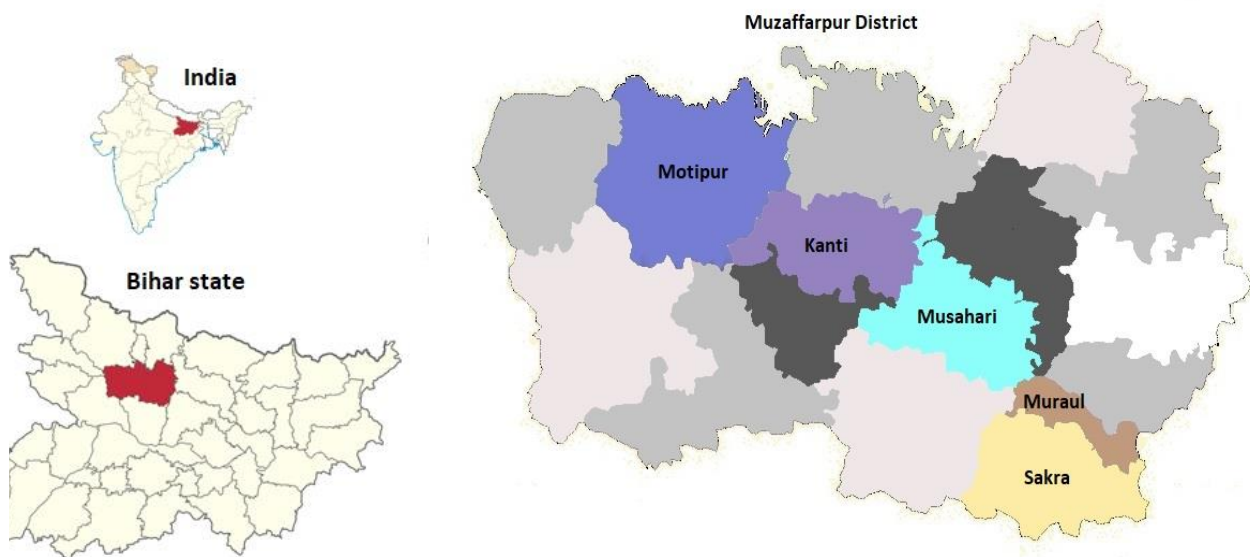




Cancer Incidence and Mortality in Muzaffarpur, Bihar state, India: 2019-2021

Population-Based Cancer Registry (PBCR) Report



Project of
Tata Memorial Centre (TMC), Mumbai, India
(A Grant-in-Aid Institution under Department of Atomic Energy, Government of India)
Centre for Cancer Epidemiology (CCE)
Advanced Centre for Treatment Research and Education in Cancer, Navi Mumbai, India
Mahamana Pandit Madan Mohan Malviya Cancer Centre (MPMMCC), Varanasi, UP, India
Homi Bhabha Cancer Hospital & Research Centre (HBCH&RC), Muzaffarpur, Bihar, India
Sri Krishna Medical College and Hospital (SKMCH), Muzaffarpur, Bihar, India
and
Health Department, Government of Bihar, India

Population-based cancer registry (PBCR), Muzaffarpur, Bihar first-year report release

The first report of the population-based cancer registry Muzaffarpur for the year 2018 was released by the Hon'ble Deputy Chief Minister of Bihar Shri Tejashwi Prasad Yadav along with other dignitaries from Bihar Government and Tata Memorial Centre, Mumbai on 4th February 2023.



Dignitaries during the PBCR Muzaffarpur report release event (from left to right) Dr. Satyajit Pradhan (Director, MPMMCC & HBCH Varanasi), Dr. Atul Budukh (Professor, CCE-TMC), Dr. Pankaj Chaturvedi (then-Dy. Director, CCE- ACTREC), Shri Tejashwi Prasad Yadav (Deputy Chief Minister of Bihar), Mr. Pratayaya Amrit (IAS, ACS, Bihar), Mr. K Senthil Kumar (IAS, Health Secretary, Bihar), Mr. Sanjay Kumar Singh (IAS, Executive Director, Health Department, Bihar).

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I. Highlights

- ◆ The Muzaffarpur population-based cancer registry (PBCR) is the first cancer registry in Bihar state, India.
- ◆ The registry was started in the year 2018 and is functioning with the help of Sri Krishna Medical College and Hospital (SKMCH), Muzaffarpur and the Health Department, Government of Bihar.
- ◆ The Muzaffarpur PBCR covers five blocks: Motipur, Kanti, Musahari, Sakra, Muraul and Muzaffarpur Municipal Corporation [Urban areas (83 wards) and 528 villages] with an estimated average population for the year 2019-2021 is 2.1 million. 78% of the population covered by the registry is rural.
- ◆ Population-based cancer registry (PBCR) Muzaffarpur released first report (2018) by the Hon'ble Deputy Chief Minister of Bihar Shri Tejashwi Prasad Yadav on 4th February 2023.
- ◆ The registry staff was selected locally and trained in cancer registration at different units of the Tata Memorial Centre (TMC), Mumbai.
- ◆ The registry staff collected the cancer cases data from all the cancer centres/ private hospitals/ laboratories in Muzaffarpur district and from nearby areas. The staff has interacted with more than 3,800 community leaders to gather cancer case information.
- ◆ In the year 2019-2021, the cancer registry recorded 2,165 incidence cancer cases including 1,048 males (48.4%) and 1,117 females (51.6%).
- ◆ The age-adjusted incidence rate for males is 38.9 per 100,000 population and for females, it is 46.9 per 100,000 population.
- ◆ **The cancer incidence rate in urban and rural areas for males is 54.9 and 34.6 per 100,000 population respectively. For females, the cancer incidence rate in urban and rural areas is 59.3 and 43.5 per 100,000 population respectively.**
- ◆ 1 in 23 males and 1 in 19 females are at risk of developing cancer.
- ◆ Among registered cancer patients, one in every six males is illiterate, whereas one in every two females is illiterate.
- ◆ Among males, the top five leading cancer sites are mouth, tongue, prostate, gall bladder, and liver. Whereas, in females, it is breast, cervix uteri, gall bladder, lung, and ovary cancer.
- ◆ As per the Muzaffarpur cancer registry data, the tobacco-related cancer burden is 34.4% in males, 1 in 3 cases of cancer in men were linked to tobacco, compared to 1 in 8 cases in females.

- ◆ In the year 2019-2021, out of 2,165 registered cancer cases, 1,408 (65.0%) cases have microscopic verification.
- ◆ One out of four cases are obtained from death certificate only (DCO) and verbal autopsy.
- ◆ Of the total 2,165 cancer cases, 60 (2.8%) cases are paediatric cancer cases.
- ◆ For the year 2019-2021, the cancer registry recorded 1,641 cancer deaths including 828 (50.5%) deaths among males and 813 (49.5%) deaths among females.
- ◆ The age-adjusted mortality rate for males is 31.0 per 100,000 population and for females, it is 34.2 per 100,000 population.
- ◆ 1 in 29 males and 1 in 26 females are at risk of death due to cancer.
- ◆ Among males, the mouth, tongue, and prostate cancer cases registered by Muzaffarpur PBCR in 2018 were followed up to 31st December 2023. The five years' relative survival of mouth, tongue, and prostate were 25.1, 32.7, and 32.2 respectively.
- ◆ Moreover, the five years' relative survival of breast, cervix uteri, and gall bladder among female were 35.2, 22.3, and none of the gall bladder cancer cases survived respectively,
- ◆ Lack of co-operation from major cancer treating centres and community as well as poor documentation of medical records are major challenges for the cancer registration in Muzaffarpur. Moreover, the huddles like office space, staff sustainability, extreme weather condition, inadequate transportation facilities, and COVID-19 pandemic hampered the cancer registration process.
- ◆ The cancer registry work hampered due to COVID-19 pandemic. As a result, cancer registry has noted under reporting/ under diagnosis of the cancer incidence and mortality cases. We expect an improvement in the cancer registration process in the coming years.
- ◆ Due to lack of infrastructure in the district, TMC, Mumbai with the support of the Government of Bihar has started Homi Bhabha Cancer Hospital & Research Centre (HBCH&RC) and the hospital is functioning since 4th February 2020 in Muzaffarpur. In future, this will be the main source of cancer registration.

II. Executive summary

Background

Tata Memorial Centre (TMC), Mumbai an autonomous institute under the Department of Atomic Energy, Government of India, started a population-based cancer registry (PBCR) in Muzaffarpur district, Bihar state in September 2018, with the help of Sri Krishna Medical College and Hospital (SKMCH), and Health Department, Government of Bihar. The objective of the cancer registry is to measure the burden of cancer in terms of incidence and mortality and to know the patterns of cancer in the district. This is the first PBCR in Bihar state. The registry data will be useful in planning cancer control activities and strengthening cancer care services in the Muzaffarpur district. We are presenting here the second report of Muzaffarpur PBCR for the year 2019-2021.

Population covered

The cancer registry covers the five blocks of the district – Kanti, Motipur (Baruraj), Murauli (Dholi), Musahari, Sakra, and Muzaffarpur Municipal Corporation, with an estimated average population for the year 2019-2021 is 2.1 million. The registry covers urban areas (83 wards) as well as 528 villages in the district. As per 2019-2021 estimated average population of registry area, 78.4% of population covered by PBCR is rural.

Registration method

Trained field staff of the cancer registry regularly visit the villages as well as different hospitals, pathology laboratories, medical colleges, and the birth and death registrar's office to collect cancer incidence and death cases. The registry staff periodically interacts with the village sarpanch, Auxiliary Nurse Midwife (ANM), Accredited Social Health Activist (ASHA) workers, and primary health centre (PHC) staff to know the diagnosed cancer cases in the area as well as cancer deaths that have occurred in the village. With the help of ASHA workers, the registry staff interacts with the patient's relatives and notes down the information available.

In the urban area, the staff interacts with the local municipal corporators and local leaders to obtain information about the cancer cases diagnosed in the community. The information received from ASHA workers/patients' relatives/local leaders is further confirmed at the patient's treating hospital.

After confirming the patient's residence (resident of the district for at least one year) and duplicate checking by senior staff, the case is registered in the prescribed format. The data entry is carried out in *CanReg5* software.

Patients from this area travel to Patna, Darbhanga, Kolkata, Lucknow, Varanasi, Delhi, Jamshedpur, Chandigarh, Gorakhpur, Hyderabad, Bangalore, and Mumbai for cancer treatment and also, receive the treatment at SKMCH, Muzaffarpur and other private hospitals.

TMC, Mumbai started Homi Bhabha Cancer Hospital & Research Centre (HBCH&RC) in Muzaffarpur city from 4th February 2020. The centre is well-functioning in providing cancer care and treatment services. The HBCH&RC is following the TMC treatment and follow-up protocol. In the years 2021-2023, more than 10,000 cancer patients have been registered. The hospital provides surgical and medical oncology facilities along with preventive and palliative care. We expect the radiotherapy treatment will also be commenced in the coming year. The PBCR staff has helped in establishing the hospital-based cancer registry in the hospital.

Results

This report presents the cancer registry data for the year 2019-2021. In the year 2019-2021, the cancer registry recorded 2,165 incidence cancer cases including 1,048 males (48.4%) and 1,117 females (51.6%). The age-adjusted incidence rate for males is 38.9 per 100,000 population and for females, it is 46.9 per 100,000 population. The cumulative risk for the age group 0-74 in males is 4.3% (1 in 23 males is at risk of developing cancer) and in females, it is 5.1% (1 in 19 females is at risk of developing cancer).

For the year 2019-2021, the cancer registry recorded 1,641 cancer deaths including 828 (50.5%) deaths among males and 813 (49.5%) deaths among females. The age-adjusted mortality rate for males is 31.0 per 100,000 population and for females, it is 34.2 per 100,000 population. The cumulative risk of death due to cancer in the age group 0-74 in males is 3.4% and for females, it is 3.8% (1 in 29 males and 1 in 26 females is at risk of death due to cancer).

Cancer patterns in urban and rural areas

The Muzaffarpur cancer registry covers 78.4% of rural areas and 21.6% of urban areas. The cancer incidence rate in urban and rural areas for males is 54.9 and 34.6 per 100,000 population respectively. For females, the cancer incidence rate in urban and rural areas is 59.3 and 43.5 per 100,000 population. The rural areas cancer incidence rates are lower compared to urban areas. Mouth cancer is the leading cancer site in both urban and rural males with an age-adjusted incidence rate of 11.5 and 4.1 per 100,000 population respectively. For females, breast, cervix uteri and gall bladder are the top three leading cancer sites. Incidence rates in urban areas are higher than that in rural areas. Due to the COVID-19 pandemic, we have limited access to the urban area hospital. There is an under-reporting of cancer incidence and mortality cases.

Leading cancer sites

Among males; mouth, tongue, prostate, gall bladder, and liver are the leading cancer sites. Among females; breast, cervix uteri, gall bladder, lung, and ovary are 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 2019-2021

ICD-10	Sites	Number	%	CR	AAR	TR
C03-C06	Mouth	155	14.8	4.8	5.7	13.0
C01-C02	Tongue	77	7.3	2.4	2.8	6.5
C61	Prostate	51	4.9	1.6	1.8	1.9
C23-C24	Gallbladder etc.	46	4.4	1.4	1.8	4.6
C22	Liver	40	3.8	1.2	1.6	3.6

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 2019-2021

ICD-10	Sites	Number	%	CR	AAR	TR
C50	Breast	248	22.2	8.4	10.5	27.3
C53	Cervix uteri	141	12.6	4.8	5.8	13.7
C23-C24	Gallbladder etc.	123	11.0	4.2	5.2	13.1
C33-C34	Trachea, bronchus and lung	48	4.3	1.6	2.1	3.7
C56	Ovary	40	3.6	1.4	1.6	3.9

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

Primary unknown (C80) cases

This is the second report of the registry and the registry staff faced several challenges in collecting cancer patients' data. Poor medical documentation and lack of awareness of the disease in the community are the major challenges, as we were not able to trace the primary site of the patients in most of the records. In the year 2019-2021; of the 2,165 cases, 373 (17.2%) (male 17.1% and female 17.4%) cases of primary unknown were registered. The lack of adequate health infrastructure may be responsible for the primary unknown cases. In

addition to this, patient is reluctant to travel to the tertiary cancer centre for further diagnosis and treatment.

Late registration of 2018 incidence cases

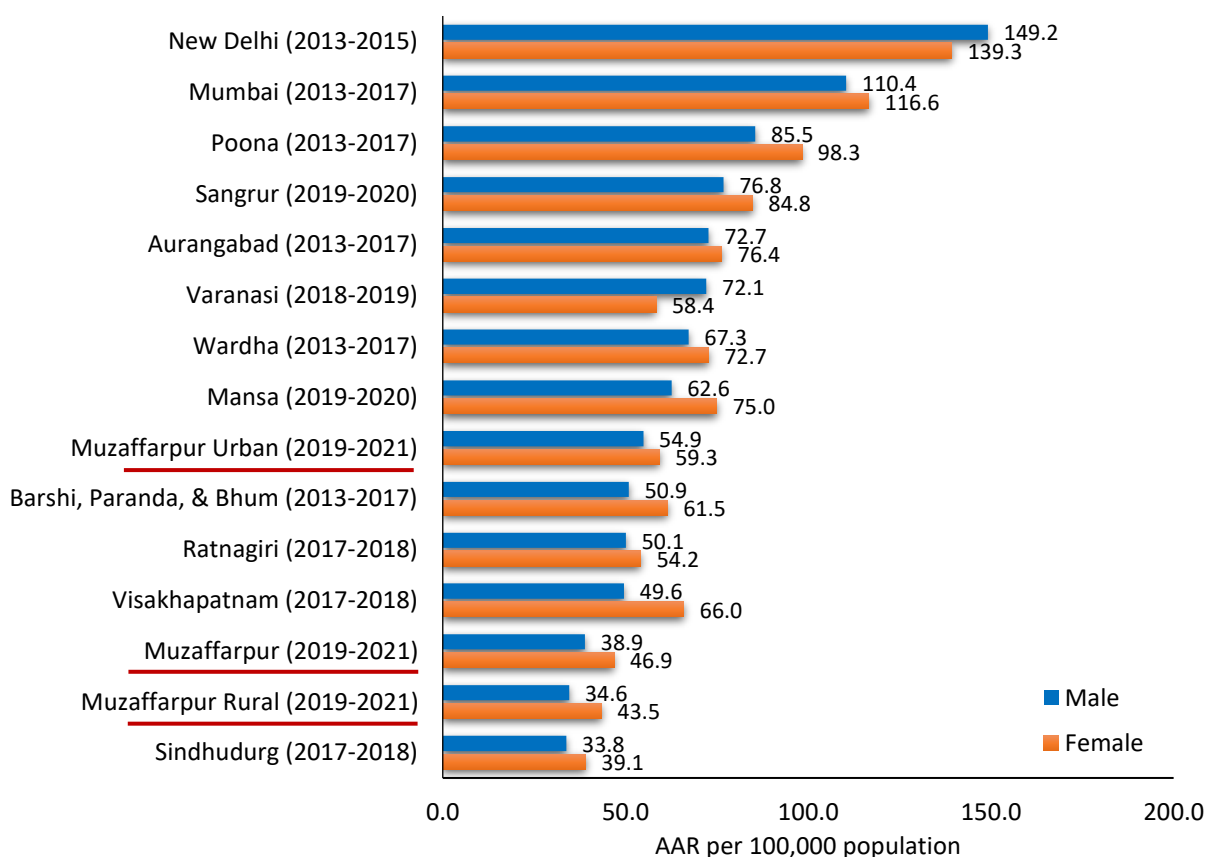
In the first-year report of the population-based cancer registry, we have noted the under-reporting of the cases. Few private laboratories, as well as leading hospitals, were reluctant in providing the cancer patient's data in the Muzaffarpur area. Due to continuous interaction with the community leaders/patient's relatives to gather the information, we have registered a few cancer cases after the first-year report (2018) release, which will be considered as late registration.

The registry has noted 40 (Male: 31 and Female: 9) late-registration incidence cases for the year 2018. After including the late registration, total cancer cases were 752 (Male: 389 and Female: 363) and the age-adjusted incidence rate for males for the year 2018 was 44.3 and for females, it was 46.6 per 100,000.

Comparison of Muzaffarpur PBCR rate with other cancer registries in India

The cancer incidence rates among male and females are lower as compared with other parts of India (Figure I).⁽¹⁻⁷⁾ The incidence rates reported by Muzaffarpur PBCR are low as there may be under-reporting.

Figure I: All site cancer incidence rate



Paediatric cancer burden

The Muzaffarpur PBCR is monitoring the paediatric cancer burden. The registry has maintained the data of the paediatric cancer cases as per the International Classification of Childhood Cancer (ICCC)-3 standard. Of the total 2,165 cancer cases, 60 (2.8%) cases are paediatric cancer cases. The paediatric cancer incidence in boys is 36.3 per million and for girls, it is 15.2 per million. The paediatric cancer rates are low compared to other registries in India. The registry may have missed the childhood cases and there may have been under-diagnosis.

Cancer control in the registry area

HBCH&RC along with the state government of Bihar has started cancer control activities in the district. The cancer registry staff assisted screening team in cancer control activities in the registry area. Also provided assistance when patients from registry area attend the HBCH&RC.

1. Bihar state profile

Bihar is located in the eastern region of India. Bihar lies between the humid West Bengal in the East and the sub-humid Uttar Pradesh in the West which provides it with a transitional position in respect of climate, economy and culture. It is bounded by Nepal in the North and by Jharkhand in the South. Bihar state is divided into two unequal parts (North Bihar and South Bihar) by the river Ganga which flows through the middle from West to East. The average elevation of Bihar land is 173 feet above sea level. Patna, situated on the bank of the river Ganga, is the capital of Bihar. The state is divided into nine divisions comprising of 38 districts.⁽⁸⁾

As per the 2011 Census, Bihar is the third most populous state of India with a total population of 104,099,452 [54,278,157 (52.1%) male and 49,821,295 (47.9%) female]. The Census of India 2011 indicates that 89% of Bihar's population lived in rural areas. The population density of Bihar is 1,106 per sq. km. The state is spread across 94,163 sq. km. ⁽⁹⁾ The literacy rate is 61.8%. The key characteristics are represented in Table 1.

Table 1: Bihar state population, literacy and area

Sr. No.	Characteristic	Unit	Value
	Area		94,163.0
1.	a) Urban	Km ²	1,095.5
	b) Rural		92,257.5
	Population		104,099,452
2.	a) Urban	Number	11,758,016
	b) Rural		92,341,436
3.	District	Number	38
4.	Density	Km ²	1,106
5.	Female per 1000 male	Number	918
6.	Literacy Rate	%	61.8

2. Muzaffarpur district profile

Muzaffarpur district, 'The Land of Leechi' was created in 1875 for the sake of administrative convenience by splitting up the earlier district of Tirhut. The present district of Muzaffarpur came into its existence in the 18th century and was named after Muzaffar Khan, an Amil (Revenue Officer) under British Dynasty. Muzaffarpur district of Bihar is spread over an area of 3,172 sq. km. The district is bounded on the north by East Champaran and Sitamarhi districts, on the South by the district of Vaishali and Saran, on the East by the districts of Darbhanga and Samastipur (part) and on the West by Saran and part of Gopalganj districts. The district headquarters is located at Muzaffarpur.

The alluvial plain is a tract of great fertility. The soil of the district is largely alluvial. A special feature of the district is that due to continuous deposit of silt, many of its riverbeds are higher than the adjoining areas. This leads to frequent floods during the rainy season, particularly in the northeast and southwest parts of the district. ⁽¹⁰⁾

Muzaffarpur district is divided into 16 blocks which are situated in two sub-divisions namely East and West. As per the census 2011, the total population of the district is 4,801,062 (Male: 2,527,497 [52.6%], Female: 2,273,565 [47.4%]). Out of the total population, 9.9% of the population of Muzaffarpur district lives in urban areas while 90.1% in rural areas. ⁽⁹⁾ The Muzaffarpur district blocks and the number of villages are mentioned in Table 2 and the location of the Muzaffarpur district is in Figure 1.

Figure 1: Location of Muzaffarpur district, Bihar



Table 2: Blocks under Muzaffarpur district ⁽¹⁰⁾

Sr. No.	Blocks	Panchayat	Number of Villages
1	Aurai	26	116
2	Bandra	12	32
3	Bochahan	20	134
4	Gaighat	23	114
5	Kanti	21	116
6	Katra	22	80
7	Kurhani	39	166
8	Marwan	14	60
9	Minapur	28	154
10	Motipur (Baruraj)	32	137
11	Muraul (Dholi)	9	37
12	Musahari	26	117
13	Sahebganj	21	131
14	Sakra	28	121
15	Saraiya	30	124
16	Paroo	34	158
Total		385	1,797

Health Infrastructure of Muzaffarpur district ⁽¹⁰⁾

Muzaffarpur district has one medical college and hospital, and one district hospital with basic medical diagnostic and surgical facilities. The district has 16 blocks PHC, 83 additional primary health centres (APHC) and 500 health sub-centres. Primary health care is offered in these hospitals. Detailed information about the hospitals and PHC is presented in Table 3.

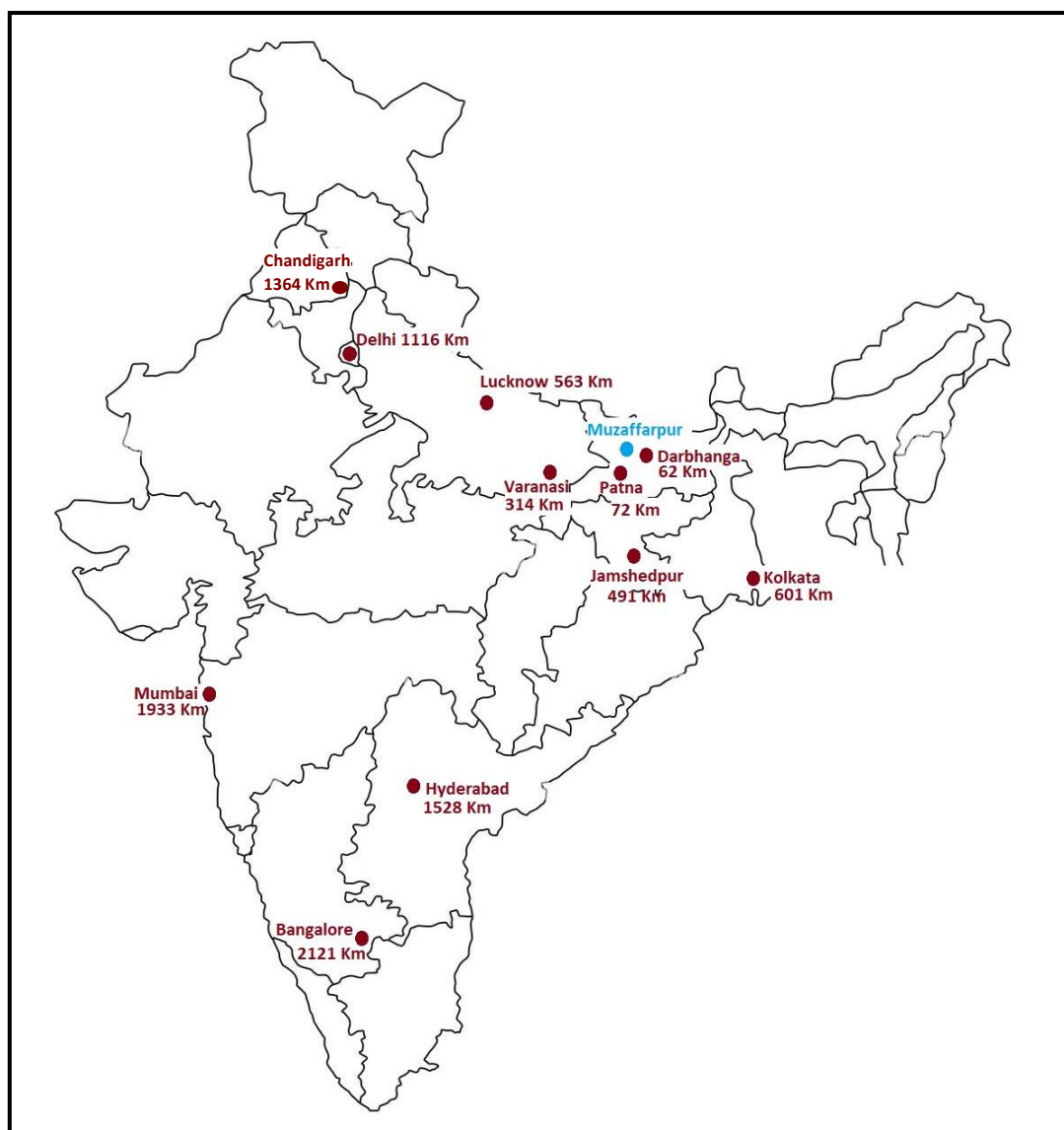
Table 3: Major health facilities in Muzaffarpur district

Sr. No.	Institute	Number
1.	Medical College and Hospital	1
2.	Sadar Hospital	1
3.	Referral Hospital	1
4.	Primary Health Centre (PHC)	16
5.	Additional Primary Health Centre (APHC)	83
6.	Health Sub Centre (HSC)	500
Total		602

Cancer treatment facilities are not available in the district. Patients have to travel to many other places such as Darbhanga, Patna, Jamshedpur, Varanasi, Kolkata, New Delhi, Bangalore, Chandigarh, and Mumbai for treatment. The closest centre is Darbhanga (62 Km) and the farthest is Bangalore (2,121 Km). The distance from Muzaffarpur to different cancer treatment centres is shown in Figure 2.

TMC, Mumbai – an autonomous unit of the Department of Atomic Energy, Government of India with the support of the Government of Bihar has started HBCH&RC and the hospital is functioning since 4th February 2020 in Muzaffarpur. At present, the centre has started Day-Care chemotherapy, surgical and other medical oncology facilities. The hospital is listed in the government-sponsored scheme “Chief Minister Medical Relief Fund” and “Pradhan Mantri Jan Arogya Yojana (Ayushman Bharat Scheme)” for cancer treatment.

Figure 2: The distance from Muzaffarpur to different cancer treatment centres



3. Administrative orders

Principal Secretary – Health Department, Government of Bihar has issued an administrative order to all the hospitals in the state, to provide data of all cancer patients to the PBCR of Muzaffarpur. Due to administrative support from the government of Bihar, we have good cooperation from many government and private cancer centres.

Government of Bihar Health Department	
File No: SHSB/GA/NPCDCS/3039/2018/Part-1	
From, Principal Secretary, Health Department, Government of Bihar	
To, Principle/Superintendent , SKMCH, Muzaffarpur HOD Department of all Units, SKMCH, Muzaffarpur HOD Department of Pathology, SKMCH, Muzaffarpur Civil Surgeon-cum- Member Secretary District Health Society Muzaffarpur. All Pathologists/Radiologist, Muzaffarpur District.	
Date:-----	
Sub:- The population based cancer registry is an important part of cancer control programme.	
Dear Doctor, As you are aware Tata Memorial Centre (TMC), Mumbai- A grant in aid institute of Department of Atomic Energy, Government of India is establishing a cancer centre at Muzaffarpur. Population based cancer registry is also proposed to be developed at Muzaffarpur. The population based cancer registry is an important part of cancer control programme which is beneficial for cancer control and cancer research activities. The staff from the population based cancer registry system department of TMC will visit all hospitals/Pathological Laboratories/Radiotherapy centres to collect information on diagnosed/treated suspected cancer cases from your centre. Tata Memorial Hospital has agreed to acknowledge your hospitals name in the annual report of the cancer registry. Since personal identification data may be included, steps to maintain the confidentiality of collected data will be ensured throughout the process. The data should be provided in the enclosed format. You are requested to cooperate with the officials of TMH, Mumbai to provide them required data in the enclosed format. We together will fight cancer with your co-operation in cancer control activities. Thanking You.	
Yours Sincerely Sd/- (Sanjay Kumar)	
Memo No:- 4376 ----- Dated 21/01/18 -----	
Copy to:- 1. President IMA Bihar for Co-operation. 2. Dr. Ashok Mandal, Radiologist society of India Bihar Chapter for information and needful. 3. Indian Association of Pathologists and Microbiologists(IPM) Bihar for information and needful. 4- Director IGIMS, Mahavir Cancer Sansthan, Paras Cancer Hospital, Homi Bhabha Cancer Hospital, Varanasi, Superintendent Patna Medical College and Hospital, Darbhanga Medical College and Hospital for information and request share to names & address of Suspected, Cancer of patients visiting your hospital for treatment/diagnosis	
 Principal Secretary, Health Department, Government of Bihar	

		समाहरणालय, मुज़फ्फरपुर			
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पत्रांक-	(जिला भूमि सुधार प्रशाखा)			दिनांक -	
प्रेषक,	समाहर्ता,				
सेवा में,	मुजफ्फरपुर।				
	<u>नगर आयुक्त, नगर निगम, मुजफ्फरपुर।</u> <u>जिला शिक्षा पदाधिकारी, मुजफ्फरपुर।</u> <u>प्रखंड विकास पदाधिकारी,</u> <u>मुशहरी/मोतीपुर/सकरा/काँटी/मुरौल</u> <u>बाल विकास परियोजना पदाधिकारी,</u> <u>मुशहरी/मोतीपुर/सकरा/काँटी/मुरौल</u>				
विषय :-	जनसंख्या आधारित कैंसर रजिस्ट्री, मुजफ्फरपुर के संबंध में।				
प्रसंग :-	डॉ० रविकान्त सिंह, प्रभारी पदाधिकारी, एच.बी.सी.एच.एण्ड RC मुजफ्फरपुर के पत्रांक शून्य दिनांक 16.12.2022				
महाशय,	उपर्युक्त विषयक प्रासंगिक पत्र की छायाप्रति संलग्न करते हुए निदेशित है कि पत्र में वर्णित तथ्यों के आलोक में नियमानुसार होमी भाभा कैंसर अस्पताल एवं अनुसंधान केन्द्र, मुजफ्फरपुर को आवश्यक सहयोग प्रदान करें।				
अनुलग्नक:-	यथोक्त।				
	विश्वासभाजन समाहर्ता, मुजफ्फरपुर।				
	ज्ञापांक.....506...../भू0सु0मुज0 दिनांक25/.....01...../2023				
प्रतिलिपि :-	डॉ० रविकान्त सिंह, प्रभारी पदाधिकारी, एच.बी.सी.एच.एण्ड RC मुजफ्फरपुर को उनके पत्रांक शून्य दिनांक 16.12.2022 के आलोक में सूचनार्थ प्रेषित।				
	समाहर्ता, मुजफ्फरपुर। 23/1/23				

District Magistrate of Muzaffarpur (Bihar) issued a circular for sharing cancer patient data to the cancer registry

4. Area and population covered by Muzaffarpur cancer registry

Muzaffarpur district is divided into 16 blocks – Aurai, Bandra, Bochahan, Gaighat, Kanti, Katra, Kurhani, Marwan, Minapur, Motipur, Muraul, Musahari, Sahebganj, Sakra, Paroo and Saraiya. As per census 2011, the total population of Muzaffarpur district is 4,801,062 [Male: 2,527,497 (52.6%), Female: 2,273,565 (47.4%)].

At present, the Muzaffarpur PBCR covers five blocks: Motipur, Kanti, Musahari, Sakra, Muraul and Muzaffarpur Municipal Corporation. As per the census 2011, the population of these blocks is 1,760,049. Of the total population, 53% are males and 47% are females. The area covered by the PBCR is mentioned in Table 4.

Table 4: Area-wise estimated population for the year 2019-2021 covered by Muzaffarpur cancer registry

Area	Male	Female	Total
Rural	8,53,331	7,65,327	16,18,658 (78.4%)
Urban	2,31,730	2,13,102	4,44,831 (21.6%)
Total	10,85,061 (52.6%)	9,78,429 (47.4%)	20,63,489

In the Muzaffarpur district, the areas are scattered and have limited transport facilities. This is the initial period of the registry. As covering more area was practically not feasible, the registry did not cover the entire district. However, in the coming years, we will cover the remaining blocks depending on the budget of the registry.

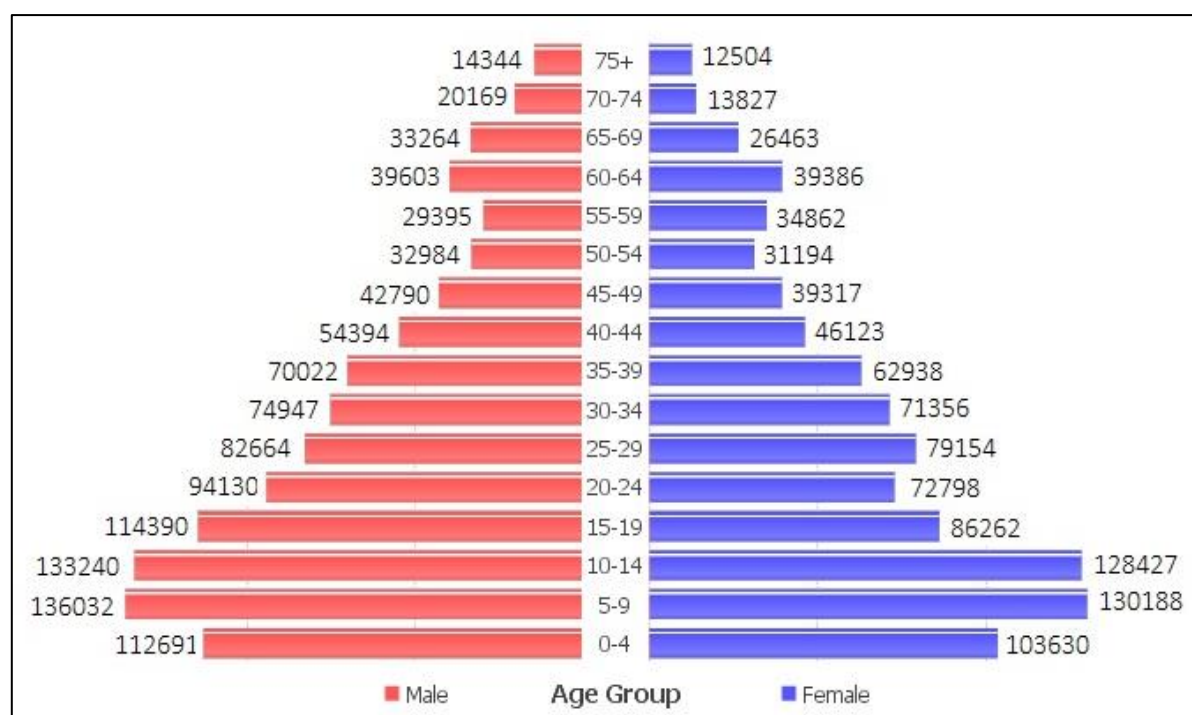
Estimated population of Muzaffarpur cancer registry area for the year 2019-2021

The registry population for the years 2019-2021 was estimated by ratio method by using the 2001 and 2011 census populations. As a result, the average population of the year 2019-2021 is 20,63,489 with 10,85,061 males (52.6%) and 9,78,429 females (47.4%). The estimated population for 2019-2021 is presented in Table 5. The population pyramid of the Muzaffarpur cancer registry is shown in Figure 3.

Table 5: Estimated average population of Muzaffarpur cancer registry: Year 2019-2021

Age-Group	Male		Female		Total	
	Number	%	Number	%	Number	%
0-4	112691	10.4	103630	10.6	216321	10.5
5-9	136032	12.5	130188	13.3	266220	12.9
10-14	133240	12.3	128427	13.1	261667	12.7
15-19	114390	10.5	86262	8.8	200652	9.7
20-24	94130	8.7	72798	7.4	166928	8.1
25-29	82664	7.6	79154	8.1	161818	7.8
30-34	74947	6.9	71356	7.3	146303	7.1
35-39	70022	6.5	62938	6.4	132960	6.4
40-44	54394	5.0	46123	4.7	100517	4.9
45-49	42790	3.9	39317	4.0	82107	4.0
50-54	32984	3.0	31194	3.2	64178	3.1
55-59	29395	2.7	34862	3.6	64257	3.1
60-64	39603	3.6	39386	4.0	78989	3.8
65-69	33264	3.1	26463	2.7	59727	2.9
70-74	20169	1.9	13827	1.4	33996	1.6
75+	14344	1.3	12504	1.3	26848	1.3
Total	10,85,059	100	9,78,429	100	20,63,488	100

Figure 3: Population pyramid of Muzaffarpur cancer registry: Year 2019-2021



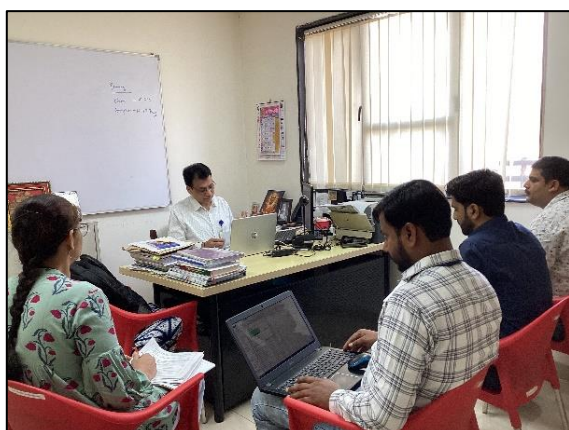
5. Cancer registration method

Staff selection and training

The field supervisor and field staff were selected from the district and they were provided training in cancer registry operation at the Centre for Cancer Epidemiology (CCE)-TMC, Mumbai. To observe the cancer registry working and for field experience, the recruited cancer registry staff members were deputed to several centres including Varanasi as well as Chandigarh and Sangrur PBCRs. Periodically cancer registration training programs were conducted by the CCE-TMC either in person or virtually. The staff were provided training on cancer registry and its role in cancer control, cancer registration, case abstraction, ICD-O3 coding, data entry in CanReg5 software, and data analysis.



Regular virtual training session for the registry staff through CCE-TMC, Mumbai



Difficult cases discussion with Dr. Atul Budukh (Co-Principal Investigator) as well as with Senior consultants of TMC Dr. Nitin Shetty (OIC Interventional Radiology, ACTREC)

The details of the training given to the Muzaffarpur PBCR staff are presented below.

Sr. No.	Place of training	Number of staff attended training	Date of visit
1	PBCR Varanasi, Uttar Pradesh	4	04.10.2018 to 10.10.2018
2	CCE, TMC Mumbai	4	19.11.2018 to 27.11.2018
3	PBCR Chandigarh & Sangrur, Punjab	1	21.01.2019 to 30.01.2019
4	PBCR Varanasi, Uttar Pradesh	3	22.08.2019 to 24.08.2019
5	CCE-TMC, Mumbai	3	27.02.2021 to 08.03.2021
6	CCE-TMC, Mumbai	3	29.01.2022 to 08.02.2022
7	PBCR Sangrur, Punjab	3	25.02.2022 to 07.03.2022
8	CCE-TMC, Mumbai	2	21.02.2023 to 28.02.2023
9	MPMMCC, Varanasi, Uttar Pradesh	2	14.02.2024 to 22.02.2024
10	CCE-TMC, Mumbai	3	28.03.2024 to 09.04.2024

Cancer incidence cases

Trained field staff of the registry visits the allotted villages periodically (in a period of 6 to 8 months) to gather information regarding the cancer cases diagnosed in the area and the cancer deaths documented in the village administrative office. The field staff interacts with the village sarpanch, Auxiliary Nurse Midwives (ANMs), Anganwadi workers, Accredited Social Health Activist (ASHA) workers, and the medical officer of the PHC. This helps them collect information regarding cancer cases diagnosed in the village as well as any cancer death that has occurred in the village. The field staff takes detailed information about the cancer case and visits the patient's house, along with the ASHA workers. The field staff interacts with the patient/patient's relative and asks the following questions:

- When was the patient diagnosed with cancer?
- Does the patient have a case file number with the treating hospital?
- Does the patient have any discharge report, biopsy report, or CT scan report?

The field staff notes down the available information. As per the information provided by the patient/patient's relative, the field staff communicates with the treating cancer centre, collects the clinical details of the patient, and registers the cancer case in the prescribed proforma. In case of inaccessibility to the medical records of the patient, staff register the case based on the information provided by the patient/patient's relatives. The quality control of the data collected has been done by the senior staff of CCE-TMC, Mumbai.

During the second visit, the field staff updates the status of the cancer cases. The field worker also identifies any new cancer cases/deaths in the village and repeats the same procedure mentioned above. This is a continuous process of village visits.

Cancer death cases

During the village visit, the field staff inquires about cancer deaths that have occurred in the village. The staff also collects the death case information from the birth and death records in the registrar's office. The field staff interacts with the patient/patient's relative and collects information regarding cancer death. Based on the information provided by the relatives and by matching the information with the medical records available in the cancer registry, the cancer deaths are registered.

Cancer prevalence cases

During the field visit, sometimes field staff may come across cases diagnosed before 2019. In this situation, the field staffs collect detailed information on the cancer case from the patient's relative and maintain the data in the registry office. During the second visit, field staff updates the status of the cancer cases. If there is any death of the prevalent case in that year, then the cancer death is registered after matching the information with the registry record.

Data checking and quality control

All the cases collected by field staff from the villages as well as from the hospitals are scrutinized by the senior staff member. After residence confirmation, the cancer case information is documented in a prescribed format. The primary site and histology are coded based on the International Classification of Diseases for Oncology – Third Edition, Geneva, 2000 (ICD-O3).⁽¹¹⁾ TMC-CCE team regularly performs data quality control.

Data entry

The data entry is carried out in CanReg5 software developed by the International Agency for Research on Cancer (IARC), Lyon, France.⁽¹²⁾

After duplicate checking and other quality measures, cancer incidence and death cases are registered. The cancer registration process of the registry is presented in Figure 4.

Cancer cases data collection from different hospitals

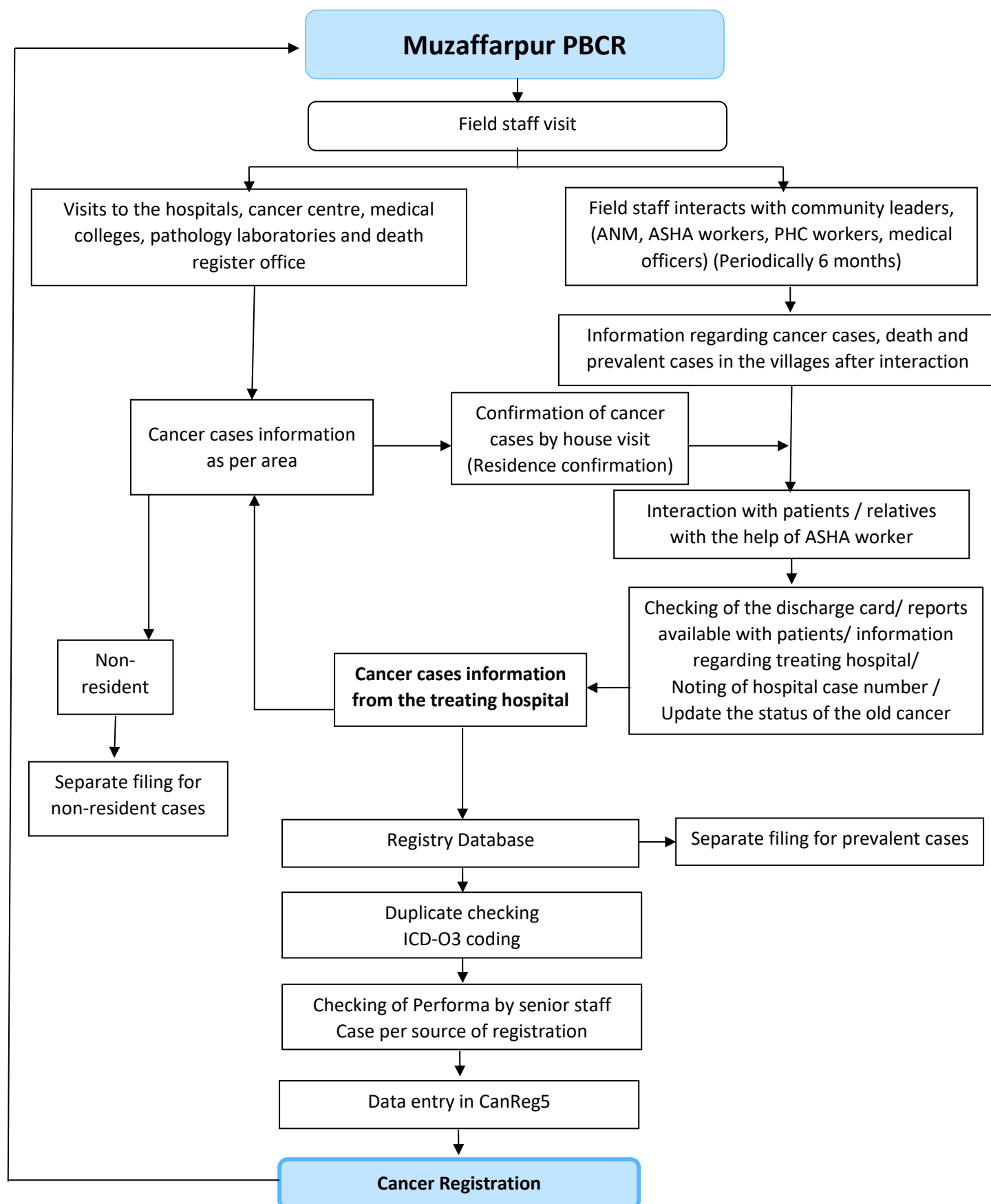
The registry staff regularly visits the following centres to collect information on the cancer cases and death cases in the Muzaffarpur district. The different sources of data collection are mentioned in Table 6.

Table 6: Different sources of data collection

Sr. No.	Institute Name	Place
1	Al-Shifa Nursing Home	Muzaffarpur
2	Amal Nursing Home	Muzaffarpur
3	Anupam CT Scan Centre	Muzaffarpur
4	Ashoka Hospital	Muzaffarpur
5	Bathua Nursing Home	Muzaffarpur
6	Bhawani Diagnostic Centre	Muzaffarpur
7	Death Registry Office (Municipal Office)	Muzaffarpur
8	Dr. Lal path labs	Muzaffarpur
9	Gautam Diagnostic Centre	Muzaffarpur
10	Goyal CT Scan and MRI Centre	Muzaffarpur
11	Healthcare Centre Diagnostics Laboratory	Muzaffarpur
12	Homi Bhabha Cancer Hospital and Research Centre	Muzaffarpur
13	Krishna Devi Deviprasad Kejriwal Matrisadan Trust	Muzaffarpur
14	Life Care Nursing Home	Muzaffarpur
15	Life Line Janch Ghar	Muzaffarpur
16	Maa Janki Hospital & Research Centre	Muzaffarpur
17	Medicare Diagnostic Centre	Muzaffarpur
18	Modern Diagnostic Centre	Muzaffarpur
19	Muktidham (Cemetery Area)	Muzaffarpur
20	Om Diagnostic Centre	Muzaffarpur
21	Phular Superspeciality Hospital	Muzaffarpur
22	Prasad Hospital	Muzaffarpur
23	Prashant Memorial Charitable Hospital	Muzaffarpur
24	Roy Nursing Home and Maternity Centre	Muzaffarpur
25	Shahi Stone and Urology Clinic	Muzaffarpur
26	Shailja Janch Ghar	Muzaffarpur
27	Shree Hospital	Muzaffarpur
28	Sri Krishna Diagnostic Centre	Muzaffarpur
29	Sri Krishna Medical College and Hospital	Muzaffarpur

Sr. No.	Institute Name	Place
30	AGILUS Diagnostic Centre	Muzaffarpur
31	Standard Janch Ghar	Muzaffarpur
32	Usha Hospital	Muzaffarpur
33	Vaishali Oral & Maxillofacial Centre	Muzaffarpur
34	Aaddhya's Oncology Centre	Patna
35	All India Institute of Medical Science (AIIMS)	Patna
36	Bihar Diagnostics and Radiology Clinic	Patna
37	Buddha Cancer Centre	Patna
38	C. K. Diagnostics	Patna
39	Dr. Prabhat Ranjan Diagnostic and Research Centre	Patna
40	Dr. Shukla Diagnostics and Research Centre	Patna
41	Hematology Hemto-Oncology Clinic	Patna
42	Indira Gandhi Institute of Medical Science (IGIMS)	Patna
43	Magadh Cancer Centre	Patna
44	Mahavir Cancer Institute and Research Centre	Patna
45	Nalanda Medical College and Hospital	Patna
46	Oncopath Diagnostics	Patna
47	Paras HMRI Hospital	Patna
48	Patna Hematology/Hemato-Oncology Clinic	Patna
49	Patna Medical College and Hospital	Patna
50	S. S. Hospital and Research Centre	Patna
51	Saral Pathlab Pvt. Ltd.	Patna
52	Sarita Diagnostic Centre Pvt. Ltd.	Patna
53	Savera Cancer and Multispeciality Hospital	Patna
54	Homi Bhabha Cancer Hospital	Varanasi
55	Mahamana Pandit Madan Mohan Malviya Cancer Centre	Varanasi
56	Darbhanga Medical College & Hospital	Darbhanga
57	Swami Vivekanand Cancer Aspatal & Multispeciality Centre	Darbhanga
58	Advance Centre for Treatment, Research & Education in Cancer	Mumbai
59	Tata Memorial Hospital	Mumbai

Figure 4: Cancer registration process at Muzaffarpur PBCR



6. Community involvement in the cancer registration process

Cancer patients from the Muzaffarpur district travel to different cities for cancer treatment. On average, patients travel up to 62 km to 2,121 km for cancer treatment. It is practically difficult for the registry staff to visit these centres regularly. Few hospitals and private laboratories are reluctant in providing cancer patients data in the district. To overcome this problem, we started regular interaction with the community. The PHC staffs, ANM, ASHA workers, Anganwadi workers and Jeevika workers cooperate by providing information on newly diagnosed cancer/ cancer deaths that occurred in the village. The trained field staff from the registry continuously interacts with these community members to obtain information regarding cancer cases in the villages. In the urban area, we have interacted with municipal corporates and local leaders.

Due to community interaction, the registry is 100% sure about the residence confirmation of the cancer cases. Interaction with the patient/ patient's relatives provides demographic information such as education, income and religion, etc. Regular village visits and communications with the community have enabled the registry to update the status of cancer patients, which will be utilized for cancer survival analysis. Initially, several centres refused to provide cancer case data. In this situation, due to regular field visits and interactions with community leaders, we were able to obtain information about the cancer cases from the villages after contacting patients/ their relatives through these community leaders. At present, registry staff has interacted with 3,801 community leaders of 83 wards and 528 villages of five blocks (Motipur, Sakra, Kanti, Musahari and Muraul) out of 16 blocks of Muzaffarpur district.

Registry staff interacts with community leaders and primary health workers to collect information about diagnosed cancer cases. The block-wise details of the same are presented in Table 7.

Table 7: Community leaders/ PHC staff involved in the cancer registration process

Block Name	Muzaffarpur (Urban)	Motipur	Kanti	Sakra	Musahari	Muraul	Total
Total Villages/Wards	83	137	116	121	117	37	611
Gram Pradhan (Mukhiya)/ Ward Parshad	78	32	21	28	26	9	194
Ward members	-	380	205	320	315	92	1,312
Sarpanch	-	22	20	18	28	5	93
Panchayat Samiti members	-	22	16	14	28	4	84
Civil Surgeon	1	-	-	-	-	-	1
Medical Officer	6	1	1	1	1	1	11
Block Development Officer	1	1	1	1	1	1	6
Auxiliary Nurse Midwife	-	12	10	19	16	17	74
Child Development Project Officer	1	1	1	1	1	1	6
Accredited Social Health Activist	24	153	130	132	148	69	656
Anganwadi Workers	130	242	170	208	228	72	1,050
Jeevika Workers	-	42	72	38	142	20	314
Total	241	908	647	780	934	291	3,801

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

Village/ house visit is the primary source of information; further, these cases are again verified from different diagnostic centres as well as treatment centre. The village/ house visit is the major source to register cancer incidence and mortality. About 49% of cancer incidence cases were collected by village/ house visits. The vital status of the incidence cases is updated through telephone contact or house visit. Along with field visits, the Homi Bhabha Cancer Hospital & Research Centre Muzaffarpur, Mahavir Cancer Institution and Research Centre, Patna and Tata Memorial Hospital, Mumbai are major sources of cancer cases data collection. The cancer incidence cases registered by the source of registration are mentioned in Table 8.

Table 8: Cancer incidence cases information by the first source of registration

Sr. No.	Source of registration	Male		Female		Total	
		Number	%	Number	%	Number	%
1	House/Village visit	508	48.5	554	49.6	1062	49.1
2	Homi Bhabha Cancer Hospital & Research Centre, Muzaffarpur	213	20.3	240	21.5	453	20.9
3	Mahavir Cancer Institution & Research Centre, Patna	86	8.2	89	8.0	175	8.1
4	Tata Memorial Centre, Mumbai	87	8.3	60	5.4	147	6.8
5	Indian Council of Medical Research (ICMR)	50	4.8	42	3.8	92	4.2
6	Chief Minister Relief Fund, Bihar	20	1.9	22	2.0	42	1.9
7	Buddha Cancer Centre, Patna	16	1.5	14	1.3	30	1.4
8	Healthcare Centre Diagnostic Laboratory, Muzaffarpur	11	1.0	15	1.3	26	1.2
9	All India Institute of Medical Sciences, Patna	7	0.7	17	1.5	24	1.1
10	Homi Bhabha Cancer Hospital /MPMMCC, Varanasi	9	0.9	11	1.0	20	0.9
11	Modern Diagnostic Centre, Muzaffarpur	1	0.1	16	1.4	17	0.8
12	Sri Krishna Medical College and Hospital, Muzaffarpur	7	0.7	7	0.6	14	0.6
13	Municipal Office, Muzaffarpur	4	0.4	6	0.5	10	0.5
14	Paras HMRI Hospital, Patna	6	0.6	4	0.4	10	0.5
15	Other	23	2.2	20	1.8	43	2.0
Total		1,048	100	1,117	100	2,165	100

8. Quality control

Mortality to incidence ratio

The mortality-incidence or MI ratio is an indicator of the completeness and accuracy of cancer registry data. In the year 2019-2021; 2,165 cancer incident cases [Male: 1,048 (48.4%); Female: 1,117 (51.6%)] have been registered by PBCR Muzaffarpur. For the same period, 1,641 cancer deaths have been registered [Male: 828 (50.5%); Female: 813 (49.5%)]. The overall mortality to incidence ratio is 0.76 [Male: 0.79; Female: 0.73]. The MI ratio is slightly higher as compared to Barshi rural PBCR in India. ⁽¹³⁾

Re-abstraction of the cases

A quality control exercise was carried out in order to improve the records and, if required, staff was retrained. All cancer case data was scrutinized by the TMC-CCE team. During the quality control exercise, it was observed that the registry staff needed to be re-trained in the abstraction of cases of unknown primary site, metastatic cases, and lymphoma leukaemia cases. TMC-CCE, Mumbai, retrained the staff. The data was updated and re-entered.

Incidence rates of childhood cancers

In the year 2019-2021, PBCR registered 43 cancer cases in boys and 17 in girls. The age-specific rates reported for paediatric cancer are mentioned in Table 9.

Table 9: Incidence rate of paediatric cancer cases in Muzaffarpur PBCR area: 2019-2021

Age group	Boys		Girls	
	Number of Cases	Age-Specific Rate	Number of Cases	Age-Specific Rate
0 – 4	10	29.6	4	12.9
5 – 9	13	31.9	6	15.4
10 – 14	20	50.0	7	18.2
Age Adjusted Rate per 1,000,000 (AAR per million)	36.3		15.2	

Of the total 2,165 cancer cases, 60 (2.8%) cases are paediatric cancer cases. The age-adjusted incidence rate for the paediatric age group (0-14) was 36.3 per million for boys and 15.2 per million for girls. As per the International Incidence of Childhood Cancer volume III, the incidence rate for boys and girls is less than 60 per million. ⁽¹⁴⁾ There is an under-reporting/under-diagnosis of the paediatric cancer cases.

Microscopic verification of the cases

In the year 2019-2021, out of 1,048 male cases, 709 cases (67.7%) were diagnosed with microscopic verification. 6.7% of cases were diagnosed based on radiological findings and 2.9% of cases were diagnosed clinically. In females, out of 1,117 cases, we have 699 cases (62.6%) diagnosed with microscopic verification. 8.2% of cases were diagnosed on radiological findings and 3.8% of cases were diagnosed clinically.

Most of the other and unspecified cases were based on verbal autopsy i.e., a relative's remark (Eg. primary site unknown cases).

Cases registered based on narrations by the patient's relatives (verbal autopsy)

While interacting with the community both in villages and the urban areas, it was learned that the patient's relatives burnt the medical documents after the patient death. In some cases, individuals did not complete the required treatment despite consultation with an oncologist/ cancer centre due to social/ financial issues. Many of these patients destroyed their pathology reports, CT scans, and discharge summaries. In this situation, we interacted with the patient or their relatives and asked them the following questions to obtain information:

1. Where was the patient diagnosed? Which hospital did the patient visit?
2. What was the opinion of the treating consultants?
3. Whether the patient has taken any chemotherapy/ radiotherapy
4. Where did the patient undergone MRI/ CT scan/ USG?

Once the information was obtained, the registry attempted to identify evidence based on the patient's/ relatives' narration, such as the patient verbally providing the date of biopsy or the patient mentioning the received chemotherapy/ radiotherapy/ surgery or the name of the medical/ surgical/ radiation oncologist from whom the patient was receiving treatment. The registry has recorded the cancer case based on the information gathered through these narrations. When registry has strong evidence based on verbal autopsy, case is registered. Weak evidence cases are not registered by the registry staff.

These cases are also traced back to the treating hospital by registry staff. Due to lack of cooperation from hospital the staff do not always retrieve medical records from the treating hospital. The cancer registries in Barshi, Sangrur, Mansa, and Varanasi, as well as Gadchiroli adopted a similar approach to cancer registration.

In the coming years, due to cancer awareness as well awareness of availability of government funded health insurance scheme for cancer treatment, we may improve the cancer registration.

Death Certificate Only (DCO) Cases

We have registered 239 (22.8%) cases in males and 284 (25.4%) cases in females under the DCO/Other categories. The death cases have been registered based on the narration/relative's remarks/discharge summary available with the patient's relative. In principle, they are not registered based on the death certificate only because the death certificate does not have the documentation of cancer death. In the initial period of the registry, DCO cases are always high. ⁽¹⁵⁾ Out of 4 cases one is from DCO and verbal autopsy. Similar results were reported by the first-year report of Varanasi PBCR.

Per source case registration

The number of sources per incidence case registered was noted. The cases were counted as per source notification. In Muzaffarpur, the average number of sources per the case registered is 2.3. Due to field interactions, the coverage is satisfactory.

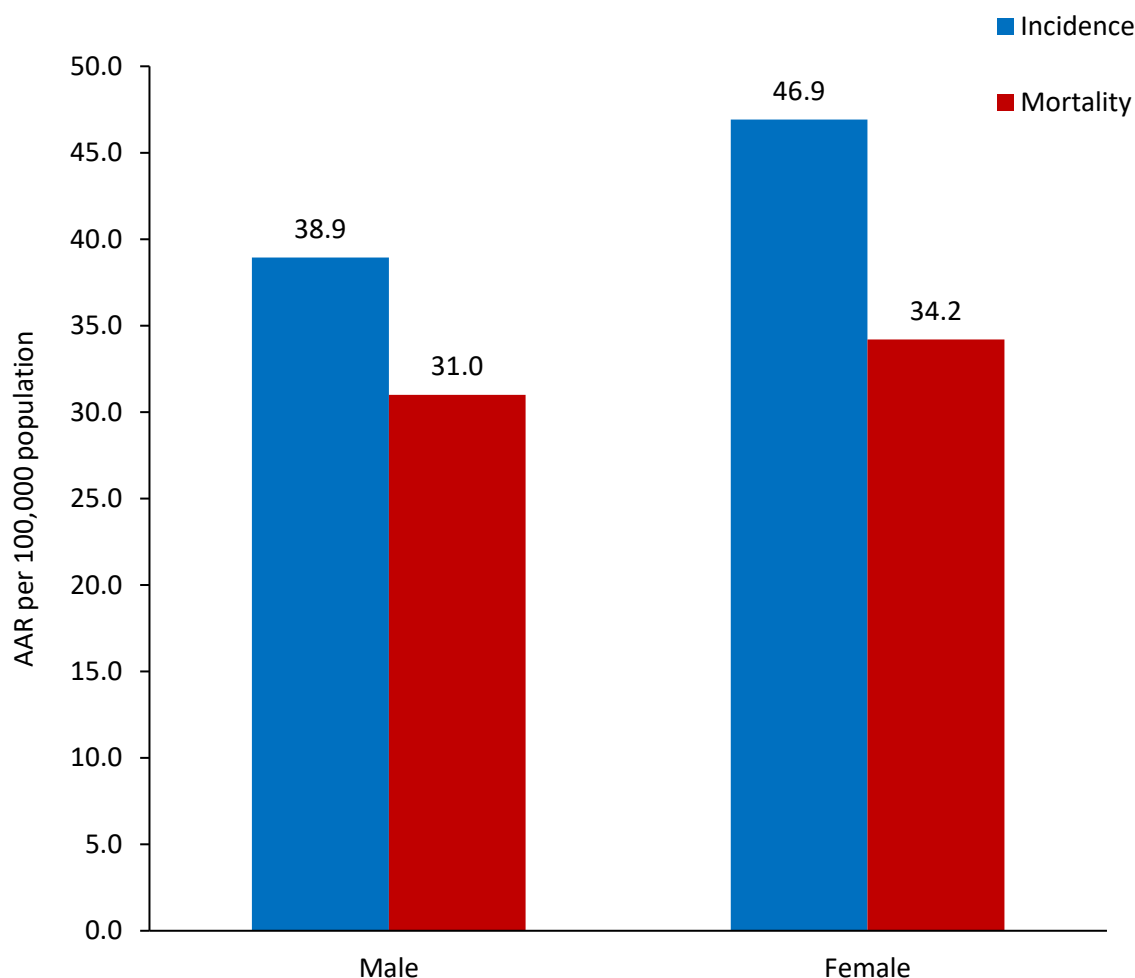
Source	Number of cases confirm
Source 1	597
Source 2	1534
Source 3	1419
Source 4	996
Source 5	330
Source 6	48
Source 7	35
Total sources	4959
Per source of registration	2.3 (4,959/2,165)

9. Cancer incidence and mortality: All sites

In the year 2019-2021, the cancer registry registered 2,165 cancer cases. There were 1,048 male (48.4%) cases and 1,117 female (51.6%) cases. The age-adjusted incidence rate for males was 38.9 per 100,000 population and for females, it was 46.9 per 100,000 population.

In the year 2019-2021, the cancer registry registered 1,641 cancer deaths of which 828 were male (50.5%) deaths and 813 were female (49.5%) deaths. The age-adjusted mortality rate for males was 31.0 per 100,000 population and for females, it was 34.2 per 100,000 population. The cancer incidence and mortality rates for all sites for males and females is presented in Figure 5.

Figure 5: All sites cancer incidence and mortality rate by gender: 2019-2021 (Muzaffarpur PBCR area)



The cancer registry covers 78.4% of rural areas and 21.6% of urban areas. The estimated population for the year 2019-2021 for the urban area is 4,44,832 [Male: 2,21,729; Female: 2,13,102] and rural area is 16,18,659 [Male: 8,53,331; Female: 7,65,327]. We observed the difference in the cancer incidence rate in urban and rural areas. The urban area cancer incidence rate in males was 54.9 per 100,000 population whereas it was 34.6 per 100,000 population in rural areas. In females, the urban area cancer incidence rates are higher as compared to rural areas. The cancer incidence rate by area and gender is mentioned in Figure 6. All site cancer mortality by area and gender is mentioned in Figure 7.

Figure 6: All sites cancer incidence rate by area and gender: 2019-2021

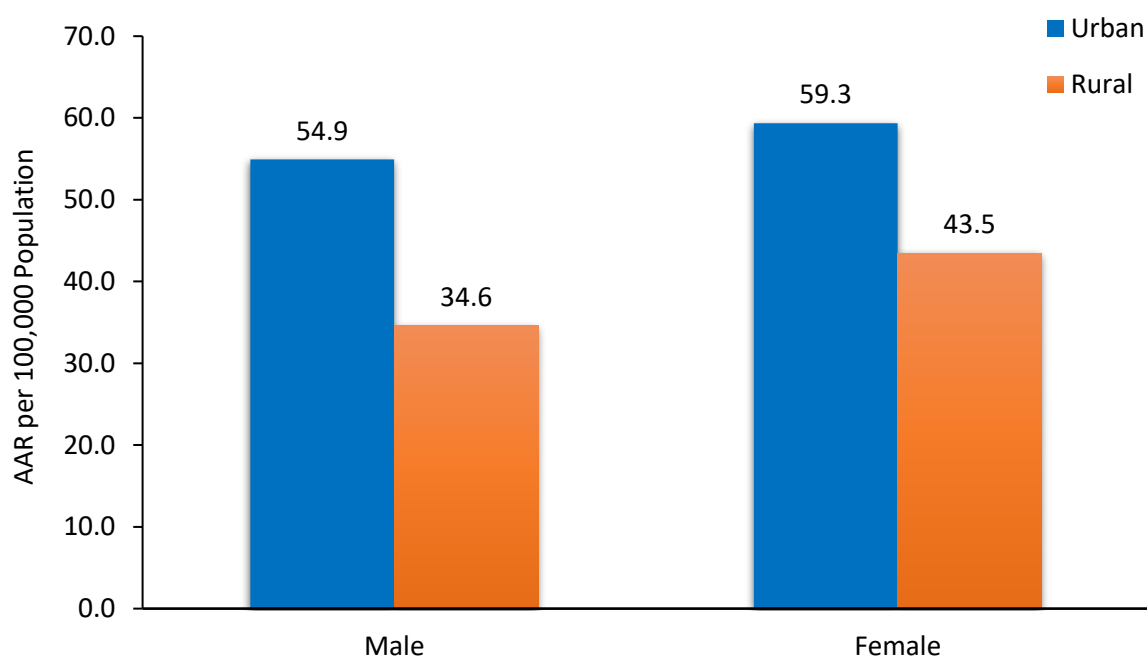
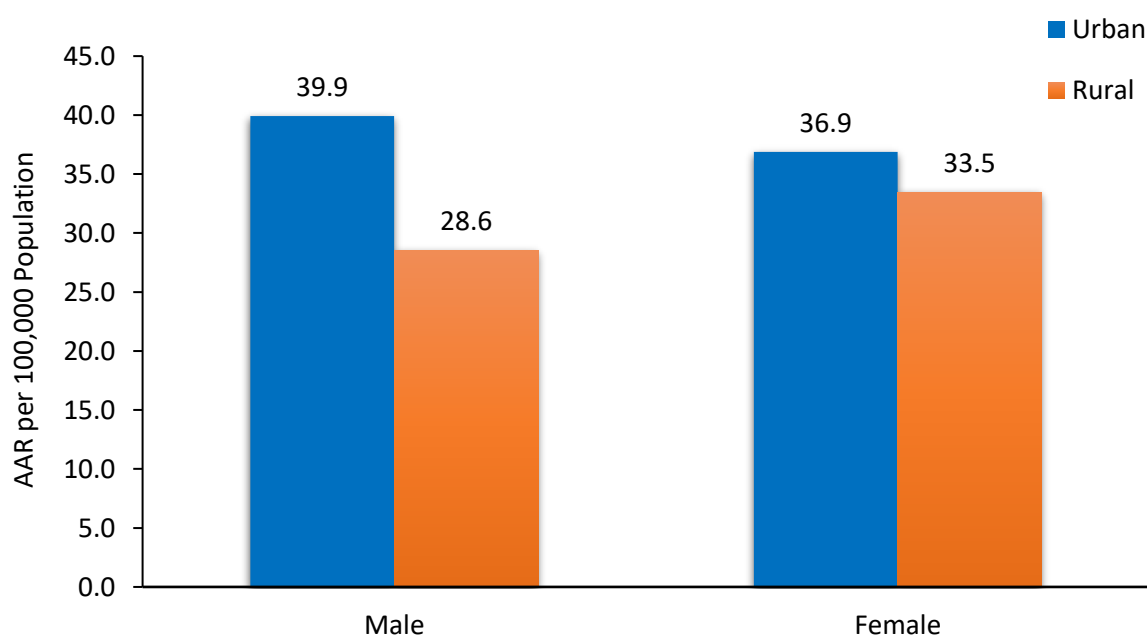


Figure 7: All site cancer mortality rate by area and gender: 2019-2021



10. Gender-wise leading cancer sites

Among males, mouth, tongue, prostate, gall bladder, liver, stomach, lung, colon, oesophagus, and non-hodgkin lymphoma are the leading cancer sites. The top ten leading cancer sites for males are presented in Figure 8. Among females, breast, cervix uteri, gall bladder, lung, ovary, mouth, tongue, stomach, non-hodgkin lymphoma, and lymphoid leukaemia were the leading cancer sites. The top ten leading cancer sites for females are presented in Figure 9.

Figure 8: Leading cancer sites in males: 2019-2021

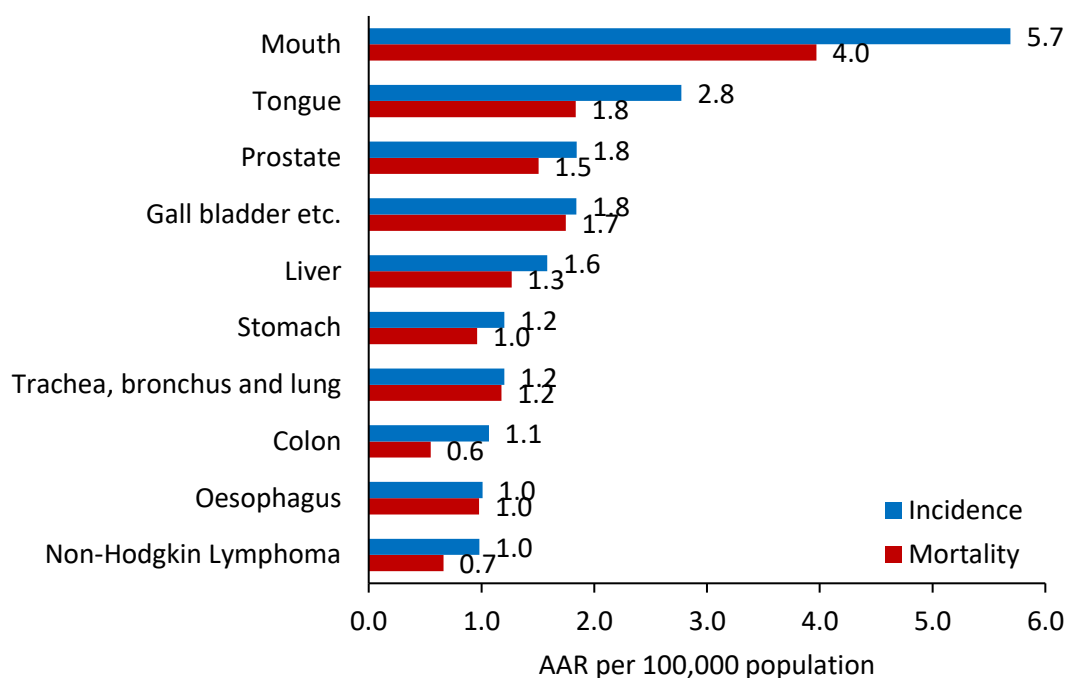
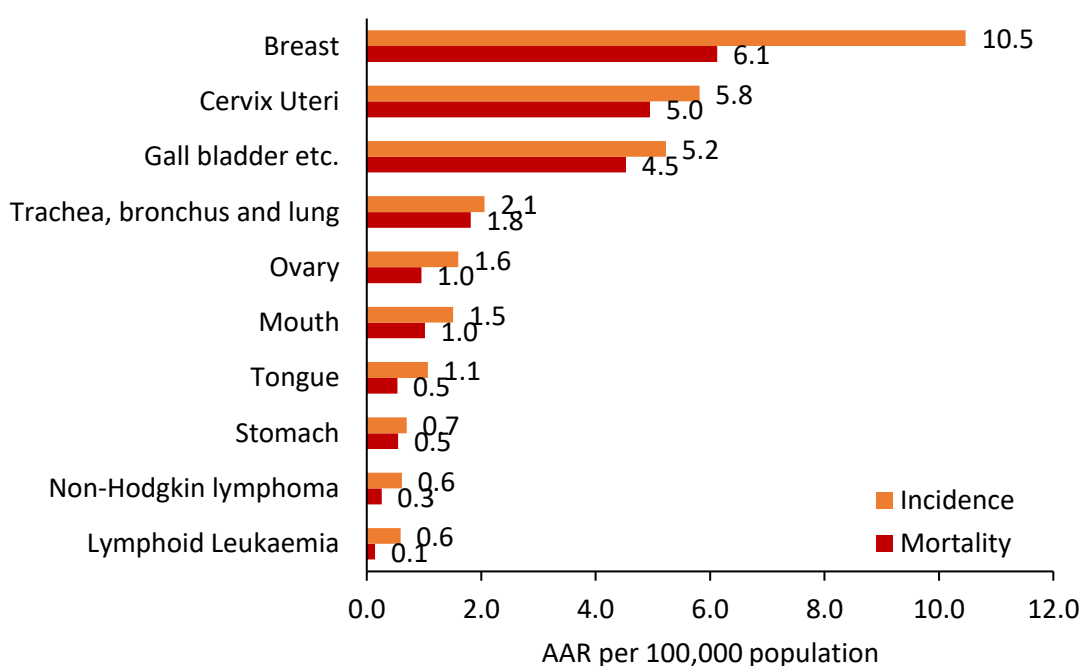


Figure 9: Leading cancer sites in females: 2019-2021



Leading cancer sites in rural and urban areas

In males, mouth cancer incidence rates are higher in urban (11.5 per 100,000 population) as compared to rural (4.1 per 100,000 population) areas. The breast, cervix uteri, and gall bladder are the top three leading cancer sites among females both in urban and rural areas.

The difference in the cancer burden and patterns in rural and urban areas may be due to different lifestyles, food habits, education levels, and access to diagnostic and treatment facilities. The leading cancer sites by gender and area are presented in Figures 10 to 13.

Figure 10: Leading cancer sites in urban area: male (2019-2021)

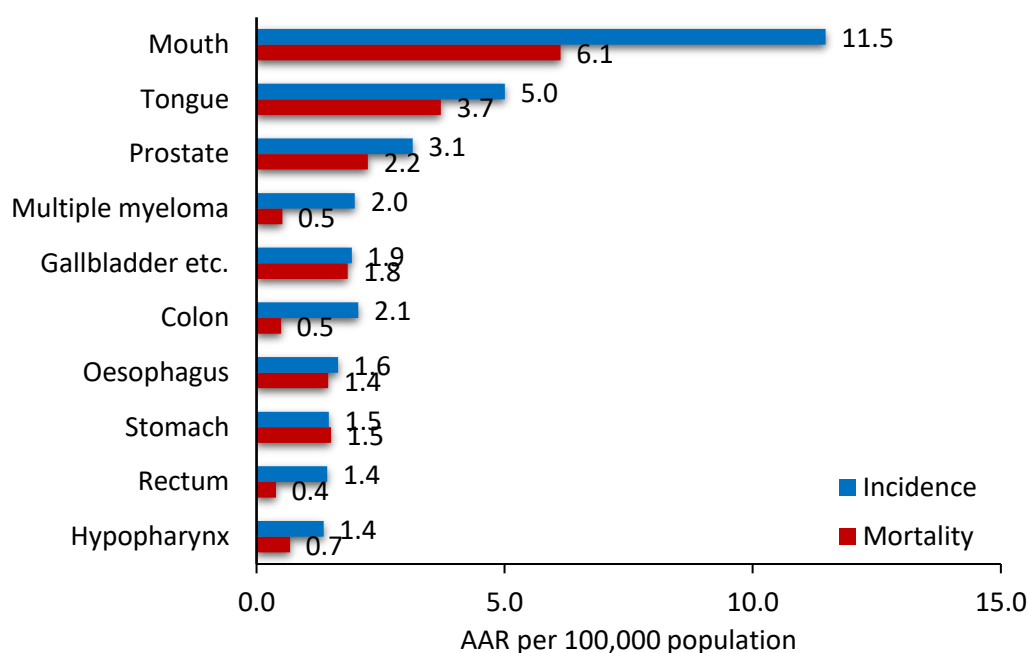


Figure 11: Leading cancer sites in rural area: male (2019-2021)

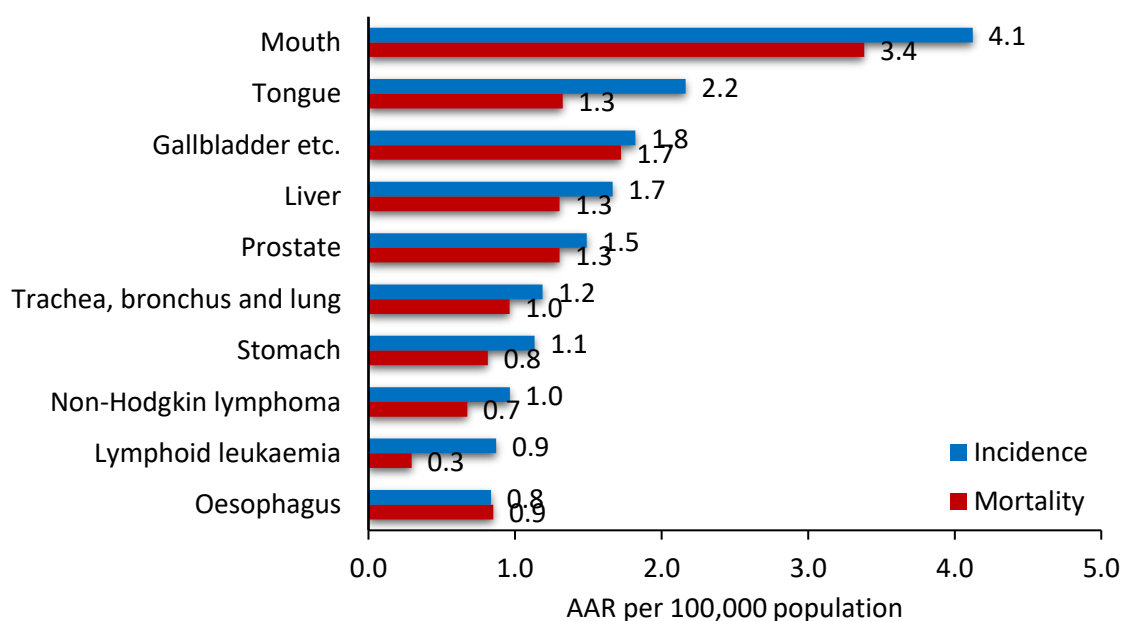
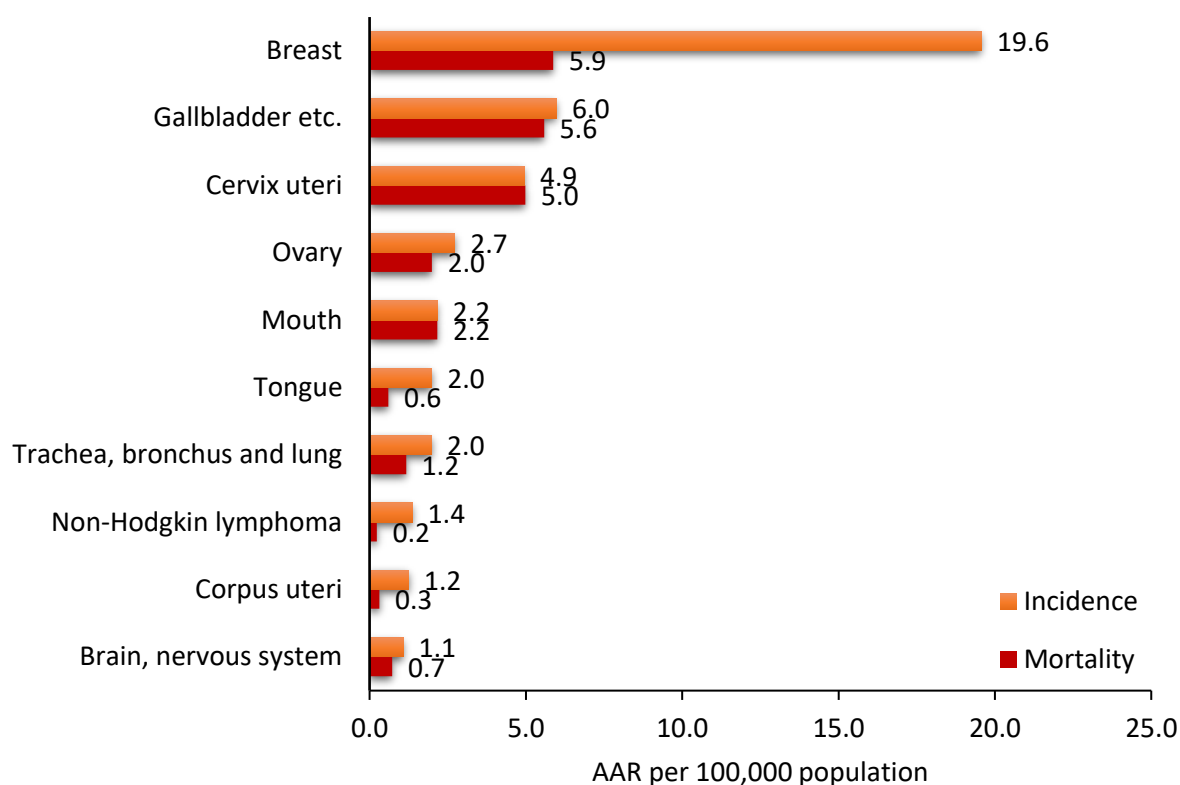
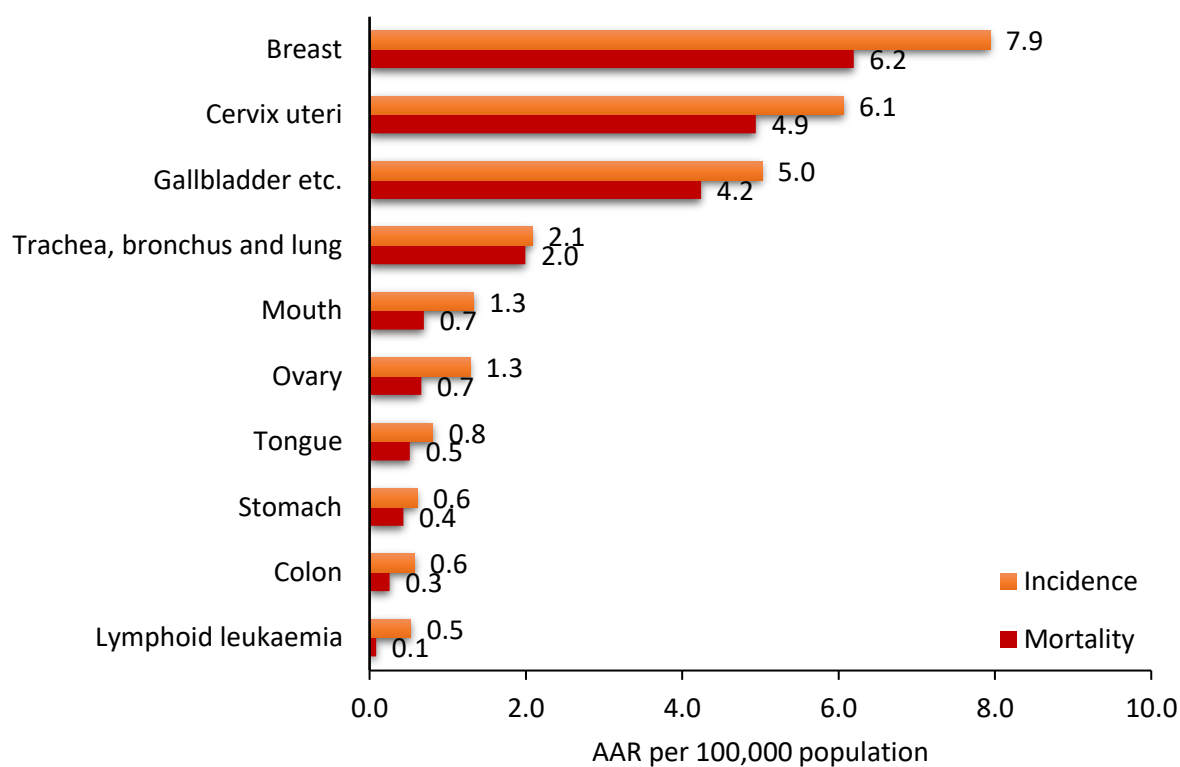


Figure 12: Leading cancer sites in urban area: female (2019-2021)**Figure 13: Leading cancer sites in rural area: female (2019-2021)**

Urban and rural difference

The prime objective of the registry is to evaluate the cancer burden among areas. It is also important to demonstrate the urban and rural disparity in the cancer burden and patterns. This inequality presents the difference in life style, health care facilities, and inadequate knowledge about disease.

As common in other cancer registries, the urban rates are high as compared to rural populations. Overall cancer incidence is 60% and 40% high in urban areas among males and females respectively. Mouth and tongue cancer burdens are 2.8 and 2.3 times higher in rural as compared to urban in males respectively. In females, the breast cancer rates are 2.5 times higher in urban areas. In males, mouth, tongue, prostate and all site cancer rates were different among urban and rural areas and this difference was statistically significant. Whereas in females the difference was statistically significant for breast and all site cancer.

The urban-rural rate along with the rate ratio and 95% Confidence Interval (CI) are presented in Table 10.

Table 10: Comparison of rural/urban incidence rate of leading cancer sites

ICD10	Site	Sex	Urban (AAR)	Rural (AAR)	Rate Ratio (RR)	95% CI	
						Lower	Upper
ALL	All Sites	Male	54.9	34.6	1.6	1.36	1.85
		Female	59.3	43.5	1.4	1.18	1.58
C03-C06	Mouth	Male	11.5	4.1	2.8	1.83	4.22
		Female	2.2	1.3	1.6	0.71	3.71
C01-C02	Tongue	Male	5.0	2.2	2.3	1.30	4.12
		Female	2.0	0.8	2.5	0.86	6.99
C23-C24	Gall bladder	Male	1.9	1.8	1.1	0.50	2.22
		Female	6.0	5.0	1.2	0.77	1.84
C61	Prostate		3.1	1.5	2.1	1.06	4.21
C50	Breast		19.6	7.9	2.5	1.78	3.41
C53	Cervix uteri		4.9	6.1	0.8	0.55	1.22

Comparison of leading cancer sites with other Indian 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 Indian registries, are also depicted in the respective figures below.

Cancer of mouth (C03-C06)

	Male	Female
Number of cases	155	34
% of total cases	14.8	3.0
Crude Incidence Rate per 100,000	4.8	1.2
Age-Adjusted Incidence Rate per 100,000	5.7	1.5
Truncated Rate per 100,000	13.0	2.8

Figure 14: Age-specific incidence rate of cancer of mouth: 2019-2021

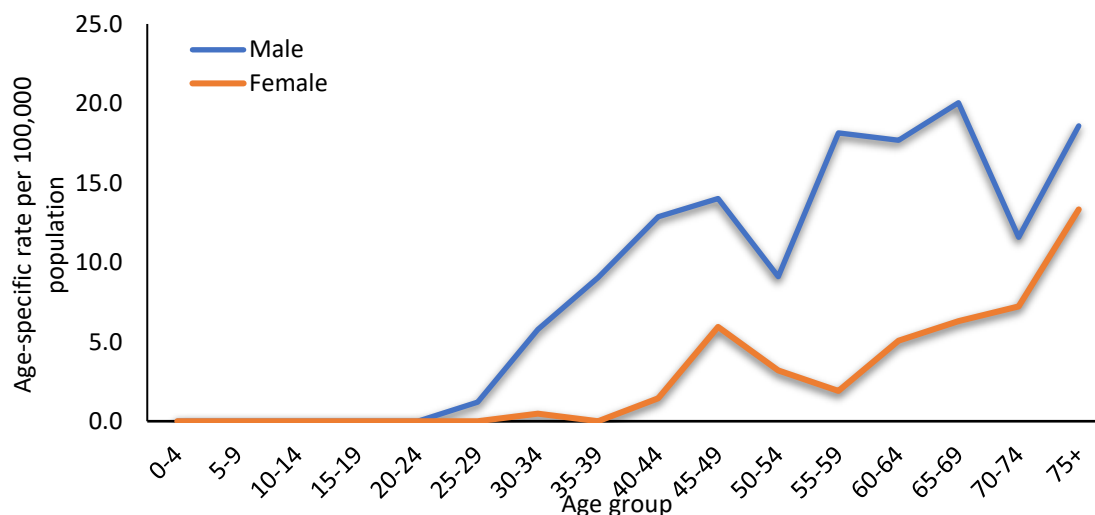
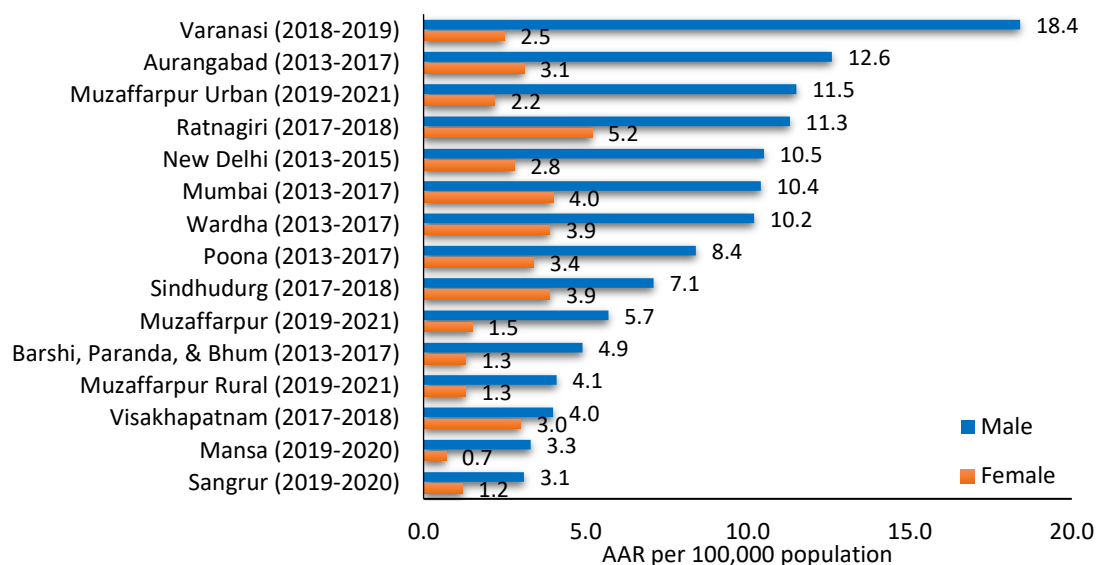


Figure 15: Comparison of mouth cancer incidence rate with other Indian registries



Cancer of tongue (C01-C02)

	Male	Female
Number of cases	77	23
% of total cases	7.3	2.1
Crude Incidence Rate per 100,000	2.4	0.8
Age-Adjusted Incidence Rate per 100,000	2.8	1.1
Truncated Rate per 100,000	6.5	2.3

Figure 16: Age-specific incidence rate of cancer of tongue: 2019-2021

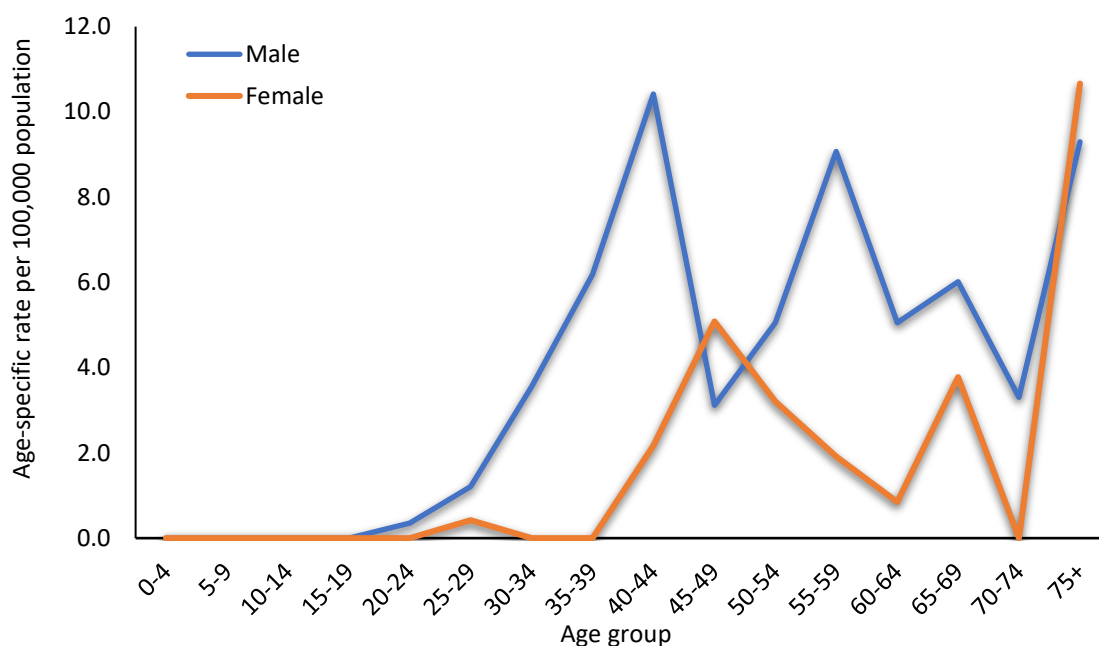
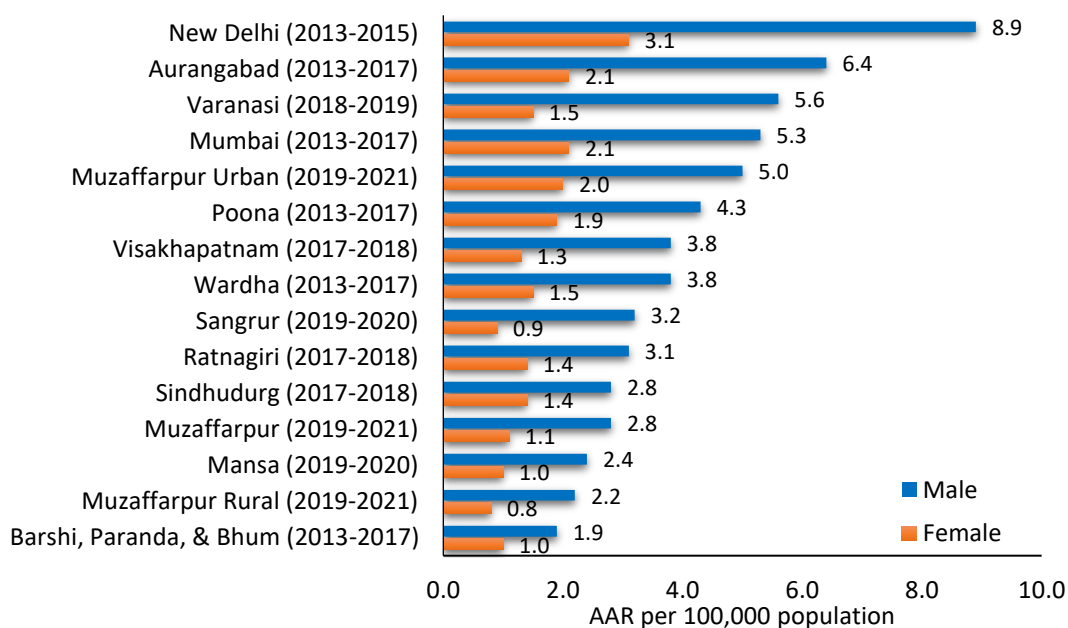


Figure 17: Comparison of tongue cancer incidence rate with other Indian registries



Cancer of gall bladder (C23-C24)

	Male	Female
Number of cases	46	123
% of total cases	4.4	11.0
Crude Incidence Rate per 100,000	1.4	4.2
Age-Adjusted Incidence Rate per 100,000	1.8	5.2
Truncated Rate per 100,000	4.6	13.1

Figure 18: Age-specific incidence rate of cancer of gall bladder: 2019-2021

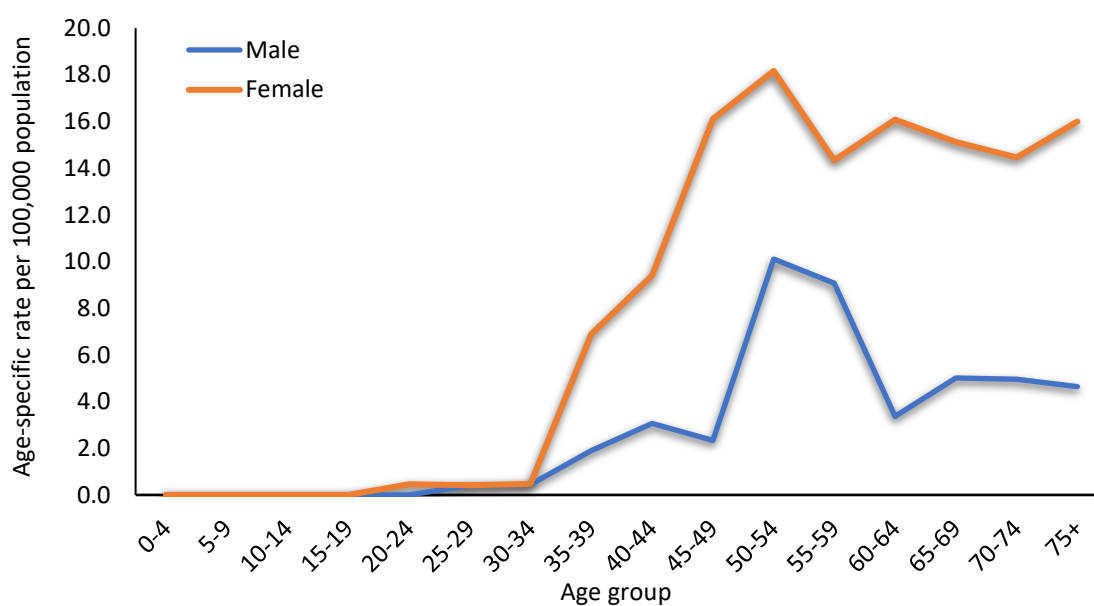
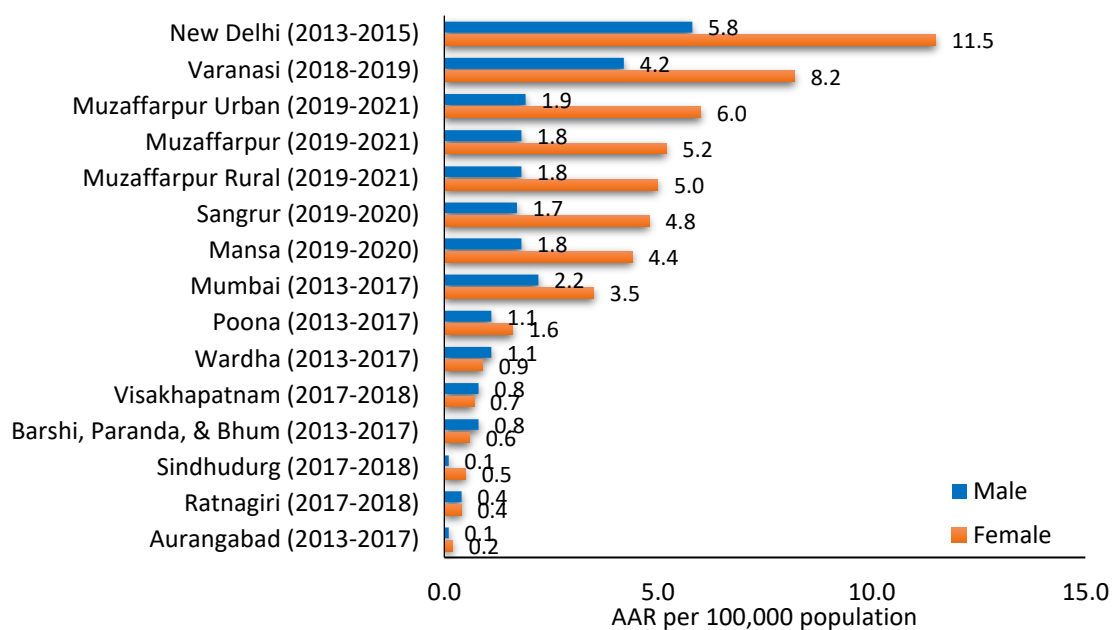


Figure 19: Comparison of gall bladder cancer incidence rate with other Indian registries



Cancer of liver (C22)

	Male	Female
Number of cases	40	11
% to total cases	3.8	1.0
Crude Incidence Rate per 100,000	1.2	0.4
Age-Adjusted Incidence Rate per 100,000	1.6	0.5
Truncated Rate per 100,000	3.6	0.9

Figure 20: Age-specific incidence rate of cancer of liver: 2019-2021

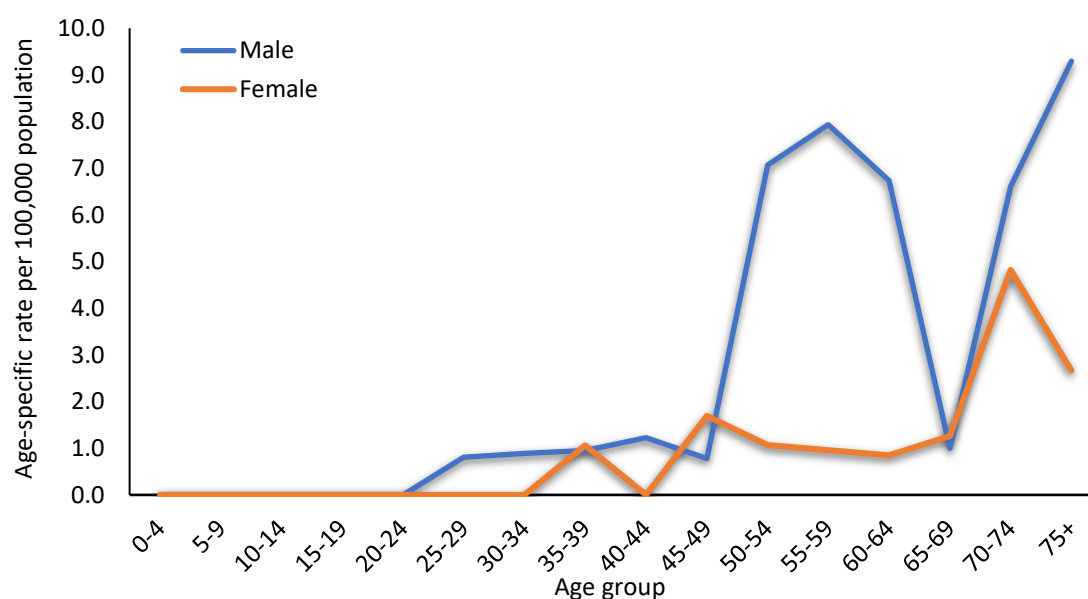
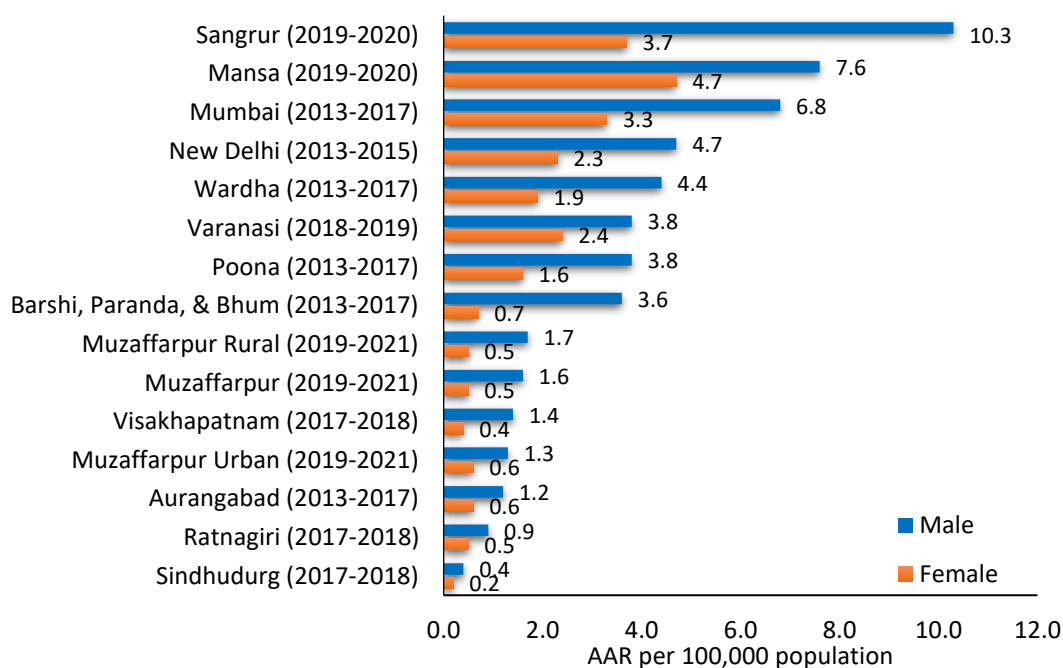


Figure 21: Comparison of liver cancer incidence rate with other Indian registries



Cancer of stomach (C16)

	Male	Female
Number of cases	31	17
% to total cases	3.0	1.5
Crude Incidence Rate per 100,000	1.0	0.6
Age-Adjusted Incidence Rate per 100,000	1.2	0.7
Truncated Rate per 100,000	3.0	1.8

Figure 22: Age-specific incidence rate of cancer of stomach: 2019-2021

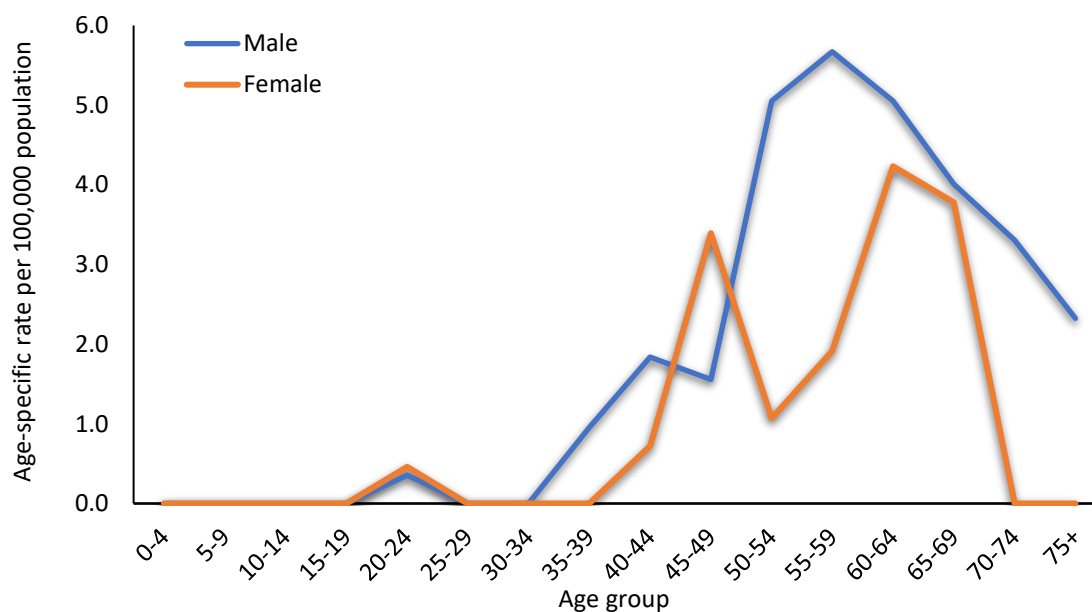
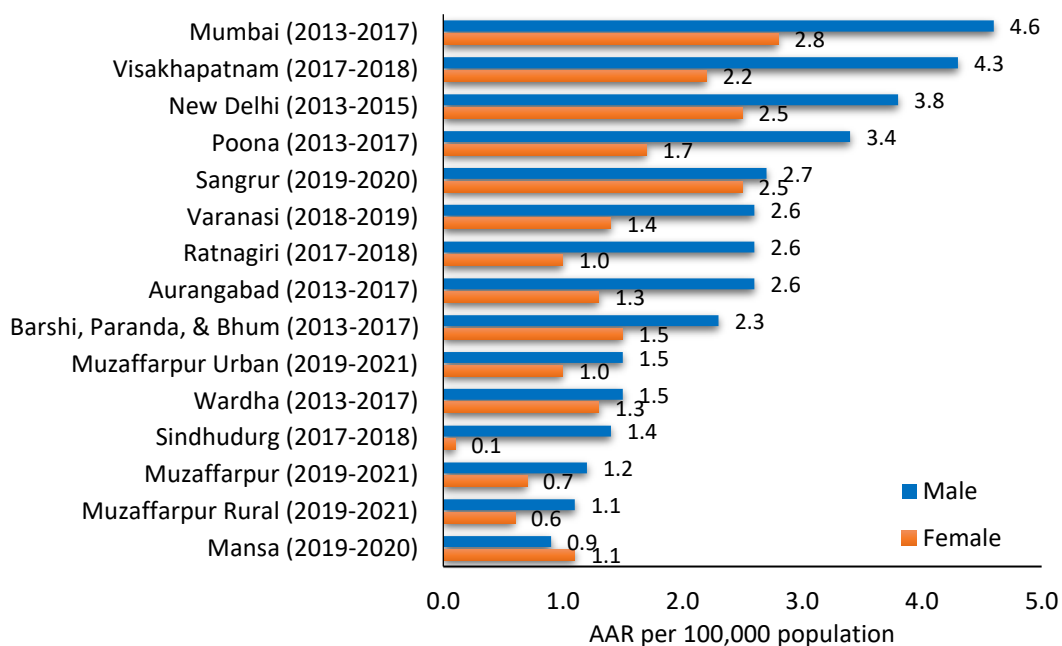


Figure 23: Comparison of stomach cancer incidence rate with other Indian registries



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

	Male	Female
Number of cases	32	48
% of total cases	3.1	4.3
Crude Incidence Rate per 100,000	1.0	1.6
Age-Adjusted Incidence Rate per 100,000	1.2	2.1
Truncated Rate per 100,000	2.5	3.7

Figure 24: Age-specific incidence rate of cancer of trachea, bronchus and lung: 2019-2021

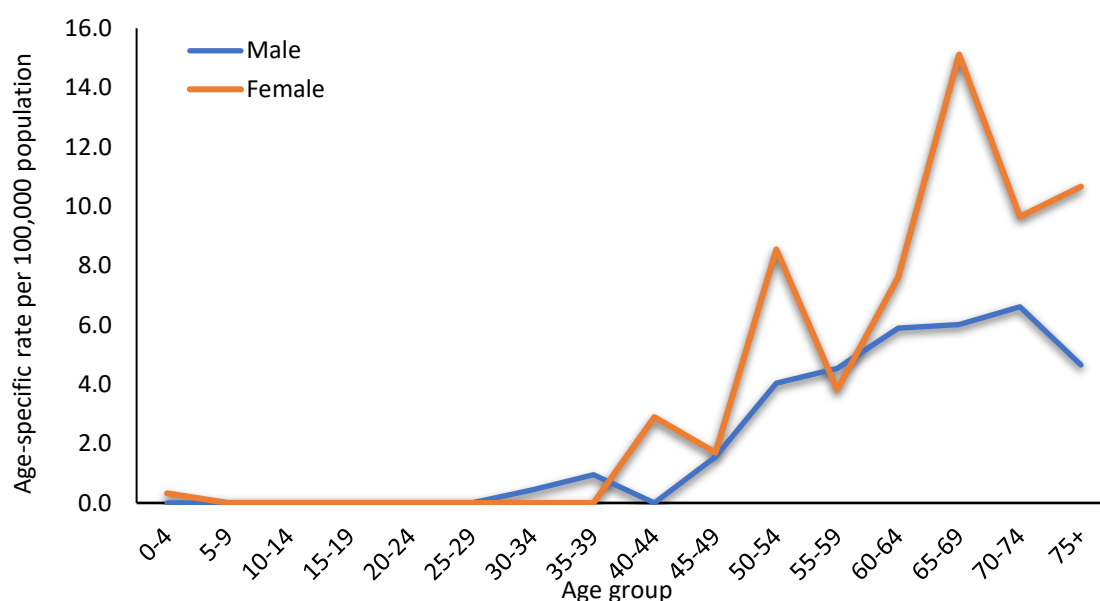
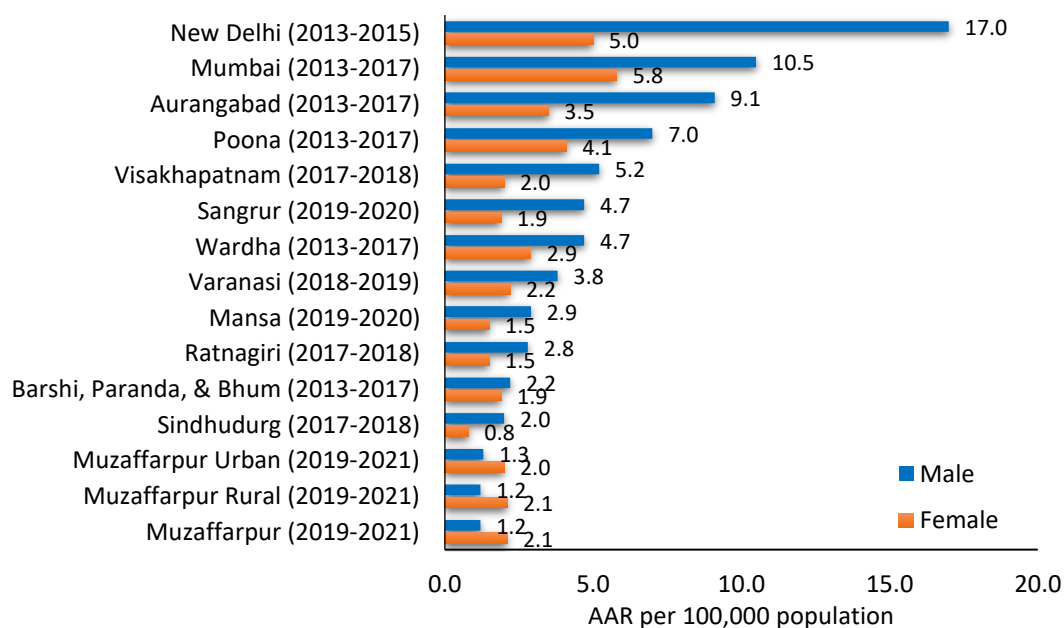


Figure 25: Comparison of trachea, bronchus and lung cancer incidence rate with other Indian registries



Cancer of prostate (C61)

Number of cases	51
% of total cases	4.9
Crude Incidence Rate per 100,000	1.6
Age-Adjusted Incidence Rate per 100,000	1.8
Truncated Rate per 100,000	1.9

Figure 26: Age-specific incidence rate of cancer of prostate: 2019-2021

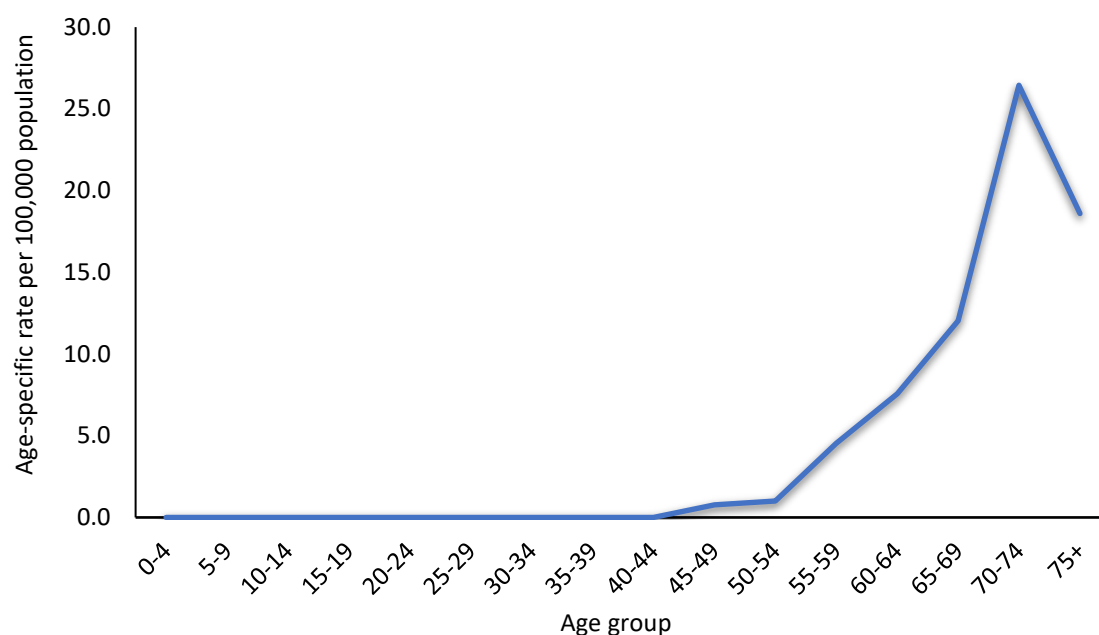
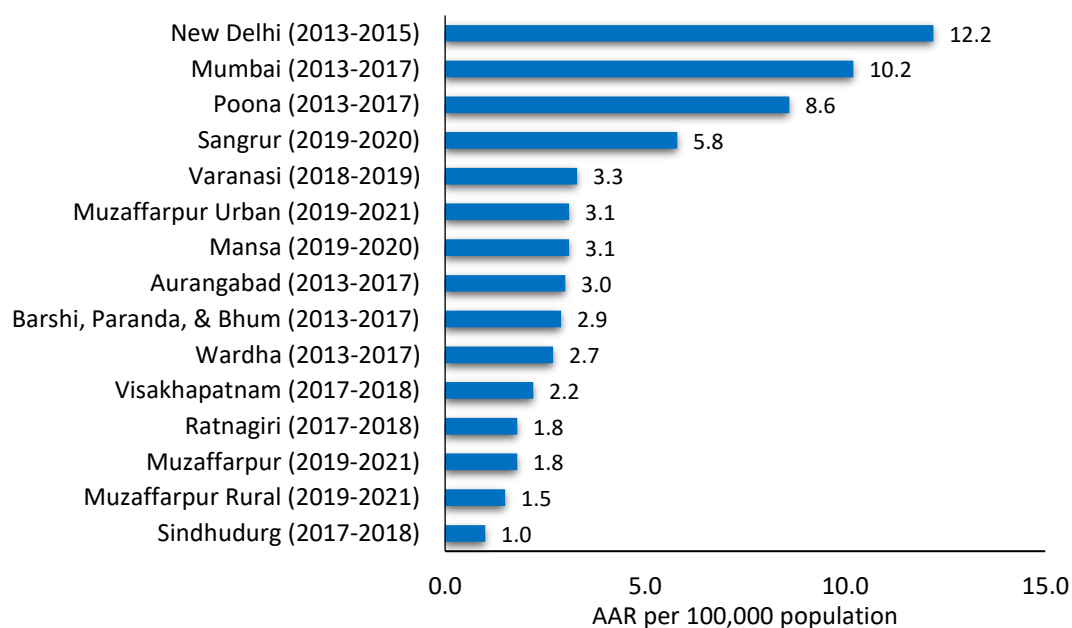


Figure 27: Comparison of prostate cancer incidence rate with other Indian registries



Cancer of breast (C50)

	Female
Number of cases	248
% of total cases	22.2
Crude Incidence Rate per 100,000	8.4
Age-Adjusted Incidence Rate per 100,000	10.5
Truncated Rate per 100,000	27.3

Figure 28: Age-specific incidence rate of cancer of breast: 2019-2021

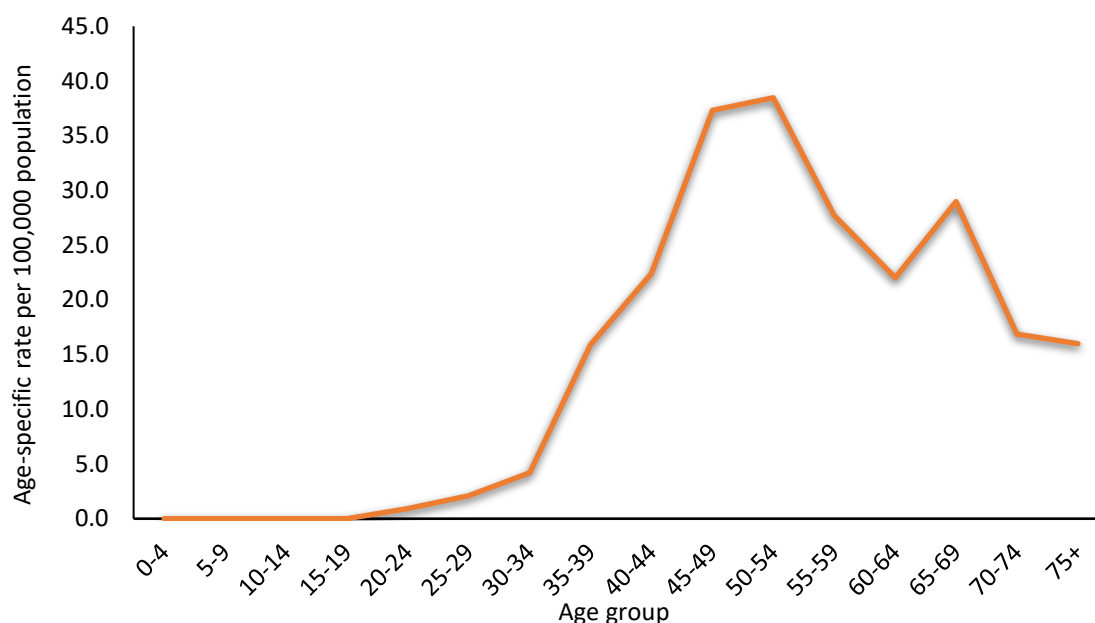
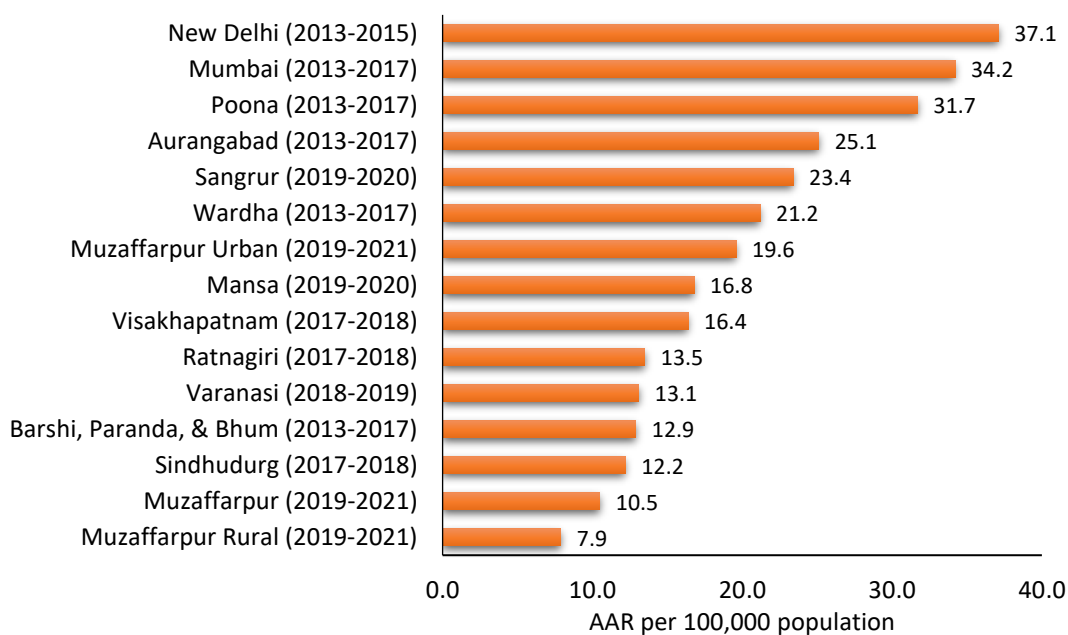


Figure 29: Comparison of breast cancer incidence rate with other Indian registries



Cancer of cervix uteri (C53)

Number of cases	141
% of total cases	12.6
Crude Incidence Rate per 100,000	4.8
Age-Adjusted Incidence Rate per 100,000	5.8
Truncated Rate per 100,000	13.7

Figure 30: Age-specific incidence rate of cancer of cervix uteri: 2019-2021

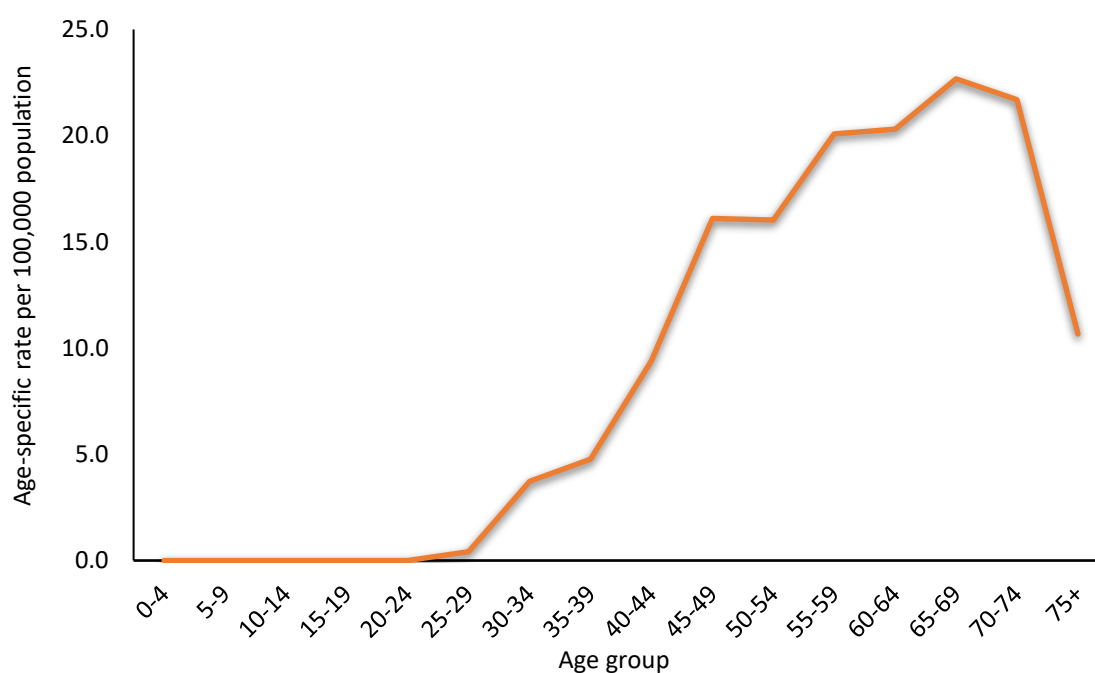
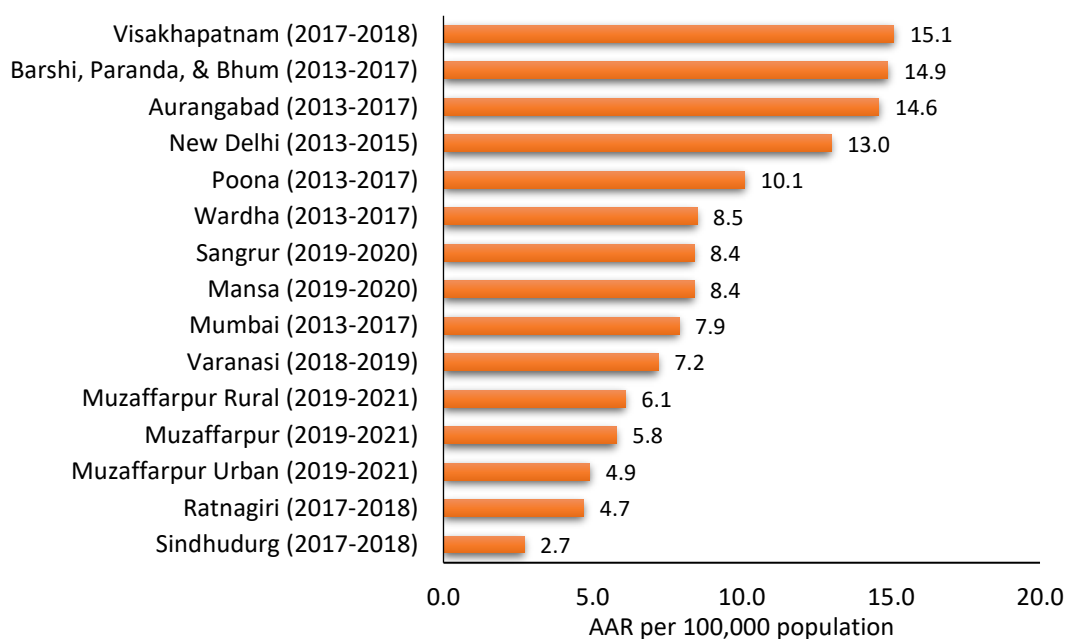


Figure 31: Comparison of cervix uteri cancer incidence rate with other Indian registries



Cancer of ovary (C56)

Number of cases	40
% to total cases	3.6
Crude Incidence Rate per 100,000	1.4
Age-Adjusted Incidence Rate per 100,000	1.6
Truncated Rate per 100,000	3.9

Figure 32: Age-specific incidence rate of cancer of ovary: 2019-2021

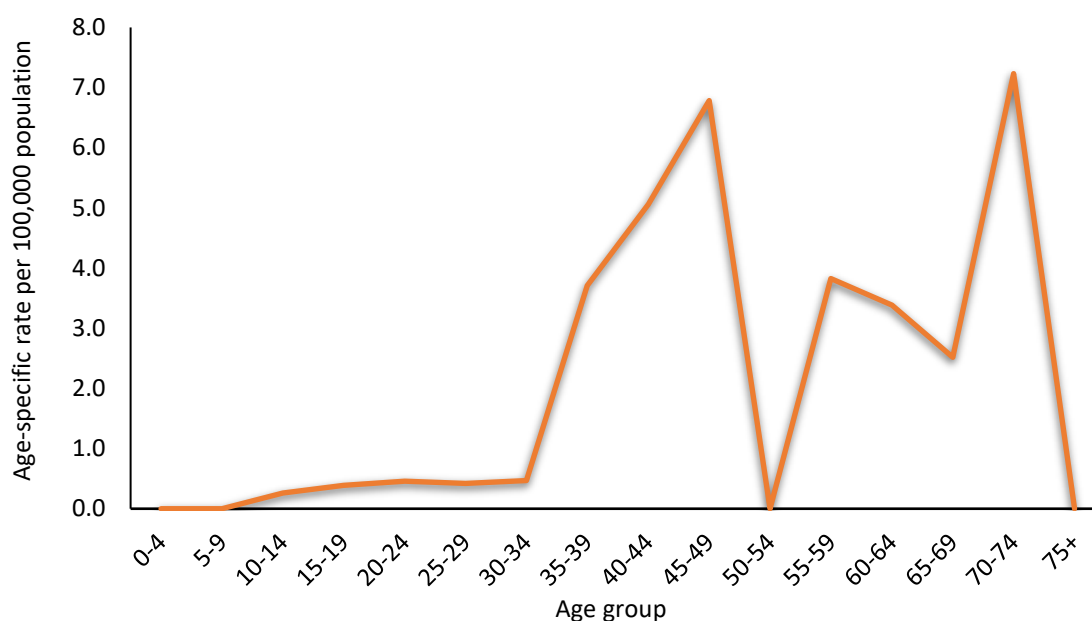
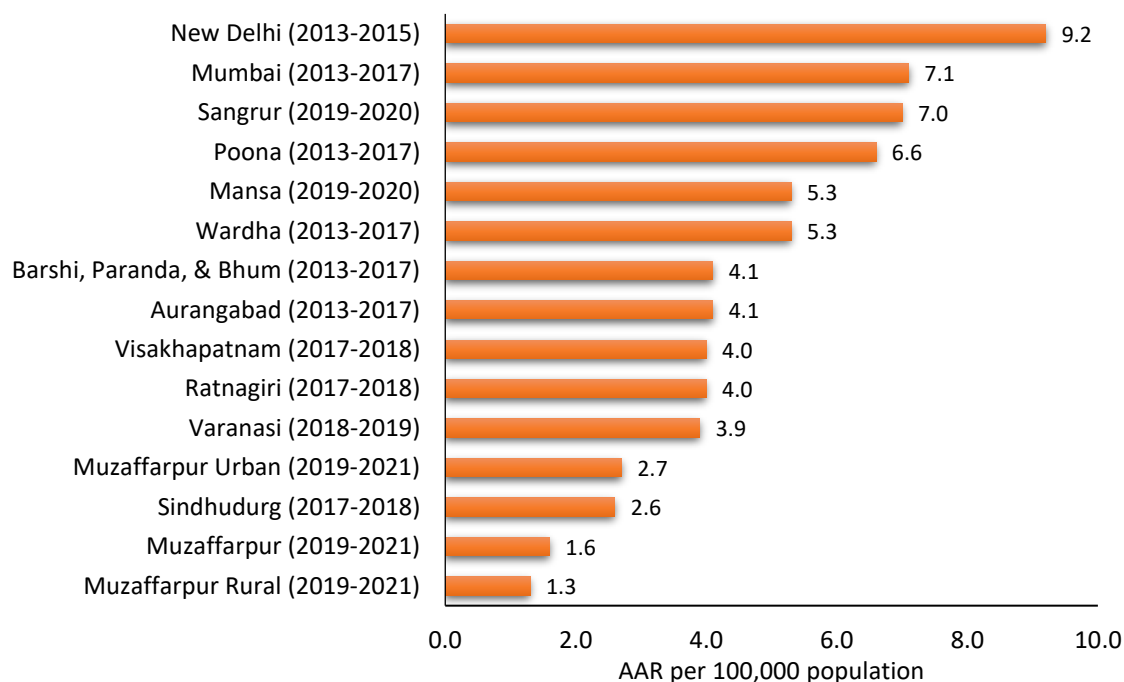


Figure 33: Comparison of ovary cancer incidence rate with other Indian registries



Age-specific incidence and mortality rate for all site

The overall, Urban, and rural all-site age-specific incidence and mortality rates for males and females are presented from Figure 34 to Figure 39.

Figure 34: Age-specific incidence and mortality rate: male all sites (Muzaffarpur: 2019-21)

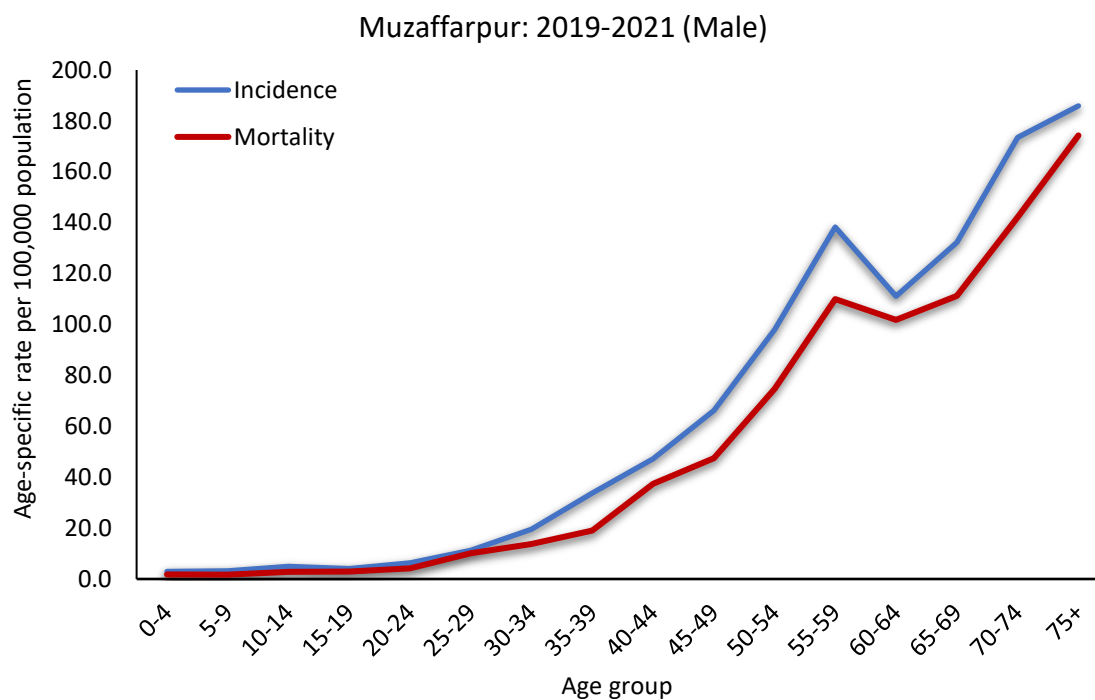


Figure 35: Age-specific incidence and mortality rate: female all sites (Muzaffarpur: 2019-21)

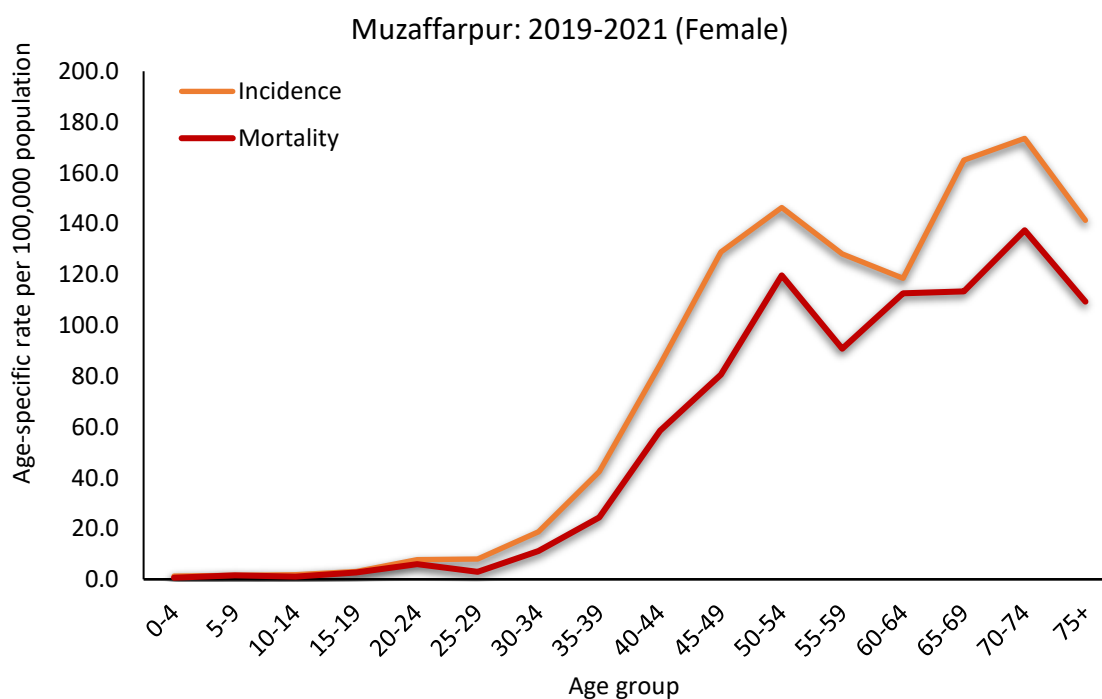


Figure 36: Age-specific incidence and mortality rate: male all sites (Muzaffarpur Urban: 2019-21)

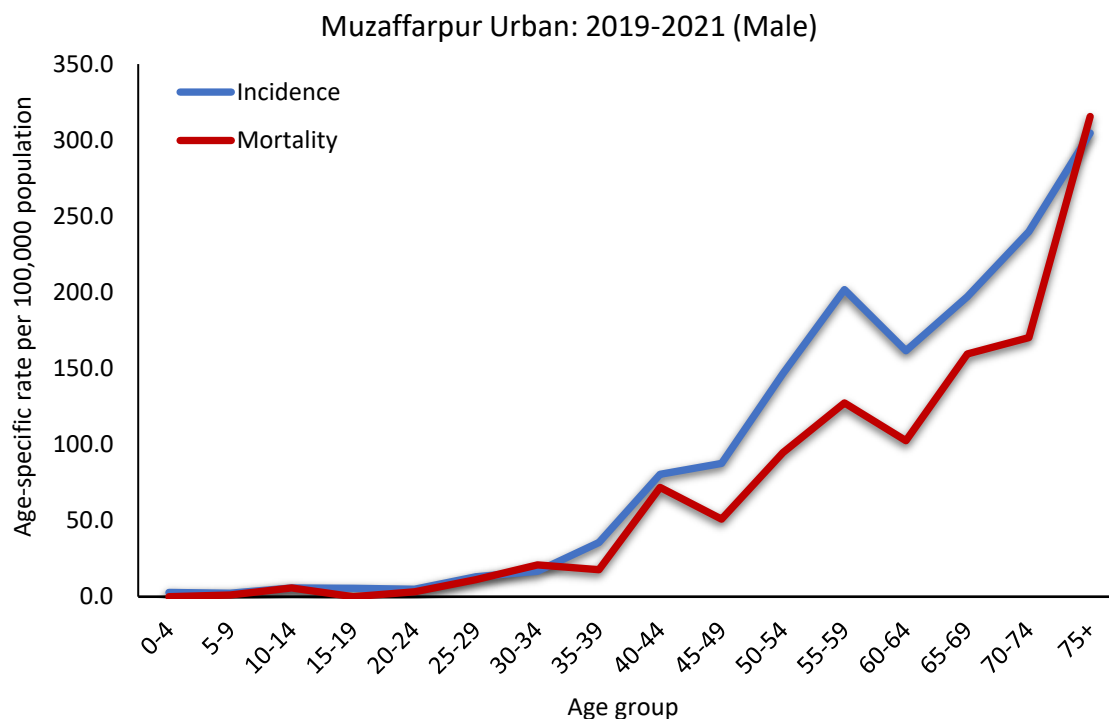


Figure 37: Age-specific incidence and mortality rate: female all sites (Muzaffarpur Urban: 2019-21)

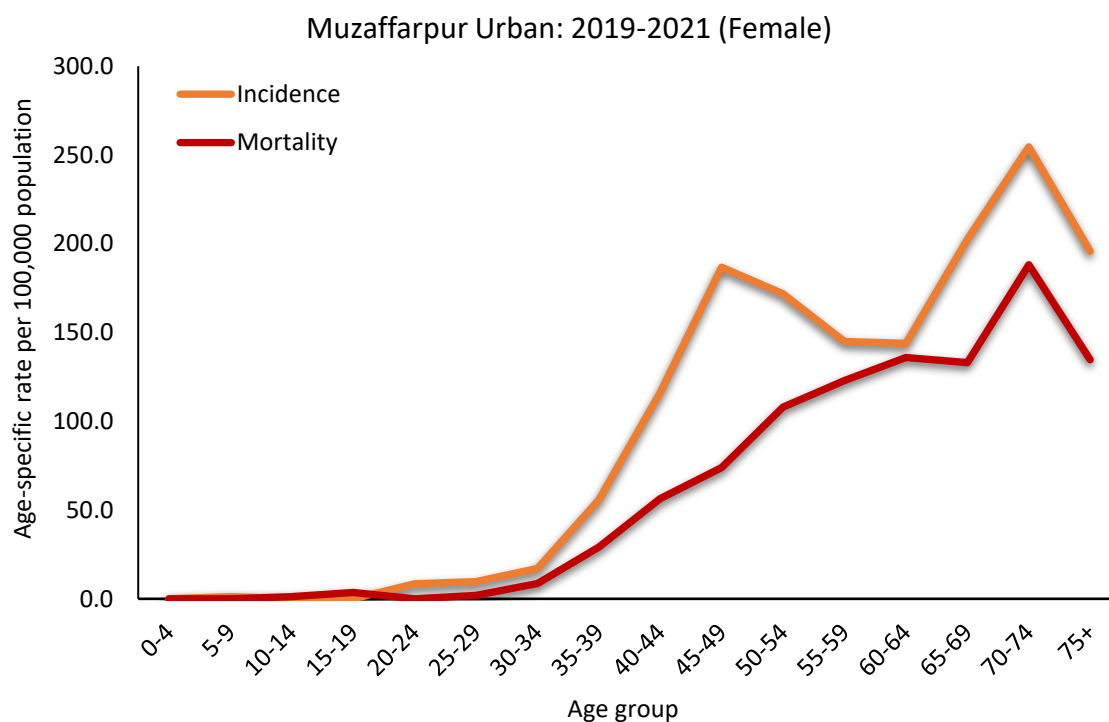


Figure 38: Age-specific incidence and mortality rate: male all sites (Muzaffarpur Rural: 2019-21)

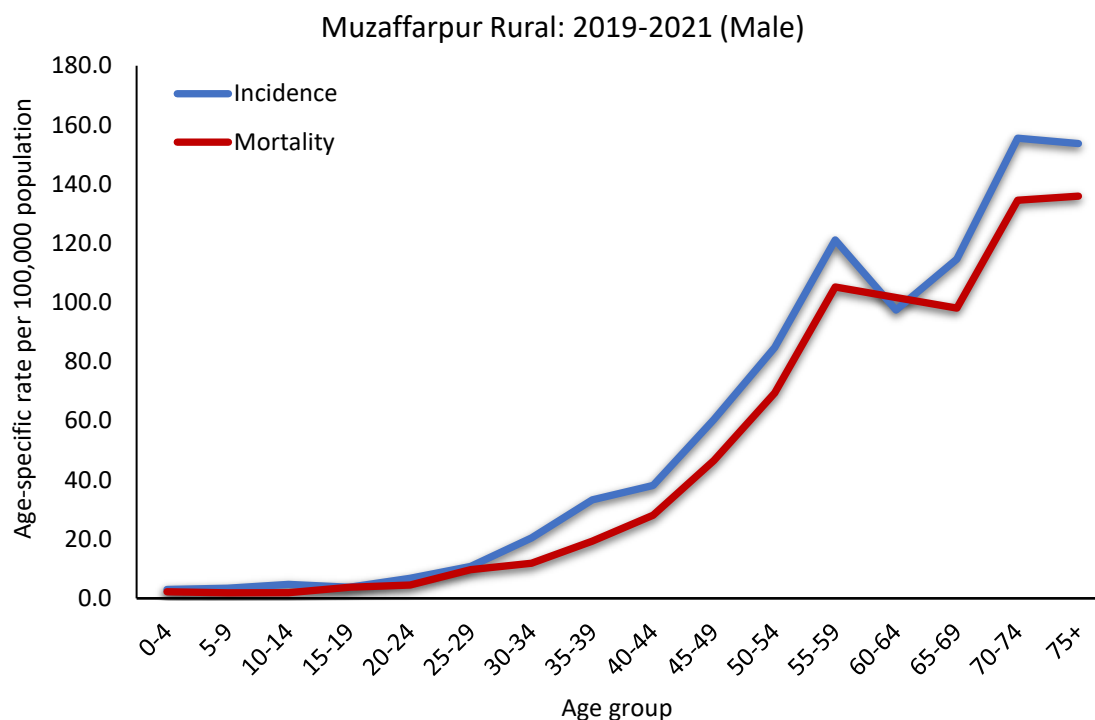
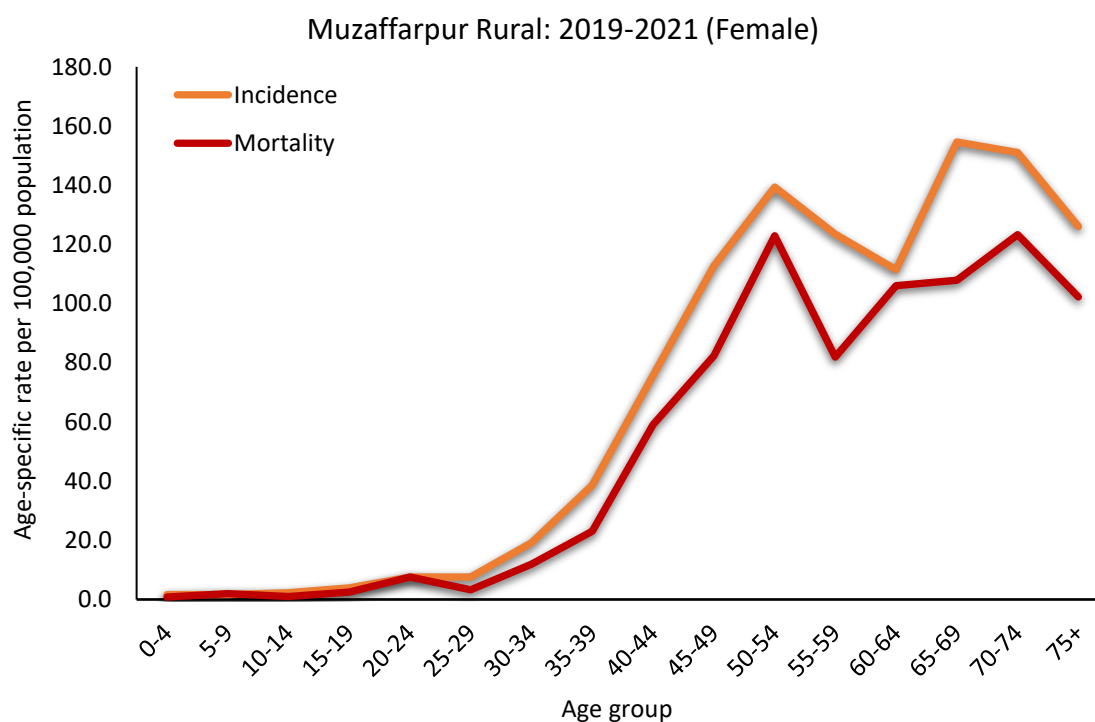


Figure 39: Age-specific incidence and mortality rate: female all sites (Muzaffarpur Rural: 2019-21)



Other and unspecified sites

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

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

In males, out of 1,048 cases, 197 (18.8%) cases were of other and unspecified sites. The predominant cases were of C80 – primary unknown (17.1%), followed by C76 – other and ill-defined, secondary and unspecified sites (0.9%), and other sites (0.9%). In females, out of 1,117 cases, 202 (18.1%) cases were of other and unspecified sites. The predominant cases were of C80 – primary unknown (17.4%), followed by C26 – Other and Ill-Defined Digestive Organ (0.4%), and other sites (0.4%). The details are presented in Table 11.

In the coming years, it is anticipated that the percentage of the primary site unknown will decrease due to improvements in the diagnostic and treatment facility.

Table 11: Other and unspecified cases by gender

ICD-10	Male		Female	
	Number	%	Number	%
C26	5	0.5	4	0.4
C48	4	0.4	-	-
C76	9	0.9	3	0.3
C77	-	-	1	0.1
C78	-	-	-	-
C79	-	-	-	-
C80	179	17.1	194	17.4
Total	197/1,048	18.8/100.0	202/1,117	18.1/100.0

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

	Male	Female
Number of cases	197	202
% to total cases	18.8	18.1
Crude Incidence Rate per 100,000	6.1	6.9
Age-Adjusted Incidence Rate per 100,000	7.6	8.6
Truncated Rate per 100,000	13.6	17.1

Figure 40: Age-specific incidence rate of cancer of other and unspecified: 2019-2021

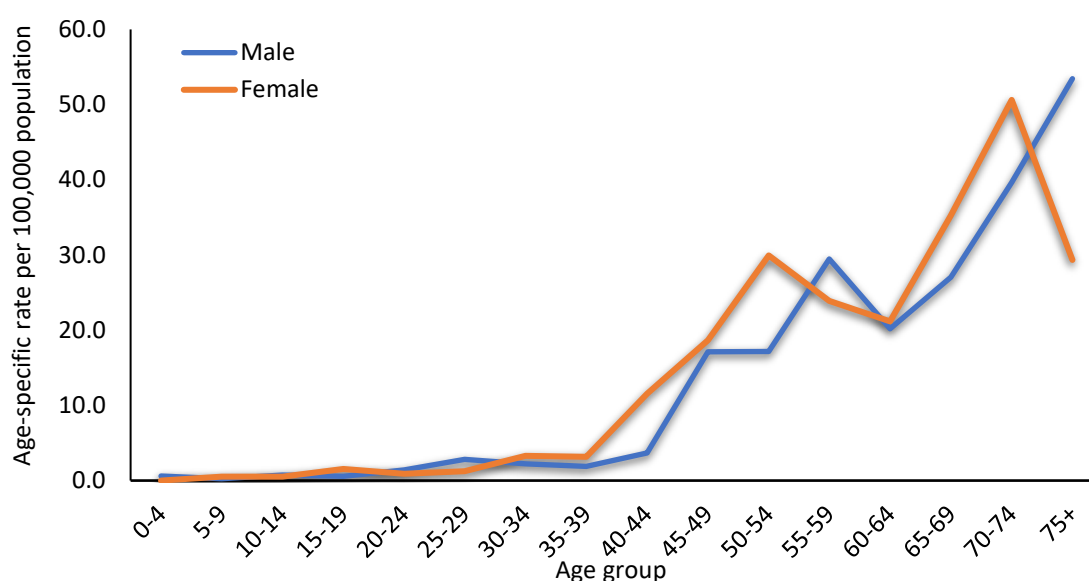
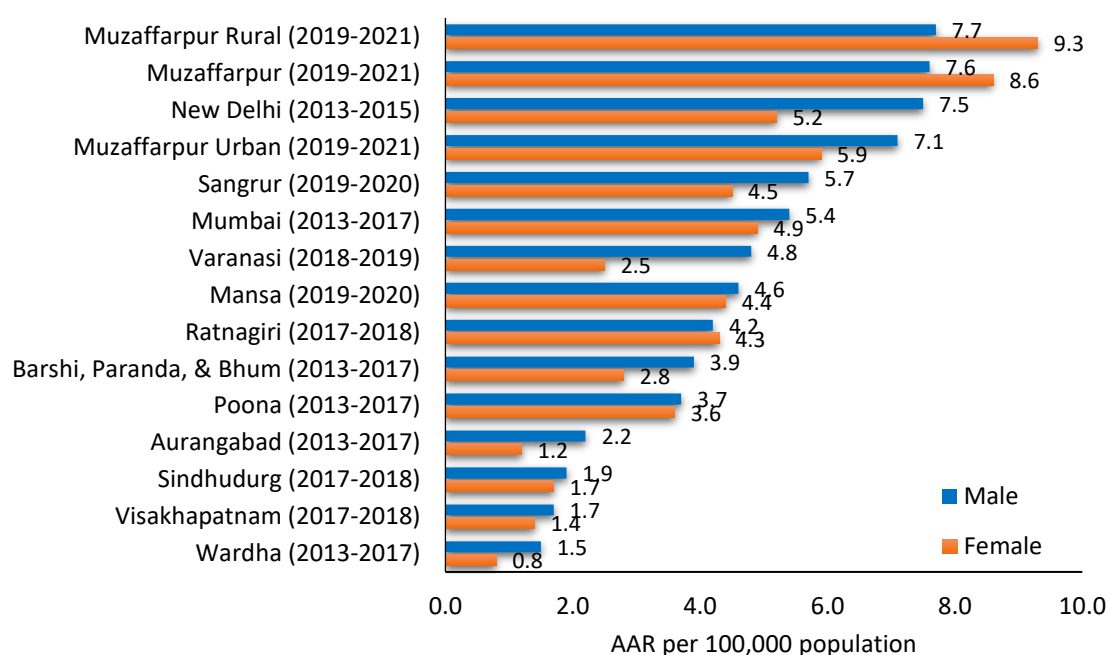


Figure 41: Comparison of other and unspecified cancer incidence rate with other Indian registries



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

In the year 2019-2021, out of 2,165 registered cancer cases 60 (2.8%) paediatric cases (0-14 age group) were registered. The age-adjusted incidence for boys is 36.3 per million and 15.2 per million for girls. The leading cancer sites among boys are lymphoid leukaemia, bone, non-Hodgkin lymphoma, leukaemia unspecified, and brain, nervous system. While among girls, lymphoid leukaemia, leukaemia unspecified, bone, myeloid leukaemia, and lung are the leading cancer sites. The leading cancer sites are mentioned in Figures 42 and 43. Of the total 60 registered paediatric cancer cases, 43 (71.7%) cases have microscopic confirmation.

The paediatric cancer rates are very low compared to other Indian registries. This is the second report of the cancer registry and in the initial period, cooperation from the treating cancer centre, diagnostic centre and even from the community was the most challenging obstacle faced by registry during data collection. This may be the reason for under-reporting of paediatric cases.

Figure 42: Leading cancer sites in boys: 2019-2021

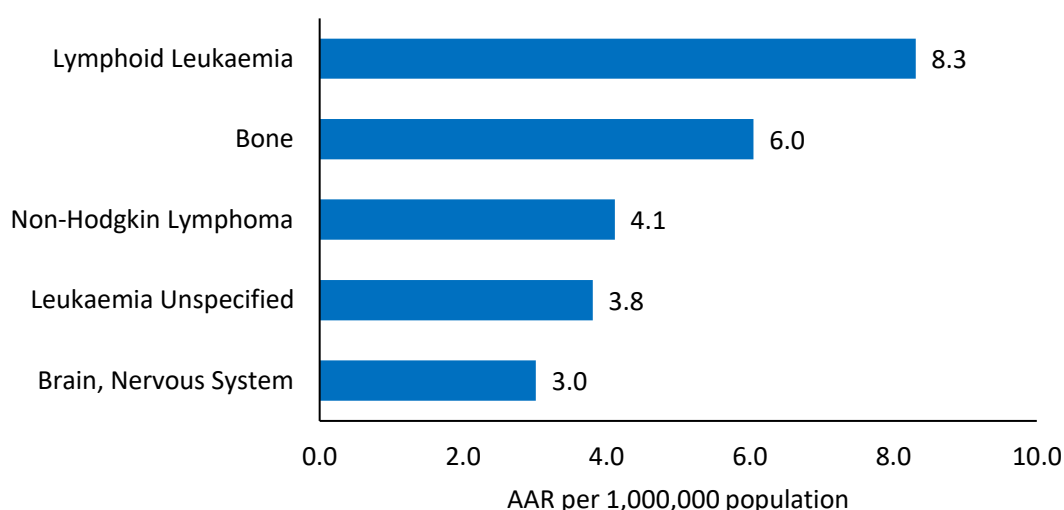
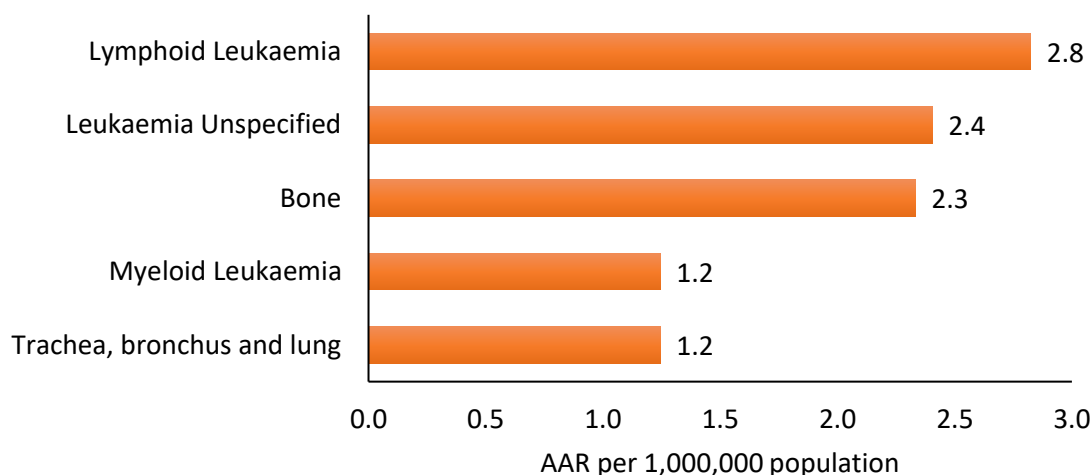


Figure 43: Leading cancer sites in girls: 2019-2021



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 in to 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 12. **The paediatric cancer burden as per ICCC-3 standard is mentioned separately in Table 39 and 40.** ⁽¹⁶⁾

Proportion of paediatric cancer cases as per 12 main diagnostic group as per ICCC-3 standard is presented in Figure 44.

Figure 44: Proportion of paediatric cancer cases by age-group: Both sex (Muzaffarpur area)

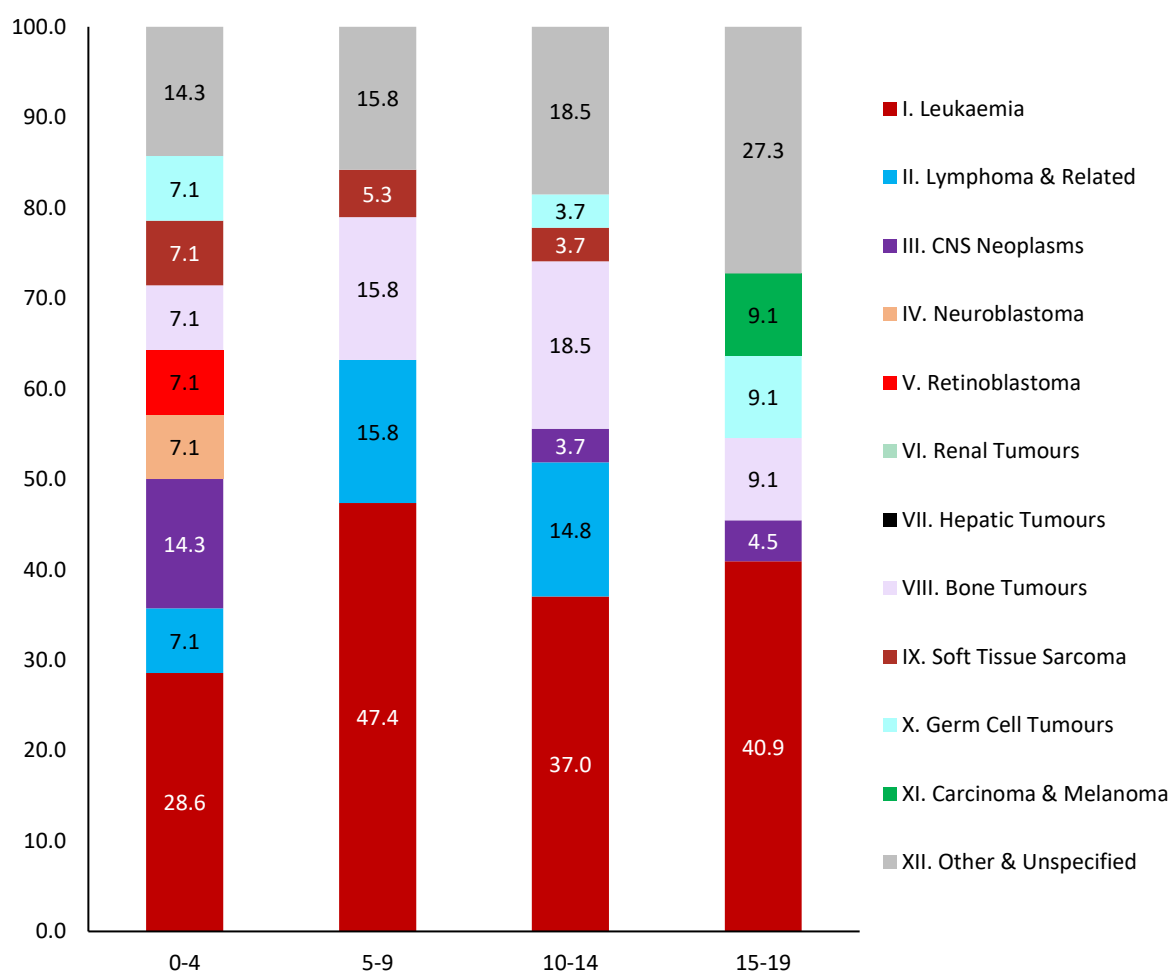


Table 12: Cancer cases distribution as per the International Classification of Childhood Cancer (ICCC) code: 2019-2021

ICCC Code	Site	Boys			Girls		
		Number	%	AAR*	Number	%	AAR*
1a	Lymphoid	11	25.6	8.3	3	17.6	2.8
1b	Acute myeloid	1	2.3	0.7	1	5.9	1.2
1e	Unspecified	4	9.3	3.8	3	17.6	2.4
2a	Hodgkin	3	7.0	2.3	-	-	-
2b	Non-Hodgkin except BL	3	7.0	2.2	-	-	-
2c	Burkitt (BL)	1	2.3	1.1	-	-	-
2e	Unspecified	1	2.3	0.7	-	-	-
3a	Ependymoma	1	2.3	0.7	-	-	-
3c	CNS embryonal	1	2.3	1.1	-	-	-
3f	Unspecified CNS	1	2.3	1.1	-	-	-
4a	(Ganglio)neuroblastoma	-	-	-	1	5.9	1.2
5	RETINOBLASTOMA	1	2.3	1.1	-	-	-
8a	Osteosarcoma	1	2.3	0.7	1	5.9	0.8
8c	Ewing & related	4	9.3	3.4	1	5.9	0.8
8e	Unspecified	1	2.3	0.8	1	5.9	0.8
9b	Fibrosarcoma	1	2.3	0.7	-	-	-
9d	Other specified	2	4.7	1.9	-	-	-
10b	Other extragonadal	1	2.3	1.1	-	-	-
10c	Gonadal germ cell	-	-	-	1	5.9	0.8
12a	Other specified	-	-	-	1	5.9	1.2
12b	Other unspecified	5	11.6	4.1	4	23.5	3.2
ALL	All sites	43	100	36.3	17	100.1	15.2

* AAR per 1,000,000 population

12. Tobacco-related cancer

The use of tobacco has severe ill-effects on health. Tobacco is one of the major causes of non-communicable diseases. The anatomical sites are included to calculate the tobacco-related cancer burden are based on the guidelines of the IARC, World Health Organisation (WHO), Lyon, France.⁽¹⁷⁾ 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 Muzaffarpur cancer registry data, the tobacco-related cancer burden is 34.4% in males (1 out of 3 cancer case is tobacco-related) while, it is 12.0% in females (1 out of 8 cancer case is tobacco-related). The leading site under tobacco-related cancer are mouth, tongue, lung, oesophagus, and larynx in males; and in females, lung, mouth, and tongue.

Among 360 male tobacco-related cancer cases, 82 (22.8%) were farmers, 58 (16.1%) were clerical shop-owners, and 54 (15.0%) were government employees. Whereas, out of the total 134 female tobacco-related cancer cases, 122 (91.0%) were housewives. With regards to the educational level of this population, 17.5% males and 50.0% females were illiterate. Moreover, income of around 67% population was less than Rs. 15,000/- per month (male: 65.3% and female: 70.9%).

Table 13: Tobacco-related cancer in male: 2019-2021

ICD-10	Site	Total	%	CR	AAR	TR
C00	Lip	12	1.1	0.4	0.4	0.9
C01-C02	Tongue	77	7.3	2.4	2.8	6.5
C03-C06	Mouth	155	14.8	4.8	5.7	13.0
C10	Other Oropharynx	11	1.0	0.3	0.4	0.4
C12-C13	Hypopharynx	14	1.3	0.4	0.5	0.5
C14	Pharynx Unspecified	-	-	-	-	-
C15	Oesophagus	26	2.5	0.8	1.0	2.1
C32	Larynx	19	1.8	0.6	0.8	1.9
C33-C34	Trachea, bronchus and lung	32	3.1	1.0	1.2	2.5
C67	Urinary Bladder	14	1.3	0.4	0.5	0.8
C00-C06, C10, C12-C15, C32-C34 & C67	Tobacco-related cancer	360	34.4	11.1	13.4	28.7

Table 14: Tobacco-related cancer in female: 2019-2021

ICD-10	Site	Total	%	CR	AAR	TR
C00	Lip	-	-	-	-	-
C01-C02	Tongue	23	2.1	0.8	1.1	2.3
C03-C06	Mouth	34	3.0	1.2	1.5	2.8
C10	Other Oropharynx	5	0.4	0.2	0.2	0.8
C12-C13	Hypopharynx	-	-	-	-	-
C14	Pharynx Unspecified	1	0.1	0.0	0.0	0.1
C15	Oesophagus	10	0.9	0.3	0.4	0.7
C32	Larynx	5	0.4	0.2	0.2	0.4
C33-C34	Trachea, bronchus and lung	48	4.3	1.6	2.1	3.7
C67	Urinary Bladder	8	0.7	0.3	0.3	0.6
C00-C06, C10, C12-C15, C32-C34 & C67	Tobacco-related cancer	134	12.0	4.6	5.9	11.5

Table 15: Tobacco-related cancer cases by gender and occupation

Occupation	Male		Female		Total	
	Number	%	Number	%	Number	%
Professional	17	4.7	-	-	17	3.4
Semi-Professional	13	3.6	-	-	13	2.6
Clerical/Shop owner	58	16.1	2	1.5	60	12.1
Farmer	82	22.8	1	0.7	83	16.8
Skilled Worker	43	11.9	-	-	43	8.7
Semi-Skilled Worker	21	5.8	-	-	21	4.3
Unskilled Worker	28	7.8	1	0.7	29	5.9
Unemployed	3	0.8	-	-	3	0.6
Student	2	0.6	-	-	2	0.4
Housewife	-	-	122	91.0	122	24.7
Govt Employee	54	15.0	6	4.5	60	12.1
Pvt Employee	31	8.6	1	0.7	32	6.5
Other	8	2.2	1	0.7	9	1.8
Total	360	100	134	100	494	100

Table 16: Tobacco-related cancer cases by gender and religion

Religion	Male		Female		Total	
	Number	%	Number	%	Number	%
Hindu	304	84.4	106	79.1	410	83.0
Muslim	56	15.6	28	20.9	84	17.0
Total	360	100	134	100	494	100

Table 17: Tobacco-related cancer cases by gender and education

Education	Male		Female		Total	
	Number	%	Number	%	Number	%
Illiterate	63	17.5	67	50.0	130	26.3
Literate	38	10.6	16	11.9	54	10.9
Primary (1-7 std)	58	16.1	20	14.9	78	15.8
Secondary (8-10 std)	74	20.6	18	13.4	92	18.6
Technical after 10th	8	2.2	-	-	8	1.6
College	109	30.3	11	8.2	120	24.3
Post graduate	8	2.2	1	0.7	9	1.8
Other	1	0.3	1	0.7	2	0.4
Unknown / No Information	1	0.3	-	-	1	0.2
Total	360	100	134	100	494	100

Table 18: Tobacco-related cancer cases by gender and income

Income	Male		Female		Total	
	Number	%	Number	%	Number	%
>=30375	43	11.9	10	7.5	53	10.7
15188-30374	81	22.5	29	21.6	110	22.3
11362-15187	106	29.4	55	41.0	161	32.6
7594-11361	77	21.4	27	20.1	104	21.1
4556-7593	44	12.2	10	7.5	54	10.9
1521-4555	8	2.2	3	2.2	11	2.2
Unknown/No Information	1	0.3	-	-	1	0.2
Total	360	100	134	100	494	100

13. Cancer burden as per anatomical system

For males, the reported majority of cancer cases involved the sites from head and neck region (30.1%) followed by the lip, oral cavity (23.3%) with the highest AAR 11.5 and 8.9 per 100,000 population respectively, and further, digestive organ (20.6%), lymphoid and haematopoietic tissue (11.5%) and male genital organ (7.0%) and leukaemia (6.1%) followed. In head and neck region as well as lip, oral cavity, the leading sites were of mouth cancers (C03-06) with AAR 5.7 per 100,000 population, in digestive tract organs, stomach was the leading cancer site (C16) with 1.2 AAR per 100,000 population and while among male genitalia cancer cases, the leading site was prostate (C61) with AAR 1.8 per 100,000 population (Table 19).

For females, the reported majority of cancer cases involved the sites from breast (22.2%) followed by the female genital organs (18.7%) and digestive organ (18.5%) with highest AAR 10.5, 8.6, and 8.8 per 100,000 population respectively and further, head and neck regions (7.4%), lymphoid and haematopoietic tissue (6.0%) and lip, oral cavity (5.1) followed. Among the female genitalia organs, the leading site is cervix uteri (C53) with AAR 5.8 per 100,000 population and for digestive organ cancer, the leading site was gall bladder (C23-24) with AAR 5.2 per 100,000 population (Table 20).

The anatomical system-wise cancer burden is presented in Figure 45, Tables 19 and 20.

Figure 45: Cancer rates by different anatomical sites in Muzaffarpur: 2019-2021

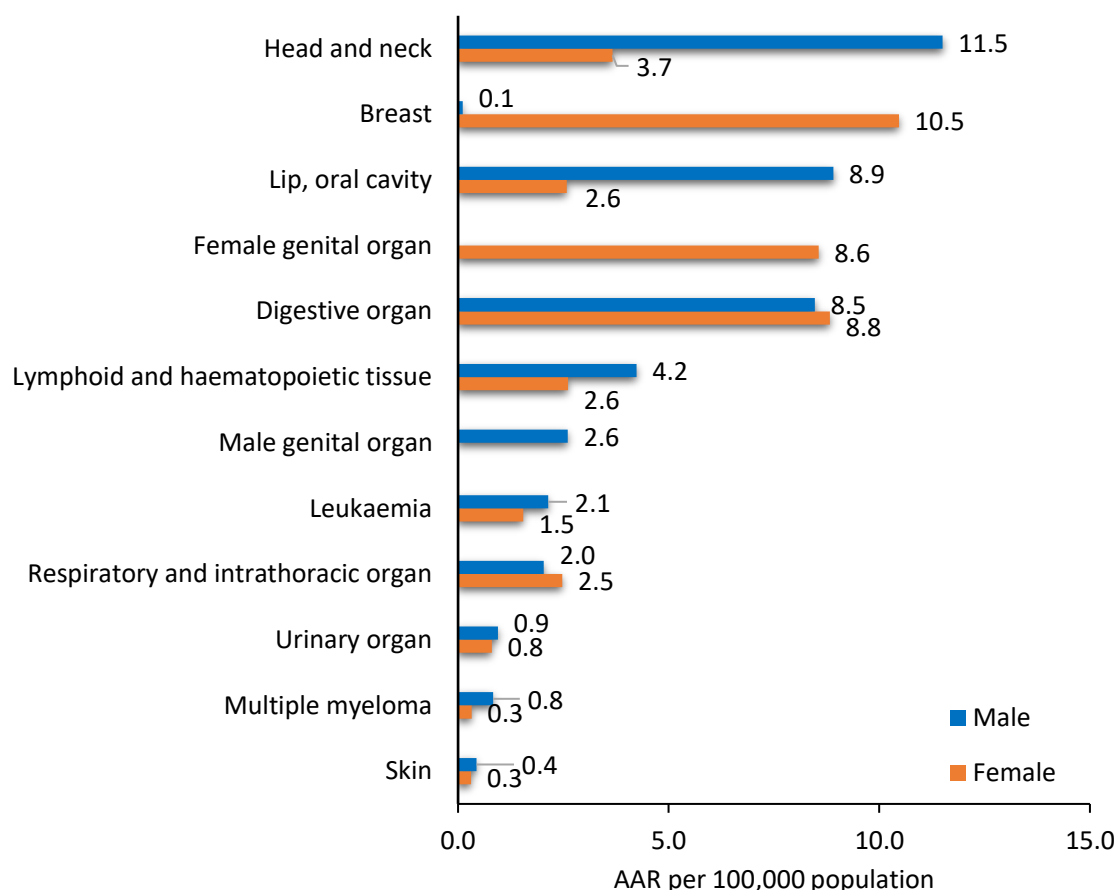


Table 19: Cancer burden as per the various anatomical system in male: 2019-2021

ICD-10	Site	Number	%	CR	AAR	TR
C00-C14, C30-C32 & C73	Head and neck	315	30.1	9.7	11.5	24.2
C00-C06	Lip, oral cavity	244	23.3	7.5	8.9	20.4
C15-C25	Digestive organ	216	20.6	6.6	8.5	19.5
C81-C96	Lymphoid and haematopoietic tissue	121	11.5	3.7	4.2	8.0
C60-C63	Male genital organ	73	7.0	2.2	2.6	3.6
C91-C95	Leukaemia	64	6.1	2.0	2.1	3.9
C30-C38	Respiratory and intrathoracic organ	53	5.1	1.6	2.0	4.4
C64-C68	Urinary organ	24	2.3	0.7	0.9	1.9
C88 + C90	Multiple myeloma	21	2.0	0.6	0.8	1.7
C43-C44	Skin	12	1.1	0.4	0.4	0.6
C50	Breast	3	0.3	0.1	0.1	0.2

Table 20: Cancer burden as per the various anatomical system in female: 2019-2021

ICD-10	Site	Number	%	CR	AAR	TR
C50	Breast	248	22.2	8.4	10.5	27.3
C15-C25	Digestive organ	207	18.5	7.1	8.8	20.4
C51-C58	Female genital organ	209	18.7	7.1	8.6	20.2
C00-C14, C30-C32 & C73	Head and neck	83	7.4	2.8	3.7	7.5
C81-C96	Lymphoid and haematopoietic tissue	67	6.0	2.3	2.6	4.6
C00-C06	Lip, oral cavity	57	5.1	1.9	2.6	5.1
C30-C38	Respiratory and intrathoracic organ	57	5.1	1.9	2.5	4.6
C91-C95	Leukaemia	41	3.7	1.4	1.5	2.4
C64-C68	Urinary organ	19	1.7	0.6	0.8	1.7
C88 + C90	Multiple myeloma	8	0.7	0.3	0.3	0.8
C43-C44	Skin	8	0.7	0.3	0.3	0.6

14. Survival studies

The Muzaffarpur cancer registry report for the year 2018 stated that the mouth, prostate, and tongue were the leading cancer sites among male with age-adjusted incidence rate 6.7, 2.2, and 2.1 respectively. While in female the breast was the leading cancer site followed by cervix uteri, and gallbladder with an age-adjusted incidence rate of 12.8, 7.7, and 5.1, respectively.

These cancer cases were followed till 31st December 2023 for vital status. Of these, 23.3% of mouth, 27.3% prostate, and 31.8% of tongue male cancer cases were alive after five years of diagnosis. Whereas, the 30.5% of breast, 17.5% cervix uteri, and none of the gall bladder cases were alive in females.

The survival of cancer patients among this area is very poor. Due to a lack of health awareness, the majority of cancer patients are presented to the hospital in an advanced stage of the disease. There are lot of challenges in the completion of the treatment for the cancer patient. To boost cancer care services in this area, Tata Memorial Centre, Mumbai, has established a cancer hospital with the help of the State Government of Bihar. Due to improvements in cancer care services, there will be an improvement in survival in the future.

The 1, 3, and 5 year observed and relative survival of leading cancer sites among male and female mentioned below in Table 21 and 22 respectively.

Table 21: Observed and relative survival among male

ICD-10	Site	Observed survival (%)			Relative survival (%)		
		1 year	3 year	5 year	1 year	3 year	5 year
C03-C06	Mouth	55.0	31.7	23.3	56.2	33.4	25.1
C61	Prostate	72.7	40.9	27.3	75.3	44.6	32.2
C01-C02	Tongue	54.6	36.4	31.8	54.9	36.9	32.7

Table 22: Observed and relative survival among female

ICD-10	Site	Observed survival (%)			Relative survival (%)		
		1 year	3 year	5 year	1 year	3 year	5 year
C50	Breast	76.8	43.2	32.6	78.0	45.0	35.2
C53	Cervix uteri	56.1	31.6	21.1	57.1	32.7	22.3
C23-24	Gall bladder etc.	15.0	0.0	0.0	15.1	0.0	0.0

15. Socio-demographic information

The Muzaffarpur cancer registry staff interacted with cancer patients or their relatives and gathered socio-demographic information. Based on the information collected, cancer cases were highest among the Hindu community (84.7%) in the Muzaffarpur. Moreover, cancer cases were more among the illiterate female population [472/1117 (42.3%)] compared to males [178/1048 (17.0%)]. Furthermore, in terms of occupation, cancer cases were more commonly found among farmers (25.1%) in males and housewives (88.3%) in females. The number of cancer cases were more among the population (56.5%) with an income range of Rs. 7,500/- to Rs. 15,200/- per month. The socio-demographic information of cancer cases is presented in Table 23 to Table 26.

Table 23: Cancer cases by education and gender

Education	Male		Female		Total	
	Number	%	Number	%	Number	%
Illiterate	178	17.0	472	42.3	650	30.0
Literate	102	9.7	145	13.0	247	11.4
Primary (1-7 std)	173	16.5	171	15.3	344	15.9
Secondary (8-10 std)	222	21.2	168	15.0	390	18.0
Technical after 10th	20	1.9	5	0.4	25	1.2
College	305	29.1	122	10.9	427	19.7
Post graduate	28	2.7	26	2.3	54	2.5
Other	2	0.2	1	0.1	3	0.1
Not applicable for children	13	1.2	5	0.4	18	0.8
Unknown / No Information	5	0.5	2	0.2	7	0.3
Total	1048	100	1117	100	2165	100

Table 24: Cancer cases by religion and gender

Religion	Male		Female		Total	
	Number	%	Number	%	Number	%
Hindu	889	84.8	944	84.5	1833	84.7
Muslim	158	15.1	172	15.4	330	15.2
Christian	1	0.1	-	-	1	0.0
Jain	-	-	1	0.1	1	0.0
Total	1048	100	1117	100	2165	100

Table 25: Cancer cases by income and gender

Income	Male		Female		Total	
	Number	%	Number	%	Number	%
>=30375	136	13.0	89	8.0	225	10.4
15188-30374	213	20.3	252	22.6	465	21.5
11362-15187	323	30.8	407	36.4	730	33.7
7594-11361	242	23.1	251	22.5	493	22.8
4556-7593	106	10.1	93	8.3	199	9.2
1521-4555	23	2.2	21	1.9	44	2.0
<=1520	-	-	1	0.1	1	0.05
Unknown/No Information	5	0.5	3	0.3	8	0.4
Total	1048	100	1117	100	2165	100

Table 26: Cancer cases by occupation and gender

Occupation	Male		Female		Total	
	Number	%	Number	%	Number	%
Professional	51	4.9	9	0.8	60	2.8
Semi-Professional	22	2.1	3	0.3	25	1.2
Clerical/Shop owner	124	11.8	7	0.6	131	6.1
Farmer	263	25.1	12	1.1	275	12.7
Skilled Worker	100	9.5	2	0.2	102	4.7
Semi-Skilled Worker	57	5.4	1	0.1	58	2.7
Unskilled Worker	87	8.3	4	0.4	91	4.2
Unemployed	4	0.4	1	0.1	5	0.2
Student	54	5.2	24	2.1	78	3.6
Housewife	-	-	986	88.3	986	45.5
Govt Employee	161	15.4	49	4.4	210	9.7
Pvt Employee	87	8.3	8	0.7	95	4.4
Other	23	2.2	5	0.4	28	1.3
Not applicable to children	15	1.4	6	0.5	21	1.0
Total	1048	100	1117	100	2165	100

16. Challenges faced by the registry team

The PBCR was established in Muzaffarpur, Bihar state in the year 2018. Several challenges were faced by the registry staff while working and collecting the PBCR data.

1. Cancer hospitals, laboratories and patient relatives were reluctant to share information for numerous reasons, including a lack of awareness of the cancer registry's purpose, expectations of financial benefits, and data privacy concerns.
2. The medical and death records from various hospitals and other cancer centers were incomplete which compromised the quality of the data. It is difficult to collect proper cancer patient information and trace them in field.
3. Patients from Muzaffarpur district travel to Patna, Delhi, Varanasi, Lucknow, Kolkata, Bangalore, and Mumbai for cancer treatment. It is difficult for the staff to visit all these places regularly for the data collection.
4. Due to lack of awareness and low economic status, some patients opt for an alternative treatment such as homeopathy/ ayurvedic/ local treatment. In such circumstances, neither clinical notes nor diagnostic evidence was provided to the patients or their relatives.
5. The registry covers remote areas that are difficult to access due to inadequate local transportation, poor infrastructure, and security concerns.
6. Due to COVID-19 pandemic, the registry's operations were hampered. Village visit and community interaction which are prerequisites for the PBCR to function were halted entirely due to the pandemic.
7. Furthermore, as Muzaffarpur district is highly prone to natural calamities such as extreme weather conditions during summer and winter season as well as heavy floods during monsoon seasons, cancer registration work is delayed, limiting registry coverage.
8. Apart from these field related hurdle the registry staff also faced problem for a dedicated office space. Registry office was shifted multiple times at different places.

9. Major challenge is the sustainability of staff; many trained staff resigned from post. The recruitment of new staff and re-arranging training activities is time-consuming, and effects work productivity.

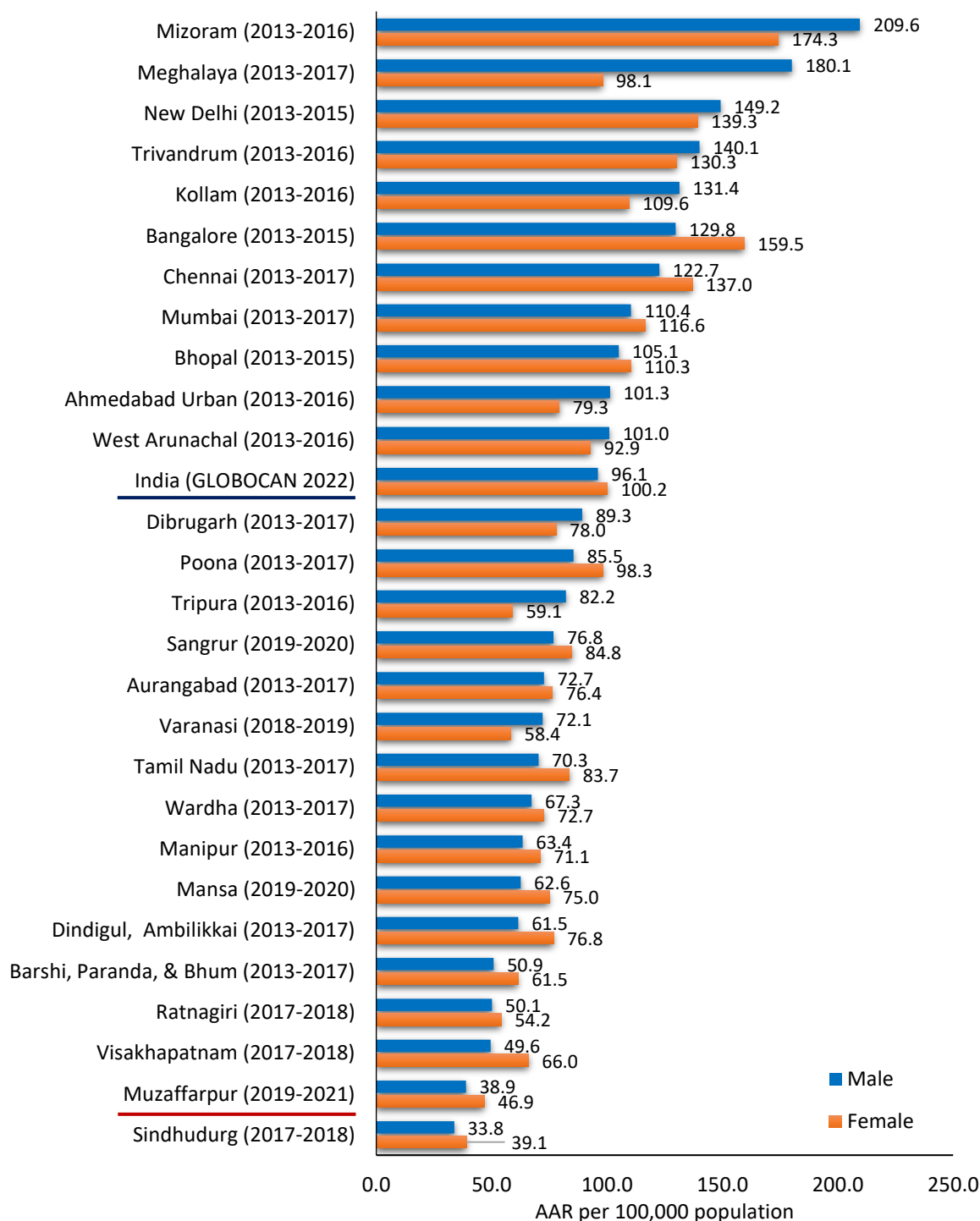
Action Taken:

- a. The registry team acknowledges the Health Department of the Government of Bihar and the Civil Surgeon of Muzaffarpur district for supporting the cancer registry activities and issuing orders to government and non-government institutions to share the cancer patients' data for registry activity.
- b. Due to regular interaction, community meetings as well as help from community leaders, ANMs, ASHA, Jeevika workers, and Anganwadi workers, the field staff has started to build trust among the residents.
- c. To minimize frequent visits to different cancer centres, we have requested centres to send data electronically; some of the centres are now providing the data via email.

17. Comparison of cancer incidence rate with other Indian registries

The cancer incidence rate of Muzaffarpur is compared with other Indian registries. Male and female all site age-adjusted incidence rate is lower than the national average as well as other Indian registries. This could be due to under-reporting of cases. Comparison of all site cancer rate is shown in Figure 46.

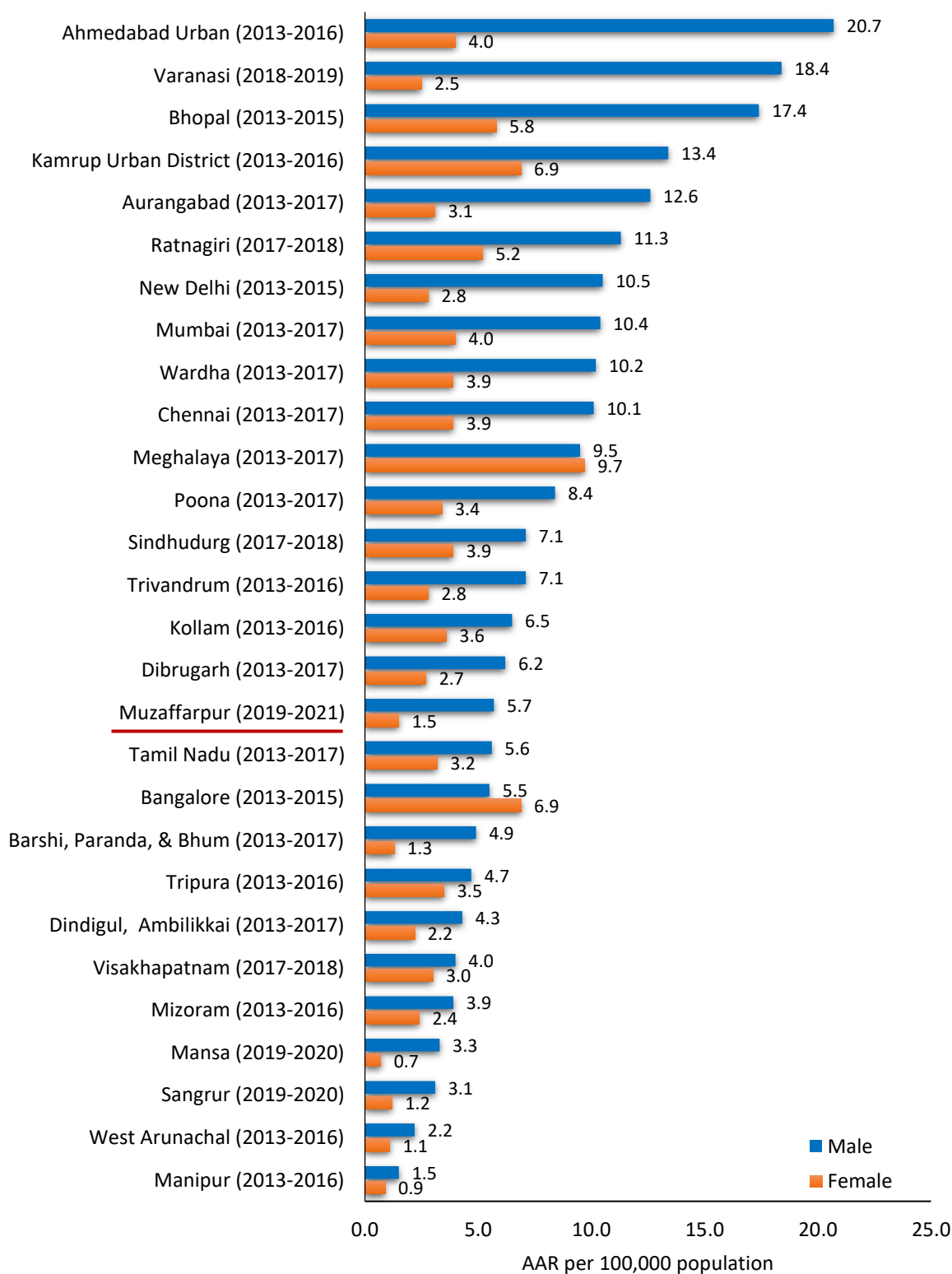
Figure 46: Age-adjusted incidence rate of all cancer sites in male & female



(References: 1-7, 18)

Among males, out of every 7 cancer cases, 1 case is of mouth cancer registered at Muzaffarpur PBCR. Compared to other population-based cancer registry the Muzaffarpur incidence rate for mouth cancer is low whereas it is high compared to Manipur, West Arunachal, and Mizoram. Comparison of incidence rate is shown in Figure 47.

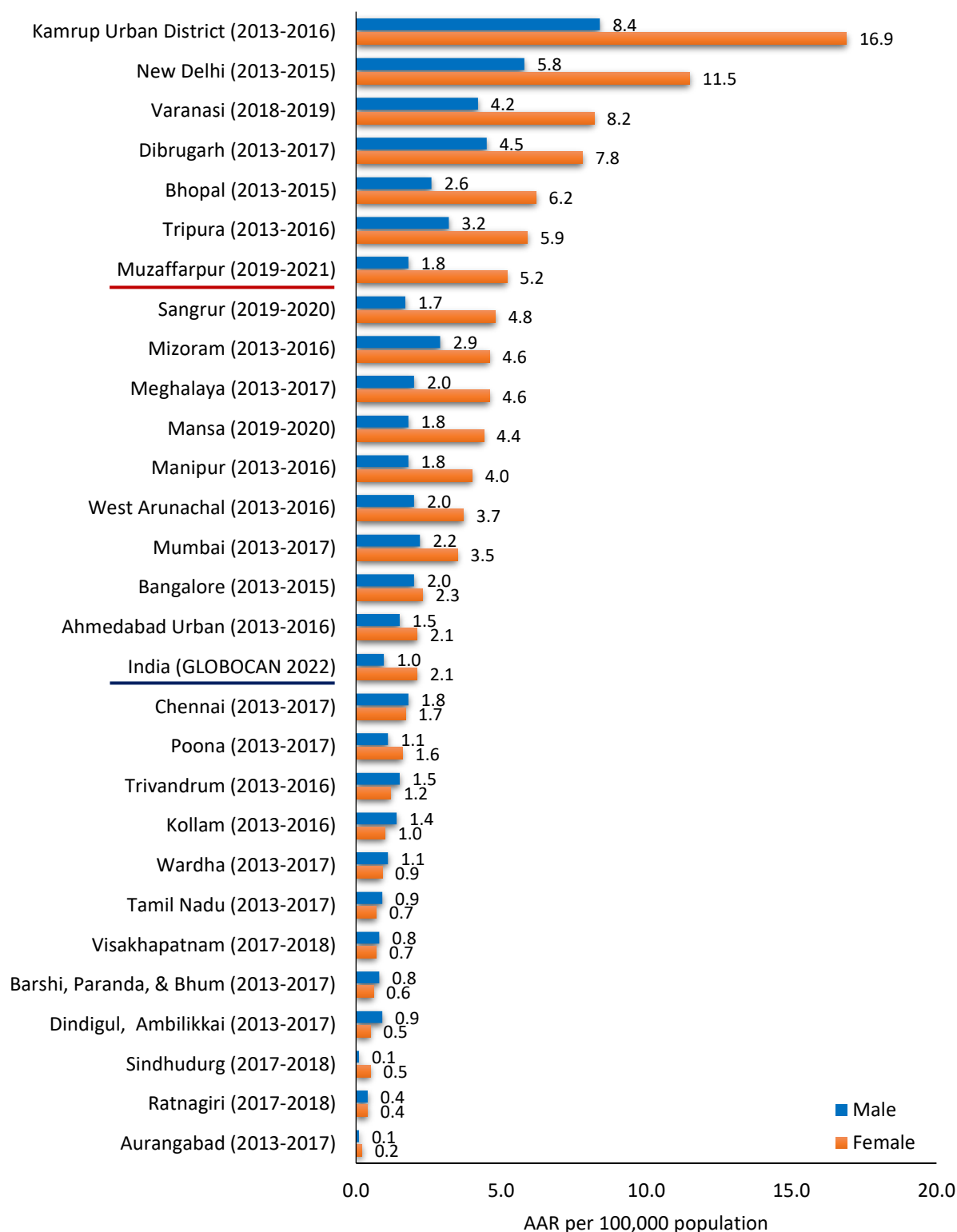
Figure 47: Age-adjusted incidence rate of mouth cancer in males & female (C03-06)



(References: 1-7, 18)

Gall bladder cancer is the third leading cancer site among females in Muzaffarpur. Compared to other Indian registries the rates are slightly higher in females; however, it is low as compared to New Delhi, Varanasi, and Mumbai cancer registry. The comparison of gall bladder cancer rate for both male and females is shown in Figure 48.

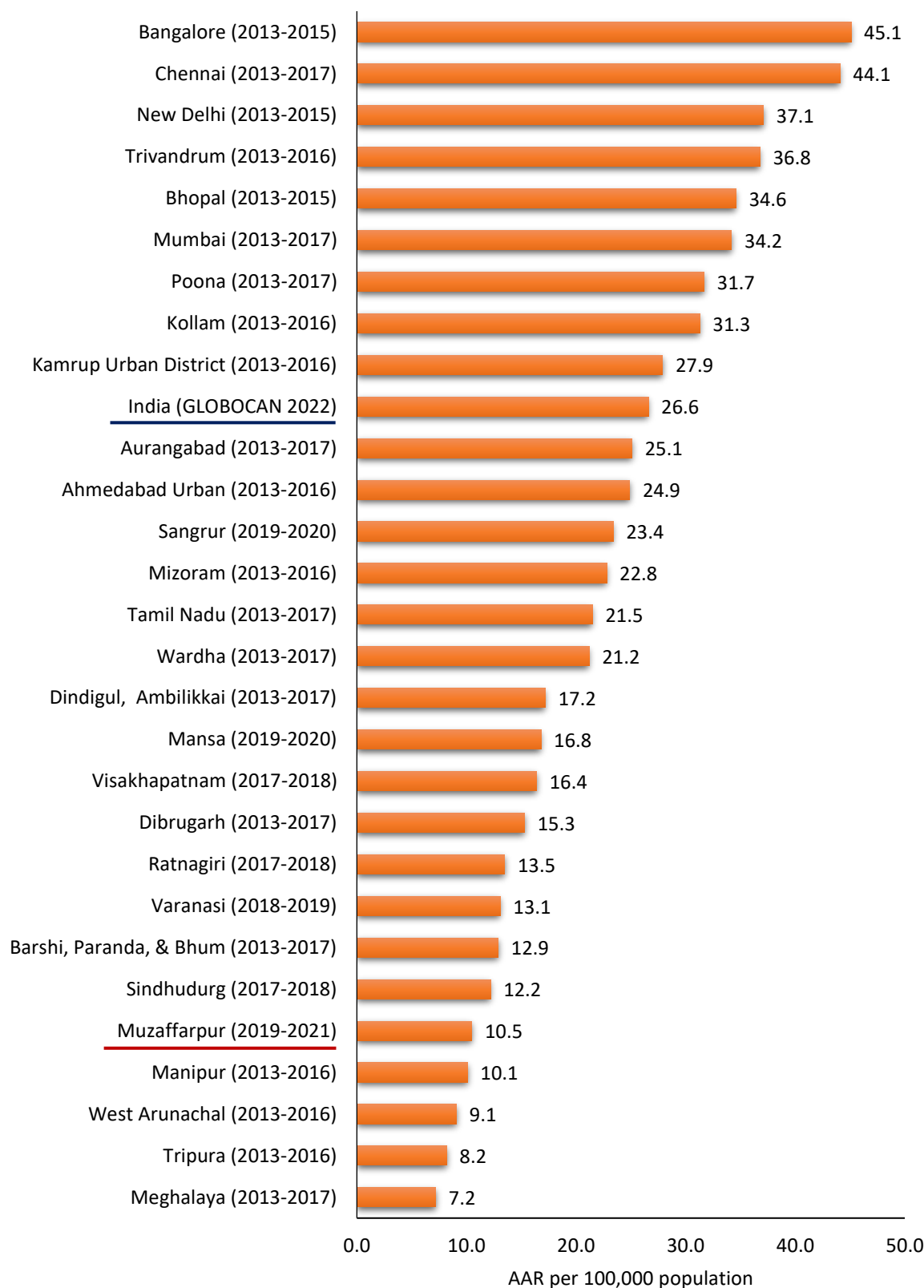
Figure 48: Age-adjusted incidence rate of gall bladder cancer



(References: 1-7, 18)

For females, the breast cancer incidence rate is lower in Muzaffarpur as compared to other Indian registries. The rate is low as compare to Sangrur, Mansa, and Varanasi PBCR. The comparison of breast cancer rate is shown in Figure 49.

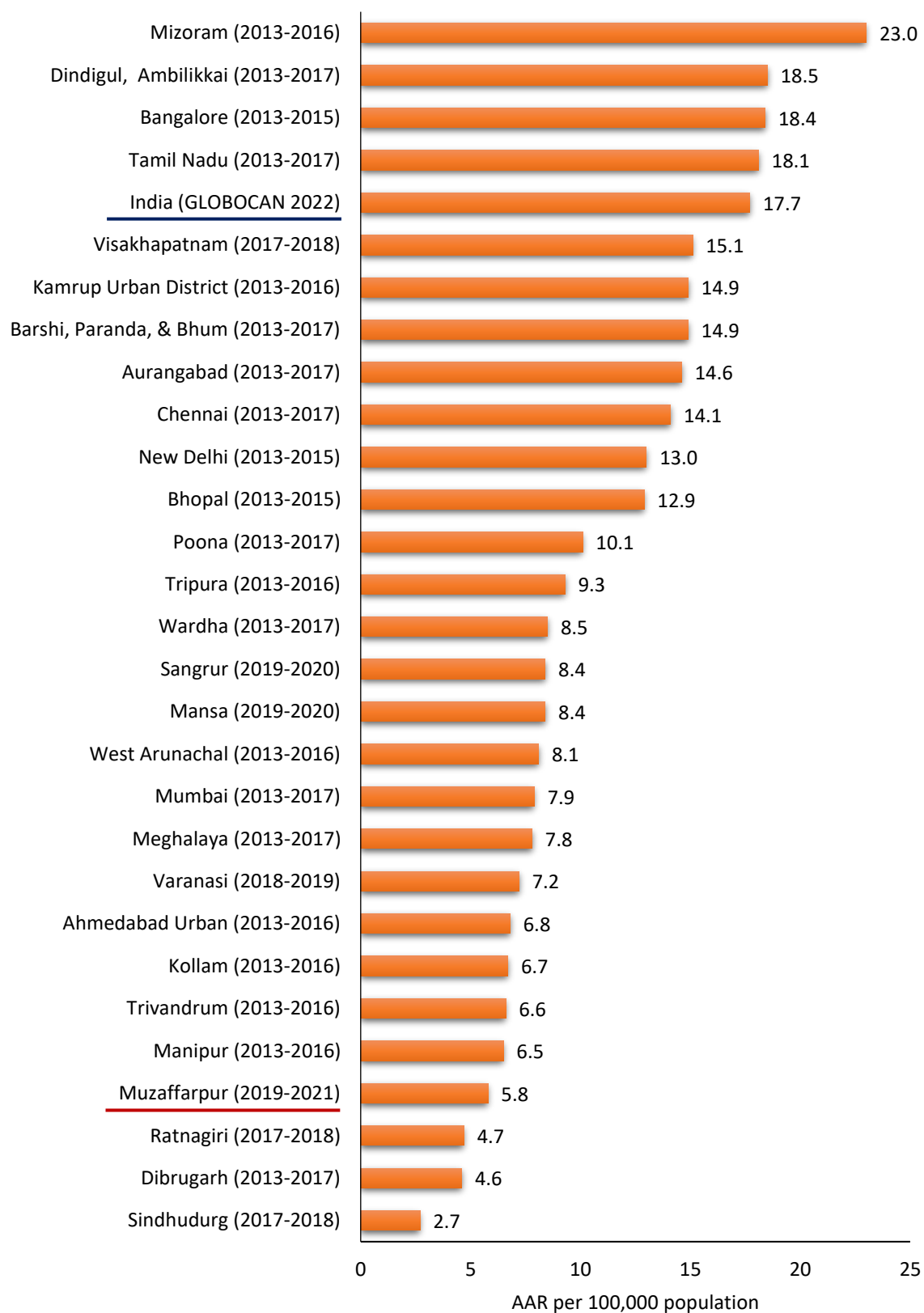
Figure 49: Age-adjusted incidence rate of female breast cancer



(References: 1-7, 18)

The cervical cancer incidence rate is low in Muzaffarpur as compared to other registries in India. The comparison of cervical cancer rate is shown in Figure 50.

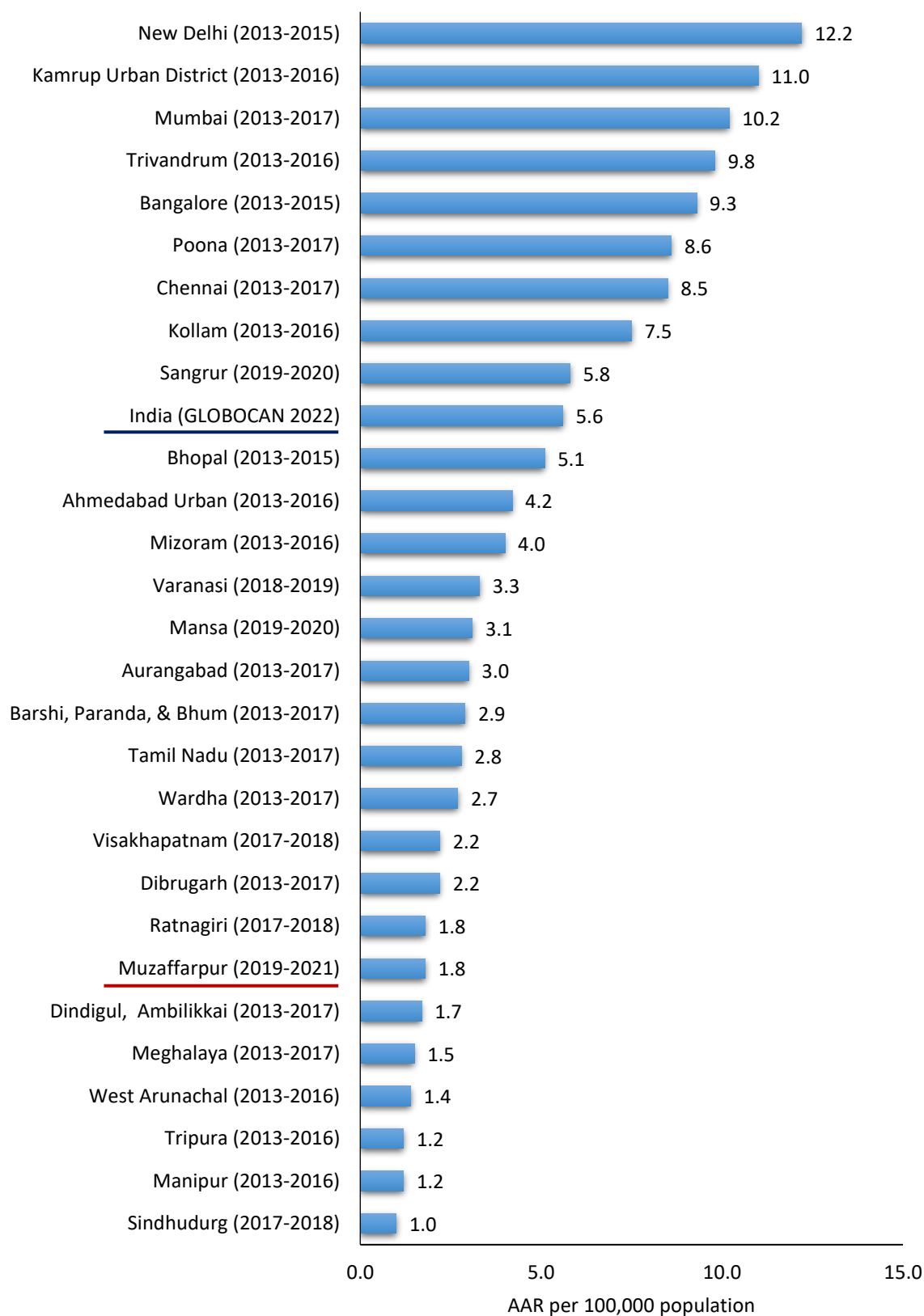
Figure 50: Age-adjusted incidence rate of cervical cancer



(References: 1-7, 18)

The prostate cancer incidence rate is low in Muzaffarpur as compared to other registries in India. The comparison of prostate cancer rate is shown in Figure 51.

Figure 51: Age-adjusted incidence rate of prostate cancer



(References: 1-7, 18)

18. Description of statistical terms

Incidence: Cancer incidence denotes new cancer cases diagnosed in a defined population in a specified period. For this report, all cancer cases diagnosed from 1st January 2019 to 31st December 2021 in the Muzaffarpur area have 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 from 1st January 2019 to 31st December 2021 in the Muzaffarpur area have been included.

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

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

$$\text{CIR} = \frac{\text{Number of new cancer cases observed in the period 2019-2021} * 100,000}{\text{Estimated population of the same year}}$$

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

Age-Specific Rate (ASR): 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 gender/site/geographic area/time 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 (TR): This is similar to the age-adjusted rate except that it is calculated to the truncated age group 35-64 years of age.

19. Standard registry tables

Table 27: Number of incidence cancers by five-year age group and site (ICD-10): 2019-2021

Males Muzaffarpur PBCR area

% = 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	-	-	1	5	1	1	2	12	1.1
C01-C02	Tongue	-	-	-	-	1	3	8	13	17	4	5	8	6	6	2	4	77	7.3
C03-C06	Mouth	-	-	-	-	-	3	13	19	21	18	9	16	21	20	7	8	155	14.8
C07-C08	Salivary Gland	-	-	-	-	-	-	-	1	1	-	-	2	1	2	1	-	8	0.8
C09	Tonsil	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	4	0.4
C10	Other Oropharynx	-	-	-	-	-	1	-	-	-	-	2	-	1	3	2	2	11	1.0
C11	Nasopharynx	-	-	-	1	-	1	-	1	-	-	-	-	-	3	1	-	7	0.7
C12-C13	Hypopharynx	-	-	-	-	-	-	-	-	1	-	1	1	1	6	1	3	14	1.3
C14	Pharynx Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C15	Oesophagus	-	-	-	-	-	-	-	-	2	4	2	2	6	1	7	2	26	2.5
C16	Stomach	-	-	-	-	1	-	-	2	3	2	5	5	6	4	2	1	31	3.0
C17	Small Intestine	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	3	0.3
C18	Colon	-	-	-	-	-	1	2	1	-	1	8	3	4	5	1	1	27	2.6
C19-C20	Rectum	-	-	-	-	1	1	2	3	1	1	5	1	2	-	2	3	22	2.1
C21	Anus & Anal Canal	-	-	-	-	-	1	-	1	1	1	-	1	1	-	2	1	9	0.9
C22	Liver	-	-	-	-	-	2	2	2	2	1	7	7	8	1	4	4	40	3.8
C23-C24	Gallbladder etc.	-	-	-	-	-	1	1	4	5	3	10	8	4	5	3	2	46	4.4
C25	Pancreas	-	-	-	-	-	-	-	1	-	2	-	3	2	1	3	-	12	1.1
C30-C31	Nose, Sinuses etc.	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2	0.2
C32	Larynx	-	-	-	-	-	-	-	-	1	2	2	4	5	-	3	2	19	1.8
C33-C34	Trachea, bronchus and lung	-	-	-	-	-	-	1	2	-	2	4	4	7	6	4	2	32	3.1
C37-C38	Other Thoracic Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	Bone	2	2	3	2	2	-	1	-	-	1	-	2	-	1	1	-	17	1.6
C43	Melanoma of Skin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	0.1
C44	Other Skin	-	-	-	-	-	1	-	1	1	-	2	-	1	1	3	1	11	1.0
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	Conn. & Soft Tissue	-	-	1	-	-	1	-	2	1	1	3	-	-	3	-	2	14	1.3
C50	Breast	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	3	0.3
C60	Penis	-	-	-	-	-	-	-	-	2	-	-	3	4	4	-	-	13	1.2
C61	Prostate	-	-	-	-	-	-	-	-	-	1	1	4	9	12	16	8	51	4.9
C62	Testis	-	-	-	1	1	1	1	2	-	1	-	1	1	-	-	-	9	0.9
C63	Other Male Genital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney etc.	-	-	-	-	-	-	-	-	-	1	3	1	3	1	1	-	10	1.0
C65	Renal Pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Urinary Bladder	-	-	-	-	-	-	-	-	-	3	-	1	2	3	3	2	14	1.3
C68	Unspecified Urinary Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0.2
C70-C72	Brain, Nervous System	2	-	1	1	-	2	3	2	2	-	2	1	-	-	3	1	20	1.9
C73	Thyroid	-	-	-	-	-	-	1	1	-	1	-	-	-	2	1	-	6	0.6
C74	Adrenal Gland	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	2	0.2
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkins Disease	-	2	1	-	-	1	-	-	1	1	-	1	-	-	-	1	8	0.8
C82-C86, C96	Non-Hodgkin Lymphoma	1	1	3	-	3	-	-	2	3	4	1	3	2	2	3	-	28	2.7
C88	Malig Imn.Prol D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	-	-	-	-	-	-	-	-	-	1	3	5	3	6	1	2	21	2.0
C91	Lymphoid Leukaemia	-	5	6	4	-	-	-	2	-	3	2	3	1	-	-	1	27	2.6
C92-C94	Myeloid Leukaemia	-	-	1	1	1	-	3	2	3	4	1	2	1	1	-	-	20	1.9
C95	Leukaemia Unspecified	2	1	1	2	3	-	1	1	1	-	1	2	-	2	-	-	17	1.6
Other and Unspecified		2	1	3	2	4	7	5	4	6	22	17	26	24	27	24	23	197	18.8
All sites		10	13	20	14	18	28	44	71	77	85	97	122	132	132	105	80	1048	100.0

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

Table 28: Number of incidence cancers by five-year age group and site (ICD-10): 2019-2021
Females Muzaffarpur PBCR area
 % = 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-C02	Tongue	-	-	-	-	-	1	-	-	3	6	3	2	1	3	-	4	23	2.1
C03-C06	Mouth	-	-	-	-	-	-	1	-	2	7	3	2	6	5	3	5	34	3.0
C07-C08	Salivary Gland	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1	-	3	0.3
C09	Tonsil	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-	3	0.3
C10	Other Oropharynx	-	-	-	-	-	-	-	-	1	1	2	1	-	-	-	-	5	0.4
C11	Nasopharynx	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2	0.2
C12-C13	Hypopharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C14	Pharynx Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	0.1
C15	Oesophagus	-	-	-	-	-	-	1	-	-	1	1	2	1	2	2	-	10	0.9
C16	Stomach	-	-	-	-	1	-	-	-	1	4	1	2	5	3	-	-	17	1.5
C17	Small Intestine	-	-	-	-	1	-	1	-	1	-	-	1	-	-	-	1	5	0.4
C18	Colon	-	-	-	-	2	-	-	-	2	1	2	1	1	-	2	1	12	1.1
C19-C20	Rectum	-	-	-	1	-	-	2	-	1	2	3	1	1	-	1	1	13	1.2
C21	Anus & Anal Canal	-	-	-	-	-	-	-	-	1	1	-	1	1	-	1	1	6	0.5
C22	Liver	-	-	-	-	-	-	-	2	-	2	1	1	1	1	2	1	11	1.0
C23-C24	Gallbladder etc.	-	-	-	-	1	1	1	13	13	19	17	15	19	12	6	6	123	11.0
C25	Pancreas	-	-	-	-	-	-	1	-	1	-	2	2	1	1	1	1	10	0.9
C30-C31	Nose, Sinuses etc.	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	2	0.2
C32	Larynx	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	2	5	0.4
C33-C34	Trachea, bronchus and lung	1	-	-	-	-	-	-	-	4	2	8	4	9	12	4	4	48	4.3
C37-C38	Other Thoracic Organs	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	2	0.2
C40-C41	Bone	-	1	2	-	2	1	-	-	-	-	-	-	-	-	-	1	7	0.6
C43	Melanoma of Skin	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	3	0.3
C44	Other Skin	-	-	-	-	-	1	-	-	1	-	-	2	-	-	1	-	5	0.4
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	Conn. & Soft Tissue	-	-	-	-	-	-	-	2	1	-	-	2	-	2	-	-	7	0.6
C50	Breast	-	-	-	-	2	5	9	30	31	44	36	29	26	23	7	6	248	22.2
C51	Vulva	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	2	0.2
C52	Vagina	-	-	-	-	-	-	1	-	2	2	2	-	1	2	-	-	10	0.9
C53	Cervix Uteri	-	-	-	-	-	1	8	9	13	19	15	21	24	18	9	4	141	12.6
C54	Corpus Uteri	-	-	-	-	-	-	-	-	1	1	1	2	4	3	1	-	13	1.2
C55	Uterus Unspecified	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	0.1
C56	Ovary	-	-	1	1	1	1	1	7	7	8	-	4	4	2	3	-	40	3.6
C57	Other Female Genital	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	2	0.2
C58	Placenta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney etc.	-	-	-	-	-	1	-	-	1	1	2	3	-	3	-	-	11	1.0
C65	Renal Pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Urinary Bladder	-	-	-	-	-	-	-	1	-	1	-	3	-	1	1	1	8	0.7
C68	Unspecified Urinary Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C70-C72	Brain, Nervous System	-	-	-	-	-	-	-	1	1	3	3	-	-	1	-	-	9	0.8
C73	Thyroid	-	-	-	-	-	-	-	2	-	-	-	-	1	1	1	-	5	0.4
C74	Adrenal Gland	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkins Disease	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	3	0.3
C82-C86, C96	Non-Hodgkin lymphoma	-	-	-	-	2	-	1	-	3	2	-	2	1	2	2	-	15	1.3
C88	Malig Imn.Prol D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	-	-	-	-	-	-	1	-	1	1	1	2	1	1	-	-	8	0.7
C91	Lymphoid Leukaemia	1	1	1	-	1	2	1	1	2	-	3	-	-	1	-	1	15	1.3
C92-C94	Myeloid Leukaemia	1	-	-	2	-	-	2	3	-	1	-	-	2	2	-	-	13	1.2
C95	Leukaemia Unspecified	-	2	1	-	2	-	-	1	-	-	2	2	1	-	-	2	13	1.2
Other and Unspecified		-	2	2	4	2	3	7	6	16	22	28	25	25	28	21	11	202	18.1
All sites		4	6	7	8	17	19	40	80	117	152	137	134	140	131	72	53	1117	100.0

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

Table 29: Average annual Age-Specific, Crude (CR), Age-Adjusted (AAR) and Truncated (35-64 yrs) (TR) incidence rate per 100,000 population: 2019-2021– Males Muzaffarpur PBCR area

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	-	-	1.1	4.2	1.0	1.7	4.6	0.4	0.4	0.9
C01-C02	-	-	-	-	0.4	1.2	3.6	6.2	10.4	3.1	5.1	9.1	5.1	6.0	3.3	9.3	2.4	2.8	6.5
C03-C06	-	-	-	-	-	1.2	5.8	9.0	12.9	14.0	9.1	18.1	17.7	20.0	11.6	18.6	4.8	5.7	13.0
C07-C08	-	-	-	-	-	-	-	0.5	0.6	-	-	2.3	0.8	2.0	1.7	-	0.2	0.3	0.6
C09	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	1.7	2.3	0.1	0.1	-
C10	-	-	-	-	-	0.4	-	-	-	-	2.0	-	0.8	3.0	3.3	4.6	0.3	0.4	0.4
C11	-	-	-	0.3	-	0.4	-	0.5	-	-	-	-	-	3.0	1.7	-	0.2	0.2	0.1
C12-C13	-	-	-	-	-	-	-	-	0.6	-	1.0	1.1	0.8	6.0	1.7	7.0	0.4	0.5	0.5
C14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C15	-	-	-	-	-	-	-	-	1.2	3.1	2.0	2.3	5.1	1.0	11.6	4.6	0.8	1.0	2.1
C16	-	-	-	-	0.4	-	-	1.0	1.8	1.6	5.1	5.7	5.1	4.0	3.3	2.3	1.0	1.2	3.0
C17	-	-	-	-	-	-	-	0.5	-	-	-	1.1	-	-	-	2.3	0.1	0.1	0.2
C18	-	-	-	-	-	0.4	0.9	0.5	-	0.8	8.1	3.4	3.4	5.0	1.7	2.3	0.8	1.1	2.4
C19-C20	-	-	-	-	0.4	0.4	0.9	1.4	0.6	0.8	5.1	1.1	1.7	-	3.3	7.0	0.7	0.9	1.7
C21	-	-	-	-	-	0.4	-	0.5	0.6	0.8	-	1.1	0.8	-	3.3	2.3	0.3	0.3	0.6
C22	-	-	-	-	-	0.8	0.9	1.0	1.2	0.8	7.1	7.9	6.7	1.0	6.6	9.3	1.2	1.6	3.6
C23-C24	-	-	-	-	-	0.4	0.4	1.9	3.1	2.3	10.1	9.1	3.4	5.0	5.0	4.6	1.4	1.8	4.6
C25	-	-	-	-	-	-	-	0.5	-	1.6	-	3.4	1.7	1.0	5.0	-	0.4	0.5	1.0
C30-C31	-	-	-	-	0.4	0.4	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-
C32	-	-	-	-	-	-	-	-	0.6	1.6	2.0	4.5	4.2	-	5.0	4.6	0.6	0.8	1.9
C33-C34	-	-	-	-	-	-	0.4	1.0	-	1.6	4.0	4.5	5.9	6.0	6.6	4.6	1.0	1.2	2.5
C37-C38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	0.6	0.5	0.8	0.6	0.7	-	0.4	-	-	0.8	-	2.3	-	1.0	1.7	-	0.5	0.5	0.4
C43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	-	-	-	-
C44	-	-	-	-	-	0.4	-	0.5	0.6	-	2.0	-	0.8	1.0	5.0	2.3	0.3	0.4	0.6
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	-	-	0.3	-	-	0.4	-	1.0	0.6	0.8	3.0	-	-	3.0	-	4.6	0.4	0.5	0.9
C50	-	-	-	-	-	-	-	-	-	-	1.0	-	-	1.0	1.7	-	0.1	0.1	0.2
C60	-	-	-	-	-	-	-	-	1.2	-	-	3.4	3.4	4.0	-	-	0.4	0.5	1.1
C61	-	-	-	-	-	-	-	-	-	0.8	1.0	4.5	7.6	12.0	26.4	18.6	1.6	1.8	1.9
C62	-	-	-	0.3	0.4	0.4	0.4	1.0	-	0.8	-	1.1	0.8	-	-	-	0.3	0.3	0.6
C63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	-	-	-	-	-	-	-	-	-	0.8	3.0	1.1	2.5	1.0	1.7	-	0.3	0.4	1.1
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	-	-	2.3	-	1.1	1.7	3.0	5.0	4.6	0.4	0.5	0.8
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	0.3	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-
C70-C72	0.6	-	0.3	0.3	-	0.8	1.3	1.0	1.2	-	2.0	1.1	-	-	5.0	2.3	0.6	0.7	0.9
C73	-	-	-	-	-	-	0.4	0.5	-	0.8	-	-	-	2.0	1.7	-	0.2	0.2	0.2
C74	-	-	-	-	-	-	-	0.5	-	-	-	-	0.8	-	-	-	0.1	0.1	0.2
C75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	-	0.5	0.3	-	-	0.4	-	-	0.6	0.8	-	1.1	-	-	-	2.3	0.2	0.3	0.4
C82-C86, C96	0.3	0.2	0.8	-	1.1	-	-	1.0	1.8	3.1	1.0	3.4	1.7	2.0	5.0	-	0.9	1.0	2.0
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	-	-	-	0.8	3.0	5.7	2.5	6.0	1.7	4.6	0.6	0.8	1.7
C91	-	1.2	1.5	1.2	-	-	-	1.0	-	2.3	2.0	3.4	0.8	-	-	2.3	0.8	0.9	1.5
C92-C94	-	-	0.3	0.3	0.4	-	1.3	1.0	1.8	3.1	1.0	2.3	0.8	1.0	-	-	0.6	0.7	1.7
C95	0.6	0.2	0.3	0.6	1.1	-	0.4	0.5	0.6	-	1.0	2.3	-	2.0	-	-	0.5	0.5	0.7
O&U*	0.6	0.2	0.8	0.6	1.4	2.8	2.2	1.9	3.7	17.1	17.2	29.5	20.2	27.1	39.7	53.4	6.1	7.6	13.6
All sites	3.0	3.2	5.0	4.1	6.4	11.3	19.6	33.8	47.2	66.2	98.0	138.3	111.1	132.3	173.5	185.9	32.2	38.9	76.5

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

Table 30: Average annual Age-Specific, Crude (CR), Age-Adjusted (AAR) and Truncated (35-64 yrs) (TR) incidence rate per 100,000 population: 2019-2021– Females Muzaffarpur PBCR area

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-C02	-	-	-	-	-	0.4	-	-	2.2	5.1	3.2	1.9	0.8	3.8	-	10.7	0.8	1.1	2.3
C03-C06	-	-	-	-	-	-	0.5	-	1.4	5.9	3.2	1.9	5.1	6.3	7.2	13.3	1.2	1.5	2.8
C07-C08	-	-	-	-	-	0.4	-	0.5	-	-	-	-	-	-	2.4	-	0.1	0.1	0.1
C09	-	-	-	-	-	-	-	0.5	0.7	-	-	-	-	1.3	-	-	0.1	0.1	0.2
C10	-	-	-	-	-	-	-	-	0.7	0.8	2.1	1.0	-	-	-	-	0.2	0.2	0.8
C11	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	2.4	-	0.1	0.1	0.1
C12-C13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C14	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	0.1
C15	-	-	-	-	-	-	0.5	-	-	0.8	1.1	1.9	0.8	2.5	4.8	-	0.3	0.4	0.7
C16	-	-	-	-	0.5	-	-	-	0.7	3.4	1.1	1.9	4.2	3.8	-	-	0.6	0.7	1.8
C17	-	-	-	-	0.5	-	0.5	-	0.7	-	-	1.0	-	-	-	2.7	0.2	0.2	0.3
C18	-	-	-	-	0.9	-	-	-	1.4	0.8	2.1	1.0	0.8	-	4.8	2.7	0.4	0.5	1.0
C19-C20	-	-	-	0.4	-	-	0.9	-	0.7	1.7	3.2	1.0	0.8	-	2.4	2.7	0.4	0.6	1.2
C21	-	-	-	-	-	-	-	-	0.7	0.8	-	1.0	0.8	-	2.4	2.7	0.2	0.3	0.5
C22	-	-	-	-	-	-	-	1.1	-	1.7	1.1	1.0	0.8	1.3	4.8	2.7	0.4	0.5	0.9
C23-C24	-	-	-	-	0.5	0.4	0.5	6.9	9.4	16.1	18.2	14.3	16.1	15.1	14.5	16.0	4.2	5.2	13.1
C25	-	-	-	-	-	-	0.5	-	0.7	-	2.1	1.9	0.8	1.3	2.4	2.7	0.3	0.4	0.8
C30-C31	-	-	-	-	-	-	-	-	0.7	-	-	1.0	-	-	-	-	0.1	0.1	0.3
C32	-	-	-	-	-	-	-	-	1.4	0.8	-	-	-	-	-	5.3	0.2	0.2	0.4
C33-C34	0.3	-	-	-	-	-	-	-	2.9	1.7	8.5	3.8	7.6	15.1	9.6	10.7	1.6	2.1	3.7
C37-C38	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	2.4	-	0.1	0.1	0.1
C40-C41	-	0.3	0.5	-	0.9	0.4	-	-	-	-	-	-	-	-	-	2.7	0.2	0.2	-
C43	-	-	-	-	-	-	0.9	-	-	-	1.1	-	-	-	-	-	0.1	0.1	0.2
C44	-	-	-	-	-	0.4	-	-	0.7	-	-	1.9	-	-	2.4	-	0.2	0.2	0.4
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	-	-	-	-	-	-	-	1.1	0.7	-	-	1.9	-	2.5	-	-	0.2	0.3	0.6
C50	-	-	-	-	0.9	2.1	4.2	15.9	22.4	37.3	38.5	27.7	22.0	29.0	16.9	16.0	8.4	10.5	27.3
C51	-	-	-	-	-	-	-	-	-	-	-	1.0	0.8	-	-	-	0.1	0.1	0.2
C52	-	-	-	-	-	-	0.5	-	1.4	1.7	2.1	-	0.8	2.5	-	-	0.3	0.4	1.1
C53	-	-	-	-	-	0.4	3.7	4.8	9.4	16.1	16.0	20.1	20.3	22.7	21.7	10.7	4.8	5.8	13.7
C54	-	-	-	-	-	-	-	-	0.7	0.8	1.1	1.9	3.4	3.8	2.4	-	0.4	0.5	1.2
C55	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	0.1
C56	-	-	0.3	0.4	0.5	0.4	0.5	3.7	5.1	6.8	-	3.8	3.4	2.5	7.2	-	1.4	1.6	3.9
C57	-	-	-	-	-	0.4	-	-	-	-	-	-	-	1.3	-	-	0.1	0.1	-
C58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	-	-	-	-	-	0.4	-	-	0.7	0.8	2.1	2.9	-	3.8	-	-	0.4	0.5	1.0
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	0.5	-	0.8	-	2.9	-	1.3	2.4	2.7	0.3	0.3	0.6
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C70-C72	-	-	-	-	-	-	-	0.5	0.7	2.5	3.2	-	-	1.3	-	-	0.3	0.4	1.3
C73	-	-	-	-	-	-	-	1.1	-	-	-	-	0.8	1.3	2.4	-	0.2	0.2	0.3
C74	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	-	-	-	-	-	-	-	-	0.7	-	-	-	0.8	-	2.4	-	0.1	0.1	0.2
C82-C86, C96	-	-	-	-	0.9	-	0.5	-	2.2	1.7	-	1.9	0.8	2.5	4.8	-	0.5	0.6	1.1
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	0.5	-	0.7	0.8	1.1	1.9	0.8	1.3	-	-	0.3	0.3	0.8
C91	0.3	0.3	0.3	-	0.5	0.8	0.5	0.5	1.4	-	3.2	-	-	1.3	-	2.7	0.5	0.6	0.9
C92-C94	0.3	-	-	0.8	-	-	0.9	1.6	-	0.8	-	-	1.7	2.5	-	-	0.4	0.5	0.7
C95	-	0.5	0.3	-	0.9	-	-	0.5	-	-	2.1	1.9	0.8	-	-	5.3	0.4	0.5	0.8
O&U*	-	0.5	0.5	1.5	0.9	1.3	3.3	3.2	11.6	18.7	29.9	23.9	21.2	35.3	50.6	29.3	6.9	8.6	17.1
All sites	1.3	1.5	1.8	3.1	7.8	8.0	18.7	42.4	84.6	128.9	146.4	128.1	118.5	165.0	173.6	141.3	38.1	46.9	104.9

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

Table 31: 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 (Muzaffarpur PBCR area)

ICD 10	Sites	Cum Rate (0-64)	Cum Risk (0-64)	Cum Rate (0-74)	Cum Risk (0-74)
C00	Lip	0.0003	0.0003	0.0005	0.0005
C01-C02	Tongue	0.0022	0.0022	0.0027	0.0027
C03-C06	Mouth	0.0044	0.0044	0.0060	0.0060
C07-C08	Salivary Gland	0.0002	0.0002	0.0004	0.0004
C09	Tonsil	-	-	0.0002	0.0002
C10	Other Oropharynx	0.0002	0.0002	0.0005	0.0005
C11	Nasopharynx	0.0001	0.0001	0.0003	0.0003
C12-C13	Hypopharynx	0.0002	0.0002	0.0006	0.0006
C14	Pharynx Unspecified	-	-	-	-
C15	Oesophagus	0.0007	0.0007	0.0013	0.0013
C16	Stomach	0.0010	0.0010	0.0014	0.0014
C17	Small Intestine	0.0001	0.0001	0.0001	0.0001
C18	Colon	0.0009	0.0009	0.0012	0.0012
C19-C20	Rectum	0.0006	0.0006	0.0008	0.0008
C21	Anus & Anal Canal	0.0002	0.0002	0.0004	0.0004
C22	Liver	0.0013	0.0013	0.0017	0.0017
C23-C24	Gallbladder etc.	0.0015	0.0015	0.0020	0.0020
C25	Pancreas	0.0004	0.0004	0.0007	0.0007
C30-C31	Nose, Sinuses etc.	-	-	-	-
C32	Larynx	0.0006	0.0006	0.0009	0.0009
C33-C34	Trachea, bronchus and lung	0.0009	0.0009	0.0015	0.0015
C37-C38	Other Thoracic Organs	-	-	-	-
C40-C41	Bone	0.0003	0.0003	0.0005	0.0005
C43	Melanoma of Skin	-	-	0.0001	0.0001
C44	Other Skin	0.0002	0.0002	0.0005	0.0005
C45	Mesothelioma	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-
C47+C49	Conn. & Soft Tissue	0.0003	0.0003	0.0005	0.0005
C50	Breast	0.0001	0.0001	0.0002	0.0002
C60	Penis	0.0004	0.0004	0.0006	0.0006
C61	Prostate	0.0007	0.0007	0.0026	0.0026
C62	Testis	0.0003	0.0003	0.0003	0.0003
C63	Other Male Genital	-	-	-	-
C64	Kidney etc.	0.0004	0.0004	0.0005	0.0005
C65	Renal Pelvis	-	-	-	-
C66	Ureter	-	-	-	-
C67	Urinary Bladder	0.0003	0.0003	0.0007	0.0007
C68	Unspecified Urinary Organs	-	-	-	-
C69	Eye	-	-	-	-
C70-C72	Brain, Nervous System	0.0004	0.0004	0.0007	0.0007
C73	Thyroid	0.0001	0.0001	0.0003	0.0003
C74	Adrenal Gland	0.0001	0.0001	0.0001	0.0001
C75	Other endocrine	-	-	-	-
C81	Hodgkins Disease	0.0002	0.0002	0.0002	0.0002
C82-C86, C96	Non-Hodgkin Lymphoma	0.0007	0.0007	0.0011	0.0011
C88	Malig Imn.Prol D	-	-	-	-
C90	Multiple Myeloma	0.0006	0.0006	0.0010	0.0010
C91	Lymphoid Leukaemia	0.0007	0.0007	0.0007	0.0007
C92-C94	Myeloid Leukaemia	0.0006	0.0006	0.0007	0.0007
C95	Leukaemia Unspecified	0.0004	0.0004	0.0005	0.0005
Other and Unspecified		0.0049	0.0049	0.0082	0.0082
All sites		0.0274	0.0274	0.0426	0.0426

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

Table 32: 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 (Muzaffarpur PBCR area)

ICD 10	Sites	Cum Rate (0-64)	Cum Risk (0-64)	Cum Rate (0-74)	Cum Risk (0-74)
C00	Lip	-	-	-	-
C01-C02	Tongue	0.0007	0.0007	0.0009	0.0009
C03-C06	Mouth	0.0009	0.0009	0.0016	0.0016
C07-C08	Salivary Gland	-	-	0.0002	0.0002
C09	Tonsil	0.0001	0.0001	0.0001	0.0001
C10	Other Oropharynx	0.0002	0.0002	0.0002	0.0002
C11	Nasopharynx	-	-	0.0002	0.0002
C12-C13	Hypopharynx	-	-	-	-
C14	Pharynx Unspecified	-	-	-	-
C15	Oesophagus	0.0003	0.0003	0.0006	0.0006
C16	Stomach	0.0006	0.0006	0.0008	0.0008
C17	Small Intestine	0.0001	0.0001	0.0001	0.0001
C18	Colon	0.0004	0.0004	0.0006	0.0006
C19-C20	Rectum	0.0004	0.0004	0.0006	0.0006
C21	Anus & Anal Canal	0.0002	0.0002	0.0003	0.0003
C22	Liver	0.0003	0.0003	0.0006	0.0006
C23-C24	Gallbladder etc.	0.0041	0.0041	0.0056	0.0056
C25	Pancreas	0.0003	0.0003	0.0005	0.0005
C30-C31	Nose, Sinuses etc.	0.0001	0.0001	0.0001	0.0001
C32	Larynx	0.0001	0.0001	0.0001	0.0001
C33-C34	Trachea, bronchus and lung	0.0012	0.0012	0.0025	0.0025
C37-C38	Other Thoracic Organs	-	-	0.0002	0.0002
C40-C41	Bone	0.0001	0.0001	0.0001	0.0001
C43	Melanoma of Skin	0.0001	0.0001	0.0001	0.0001
C44	Other Skin	0.0002	0.0002	0.0003	0.0003
C45	Mesothelioma	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-
C47+C49	Conn. & Soft Tissue	0.0002	0.0002	0.0003	0.0003
C50	Breast	0.0086	0.0086	0.0108	0.0108
C51	Vulva	0.0001	0.0001	0.0001	0.0001
C52	Vagina	0.0003	0.0003	0.0005	0.0005
C53	Cervix Uteri	0.0045	0.0045	0.0068	0.0068
C54	Corpus Uteri	0.0004	0.0004	0.0007	0.0007
C55	Uterus Unspecified	-	-	-	-
C56	Ovary	0.0012	0.0012	0.0017	0.0017
C57	Other Female Genital	-	-	0.0001	0.0001
C58	Placenta	-	-	-	-
C64	Kidney etc.	0.0003	0.0003	0.0005	0.0005
C65	Renal Pelvis	-	-	-	-
C66	Ureter	-	-	-	-
C67	Urinary Bladder	0.0002	0.0002	0.0004	0.0004
C68	Unspecified Urinary Organs	-	-	-	-
C69	Eye	-	-	-	-
C70-C72	Brain, Nervous System	0.0004	0.0004	0.0004	0.0004
C73	Thyroid	0.0001	0.0001	0.0003	0.0003
C74	Adrenal Gland	-	-	-	-
C75	Other endocrine	-	-	-	-
C81	Hodgkins Disease	0.0001	0.0001	0.0002	0.0002
C82-C86, C96	Non-Hodgkin lymphoma	0.0004	0.0004	0.0008	0.0008
C88	Malig Imn.Prol D	-	-	-	-
C90	Multiple Myeloma	0.0003	0.0003	0.0004	0.0004
C91	Lymphoid Leukaemia	0.0004	0.0004	0.0005	0.0005
C92-C94	Myeloid Leukaemia	0.0003	0.0003	0.0004	0.0004
C95	Leukaemia Unspecified	0.0004	0.0004	0.0004	0.0004
Other and Unspecified		0.0058	0.0058	0.0101	0.0101
All sites		0.0345	0.0345	0.0515	0.0515

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

**Table 33: Number (#) and Proportion (%) of cancers by site (ICD-10) and method of diagnosis: 2019-2021–
Males Muzaffarpur PBCR area**

ICD 10	Sites	Clinical		Radiology		Microscopic		Other (+DCO)**		Total	
		#	%	#	%	#	%	#	%	#	%
C00	Lip	1	8.3	-	-	11	91.7	-	-	12	100
C01-C02	Tongue	2	2.6	-	-	67	87.0	8	10.4	77	100
C03-C06	Mouth	5	3.2	1	0.6	126	81.3	23	14.8	155	100
C07-C08	Salivary Gland	-	-	-	-	7	87.5	1	12.5	8	100
C09	Tonsil	-	-	-	-	3	75.0	1	25.0	4	100
C10	Other Oropharynx	-	-	1	9.1	10	90.9	-	-	11	100
C11	Nasopharynx	-	-	-	-	6	85.7	1	14.3	7	100
C12-C13	Hypopharynx	2	14.3	-	-	12	85.7	-	-	14	100
C14	Pharynx Unspecified	-	-	-	-	-	-	-	-	-	-
C15	Oesophagus	1	3.8	1	3.8	20	76.9	4	15.4	26	100
C16	Stomach	-	-	3	9.7	28	90.3	-	-	31	100
C17	Small Intestine	-	-	-	-	2	66.7	1	33.3	3	100
C18	Colon	-	-	-	-	23	85.2	4	14.8	27	100
C19-C20	Rectum	-	-	-	-	20	90.9	2	9.1	22	100
C21	Anus & Anal Canal	-	-	-	-	9	100.0	-	-	9	100
C22	Liver	3	7.5	10	25.0	17	42.5	10	25.0	40	100
C23-C24	Gallbladder etc.	1	2.2	12	26.1	29	63.0	4	8.7	46	100
C25	Pancreas	-	-	1	8.3	10	83.3	1	8.3	12	100
C30-C31	Nose, Sinuses etc.	-	-	-	-	2	100.0	-	-	2	100
C32	Larynx	2	10.5	-	-	15	78.9	2	10.5	19	100
C33-C34	Trachea, bronchus and lung	1	3.1	2	6.3	24	75.0	5	15.6	32	100
C37-C38	Other Thoracic Organs	-	-	-	-	-	-	-	-	-	-
C40-C41	Bone	-	-	1	5.9	14	82.4	2	11.8	17	100
C43	Melanoma of Skin	-	-	-	-	1	100.0	-	-	1	100
C44	Other Skin	-	-	-	-	11	100.0	-	-	11	100
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-	-	-	-	-	-	-
C47+C49	Conn. & Soft Tissue	-	-	-	-	14	100.0	-	-	14	100
C50	Breast	-	-	-	-	3	100.0	-	-	3	100
C60	Penis	-	-	-	-	11	84.6	2	15.4	13	100
C61	Prostate	1	2.0	4	7.8	35	68.6	11	21.6	51	100
C62	Testis	-	-	-	-	8	88.9	1	11.1	9	100
C63	Other Male Genital	-	-	-	-	-	-	-	-	-	-
C64	Kidney etc.	-	-	2	20.0	7	70.0	1	10.0	10	100
C65	Renal Pelvis	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-
C67	Urinary Bladder	-	-	2	14.3	10	71.4	2	14.3	14	100
C68	Unspecified Urinary Organs	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	1	50.0	1	50.0	-	-	2	100
C70-C72	Brain, Nervous System	1	5.0	2	10.0	11	55.0	6	30.0	20	100
C73	Thyroid	-	-	-	-	6	100.0	-	-	6	100
C74	Adrenal Gland	-	-	-	-	2	100.0	-	-	2	100
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-
C81	Hodgkins Disease	-	-	-	-	8	100.0	-	-	8	100
C82-C86, C96	Non-Hodgkin Lymphoma	-	-	1	3.6	26	92.9	1	3.6	28	100
C88	Malig Imm.Prol D	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	1	4.8	3	14.3	17	81.0	-	-	21	100
C91	Lymphoid Leukaemia	1	3.7	-	-	26	96.3	-	-	27	100
C92-C94	Myeloid Leukaemia	1	5.0	-	-	19	95.0	-	-	20	100
C95	Leukaemia Unspecified	-	-	-	-	11	64.7	6	35.3	17	100
Other and Unspecified*		7	3.6	23	11.7	27	13.7	140	71.1	197	100
All sites		30	2.9	70	6.7	709	67.7	239	22.8	1048	100

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

** Other: Information based on patient's relatives and DCO

**Table 34: Number (#) and Proportion (%) of cancers by site (ICD-10) and method of diagnosis: 2019-2021–
Females Muzaffarpur PBCR area**

ICD 10	Sites	Clinical		Radiology		Microscopic		Other (+DCO)**		Total	
		#	%	#	%	#	%	#	%	#	%
C00	Lip	-	-	-	-	-	-	-	-	-	-
C01-C02	Tongue	1	4.3	1	4.3	17	73.9	4	17.4	23	100
C03-C06	Mouth	3	8.8	-	-	20	58.8	11	32.4	34	100
C07-C08	Salivary Gland	-	-	-	-	3	100.0	-	-	3	100
C09	Tonsil	-	-	-	-	2	66.7	1	33.3	3	100
C10	Other Oropharynx	-	-	-	-	5	100.0	-	-	5	100
C11	Nasopharynx	-	-	-	-	2	100.0	-	-	2	100
C12-C13	Hypopharynx	-	-	-	-	-	-	-	-	-	-
C14	Pharynx Unspecified	-	-	-	-	1	100.0	-	-	1	100
C15	Oesophagus	-	-	2	20.0	7	70.0	1	10.0	10	100
C16	Stomach	-	-	-	-	16	94.1	1	5.9	17	100
C17	Small Intestine	-	-	-	-	4	80.0	1	20.0	5	100
C18	Colon	-	-	-	-	9	75.0	3	25.0	12	100
C19-C20	Rectum	1	7.7	1	7.7	6	46.2	5	38.5	13	100
C21	Anus & Anal Canal	1	16.7	-	-	5	83.3	-	-	6	100
C22	Liver	-	-	5	45.5	5	45.5	1	9.1	11	100
C23-C24	Gallbladder etc.	6	4.9	26	21.1	73	59.3	18	14.6	123	100
C25	Pancreas	-	-	3	30.0	7	70.0	-	-	10	100
C30-C31	Nose, Sinuses etc.	-	-	-	-	2	100.0	-	-	2	100
C32	Larynx	-	-	1	20.0	4	80.0	-	-	5	100
C33-C34	Trachea, bronchus and lung	1	2.1	8	16.7	35	72.9	4	8.3	48	100
C37-C38	Other Thoracic Organs	-	-	-	-	2	100.0	-	-	2	100
C40-C41	Bone	-	-	2	28.6	5	71.4	-	-	7	100
C43	Melanoma of Skin	-	-	-	-	3	100.0	-	-	3	100
C44	Other Skin	-	-	-	-	5	100.0	-	-	5	100
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-	-	-	-	-	-	-
C47+C49	Conn. & Soft Tissue	1	14.3	-	-	6	85.7	-	-	7	100
C50	Breast	10	4.0	4	1.6	193	77.8	41	16.5	248	100
C51	Vulva	-	-	-	-	2	100.0	-	-	2	100
C52	Vagina	1	10.0	1	10.0	8	80.0	-	-	10	100
C53	Cervix Uteri	8	5.7	2	1.4	97	68.8	34	24.1	141	100
C54	Corpus Uteri	-	-	-	-	13	100.0	-	-	13	100
C55	Uterus Unspecified	-	-	-	-	1	100.0	-	-	1	100
C56	Ovary	-	-	5	12.5	34	85.0	1	2.5	40	100
C57	Other Female Genital	-	-	-	-	2	100.0	-	-	2	100
C58	Placenta	-	-	-	-	-	-	-	-	-	-
C64	Kidney etc.	-	-	3	27.3	7	63.6	1	9.1	11	100
C65	Renal Pelvis	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-
C67	Urinary Bladder	1	12.5	1	12.5	6	75.0	-	-	8	100
C68	Unspecified Urinary Organs	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	-	-	-	-	-	-	-	-
C70-C72	Brain, Nervous System	-	-	2	22.2	3	33.3	4	44.4	9	100
C73	Thyroid	-	-	-	-	5	100.0	-	-	5	100
C74	Adrenal Gland	-	-	-	-	1	100.0	-	-	1	100
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-
C81	Hodgkins Disease	-	-	-	-	3	100.0	-	-	3	100
C82-C86, C96	Non-Hodgkin lymphoma	2	13.3	1	6.7	12	80.0	-	-	15	100
C88	Malig Imn.Prol D	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	1	12.5	-	-	7	87.5	-	-	8	100
C91	Lymphoid Leukaemia	-	-	-	-	15	100.0	-	-	15	100
C92-C94	Myeloid Leukaemia	-	-	-	-	13	100.0	-	-	13	100
C95	Leukaemia Unspecified	-	-	-	-	4	30.8	9	69.2	13	100
Other and Unspecified*		5	2.5	24	11.9	29	14.4	144	71.3	202	100
All sites		42	3.8	92	8.2	699	62.6	284	25.4	1117	100

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

** Other: Information based on patient's relatives and DCO

Table 35: Number of cancer deaths by five year age group and site (ICD-10): 2019-2021 Males
Muzaffarpur PBCR area

% = 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	-	2	-	-	1	4	0.5
C01-C02	Tongue	-	-	-	-	-	5	8	5	11	3	4	4	1	5	2	3	51	6.2
C03-C06	Mouth	-	-	-	-	-	-	9	13	14	8	6	9	20	14	6	10	109	13.2
C07-C08	Salivary Gland	-	-	-	-	-	-	1	1	-	-	-	1	1	1	1	-	6	0.7
C09	Tonsil	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1	1	6	0.7
C10	Other Oropharynx	-	-	-	-	-	-	-	-	-	-	1	1	2	4	2	1	11	1.3
C11	Nasopharynx	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	3	0.4
C12-C13	Hypopharynx	-	-	-	-	-	1	-	-	1	-	-	1	1	5	1	2	12	1.4
C14	Pharynx Unspecified	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	2	0.2
C15	Oesophagus	-	-	-	-	-	-	-	-	3	4	1	2	6	-	6	3	25	3.0
C16	Stomach	-	-	-	-	-	-	-	1	3	2	4	5	2	4	2	1	24	2.9
C17	Small Intestine	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2	0.2
C18	Colon	-	-	-	-	-	-	-	-	-	2	2	1	2	5	-	2	14	1.7
C19-C20	Rectum	-	-	-	-	1	-	-	3	-	-	2	2	3	-	1	4	16	1.9
C21	Anus & Anal Canal	-	-	-	-	2	1	-	-	2	1	1	-	1	-	2	1	11	1.3
C22	Liver	-	-	-	-	-	3	2	2	1	1	4	5	6	2	3	4	33	4.0
C23-C24	Gallbladder etc.	-	-	-	-	1	-	-	2	5	4	6	7	7	7	4	2	45	5.4
C25	Pancreas	-	-	-	-	-	1	-	-	-	1	-	2	3	1	1	-	9	1.1
C30-C31	Nose, Sinuses etc.	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2	0.2
C32	Larynx	-	-	-	-	-	-	-	-	1	-	1	3	4	2	-	4	15	1.8
C33-C34	Trachea, bronchus and lung	-	-	-	-	-	-	1	1	2	1	2	5	7	6	5	2	32	3.9
C37-C38	Other Thoracic Organs	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
C40-C41	Bone	1	2	1	3	-	1	-	-	-	1	-	1	-	1	1	-	12	1.4
C43	Melanoma of Skin	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	0.1
C44	Other Skin	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	1	5	0.6
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	Conn. & Soft Tissue	-	-	1	-	-	2	1	-	2	1	4	-	-	1	-	1	13	1.6
C50	Breast	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	3	0.4
C60	Penis	-	-	-	-	-	-	-	-	-	-	-	-	6	1	1	1	9	1.1
C61	Prostate	-	-	-	-	-	-	-	-	1	-	2	3	8	8	12	7	41	5.0
C62	Testis	-	-	-	-	-	-	-	-	1	1	-	1	1	-	-	-	4	0.5
C63	Other Male Genital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney etc.	-	-	-	-	-	-	-	-	-	-	1	3	2	-	1	-	7	0.8
C65	Renal Pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Urinary Bladder	-	-	-	-	-	-	-	-	1	1	1	2	4	3	1	1	14	1.7
C68	Unspecified Urinary Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	0.1
C70-C72	Brain, Nervous System	1	-	-	1	-	-	2	1	2	-	2	2	-	1	3	-	15	1.8
C73	Thyroid	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3	0.4
C74	Adrenal Gland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkins Disease	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	3	0.4
C82-C86, C96	Non-Hodgkin Lymphoma	-	1	2	-	1	-	-	2	2	3	3	1	1	1	1	-	18	2.2
C88	Malig Imn.Prol D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	-	-	-	-	-	-	-	-	-	1	3	1	-	4	1	1	11	1.3
C91	Lymphoid Leukaemia	-	1	1	-	-	-	-	2	-	2	1	1	1	1	-	-	10	1.2
C92-C94	Myeloid Leukaemia	-	-	-	-	-	-	-	2	-	1	1	-	1	-	1	-	6	0.7
C95	Leukaemia Unspecified	1	-	1	1	3	1	-	1	-	-	1	2	1	4	1	1	18	2.2
Other and Unspecified		3	3	4	3	3	8	7	4	8	22	19	30	23	22	23	19	201	24.3
All sites		6	7	11	10	12	25	31	40	61	61	74	97	121	111	86	75	828	100.0

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

Table 36: Number of cancer deaths by five year age group and site (ICD-10): 2019-2021 Females
Muzaffarpur PBCR area

% = 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-C02	Tongue	-	-	-	-	-	-	-	-	1	2	1	3	-	3	-	2	12	1.5
C03-C06	Mouth	-	-	-	-	-	-	-	-	1	5	2	1	6	3	2	3	23	2.8
C07-C08	Salivary Gland	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	0.1
C09	Tonsil	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	0.1
C10	Other Oropharynx	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	3	0.4
C11	Nasopharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C12-C13	Hypopharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C14	Pharynx Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	0.2
C15	Oesophagus	-	-	-	-	-	-	1	-	-	1	2	2	2	2	3	-	13	1.6
C16	Stomach	-	-	-	-	-	-	-	-	-	2	2	1	4	3	-	1	13	1.6
C17	Small Intestine	-	-	-	-	1	-	1	-	1	-	-	-	-	-	-	1	4	0.5
C18	Colon	-	-	-	-	1	-	-	-	1	-	-	1	1	-	1	1	6	0.7
C19-C20	Rectum	-	-	-	1	-	-	2	1	1	-	3	1	1	-	-	-	10	1.2
C21	Anus & Anal Canal	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	2	0.2
C22	Liver	-	-	-	-	-	-	-	2	-	1	3	3	1	1	2	1	14	1.7
C23-C24	Gallbladder etc.	-	-	-	-	-	1	1	12	11	15	18	14	16	8	5	5	106	13.0
C25	Pancreas	-	-	-	-	-	-	-	-	1	-	2	1	1	1	2	1	9	1.1
C30-C31	Nose, Sinuses etc.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C32	Larynx	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	2	5	0.6
C33-C34	Trachea, bronchus and lung	1	-	-	-	-	-	-	-	6	-	8	3	11	8	4	2	43	5.3
C37-C38	Other Thoracic Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	Bone	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	1	3	0.4
C43	Melanoma of Skin	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	2	0.2
C44	Other Skin	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	3	0.4
C45	Mesothelioma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	Kaposi Sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	Conn. & Soft Tissue	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	3	0.4
C50	Breast	-	-	-	-	4	-	5	11	17	26	16	19	22	16	7	3	146	18.0
C51	Vulva	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	0.1
C52	Vagina	-	-	-	-	-	-	1	-	2	-	-	-	1	2	-	-	6	0.7
C53	Cervix Uteri	-	-	-	1	-	-	4	6	12	16	17	14	23	12	7	5	117	14.4
C54	Corpus Uteri	-	-	-	-	-	-	-	-	-	-	1	-	4	-	-	-	5	0.6
C55	Uterus Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C56	Ovary	-	-	-	-	1	1	1	4	3	4	1	4	3	1	1	-	24	3.0
C57	Other Female Genital	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	2	0.2
C58	Placenta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney etc.	-	-	-	-	-	-	-	-	1	2	1	2	-	1	-	-	7	0.9
C65	Renal Pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Urinary Bladder	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	3	0.4
C68	Unspecified Urinary Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C70-C72	Brain, Nervous System	-	-	-	1	-	-	-	1	-	-	1	3	-	1	-	-	7	0.9
C73	Thyroid	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	3	0.4
C74	Adrenal Gland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkins Disease	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	0.1
C82-C86, C96	Non-Hodgkin lymphoma	-	-	-	-	1	-	-	-	2	1	-	-	-	1	1	-	6	0.7
C88	Malig Imn.Prol D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	-	-	-	-	-	-	-	-	-	1	1	-	3	-	-	-	5	0.6
C91	Lymphoid Leukaemia	-	-	-	-	-	1	-	1	1	-	-	1	-	-	-	-	4	0.5
C92-C94	Myeloid Leukaemia	1	-	-	1	-	-	-	-	-	1	-	-	1	1	-	-	5	0.6
C95	Leukaemia Unspecified	-	2	1	-	2	-	1	1	-	-	3	1	1	1	-	2	15	1.8
Other and Unspecified		-	3	3	3	3	2	6	5	16	16	27	19	26	23	18	8	178	21.9
All sites		2	6	4	7	13	7	24	46	81	95	112	95	133	90	57	41	813	100

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

Table 37: Average annual Age Specific, Crude (CR), Age Adjusted (AAR) and Truncated (35-64 yrs) (TR) mortality rate per 100,000 population: 2019-2021– Males Muzaffarpur PBCR area

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	-	-	-	-	-	-	-	-	-	-	1.0	-	1.7	-	-	2.3	0.1	0.2	0.4
C01-C02	-	-	-	-	-	2.0	3.6	2.4	6.7	2.3	4.0	4.5	0.8	5.0	3.3	7.0	1.6	1.8	3.6
C03-C06	-	-	-	-	-	-	4.0	6.2	8.6	6.2	6.1	10.2	16.8	14.0	9.9	23.2	3.3	4.0	8.5
C07-C08	-	-	-	-	-	-	0.4	0.5	-	-	-	1.1	0.8	1.0	1.7	-	0.2	0.2	0.3
C09	-	-	-	-	-	-	-	-	-	-	-	1.1	1.7	1.0	1.7	2.3	0.2	0.2	0.4
C10	-	-	-	-	-	-	-	-	-	-	1.0	1.1	1.7	4.0	3.3	2.3	0.3	0.4	0.5
C11	-	-	-	-	-	-	-	-	0.6	-	-	-	-	1.0	1.7	-	0.1	0.1	0.1
C12-C13	-	-	-	-	-	0.4	-	-	0.6	-	-	1.1	0.8	5.0	1.7	4.6	0.4	0.4	0.4
C14	-	-	-	-	-	-	-	-	-	0.8	-	-	-	1.0	-	-	0.1	0.1	0.2
C15	-	-	-	-	-	-	-	-	1.8	3.1	1.0	2.3	5.1	-	9.9	7.0	0.8	1.0	2.1
C16	-	-	-	-	-	-	-	0.5	1.8	1.6	4.0	5.7	1.7	4.0	3.3	2.3	0.7	1.0	2.4
C17	-	-	-	-	-	-	-	-	-	-	-	1.1	-	-	-	2.3	0.1	0.1	0.1
C18	-	-	-	-	-	-	-	-	-	1.6	2.0	1.1	1.7	5.0	-	4.6	0.4	0.6	1.0
C19-C20	-	-	-	-	0.4	-	-	1.4	-	-	2.0	2.3	2.5	-	1.7	9.3	0.5	0.6	1.2
C21	-	-	-	-	0.7	0.4	-	-	1.2	0.8	1.0	-	0.8	-	3.3	2.3	0.3	0.4	0.7
C22	-	-	-	-	-	1.2	0.9	1.0	0.6	0.8	4.0	5.7	5.1	2.0	5.0	9.3	1.0	1.3	2.5
C23-C24	-	-	-	-	0.4	-	-	1.0	3.1	3.1	6.1	7.9	5.9	7.0	6.6	4.6	1.4	1.7	4.1
C25	-	-	-	-	-	0.4	-	-	-	0.8	-	2.3	2.5	1.0	1.7	-	0.3	0.3	0.8
C30-C31	-	-	-	-	0.4	0.4	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-
C32	-	-	-	-	-	-	-	-	0.6	-	1.0	3.4	3.4	2.0	-	9.3	0.5	0.6	1.2
C33-C34	-	-	-	-	-	-	0.4	0.5	1.2	0.8	2.0	5.7	5.9	6.0	8.3	4.6	1.0	1.2	2.3
C37-C38	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	0.3	0.5	0.3	0.9	-	0.4	-	-	-	0.8	-	1.1	-	1.0	1.7	-	0.4	0.4	0.3
C43	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-
C44	-	-	-	-	-	-	-	-	-	-	1.0	-	0.8	1.0	1.7	2.3	0.2	0.2	0.3
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	-	-	0.3	-	-	0.8	0.4	-	1.2	0.8	4.0	-	-	1.0	-	2.3	0.4	0.5	1.0
C50	-	-	-	-	-	-	-	-	-	-	-	-	0.8	1.0	1.7	-	0.1	0.1	0.1
C60	-	-	-	-	-	-	-	-	-	-	-	-	5.1	1.0	1.7	2.3	0.3	0.3	0.7
C61	-	-	-	-	-	-	-	-	0.6	-	2.0	3.4	6.7	8.0	19.8	16.3	1.3	1.5	1.8
C62	-	-	-	-	-	-	-	-	0.6	0.8	-	1.1	0.8	-	-	-	0.1	0.2	0.5
C63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	-	-	-	-	-	-	-	-	-	-	1.0	3.4	1.7	-	1.7	-	0.2	0.3	0.8
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	-	0.6	0.8	1.0	2.3	3.4	3.0	1.7	2.3	0.4	0.5	1.2
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	0.1
C70-C72	0.3	-	-	0.3	-	-	0.9	0.5	1.2	-	2.0	2.3	-	1.0	5.0	-	0.5	0.5	0.9
C73	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	-	-	0.1	0.1	-
C74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	-	-	2.3	0.1	0.1	-
C82-C86, C96	-	0.2	0.5	-	0.4	-	-	1.0	1.2	2.3	3.0	1.1	0.8	1.0	1.7	-	0.6	0.7	1.6
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	-	-	-	0.8	3.0	1.1	-	4.0	1.7	2.3	0.3	0.4	0.8
C91	-	0.2	0.3	-	-	-	-	1.0	-	1.6	1.0	1.1	0.8	1.0	-	-	0.3	0.4	0.9
C92-C94	-	-	-	-	-	-	-	1.0	-	0.8	1.0	-	0.8	-	1.7	-	0.2	0.2	0.6
C95	0.3	-	0.3	0.3	1.1	0.4	-	0.5	-	-	1.0	2.3	0.8	4.0	1.7	2.3	0.6	0.6	0.7
O&U*	0.9	0.7	1.0	0.9	1.1	3.2	3.1	1.9	4.9	17.1	19.2	34.0	19.4	22.0	38.0	44.2	6.2	7.7	14.6
All sites	1.8	1.7	2.8	2.9	4.2	10.1	13.8	19.0	37.4	47.5	74.8	110.0	101.8	111.2	142.1	174.3	25.4	31.0	59.5

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

Table 38: Average annual Age Specific, Crude (CR), Age Adjusted (AAR) and Truncated (35-64 yrs) (TR) mortality rate per 100,000 population: 2019-2021 – Females Muzaffarpur PBCR area

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-C02	-	-	-	-	-	-	-	-	0.7	1.7	1.1	2.9	-	3.8	-	5.3	0.4	0.5	1.0
C03-C06	-	-	-	-	-	-	-	-	0.7	4.2	2.1	1.0	5.1	3.8	4.8	8.0	0.8	1.0	2.1
C07-C08	-	-	-	-	-	-	-	-	-	-	1.1	-	-	-	-	-	-	0.1	0.2
C09	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	-	-	-	0.1
C10	-	-	-	-	-	-	-	-	0.7	-	1.1	-	-	-	-	2.7	0.1	0.2	0.3
C11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C12-C13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C14	-	-	-	-	-	-	-	-	-	-	-	-	1.7	-	-	-	0.1	0.1	0.2
C15	-	-	-	-	-	-	0.5	-	-	0.8	2.1	1.9	1.7	2.5	7.2	-	0.4	0.6	1.0
C16	-	-	-	-	-	-	-	-	-	1.7	2.1	1.0	3.4	3.8	-	2.7	0.4	0.5	1.2
C17	-	-	-	-	0.5	-	0.5	-	0.7	-	-	-	-	-	-	2.7	0.1	0.2	0.1
C18	-	-	-	-	0.5	-	-	-	0.7	-	-	1.0	0.8	-	2.4	2.7	0.2	0.3	0.4
C19-C20	-	-	-	0.4	-	-	0.9	0.5	0.7	-	3.2	1.0	0.8	-	-	-	0.3	0.4	1.0
C21	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	2.4	-	0.1	0.1	0.1
C22	-	-	-	-	-	-	-	1.1	-	0.8	3.2	2.9	0.8	1.3	4.8	2.7	0.5	0.6	1.4
C23-C24	-	-	-	-	-	0.4	0.5	6.4	7.9	12.7	19.2	13.4	13.5	10.1	12.1	13.3	3.6	4.5	11.8
C25	-	-	-	-	-	-	-	-	0.7	-	2.1	1.0	0.8	1.3	4.8	2.7	0.3	0.4	0.7
C30-C31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C32	-	-	-	-	-	-	-	-	1.4	0.8	-	-	-	-	-	5.3	0.2	0.2	0.4
C33-C34	0.3	-	-	-	-	-	-	-	4.3	-	8.5	2.9	9.3	10.1	9.6	5.3	1.5	1.8	3.8
C37-C38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	-	-	-	-	-	0.4	-	-	-	-	-	-	0.8	-	-	2.7	0.1	0.1	0.1
C43	-	-	-	-	-	-	0.5	-	-	-	1.1	-	-	-	-	-	0.1	0.1	0.2
C44	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	2.4	2.7	0.1	0.1	0.1
C45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47+C49	-	0.3	-	-	-	-	-	0.5	-	0.8	-	-	-	-	-	-	0.1	0.1	0.3
C50	-	-	-	-	1.8	-	2.3	5.8	12.3	22.0	17.1	18.2	18.6	20.2	16.9	8.0	5.0	6.1	15.3
C51	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	0.1
C52	-	-	-	-	-	-	0.5	-	1.4	-	-	-	0.8	2.5	-	-	0.2	0.2	0.4
C53	-	-	-	0.4	-	-	1.9	3.2	8.7	13.6	18.2	13.4	19.5	15.1	16.9	13.3	4.0	5.0	12.1
C54	-	-	-	-	-	-	-	-	-	-	1.1	-	3.4	-	-	-	0.2	0.2	0.6
C55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C56	-	-	-	-	0.5	0.4	0.5	2.1	2.2	3.4	1.1	3.8	2.5	1.3	2.4	-	0.8	1.0	2.5
C57	-	-	-	-	-	0.4	-	-	-	-	-	-	-	1.3	-	-	0.1	0.1	-
C58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	-	-	-	-	-	-	-	-	0.7	1.7	1.1	1.9	-	1.3	-	-	0.2	0.3	0.9
C65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	2.4	2.7	0.1	0.1	0.1
C68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C70-C72	-	-	-	0.4	-	-	-	0.5	-	-	1.1	2.9	-	1.3	-	-	0.2	0.3	0.6
C73	-	-	-	-	-	-	-	-	-	-	-	-	1.7	1.3	-	-	0.1	0.1	0.2
C74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	-	-	-	-
C82-C86, C96	-	-	-	-	0.5	-	-	-	1.4	0.8	-	-	-	1.3	2.4	-	0.2	0.3	0.4
C88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	-	-	-	-	-	-	-	-	-	0.8	1.1	-	2.5	-	-	-	0.2	0.2	0.7
C91	-	-	-	-	-	0.4	-	0.5	0.7	-	-	1.0	-	-	-	-	0.1	0.1	0.4
C92-C94	0.3	-	-	0.4	-	-	-	-	-	0.8	-	-	0.8	1.3	-	-	0.2	0.2	0.3
C95	-	0.5	0.3	-	0.9	-	0.5	0.5	-	-	3.2	1.0	0.8	1.3	-	5.3	0.5	0.6	0.9
O&U*	-	0.8	0.8	1.2	1.4	0.8	2.8	2.6	11.6	13.6	28.9	18.2	22.0	29.0	43.4	21.3	6.1	7.5	15.2
All sites	0.6	1.5	1.0	2.7	6.0	2.9	11.2	24.4	58.5	80.5	119.7	90.8	112.6	113.4	137.4	109.3	27.7	34.2	77.2

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

20. Paediatric cancer incidence tables as per ICC-3 standard

Table 39: Number of cases in paediatric age-group, incidence rate per million population: 2019-2021 (Both sex)

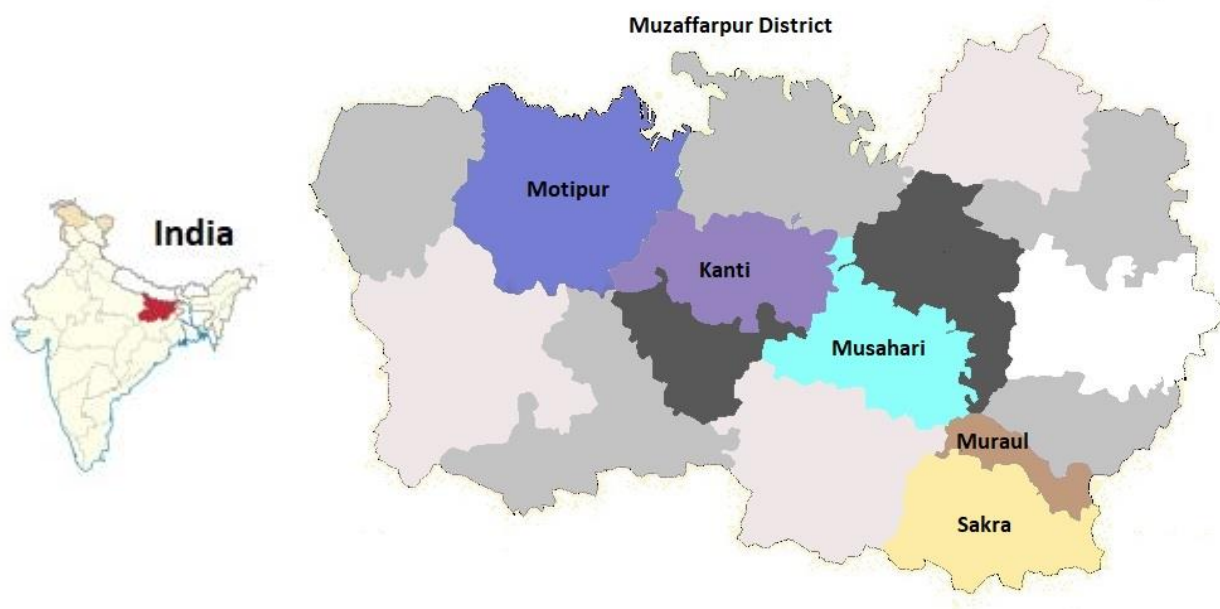
ICCC	Site	0-4	5-9	10-14	15-19	0-14	0-19	Percentage (0-14)		Percentage (0-19)		Age-specific rate per 1,000,000				AAR		Cumulative		MV % 0-19	DCO % 0-19
								All	Group	All	Group	0-4	5-9	10-14	15-19	0-14	0-19	0-14	0-19		
I	LEUKAEMIA	4	9	10	9	23	32	38.3	100.0	39.0	100.0	6.2	11.3	12.7	15.0	9.7	10.9	6629	4433	87.5	0.0
a.	Lymphoid	1	6	7	4	14	18	23.3	60.9	22.0	56.3	1.5	7.5	8.9	6.6	5.6	5.8	11130	8125	94.4	0.0
b.	Acute myeloid	1	-	1	1	2	3	3.3	8.7	3.7	9.4	1.5	0.0	1.3	1.7	1.0	1.1	71053	44683	100.0	0.0
c.	CMD	-	-	-	2	-	2	-	-	2.4	6.3	-	-	-	3.3	-	0.7	-	60196	100.0	0.0
d.	MDS & other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	2	3	2	2	7	9	11.7	30.4	11.0	28.1	3.1	3.8	2.5	3.3	3.1	3.2	21309	15738	66.7	0.0
II	LYMPHOMA & RELATED	1	3	4	-	8	8	13.3	100.0	9.8	100.0	1.5	3.8	5.1	-	3.3	2.5	19245	19245	100.0	0.0
a.	Hodgkin	-	2	1	-	3	3	5.0	37.5	3.7	37.5	-	2.5	1.3	-	1.2	0.9	52938	52938	100.0	0.0
b.	Non-Hodgkin except BL	-	1	2	-	3	3	5.0	37.5	3.7	37.5	-	1.3	2.5	-	1.1	0.9	52634	52634	100.0	0.0
c.	Burkitt (BL)	1	-	-	-	1	1	1.7	12.5	1.2	12.5	1.5	-	-	-	0.6	0.5	129793	129793	100.0	0.0
d.	Lymphoreticular	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	-	-	1	-	1	1	1.7	12.5	1.2	12.5	-	-	1.3	-	0.4	0.3	157001	157001	100.0	0.0
III	CNS NEOPLASMS	2	-	1	1	3	4	5.0	100.0	4.9	100.0	3.1	-	1.3	1.7	1.6	1.6	45917	33240	100.0	0.0
a.	Ependymoma	-	-	1	-	1	1	1.7	33.3	1.2	25.0	-	-	1.3	-	0.4	0.3	157001	157001	100.0	0.0
b.	Astrocytoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	CNS embryonal	1	-	-	1	1	2	1.7	33.3	2.4	50.0	1.5	-	-	1.7	0.6	0.8	129793	62458	100.0	0.0
d.	Other gliomas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Other specified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f.	Unspecified CNS	1	-	-	-	1	1	1.7	33.3	1.2	25.0	1.5	-	-	-	0.6	0.5	129793	129793	0.0	0.0
IV	NEUROBLASTOMA	1	-	-	-	1	1	1.7	100.0	1.2	100.0	1.5	-	-	-	0.6	0.5	129793	129793	100.0	0.0
a.	(Ganglio)neuroblastoma	1	-	-	-	1	1	1.7	100.0	1.2	100.0	1.5	-	-	-	0.6	0.5	129793	129793	100.0	0.0
b.	Peripheral nervous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V	RETINOBLASTOMA	1	-	-	-	1	1	1.7	100.0	1.2	100.0	1.5	-	-	-	0.6	0.5	129793	129793	0.0	0.0
VI	RENAL TUMOURS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a.	Nephroblastoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Renal carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VII	HEPATIC TUMOURS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a.	Hepatoblastoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Hepatic carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VIII	BONE TUMOURS	1	3	5	2	9	11	15.0	100.0	13.4	100.0	1.5	3.8	6.4	3.3	3.7	3.6	17143	13344	72.7	0.0
a.	Osteosarcoma	-	-	2	1	2	3	3.3	22.2	3.7	27.3	-	-	2.5	1.7	0.7	0.9	78501	47518	100.0	0.0
b.	Chondrosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Ewing & related	1	2	2	-	5	5	8.3	55.6	6.1	45.5	1.5	2.5	2.5	-	2.1	1.7	30336	30336	100.0	0.0
d.	Other specified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	-	1	1	1	2	3	3.3	22.2	3.7	27.3	-	1.3	1.3	1.7	0.8	1.0	79178	47765	0.0	0.0
IX	SOFT TISSUE SARCOMA	1	1	1	-	3	3	5.0	100.0	3.7	100.0	1.5	1.3	1.3	-	1.4	1.1	49178	49178	100.0	0.0
a.	Rhabdomyosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Fibrosarcoma	-	-	1	-	1	1	1.7	33.3	1.2	33.3	-	-	1.3	-	0.4	0.3	157001	157001	100.0	0.0
c.	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Other specified	1	1	-	-	2	2	3.3	66.7	2.4	66.7	1.5	1.3	-	-	1.0	0.8	71608	71608	100.0	0.0
e.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X	GERM CELL TUMOURS	1	-	1	2	2	4	3.3	100.0	4.9	100.0	1.5	0.0	1.3	3.3	1.0	1.5	71053	32588	100.0	0.0
a.	CNS germ cell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Other extragonadal	1	-	-	-	1	1	1.7	50.0	1.2	25.0	1.5	-	-	-	0.6	0.5	129793	129793	100.0	0.0
c.	Gonadal germ cell	-	-	1	2	1	3	1.7	50.0	3.7	75.0	-	-	1.3	3.3	0.4	1.0	157001	43513	100.0	0.0
d.	Gonadal carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified gonadal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
XI	CARCINOMA & MELANOMA	-	-	-	2	-	2	-	-	2.4	100.0	-	-	-	3.3	-	0.7	-	60196	100.0	0.0
a.	Adrenocortical	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Thyroid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Nasopharyngeal	-	-	-	1	-	1	-	-	1.2	50.0	-	-	-	1.7	-	0.4	-	120392	100.0	0.0
d.	Melanoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Skin carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f.	Other & unspecified	-	-	-	1	-	1	-	-	1.2	50.0	-	-	-	1.7	-	0.4	-	120392	100.0	0.0
XII	OTHER & UNSPECIFIED	2	3	5	6	10	16	16.7	100.0	19.5	100.0	3.1	3.8	6.4	10.0	4.3	5.5	15143	8630	6.3	6.3
a.	Other specified	1	-	-	-	1	1	1.7	10.0	1.2	6.3	1.5	-	-	-	0.6	0.5	129793	129793	100.0	0.0
b.	Other unspecified	1	3	5	6	9	15	15.0	90.0	18.3	93.8	1.5	3.8	6.4	10.0	3.7	5.1	17143	9245	0.0	6.7
Total		14	19	27	22	60	82	100.0	100.0	100.0	100.0	21.6	23.8	34.4	36.5	26.0	28.4	2508	1720	71.6	1.2

Table 40: Number of cases in paediatric age-group, incidence rate per million population: 2019-2021 (By gender)

ICCC	Site	Males								Females									
		Number of cases in age groups						AAR per million		M/F Ratio		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	2	6	8	7	16	23	12.8	14.5	2.3	2.6	2	3	2	2	7	9	6.5	6.8
a.	Lymphoid	-	5	6	4	11	15	8.3	9.1	3.7	5.0	1	1	1	-	3	3	2.8	2.2
b.	Acute myeloid	-	-	1	-	1	1	0.7	0.6	1.0	0.5	1	-	-	1	1	2	1.2	1.8
c.	CMD	-	-	-	1	-	1	-	0.7	-	1.0	-	-	-	1	-	1	-	0.9
d.	MDS & other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	2	1	1	2	4	6	3.8	4.3	1.3	2.0	-	2	1	-	3	3	2.4	1.9
II	LYMPHOMA & RELATED	1	3	4	-	8	8	6.4	5.0	0.0	0.0	-	-	-	-	-	-	-	-
a.	Hodgkin	-	2	1	-	3	3	2.3	1.8	0.0	0.0	-	-	-	-	-	-	-	-
b.	Non-Hodgkin except BL	-	1	2	-	3	3	2.2	1.7	0.0	0.0	-	-	-	-	-	-	-	-
c.	Burkitt (BL)	1	-	-	-	1	1	1.1	0.9	0.0	0.0	-	-	-	-	-	-	-	-
d.	Lymphoreticular	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	-	-	1	-	1	1	0.7	0.6	0.0	0.0	-	-	-	-	-	-	-	-
III	CNS NEOPLASMS	2	-	1	1	3	4	3.0	3.0	0.0	0.0	-	-	-	-	-	-	-	-
a.	Ependymoma	-	-	1	-	1	1	0.7	0.6	0.0	0.0	-	-	-	-	-	-	-	-
b.	Astrocytoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	CNS embryonal	1	-	-	1	1	2	1.1	1.5	0.0	0.0	-	-	-	-	-	-	-	-
d.	Other gliomas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Other specified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f.	Unspecified CNS	1	-	-	-	1	1	1.1	0.9	0.0	0.0	-	-	-	-	-	-	-	-
IV	NEUROBLASTOMA	-	-	-	-	-	-	-	-	0.0	0.0	1	-	-	-	1	1	1.2	1.0
a.	(Ganglio)neuroblastoma	-	-	-	-	-	-	-	-	0.0	0.0	1	-	-	-	1	1	1.2	1.0
b.	Peripheral nervous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V	RETINOBLASTOMA	1	-	-	-	1	1	1.1	0.9	0.0	0.0	-	-	-	-	-	-	-	-
VI	RENAL TUMOURS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a.	Nephroblastoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Renal carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VII	HEPATIC TUMOURS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a.	Hepatoblastoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Hepatic carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VIII	BONE TUMOURS	1	2	3	2	6	8	4.9	5.1	2.0	2.7	-	1	2	-	3	3	2.3	1.8
a.	Osteosarcoma	-	-	1	1	1	2	0.7	1.2	1.0	2.0	-	-	1	-	1	1	0.8	0.6
b.	Chondrosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Ewing & related	1	1	2	-	4	4	3.4	2.6	4.0	4.0	-	1	-	-	1	1	0.8	0.6
d.	Other specified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified	-	1	-	1	1	2	0.8	1.3	1.0	2.0	-	-	1	-	1	1	0.8	0.6
IX	SOFT TISSUE SARCOMA	1	1	1	-	3	3	2.7	2.1	0.0	0.0	-	-	-	-	-	-	-	-
a.	Rhabdomyosarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Fibrosarcoma	-	-	1	-	1	1	0.7	0.6	0.0	0.0	-	-	-	-	-	-	-	-
c.	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d.	Other specified	1	1	-	-	2	2	1.9	1.5	0.0	0.0	-	-	-	-	-	-	-	-
e.	Unspecified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X	GERM CELL TUMOURS	1	-	-	1	1	2	1.1	1.5	1.0	1.0	-	-	1	1	1	2	0.8	1.5
a.	CNS germ cell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Other extragonadal	1	-	-	-	1	1	1.1	0.9	0.0	0.0	-	-	-	-	-	-	-	-
c.	Gonadal germ cell	-	-	-	1	-	1	-	0.7	0.0	0.5	-	-	1	1	1	2	0.8	1.5
d.	Gonadal carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Unspecified gonadal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
XI	CARCINOMA & MELANOMA	-	-	-	1	-	1	-	0.7	-	1.0	-	-	-	1	-	1	-	0.9
a.	Adrenocortical	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Thyroid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c.	Nasopharyngeal	-	-	-	1	-	1	-	0.7	-	0.0	-	-	-	-	-	-	-	-
d.	Melanoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
e.	Skin carcinoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f.	Other & unspecified	-	-	-	-	-	-	-	-	-	0.0	-	-	-	1	-	1	-	0.9
XII	OTHER & UNSPECIFIED	1	1	3	2	5	7	4.1	4.5	1.0	0.8	1	2	2	4	5	9	4.4	6.9
a.	Other specified	-	-	-	-	-	-	-	-	0.0	0.0	1	-	-	-	1	1	1.2	1.0
b.	Other unspecified	1	1	3	2	5	7	4.1	4.5	1.3	0.9	0	2	2	4	4	8	3.2	5.9
	Total	10	13	20	14	43	57	36.3	37.3	2.5	2.3	4	6	7	8	17	25	15.2	18.7

21. Village-wise incidence and mortality cases: 2019-2021

We are presenting village-wise incidence and mortality cases registered in the years 2019-2021.



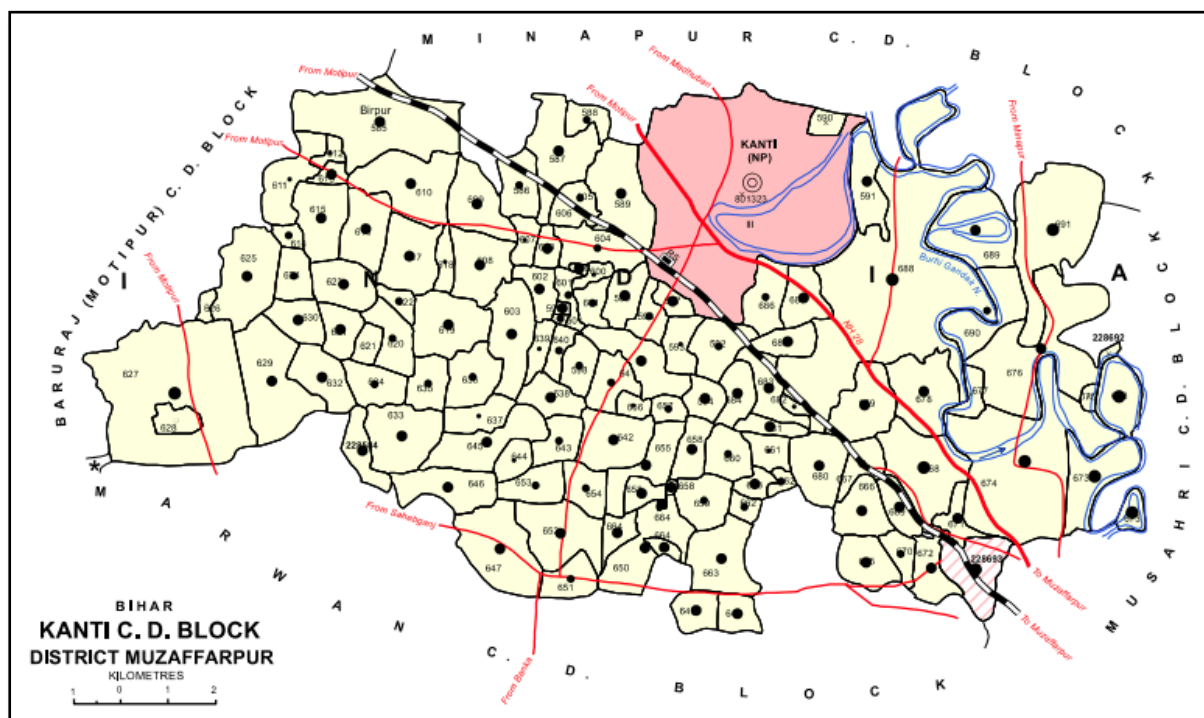
Cancer incidence cases and mortality cases: Muzaffarpur PBCR area (2019-2021) (Urban and rural area)

Block	Incidence (2019-2021)			Mortality (2019-2021)		
	Male	Female	Total	Male	Female	Total
Muzaffarpur urban	310	303	613	226	192	418
Kanti	123	153	276	100	113	213
Musahari	205	221	426	151	157	308
Muraul (Dholi)	48	63	111	42	46	88
Motipur (Baruraj)	200	207	407	167	165	332
Sakra	162	170	332	142	140	282
Total	1048	1117	2165	828	813	1641

Cancer incidence cases and mortality cases: Muzaffarpur urban area (2019-2021)

Block	Incidence (2019-2021)			Mortality (2019-2021)		
	Male	Female	Total	Male	Female	Total
Muzaffarpur Municipal Corporation	273	267	540	199	171	370
Motipur Nagar Panchayat	12	10	22	10	3	13
Kanti Nagar Panchayat	14	20	34	10	14	24
Damodarpur Census Town	11	6	17	7	4	11
Total	310	303	613	226	192	418

Cancer incidence cases and mortality cases: Kanti, Muzaffarpur PBCR (2019-2021)

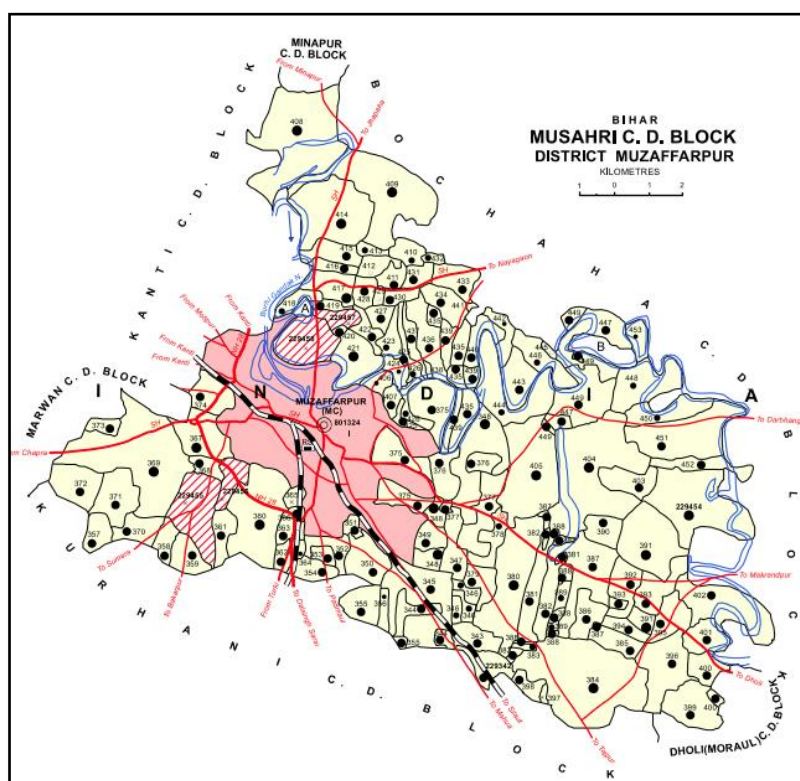


Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
1	Akurahan Khargi	1	2	3	1	-	1
2	Arizpur	-	1	1	-	-	-
3	Bahuara urf Harpur Hiranman	-	5	5	-	2	2
4	Bairiya	3	4	7	-	1	1
5	Bangra Hardas	2	1	3	1	1	2
6	Barmatpur	2	-	2	3	-	3
7	Bathnaha	1	1	2	1	2	3
8	Bheriahi	1	3	4	1	3	4
9	Bheriahi Narayan	-	1	1	-	-	-
10	Bhimalpur	1	-	1	1	-	1
11	Birpur	4	1	5	2	-	2
12	Bishunpur Ganga urf Baikatpur	6	4	10	7	3	10
13	Bishunpur Mahanand	2	1	3	3	1	4
14	Bishunpur Tola Pirmia	-	-	-	1	-	1
15	Chak Murmur	-	3	3	-	2	2
16	Chhapra Dharampur Jadu	2	3	5	2	1	3

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
17	Chhapra Madho	1	-	1	2	1	3
18	Chhapra Manorath	-	1	1	-	-	-
19	Dadar Kolhua	6	3	9	4	4	8
20	Dhamauli Ramnath	17	13	30	13	9	22
21	Ghausi Chhapra	-	1	1	-	1	1
22	Gopalpur	2	1	3	3	1	4
23	Gosainpur	-	1	1	-	1	1
24	Harchanda	4	5	9	2	5	7
25	Hardaspur	2		2	3	-	3
26	Harpur Ganesh	-	1	1	-	1	1
27	Hichra	1	-	1	1	-	1
28	Jalgaon urf Phul Kahan Subodh	-	-	-	-	1	1
29	Jasoda Math urf Rampur Harihar	1	-	1	1	-	1
30	Jhiktahi Madhuban	-	4	4	2	3	5
31	Khajuri	3	2	5	1	-	1
32	Kusi urf Harpur	-	1	1	-	-	-
33	Lashkaripur	3	4	7	1	5	6
34	Madhopur Dulham urf Dhebahan	2	2	4	3	-	3
35	Madhopur Machhia	-	1	1	1	1	2
36	Madhukar Chhapra	1	2	3	-	1	1
37	Mahartha	2	1	3	2	1	3
38	Maisahan	1	-	1	-	-	-
39	Manikpur Narotam	-	5	5	-	3	3
40	Manpura Kanti	-	2	2	1	1	2
41	Mirzapur	-	1	1	1	1	2
42	Mithan Sarai	3	5	8	2	1	3
43	Mobarakpur	-	-	-	-	1	1
44	Muhammadpur Kanti	-	1	1	1	-	1
45	Mustafapur	2	3	5	3	2	5
46	Narsanda	2	2	4	2	1	3
47	Paighambarpur Kolhua	9	13	22	4	9	13
48	Pakri	3	1	4	3	3	6

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
49	Panapur Haveli	3	5	8	3	2	5
50	Panapur Kariat	2	-	2	1	2	3
51	Panapur Khurd	-	-	-	-	1	1
52	Patti Sain Brij Lal	2	1	3	1	-	1
53	Patti Sain Chhapra Darianand	1	3	4	1	4	5
54	Patti Sain Tola Ram Rai	1	-	1	3	-	3
55	Pemi Chhapra	-	1	1	-	-	-
56	Phul Kahan Gobind	1	5	6	1	5	6
57	Phul Kahan Godai	4	4	8	2	5	7
58	Phul Kahan Mani	1	3	4	-	3	3
59	Pokhraira	-	1	1	-	1	1
60	Rasulpur Kariat	2	1	3	1	-	1
61	Ratanpura	1	-	1	1	1	2
62	Sadatpur	6	7	13	4	4	8
63	Sain Patti Shiu Parsan Singh	-	3	3	-	2	2
64	Salempur Dhab	-	2	2	-	2	2
65	Serukahi	3	4	7	1	2	3
66	Shahpur	-	3	3	-	1	1
67	Sherpur urf Mahammadpur Mustak	-	-	-	-	1	1
68	Sirna urf Bheriahi	-	-	-	1	-	1
69	Sirsian	-	1	1	-	-	-
70	Sirsian Buzurg	2	1	3	-	1	1
71	Sonbarsa	2	1	3	-	1	1
72	Suratpur	1	1	2	-	2	2
73	Tola Chand Pande urf Bherahi	1	-	1	1	-	1
Total		123	153	276	100	113	213

Cancer incidence cases and mortality cases: Musahari, Muzaffarpur PBCR (2019-2021)

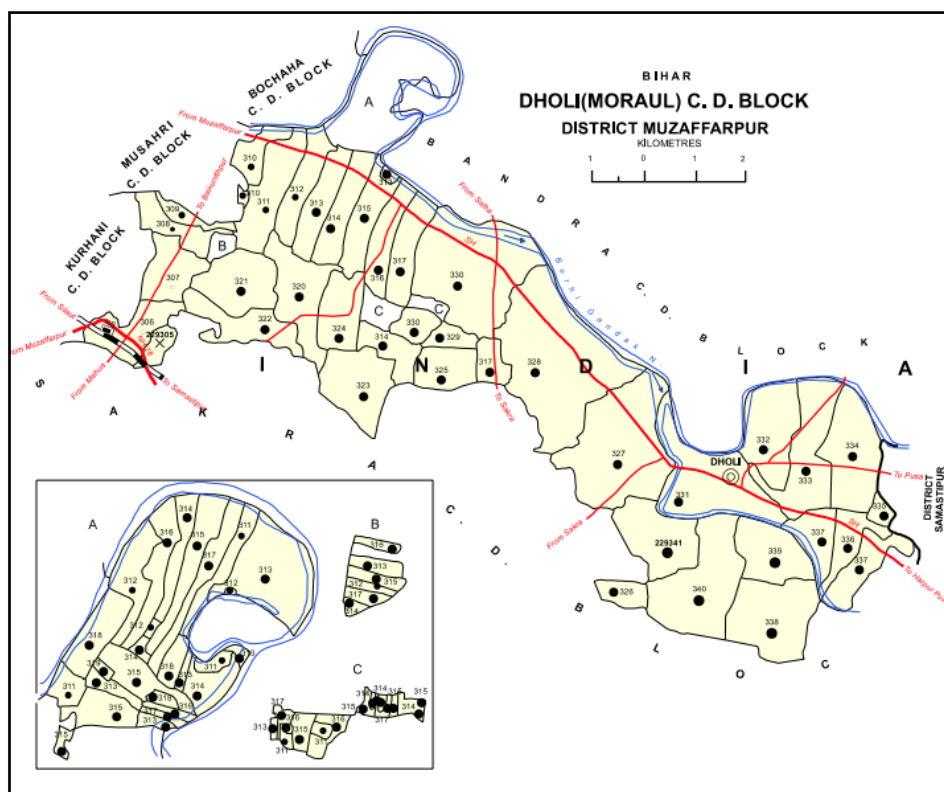


Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
1	Abdunagar urf Madhopur	2	3	5	2	2	4
2	Baijnathpur	-	1	1	-	1	1
3	Baikunthpur	1	-	1	1	-	1
4	Bara Jagarnath	4	11	15	-	4	4
5	Bhagwanpur	22	17	39	15	12	27
6	Bhagwatipur	1	-	1	2	-	2
7	Bhikanpur Adam	-	1	1	-	-	-
8	Bhikanpur Dih	4	3	7	-	3	3
9	Bhikhanpura	1	4	5	1	1	2
10	Binda	1	1	2	1	-	1
11	Burhnagra	3	2	5	2	3	5
12	Burhnagra Radha	-	1	1	-	2	2
13	Chak Ahmad	1	1	2	1	1	2
14	Chak Ghazi	-	1	1	-	1	1
15	Chak Mohabbat	3	2	5	1	1	2
16	Chandwara	-	1	1	-	-	-

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
17	Chapra Megh Rai	4	3	7	3	4	7
18	Chau Siwan	1	-	1	1	-	1
19	Damodarpur	-	1	1	-	1	1
20	Dharampur	-	-	-	1	-	1
21	Dighra Patti	-	2	2	-	2	2
22	Dighra Rampur Shah	2	2	4	2	-	2
23	Dumri urf Mahammadpur Mobarak	6	11	17	4	5	9
24	Dwarkanagar urf Dwarkanathpur	2	2	4	2	2	4
25	Fatehpur	-	1	1	-	1	1
26	Gobrahi urf Gobardhanpur	7	5	12	1	5	6
27	Hasan Chak	4	2	6	3	1	4
28	Jalalpur Baikat	1	7	8	1	6	7
29	Jamalabad	2	5	7	2	4	6
30	Jhapaha	3	9	12	3	7	10
31	Kanahauli Bishundat	4	1	5	1	-	1
32	Khabra urf Kiratpur Gurdas	6	7	13	6	5	11
33	Kothia Dakhili	1	1	2	1	1	2
34	Madapur Chaube	-	-	-	1	2	3
35	Madhubani	4		4	3	1	4
36	Majhauri Dharamdas	9	5	14	7	4	11
37	Manika Ghazi	-	1	1	-	-	-
38	Manika Harkishun	2	5	7	1	4	5
39	Manika urf Bishunpur Bhand	4	3	7	4	2	6
40	Manikpur Burhnagra	1	-	1	1	-	1
41	Manshi	1	-	1	1	-	1
42	Mathurapur	1	-	1	-	-	-
43	Mirdahi	-	1	1	-	1	1
44	Modhopur	2	2	4	-	-	-
45	Mominpur urf BishunpurManohar	1	-	1	2	-	2
46	Muradpur Dullah	1	1	2	1	-	1
47	Mushari urf Radhanagar	5	7	12	5	5	10

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
48	Narauli	5	3	8	5	2	7
49	Narauli Dih	2	-	2	1	-	1
50	Narauli Kalyan	-	2	2	-	1	1
51	Narsinghpur	3	1	4	3	2	5
52	Nawada urf BishunpurBhagwan	-	2	2	-	1	1
53	Nayagaon	2	2	4	1	1	2
54	Nazirpur	6	2	8	5	-	5
55	Pahladpur	7	3	10	10	3	13
56	Patahi urf Patahi Rup	5	7	12	5	7	12
57	Pirmahammadpur	-	1	1	1	-	1
58	Punas Chaturi	1	2	3	-	2	2
59	Punas Raja	1	-	1	-	1	1
60	Raghunathpur Jagdish	3	-	3	1	-	1
61	Raghunathpur Khurd	1	3	4	1	1	2
62	Rajwara Bhagwan	2	2	4	1	2	3
63	Rajwara Dih	-	1	1	-	1	1
64	Rakbe Yehiapur urf Ganeshpur	-	2	2	2	4	6
65	Rasulpur Saidpur Bazid	3	-	3	1	1	2
66	Rasulpur Saiyad Salem	2	5	7	1	4	5
67	Rohua Apuchh	3	6	9	2	7	9
68	Rohua Birnarayan	-	1	1	-	-	-
69	Rohua Rajaram	3	4	7	3	-	3
70	Sadullahpur	1	-	1	1	-	1
71	Saghari	1	-	1	-	-	-
72	Salha	2	-	2	1	-	1
73	Sekhpur	8	10	18	4	5	9
74	Shahbazpur urf Salempur	14	14	28	7	9	16
75	Sherpur	8	5	13	7	2	9
76	Susta	3	5	8	4	3	7
77	Sutihara	1	-	1	1	1	2
78	Tarwara Gopalpur	1	5	6	-	3	3
Total		205	221	426	151	157	308

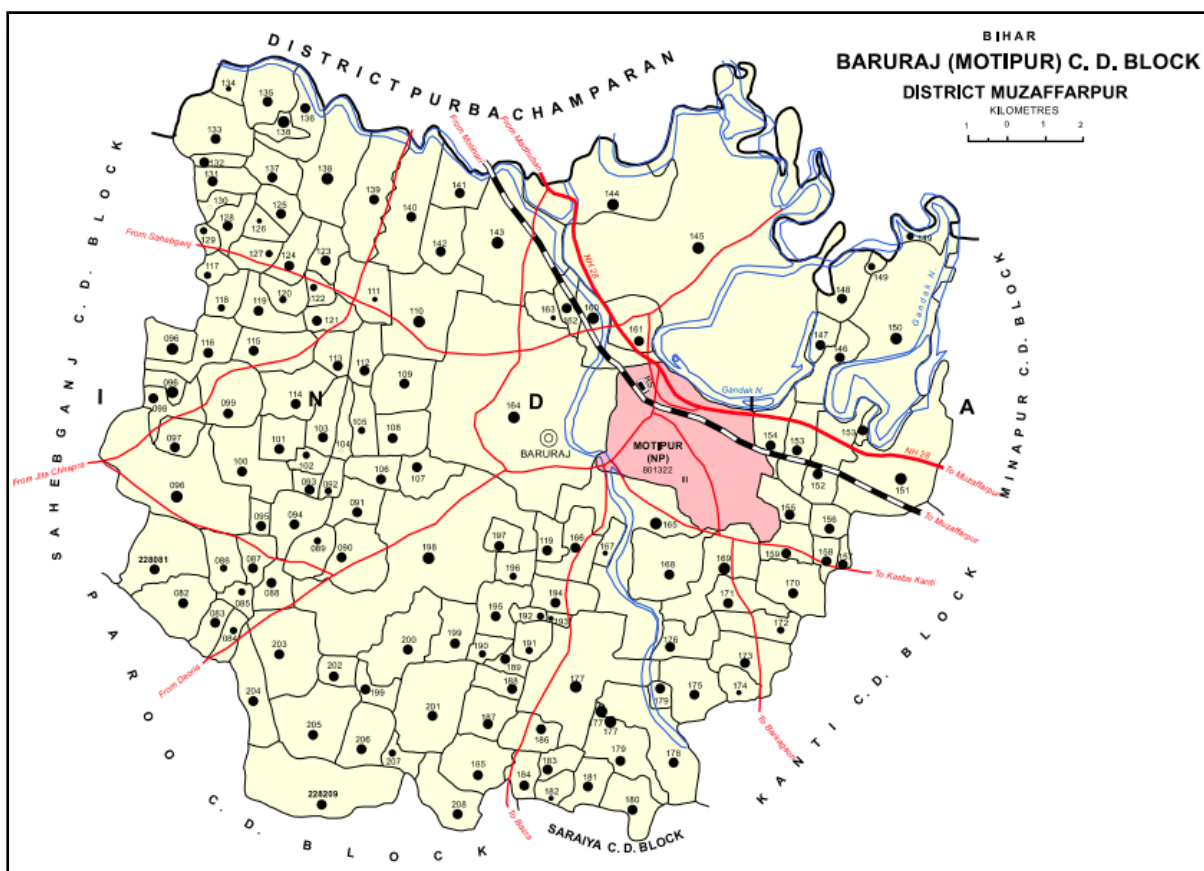
Cancer incidence cases and mortality cases: Muraul (Dholi), Muzaffarpur PBCR (2019-2021)



Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
1	Abdulpur Raini	2	5	7	1	3	4
2	Balua	-	-	-	-	1	1
3	Basantpur Bakhari	1	1	2	1	1	2
4	Bidya Jhanp	3	2	5	2	1	3
5	Bishunpur Bakhri	3	5	8	3	2	5
6	Bishunpur Murar	1	-	1	1	-	1
7	Bishunpur SiriRam	-	2	2	-	1	1
8	Bishunpur Titra	-	1	1	-	1	1
9	Chak Sen	-	1	1	-	-	-
10	Daraha Chausajh	1	3	4	1	4	5
11	Dharmagatpur	-	2	2	-	1	1
12	Dholi	-	1	1	-	1	1
13	Dwarkapur	2	1	3	2	1	3
14	Gopalpur Bishunpur Lala	1	-	1	-	-	-
15	Gopinathpur	-	1	1	1	1	2

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
16	Harsinghpur Lautan	8	3	11	8	2	10
17	Itha Rasulnagar	2	3	5	2	4	6
18	Kharauna	-	2	2	-	1	1
19	Khas Patti urf Jadunathpur	1	-	1	-	1	1
20	Mahamadpur Badal	2	2	4	1	1	2
21	Mahammadpur Damodar	-	2	2	-	-	-
22	Mahammadpur Lalse	-	2	2	-	1	1
23	Mahammadpur Mohan	1	1	2	1	-	1
24	Mahammadpur Shiuram	1	-	1	1	-	1
25	Malpur Agrail	2	3	5	2	2	4
26	Markan	1	1	2	-	1	1
27	Mirapur urf Gopalpur Moraul	2	5	7	3	5	8
28	Mohammadpur Gokhul	1	-	1	1	-	1
29	Pilkhil Gajpatti	8	4	12	6	3	9
30	Sadikpur Moraul	3	5	8	3	4	7
31	Sambaha	1	3	4	1	1	2
32	Titra Asanan	1	2	3	1	2	3
Total		48	63	111	42	46	88

Cancer incidence cases and mortality cases: Motipur (Baruraj), Muzaffarpur PBCR (2019-2021)



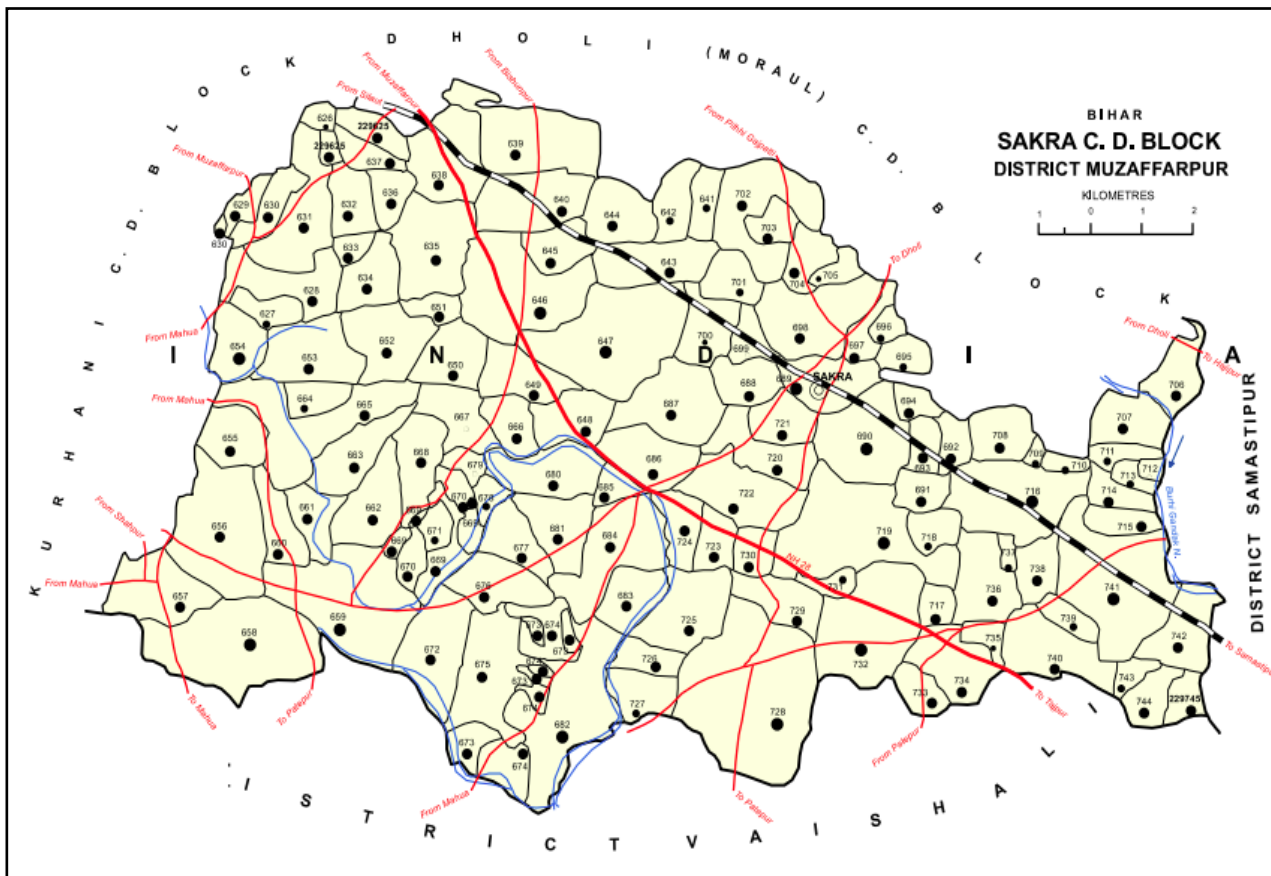
Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
1	Adalpur urf Abdulpur	-	-	-	-	1	1
2	Ahiraulia	1	1	2	1	1	2
3	Akhtiarpur	-	1	1	-	1	1
4	Andaul urf BishunpurMandal	3	3	6	3	3	6
5	Aswari Banjaria	2	2	4	-	1	1
6	Baburban	-	3	3	-	3	3
7	Bakhri	1	1	2	1	1	2
8	Bangra Firoz	-	2	2	1	2	3
9	Bangri	1	1	2	1	-	1
10	Bans Ghatta	1	4	5	-	2	2
11	Barhampur Karman	4	2	6	3	1	4
12	Bariarpur urf Bazidpur	15	23	38	16	19	35
13	Baruraj	13	9	22	9	10	19

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
14	Bathnaha urf Madhopur Ram	-	4	4	-	1	1
15	Bhanpur Barewa urf Koirgawan K	2	2	4	1	-	1
16	Bhataulia	2	-	2	1	-	1
17	Bhemriahi urf Rampur Bhemriahi	5	3	8	3	3	6
18	Birji	2	4	6	1	5	6
19	Bishunpur Horil	-	-	-	1	-	1
20	Bishunpur Lakhansen	-	1	1	-	1	1
21	Bishunpur Manohar Urf Manohar	-	-	-	1	-	1
22	Boaria	3	1	4	4	1	5
23	Chainpur	1	-	1	-	-	-
24	Chakwa	1	2	3	-	1	1
25	Chhapra Mohan	-	1	1	-	-	-
26	Chhatarpatti	-	-	-	-	1	1
27	Chorghatta	2	-	2	2	-	2
28	Dhanauti	-	-	-	1	-	1
29	Dichhtaulia	1	-	1	1	-	1
30	Donra Chhapra	-	1	1	-	-	-
31	Dumaria	2	-	2	2	-	2
32	Gokhula	2	3	5	4	1	5
33	Gopalpur Gopil	-	1	1	-	1	1
34	Gopinathpur	1	2	3	2	3	5
35	Gosainpur	1	-	1	1	-	1
36	Hardi	5	4	9	3	2	5
37	Harnahi	3	8	11	2	6	8
38	Harpur	3	1	4	1	1	2
39	Hathilwa urf Chhapra Hathil	-	-	-	-	1	1
40	Ibrahimpur	6	2	8	5	-	5
41	Jagarnathpur	-	2	2	1	1	2
42	Jagdewan Chhapra	1	1	2	1	-	1
43	Jahangirpur	5	5	10	4	5	9
44	Jasauli	5	3	8	3	6	9
45	Jathwalia	2	5	7	1	4	5

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
46	Kaithaulia	3	4	7	2	4	6
47	Kalyanpur Haraulia	4	8	12	4	6	10
48	Kamalpur Bithraul	3	7	10	2	4	6
49	Kathaia		3	3	1	2	3
50	Khartari Mahanand	-	-	-	1	1	2
51	Khiro Chhapra	-	-	-	-	1	1
52	Korra	-	1	1	-	-	-
53	Kuahi	1	2	3	-	-	-
54	Kuria	2	-	2	1	-	1
55	Kusahi urf Jagdishpur Chamman	1	-	1	-	-	-
56	Lohi NawalpurAz Rakbe Jasauli	1	1	2	-	2	2
57	Mahamadpur Balmi	5	4	9	5	3	8
58	Mahamadpur Ganga	-	1	1	-	1	1
59	Mahamadpur Mahamda	4	7	11	5	7	12
60	Mahamadpur Raju	2		2	2	-	2
61	Mahima Gopinath	4	4	8	1	5	6
62	Mahual	1	1	2	1	3	4
63	Malikana urf Bagahi	3	2	5	1	2	3
64	Manguraha Tajpur	4	3	7	2	3	5
65	Manikpur	3	1	4	1	3	4
66	Manpura	2		2	1	-	1
67	Mansurpur	1	-	1	1	-	1
68	Manua	-	-		1	-	1
69	Mathiha	-	3	3	-	2	2
70	Meghua	1	2	3	-	2	2
71	Mithanpura Siri Ram	-	-	-	-	1	1
72	Mohiuddinpur	1	1	2			-
73	Mursandi	2	5	7	2	3	5
74	Mushari Paraspur	2	-	2	1	-	1
75	Narayanpur Kusai	-	-		-	1	1
76	Nariar	5	5	10	6	2	8
77	Narwara	1	1	2	-	2	2

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
78	Nawalpur Goodhwara	2	1	3	1	2	3
79	Pachrukhi	-	-	-	1	-	1
80	Pagahia Raiti	1	2	3	3	-	3
81	Pakri	2	4	6	2	3	5
82	Pana Chhapra urf Sanrha Sumar	4	3	7	3	1	4
83	Panapur	1	-	1	1	-	1
84	Paroha	2	1	3	-	1	1
85	Parsauni Kapur	-	1	1	-	-	-
86	Parsauni Nath	2	3	5	1	-	1
87	Patti Aswari	1	3	4	4	2	6
88	Phulwaria	1	-	1	1	-	1
89	Rampur Ugan	3	-	3	2	-	2
90	Rasulpur	1	2	3	2	2	4
91	Ratanpura	-	1	1	-	1	1
92	Sadhanpura	4	3	7	4	-	4
93	Sasna	2	1	3	1	-	1
94	Semra	2	-	2	1	-	1
95	Senduari	1	-	1	2	-	2
96	Senduari Gaj Singh	3	-	3	2	-	2
97	Sirampur	1	-	1	1	-	1
98	Sirsia Jagdishpur	2	2	4	2	2	4
99	Siswan	1	-	1	1	-	1
100	Sital Simra	1	2	3	1	-	1
101	Sonbarsa	2	-	2	1	-	1
102	Thikaho urf Aswari	3	1	4	4	1	5
103	Tola Banjaria	1	-	1	1	-	1
104	Tola Fatuha	5	3	8	3	1	4
Total		200	207	407	167	165	332

Cancer incidence cases and mortality cases: Sakra, Muzaffarpur PBCR (2019-2021)



Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
1	Adwara urf Chintamanpur	-	1	1	-	1	1
2	Ali Sarai urf Hasanpur Sarai	1	1	2	1	1	2
3	Baghnagri urf Bishunpur Subas	3	4	7	1	6	7
4	Bahrampur	-	1	1	-	-	-
5	Bajar Mara Chak Abdullahpur	1	-	1	1	-	1
6	Baji Buzurg	1	2	3	1	1	2
7	Baji Raut	-	1	1	-	1	1
8	Baji urf Manoharpatti	1	1	2	-	1	1
9	Bariyarpur Kandh	6	4	10	6	6	12
10	Basantpur Jhiktahi	2	-	2	2	-	2
11	Bazidpur Asog	3	1	4	2	1	3

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
12	Bedhipur	-	-	-	-	1	1
13	Beruadih	1	3	4	2	3	5
14	Bharthipur	2	3	5	1	-	1
15	Bharwari	2	1	3	1	1	2
16	Bhatandi	-	2	2	1	1	2
17	Chak Ajmeri	-	1	1	-	1	1
18	Chak Rahi urf Maniari	2	3	5	4	4	8
19	Chandanpatti	2	3	5	1	3	4
20	Chandpur Chiknauta	-	1	1	-	1	1
21	Chhapra Bahar	1	1	2	1	2	3
22	Chhapra Faridpur urf Misraulia	2	2	4	2	1	3
23	Dihri Ishak	2	1	3	3	2	5
24	Donwan	5	1	6	4	1	5
25	Dubaha Buzurg	6	1	7	3	1	4
26	Faridpur urf Shakra	2	4	6	4	3	7
27	Ganiari	1	1	2	2	2	4
28	Gauri Har Khalik Nagar	7	6	13	7	4	11
29	Ghanipur Bejha	3	5	8	2	6	8
30	Gopalpur Raja Ram	-	1	1	-	2	2
31	Harpur Kishuni	2	1	3	2	1	3
32	Hasanpur Pagahi	1	1	2	1	1	2
33	Jagdishpur Baghnagri	5	4	9	2	4	6
34	Jogni Jaga	-	1	1	-	-	-
35	Katesar	5	5	10	6	6	12
36	Keshopur	4	4	8	4	1	5
37	Kharpapura urf Peari	2	-	2	-	-	-
38	Kutubpur	1	-	1	-	-	-
39	Machhia	4	1	5	3	3	6

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
40	Madsudanpur	-	1	1	-	1	1
41	Mahammadpur Banwari	1	2	3	1	1	2
42	Mahammadpur Bhopat	-	1	1	2	1	3
43	Mahammadpur Buzurg	-	2	2	1	1	2
44	Mahammadpur Dharam	1	-	1	1	-	1
45	Mahammadpur Kanth	-	1	1	-	1	1
46	Majhauri Pachdahi	-	3	3	-	-	-
47	Majhauria	5	9	14	7	6	13
48	Malpur urf Chak Hazrat	-	1	1	-	1	1
49	Mansurpur	1	3	4	-	3	3
50	Marari Khurd	2	-	2	2	-	2
51	Marwan urf Arizpur	-	2	2	-	1	1
52	Mathurapur	4	1	5	2	1	3
53	Mehsi	1	-	1	1	-	1
54	Mohanpur Manda	-	1	1	-	-	-
55	Mohiuddinpur	-	2	2	-	-	-
56	Mundiari	1	2	3	2	1	3
57	Murna urf Harlochanpur	2	3	5	1	1	2
58	Mushari Ram	1	1	2	-	-	-
59	Narsinghpur	1	-	1	-	-	-
60	Nawalpur Misraulia	3	2	5	1	1	2
61	Paharpur	2	2	4	-	-	-
62	Paighambarpur	6	5	11	3	2	5
63	Patsawan	-	1	1	-	1	1
64	Pupri	-	2	2	2	3	5
65	Rahimpur Jiwan urf Raksa	2	3	5	3	1	4
66	Raja Padar	5	3	8	4	-	4
67	Rajapur	4	4	8	3	1	4

Sr. No.	Village	Incidence			Mortality		
		Male	Female	Total	Male	Female	Total
68	Rami Rampur	-	1	1	-	1	1
69	Ramnagar Lachhumannagar	4	1	5	3	2	5
70	Rampur Bakhri	1	1	2	1	2	3
71	Rampur Bhadson	-	1	1	-	-	-
72	Rampur Kishuni	3	1	4	3	1	4
73	Rampur Mani	1	2	3	1	1	2
74	Ratanpur Kewal	3	3	6	2	3	5
75	Rupanpattiwo Mathurapur Jani	2	-	2	2	2	4
76	Sadullahpur	-	5	5	-	4	4
77	Sangopatti	1	-	1	3	-	3
78	Sapha Mahdaiya	1	-	1	1	-	1
79	Saraiya	1	-	1	-	1	1
80	Sarmastpur	4	10	14	7	7	14
81	Semra	1	1	2	1	1	2
82	Semri	-	2	2	-	3	3
83	Shahpur Juned	1	3	4	-	3	3
84	Shakra Bazid	4	2	6	3	1	4
85	Shirazabad	2	2	4	2	1	3
86	Siho	-	-	-	1	1	2
87	Sipahi urf Narayanpur	1	-	1	-	-	-
88	Sujawalpur	4	4	8	4	2	6
89	Sujawalpur Chauriwan	-	-	-	-	1	1
90	Sundarpur	1	1	2	-	1	1
91	Susta	3	-	3	1	-	1
92	Thatia	-	-	-	-	1	1
93	Tulsi Mohanpur	2	-	2	1	-	1
Total		162	170	332	142	140	282

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Shahi Stone & Urology Clinic, Muzaffarpur

Dr Santosh Kumar Shahi – *Director*

Roy Nursing Home & Maternity Centre, Muzaffarpur**(Roy Advance ENT Care, Muzaffarpur)**

Dr Bimal Kumar Roy – *Director*
 Dr Anshuman Roy – *Surgeon*
 Dr Pallawi Roy – *Gynaecologists*

Standard Diagnostics, Muzaffarpur

Dr K.K Mishra – *Owner/Pathologist*
 Dr Ranjana Mishra – *Gynecologist*

Usha Hospital, Muzaffarpur

Dr Brajesh Kumar – *Owner/Ortho*

Life Line Janch Ghar, Muzaffarpur

Dr Manoj Kumar – *Owner/Pathologist*

Al-Shifa Nursing Home

Dr Mahmudul Hasan – *Surgeon*
 Md Nazre Alam – *Staff Nurse*

Amal Nursing Home

Dr Md Anzar Alam

Shree Hospital & Maternity Centre, Muzaffarpur

Dr A.K Das – *Director*
 Dr Jyoti – *Gynecologist*

Mahaveer Cancer Institute & Research Centre, Patna

Dr (Prof) Biswajit Sanyal – *Director (Admin)*
 Dr Manisha Singh – *Director (Medical)*
 Dr LB Singh – *Medical Superintendent*
 Dr Rita Rani – *Sr Consultant, Radiation Oncology, Centre PI-NCRP*

Indira Gandhi Institute of Medical Science (IGIMS), Patna

Dr (Prof) Bindev Kumar – *Director*
 Dr Rajesh Kumar Singh – *Chief SCI, HOD Radiation Oncology*
 Dr Dinesh Kumar Sinha – *Professor*

All India Institute of Medical Science (AIIMS), Patna

Dr(Prof) Saurabh Varshney – *Exec. Director/CEO*

Dr(Prof) Anup Kumar – *Medical Superintendent*

Dr Sujeet Kumar Sinha – *Dy Medical Superintendent/ HOD – MRD*

Dr(Prof) Ruchi Sinha – *Dean Academics*

Dr(Prof) Umesh Kumar Bhadani – *Ex. Dean*

Dr Punam Prasad Bhadani – *Prof & Head (Pathology)*

Dr Jagjit Pandey- *Asso. Professor & Head (Surgical Onco)*

Dr Pritanjali Singh – *Prof. & Head (Radiotherapy)*

Sarita Diagnostic Centre Pvt Ltd, Patna

Dr Rakesh Mehra – *Director*

Dr Pallavi Mehra – *Pathologist*

Md Jiyaul Haque – *Manager*

Bihar Diagnostics & Radiology Clinic, Patna

Dr Chandra Kishore – *Director/ Radiologist*

Dr Ratna Priya – *Pathologist (Biochemistry)*

Mr Utsav Kumar – *Unit Head*

Ms Bibha Kumari – *Management In Charge*

Dr. Prabhat Ranjan Diagnostic & Research Centre, Patna

Dr Prabhat Ranjan – *Director/Pathologist*

Dr. Shukla Diagnostics & Research Centre, Patna

Dr Sangam Shukla – *Director/Pathologist*

Oncopath Diagnostics, Patna

Dr Aashish Gupta – *Director/Pathologist*

Paras HMRI Hospital, Patna

Mr Anil Kumar – *Facility Director*

Mr Manish Gurudatta – *GM (Admin)*

Mr Ramavtar Jangid – *GM (Operations)*

Dr Amit Kumar- *Asso. Medical Superintendent*

Dr Abhishek Anand – *Sr Consultant Medical Oncology*

Dr RN Tagore – *Chief Consultant Medical Oncology*

Dr Mosarrat Shaheen – *Consultant Med Oncology*

Dr Mofizur Rahman Khan – *Asso. Consultant Med Oncology*

Dr Mitali Dandekar Lal – *Chief Consultant, Head, H&N Surgery*

Dr Shekhar Kumar Keshari – *HOD Radiation Oncology*

Dr Shiv Shankar Mishra – *Consultant Radiation Oncology*

Dr Rupesh Kumar Singh – *Surgical Oncologist*

Mr Madhavendra Tiwari – *Co-ordinator*

Mr Madan Lal – *Co-ordinator*

S. S. Hospital & Research Centre, Patna

Dr Jitendra Kumar Singh – *Director*

Saral Pathlab Pvt Ltd, Patna

Dr Kamlesh Kumar – *Director/Pathologist*

Savera Cancer & Multispeciality Hospital, Patna

Dr VP Singh – *Director*

Dr Aakash Singh – *Oncology Surgeon*

Dr S Sircar – *Oncology Surgeon*

Dr Rahul Choudhary – *Oncology Surgeon*

Dr Avinash Pandey – *Medical Oncology*

Dr Amrita Rakesh – *Radiation Oncology*

Dr Pranav Verma – *Pathologist*

Mr Ashutosh Kumar – *Project In Charge (ICMR)*

Patna Medical College & Hospital, Patna

Dr (Prof) Vidyapati Choudhary – *Principal*

Dr I.S. Thakur – *Medical Superintendent*

Dr (Prof) N K Bariar – *HOD Pathology*

Dr Ravi Byahut – *HOD Radiotherapy*

Dr Deepak Kumar – *Medical Officer (RT Dept)*

Dr Hariharnath Tiwari – *Senior Resident (RT Dept)*

Dr Nandani – *Junior Resident (RT Dept)*

Buddha Cancer Centre, Patna

Dr Arvind Kumar – *MD(Med), DM (Medical Oncology) Director & Consultant*

Mr Prashant Kumar – *MBA Operation Corporate Manager*

Mr Ravindra Kumar – *Manager*

C. K. Diagnostics, Patna

Dr Prakash Chandra Jha – *Director*

Dr Siddharth Jha – *Pathologist*

Magadh Cancer Centre, Patna

Dr Ridhu Kumar – *Director*

Nalanda Medical College & Hospital, Patna

Dr(Prof) Usha Kumari – *Principal*

Dr Binod Kumar Singh – *Superintendent*

Dr Anita Kumari – *Asso Prof & HOD RT Dept*

Dr Sweta Kumari – *Senior Resident (RT Dept)*

Swami Vivekanand Cancer Asptal & Multispecialty Centre, Darbhanga

Dr Ashok Kumar Singh – *Founder & Chairman*

Darbhanga Medical College & Hospital, Darbhanga

Dr K.N. Mishra – *Principal & Dean*

Dr Alka Jha – *Medical Superintendent*

Dr Mukesh Kumar Bharti – *Ass Prof & HOD (RT Dept)*

District Program Office, (Collectorate Office) Muzaffarpur

Mrs Mamta Verma – *District Program Officer*

Motipur (Baruraj) Block

Dr Vinod Kumar – *MOIC (PHC)*

Dr Prabhat Ranjan – *MO (APHC)*

Mr Prashant Kashyap – *BHM (PHC)*

Mr Sanjay Kumar – *BCM*

Mr Sanjeev Kumar – *BDO*

Mrs Sushma Kumari – *CDPO*

Mr Dinesh Dayal Lal – *Executive Officer*

Mr Kumar Raghvendra Raghav – *Chairman (Nagar Parishad)*

Mr Vishal Anand – *BPM (Jeevika)*

Dholi (Muraul) Block

Dr Jyoti Prasad Sinha – *MOIC (PHC)*

Mr Ram Krishna Kumar – *BHM (PHC)*

Mr Ashok Kumar – *BCM*

Mrs Shivangi Kumari – *BDO*

Mrs Sweta Kumari – *CDPO*

Mrs Kalpana Kumari – *Executive Officer*

Mrs Archana Sharma – *BPM (Jeevika)*

Musahari Block

Dr Prity – *MOIC (PHC)*

Dr Rajesh Kumar – *MO (PHC)*

Mr Dhananjay Kumar – *BHM (PHC)*

Mr Mahesh Chandra- *BCM*

Mr Jaykant Sada – *BCM*

Mr Chandan Kumar – *BDO*

Mrs Smita Sharma – *CDPO - Rural*

Mr Sanjeev Priyadarshi – *CDPO – Urban*

Mr Sanjeev Kumar – *BPM (Jeevika)*

Kanti Block

Dr Sumeet Sanskar – *MOIC (PHC)*

Mr Pushkar Kumar – *BHM (PHC)*

Mrs Ranjana Rai – *BCM*

Mr Rahul Kumar Karn – *BDO*

Mrs Kumari Bindu Singh – *CDPO*

Mr Ajay Kumar – *Executive Officer*

Mr Dilip Kumar – *Chairman (Nagar Parishad)*

Mr Rakesh Kumar – *BPM (Jeevika)*

Sakra Block

Dr Masihuddin – *MOIC (RH)*

Mr Mithilesh Jha – *BCM, BHM- Additional Charge (PHC)*

Mr Manoj Kumar – *BDO*

Mrs Kumari Seema – *CDPO*

Mrs Reshu Kumari – *Executive Officer*

Mr Haider Ali – *Chairman (Nagar Panchayat)*

Mr Mohammad Kaiftullah – *BPM (Jeevika)*

24. Photo gallery



Cancer registry staff attended the Evidence Based Management (EBM) conference organised at Tata Memorial Centre, Mumbai (24th – 26th, February 2023)



PBCR Muzaffarpur staff along with Sangrur, Ratnagiri, Sindhudurg, Khordha, Mayurbhanj, cancer registry staff were deputed for “ICD-10 Mortality Coder training” organized at Varanasi from 15th - 21st February 2024

Community involvement in the cancer registration process



Cancer registry staff collecting the records from various hospitals, diagnostic centre, death registrar office, and cemetery area of the Muzaffarpur district





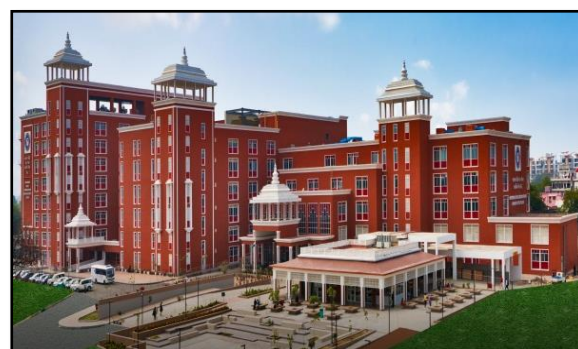
Tata Memorial Centre, Mumbai, India



**Centre for Cancer Epidemiology – ACTREC,
Kharghar, Navi Mumbai, India**



**Advanced Centre for Treatment, Research and
Education in Cancer (ACTREC), Navi Mumbai,
India**



**Mahamana Pandit Madan Mohan Malaviya
Cancer Centre, Varanasi, Uttar Pradesh, India**



Homi Bhabha Cancer Hospital and Research Centre, Muzaffarpur, Bihar, India

“CANCER IS CURABLE, IF DETECTED EARLY”