microscopic verification, 6.9% of cases were diagnosed from radiological findings and 3.3% of cases were diagnosed clinically.

Death certificate-Only (DCO) cases

The PBCR has registered 95 (6.5%) cases in male and 82 (4.8%) cases in female under the DCO categories. The death cases have been registered based on the death certificate information and through death claims from RICBL.

Source per case registration

The cases were counted as per source notification. The average number of sources per case registered is 1.4.

Table 6.2 Source per case registration

Source	Number of cases confirmed
One Source	3171
Two Sources	980
Three Sources	124
Four Sources	8
Total sources	4283
Source per case registration	**1.4**

7. Cancer cases registered by the source of registration: First source of information

JDWNRH is the main source of information for the registration of newly diagnosed cancer cases. More than 75% cases registered from the JDWNRH, where cancer patients are referred for further management. The other hospitals were covered by the registry staff through their yearly data collection. Cancer Incidence registered by the first source of registration are mentioned in table 6.

Table 7.1 : Cancer cases information by the first source of cancer registration

Sr. No.	Age group	Male		Female		Total	
		Number	%	Number	%	Number	%
1	JDWNRH Hospital	1073	73.6	1313	76.5	2386	75.2
2	Mongar RR Hospital	87	6.0	104	6.1	191	6.0
3	Gelephu RR Hospital	61	4.2	55	3.2	116	3.7
4	RICB	60	4.1	56	3.3	116	3.7
5	Paro Hospital	25	1.7	19	1.1	44	1.4
6	Bajo Hospital	16	1.1	20	1.2	36	1.1
7	Samtse Hospital	15	1.0	19	1.1	34	1.1
8	Menjong Diagnostic centre	20	1.4	11	0.6	31	1.0
9	Punakha Hospital	12	0.8	16	0.9	28	0.9
10	Trashigang Hospital	11	0.8	16	0.9	27	0.9
11	Phuentsholing Hospital	6	0.4	15	0.9	21	0.7
12	Bumthang Hospital	5	0.3	12	0.7	17	0.5
13	Pemagatsel Hospital	7	0.5	6	0.3	13	0.4
14	IMTART Hospital HAA	1	0.1	10	0.6	11	0.3
15	Lungtenphu RBA Hospital	7	0.5	3	0.2	10	0.3
16	Trongsa Hospital	5	0.3	5	0.3	10	0.3
17	Deothang RBA Hospital	4	0.3	6	0.3	10	0.3
18	Other	42	2.9	29	1.7	71	2.2

Sources of information on Cancer deaths

The information on the source of death in the registry is unreliable since there is no dedicated column for entering this data. Currently, the primary sources of information on deaths are hospital wards, the home-based palliative care unit at JDWNRH, and the Royal Insurance Corporation of Bhutan Limited (RICBL) and the Bhutan Cancer Society. Bhutan's registration system is still underdeveloped, particularly in recording deaths. All Bhutanese citizens above 8 years of aged, including those living in urban areas, are covered by a rural insurance scheme. We annually receive death claim data for cancer patients from the Royal Insurance Corporation of Bhutan. A major drawback of this method is the potential to overlook deaths among children under the age of 8 as they are not covered by this scheme

8. Cancer incidence and mortality: All sites

In the year 2019-2022, 3,172 new cancer cases were registered. There were 1,457 males (45.9%) and 1,715 females (54.1%). The age-adjusted incidence rate for males was 101.7 per 100,000 population and for females, it was 126.4 per 100,000 population.

In the year 2019-2022, the cancer registry registered 1,461 cancer deaths of which 734 were in males (50.2%) and 727 were in females (49.8%). The age-adjusted mortality rate for males was 51.6 per 100,000 population and for females, it was 54.2 per 100,000 population.

The cancer incidence and mortality rates for all sites for males and females are presented in Figure 8.1.

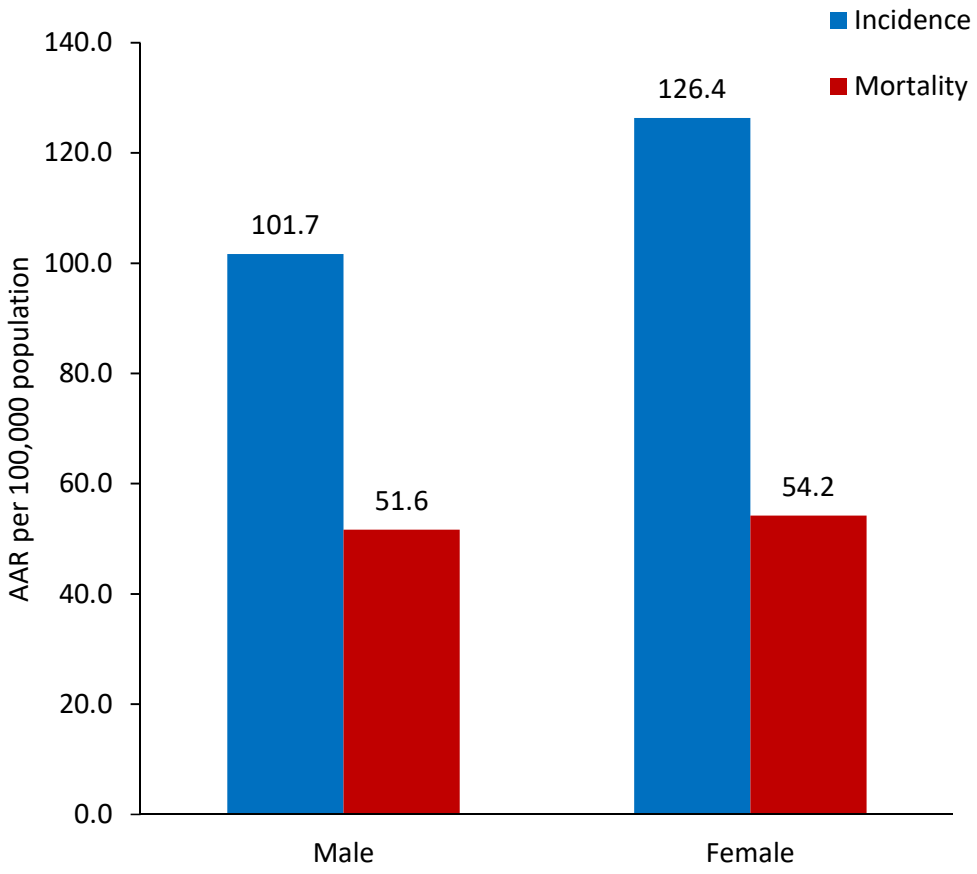


Figure 8.1: All sites cancer incidence and mortality rate by sex: 2019-2022

9. Leading cancer sites by gender

Among males; stomach, oesophagus, liver, lung, colon, rectum, other skin, brain, prostate, and gallbladder were the leading cancer sites. Among females; cervix uteri, stomach, breast, lung, ovary, thyroid, liver, gallbladder, brain, and rectum were the leading cancer sites.

The top 10 leading cancer sites in males and females are presented in Figures 3 and 4 respectively.

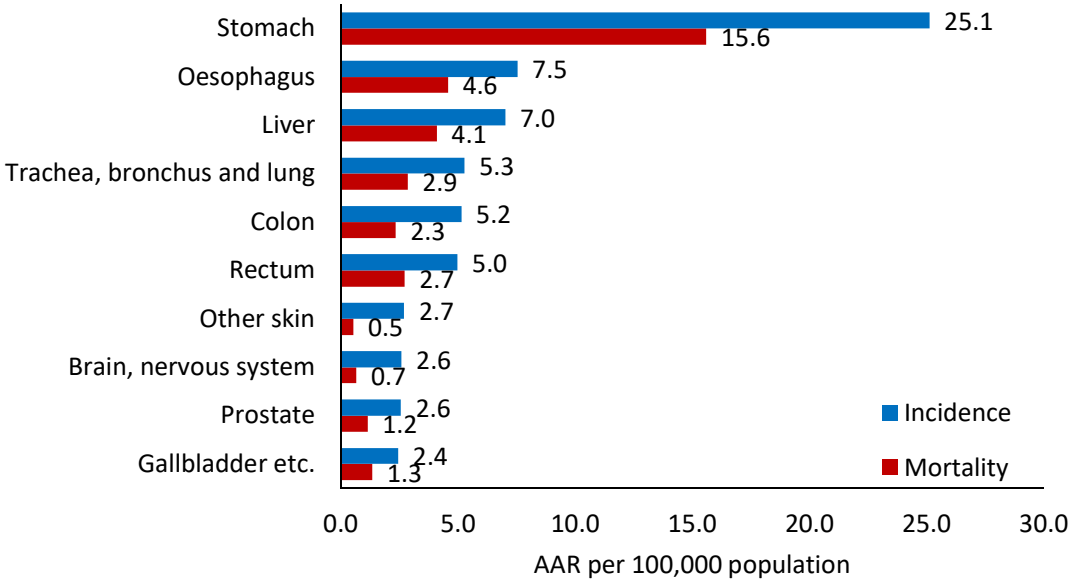


Figure 9.1: Leading cancer sites in males: 2019-2022

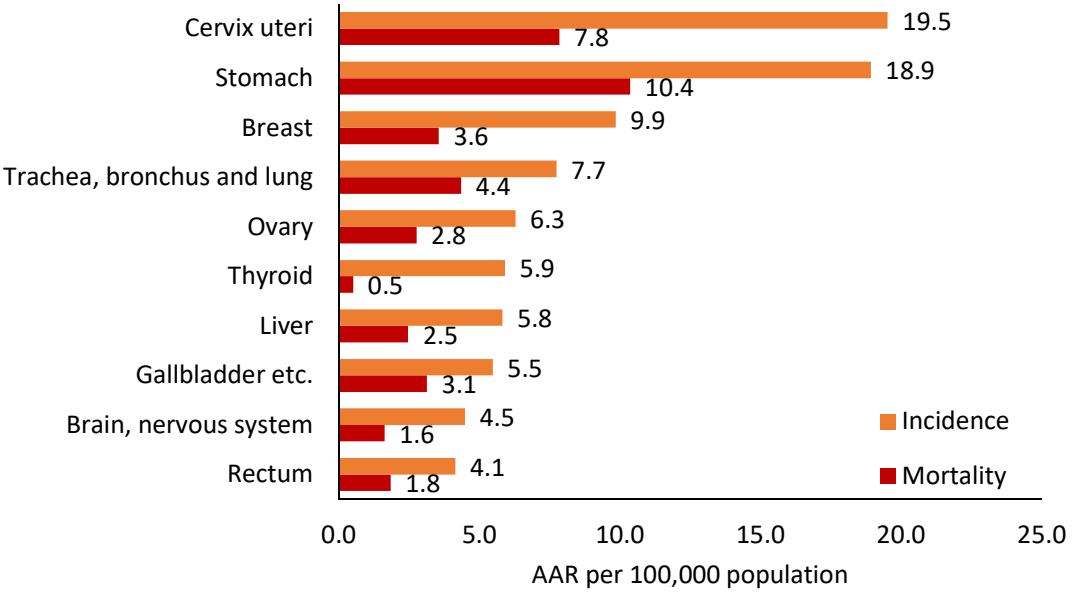


Figure 9.2: Leading cancer sites in females: 2019-2022

10. Comparison of leading cancer sites with other countries' cancer registries

The site-wise cancer cases details are shown in respective tables below with crude rate, age-adjusted incidence rate, and truncated rate. The age-specific incidence rate for males and females for each site, as well as comparisons with other countries' cancer registries, are also depicted in the respective figures below.

Cancer of the Stomach (C16)

The stomach cancer incidence rates are high among both males and females as compared to India, Sri Lanka and Nepal cancer registries.

Table 10.1: stomach cancer incidence rates male vs. female in Bhutan (2019-2022)

	Male	Female
Number of cases	354	254
Percentage (%)	24.3	14.8
Crude incidence rate (CR)	22.5	17.6
Age-adjusted rate (AAR)	25.1	18.9
Truncated rate (TR)	30.2	27.7

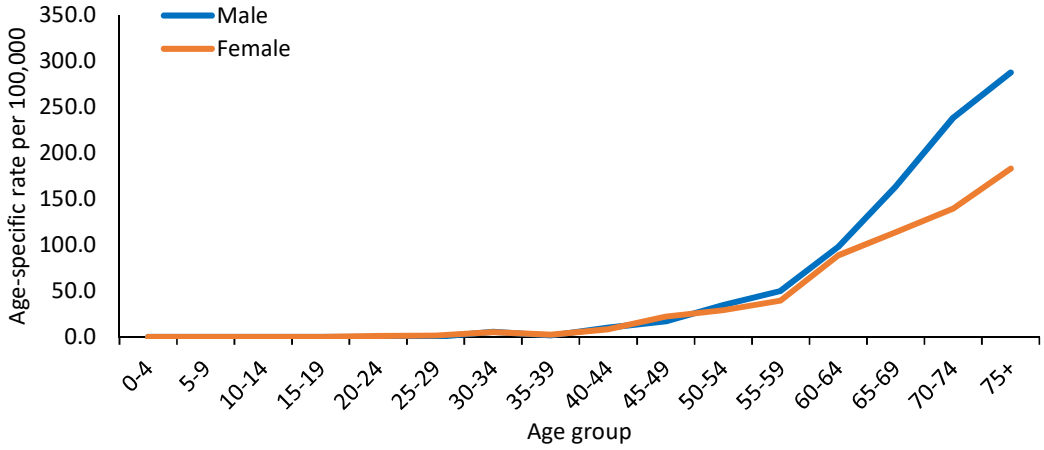


Figure 10.1: Age-specific incidence rate of stomach cancer in Bhutan (2019-2022)

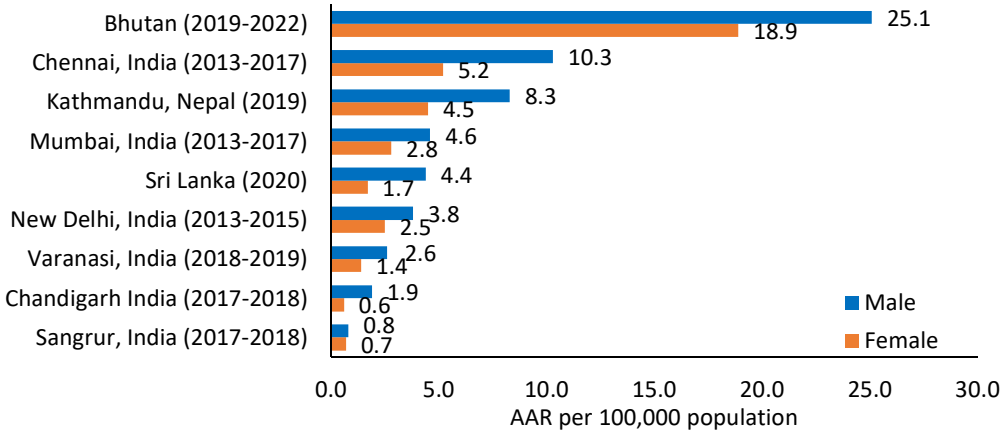


Figure 10.2: Comparison of stomach cancer incidence rate with other countries registries

Cancer of the oesophagus (C15)

The oesophagus cancer incidence rates are low as compared to Sri Lanka cancer registry while it is higher than that of India and Nepal cancer registries.

Table 10.2: Oesophagus Cancer incidence rates Male vs. Female in Bhutan

	Male	Female
Number of cases	104	50
Percentage (%)	7.1	2.9
Crude incidence rate (CR)	6.6	3.5
Age-adjusted rate (AAR)	7.5	4
Truncated rate (TR)	11.7	7.8

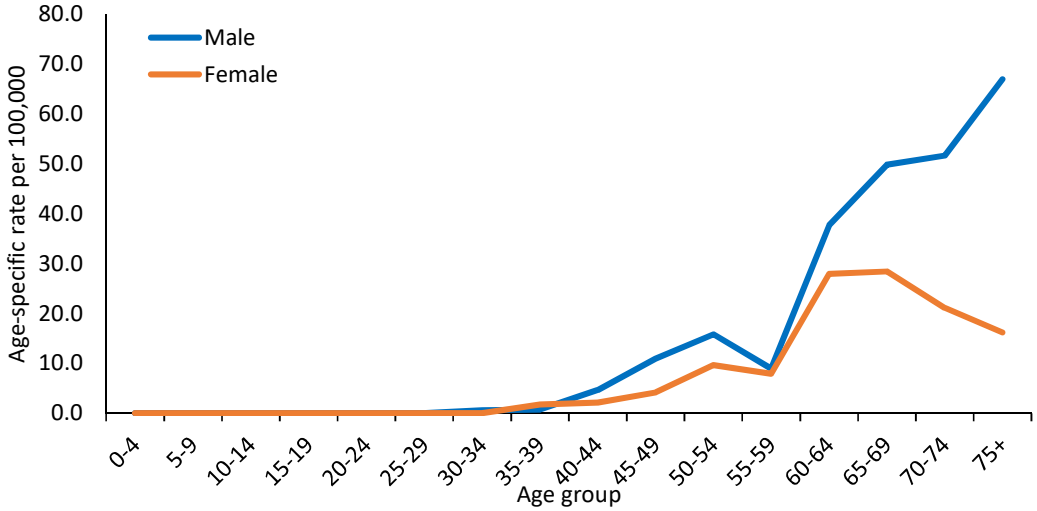


Figure 10.3: Age-specific incidence rate of oesophagus cancer in Bhutan (2019-2022)

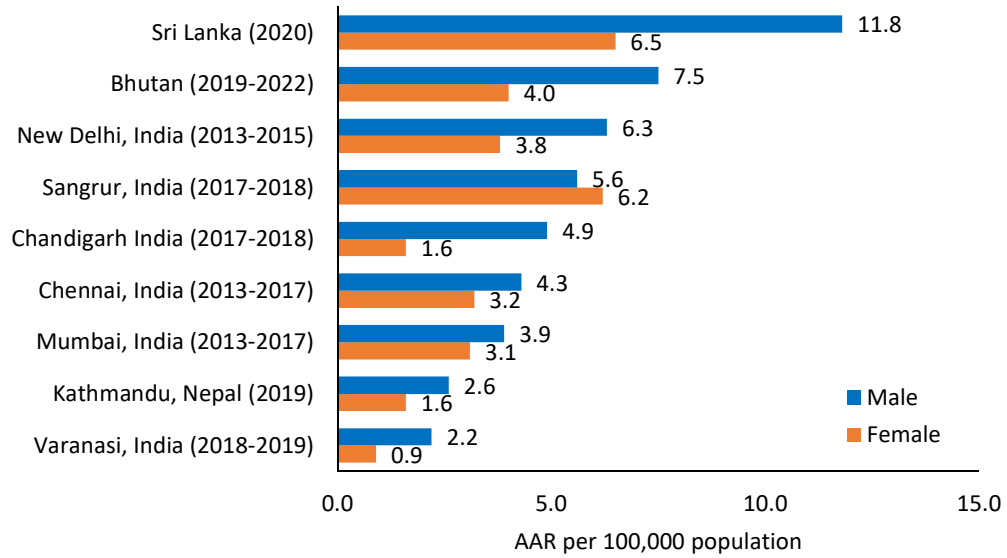


Figure 10.4: Comparison of oesophagus cancer incidence rate with other countries registries

Cancer of the Liver (C22)

The liver cancer incidence rate in male is similar to Sri Lanka cancer registry while it is higher in females. The rates are high in comparison to India and Nepal cancer registries.

Table 10.3: Liver Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Male	Female
Number of cases	99	76
Percentage (%)	6.8	4.4
Crude incidence rate (CR)	6.3	5.3
Age-adjusted rate (AAR)	7.0	5.8
Truncated rate (TR)	8.8	8.8

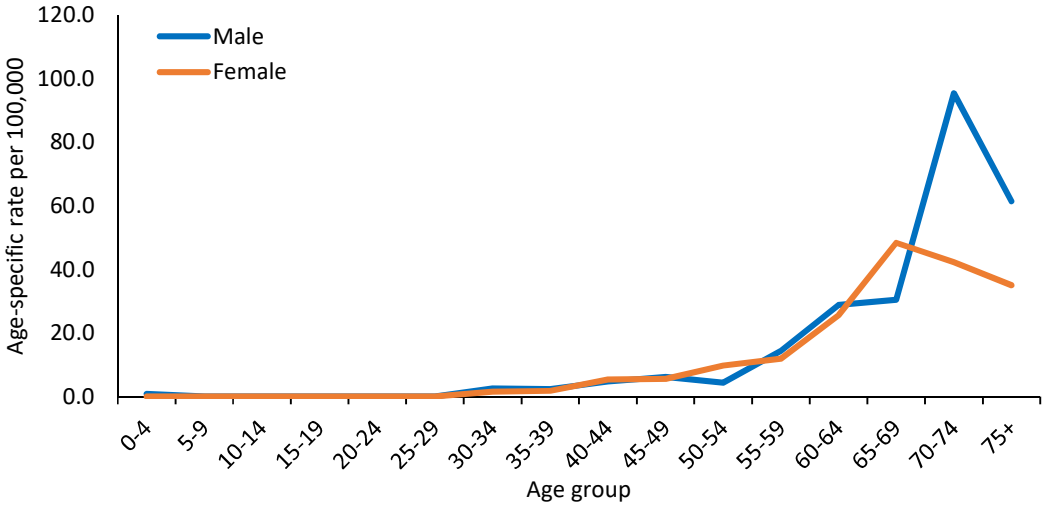


Figure 10.5: Age-specific incidence rate of liver cancer in Bhutan (2019-2022)

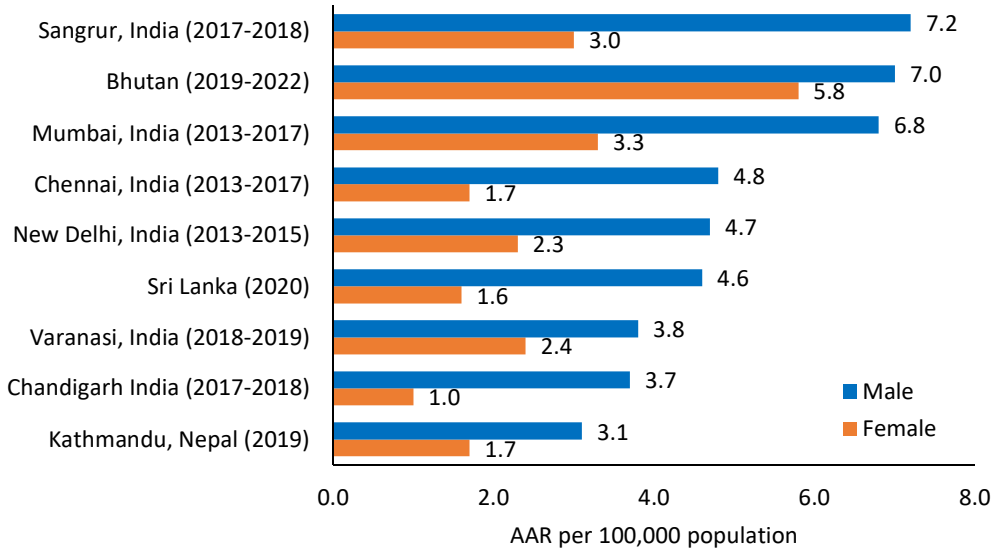


Figure 10.6: Comparison of liver cancer incidence rate with other countries registries

Cancer of the trachea, bronchus and lung (C33-C34)

The lung cancer incidence rates are low as compared to Sri Lanka, India, and Nepal cancer registries. Bhutan is the only country with lung cancer incidence rates higher in females as compared to male.

Table 10.4: Trachea, Bronchus and Lung Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Male	Female
Number of cases	76	103
Percentage (%)	5.2	6
Crude incidence rate (CR)	4.8	7.2
Age-adjusted rate (AAR)	5.3	7.7
Truncated rate (TR)	6.5	10.6

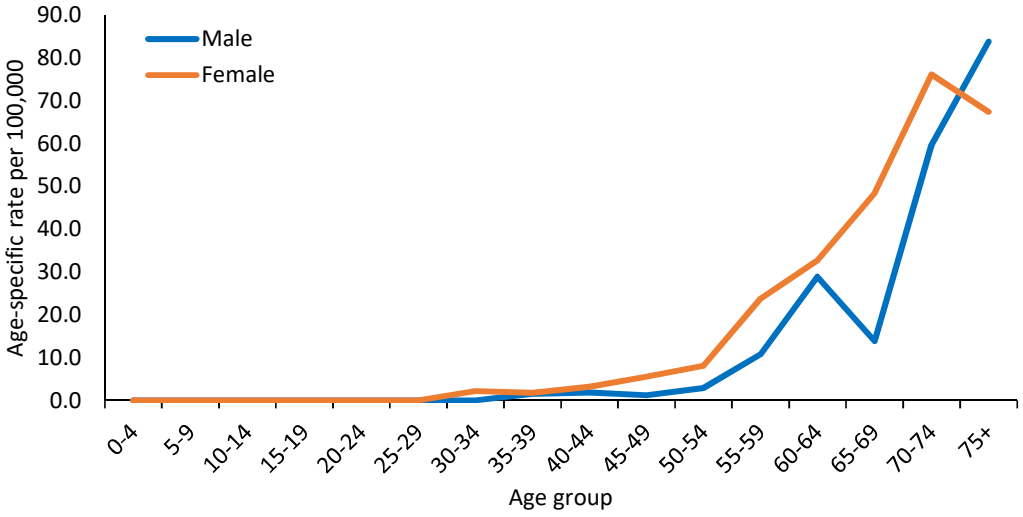


Figure 10.7: Age-specific incidence rate of lung cancer in Bhutan (2019-2022)

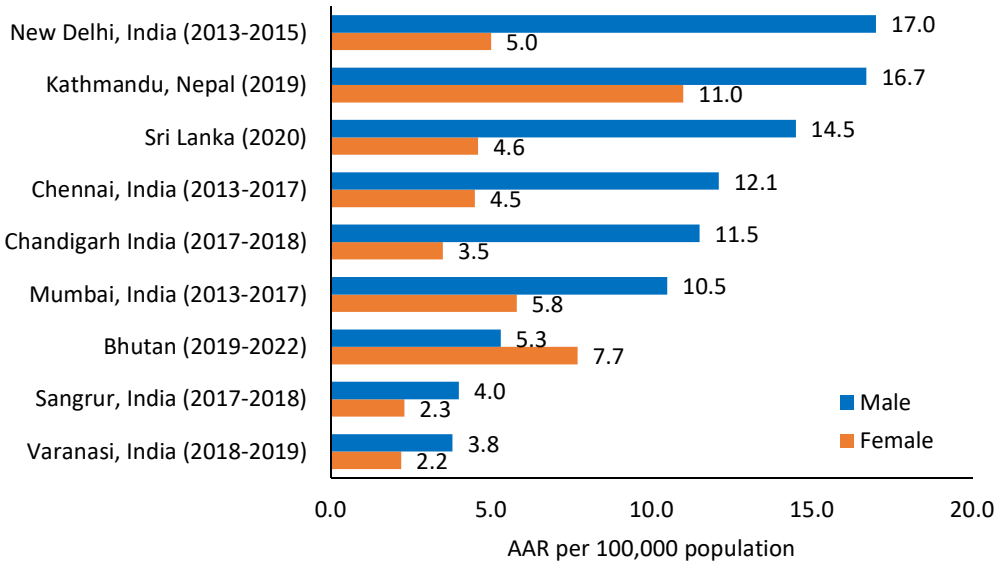


Figure 10.8: Comparison of lung cancer incidence rate with other countries registries

Cancer of the colon (C18)

The colon cancer incidence rates are low as compared to Sri Lanka cancer registry while it is higher than India and Nepal cancer registries.

Table 10.5: Colon Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Male	Female
Number of cases	72	55
Percentage (%)	4.9	3.2
Crude incidence rate (CR)	4.6	3.8
Age-adjusted rate (AAR)	5.2	3.9
Truncated rate (TR)	7.9	6.3

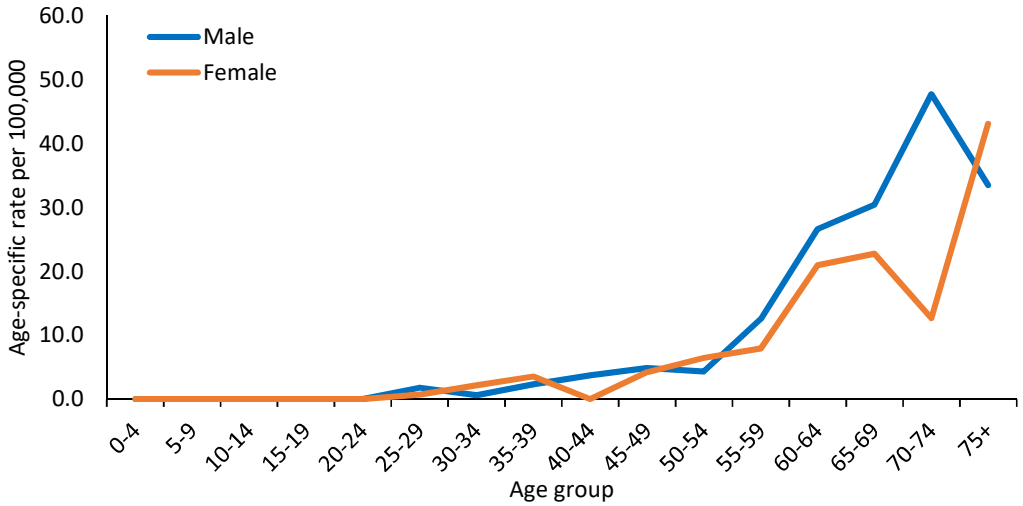


Figure 10.9: Age-specific incidence rate of colon cancer in Bhutan (2019-2022)

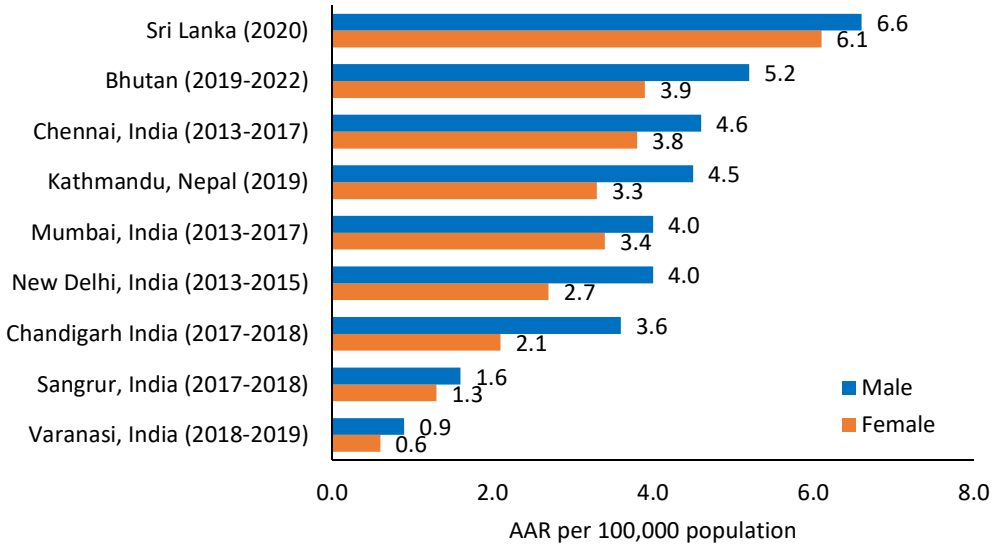


Figure 10.10: Comparison of colon cancer incidence rate with other countries registries

Cancer of the rectum (C19-C20)

The rectum cancer incidence rates are low as compared to Sri Lanka cancer registry while it is higher than India and Nepal cancer registries.

Table 10.6: Colon Cancer incidence rates Male vs. Female

	Male	Female
Number of cases	70	55
Percentage (%)	4.8	3.2
Crude incidence rate (CR)	4.5	3.8
Age-adjusted rate (AAR)	5.0	4.1
Truncated rate (TR)	5.0	7.8

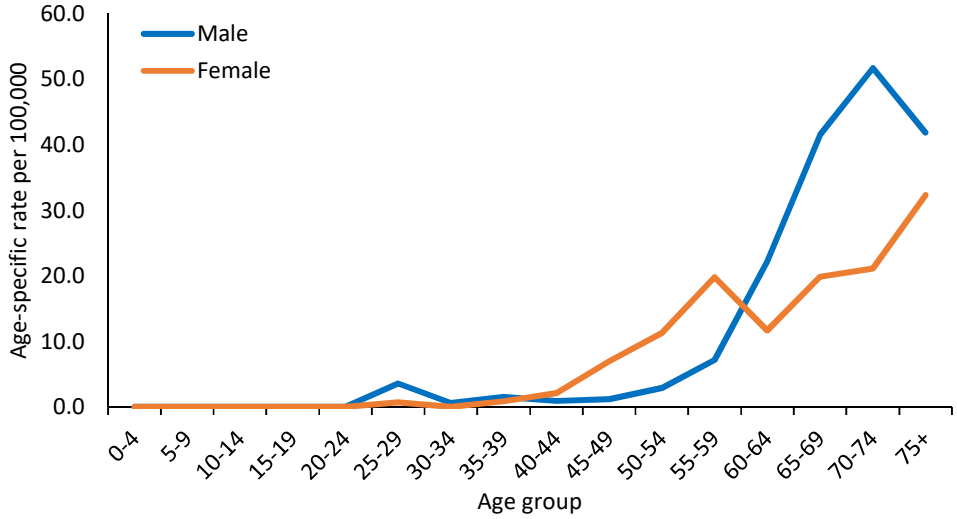


Figure 10.11: Age-specific incidence rate of rectum cancer in Bhutan (2019-2022)

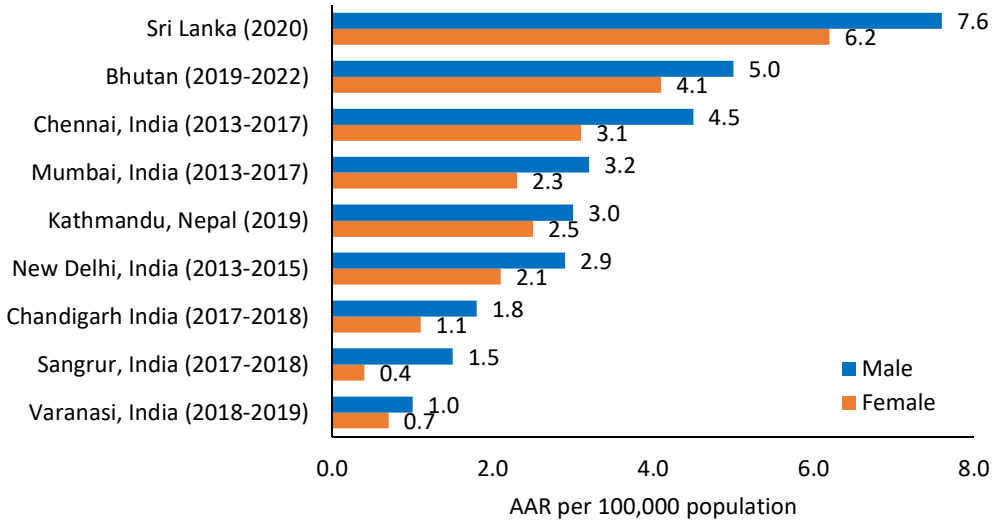


Figure 10.12: Comparison of rectum cancer incidence rate with other countries registries

Cancer of the other skin (C44)

The skin cancer incidence rates are low as compared to Sri Lanka cancer registry while it is higher than India and Nepal cancer registries.

Table 10.7: Other Skin Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Male	Female
Number of cases	37	21
Percentage (%)	2.5	1.2
Crude incidence rate (CR)	2.4	1.5
Age-adjusted rate (AAR)	2.7	1.6
Truncated rate (TR)	2.2	2.5

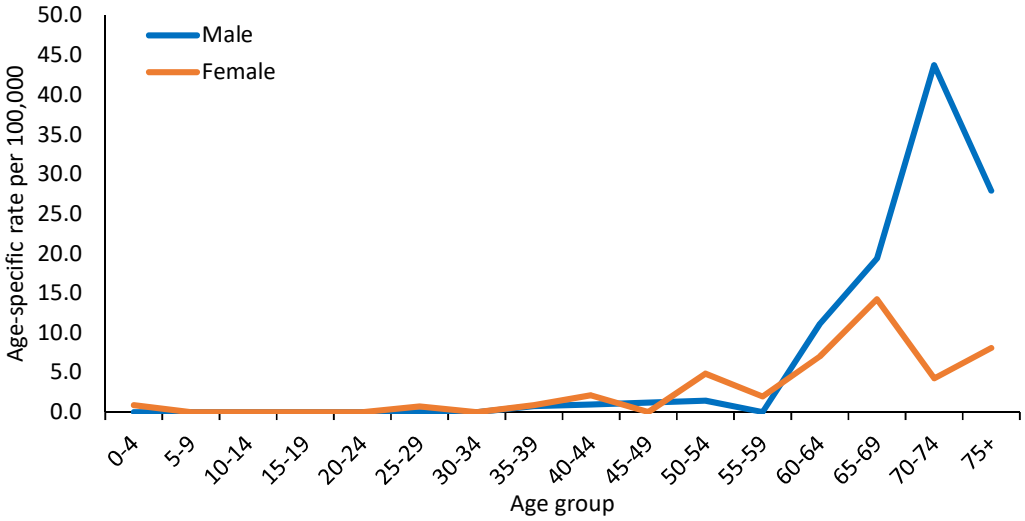


Figure 10.13: Age-specific incidence rate of other skin cancer in Bhutan (2019-2022)

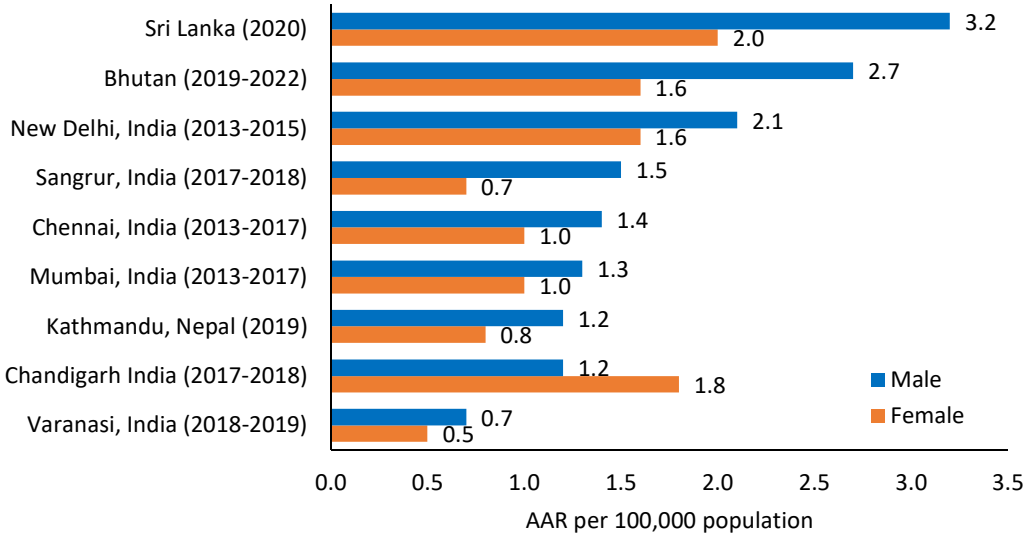


Figure 10.14: Comparison of other skin cancer incidence rate with other countries registries

Cancer of the brain, nervous system (C70-C72)

The brain and nervous system cancer incidence rates in males are low as compared to Sri Lanka and few Indian cancer registries while it is higher than Nepal cancer registry. Moreover, the rates among females are high as compared to India, Sri Lanka, and Nepal PBCR.

Table 10.8: Brain, Nervous System Cancer incidence rates Male vs. Female

	Male	Female
Number of cases	39	61
Percentage (%)	2.7	3.6
Crude incidence rate (CR)	2.5	4.2
Age-adjusted rate (AAR)	2.6	4.5
Truncated rate (TR)	4.0	9.8

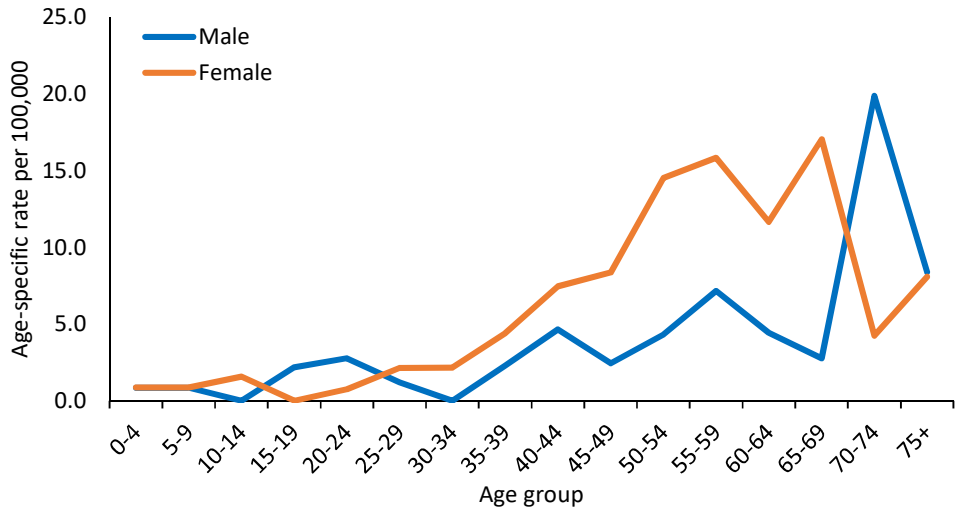


Figure 10.15: Age-specific incidence rate of brain, nervous system cancer in Bhutan (2019-2022)

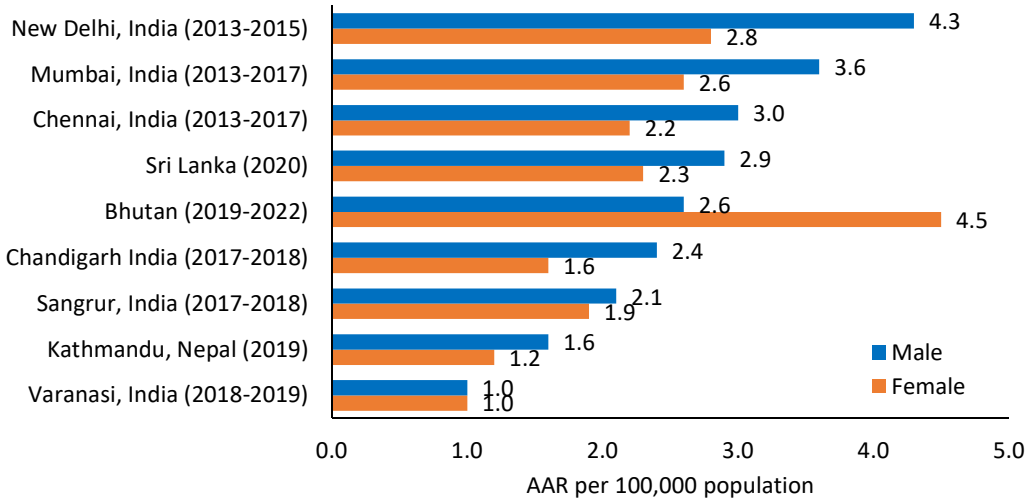


Figure 10.16: Comparison of brain, nervous system cancer incidence rate with other countries registries

Cancer of the Gallbladder (C23-C24)

The gall bladder cancer incidence rates are low as compared to Nepal and few Indian cancer registries while it is higher than Sri Lanka cancer registry.

Table 10.9: Gallbladder Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Male	Female
Number of cases	35	71
Percentage (%)	2.4	4.1
Crude incidence rate (CR)	2.2	4.9
Age-adjusted rate (AAR)	2.4	5.5
Truncated rate (TR)	2.8	9.4

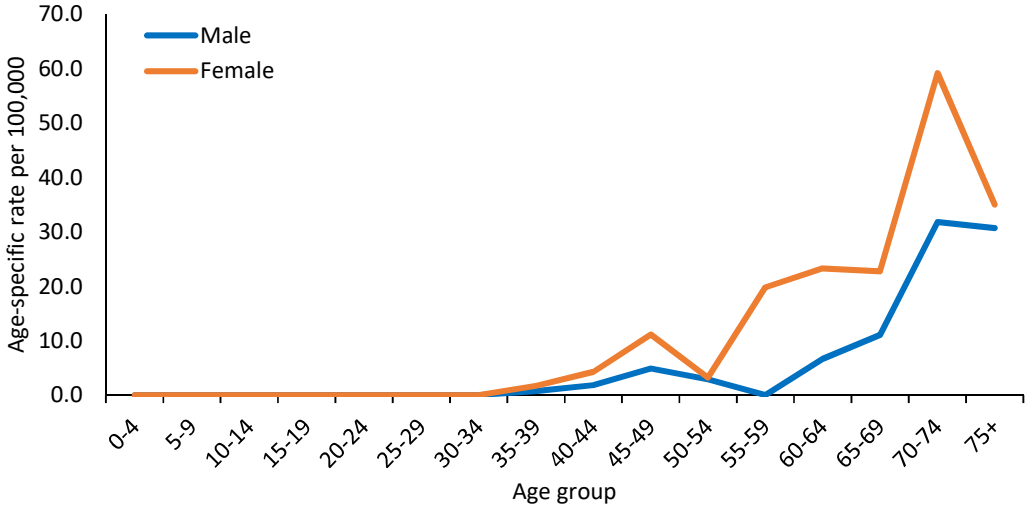


Figure 10.17: Age-specific incidence rate of gallbladder cancer in Bhutan (2019-2022)

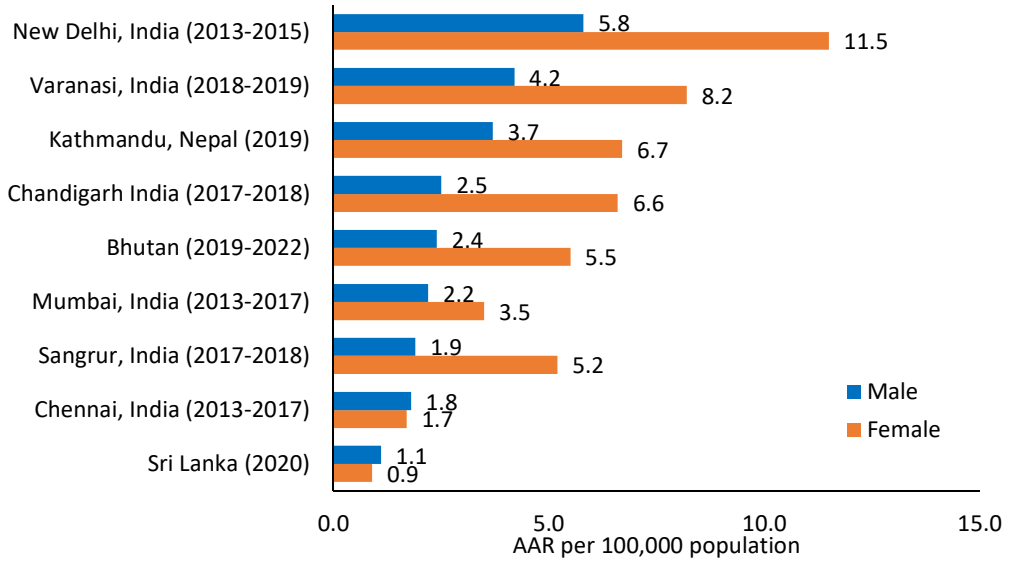


Figure 10.18: Comparison of gallbladder cancer incidence rate with other countries registries

Cancer of the Thyroid (C73)

The thyroid cancer incidence rates are low as compared to Sri Lanka cancer registry while it is higher than India and Nepal cancer registries.

Table 10.10: Thyroid Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Male	Female
Number of cases	30	91
Percentage (%)	2.1	5.3
Crude incidence rate (CR)	1.9	6.3
Age-adjusted rate (AAR)	1.7	5.9
Truncated rate (TR)	3.0	10.5

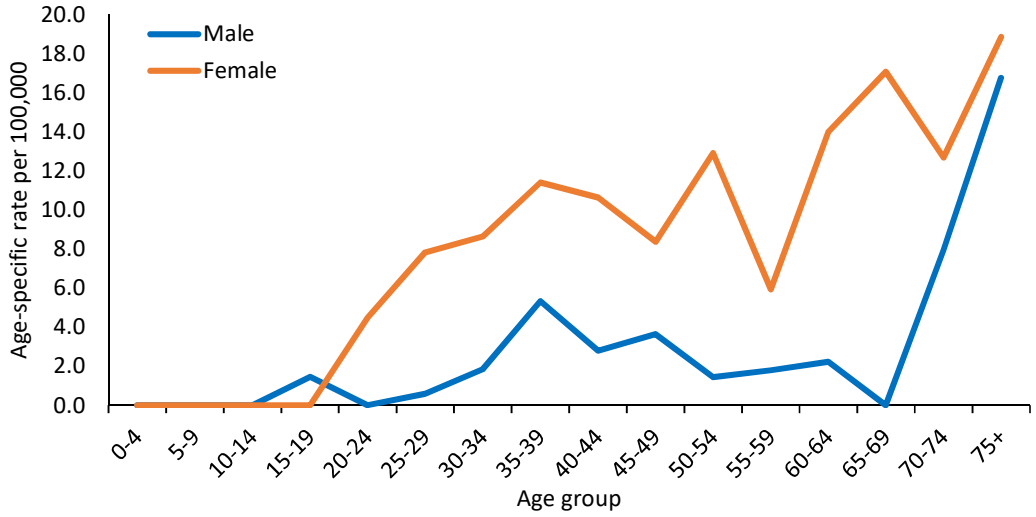


Figure 10.19: Age-specific incidence rate of thyroid cancer in Bhutan (2019-2022)

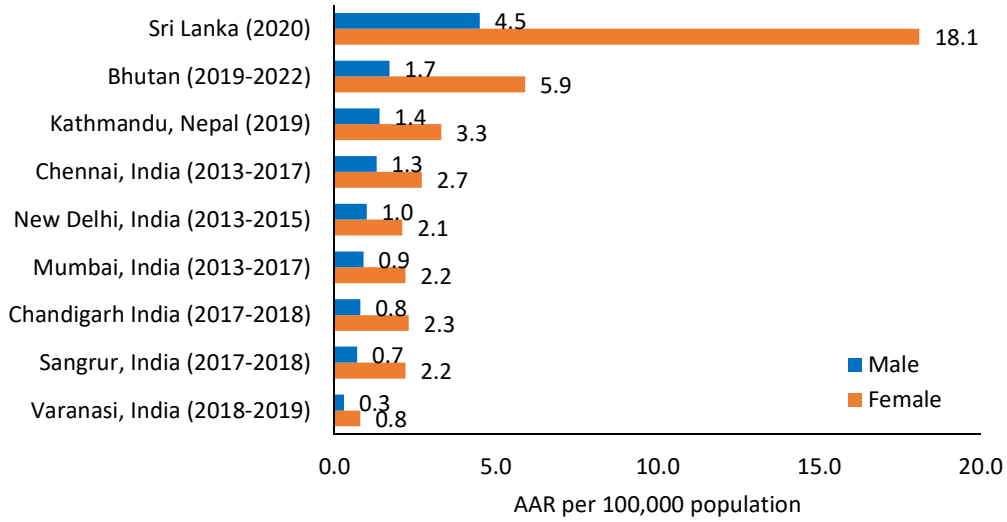


Figure 10.20: Comparison of thyroid cancer incidence rate with other countries registries

Cancer of the Cervix uteri (C53)

The cervical cancer incidence rate is high as compared to Sri Lanka, India, and Nepal cancer registries.

Table 10.11: Cervix Cancer incidence rates Male vs. Female

	Female
Number of cases	272
Percentage (%)	15.9
Crude incidence rate (CR)	18.9
Age-adjusted rate (AAR)	19.5
Truncated rate (TR)	49.1

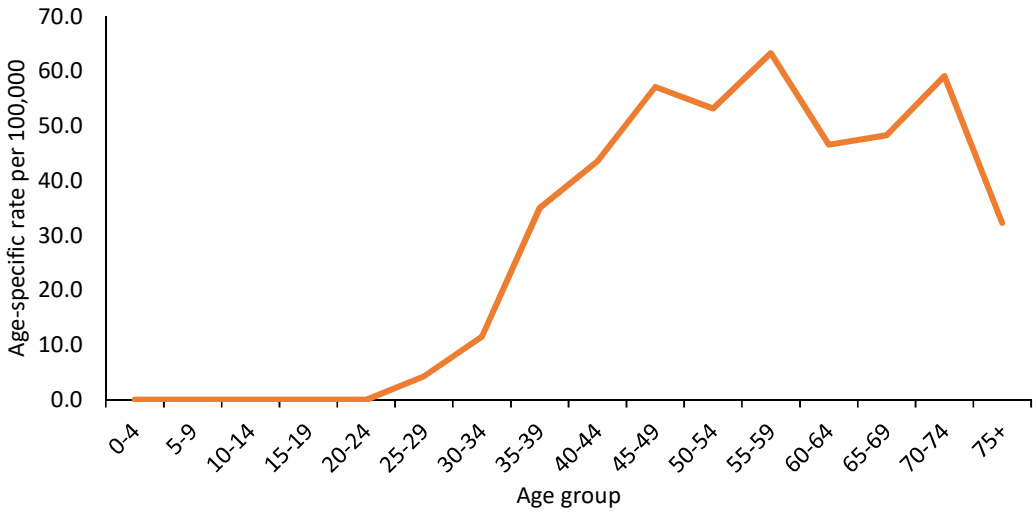


Figure 10.21: Age-specific incidence rate of cervix uteri cancer in Bhutan (2019-2022)

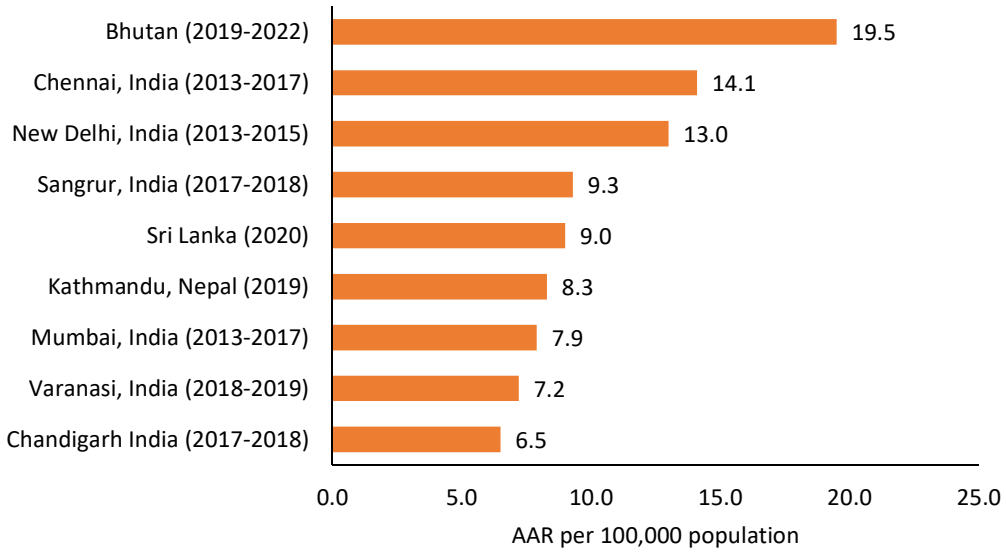


Figure 10.22: Comparison of cervix uteri cancer incidence rate with other countries registries

Cancer of the Breast (C50)

The breast cancer incidence rate is low as compared to Sri Lanka, India, and Nepal cancer registries.

Table 10.12: Breast Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Female
Number of cases	135
Percentage (%)	7.9
Crude incidence rate (CR)	9.4
Age-adjusted rate (AAR)	9.9
Truncated rate (TR)	25.0

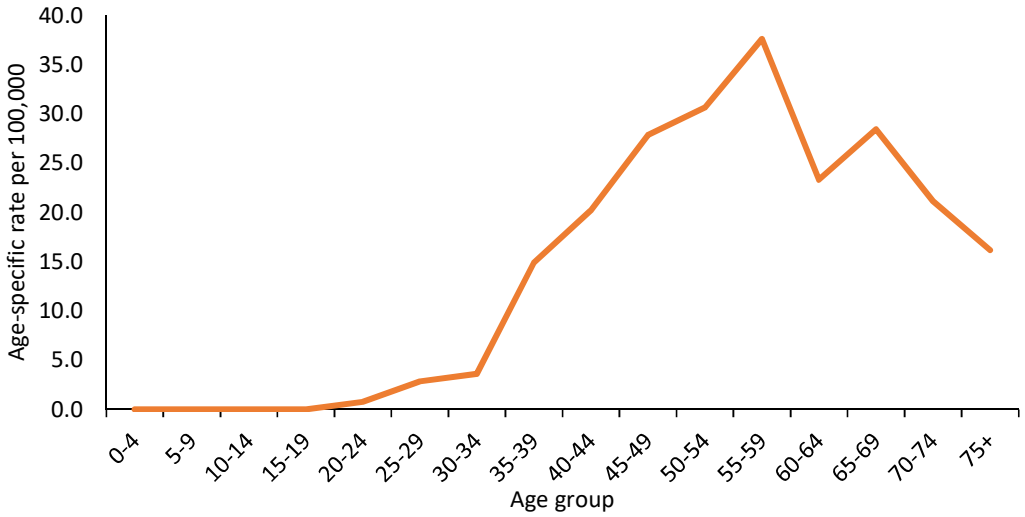


Figure 10.23: Age-specific incidence rate of breast cancer in Bhutan (2019-2022)

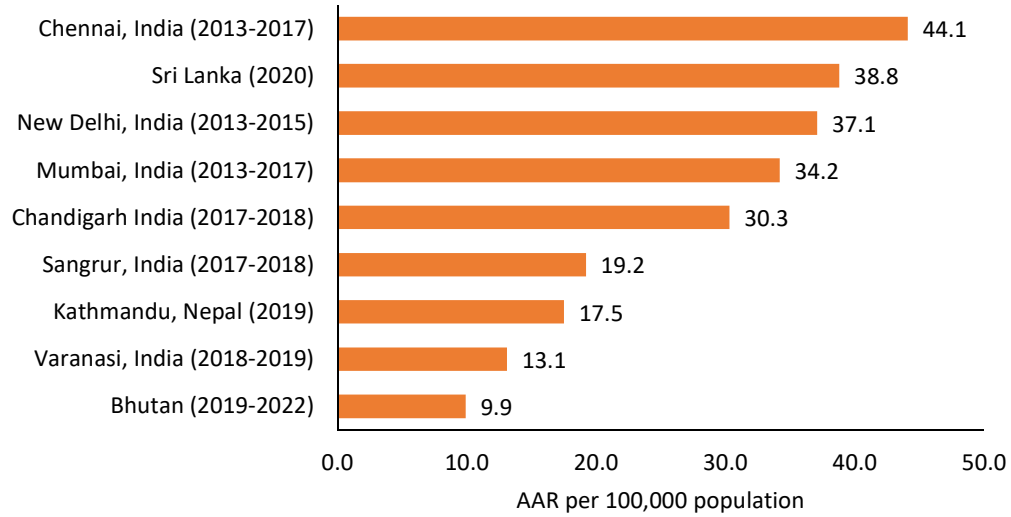


Figure 10.24: Comparison of breast cancer incidence rate with other countries registries

Cancer of the Ovary (C56)

The ovarian cancer incidence rates are low as compared to Sri Lanka and few Indian cancer registries while it is higher than Nepal cancer registry.

Table 10.13: Ovary Cancer incidence rates Male vs. Female

	Female
Number of cases	85
Percentage (%)	5
Crude incidence rate (CR)	5.9
Age-adjusted rate (AAR)	6.3
Truncated rate (TR)	11.8

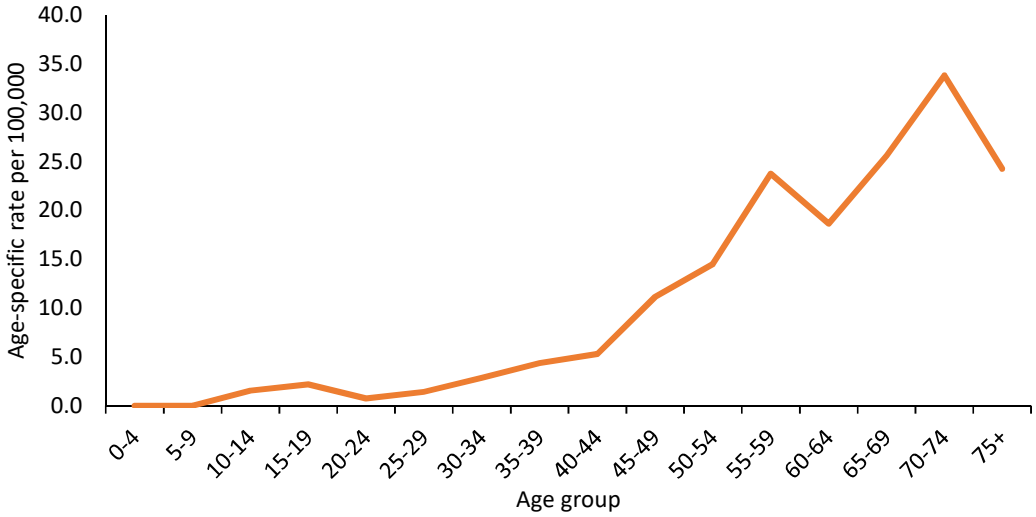


Figure 10.25: Age-specific incidence rate of ovary cancer in Bhutan (2019-2022)

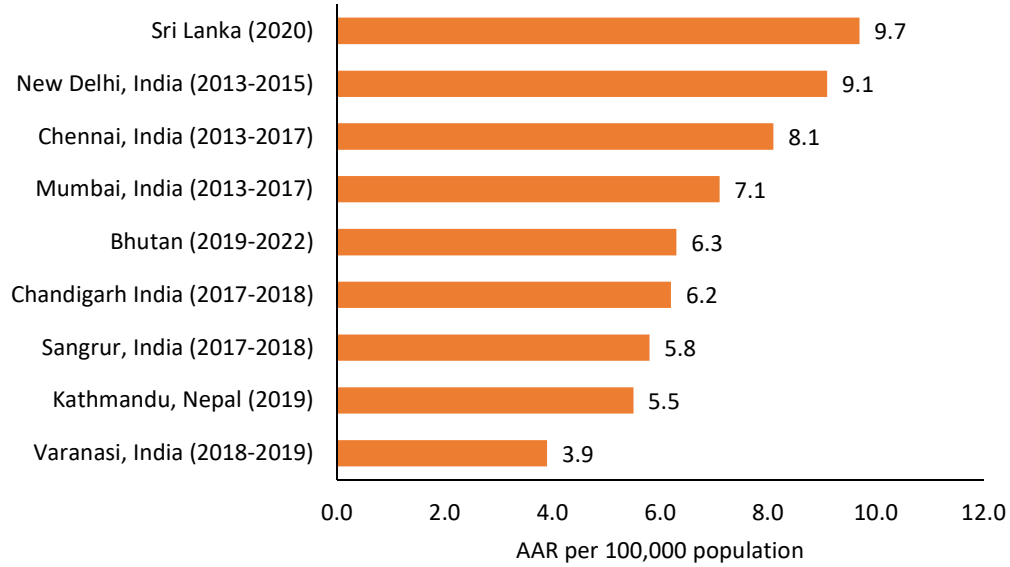


Figure 10.26: Comparison of ovary cancer incidence rate with other countries registries

Cancer of the prostate (C61)

The prostate cancer incidence rates are low as compared to Sri Lanka, India, and Nepal cancer registries.

Table 10.14: Prostate Cancer incidence rates Male vs. Female in Bhutan (2019-2022)

	Female
Number of cases	38
Percentage (%)	2.6
Crude incidence rate (CR)	2.4
Age-adjusted rate (AAR)	2.6
Truncated rate (TR)	1.3

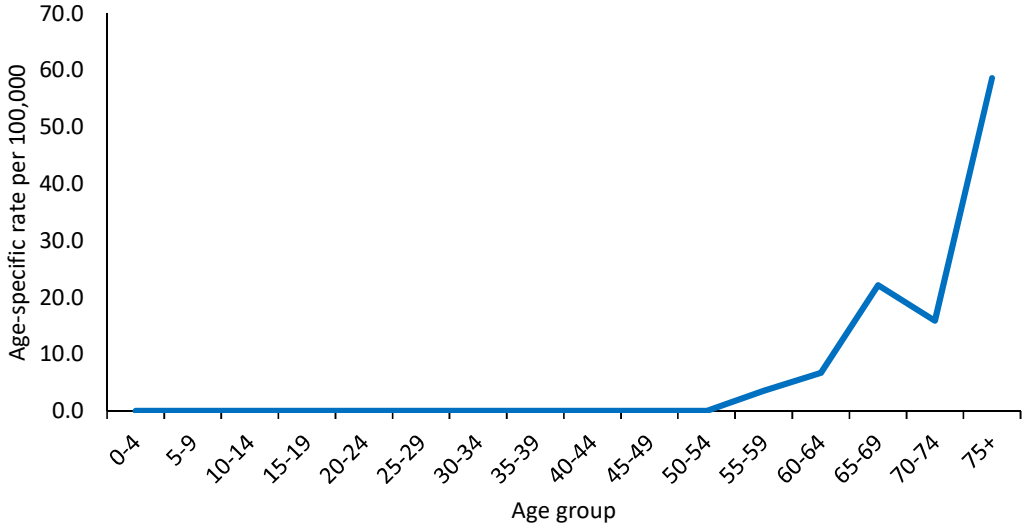


Figure 10.27: Age-specific incidence rate of prostate cancer in Bhutan (2019-2022)

Following figure shows overall cancer incidence and mortality among male and female

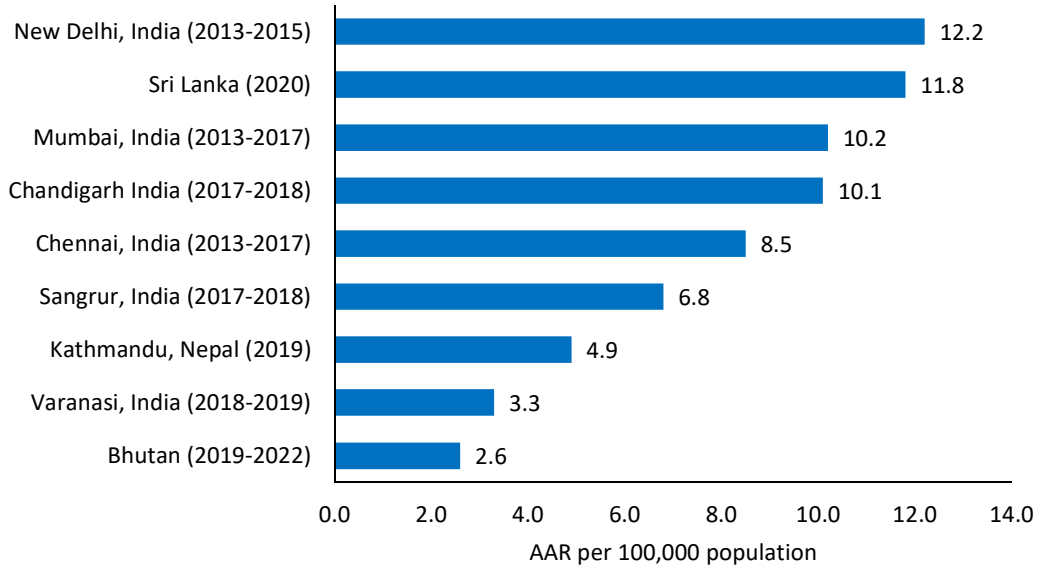


Figure 10.28: Comparison of prostate cancer incidence rate with other countries registries

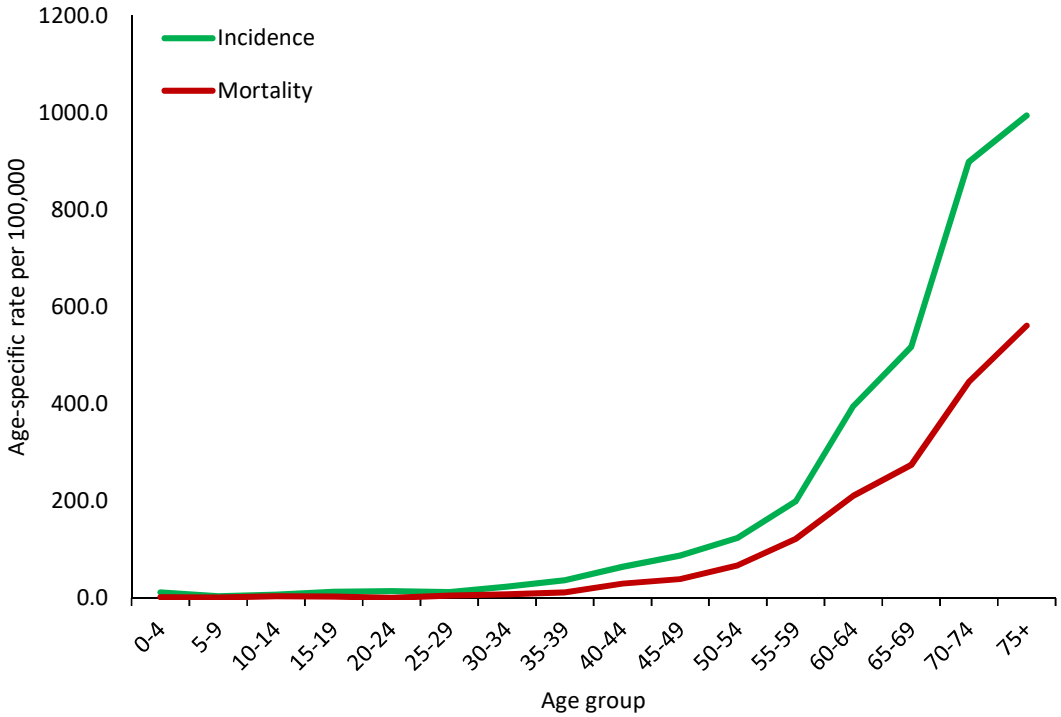


Figure 10.29: Age-specific incidence and mortality rate: Male all cancer sites in Bhutan (2019-2022)

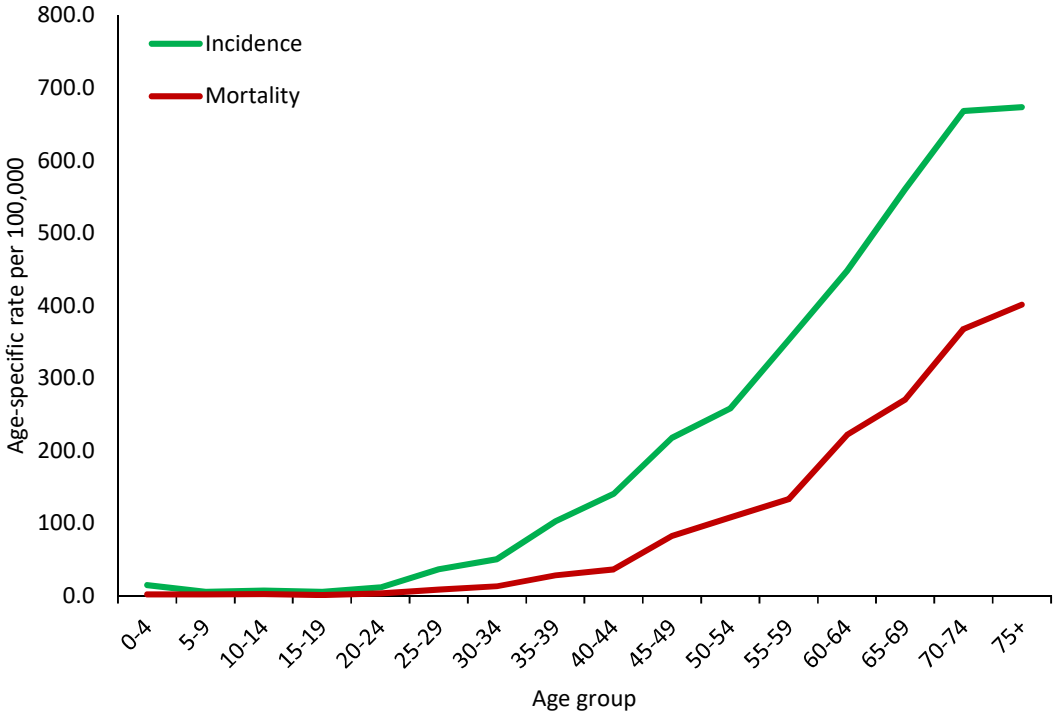


Figure 10.30: Age-specific incidence and mortality rate: Female all cancer sites in Bhutan (2019-2022)

Other and unspecified sites

The other and unspecified cancer sites refer to the following cancer types:

C26	Other and Ill-Defined Digestive Organ	C78	Secondary Malignant Neoplasm of Respiratory and Digestive Organs,
C39	Other and Ill-Defined Sites Within Respiratory Systems and Intra thoracic Organ	C79	Secondary Malignant Neoplasm of Other and Unspecified Sites
C48	Retro Peritoneum and Peritoneum	C80	Malignant Neoplasm Without Specification of Site
C76	Other and Ill-Defined, Secondary and Unspecified sites	C97	Malignant Neoplasm of Independent (Primary) Multiple sites
C77	Secondary and Unspecified Malignant Neoplasm of Lymph Node		

In males, out of 1,457 cases, 59 (4.0%) cases were of other and unspecified sites. The predominant cases were of C80 – primary unknown (3.6%), followed by C77 – Secondary and unspecified Malignant Neoplasm of Lymph Node (0.4%).

In females, out of 1,715 cases, 50 (2.9%) were of other and unspecified sites. The predominant cases were of C80 – primary unknown (2.7%), followed by C48 – Retro Peritoneum and Peritoneum, C76 – Other and Ill-Defined, Secondary and Unspecified sites and C77 – Secondary and Unspecified Malignant Neoplasm of Lymph Node with 0.1% each site. The details are presented in Table 8.

Table 10.15: Other and unspecified cases by sex Male vs. Female

ICD 10	Male		Female	
	Number	%	Number	%
C48	0	0.0	1	0.1
C76	0	0.0	1	0.1
C77	6	0.4	2	0.1
C80	53	3.6	46	2.7
Total	**59/1457**	**4.0/100**	**50/1715**	**2.9/100**

Cancer of the other and unspecified sites (C26, C39, C48, C76, C77, C78, C79, C80, C97)

The other and unspecified cancer incidence rates are low as compared to Sri Lanka, India, and Nepal cancer registries.

Table 10.16: Cancer of the other and unspecified sites Male vs. Female in Bhutan (2019-2022)

	Male	Female
Number of cases	59	50
Percentage (%)	4.0	2.9
Crude incidence rate (CR)	3.8	3.5
Age-adjusted rate (AAR)	4.1	3.6
Truncated rate (TR)	6.1	6.0

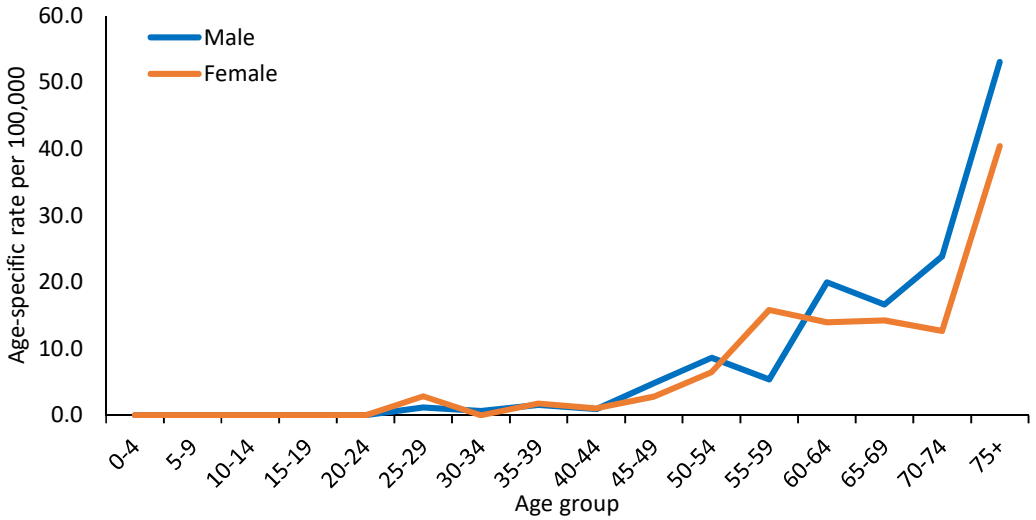


Figure 10.31: Age-specific incidence rate of other and unspecified cancer in Bhutan (2019-2022)

11. Cancer pattern in paediatric age-group (0-14 years)

In the year 2019-2022, out of 3,172 registered cancer cases 59 (1.9%) paediatric cases (0-14 age group) were noted. The age-adjusted incidence for boys is 76.5 per million and 94.2 per million for girls.

The leading cancer sites in boys are lymphoid leukaemia, myeloid leukaemia, NHL, eye, testis, brain, kidney, liver, and hodgkin disease. While in girls lymphoid leukaemia, brain NS, bone, eye, myeloid leukaemia, connective and soft tissue, kidney, ovary, leukaemia unspecified, and other skin are the leading cancer sites. Leading cancer sites are mentioned below in Figure 11.1 and 11.2.

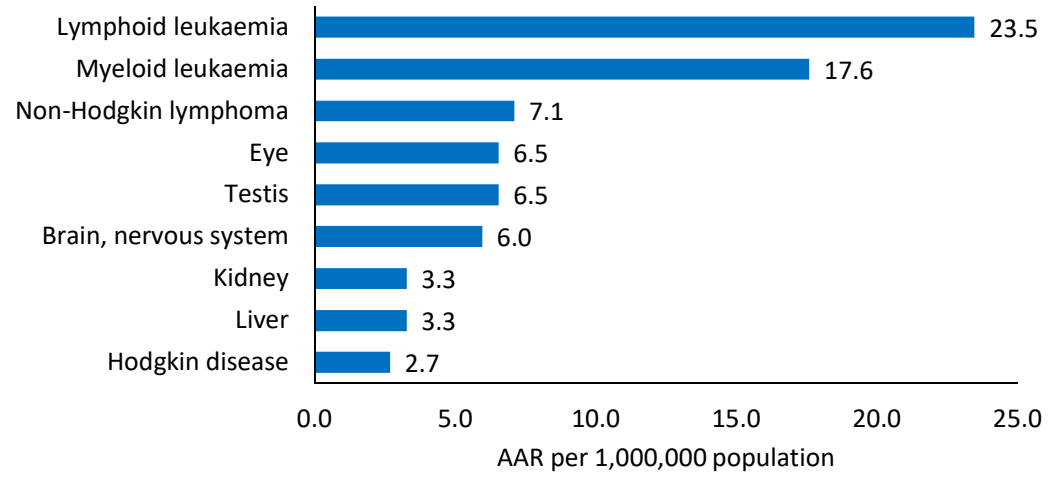


Figure 11.1: Leading cancer sites in boys: 2019-2022

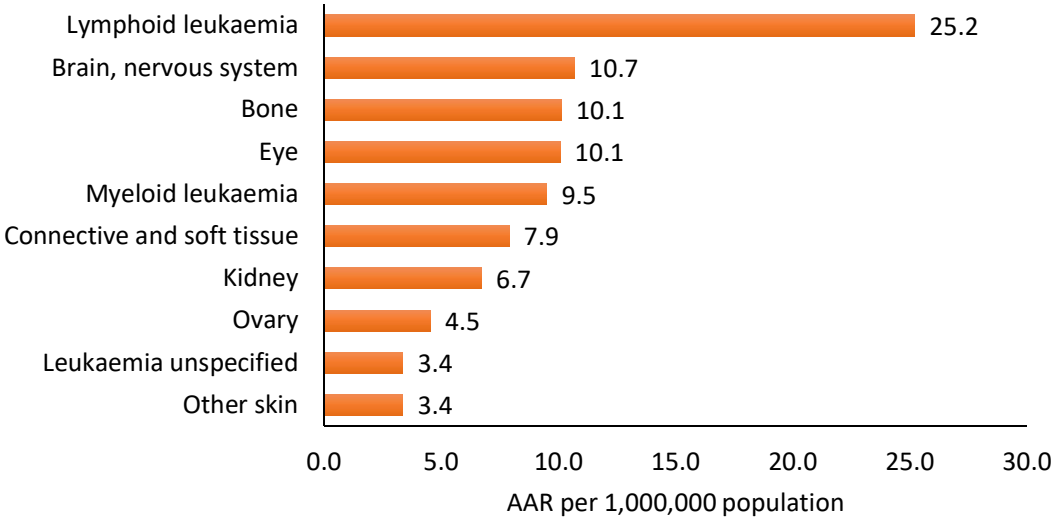


Figure 11.2: Leading cancer sites in girls: 2019-2022

International Classification of Childhood Cancer, 3rd edition (ICCC-3) has mentioned the separate coding to know the cancer burden in children according to appropriate diagnostic groups. ICCC-3 having twelve main groups and further these are divided into subgroups and division of selected subgroups. The age-adjusted incidence rate as per subgroups in boys and girls per million population is mentioned in Table 11.1. The paediatric cancer burden as per ICCC-3 standard is mentioned separately in Table 24.5 and Table 24.6.

Proportion of paediatric cancer cases as per 12 main diagnostic group as per ICCC-3 standard is presented in figure 11.3.

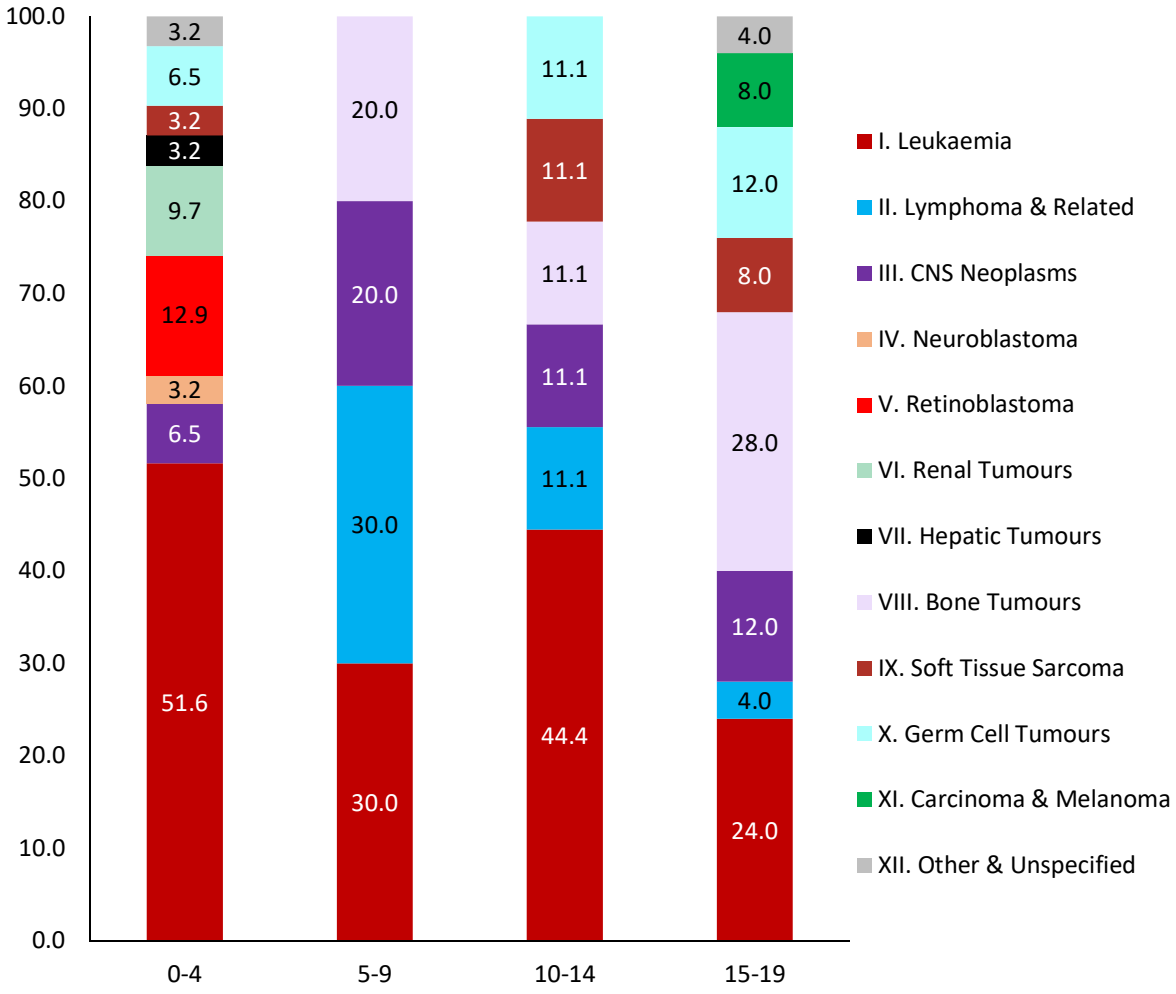


Figure 11.3: Proportion of paediatric cancer cases by age-group: Both sex (Bhutan)

Table 11.1: Cancer cases distribution as per the International Classification of Childhood Cancer (ICCC) code: 2019-2022

ICCC Code	Site	Boys			Girls		
		Number	%	AAR*	Number	%	AAR*
1a	Lymphoid	8	29.6	23.5	8	25.0	25.2
1b	Acute myeloid	7	25.9	17.6	2	6.3	6.7
1c	CML	-	-	-	1	3.1	2.8
1e	Unspecified	-	-	-	1	3.1	3.4
2a	Hodgkin	1	3.7	2.7	-	-	-
2b	Non-Hodgkin except BL	-	-	-	1	3.1	2.8
2d	Lymphoreticular	1	3.7	2.2	-	-	-
2e	Unspecified	2	7.4	4.9	-	-	-
3a	Ependymoma	-	-	-	1	3.1	2.3
3c	CNS embryonal	2	7.4	6.0	-	-	-
3d	Other gliomas	-	-	-	1	3.1	3.4
3e	Other specified	-	-	-	2	6.3	5.1
4a	(Ganglio) neuroblastoma	-	-	-	1	3.1	3.4
5	Retinoblastoma	2	7.4	6.5	2	6.3	6.7
6a	Nephroblastoma	1	3.7	3.3	1	3.1	3.4
6c	Unspecified	-	-	-	1	3.1	3.4
7a	Hepatoblastoma	1	3.7	3.3	-	-	-
8a	Osteosarcoma	-	-	-	3	9.4	7.8
8d	Other specified	-	-	-	1	3.1	2.3
9a	Rhabdomyosarcoma	-	-	-	2	6.3	5.6
9e	Unspecified	-	-	-	1	3.1	2.3
10c	Gonadal germ cell	1	3.7	3.3	-	-	-
10d	Gonadal carcinoma	-	-	-	1	3.1	2.3
10e	Unspecified gonadal	1	3.7	3.3	1	3.1	2.3
12b	Other unspecified	-	-	-	1	3.1	3.4
Total		**27**	**100**	**76.5**	**32**	**100**	**94.2**

* AAR per 1,000,000 population

12. Tobacco related Cancers

Tobacco use has a detrimental impact on health and is one of the major causes of non-communicable diseases. The anatomical sites are included to calculate the tobacco-related cancer burden based on the guidelines of the International Agency for Research on Cancer (IARC), WHO, Lyon, France. Lip (C00), tongue (C01-C02), mouth (C03-C06), pharynx (C10, C12-C14), oesophagus (C15), larynx (C32), lung (C33-C34) and urinary bladder (C67) are associated with the use to tobacco.

As per the Bhutan registry data, the tobacco-related cancer burden is 23.0% in males (1 out of 4 cancer cases is tobacco-related) while it is 13.9% in females (1 out of 7 cancer cases is tobacco-related). The tobacco-related cancer incidence rate in males is 23.6 per 100,000 population while it is 18.1 in females as shown in table 12.1. The leading sites of tobacco-related cancer are oesophagus, lung, hypopharynx, urinary bladder, mouth and tongue in males; and in females, lung, oesophagus, urinary bladder, mouth, and larynx as shown in Table 12.1.

Table 12.1: Tobacco-related cancer in males: 2019-2022

ICD10	Site	Number	%	CR	AAR	TR
C00	Lip	5	0.3	0.3	0.4	0.5
C01-C02	Tongue	26	1.8	1.7	1.8	2.9
C03-C06	Mouth	26	1.8	1.7	1.9	4.1
C10	Other oropharynx	6	0.4	0.4	0.5	1
C12-C13	Hypopharynx	34	2.3	2.2	2.3	4.1
C14	Pharynx unspecified	6	0.4	0.4	0.4	0.4
C15	Oesophagus	104	7.1	6.6	7.5	11.7
C32	Larynx	22	1.5	1.4	1.4	2
C33-C34	Trachea, bronchus and lung	76	5.2	4.8	5.3	6.5
C67	Urinary bladder	30	2.1	1.9	2	2.2
C00-C06, C10, C12-C15, C32-C34 & C67	**Tobacco-related cancer**	**335**	**23**	**21.3**	**23.6**	**35.4**

Table 12.2: Tobacco-related cancer in females: 2019-2021

ICD10	Site	Number	%	CR	AAR	TR
C00	Lip	2	0.1	0.1	0.1	0.3
C01-02	Tongue	9	0.5	0.6	0.6	1.4
C03-06	Mouth	20	1.2	1.4	1.6	2.9
C10	Other oropharynx	2	0.1	0.1	0.1	0
C12-13	Hypopharynx	8	0.5	0.6	0.7	1.3
C14	Pharynx unspecified	7	0.4	0.5	0.5	0.7
C15	Oesophagus	50	2.9	3.5	4	7.8
C32	Larynx	11	0.6	0.8	0.9	0.5
C33-34	Trachea, bronchus and lung	103	6	7.2	7.7	10.6
C67	Urinary bladder	26	1.5	1.8	1.9	3.6
C00-C06, C10, C12-C15, C32-C34 & C67	**Tobacco-related cancer**	**238**	**13.9**	**16.5**	**18.1**	**29**

13. Cancer burden as per anatomical system

For males, the reported majority of cancer cases involved the sites from digestive organs (C15-C25) (52.6%) followed by head and neck region (13.9%) with highest AAR 54.6 and 13.7 per 100,000 populations respectively. Further, Respiratory and Intra thoracic sites (7.1%), Lymphoid and Haematopoietic tissue (7.1%) and Male Genital Organ (4.6%) were common. In the digestive organ, the leading sites were stomach (C16), oesophagus (C15), and liver (C22) with AAR 25.1, 7.5, and 7.0 respectively.

For females, the reported majority of cancer cases involved the sites from digestive organs (34.6%), followed by female genital organ (24.0%), head and neck region (10.4%), and breast (7.9%) with highest AAR 44.7, 29.8, 12.5, and 9.9 respectively. In the digestive organ, the leading sites were stomach (C16), liver (C22), gall bladder (C22-C23) with AAR 18.9, 5.8, and 5.5 respectively. Moreover, in the female genital organ the leading sites were cervix uteri (C53) and ovary (C56) with AAR 19.5 and 6.3 respectively (table 13.2).

The details are presented in Figure 13.1, Table 13.1 and 13.2.

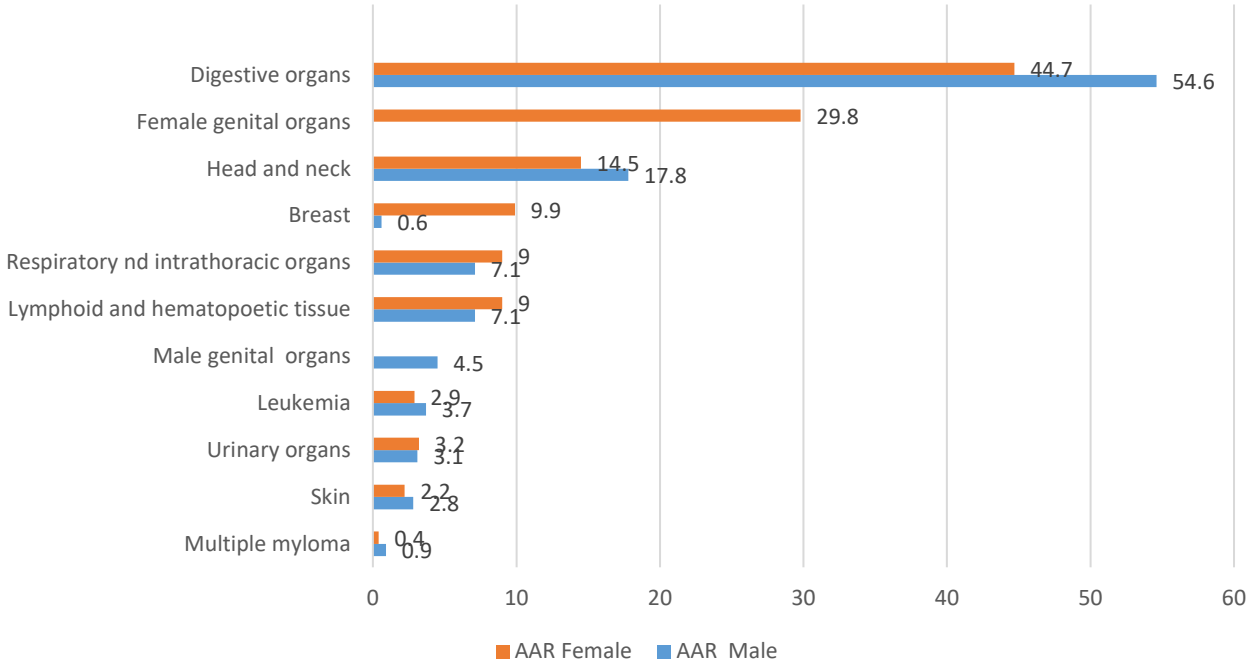


Figure 13.1: Cancer rates as per anatomical site in both sexes

Table 13.1: Cancer burden as per the various anatomical systems in males: 2019-2022

ICD10	Site	Number	%	CR	AAR	TR
C15-C25	Digestive Organ	766	52.6	48.8	54.6	70.4
C00-C14, C30-C32 & C73	Head and Neck	209	16.1	15.1	17.8	30.9
C30-C38	Respiratory and Intrathoracic Organ	104	7.1	6.6	7.1	8.7
C81-C96	Lymphoid and Haematopoietic tissue	104	7.1	6.6	7.1	8
C60-C63	Male Genital Organ	67	4.6	4.3	4.5	4
C91-C95	Leukaemia	54	3.7	3.4	3.7	3.4
C64-C68	Urinary Organ	45	3.1	2.9	3.1	3.4
C43-C44	Skin	39	2.7	2.5	2.8	2.2
C88 + C90	Multiple Myeloma	11	0.8	0.7	0.9	1
C50	Breast	9	0.6	0.6	0.6	0.8

Table 13.2: Cancer burden as per the various anatomical system in females: 2019-2022

ICD10	Site	Number	%	CR	AAR	TR
C15-C25	Digestive Organ	593	34.6	41.2	44.7	71.8
C51-C58	Female Genital Organ	411	24	28.5	29.8	69.2
C00-C14, C30-C32 & C73	Head and Neck	179	11.5	14.5	14.6	25.9
C50	Breast	135	7.9	9.4	9.9	25
C30-C38	Respiratory and Intrathoracic Organ	120	7	8.3	9	11.6
C81-C96	Lymphoid and Haematopoietic tissue	73	4.3	5.1	5.6	7.4
C64-C68	Urinary Organ	43	2.5	3	3.2	5.7
C91-C95	Leukaemia	37	2.2	2.6	2.9	2.7
C43-C44	Skin	29	1.7	2	2.2	3.8
C88 + C90	Multiple Myeloma	6	0.3	0.4	0.4	1.1

14. Cancer Survival Studies

The Bhutan Cancer Registry has systematically recorded cancer cases diagnosed since 2014, with staff regularly updating the vital status of these cases. The Population-Based Cancer Registry (PBCR) team conducted survival studies on cervical and stomach cancer cases diagnosed between 2014 and 2021, with the most recent follow-up conducted on 31st December 2022.

For cervical cancer, out of a total of 502 cases, 237 patients (59.2%) remain alive, 153 patients (30.5%) have passed away, and 52 patients (10.4%) were excluded due to limited follow-up information and thus excluded from the analysis. Consequently, 450 cases (89.6%) were included in the survival analysis.

For stomach cancer, out of 863 cases, 164 patients (19.0%) were alive, 490 patients (56.8%) had passed away, 188 patients (21.8%) were excluded due to limited follow-up information. 21 cases (2.4%) were identified through Death Certificate Only (DCO) and excluded from the analysis. Therefore, 654 cases (75.8%) were included in the survival analysis.

The 1 year, 3 year, and 5 year observed and relative survival of cervical and stomach cancer cases is mentioned in the table below:

Cancer site	Number	Status		Observed Survival (%)			Relative Survival (%)		
		Alive	Death	1 Year	3 Year	5 Year	1 Year	3 Year	5 Year
Cervix uteri	450	297	153	85.1	70.5	65.1	85.5	71.6	66.6
Stomach	654	164	490	47.6	26.1	18.4	48.6	27.3	19.4

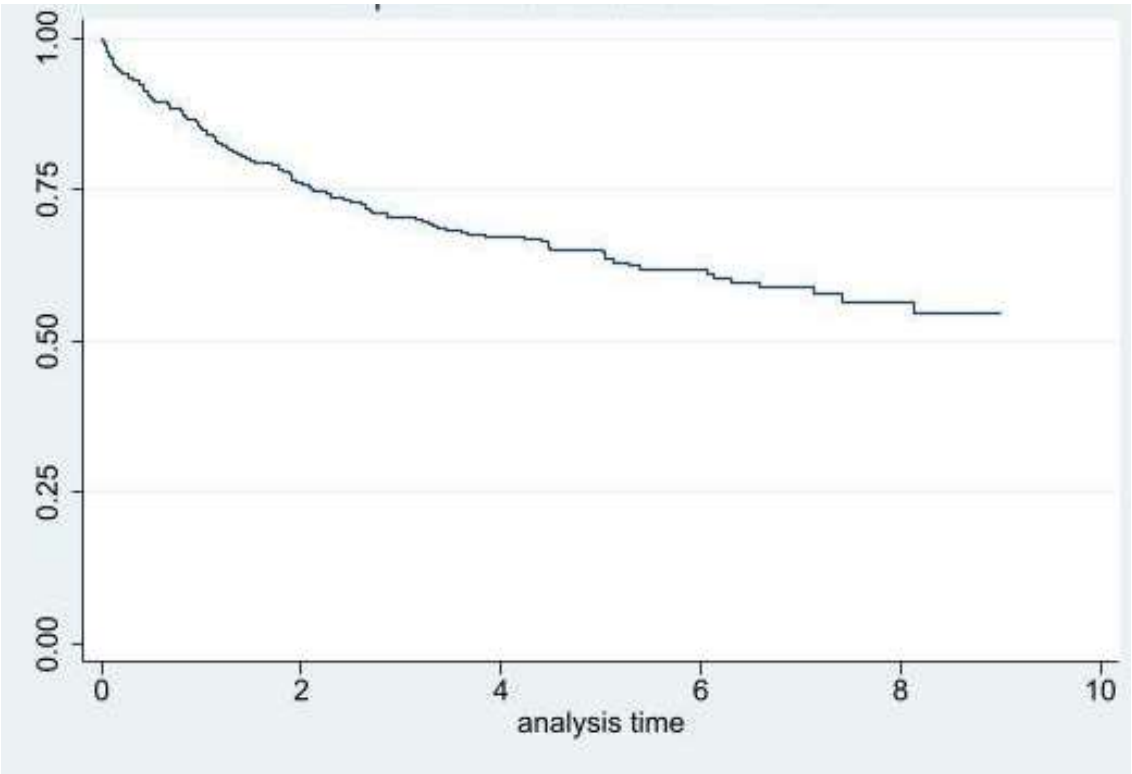


Figure 14.1: Overall survival of cervical cancer

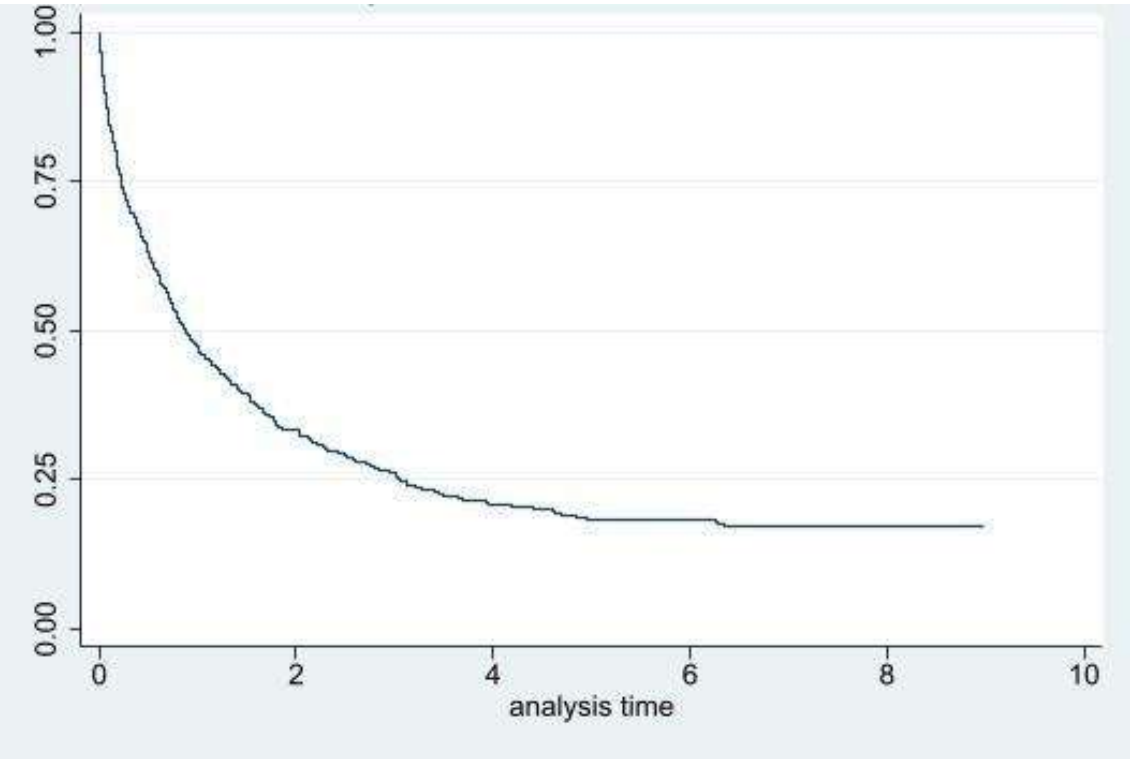


Figure 14.2: Overall survival of stomach cancer

15. Socio-demographic Information

Ethnicity

The population-based cancer registry staff gathered socio-demographic information along with tumor related information. Based on the information collected, more than 60% cancer cases were registered among *Sharchops* (32.0%) and *Ngalong* (30.5%) and the rest in the other ethnic groups (Table 15.1).

Regarding other socio demographic information such as literacy rate and occupation, reliable data could not be collected due to some limitations.

Table 15.1: Cancer cases by ethnicity and sex

ICD 10	Male		Female		Total	
	Number	%	Number	%	Number	%
Sharchop	468	32.1	548	32	1016	32
Ngalong	474	32.5	492	28.7	966	30.5
Lhotsham	256	17.6	372	21.7	628	19.8
Central Bhutan	156	10.7	174	10.1	330	10.4
Other	103	7.1	129	7.5	232	7.3
Total	**1457**	**100**	**1715**	**100**	**3172**	**100**

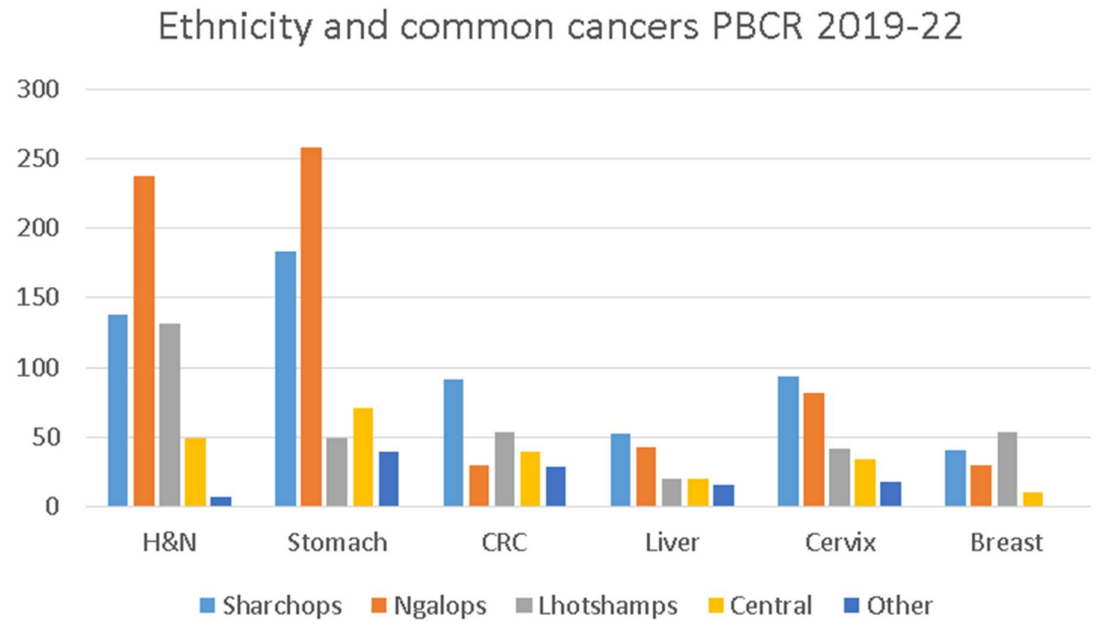


Figure 15.2. The data on ethnicity and common cancers

Head & Neck cancer and stomach cancer were more in *Ngalops* whereas, CRC and cervix cancer are more in *sharchops* and breast cancer is more in *Lhotshampas*.

16. Execution of Flagship Programme

The Health Flagship Program, launched in 2020 as part of the 12th Five-Year Plan, aimed to reduce the burden of stomach, cervical, and breast cancers through population-based screening for early detection and treatment. Running until 2023, the program successfully reached over 90% of the targeted population for all three cancers.

The Ministry of Health, recognizing the importance of ongoing prevention, has integrated these screenings into regular health services. A comprehensive monitoring and evaluation (M&E) framework tracked key indicators, including the percentage of women aged 30-65 screened for cervical cancer, women aged 40-65 for breast cancer, and individuals aged 18-75 for H. Pylori infection. By the program's end, all screening targets exceeded 90%, with cervical cancer at 90.81%, gastric cancer at 90.17%, and breast cancer at 93% (5).

Continuous monitoring of these indicators played a crucial role in keeping the program on course, offering valuable insights for enhancement, and significantly boosting the effectiveness and impact of cancer prevention and treatment efforts (5).

17. COVID-19 Impact on Cancer Registry

During the pandemic, Bhutan experienced multiple lockdowns. While movement restrictions were in place, essential health services remained operational. The Red Cross Society, Bhutan Cancer Society, and ambulances facilitated the transportation of cancer patients to health centers. Antenatal care, family planning, and vaccination services continued uninterrupted. Although outpatient services were closed, doctors from all departments remained available online consultations from 9 AM to 5 PM, including Sundays. Prescribed medications were delivered directly to patients' homes or nearby zones allocated for the medicine pickup.

Chronic disease patients, including those with hypertension, diabetes, and cancer, continued to receive their medications at home. Chemotherapy and radiation patients in Thimphu were transported by locally arranged transportation. Emergency surgeries and cancer surgeries were performed without interruption, and terminally ill patients were transported home by the Red Cross Society. Funerals and death rites were also managed by the Red Cross Society. Patients needing referrals were flown to Kolkata on special flights.

The only services disrupted was home-based palliative care which lead to many terminal patients being admitted to JDWNRH until they passed away or transportation could be arranged them to return them home. Some were transported by ambulance, while others were transported by Red Cross Society.

Like essential health services, the regular cancer registry activities were disrupted, especially the data collection from the periphery, data abstraction and data entry. However, at the end of three years, all pending cancer registry activities were completed as needed.

Training

The World Health Organization (WHO) global initiatives on cancer have prioritised the strengthening of cancer registration. In South-East Asia Region (SEAR), WHO has collaborated with Centre for Cancer Epidemiology (CCE) (ACTREC), Tata Memorial Center (TMC), Mumbai- an IARC regional hub to support countries in strengthening cancer registration in SEAR.

Bhutan has been part of the activity and has demonstrated commitment and progress in maintaining cancer registry since 2014. The first report was published for the period 2014-2018 in February 2020. And the registry has continued the regular data collection to date. This was also one of the recommendations made by the NCD mission to Bhutan from WHO regional office in September 2023. Hands-on exposure and mentoring in publication of the next report were also expected to enable the country team to gain independence in publishing subsequent reports.

In this regard, CCE (ACTREC) -TMC, Mumbai organized a 6-days training program for the Bhutan cancer registry team, covering overall organization and operations of cancer registry with a focus on preparation of cancer registry report. This training program was organized with support from the WHO- SEAR office, New Delhi, India.

18. Training program conducted by IARC Regional Hub, Mumbai, India in March 2024

The objective of the training program was to provide technical guidance and to provide hands-on training to candidates from Bhutan Cancer Registry Program on operations of cancer registry focusing on the preparation of cancer registry report and assisting in the publication of the report of Bhutan cancer registry with latest data. Further, the second objective was to provide training on data analysis including survival analysis using the current data.

Participants received extensive training on cancer registration and hands-on experience in generating cancer registry report related data tables. The queries raised during sessions were discussed and solved by the experts.

» Bhutan cancer registry data for the year 2019-2022 were checked for the errors by the participants and cancer registry tables were generated in CanReg5 software for the registry report. CCE-TMC team provided guidance and solved all related queries.

  ✓ Utilizing MS Excel and the IARC CHECK program to detect errors in cancer registry data

  ✓ Compiling cancer burden estimates (AAR, CR, TR), cumulative risk, as well as pediatric cancer rates calculation

  ✓ Better understanding of CanReg5 software and generating standard cancer registry tables in CanReg5

  ✓ Using IARC Check program for data consistency check.

  ✓ Graphical presentation of the top ten leading cancer site in terms of incidence and mortality

  ✓ Using Nirmiti software, an in-house software developed by CCE-TMC, to make incidence and mortality tables for Bhutan PBCR report

  ✓ Participant received training on Survival analysis and performed; Bhutan stomach cancer data was used for survival analysis.

» Problematic cancer cases were discussed and queries were solved, leading to PBCR data finalization.

» Separate sessions were conducted for Ms. Kinley Wangmo (Data assistant) to discuss the challenges she faced during entering data in the CanReg5.

» The Bhutan PBCR form was discussed with the CCE-TMC team and modified as per the requirement. Also required CanReg5 software changes were made.

» Changes were made in the data collection tool

Dr. Ugyen Tshomo (Gynecologist), Dr. Phub Tshering (Head and Neck Surgeon), and Population-based cancer registry Bhutan team along with Dr. Atul Budukh (Professor, CCE-Tata Memorial Centre, Mumbai, India) and IARC Regional Hub Mumbai team

19. Description of Statistical Terms Used

Incidence: Cancer incidence denotes new cancer cases diagnosed in a defined population in a specified time period. For this report, all cancer cases diagnosed from January 1, 2019 to December 31, 2022, in the Bhutan has been included.

Mortality: Cancer mortality is defined as the number of cancer deaths occurring in a defined population, in a defined geographic area, during a particular year(s) per 100,000 population. All cancer deaths between January 1, 2019 and December 31, 2022 in the Bhutan have been included.

Rates: Rates for cancer are always expressed per 100,000 population.

Crude Incidence Rate: The crude incidence is the rate at which new cases occur in a population during a specific period.

$$CR = \frac{\text{Number of new cancer cases observed in the period 2019-2022} * 100000}{\text{Estimated population of the same year}}$$

This rate is also called crude rate because it relates to each population as a whole and is influenced by the age structure of each population.

Age Specific Rate: This refers to the rate obtained by the division of the total number of cancer cases by the corresponding estimated population in that age group and sex/site/geographic area/time period and multiplying by 100,000.

Age Adjusted or Age Standardized Rate (AAR): Age adjustment is a statistical method that corrects for the changing age distribution of the population and allows comparisons to be made in the adjusted rates between different population sub-groups over time.

Truncated Rates: This is similar to the age-adjusted rate except that it is calculated for the truncated age group 35-64 years of age.

Paediatric cancer incidence rate: Age-specific rates are shown for 0-4, 5-9, 10-14, and 15-19 age groups. Age-adjusted incidence rates were calculated by the direct method, using the age-specific rates for the age groups 0-4, 5-9, 10-14, and 15-19 and the weights of the World Standard population for these age groups according to Segi, namely 12, 10, 9, and 9. The cumulative incidence rates were calculated as the sum of the age-specific incidence rates for the 5-year age groups, each multiplied by 5, the number of years contained in each age group.

20. District-wise Incidence and Mortality Cases: 2014-2018 and 2019-2022

Between the two periods, 2014–2018 and 2019–2022, there was a significant increase in both cancer incidence and mortality among males in nine districts: Chukha, Mongar, Paro, Punakha, Samdrupjongkhar, Sarpang, Trashigang, and Wangdue. Similarly, among females, higher incidence and mortality were observed in eight districts; Bumthang, Haa, Mongar, Paro, Samtse, Sarpang, Trashigang, and Wangdue during the latter period. In contrast, Thimphu recorded a decline in both incidence and mortality in 2019–2022, which may be attributed to improved case registration.

Table 21.1 District-wise cancer incidence cases and mortality cases in male: Bhutan

District	2014 - 2018				2019 - 2022			
	Incidence		Mortality		Incidence		Mortality	
	Number	%	Number	%	Number	%	Number	%
Bumthang	21	1.7	11	2.1	28	1.9	20	2.7
Chukha	64	5.3	34	6.4	83	5.7	35	4.8
Dagana	33	2.7	16	3.0	47	3.2	23	3.1
Gasa	12	1.0	6	1.1	8	0.5	9	1.2
Haa	18	1.5	10	1.9	22	1.5	14	1.9
Lhuntse	23	1.9	17	3.2	22	1.5	9	1.2
Mongar	44	3.7	11	2.1	72	4.9	30	4.1
Paro	77	6.4	32	6.0	113	7.8	53	7.2
Pemagatshel	36	3.0	13	2.4	34	2.3	17	2.3
Punakha	37	3.1	16	3.0	63	4.3	23	3.1
Samdrup Jongkhar	49	4.1	22	4.1	61	4.2	37	5.0
Samtse	61	5.1	27	5.1	83	5.7	43	5.9
Sarpang	58	4.8	20	3.8	81	5.6	42	5.7
Thimphu	414	34.4	185	34.8	363	24.9	233	31.7
Trashigang	71	5.9	21	4.0	98	6.7	40	5.4
Trashiyangtse	32	2.7	15	2.8	51	3.5	20	2.7
Trongsa	23	1.9	13	2.4	29	2.0	11	1.5

District	2014 - 2018				2019 - 2022			
	Incidence		Mortality		Incidence		Mortality	
	Number	%	Number	%	Number	%	Number	%
Tsirang	35	2.9	13	2.4	36	2.5	18	2.5
Wangdue Phodrang	45	3.7	21	4.0	79	5.4	42	5.7
Zhemgang	32	2.7	26	4.9	46	3.2	13	1.8
No information	17	1.4	2	0.4	38	2.6	2	0.3
Total	**1202**	**100**	**531**	**100**	**1457**	**100**	**734**	**100**

Table 21.2: District-wise cancer incidence cases and mortality cases in female: Bhutan

District	2014 - 2018				2019 - 2022			
	Incidence		Mortality		Incidence		Mortality	
	Number	%	Number	%	Number	%	Number	%
Bumthang	21	1.4	13	2.5	54	3.1	20.0	2.8
Chukha	89	5.8	38	7.3	96	5.6	35.0	4.8
Dagana	46	3.0	11	2.1	55	3.2	27.0	3.7
Gasa	4	0.3	1	0.2	6	0.3	4.0	0.6
Haa	27	1.8	8	1.5	42	2.4	13.0	1.8
Lhuntse	44	2.9	12	2.3	39	2.3	19.0	2.6
Mongar	60	3.9	30	5.8	84	4.9	33.0	4.5
Paro	96	6.3	30	5.8	115	6.7	64.0	8.8
Pemagatshel	42	2.7	13	2.5	46	2.7	18.0	2.5
Punakha	62	4.0	26	5.0	73	4.3	25.0	3.4
Samdrup Jongkhar	66	4.3	26	5.0	65	3.8	30.0	4.1
Samtse	91	5.9	26	5.0	128	7.5	43.0	5.9
Sarpang	74	4.8	24	4.6	106	6.2	49.0	6.7
Thimphu	491	32.0	161	31.1	372	21.7	219.0	30.1
Trashigang	98	6.4	34	6.6	127	7.4	42.0	5.8
Trashiyangtse	31	2.0	7	1.4	43	2.5	9.0	1.2
Trongsa	27	1.8	9	1.7	35	2.0	16.0	2.2

District	2014 - 2018				2019 - 2022			
	Incidence		Mortality		Incidence		Mortality	
	Number	%	Number	%	Number	%	Number	%
Tsirang	49	3.2	16	3.1	52	3.0	18.0	2.5
Wangdue Phodrang	65	4.2	20	3.9	91	5.3	25.0	3.4
Zhemgang	33	2.2	12	2.3	49	2.9	17.0	2.3
No information	16	1.0	1	0.2	37	2.2	1.0	0.1
Total	**1532**	**100**	**518**	**100**	**1715**	**100**	**727**	**100**

Common cancer incidence by district (2019-2022)

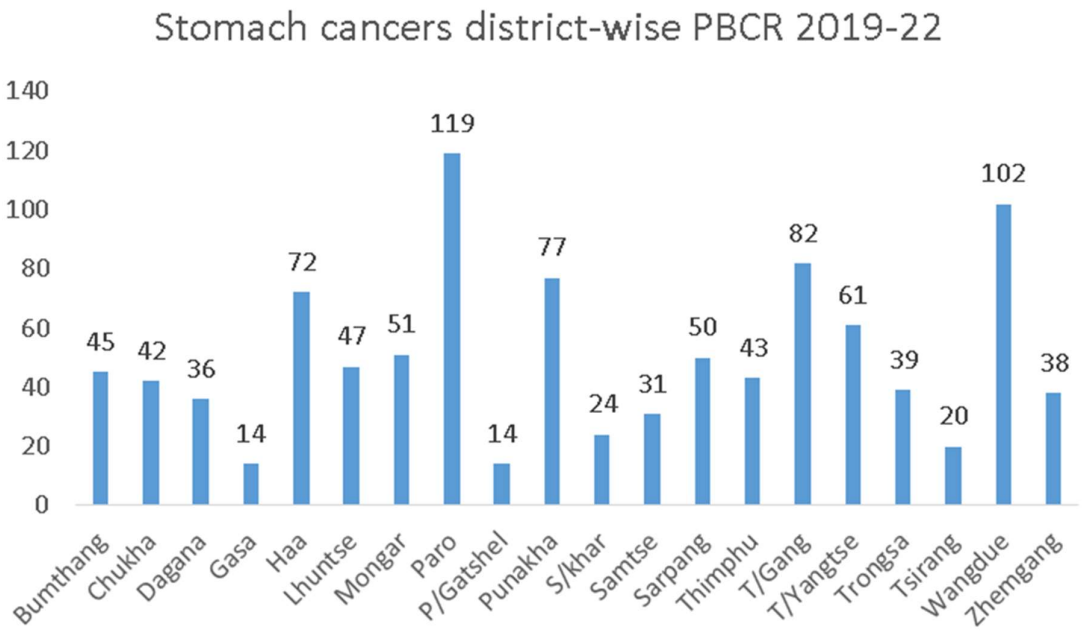


Figure 21.1. Stomach cancer by district

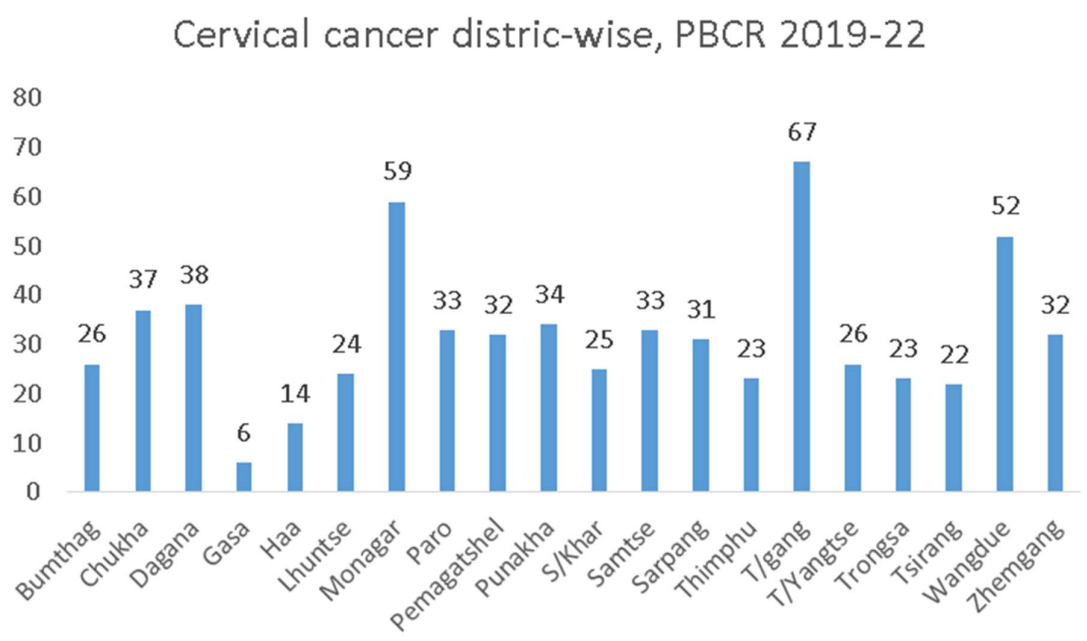


Figure 21.2. Cervical Cancer by District (2019-2022)

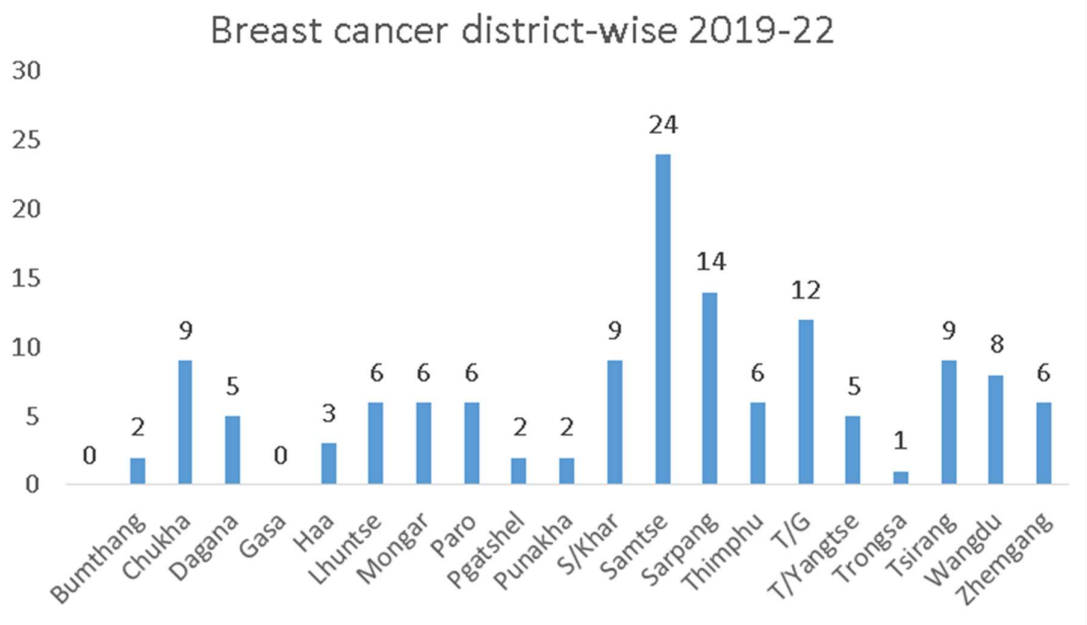


Figure 21.3. Breast Cancer by district (2019-2022)

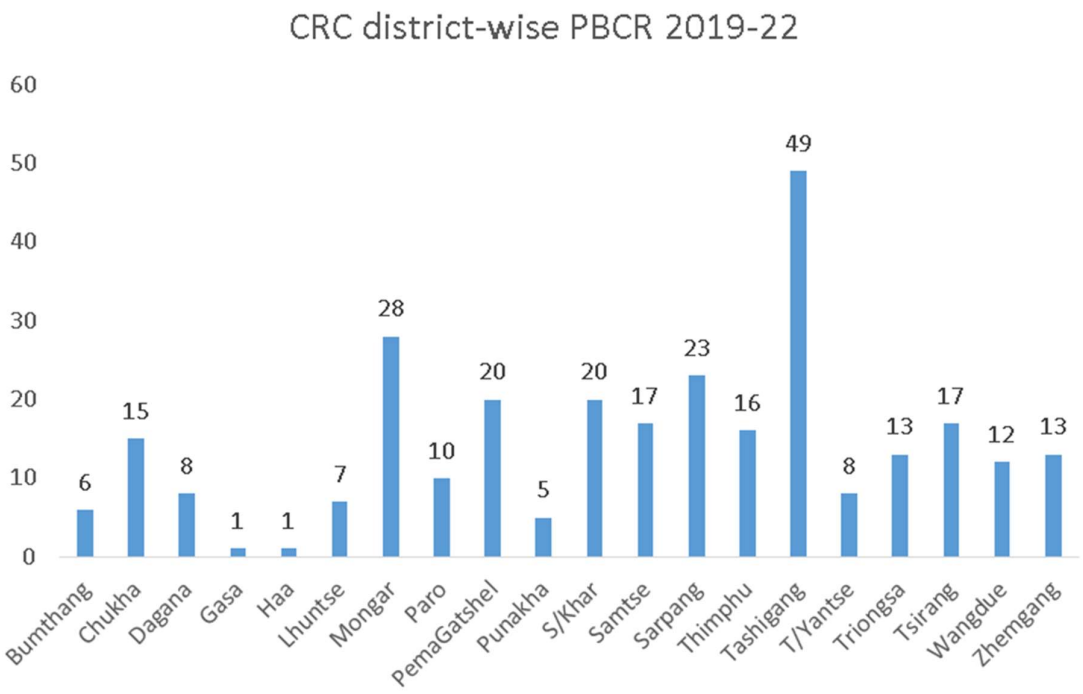


Figure 21.4. CRC by district (2019-2022)

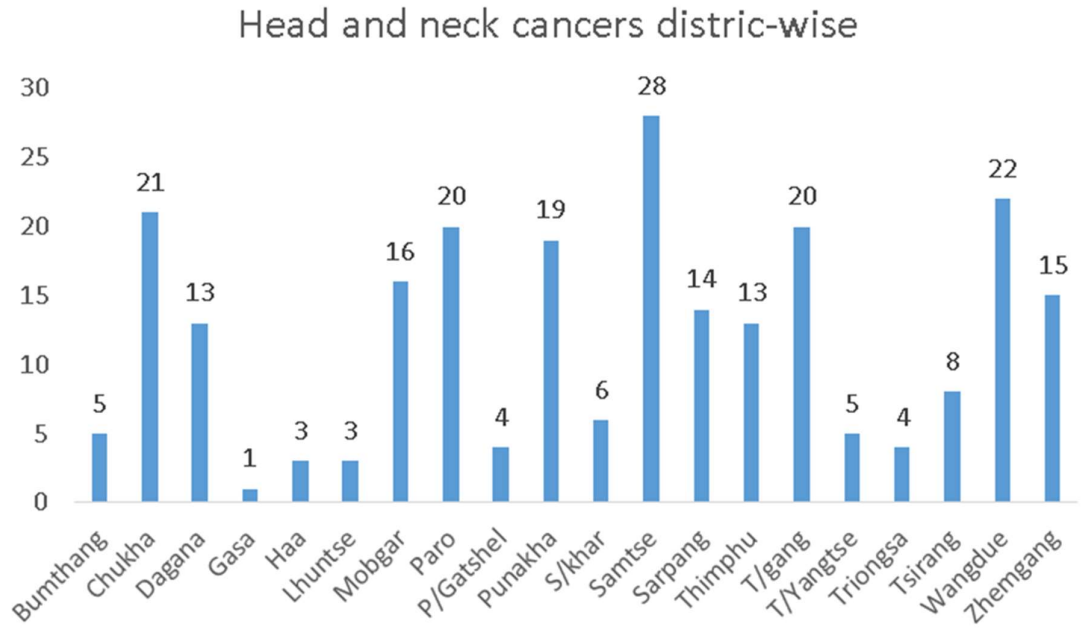


Figure 21.5. Head and neck cancer by district (2019-2022)

21. Changes in Cancer Pattern between 2014-2018 and 2019-2022

Analysis of PBCR data 2014 to 2018 revealed the top leading sites in males as Stomach, Oesophagus, liver, lungs, rectum and oral cavity. In females, the top sites were cervix, stomach, breast, thyroid and ovaries.

In comparison, for 2019 -2022, the leading sites in males, stomach, oesophagus, liver, lungs and colon. In females the top leading sites are cervix, stomach, breast, lungs and ovaries.

There are no significant changes in the pattern of cancer over the last 9 years. Stomach cancer is still the commonest cancer in males while in females it is cervical cancer. However, the number of cancer cases has increased significantly despite the Pandemic. This could be due to mass screening carried out between 2021 and 2023. Stomach cancer increased from 16.6/100,000 in 2014-18 to 25.1/100,000 among males. There was also a slight rise in liver cancers. In females, breast cancer increased from 6.8/100,000 in 2014-18 to 9.9/100,000 in 2019-22. The other significant change seen is incidence of CRC, which increased from 131 in 2014-18 to 252 in 2019-2022 with no intervention.

22. Challenges Faced by Cancer Registry

1. Presently PBCR is located in JDWNRH. There is no regularized staff for data abstraction and entry. The data assistant is on contract and supported by the WHO country office. The other staff are regular employees of JDWNRH with other primary job responsibilities and also subject to transfer.
2. Missing information mainly due to incomplete available documents and due to lack of full time staff.
3. Some cancer patients travel abroad for treatment at their own expense. These cases are missed from our registry database.
4. There are no designated days for cancer follow-up in Bhutan. Due to that, updating vital status is difficult.

24. Standard Registry Tables

Table 24.1: Number of incidence cancers by five-year age group and site (ICD 10): 2019-2022 Male Bhutan
% = Relative Proportion of Cancers of All Sites

ICD 10	Sites	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+	Total	%
C00	Lip	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	1	5	0.3
C01 - C02	Tongue	-	-	-	-	-	-	-	3	1	1	4	-	4	5	3	5	26	1.8
C03 - C06	Mouth	-	-	-	-	-	-	-	-	4	1	1	4	7	4	2	3	26	1.8
C07 - C08	Salivary glands	-	-	-	-	-	-	-	-	-	1	-	3	1	-	1	2	8	0.5
C09	Tonsil	-	-	-	-	-	-	-	-	1	-	2	-	-	2	3	1	9	0.6
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	2	2	-	2	-	6	0.4
C11	Nasopharynx	-	-	-	-	2	-	3	4	4	1	2	2	4	2	1	-	25	1.7
C12 - C13	Hypopharynx	-	-	-	-	-	-	1	-	1	-	3	9	4	1	4	11	34	2.3
C14	Pharynx unspecified	-	-	-	-	-	-	1	-	1	-	-	1	-	1	1	1	6	0.4
C15	Oesophagus	-	-	-	-	-	-	1	1	5	9	11	5	17	18	13	24	104	7.1
C16	Stomach	-	-	-	-	-	-	9	2	11	14	24	28	44	59	60	103	354	24.3
C17	Small intestine	-	-	-	-	-	-	-	-	-	1	1	1	-	2	1	2	8	0.5
C18	Colon	-	-	-	-	-	3	1	3	4	4	3	7	12	11	12	12	72	4.9
C19 - C20	Rectum	-	-	-	-	-	6	1	2	1	1	2	4	10	15	13	15	70	4.8
C21	Anus	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	2	0.1
C22	Liver	1	-	-	-	-	-	4	3	5	5	3	8	13	11	24	22	99	6.8

ICD 10	Sites	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+	Total	%
C23 - C24	Gallbladder etc.	-	-	-	-	-	-	-	1	2	4	2	-	3	4	8	11	35	2.4
C25	Pancreas	-	-	-	-	-	-	1	1	-	1	1	6	5	3	2	2	22	1.5
C30 - C31	Nose, sinuses etc.	-	-	-	-	-	1	-	1	1	-	-	-	-	-	2	1	6	0.4
C32	Larynx	-	-	-	-	-	-	-	1	2	2	2	1	1	-	4	9	22	1.5
C33 - C34	Trachea, bronchus and lung	-	-	-	-	-	-	-	2	2	1	2	6	13	5	15	30	76	5.2
C37 - C38	Other thoracic organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40 - C41	Bone	-	-	-	7	6	1	-	-	-	-	1	2	-	2	1	2	22	1.5
C43	Melanoma of skin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	0.1
C44	Other skin	-	-	-	-	-	-	-	1	1	1	1	-	5	7	11	10	37	2.5
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	2	0.1
C47, C49	Connective and soft tissue	-	-	-	1	1	-	-	2	4	-	1	2	3	2	3	2	21	1.4
C50	Breast	-	-	-	-	-	1	-	2	-	1	1	-	-	-	4	-	9	0.6
C60	Penis	-	-	-	-	-	-	1	2	3	1	-	1	2	2	3	5	20	1.4
C61	Prostate	-	-	-	-	-	-	-	-	-	-	-	2	3	8	4	21	38	2.6
C62	Testis	2	-	-	-	1	1	1	2	-	-	1	-	1	-	-	-	9	0.6
C63	Other male genital organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney	1	-	-	-	-	-	-	-	-	1	1	2	1	4	2	3	15	1.0
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ICD 10	Sites	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+	Total	%
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	-	-	-	-	-	-	-	-	1	3	-	3	2	5	1	15	30	2.1
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	2	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	4	0.3
C70 - C72	Brain, nervous system	1	1	-	3	4	2	-	3	5	2	3	4	2	1	5	3	39	2.7
C73	Thyroid	-	-	-	2	-	1	3	7	3	3	1	1	1	-	2	6	30	2.1
C74	Adrenal gland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other endocrine	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	0.1
C81	Hodgkin disease	-	1	-	-	1	1	-	-	-	-	-	-	1	-	-	-	4	0.3
C82 - C86, C96	Non-Hodgkin lymphoma	-	1	2	1	-	1	2	2	3	3	2	3	2	1	3	9	35	2.4
C88	Immunoproliferative diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple myeloma	-	-	-	-	-	-	-	-	-	-	1	1	2	3	3	1	11	0.8
C91	Lymphoid leukaemia	5	1	2	2	3	1	1	-	-	-	-	-	1	-	2	1	19	1.3
C92 - C94	Myeloid leukaemia	2	-	5	2	2	-	5	1	3	5	3	-	2	1	1	1	33	2.3
C95	Leukaemia unspecified	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	2	0.1
Other and unspecified		-	-	-	-	-	2	1	2	1	4	6	3	9	6	6	19	59	4.0
All sites		**14**	**4**	**9**	**18**	**20**	**21**	**38**	**48**	**69**	**72**	**86**	**111**	**178**	**187**	**226**	**356**	**1457**	**100**

*O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.2: Number of incidence cancers by five-year age group and site (ICD 10): 2019-2021 Female Bhutan

% = Relative Proportion of Cancers of All Sites

ICD 10	Sites	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+	Total	%
C00	Lip	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	2	0.1
C01-02	Tongue	-	-	-	-	-	-	-	2	1	-	1	1	1	-	1	2	9	0.5
C03-06	Mouth	-	-	-	-	-	-	1	1	-	2	1	4	3	5	1	2	20	1.2
C07-08	Salivary glands	-	-	-	-	-	-	1	1	2	2	1	1	2	2	-	-	12	0.7
C09	Tonsil	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	3	0.2
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	0.1
C11	Nasopharynx	-	-	-	-	-	1	-	1	1	2	1	1	-	-	1	2	10	0.6
C12-13	Hypopharynx	-	-	-	-	-	-	-	-	1	1	-	2	1	-	3	-	8	0.5
C14	Pharynx unspecified	-	-	-	-	-	1	-	-	2	-	-	-	1	2	-	1	7	0.4
C15	Oesophagus	-	-	-	-	-	-	-	2	2	3	6	4	12	10	5	6	50	2.9
C16	Stomach	-	-	-	-	1	2	7	3	8	16	18	20	38	40	33	68	254	14.8
C17	Small intestine	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2	0.1
C18	Colon	-	-	-	-	-	1	3	4	-	3	4	4	9	8	3	16	55	3.2
C19-20	Rectum	-	-	-	-	-	1	-	1	2	5	7	10	5	7	5	12	55	3.2
C21	Anus	-	-	-	-	-	-	-	1	-	-	-	-	1	-	2	1	5	0.3
C22	Liver	-	-	-	-	-	-	2	2	5	4	6	6	11	17	10	13	76	4.4
C23-24	Gallbladder etc.	-	-	-	-	-	-	-	2	4	8	2	10	10	8	14	13	71	4.1
C25	Pancreas	-	-	-	-	-	-	1	3	-	2	3	1	4	4	3	4	25	1.5
C30-31	Nose, sinuses etc.	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	1	4	0.2

ICD 10	Sites	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+	Total	%
C32	Larynx	-	-	-	-	-	-	-	-	-	1	-	1	-	4	3	2	11	0.6
C33-34	Trachea, bronchus and lung	-	-	-	-	-	-	3	2	3	4	5	12	14	17	18	25	103	6.0
C37-38	Other thoracic organs	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	2	0.1
C40-41	Bone	-	2	2	1	-	2	1	2	-	1	1	-	2	-	1	1	16	0.9
C43	Melanoma of skin	-	-	-	-	1	-	-	1	-	-	1	2	1	-	1	1	8	0.5
C44	Other skin	1	-	-	-	-	1	-	1	2	-	3	1	3	5	1	3	21	1.2
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi sarcoma	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1	3	0.2
C47, C49	Connective and soft tissue	1	-	2	-	-	3	1	1	-	1	1	-	1	-	-	1	12	0.7
C50	Breast	-	-	-	-	1	4	5	17	19	20	19	19	10	10	5	6	135	7.9
C51	Vulva	-	-	-	-	-	1	-	-	-	2	-	1	1	1	2	1	9	0.5
C52	Vagina	-	-	-	-	-	-	1	1	1	-	-	1	1	1	1	1	8	0.5
C53	Cervix uteri	-	-	-	-	-	6	16	40	41	41	33	32	20	17	14	12	272	15.9
C54	Corpus uteri	-	-	-	-	-	-	-	1	1	2	3	5	3	2	1	-	18	1.0
C55	Uterus unspecified	-	-	-	-	-	-	-	-	1	-	1	2	1	1	1	-	7	0.4
C56	Ovary	-	-	2	3	1	2	4	5	5	8	9	12	8	9	8	9	85	5.0
C57	Other female genital organs	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	0.1
C58	Placenta	-	-	-	-	1	3	3	1	2	-	1	-	-	-	-	-	11	0.6
C64	Kidney	2	-	-	-	-	-	2	-	1	3	1	2	1	3	-	2	17	1.0
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ICD 10	Sites	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+	Total	%
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	-	-	-	-	-	-	-	-	4	2	2	2	4	2	2	8	26	1.5
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0.2
C70-72	Brain, nervous system	1	1	2	-	1	3	3	5	7	6	9	8	5	6	1	3	61	3.6
C73	Thyroid	-	-	-	-	6	11	12	13	10	6	8	3	6	6	3	7	91	5.3
C74	Adrenal gland	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	2	0.1
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin disease	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C82 - C86, C96	Non-Hodgkin lymphoma	-	1	-	-	-	2	1	-	-	3	5	1	4	2	6	5	30	1.7
C88	Immunoproliferative diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple myeloma	-	-	-	-	-	-	-	2	1	-	-	1	1	1	-	-	6	0.3
C91	Lymphoid leukaemia	6	1	1	1	1	-	1	-	-	1	-	-	-	-	-	-	12	0.7
C92-94	Myeloid leukaemia	2	1	-	1	1	1	2	-	4	2	2	1	1	-	3	2	23	1.3
C95	Leukaemia unspecified	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	0.1
Other and Unspecified*		-	-	-	-	-	4	-	2	1	2	4	8	6	5	3	15	50	2.9
Total		**17**	**6**	**9**	**7**	**15**	**51**	**70**	**117**	**132**	**156**	**160**	**178**	**192**	**197**	**158**	**250**	**1715**	**100**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.3: Average annual Age Specific, Crude (CR), Age-Adjusted (AAR) and Truncated (35-64 yrs) (TR) Incidence Rate per 100,000 Population: 2019-2021 – Males Bhutan

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C00	-	-	-	-	-	-	-	-	-	1.2	1.4	-	-	2.8	4.0	2.8	0.3	0.4	0.5
C01 - C02	-	-	-	-	-	-	-	2.3	0.9	1.2	5.8	-	8.9	13.8	11.9	14.0	1.7	1.8	2.9
C03 - C06	-	-	-	-	-	-	-	-	3.7	1.2	1.4	7.2	15.5	11.1	8.0	8.4	1.7	1.9	4.1
C07 - C08	-	-	-	-	-	-	-	-	-	1.2	-	5.4	2.2	-	4.0	5.6	0.5	0.6	1.2
C09	-	-	-	-	-	-	-	-	0.9	-	2.9	-	-	5.5	11.9	2.8	0.6	0.7	0.6
C10	-	-	-	-	-	-	-	-	-	-	-	3.6	4.4	-	8.0	-	0.4	0.5	1.0
C11	-	-	-	-	1.4	-	1.9	3.0	3.7	1.2	2.9	3.6	8.9	5.5	4.0	-	1.6	1.6	3.6
C12 - C13	-	-	-	-	-	-	0.6	-	0.9	-	4.3	16.1	8.9	2.8	15.9	30.7	2.2	2.3	4.1
C14	-	-	-	-	-	-	0.6	-	0.9	-	-	1.8	-	2.8	4.0	2.8	0.4	0.4	0.4
C15	-	-	-	-	-	-	0.6	0.8	4.6	10.9	15.8	8.9	37.7	49.8	51.7	67.0	6.6	7.5	11.7
C16	-	-	-	-	-	-	5.6	1.5	10.2	17.0	34.5	50.1	97.7	163.3	238.5	287.5	22.5	25.1	30.2
C17	-	-	-	-	-	-	-	-	-	1.2	1.4	1.8	-	5.5	4.0	5.6	0.5	0.6	0.7
C18	-	-	-	-	-	1.8	0.6	2.3	3.7	4.9	4.3	12.5	26.6	30.5	47.7	33.5	4.6	5.2	7.9
C19 - C20	-	-	-	-	-	3.6	0.6	1.5	0.9	1.2	2.9	7.2	22.2	41.5	51.7	41.9	4.5	5.0	5.0
C21	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	4.0	-	0.1	0.2	-
C22	0.8	-	-	-	-	-	2.5	2.3	4.6	6.1	4.3	14.3	28.9	30.5	95.4	61.4	6.3	7.0	8.8
C23 - C24	-	-	-	-	-	-	-	0.8	1.9	4.9	2.9	-	6.7	11.1	31.8	30.7	2.2	2.4	2.8
C25	-	-	-	-	-	-	0.6	0.8	-	1.2	1.4	10.7	11.1	8.3	8.0	5.6	1.4	1.6	3.4

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C30 - C31	-	-	-	-	-	0.6	-	0.8	0.9	-	-	-	-	-	8.0	2.8	0.4	0.4	0.3
C32	-	-	-	-	-	-	-	0.8	1.9	2.4	2.9	1.8	2.2	-	15.9	25.1	1.4	1.4	2.0
C33 - C34	-	-	-	-	-	-	-	1.5	1.9	1.2	2.9	10.7	28.9	13.8	59.6	83.8	4.8	5.3	6.5
C37 - C38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40 - C41	-	-	-	5.1	4.1	0.6	-	-	-	-	1.4	3.6	-	5.5	4.0	5.6	1.4	1.4	0.7
C43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	0.1	0.1	-
C44	-	-	-	-	-	-	-	0.8	0.9	1.2	1.4	-	11.1	19.4	43.7	27.9	2.4	2.7	2.2
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	-	2.8	0.1	0.1	0.3
C47, C49	-	-	-	0.7	0.7	-	-	1.5	3.7	-	1.4	3.6	6.7	5.5	11.9	5.6	1.3	1.4	2.6
C50	-	-	-	-	-	0.6	-	1.5	-	1.2	1.4	-	-	-	15.9	-	0.6	0.6	0.8
C60	-	-	-	-	-	-	0.6	1.5	2.8	1.2	-	1.8	4.4	5.5	11.9	14.0	1.3	1.3	1.9
C61	-	-	-	-	-	-	-	-	-	-	-	3.6	6.7	22.1	15.9	58.6	2.4	2.6	1.3
C62	1.7	-	-	-	0.7	0.6	0.6	1.5	-	-	1.4	-	2.2	-	-	-	0.6	0.6	0.8
C63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	0.8	-	-	-	-	-	-	-	-	1.2	1.4	3.6	2.2	11.1	8.0	8.4	1.0	1.1	1.2
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	-	0.9	3.6	-	5.4	4.4	13.8	4.0	41.9	1.9	2.0	2.2

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	1.7	-	-	-	-	-	0.6	-	-	-	-	-	-	-	4.0	-	0.3	0.3	-
C70 - C72	0.8	0.8	-	2.2	2.8	1.2	-	2.3	4.6	2.4	4.3	7.2	4.4	2.8	19.9	8.4	2.5	2.6	4.0
C73	-	-	-	1.5	-	0.6	1.9	5.3	2.8	3.6	1.4	1.8	2.2	-	8.0	16.8	1.9	1.7	3.0
C74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	-	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-	0.1	0.1	0.2
C81	-	0.8	-	-	0.7	0.6	-	-	-	-	-	-	2.2	-	-	-	0.3	0.3	0.3
C82 - C86, C96	-	0.8	1.5	0.7	-	0.6	1.2	1.5	2.8	3.6	2.9	5.4	4.4	2.8	11.9	25.1	2.2	2.2	3.3
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	-	-	-	-	1.4	1.8	4.4	8.3	11.9	2.8	0.7	0.9	1.0
C91	4.2	0.8	1.5	1.5	2.1	0.6	0.6	-	-	-	-	-	2.2	-	8.0	2.8	1.2	1.4	0.3
C92 - C94	1.7	-	3.8	1.5	1.4	-	3.1	0.8	2.8	6.1	4.3	-	4.4	2.8	4.0	2.8	2.1	2.2	3.1
C95	-	-	-	-	-	-	0.6	-	-	-	-	-	-	-	4.0	-	0.1	0.1	-
O&U*	-	-	-	-	-	1.2	0.6	1.5	0.9	4.9	8.6	5.4	20.0	16.6	23.9	53.0	3.8	4.1	6.1
Total	**11.8**	**3.3**	**6.9**	**13.1**	**13.8**	**12.5**	**23.5**	**36.5**	**64.1**	**87.5**	**123.8**	**198.6**	**395.1**	**517.7**	**898.5**	**993.9**	**92.8**	**101.7**	**133.0**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.4: Average annual Age Specific, Crude (CR), Age-Adjusted (AAR) and Truncated (35-64 yrs) (TR) Incidence Rate per 100,000 Population: 2019-2021 – Females Bhutan

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C00	-	-	-	-	-	-	-	-	-	1.4	-	-	-	-	-	2.7	0.1	0.1	0.3
C01 - 02	-	-	-	-	-	-	-	1.8	1.1	-	1.6	2.0	2.3	-	4.2	5.4	0.6	0.6	1.4
C03 - 06	-	-	-	-	-	-	0.7	0.9	-	2.8	1.6	7.9	7.0	14.2	4.2	5.4	1.4	1.6	2.9
C07 - 08	-	-	-	-	-	-	0.7	0.9	2.1	2.8	1.6	2.0	4.7	5.7	-	-	0.8	0.9	2.2
C09	-	-	-	-	-	-	-	-	-	-	3.2	-	-	-	-	2.7	0.2	0.2	0.5
C10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	2.7	0.1	0.1	-
C11	-	-	-	-	-	0.7	-	0.9	1.1	2.8	1.6	2.0	-	-	4.2	5.4	0.7	0.7	1.4
C12-13	-	-	-	-	-	-	-	-	1.1	1.4	-	4.0	2.3	-	12.7	-	0.6	0.7	1.3
C14	-	-	-	-	-	0.7	-	-	2.1	-	-	-	2.3	5.7	-	2.7	0.5	0.5	0.7
C15	-	-	-	-	-	-	-	1.8	2.1	4.2	9.7	7.9	28.0	28.4	21.1	16.2	3.5	4.0	7.8
C16	-	-	-	-	0.7	1.4	5.0	2.6	8.5	22.3	29.0	39.6	88.6	113.7	139.5	183.1	17.6	18.9	27.7
C17	-	-	-	-	-	-	-	-	-	-	-	-	2.3	2.8	-	-	0.1	0.2	0.3
C18	-	-	-	-	-	0.7	2.2	3.5	-	4.2	6.5	7.9	21.0	22.7	12.7	43.1	3.8	3.9	6.3
C19 - 20	-	-	-	-	-	0.7	-	0.9	2.1	7.0	11.3	19.8	11.7	19.9	21.1	32.3	3.8	4.1	7.8
C21	-	-	-	-	-	-	-	0.9	-	-	-	-	2.3	-	8.5	2.7	0.3	0.4	0.5
C22	-	-	-	-	-	-	1.4	1.8	5.3	5.6	9.7	11.9	25.6	48.3	42.3	35.0	5.3	5.8	8.8
C23 - 24	-	-	-	-	-	-	-	1.8	4.3	11.2	3.2	19.8	23.3	22.7	59.2	35.0	4.9	5.5	9.4
C25	-	-	-	-	-	-	0.7	2.6	-	2.8	4.8	2.0	9.3	11.4	12.7	10.8	1.7	1.9	3.3
C30 - 31	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	8.5	2.7	0.3	0.3	-

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C32	-	-	-	-	-	-	-	-	-	1.4	-	2.0	-	11.4	12.7	5.4	0.8	0.9	0.5
C33 - 34	-	-	-	-	-	-	2.2	1.8	3.2	5.6	8.1	23.7	32.6	48.3	76.1	67.3	7.2	7.7	10.6
C37 - 38	-	-	-	-	-	-	-	-	1.1	1.4	-	-	-	-	-	-	0.1	0.1	0.5
C40 - 41	-	1.7	1.6	0.7	-	1.4	0.7	1.8	-	1.4	1.6	-	4.7	-	4.2	2.7	1.1	1.1	1.5
C43	-	-	-	-	0.7	-	-	0.9	-	-	1.6	4.0	2.3	-	4.2	2.7	0.6	0.6	1.2
C44	0.9	-	-	-	-	0.7	-	0.9	2.1	-	4.8	2.0	7.0	14.2	4.2	8.1	1.5	1.6	2.5
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	0.7	0.7	-	-	-	-	-	-	-	-	-	2.7	0.2	0.2	-
C47, C49	0.9	-	1.6	-	-	2.1	0.7	0.9	-	1.4	1.6	-	2.3	-	-	2.7	0.8	0.8	1.0
C50	-	-	-	-	0.7	2.8	3.6	14.9	20.2	27.9	30.6	37.6	23.3	28.4	21.1	16.2	9.4	9.9	25.0
C51	-	-	-	-	-	0.7	-	-	-	2.8	-	2.0	2.3	2.8	8.5	2.7	0.6	0.7	1.1
C52	-	-	-	-	-	-	0.7	0.9	1.1	-	-	2.0	2.3	2.8	4.2	2.7	0.6	0.6	0.9
C53	-	-	-	-	-	4.3	11.5	35.1	43.6	57.1	53.2	63.3	46.6	48.3	59.2	32.3	18.9	19.5	49.1
C54	-	-	-	-	-	-	-	0.9	1.1	2.8	4.8	9.9	7.0	5.7	4.2	-	1.3	1.5	3.9
C55	-	-	-	-	-	-	-	-	1.1	-	1.6	4.0	2.3	2.8	4.2	-	0.5	0.6	1.3
C56	-	-	1.6	2.2	0.7	1.4	2.9	4.4	5.3	11.2	14.5	23.7	18.7	25.6	33.8	24.2	5.9	6.3	11.8
C57	-	-	-	-	-	-	-	-	-	1.4	-	-	-	-	-	-	0.1	0.1	0.3
C58	-	-	-	-	0.7	2.1	2.2	0.9	2.1	-	1.6	-	-	-	-	-	0.8	0.6	0.8
C64	1.7	-	-	-	-	-	1.4	-	1.1	4.2	1.6	4.0	2.3	8.5	-	5.4	1.2	1.3	2.1

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	-	4.3	2.8	3.2	4.0	9.3	5.7	8.5	21.5	1.8	1.9	3.6
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.3	-
C70 - 72	0.9	0.9	1.6	-	0.7	2.1	2.2	4.4	7.4	8.4	14.5	15.8	11.7	17.1	4.2	8.1	4.2	4.5	9.8
C73	-	-	-	-	4.5	7.8	8.6	11.4	10.6	8.4	12.9	5.9	14.0	17.1	12.7	18.9	6.3	5.9	10.5
C74	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	2.7	0.1	0.1	-
C75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C82 - C86, C96	-	0.9	-	-	-	1.4	0.7	-	-	4.2	8.1	2.0	9.3	5.7	25.4	13.5	2.1	2.3	3.6
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	-	1.8	1.1	-	-	2.0	2.3	2.8	-	-	0.4	0.4	1.1
C91	5.2	0.9	0.8	0.7	0.7	-	0.7	-	-	1.4	-	-	-	-	-	-	0.8	1.0	0.3
C92 - 94	1.7	0.9	-	0.7	0.7	0.7	1.4	-	4.3	2.8	3.2	2.0	2.3	-	12.7	5.4	1.6	1.7	2.4
C95	0.9	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	0.1	0.2	-
O&U*	-	-	-	-	-	2.8	-	1.8	1.1	2.8	6.5	15.8	14.0	14.2	12.7	40.4	3.5	3.6	6.0
Total	**14.7**	**5.2**	**7.0**	**5.1**	**11.2**	**36.3**	**50.4**	**102.6**	**140.4**	**217.4**	**258.0**	**352.3**	**447.6**	**560.1**	**667.8**	**673.3**	**119.1**	**126.4**	**234.0**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.5: Number of cases in paediatric age-group, incidence rate per million population: 2019-2021 (Both sex)

ICCC	Site	0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	Percentage (0-14)		Percentage (0-19)		Age-specific rate per 1,000,000				AAR		Cumulative		MV % 0-19	DCO% 0-19
								All	Group	All	Group	0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	0 - 14	0 - 19		
I	**LEUKAEMIA**	**16**	**3**	**8**	**6**	**27**	**33**	**45.8**	**100**	**39.3**	**100**	**68.5**	**12.7**	**30.9**	**21.9**	**39.6**	**35.6**	**3569**	**2986**	**100**	**0.0**
a.	Lymphoid	11	2	3	3	16	19	27.1	59.3	22.6	57.6	47.1	8.5	11.6	10.9	24.3	21.3	5957	5122	100	0.0
b.	Acute myeloid	4	0	5	2	9	11	15.3	33.3	13.1	33.3	17.1	0.0	19.3	7.3	12.2	11.1	10986	9152	100	0.0
c.	CMD	0	1	0	1	1	2	1.7	3.7	2.4	6.1	0.0	4.2	0.0	3.6	1.4	1.9	94310	50702	100	0.0
d.	MDS & other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	1	0	0	0	1	1	1.7	3.7	1.2	3.0	4.3	0.0	0.0	0.0	1.7	1.3	93418	93418	100	0.0
II	**LYMPHOMA & RELATED**	**0**	**3**	**2**	**1**	**5**	**6**	**8.5**	**100**	**7.1**	**100**	**0.0**	**12.7**	**7.7**	**3.6**	**6.3**	**5.7**	**19572**	**16608**	**100**	**0.0**
a.	Hodgkin	0	1	0	0	1	1	1.7	20.0	1.2	16.7	0.0	4.2	0.0	0.0	1.4	1.1	94310	94310	100	0.0
b.	Non-Hodgkin except BL	0	1	0	1	1	2	1.7	20.0	2.4	33.3	0.0	4.2	0.0	3.6	1.4	1.9	94310	50702	100	0.0
c.	Burkitt (BL)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Lymphoreticular	0	0	1	0	1	1	1.7	20.0	1.2	16.7	0.0	0.0	3.9	0.0	1.1	0.9	103712	103712	100	0.0
e.	Unspecified	0	1	1	0	2	2	3.4	40.0	2.4	33.3	0.0	4.2	3.9	0.0	2.5	1.9	49394	49394	100	0.0
III	**CNS NEOPLASMS**	**2**	**2**	**2**	**3**	**6**	**9**	**10.2**	**100**	**10.7**	**100**	**8.6**	**8.5**	**7.7**	**10.9**	**8.3**	**8.9**	**16155**	**11204**	**56**	**0.0**
a.	Ependymoma	0	0	1	0	1	1	1.7	16.7	1.2	11.1	0.0	0.0	3.9	0.0	1.1	0.9	103712	103712	100	0.0
b.	Astrocytoma	0	0	0	1	0	1	0.0	0.0	1.2	11.1	0.0	0.0	0.0	3.6	0.0	0.8	0	109652	100	0.0
c.	CNS embryonal	1	1	0	0	2	2	3.4	33.3	2.4	22.2	4.3	4.2	0.0	0.0	3.0	2.3	46931	46931	100	0.0
d.	Other gliomas	1	0	0	1	1	2	1.7	16.7	2.4	22.2	4.3	0.0	0.0	3.6	1.7	2.1	93418	50443	0	0.0
e.	Other specified	0	1	1	0	2	2	3.4	33.3	2.4	22.2	0.0	4.2	3.9	0.0	2.5	1.9	49394	49394	0	0.0
f.	Unspecified CNS	0	0	0	1	0	1	0.0	0.0	1.2	11.1	0.0	0.0	0.0	3.6	0.0	0.8	0	109652	100	0.0
IV	**NEUROBLASTOMA**	**1**	**0**	**0**	**0**	**1**	**1**	**1.7**	**100**	**1.2**	**100**	**4.3**	**0.0**	**0.0**	**0.0**	**1.7**	**1.3**	**93418**	**93418**	**100**	**0.0**
a.	(Ganglio)neuroblastoma	1	0	0	0	1	1	1.7	100	1.2	100	4.3	0.0	0.0	0.0	1.7	1.3	93418	93418	100	0.0
b.	Peripheral nervous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V	**RETINOBLASTOMA**	**4**	**0**	**0**	**0**	**4**	**4**	**6.8**	**100**	**4.8**	**100**	**17.1**	**0.0**	**0.0**	**0.0**	**6.6**	**5.1**	**23355**	**23355**	**100**	**0.0**
VI	**RENAL TUMOURS**	**3**	**0**	**0**	**0**	**3**	**3**	**5.1**	**100**	**3.6**	**100**	**12.8**	**0.0**	**0.0**	**0.0**	**5.0**	**3.9**	**31140**	**31140**	**100**	**0.0**
a.	Nephroblastoma	2	0	0	0	2	2	3.4	66.7	2.4	66.7	8.6	0.0	0.0	0.0	3.3	2.6	46709	46709	100	0.0
b.	Renal carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Unspecified	1	0	0	0	1	1	1.7	33.3	1.2	33.3	4.3	0.0	0.0	0.0	1.7	1.3	93418	93418	100	0.0
VII	**HEPATIC TUMOURS**	**1**	**0**	**0**	**0**		**1**	**1.7**	**100**	**1.2**	**100**	**4.3**	**0.0**	**0.0**	**0.0**	**1.7**	**1.3**	**93418**	**93418**	**100**	**0.0**
a.	Hepatoblastoma	1	0	0	0		1	1.7	100	1.2	100.0	4.3	0.0	0.0	0.0	1.7	1.3	93418	93418	100	0.0
b.	Hepatic carcinoma	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ICCC	Site	0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	Percentage (0-14)		Percentage (0-19)		Age-specific rate per 1,000,000				AAR		Cumulative		MV % 0-19	DCO% 0-19
								All	Group	All	Group	0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	0 - 14	0 - 19		
c.	Unspecified	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VIII	**BONE TUMOURS**	**0**	**2**	**2**	**7**	**4**	**11**	**6.8**	**100**	**13.1**	**100**	**0.0**	**8.5**	**7.7**	**25.5**	**5.0**	**9.6**	**24697**	**9585**	**100**	**0.0**
a.	Osteosarcoma	0	2	1	7	3	10	5.1	75.0	11.9	90.9	0.0	8.5	3.9	25.5	3.9	8.7	32417	10562	100	0.0
b.	Chondrosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Ewing & related	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Other specified	0	0	1	0	1	1	1.7	25.0	1.2	9.1	0.0	0.0	3.9	0.0	1.1	0.9	103712	103712	100	0.0
e.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IX	**SOFT TISSUE SARCOMA**	**1**	**0**	**2**	**2**	**3**	**5**	**5.1**	**100**	**6.0**	**100**	**4.3**	**0.0**	**7.7**	**7.3**	**3.9**	**4.7**	**33346**	**20735**	**100**	**0.0**
a.	Rhabdomyosarcoma	1	0	1	1	2	3	3.4	66.7	3.6	60.0	4.3	0.0	3.9	3.6	2.8	3.0	49148	33937	100	0.0
b.	Fibrosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Other specified	0	0	0	1	0	1	0.0	0.0	1.2	20.0	0.0	0.0	0.0	3.6	0.0	0.8	0	109652	100	0.0
e.	Unspecified	0	0	1	0	1	1	1.7	33.3	1.2	20.0	0.0	0.0	3.9	0.0	1.1	0.9	103712	103712	100	0.0
X	**GERM CELL TUMOURS**	**2**	**0**	**2**	**3**	**4**	**7**	**6.8**	**100**	**8.3**	**100**	**8.6**	**0.0**	**7.7**	**10.9**	**5.6**	**6.8**	**24574**	**14695**	**86**	**0.0**
a.	CNS germ cell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Other extragonadal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Gonadal germ cell	1	0	0	3	1	4	1.7	25.0	4.8	57.1	4.3	0.0	0.0	10.9	1.7	3.7	93418	26272	100	0.0
d.	Gonadal carcinoma	0	0	1	0	1	1	1.7	25.0	1.2	14.3	0.0	0.0	3.9	0.0	1.1	0.9	103712	103712	100	0.0
e.	Unspecified gonadal	1	0	1	0	2	2	3.4	50.0	2.4	28.6	4.3	0.0	3.9	0.0	2.8	2.2	49148	49148	50	0.0
XI	**CARCINOMA & MELANOMA**	**0**	**0**	**0**	**2**	**0**	**2**	**0.0**	**0.0**	**2.4**	**100**	**0.0**	**0.0**	**0.0**	**7.3**	**0.0**	**1.6**	**0**	**54826**	**100**	**0.0**
a.	Adrenocortical	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Thyroid	0	0	0	2	0	2	0.0	0.0	2.4	100	0.0	0.0	0.0	7.3	0.0	1.6	0	54826	100	0.0
c.	Nasopharyngeal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Melanoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Skin carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f.	Other & unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
XII	**OTHER & UNSPECIFIED**	**1**	**0**	**0**	**1**	**1**	**2**	**1.7**	**100**	**2.4**	**100**	**4.3**	**0.0**	**0.0**	**3.6**	**1.7**	**2.1**	**93418**	**50443**	**0**	**50.0**
a.	Other specified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Other unspecified	1	0	0	1	1	2	1.7	100	2.4	100.0	4.3	0.0	0.0	3.6	1.7	2.1	93418	50443	0	50.0
	Total	**31**	**10**	**18**	**25**	**59**	**84**	**100**	**100**	**100**	**100**	**132.7**	**42.4**	**69.4**	**91.2**	**85.2**	**86.6**	**1636**	**1192**	**91.7**	**1.2**

Table 24.6: Number of cases in paediatric age-group, incidence rate per million population: 2019-2021 (By gender)

ICCC	Site	Male								M/F Ratio		Female							
		Number of cases in age groups						AAR per million				Number of cases in age groups						AAR per million	
		0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	0 - 14	0 - 19	0 - 14	0 - 19	0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	0 - 14	0 - 19
I	**LEUKAEMIA**	**7**	**1**	**7**	**4**	**15**	**19**	**41.1**	**38.4**	**1.3**	**1.4**	**9**	**2**	**1**	**2**	**12**	**14**	**38.1**	**32.8**
a.	Lymphoid	5	1	2	2	8	10	23.5	21.5	1.0	1.1	6	1	1	1	8	9	25.2	21.2
b.	Acute myeloid	2	0	5	2	7	9	17.6	16.9	3.5	4.5	2	0	0	0	2	2	6.7	5.2
c.	CMD	-	-	-	-	-	-	-	-	-	-	0	1	0	1	1	2	2.8	3.8
d.	MDS & other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	-	-	-	-	-	-	-	-	-	-	1	0	0	0	1	1	3.4	2.6
II	**LYMPHOMA & RELATED**	**0**	**2**	**2**	**1**	**4**	**5**	**9.8**	**9.2**	**4.0**	**5.0**	**0**	**1**	**0**	**0**	**1**	**1**	**2.8**	**2.2**
a.	Hodgkin	0	1	0	0	1	1	2.7	2.1	-	-	-	-	-	-	-	-	-	-
b.	Non-Hodgkin except BL	0	0	0	1	0	1	0.0	1.6	0.0	1.0	0	1	0	0	1	1	2.8	2.2
c.	Burkitt (BL)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Lymphoreticular	0	0	1	0	1	1	2.2	1.7	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	0	1	1	0	2	2	4.9	3.8	-	-	-	-	-	-	-	-	-	-
III	**CNS NEOPLASMS**	**1**	**1**	**0**	**3**	**2**	**5**	**6.0**	**9.5**	**0.5**	**1.3**	**1**	**1**	**2**	**0**	**4**	**4**	**10.7**	**8.3**
a.	Ependymoma	-	-	-	-	-	-	-	-	-	-	0	0	1	0	1	1	2.3	1.8
b.	Astrocytoma	0	0	0	1	0	1	0.0	1.6	-	-	-	-	-	-	-	-	-	-
c.	CNS embryonal	1	1	0	0	2	2	6.0	4.6	-	-	-	-	-	-	-	-	-	-
d.	Other gliomas	0	0	0	1	0	1	0.0	1.6	0.0	1.0	1	0	0	0	1	1	3.4	2.6
e.	Other specified	-	-	-	-	-	-	-	-	-	-	0	1	1	0	2	2	5.1	3.9
f.	Unspecified CNS	0	0	0	1	0	1	0.0	1.6	-	-	-	-	-	-	-	-	-	-
IV	**NEUROBLASTOMA**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**0**	**0**	**0**	**1**	**1**	**3.4**	**2.6**
a.	(Ganglio)neuroblastoma	-	-	-	-	-	-	-	-	-	-	1	0	0	0	1	1	3.4	2.6
b.	Peripheral nervous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V	**RETINOBLASTOMA**	**2**	**0**	**0**	**0**	**2**	**2**	**6.5**	**5.1**	**1.0**	**1.0**	**2**	**0**	**0**	**0**	**2**	**2**	**6.7**	**5.2**
VI	**RENAL TUMOURS**	**1**	**0**	**0**	**0**	**1**	**1**	**3.3**	**2.5**	**0.5**	**0.5**	**2**	**0**	**0**	**0**	**2**	**2**	**6.7**	**5.2**
a.	Nephroblastoma	1	0	0	0	1	1	3.3	2.5	1.0	1.0	1	0	0	0	1	1	3.4	2.6
b.	Renal carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Unspecified	-	-	-	-	-	-	-	-	-	-	1	0	0	0	1	1	3.4	2.6
VII	**HEPATIC TUMOURS**	**1**	**0**	**0**	**0**	**1**	**1**	**3.3**	**2.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
a.	Hepatoblastoma	1	0	0	0	1	1	3.3	2.5	-	-	-	-	-	-	-	-	-	-
b.	Hepatic carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ICCC	Site	Male								M/F Ratio		Female							
		Number of cases in age groups						AAR per million				Number of cases in age groups						AAR per million	
		0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	0 - 14	0 - 19	0 - 14	0 - 19	0 - 4	5 - 9	10 - 14	15 - 19	0 - 14	0 - 19	0 - 14	0 - 19
c.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VIII	**BONE TUMOURS**	**0**	**0**	**0**	**6**	**0**	**6**	**0.0**	**9.8**	**0.0**	**1.2**	**0**	**2**	**2**	**1**	**4**	**5**	**10.1**	**9.5**
a.	Osteosarcoma	0	0	0	6	0	6	0.0	9.8	0.0	1.5	0	2	1	1	3	4	7.8	7.7
b.	Chondrosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Ewing & related	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Other specified	-	-	-	-	-	-	-	-	-	-	0	0	1	0	1	1	2.3	1.8
e.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IX	**SOFT TISSUE SARCOMA**	**0**	**0**	**0**	**2**	**0**	**2**	**0.0**	**3.3**	**0.0**	**0.7**	**1**	**0**	**2**	**0**	**3**	**3**	**7.9**	**6.1**
a.	Rhabdomyosarcoma	0	0	0	1	0	1	0.0	1.6	0.0	0.5	1	0	1	0	2	2	5.6	4.4
b.	Fibrosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Other specified	0	0	0	1	0	1	0.0	1.6	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	0	0	0	0	0	0	0.0	0.0	-	-	0	0	1	0	1	1	2.3	1.8
X	**GERM CELL TUMOURS**	**2**	**0**	**0**	**0**	**2**	**2**	**6.5**	**5.1**	**1.0**	**0.4**	**0**	**0**	**2**	**3**	**2**	**5**	**4.5**	**8.5**
a.	CNS germ cell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Other extragonadal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Gonadal germ cell	1	0	0	0	1	1	3.3	2.5	-	0.3	0	0	0	3	0	3	0.0	4.9
d.	Gonadal carcinoma	-	-	-	-	-	-	-	-	0.0	0.0	0	0	1	0	1	1	2.3	1.8
e.	Unspecified gonadal	1	0	0	0	1	1	3.3	2.5	1.0	1.0	0	0	1	0	1	1	2.3	1.8
XI	**CARCINOMA & MELANOMA**	**0**	**0**	**0**	**2**	**0**	**2**	**0.0**	**3.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
a.	Adrenocortical	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Thyroid	0	0	0	2	2	2	0.0	3.3	-	-	-	-	-	-	-	-	-	-
c.	Nasopharyngeal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Melanoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Skin carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f.	Other & unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
XII	**OTHER & UNSPECIFIED**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**0**	**0**	**1**	**1**	**2**	**3.4**	**4.2**
a.	Other specified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Other unspecified	-	-	-	-	-	-	-	-	-	-	1	0	0	1	1	2	3.4	4.2
	Total	**14**	**4**	**9**	**18**	**27**	**45**	**76.5**	**88.7**	**0.8**	**1.2**	**17**	**6**	**9**	**7**	**32**	**39**	**94.2**	**84.6**

Table 24.7: Cumulative Rate (Cu. Rate) & Cumulative Risk (Cu. Risk) of individual sites (ICD 10) based on age-specific rates (From 0-64 Years and 0-74 Years) 2019-2021: Males

ICD 10	Sites	Cum Rate (0-64)	Cum Risk (0-64)	Cum Rate (0-74)	Cum Risk (0-74)
C00	Lip	0.0001	0.0001	0.0005	0.0005
C01-C02	Tongue	0.0010	0.0010	0.0022	0.0022
C03-C06	Mouth	0.0015	0.0015	0.0024	0.0024
C07-C08	Salivary glands	0.0004	0.0004	0.0006	0.0006
C09	Tonsil	0.0002	0.0002	0.0011	0.0011
C10	Other oropharynx	0.0004	0.0004	0.0008	0.0008
C11	Nasopharynx	0.0013	0.0013	0.0018	0.0018
C12-C13	Hypopharynx	0.0015	0.0015	0.0025	0.0025
C14	Pharynx unspecified	0.0002	0.0002	0.0005	0.0005
C15	Oesophagus	0.0040	0.0040	0.0090	0.0090
C16	Stomach	0.0108	0.0108	0.0309	0.0309
C17	Small intestine	0.0002	0.0002	0.0007	0.0007
C18	Colon	0.0028	0.0028	0.0067	0.0067
C19-C20	Rectum	0.0020	0.0020	0.0067	0.0067
C21	Anus	-	-	0.0003	0.0003
C22	Liver	0.0032	0.0032	0.0095	0.0095
C23-C24	Gallbladder etc.	0.0009	0.0009	0.0030	0.0030
C25	Pancreas	0.0013	0.0013	0.0021	0.0021
C30-C31	Nose, sinuses etc.	0.0001	0.0001	0.0005	0.0005
C32	Larynx	0.0006	0.0006	0.0014	0.0014
C33-C34	Trachea, bronchus and lung	0.0024	0.0024	0.0060	0.0060
C37-C38	Other thoracic organs	-	-	-	-
C40-C41	Bone	0.0007	0.0007	0.0012	0.0012
C43	Melanoma of skin	-	-	-	-
C44	Other skin	0.0008	0.0008	0.0039	0.0039
C45	Mesothelioma	-	-	-	-

ICD 10	Sites	Cum Rate (0-64)	Cum Risk (0-64)	Cum Rate (0-74)	Cum Risk (0-74)
C46	Kaposi sarcoma	0.0001	0.0001	0.0001	0.0001
C47,C49	Connective and soft tissue	0.0009	0.0009	0.0018	0.0018
C50	Breast	0.0002	0.0002	0.0010	0.0010
C60	Penis	0.0006	0.0006	0.0015	0.0015
C61	Prostate	0.0005	0.0005	0.0024	0.0024
C62	Testis	0.0004	0.0004	0.0004	0.0004
C63	Other male genital organs	-	-	-	-
C64	Kidney	0.0005	0.0005	0.0014	0.0014
C65	Renal pelvis	-	-	-	-
C66	Ureter	-	-	-	-
C67	Bladder	0.0007	0.0007	0.0016	0.0016
C68	Other urinary organs	-	-	-	-
C69	Eye	0.0001	0.0001	0.0003	0.0003
C70-C72	Brain, nervous system	0.0017	0.0017	0.0028	0.0028
C73	Thyroid	0.0011	0.0011	0.0015	0.0015
C74	Adrenal gland	-	-	-	-
C75	Other endocrine	0.0001	0.0001	0.0001	0.0001
C81	Hodgkin disease	0.0002	0.0002	0.0002	0.0002
C82-C86, C96	Non-Hodgkin lymphoma	0.0013	0.0013	0.0020	0.0020
C88	Immunoproliferative diseases	-	-	-	-
C90	Multiple myeloma	0.0004	0.0004	0.0014	0.0014
C91	Lymphoid leukaemia	0.0007	0.0007	0.0011	0.0011
C92-C94	Myeloid leukaemia	0.0015	0.0015	0.0018	0.0018
C95	Leukaemia unspecified	-	-	0.0002	0.0002
Other & Unspecified*		0.0022	0.0022	0.0042	0.0042
Total		**0.0495**	**0.0495**	**0.1203**	**0.1203**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.8: Cumulative Rate (Cu. Rate) & Cumulative Risk (Cu. Risk) of individual sites (ICD 10) based on age-specific rates (From 0-64 Years and 0-74 Years) 2019-2021: Females

ICD 10	Sites	Cum Rate (0-64)	Cum Risk (0-64)	Cum Rate (0-74)	Cum Risk (0-74)
C00	Lip	0.0001	0.0001	0.0001	0.0001
C01-02	Tongue	0.0004	0.0004	0.0006	0.0006
C03-06	Mouth	0.0010	0.0010	0.0020	0.0020
C07-08	Salivary glands	0.0007	0.0007	0.0010	0.0010
C09	Tonsil	0.0002	0.0002	0.0002	0.0002
C10	Other oropharynx	-	-	0.0002	0.0002
C11	Nasopharynx	0.0005	0.0005	0.0007	0.0007
C12-13	Hypopharynx	0.0004	0.0004	0.0011	0.0011
C14	Pharynx unspecified	0.0003	0.0003	0.0005	0.0005
C15	Oesophagus	0.0027	0.0027	0.0052	0.0052
C16	Stomach	0.0099	0.0099	0.0226	0.0226
C17	Small intestine	0.0001	0.0001	0.0003	0.0003
C18	Colon	0.0023	0.0023	0.0041	0.0041
C19-20	Rectum	0.0027	0.0027	0.0047	0.0047
C21	Anus	0.0002	0.0002	0.0006	0.0006
C22	Liver	0.0031	0.0031	0.0076	0.0076
C23-24	Gallbladder etc.	0.0032	0.0032	0.0073	0.0073
C25	Pancreas	0.0011	0.0011	0.0023	0.0023
C30-31	Nose, sinuses etc.	-	-	0.0005	0.0005
C32	Larynx	0.0002	0.0002	0.0014	0.0014
C33-34	Trachea, bronchus and lung	0.0039	0.0039	0.0101	0.0101
C37-38	Other thoracic organs	0.0001	0.0001	0.0001	0.0001
C40-41	Bone	0.0008	0.0008	0.0010	0.0010
C43	Melanoma of skin	0.0005	0.0005	0.0007	0.0007
C44	Other skin	0.0009	0.0009	0.0018	0.0018
C45	Mesothelioma	-	-	-	0.0000
C46	Kaposi sarcoma	0.0001	0.0001	0.0001	0.0001

ICD 10	Sites	Cum Rate (0-64)	Cum Risk (0-64)	Cum Rate (0-74)	Cum Risk (0-74)
C47, C49	Connective and soft tissue	0.0006	0.0006	0.0006	0.0006
C50	Breast	0.0081	0.0081	0.0106	0.0106
C51	Vulva	0.0004	0.0004	0.0010	0.0010
C52	Vagina	0.0003	0.0003	0.0007	0.0007
C53	Cervix uteri	0.0157	0.0157	0.0211	0.0211
C54	Corpus uteri	0.0013	0.0013	0.0018	0.0018
C55	Uterus unspecified	0.0004	0.0004	0.0008	0.0008
C56	Ovary	0.0043	0.0043	0.0073	0.0073
C57	Other female genital organs	0.0001	0.0001	0.0001	0.0001
C58	Placenta	0.0005	0.0005	0.0005	0.0005
C64	Kidney	0.0008	0.0008	0.0012	0.0012
C65	Renal pelvis	-	-	-	0.0000
C66	Ureter	-	-	-	0.0000
C67	Bladder	0.0012	0.0012	0.0019	0.0019
C68	Other urinary organs	-	-	-	0.0000
C69	Eye	0.0001	0.0001	0.0001	0.0001
C70-72	Brain, nervous system	0.0035	0.0035	0.0046	0.0046
C73	Thyroid	0.0042	0.0042	0.0057	0.0057
C74	Adrenal gland	-	-	0.0001	0.0001
C75	Other endocrine	-	-	-	0.0000
C81	Hodgkin disease	-	-	-	0.0000
C82-C86,C96	Non-Hodgkin lymphoma	0.0013	0.0013	0.0029	0.0029
C88	Immunoproliferative diseases	-	-	-	0.0000
C90	Multiple myeloma	0.0004	0.0004	0.0005	0.0005
C91	Lymphoid leukaemia	0.0005	0.0005	0.0005	0.0005
C92-94	Myeloid leukaemia	0.0010	0.0010	0.0017	0.0017
C95	Leukaemia unspecified	0.0001	0.0001	0.0001	0.0001
Other & Unspecified*		0.0022	0.0022	0.0036	0.0036
Total		**0.0824**	**0.0824**	**0.1438**	**0.1438**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.9: Number (#) and Proportion (%) of cancers by site (ICD -10) and method of diagnosis: 2019-2021 – Males Bhutan

ICD 10	Sites	DCO		Clinical		Radiology		Tumor marker		Microscopic		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
C00	Lip	-	-	-	-	-	-	-	-	5	100.0	5	100.0
C01-C02	Tongue	-	-	-	-	-	-	-	-	26	100.0	26	100.0
C03-C06	Mouth	1	3.8	1	3.8	-	-	-	-	24	92.3	26	100.0
C07-C08	Salivary glands	-	-	2	25.0	-	-	-	-	6	75.0	8	100.0
C09	Tonsil	-	-	-	-	-	-	-	-	9	100.0	9	100.0
C10	Other oropharynx	1	16.7	-	-	-	-	-	-	5	83.3	6	100.0
C11	Nasopharynx	1	4.0	-	-	-	-	-	-	24	96.0	25	100.0
C12-C13	Hypopharynx	3	8.8	2	5.9	1	2.9	-	-	28	82.4	34	100.0
C14	Pharynx unspecified	-	-	1	16.7	-	-	-	-	5	83.3	6	100.0
C15	Oesophagus	3	2.9	7	6.7	9	8.7	-	-	85	81.7	104	100.0
C16	Stomach	19	5.4	16	4.5	15	4.2	-	-	304	85.9	354	100.0
C17	Small intestine	-	-	-	-	-	-	-	-	8	100.0	8	100.0
C18	Colon	2	2.8	4	5.6	8	11.1	-	-	58	80.6	72	100.0
C19-C20	Rectum	3	4.3	1	1.4	7	10.0	-	-	59	84.3	70	100.0
C21	Anus	1	50.0	-	-	-	-	-	-	1	50.0	2	100.0
C22	Liver	12	12.1	3	3.0	17	17.2	3	3.0	64	64.6	99	100.0
C23-C24	Gallbladder etc.	6	17.1	1	2.9	15	42.9	-	-	13	37.1	35	100.0

ICD 10	Sites	DCO		Clinical		Radiology		Tumor marker		Microscopic		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
C25	Pancreas	1	4.5	4	18.2	8	36.4	-	-	9	40.9	22	100.0
C30-C31	Nose, sinuses etc.	-	-	-	-	-	-	-	-	6	100.0	6	100.0
C32	Larynx	3	13.6	1	4.5	2	9.1	-	-	16	72.7	22	100.0
C33-C34	Trachea, bronchus and lung	8	10.5	7	9.2	20	26.3	-	-	41	53.9	76	100.0
C37-C38	Other thoracic organs	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	Bone	1	4.5	-	-	-	-	-	-	21	95.5	22	100.0
C43	Melanoma of skin	-	-	-	-	-	-	-	-	2	100.0	2	100.0
C44	Other skin	1	2.7	1	2.7	-	-	-	-	35	94.6	37	100.0
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi sarcoma	1	50.0	-	-	-	-	-	-	1	50.0	2	100.0
C47,C49	Connective and soft tissue	-	-	-	-	-	-	-	-	21	100.0	21	100.0
C50	Breast	1	11.1	-	-	-	-	-	-	8	88.9	9	100.0
C60	Penis	-	-	-	-	-	-	-	-	20	100.0	20	100.0
C61	Prostate	4	10.5	4	10.5	4	10.5	1	2.6	25	65.8	38	100.0
C62	Testis	-	-	1	11.1	1	11.1	-	-	7	77.8	9	100.0
C63	Other male genital organs	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney	1	6.7	1	6.7	-	-	-	-	13	86.7	15	100.0

ICD 10	Sites	DCO		Clinical		Radiology		Tumor marker		Microscopic		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	1	3.3	1	3.3	8	26.7	-	-	20	66.7	30	100.0
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	-	-	-	-	-	-	4	100.0	4	100.0
C70-C72	Brain, nervous system	1	2.6	2	5.1	12	30.8	-	-	24	61.5	39	100.0
C73	Thyroid	2	6.7	-	-	-	-	-	-	28	93.3	30	100.0
C74	Adrenal gland	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other endocrine	-	-	-	-	-	-	-	-	1	100.0	1	100.0
C81	Hodgkin disease	-	-	-	-	-	-	-	-	4	100.0	4	100.0
C82-C86,C96	Non-Hodgkin lymphoma	-	-	-	-	-	-	-	-	35	100.0	35	100.0
C88	Immunoproliferative diseases	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple myeloma	-	-	1	9.1	-	-	1	9.1	9	81.8	11	100.0
C91	Lymphoid leukaemia	-	-	-	-	-	-	-	-	19	100.0	19	100.0
C92-C94	Myeloid leukaemia	-	-	-	-	-	-	-	-	33	100.0	33	100.0
C95	Leukaemia unspecified	-	-	-	-	-	-	-	-	2	100.0	2	100.0
Other & Unspecified*		18	30.5	3	5.1	6	10.2	-	-	32	54.2	59	100.0
Total		**95**	**6.5**	**64**	**4.4**	**133**	**9.1**	**5**	**0.3**	**1160**	**79.6**	**1457**	**100.0**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.10: Number (#) and Proportion (%) of cancers by site (ICD -10) and method of diagnosis: 2019-2021 – Females Bhutan

ICD 10	Sites	DCO		Clinical		Radiology		Tumor marker		Microscopic		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
C00	Lip	-	-	-	-	-	-	-	-	2	100.0	2	100
C01-02	Tongue	-	-	1	11.1	-	-	-	-	8	88.9	9	100
C03-06	Mouth	1	5.0	2	10.0	-	-	-	-	17	85.0	20	100
C07-08	Salivary glands	-	-	2	16.7	-	-	-	-	10	83.3	12	100
C09	Tonsil	-	-	-	-	-	-	-	-	3	100.0	3	100
C10	Other oropharynx	-	-	-	-	-	-	-	-	2	100.0	2	100
C11	Nasopharynx	-	-	1	10.0	-	-	-	-	9	90.0	10	100
C12-13	Hypopharynx	-	-	1	12.5	1	12.5	-	-	6	75.0	8	100
C14	Pharynx unspecified	2	28.6	-	-	1	14.3	-	-	4	57.1	7	100
C15	Oesophagus	5	10.0	-	-	4	8.0	-	-	41	82.0	50	100
C16	Stomach	19	7.5	10	3.9	11	4.3	-	-	214	84.3	254	100
C17	Small intestine	-	-	-	-	-	-	-	-	2	100.0	2	100
C18	Colon	2	3.6	2	3.6	5	9.1	-	-	46	83.6	55	100
C19-20	Rectum	2	3.6	2	3.6	3	5.5	-	-	48	87.3	55	100
C21	Anus	-	-	-	-	1	20.0	-	-	4	80.0	5	100
C22	Liver	5	6.6	2	2.6	10	13.2	1	1.3	58	76.3	76	100
C23-24	Gallbladder etc.	8	11.3	6	8.5	10	14.1	-	-	47	66.2	71	100

ICD 10	Sites	DCO		Clinical		Radiology		Tumor marker		Microscopic		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
C25	Pancreas	2	8.0	4	16.0	13	52.0	-	-	6	24.0	25	100
C30-31	Nose, sinuses etc.	-	-	1	25.0	-	-	-	-	3	75.0	4	100
C32	Larynx	-	-	2	18.2	2	18.2	-	-	7	63.6	11	100
C33-34	Trachea, bronchus and lung	7	6.8	4	3.9	25	24.3	-	-	67	65.0	103	100
C37-38	Other thoracic organs	-	-	-	-	1	50.0	-	-	1	50.0	2	100
C40-41	Bone	2	12.5	1	6.3	-	-	-	-	13	81.3	16	100
C43	Melanoma of skin	-	-	1	12.5	-	-	-	-	7	87.5	8	100
C44	Other skin	1	4.8	-	-	-	-	-	-	20	95.2	21	100
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi sarcoma	-	-	-	-	-	-	-	-	3	100.0	3	100
C47,C49	Connective and soft tissue	1	8.3	-	-	-	-	-	-	11	91.7	12	100
C50	Breast	3	2.2	3	2.2	1	0.7	-	-	128	94.8	135	100
C51	Vulva	-	-	1	11.1	-	-	-	-	8	88.9	9	100
C52	Vagina	-	-	-	-	1	12.5	-	-	7	87.5	8	100
C53	Cervix uteri	2	0.7	1	0.4	2	0.7	-	-	267	98.2	272	100
C54	Corpus uteri	-	-	-	-	-	-	-	-	18	100.0	18	100
C55	Uterus unspecified	-	-	-	-	-	-	-	-	7	100.0	7	100

ICD 10	Sites	DCO		Clinical		Radiology		Tumor marker		Microscopic		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
C56	Ovary	-	-	2	2.4	7	8.2	-	-	76	89.4	85	100
C57	Other female genital organs	-	-	-	-	-	-	-	-	1	100.0	1	100
C58	Placenta	-	-	-	-	1	9.1	-	-	10	90.9	11	100
C64	Kidney	-	-	-	-	2	11.8	-	-	15	88.2	17	100
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	1	3.8	2	7.7	2	7.7	-	-	21	80.8	26	100
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	-	-	-	-	-	-	3	100.0	3	100
C70-72	Brain, nervous system	5	8.2	2	3.3	12	19.7	-	-	42	68.9	61	100
C73	Thyroid	1	1.1	1	1.1	2	2.2	-	-	87	95.6	91	100
C74	Adrenal gland	1	50.0	1	50.0	-	-	-	-	-	-	2	100
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin disease	-	-	-	-	-	-	-	-	-	-	-	-
C82-C86,C96	Non-Hodgkin lymphoma	-	-	1	3.3	-	-	-	-	29	96.7	30	100
C88	Immunoproliferative diseases	-	-	-	-	-	-	-	-	-	-	-	-

ICD 10	Sites	DCO		Clinical		Radiology		Tumor marker		Microscopic		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
C90	Multiple myeloma	1	16.7	-	-	-	-	-	-	5	83.3	6	100
C91	Lymphoid leukaemia	-	-	-	-	-	-	-	-	12	100.0	12	100
C92-94	Myeloid leukaemia	-	-	-	-	-	-	-	-	23	100.0	23	100
C95	Leukaemia unspecified	-	-	-	-	-	-	-	-	2	100.0	2	100
Other & Unspecified*		11	22.0	1	2.0	1	2.0	1	2.0	36	72.0	50	100
Total		**82**	**4.8**	**57**	**3.3**	**118**	**6.9**	**2**	**0.1**	**1456**	**84.9**	**1715**	**100**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.11: Number of cancer deaths by five-year age group and site (ICD 10): 2019-2021 Males Bhutan
% = Relative Proportion of Cancers of All Sites

ICD 10	Sites	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+	Total	%
C00	Lip	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	0.3
C01 - C02	Tongue	-	-	-	-	-	-	1	1	1	-	2	-	1	2	-	1	9	1.2
C03 - C06	Mouth	-	-	-	-	-	-	-	-	4	-	2	-	2	4	2	3	17	2.3
C07 - C08	Salivary glands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	0.3
C09	Tonsil	-	-	-	-	-	-	-	-	-	-	-	1	-	1	3	-	5	0.7
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	3	0.4
C11	Nasopharynx	-	-	-	-	1	-	1	-	3	-	2	1	2	3	-	-	13	1.8
C12 - C13	Hypopharynx	-	-	-	-	-	-	-	-	2	1	-	5	2	3	2	9	24	3.3
C14	Pharynx unspecified	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	2	0.3
C15	Oesophagus	-	-	-	-	-	-	1	1	3	9	7	4	8	9	8	14	64	8.7
C16	Stomach	-	-	-	-	-	-	3	2	3	5	13	21	32	35	39	64	217	29.6
C17	Small intestine	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-	-	3	0.4
C18	Colon	-	-	-	-	-	1	-	1	3	1	-	5	4	7	4	7	33	4.5
C19 - C20	Rectum	-	-	-	-	-	4	2	2	-	1	-	5	6	7	4	9	40	5.4
C21	Anus	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	0.1
C22	Liver	-	-	-	-	-	-	2	2	2	3	3	4	7	5	14	17	59	8.0
C23 - C24	Gallbladder etc.	-	-	-	-	-	-	-	-	-	-	1	-	2	3	5	8	19	2.6
C25	Pancreas	-	-	-	-	-	-	1	1	-	2	-	4	1	3	2	1	15	2.0

ICD 10	Sites	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+	Total	%
C30 - C31	Nose, sinuses etc.	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	3	0.4
C32	Larynx	-	-	-	-	-	-	-	-	1	2	-	-	1	-	1	7	12	1.6
C33 - C34	Trachea, bronchus and lung	-	-	-	-	-	-	-	1	2	2	-	4	8	2	7	15	41	5.6
C37 - C38	Other thoracic organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40 - C41	Bone	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	1	4	0.5
C43	Melanoma of skin	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	0.1
C44	Other skin	-	-	-	-	-	-	-	-	-	-	-	-	3	-	2	2	7	1.0
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0.1
C47, C49	Connective and soft tissue	-	1	-	-	-	-	-	-	-	-	1	1	2	1	1	-	7	1.0
C50	Breast	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2	0.3
C60	Penis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3	0.4
C61	Prostate	-	-	-	-	-	-	-	-	-	-	-	-	3	5	1	7	16	2.2
C62	Testis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C63	Other male genital organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney	-	-	-	-	-	-	-	-	-	-	-	1	-	2	1	1	5	0.7
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	6	9	1.2

ICD 10	Sites	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+	Total	%
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
C70 - C72	Brain, nervous system	-	-	-	-	-	-	-	2	1	1	1	2	1	-	1	1	10	1.4
C73	Thyroid	-	-	-	-	-	-	-	1	1	-	-	1	1	1	-	4	9	1.2
C74	Adrenal gland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin disease	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	0.1
C82 - C86, C96	Non-Hodgkin lymphoma	-	-	2	-	-	-	-	-	1	2	2	2	-	-	-	5	14	1.9
C88	Immunoproliferative diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple myeloma	-	-	-	-	-	-	-	-	-	-	1	1	1	-	3	2	8	1.1
C91	Lymphoid leukaemia	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	3	0.4
C92 - C94	Myeloid leukaemia	1	-	2	1	-	-	-	-	1	2	1	-	-	1	1	-	10	1.4
C95	Leukaemia unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	0.1
Other and Unspecified*		-	-	-	-	-	1	1	1	2	-	7	4	5	3	2	12	38	5.2
Total		**2**	**1**	**5**	**4**	**1**	**8**	**12**	**15**	**32**	**32**	**47**	**68**	**95**	**99**	**112**	**201**	**734**	**100**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.12: Number of cancer deaths by five-year age group and site (ICD 10): 2019-2021 Females Bhutan
% = Relative Proportion of Cancers of All Sites

ICD 10	Sites	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+	Total	%
C00	Lip	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C01 - 02	Tongue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C03 - 06	Mouth	-	-	-	-	-	-	-	-	-	-	1	-	2	2	-	1	6	0.8
C07 - 08	Salivary glands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0.1
C09	Tonsil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0.1
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	Nasopharynx	-	-	-	-	-	-	-	-	-	2	1	1	-	1	-	-	5	0.7
C12 - 13	Hypopharynx	-	-	-	-	-	-	-	-	-	1	1	1	-	-	1	-	4	0.6
C14	Pharynx unspecified	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	1	4	0.6
C15	Oesophagus	-	-	-	-	-	-	-	-	1	1	3	5	6	5	2	2	25	3.4
C16	Stomach	-	-	-	-	1	1	3	3	4	8	8	8	22	20	18	46	142	19.5
C17	Small intestine	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	2	0.3
C18	Colon	-	-	-	-	-	1	1	2	-	-	2	3	6	5	1	5	26	3.6
C19 - 20	Rectum	-	-	-	-	-	1	-	1	1	1	2	4	3	3	3	6	25	3.4
C21	Anus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0.1
C22	Liver	-	-	-	-	-	-	1	1	1	1	1	2	4	8	4	11	34	4.7
C23 - 24	Gallbladder etc.	-	-	-	-	-	-	-	1	2	4	-	4	8	4	10	7	40	5.5
C25	Pancreas	-	-	-	-	-	-	-	1	-	-	2	-	3	1	3	1	11	1.5

ICD 10	Sites	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+	Total	%
C30-31	Nose, sinuses etc.	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	3	0.4
C32	Larynx	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	2	7	1.0
C33 - 34	Trachea, bronchus and lung	-	-	-	-	-	-	1	-	3	2	4	5	8	11	10	13	57	7.8
C37-38	Other thoracic organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40 - 41	Bone	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	3	0.4
C43	Melanoma of skin	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	2	0.3
C44	Other skin	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0.1
C47, C49	Connective and soft tissue	-	-	1	-	-	2	-	-	1	1	-	-	-	-	1	-	6	0.8
C50	Breast	-	-	-	-	1	2	4	7	5	7	6	5	2	7	2	2	50	6.9
C51	Vulva	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2	4	0.6
C52	Vagina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0.1
C53	Cervix uteri	-	-	-	-	-	1	5	10	9	15	20	11	10	6	7	13	107	14.7
C54	Corpus uteri	-	-	-	-	-	-	-	1	-	1	-	2	-	1	-	-	5	0.7
C55	Uterus unspecified	-	-	-	-	-	-	-	-	1	-	-	1	1	1	1	-	5	0.7
C56	Ovary	-	-	-	-	-	-	-	1	2	3	5	6	3	3	7	6	36	5.0
C57	Other female genital organs	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	0.1
C58	Placenta	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	2	0.3
C64	Kidney	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	1	5	0.7

ICD 10	Sites	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+	Total	%
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	-	-	-	-	-	-	-	-	-	1	1	1	1	-	1	2	7	1.0
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	0.1
C70 - 72	Brain, nervous system	-	1	1	-	1	-	-	1	1	2	3	-	5	2	1	3	21	2.9
C73	Thyroid	-	-	-	-	-	-	-	-	-	-	2	1	-	1	1	2	7	1.0
C74	Adrenal gland	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	0.1
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin disease	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C82 - C86, C96	Non-Hodgkin lymphoma	-	1	-	-	-	-	-	-	-	1	1	1	3	1	3	4	15	2.1
C88	Immunoproliferative diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
C90	Multiple myeloma	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	-	3	0.4
C91	Lymphoid leukaemia	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	3	0.4
C92-94	Myeloid leukaemia	-	-	-	-	-	2	1	-	1	1	1	-	-	-	2	2	10	1.4
C95	Leukaemia unspecified	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	0.3
Other and Unspecified*		-	-	-	-	-	-	1	2	1	2	2	6	4	3	2	11	34	4.7
	Total	2	2	3	1	4	12	18	32	34	59	67	67	95	95	87	149	727	100

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.13: Average annual Age Specific, Crude (CR), Age-Adjusted (AAR) and Truncated (35-64 yrs) (TR) Mortality Rate per 100,000 population: 2019-2021 – Males Bhutan

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C00	-	-	-	-	-	-	-	-	-	-	2.9	-	-	-	-	-	0.1	0.1	0.5
C01 - C02	-	-	-	-	-	-	0.6	0.8	0.9	-	2.9	-	2.2	5.5	-	2.8	0.6	0.6	1.1
C03 - C06	-	-	-	-	-	-	-	-	3.7	-	2.9	-	4.4	11.1	8.0	8.4	1.1	1.2	1.8
C07 - C08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	0.1	0.1	-
C09	-	-	-	-	-	-	-	-	-	-	-	1.8	-	2.8	11.9	-	0.3	0.4	0.2
C10	-	-	-	-	-	-	-	-	-	-	-	1.8	-	-	8.0	-	0.2	0.2	0.2
C11	-	-	-	-	0.7	-	0.6	-	2.8	-	2.9	1.8	4.4	8.3	-	-	0.8	0.9	1.8
C12 - C13	-	-	-	-	-	-	-	-	1.9	1.2	-	8.9	4.4	8.3	8.0	25.1	1.5	1.6	2.3
C14	-	-	-	-	-	0.6	-	-	0.9	-	-	-	-	-	-	-	0.1	0.1	0.2
C15	-	-	-	-	-	-	0.6	0.8	2.8	10.9	10.1	7.2	17.8	24.9	31.8	39.1	4.1	4.6	7.6
C16	-	-	-	-	-	-	1.9	1.5	2.8	6.1	18.7	37.6	71.0	96.9	155.1	178.7	13.8	15.6	19.0
C17	-	-	-	-	-	-	-	-	-	1.2	-	1.8	2.2	-	-	-	0.2	0.2	0.8
C18	-	-	-	-	-	0.6	-	0.8	2.8	1.2	-	8.9	8.9	19.4	15.9	19.5	2.1	2.3	3.2
C19 - C20	-	-	-	-	-	2.4	1.2	1.5	-	1.2	-	8.9	13.3	19.4	15.9	25.1	2.5	2.7	3.4
C21	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	0.1	0.1	-
C22	-	-	-	-	-	-	1.2	1.5	1.9	3.6	4.3	7.2	15.5	13.8	55.7	47.5	3.8	4.1	5.0
C23 - C24	-	-	-	-	-	-	-	-	-	-	1.4	-	4.4	8.3	19.9	22.3	1.2	1.3	0.8
C25	-	-	-	-	-	-	0.6	0.8	-	2.4	-	7.2	2.2	8.3	8.0	2.8	1.0	1.1	1.8
C30 - C31	-	-	-	-	-	0.6	-	-	-	-	-	-	-	-	4.0	2.8	0.2	0.2	-

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C32	-	-	-	-	-	-	-	-	0.9	2.4	-	-	2.2	-	4.0	19.5	0.8	0.8	0.9
C33 - C34	-	-	-	-	-	-	-	0.8	1.9	2.4	-	7.2	17.8	5.5	27.8	41.9	2.6	2.9	4.2
C37 - C38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40 - C41	-	-	-	1.5	-	-	-	-	0.9	-	-	-	-	-	-	2.8	0.3	0.2	0.2
C43	-	-	-	-	-	-	-	-	-	-	1.4	-	-	-	-	-	0.1	0.1	0.2
C44	-	-	-	-	-	-	-	-	-	-	-	-	6.7	-	8.0	5.6	0.4	0.5	0.9
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	0.1	0.1	-
C47, C49	-	0.8	-	-	-	-	-	-	-	-	1.4	1.8	4.4	2.8	4.0	-	0.4	0.6	1.0
C50	-	-	-	-	-	-	-	-	-	-	1.4	-	-	-	4.0	-	0.1	0.2	0.2
C60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.9	-	0.2	0.2	-
C61	-	-	-	-	-	-	-	-	-	-	-	-	6.7	13.8	4.0	19.5	1.0	1.2	0.9
C62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	-	-	-	-	-	-	-	-	-	-	-	1.8	-	5.5	4.0	2.8	0.3	0.4	0.2
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	-	-	-	-	-	2.2	2.8	4.0	16.8	0.6	0.6	0.3
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C69	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-
C70 - C72	-	-	-	-	-	-	-	1.5	0.9	1.2	1.4	3.6	2.2	-	4.0	2.8	0.6	0.7	1.7
C73	-	-	-	-	-	-	-	0.8	0.9	-	-	1.8	2.2	2.8	-	11.2	0.6	0.6	0.8
C74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	-	-	0.1	0.1	0.3
C82 - C86, C96	-	-	1.5	-	-	-	-	-	0.9	2.4	2.9	3.6	-	-	-	14.0	0.9	0.9	1.6
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	-	-	-	-	1.4	1.8	2.2	-	11.9	5.6	0.5	0.6	0.7
C91	-	-	0.8	0.7	-	-	-	-	-	-	-	-	-	-	-	2.8	0.2	0.2	-
C92 - C94	0.8	-	1.5	0.7	-	-	-	-	0.9	2.4	1.4	-	-	2.8	4.0	-	0.6	0.7	0.9
C95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.0	-	0.1	0.1	-
O&U*	-	-	-	-	-	0.6	0.6	0.8	1.9	-	10.1	7.2	11.1	8.3	8.0	33.5	2.4	2.6	4.5
C91	5.2	0.9	0.8	0.7	0.7	-	0.7	-	-	1.4	-	-	-	-	-	-	0.8	1.0	0.3
C92 - 94	1.7	0.9	-	0.7	0.7	0.7	1.4	-	4.3	2.8	3.2	2.0	2.3	-	12.7	5.4	1.6	1.7	2.4
C95	0.9	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	0.1	0.2	-
O&U*	-	-	-	-	-	2.8	-	1.8	1.1	2.8	6.5	15.8	14.0	14.2	12.7	40.4	3.5	3.6	6.0
Total	**1.7**	**0.8**	**3.8**	**2.9**	**0.7**	**4.8**	**7.4**	**11.4**	**29.7**	**38.9**	**67.6**	**121.7**	**210.9**	**274.1**	**445.3**	**561.1**	**46.7**	**51.6**	**69.3**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

Table 24.14: Average annual Age Specific, Crude (CR), Age-Adjusted (AAR) and Truncated (35-64 yrs) (TR) Mortality Rate per 100,000 Population: 2019-2021 – Females Bhutan

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C01-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C03-06	-	-	-	-	-	-	-	-	-	-	1.6	-	4.7	5.7	-	2.7	0.4	0.5	0.9
C07-08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	0.1	0.1	-
C09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	0.1	0.1	-
C10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	-	-	-	-	-	-	-	-	-	2.8	1.6	2.0	-	2.8	-	-	0.3	0.4	1.1
C12-13	-	-	-	-	-	-	-	-	-	1.4	1.6	2.0	-	-	4.2	-	0.3	0.3	0.8
C14	-	-	-	-	-	-	-	-	-	1.4	-	-	2.3	2.8	-	2.7	0.3	0.3	0.6
C15	-	-	-	-	-	-	-	-	1.1	1.4	4.8	9.9	14.0	14.2	8.5	5.4	1.7	2.0	4.3
C16	-	-	-	-	0.7	0.7	2.2	2.6	4.3	11.2	12.9	15.8	51.3	56.9	76.1	123.9	9.9	10.4	14.2
C17	-	-	-	-	0.7	-	-	-	-	-	-	-	2.3	-	-	-	0.1	0.2	0.3
C18	-	-	-	-	-	0.7	0.7	1.8	-	-	3.2	5.9	14.0	14.2	4.2	13.5	1.8	1.9	3.4
C19-20	-	-	-	-	-	0.7	-	0.9	1.1	1.4	3.2	7.9	7.0	8.5	12.7	16.2	1.7	1.8	3.1
C21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	0.1	0.1	-
C22	-	-	-	-	-	-	0.7	0.9	1.1	1.4	1.6	4.0	9.3	22.7	16.9	29.6	2.4	2.5	2.6
C23-24	-	-	-	-	-	-	-	0.9	2.1	5.6	-	7.9	18.7	11.4	42.3	18.9	2.8	3.1	5.1
C25	-	-	-	-	-	-	-	0.9	-	-	3.2	-	7.0	2.8	12.7	2.7	0.8	0.9	1.6

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C30-31	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	8.5	-	0.2	0.3	0.3
C32	-	-	-	-	-	-	-	-	-	-	-	-	-	8.5	8.5	5.4	0.5	0.5	-
C33-34	-	-	-	-	-	-	0.7	-	3.2	2.8	6.5	9.9	18.7	31.3	42.3	35.0	4.0	4.4	5.9
C37-38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-41	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	4.2	2.7	0.2	0.2	0.3
C43	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	4.2	-	0.1	0.1	-
C44	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	0.1	0.1	-
C47, C49	-	-	0.8	-	-	1.4	-	-	1.1	1.4	-	-	-	-	4.2	-	0.4	0.4	0.5
C50	-	-	-	-	0.7	1.4	2.9	6.1	5.3	9.8	9.7	9.9	4.7	19.9	8.5	5.4	3.5	3.6	7.5
C51	-	-	-	-	-	-	-	-	-	1.4	-	-	-	2.8	-	5.4	0.3	0.3	0.3
C52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	0.1	0.1	-
C53	-	-	-	-	-	0.7	3.6	8.8	9.6	20.9	32.3	21.8	23.3	17.1	29.6	35.0	7.4	7.8	18.6
C54	-	-	-	-	-	-	-	0.9	-	1.4	-	4.0	-	2.8	-	-	0.3	0.4	1.0
C55	-	-	-	-	-	-	-	-	1.1	-	-	2.0	2.3	2.8	4.2	-	0.3	0.4	0.8
C56	-	-	-	-	-	-	-	0.9	2.1	4.2	8.1	11.9	7.0	8.5	29.6	16.2	2.5	2.8	5.1
C57	-	-	-	-	-	-	-	-	-	1.4	-	-	-	-	-	-	0.1	0.1	0.3
C58	-	-	-	-	-	0.7	-	-	-	-	1.6	-	-	-	-	-	0.1	0.1	0.3

ICD 10	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75+	CR	AAR	TR
C64	-	-	-	-	-	-	-	-	-	2.8	-	-	-	5.7	-	2.7	0.3	0.4	0.5
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	-	-	1.4	1.6	2.0	2.3	-	4.2	5.4	0.5	0.5	1.1
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	-	0.1	0.1	-
C70-72	-	0.9	0.8	-	0.7	-	-	0.9	1.1	2.8	4.8	-	11.7	5.7	4.2	8.1	1.5	1.6	3.2
C73	-	-	-	-	-	-	-	-	-	-	3.2	2.0	-	2.8	4.2	5.4	0.5	0.5	0.8
C74	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	0.1	0.1	-
C75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C82 - C86, C96	-	0.9	-	-	-	-	-	-	-	1.4	1.6	2.0	7.0	2.8	12.7	10.8	1.0	1.2	1.7
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	-	-	1.1	-	-	-	-	5.7	-	-	0.2	0.2	0.2
C91	-	-	0.8	0.7	-	-	0.7	-	-	-	-	-	-	-	-	-	0.2	0.2	-
C92-94	-	-	-	-	-	1.4	0.7	-	1.1	1.4	1.6	-	-	-	8.5	5.4	0.7	0.7	0.7
C95	0.9	-	-	-	-	-	-	0.9	-	-	-	-	-	-	-	-	0.1	0.2	0.2
O&U*	-	-	-	-	-	-	0.7	1.8	1.1	2.8	3.2	11.9	9.3	8.5	8.5	29.6	2.4	2.4	4.3
Total	**1.7**	**1.7**	**2.3**	**0.7**	**3.0**	**8.5**	**13.0**	**28.1**	**36.2**	**82.2**	**108.1**	**132.6**	**221.5**	**270.1**	**367.7**	**401.3**	**50.5**	**54.2**	**91.5**

* O & U includes the sites (ICD - 10: C26, C39, C48, C76, C77, C78, C79, C80, C97)

25. References

1. Bureau, N. S. (n.d.). National Statistics Bureau. https://www.nsb.gov.bt/
2. Bhutan Interactive Data Portal. Bhutan Statistic Bureau. (n.d.). https://www.nsb.gov.bt/bhutan-interactive-data-portal/population/
3. National Population Health Survey (NPHS) 2023 report. Ministry of Health. (n.d.). https://www.moh.gov.sg/others/resources-and-statistics/nphs-2023
4. Ministry of Health, B. (n.d.-a). Bhutan covid 19 vaccination program. Bhutan Vaccine System | MoH Bhutan. https://bvs.systems.gov.bt/
5. Bhutan, T. M. of H. (2020). (rep.). The Health Flagship Report (pp. 2–32). Thimphu, Thimphu: The Ministry of Health.
6. International Incidence of Childhood Cancer 3 – indicators of data quality: IARC – WHO, Lyon, France
7. International Classification of Childhood Cancer Volume III: International Agency for Research on Cancer (IARC), World Health Organization (WHO) https://iicc.iarc.fr/results/ accessed on Jul 2022.
8. Picture of Ministry of Health extracted from official page Facebook of Ministry of Health, Bhutan
9. Picture of Jigme Dorji Wangchuck National Referral Hospital extracted from official page Facebook of Jigme Dorji Wangchuck National Referral Hospital, Bhutan

26. Acknowledgment

The population-based cancer Bhutan gratefully acknowledge the help rendered by following dignitaries and medical centres:

1. Word Health Organization
2. International Agency for Research on Cancer
3. TATA Memorial Center, Kolkata, West Bengal, India
4. TATA Memorial Hospital, Kolkata, West Bengal, India
5. Royal Insurance Corporation of Bhutan Limited
6. Bhutan Cancer Society, Thimphu, Bhutan
7. Medical Record Unit, JDWNRH
8. Referral Unit, JDWNRH
9. Oncology and Radiation Therapy units, JDWNRH
10. Endoscopy and Colposcopy Units, JDWNRH
11. CT/MRI Unit of Radiology Department, JDWNRH
12. Histology, Cytology and Hematology Units, Department of Laboratory, JDWNRH
13. Heads and CMOs of all Regional and District Hospitals and Grade I BHUs