



ASSAM



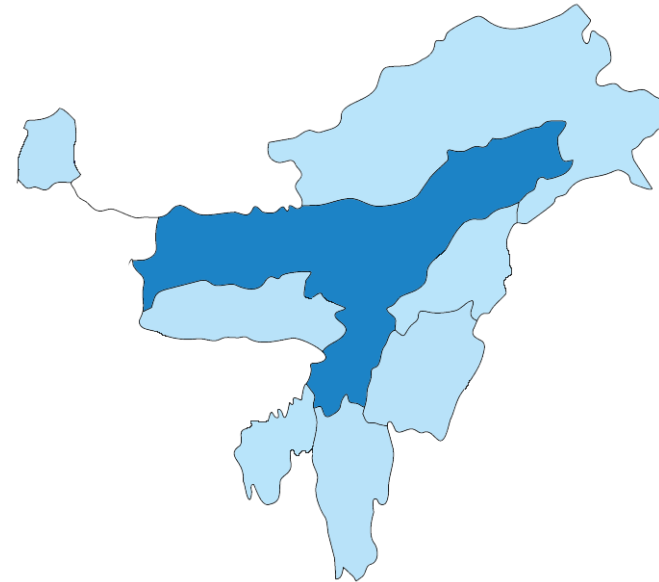


Chapter 3: Cancer and health status profile of Assam

A. Health Status Profile

3.1 Socio-demographic profile [1]

Population (Total)	31205576
Number of males	15939443
Number of females	15266133
Sex Ratio	958
Major ethnic groups	Kayastha, Ahom, Tea-tribe, Kachari, Kalita, Brahmin, Koibarta
Literacy rate (%)	
Total	72.2
Males	77.9
Females	66.3



The total population of the state is 31205576, with a sex ratio of 958. The total literacy rate is 72.2%, being 77.9% in males and 66.3% in females. The major ethnic groups include Kayastha, Ahom, Tea-tribe, Kachari, Kalita, Brahmin and Koibarta.



3.2. NCD related Risk factor profile

Behavioural and lifestyle-related							
Tobacco use ^[2]							
Current tobacco use-smoked and/or smokeless (age 15 years and above) (%)							
Total						48.2	
Males						62.9	
Females						32.9	
Current smoked tobacco use (age 15 or above) (%)							
Total						13.3	
Males						25.3	
Females						0.8	
Current smokeless tobacco use (age 15 or above) (%)							
Total						41.7	
Males						50.5	
Females						32.5	
Alcohol consumption							
	Urban		Rural		Total		
	Men	Women	Men	Women	Men	Women	
age 15 years or above (%) ^[13]	21.3	2.6	25.9	8.2	25.1	7.3	
Metabolic risk factors ^[13]							
Overweight/Obese BMI >25 (age 15-49 years) (%)	25.4	23.8	14.5	13.6	16.2	15.2	
Raised blood pressure (age 15 years or above) (%)	23.8	22.5	19.6	18.5	20.3	19.1	
Raised blood glucose (random) (age 15 years or above) (%)	20.4	16.6	15.2	12.1	16.0	12.8	
Air Pollution, DALYs per 100,000 ^[3]	3649.31						

The prevalence of current tobacco use is 48.2%, higher for the smokeless form (41.7%) than the smoked form (13.3%). The DALYs' due to air pollution is reported to be 3649.31 per 100,000. About a quarter (25.1%) of males over the age of 15 years consumed alcohol, while the proportion of alcohol use in females was 7.3%. 16.2% of the men in the age group of 15-49 years are obese, slightly higher than female prevalence (15.2%). A somewhat higher proportion of males (20.3%) have raised blood pressure than females (19.1%). The prevalence of raised blood glucose is 12.8% in women and 16.0% in men.





3.3 Mortality related statistics

Life expectancy (2016) ^[5]	
Males	63.5 years
Females	66.9 years
Leading causes of death (MCCD 2018) ^[6]	
Major Cause Group	Percentage
Certain infections & Parasitic Diseases	27.4
Endocrine, Nutritional and Metabolic diseases	18.9
Neoplasms	17.5
Circulatory System	14.5
Respiratory System	5.9
Status of Medical certification of cause of death	
Percentage of Medically Certified Deaths to Total Registered Deaths (%)	12.0
Medical Institutions covered under MCCD	1209
Medical Institutions Reported MCCD Data as per the National List	1209
Ranking of States/UTs in the medical certification of cause of death 2018	29

The life expectancy is marginally higher in females (66.9 years) than males (63.5 years). Certain infections & Parasitic Diseases causes comprise the leading cause of death (27.4%), followed by endocrine, nutritional and metabolic disorders (18.9%). The percentage of medically certified deaths to total registered deaths is only 12.0%. The state ranks 29th in the medical certification of cause of death.



3.4 Health seeking behaviour and health practices [13]

	Urban	Rural	Total
History of cancer screening			
Women aged 30-49 ever undergone a breast examination for breast cancer (%)	0.4	0.2	0.2
Women aged 30-49 ever undergone an oral cavity examination for oral Cancer (%)	0.4	0.2	0.2
Women aged 30-49 ever undergone screening for cervical Cancer (%)	0.6	0.1	0.2
Men aged 30-49 ever undergone an oral cavity examination for oral Cancer (%)	0.0	1.6	1.4
Immunization history			
Children aged 12-23 months who have received 3 doses of penta or hepatitis B vaccine (%)	72.7	75.4	75.1
Household profile			
Population living in households that use an improved sanitation facility (%)	69.7	68.4	68.6
Households using clean fuel for cooking (%)	85.5	33.7	42.1
Households with any usual member covered under a health insurance/financing scheme (%)	50.1	61.9	60.0

The proportion of women who have undergone screening is 0.2% for breast cancer, 0.2% for oral cancer and 0.2% for cervical cancer. Only 1.4% of men had a history of screening for oral cancer. As many as 75% of children in 12 to 23 months had received immunization with Penta and hepatitis B vaccine. About 68.6% of the population live in households that use an improved sanitation facility—only 42.1% of the people use clean fuel for cooking. The coverage with a health insurance scheme or financing scheme is 60%.



3.5 Status of the health system

A. Public sector health facilities ^{[7],[8]}	Number
Sub centres (SC)	4034
Health and Wellness Centre - Sub Centre (HWC-HC)	628
Primary Health Centres (PHC)	704
Health and Wellness Centre - Primary Health Centre (HWC-PHC)	297
Community Health Centres (CHC)	179
Sub-district Hospitals (SDH)	14
District Hospitals (DH)	25
Number of government allopathic doctors and dental surgeons	2558
Tertiary health care facilities	
Medical Colleges ^[9]	07
State cancer institute ^[10]	01
Tertiary cancer care centre ^[10]	00
Regional cancer care centre ^[11]	01
B. State government health scheme ^[14]	<ol style="list-style-type: none"> 1. The Assam Arogya Nidhi (AAN) 2. Atal Amrit Abhiyan 3. Chief Minister's Free Diagnostic Services

The state has 4034 SCs, 628 HWCs – SCs, 704 PHCs', 297 HWC – PHCs, 179 CHCs', 14 SDHs and 25 DHs. There are seven medical colleges and one State Cancer Institute and Regional Cancer Centre. The state implements health schemes known as 'The Assam Arogya Nidhi (AAN)', 'Atal Amrit Abhiyan' and Chief Minister's Free Diagnostic Services.



B. Profile of Cancer

3.6 Details of Cancer Registries in the State

Population Based Cancer Registry			
Population Based Cancer Registry	Cachar district - PBCR	Dibrugarh district - PBCR	Kamrup urban - PBCR
Location	Silchar Medical College, Silchar	Assam Medical College & Hospital, Dibrugarh	Dr. B. Borooah Cancer Institute, Guwahati
Established Year	2003	2003	2003
Coverage Area	Silchar Town Up to 2006 & Cachar district from 2007	Dibrugarh district	Urban Areas of Kamrup district & Kamrup Metropolitan district
Sources of Registration (SoR)	33	42	81
Area (in Sq.km)	3786	3381	336
Urban & Rural (%)	18.2 & 81.8	18.4 & 81.6	100.0 & 0.0
Hospital Based Cancer Registries	<ol style="list-style-type: none"> 1. Cachar Cancer Hospital, Silchar 2. Assam Medical College, Dibrugarh 3. Dr. B. Borooah Cancer Institute, Guwahati 4. North East Cancer Hospital & Research Institute, Guwahati 5. Silchar Medical College and Hospital, Silchar 6. State Cancer Institute Guwahati 		

The State has three PBCRs' and six HBCRs'. The PBCRs' is situated in Cachar district (33 SoRs'), Dibrugarh district (42 SoRs') and Kamrup urban (81 SoRs')



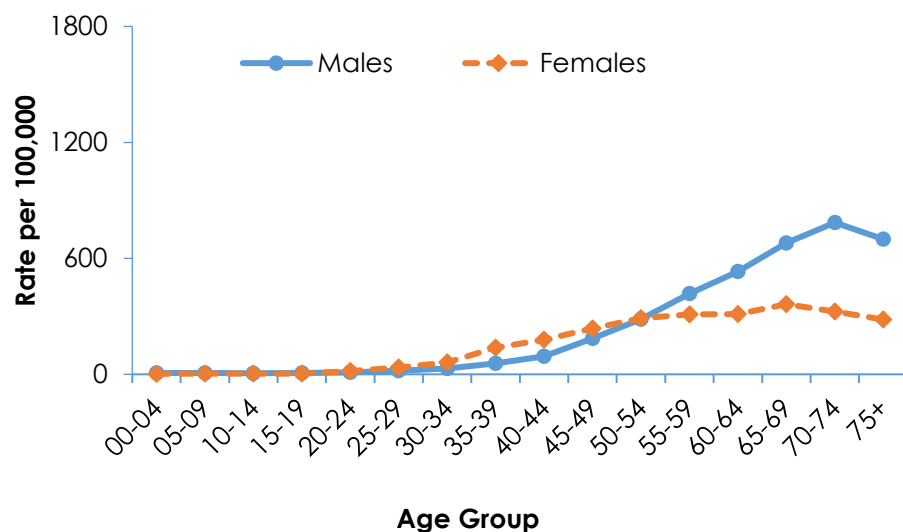
3.7 Number of cancer cases and Age Adjusted Incidence Rate (AAR) per 1,00,000 population

Gender	Cachar district		Dibrugarh district		Kamrup urban	
	Number of New Cancer Cases	AAR	Number of New Cancer Cases	AAR	Number of New Cancer Cases	AAR
Males	4663	129.0	2535	91.9	6223	213.0
Females	3943	104.8	2238	76.8	4790	169.6

The AAR is higher in males (129.0 per 100,000 males) than females (104.8 per 100,000 females) in Cachar district. Similarly, in Dibrugarh district, a higher AAR has been reported in males (91.9 per 100,000 males) in comparison to females (76.8 per 100,000 females). In Kamrup urban, the reported AAR is higher in males (213.0 per 100,000 males) than females (169.6 per 100,000 females).

3.8 Age Specific Incidence Rate (ASpR) per 100,000 population

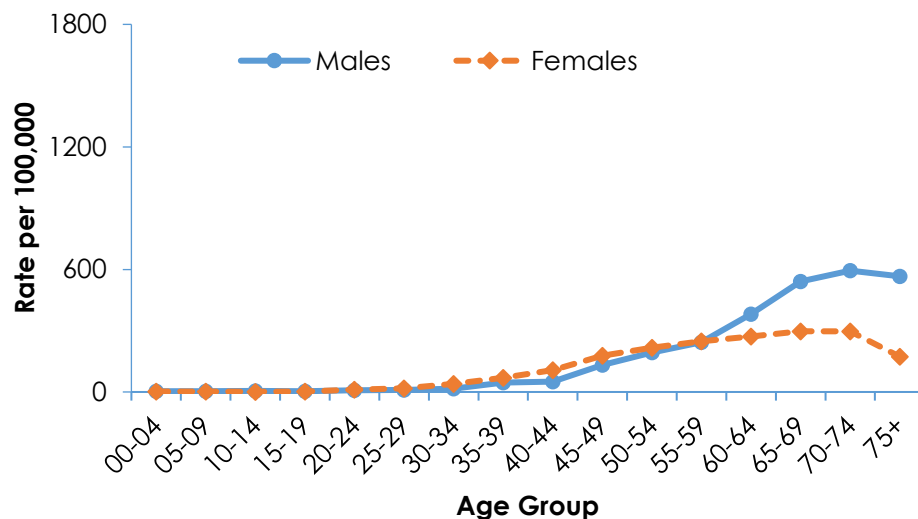
3.8.1 Cachar district



The Age-Specific Incidence Rates in both the genders shows a rise from 30-34 years age-group onwards. The highest Age-Specific Incidence Rate is seen in the 70-74 years age-group in males and 65-69 years age group in females

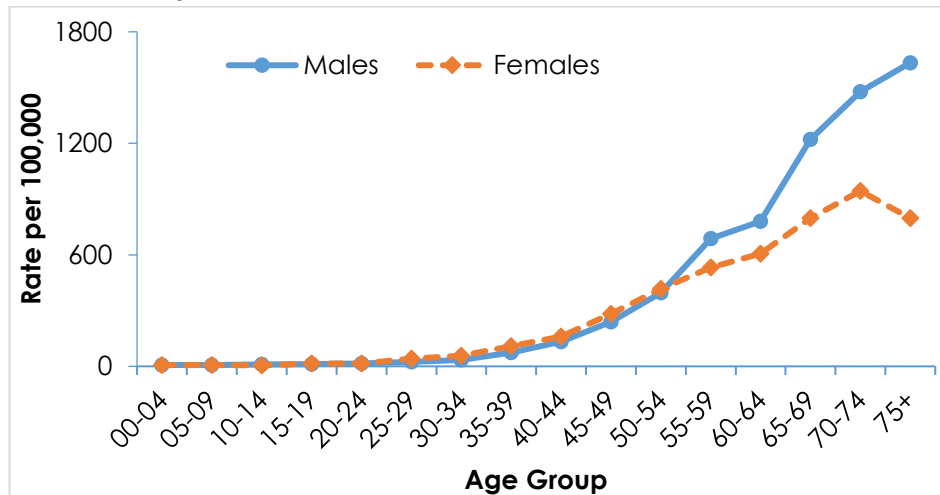


3.8.2 Dibrugarh district



The Age-Specific Incidence Rates in both the genders shows a rise from 30-34 years age-group onwards. The highest Age-Specific Incidence Rate is seen in the 70-74 years age-group in males and 65-69 years age group in females

3.8.3 Kamrup urban



The Age-Specific Incidence Rates in both the genders shows a rise from 30-34 years age-group onwards. The highest Age-Specific Incidence Rate is seen in the 75 plus age-group in males and 70-74 years age group in females

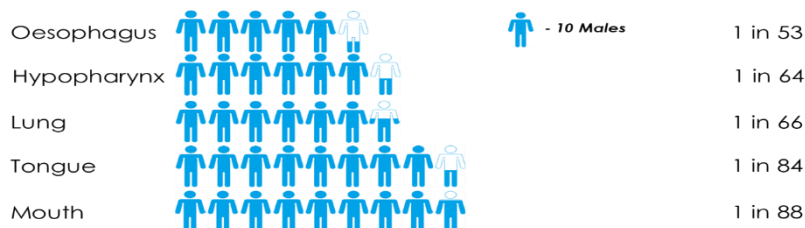




3.9 Probability of One in number of Persons developing cancer in 0-74 years age

3.9.1 Cachar district

Males



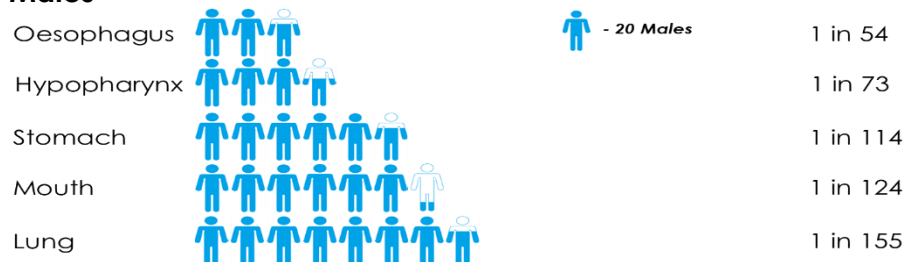
Females



In Cachar district, the probability of developing oesophageal cancer is the highest in males (1 in every 53 males) followed by cancer of hypopharynx (1 in every 64 males). In females, the probability of developing cancer of cervix uteri is highest (1 in every 63 females) followed by breast cancer (1 in every 73 females).

3.9.2 Dibrugarh district

Males



Females



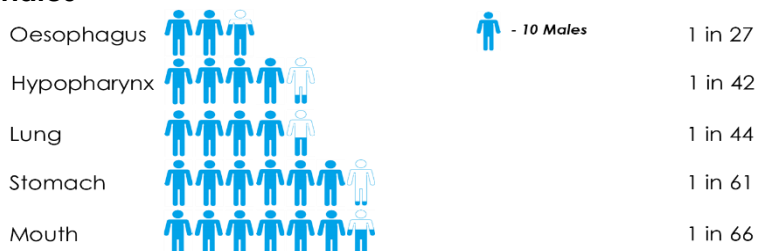
In Dibrugarh district, the probability of developing oesophageal cancer is the highest in males (1 in every 54 males), followed by hypopharynx cancer (1 in every 73 males). In females, the probability of developing breast cancer is the most (1 in every 63 females) followed by gallbladder cancer (1 in every 105 females).





3.9.3 Kamrup urban

Males



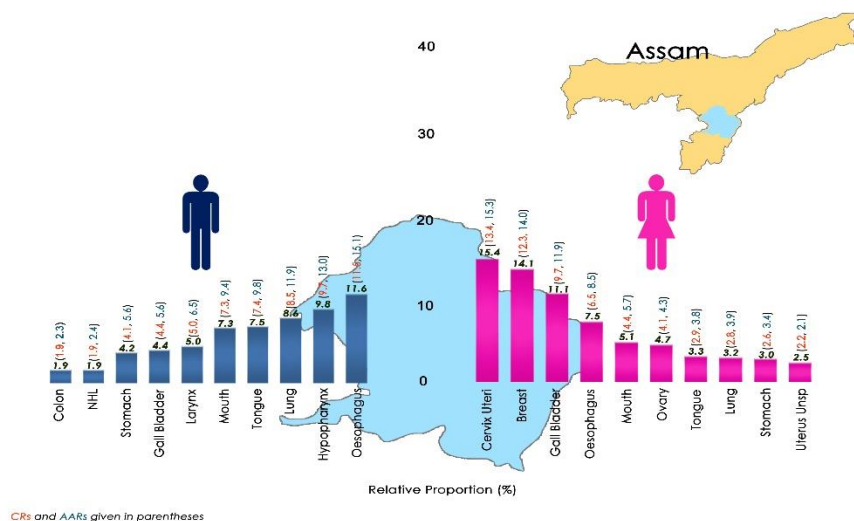
Females



In Kamrup urban, the probability of developing oesophageal cancer is the highest in males (1 in every 27 males), followed by hypopharynx (1 in every 42 males). In females, the probability of developing breast cancer is highest (1 in every 32 females) followed by oesophageal cancer (1 in every 44 females).

3.10 Leading Anatomical Sites of Cancer

3.10.1 Cachar district



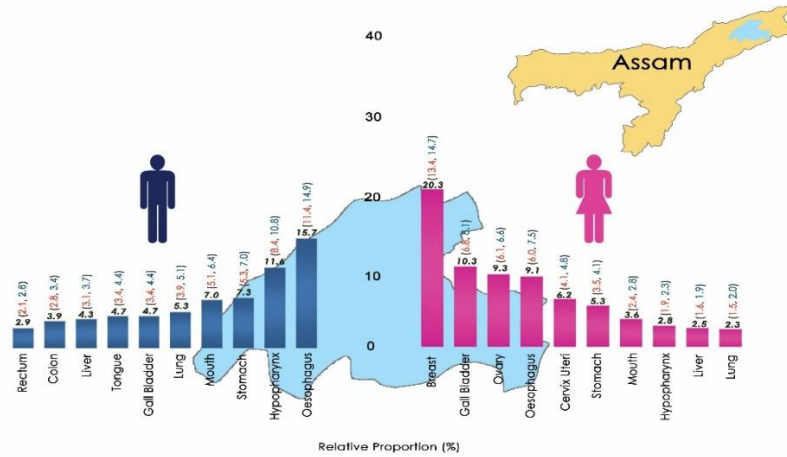
In Cachar district, among males, the proportion of oesophageal cancer (11.6%) is the highest, followed by the hypopharynx (9.8%) and lung cancer of (8.6%). In females, the cervix uteri is the leading cancer site (15.4%) followed by breast (14.1%) and Gall bladder (11.1%).

CRs and AARs given in parentheses



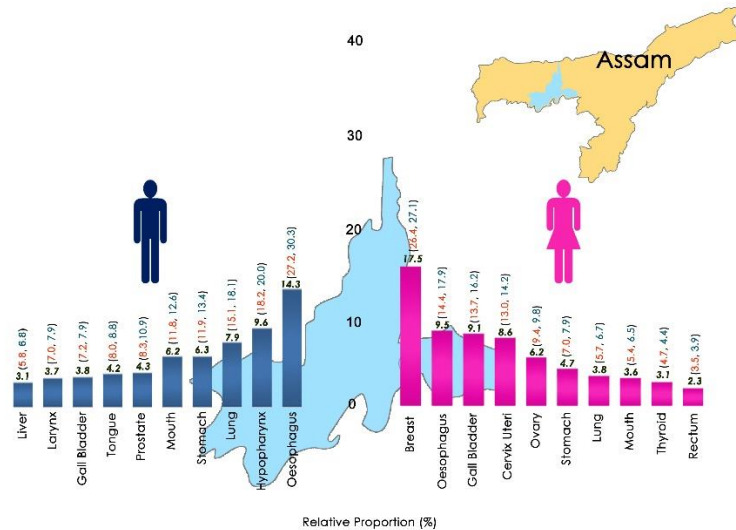


3.10.2 Dibrugarh district



CRs and AARs given in parentheses

3.10.3 Kamrup urban



CRs and AARs given in parentheses

In Dibrugarh district, among males, the proportion of oesophageal cancer (15.7%) is the highest, followed by the hypopharynx (11.6%) and stomach cancer (7.3%). In females, the breast is a leading cancer site (20.3%) followed by gall bladder (10.3%) and ovary (9.3%).

In Kamrup urban, among males, the proportion of oesophageal cancer (14.3%) is the highest, followed by the hypopharynx (9.6%) and lung cancer (7.9%). In females, the breast is a leading cancer site (17.5%) followed by oesophagus (9.5%) and gall bladder (9.1%).

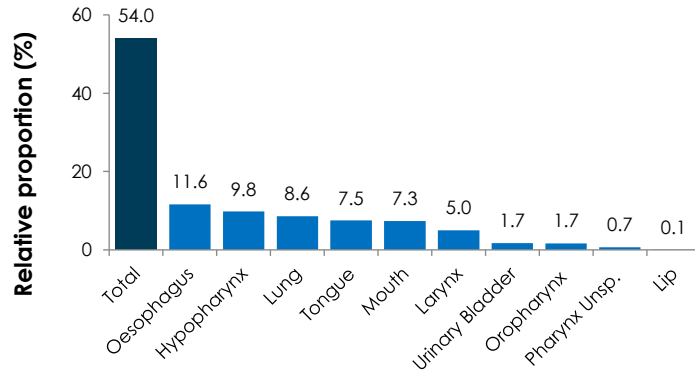




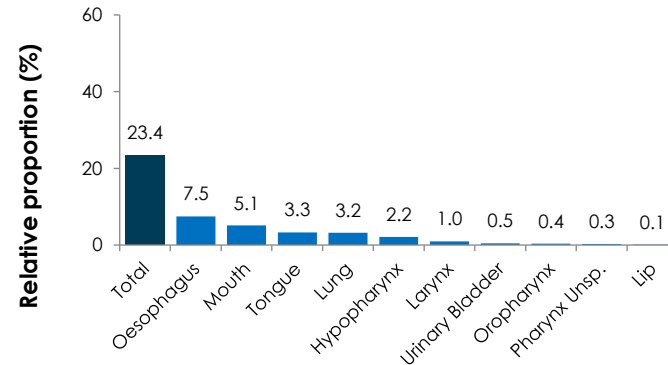
3.11 Relative Proportion (%) of Cancer Sites Associated with the Use of Tobacco

3.11.1 Cachar district

Males



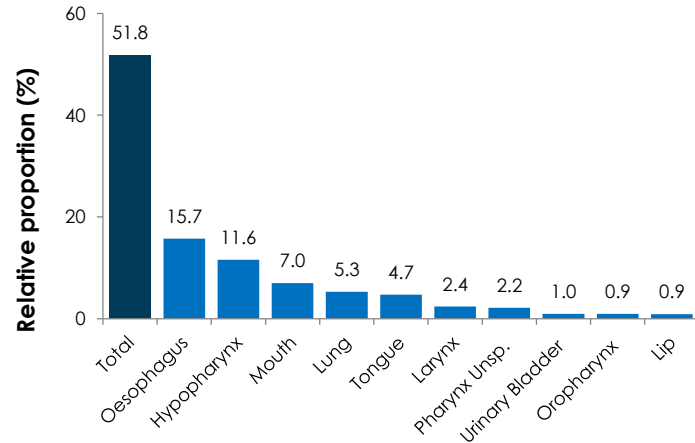
Females



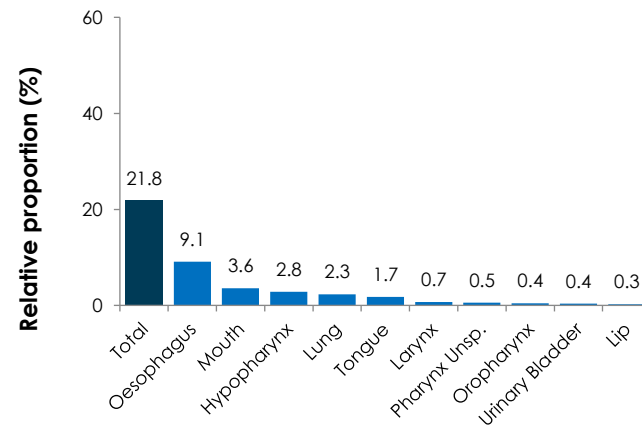
In Cachar district, over a half (54.0%) of cancers in males and close to one-fourth (23.4%) in females are tobacco use related cancer sites. Among these, oesophagus (11.6% in males; 7.5% in females) constitute the leading cancer site.

3.11.2 Dibrugarh district

Males



Females



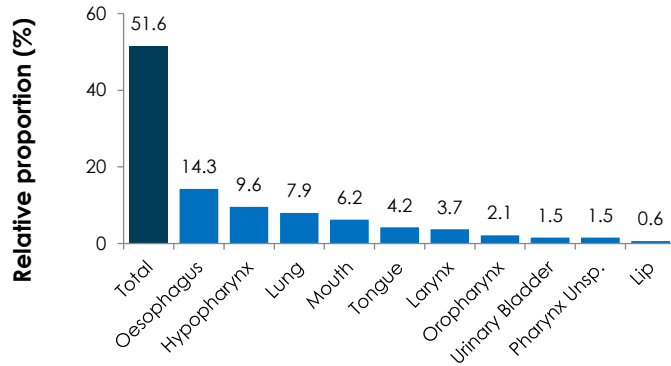
In Dibrugarh, over a half (51.8%) of cancers in males and close to one-fifth (21.8%) in females are tobacco use related cancer sites. Among these, oesophagus (15.7% in males; 9.1% in females) is the leading cancer site.



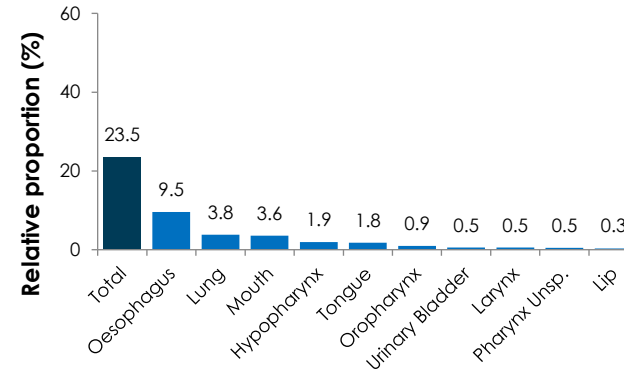


3.11.3 Kamrup urban

Males



Females



In Kamrup Urban, half (51.6%) of cancers in males and close to one-fourth (23.5%) in females are tobacco use related cancer sites. Among these, oesophagus (14.3% in males; 9.5% in females) is the leading cancer site.

3.12 Distribution of cancers according to ethnicity

3.12.1 Cachar district

Name of Ethnic Group	Number	%
Kayastha	1323	15.4
Meitei	344	4.0
Brahmin	285	3.3
Koibarta	248	2.9
Jogi	235	2.7
Bishnupriya	126	1.5
Others	4758	55.3

Total may not be 100%, because unspecified/unknown ethnic group cases are excluded.



**3.12.2 Dibrugarh district**

Name of Ethnic Group	Number	%
Ahom	1363	28.6
Tea-tribe	734	15.4
Kachari	363	7.6
Koibarta	160	3.4
Kalita	142	3.0
Nepalese	133	2.8
Brahmin	126	2.6
Kayastha	99	2.1
Muttock	67	1.4
Chutia	57	1.2
Others	1070	22.4

Total may not be 100%, because unspecified/unknown ethnic group cases are excluded.

3.12.3 Kamrup urban

Name of Ethnic Group	Number	%
Kalita	1381	12.5
Brahmin	805	7.3
Koibarta	609	5.5
Kayastha	478	4.3
Koch	345	3.1
Ahom	339	3.1
Boro	309	2.8
Bhutias	212	1.9
Nepalese	211	1.9
Koet	207	1.9
Marwari	191	1.7
Jogi	160	1.5
Chamars	136	1.2
Raj Bangshi	134	1.2
Others	3054	27.7

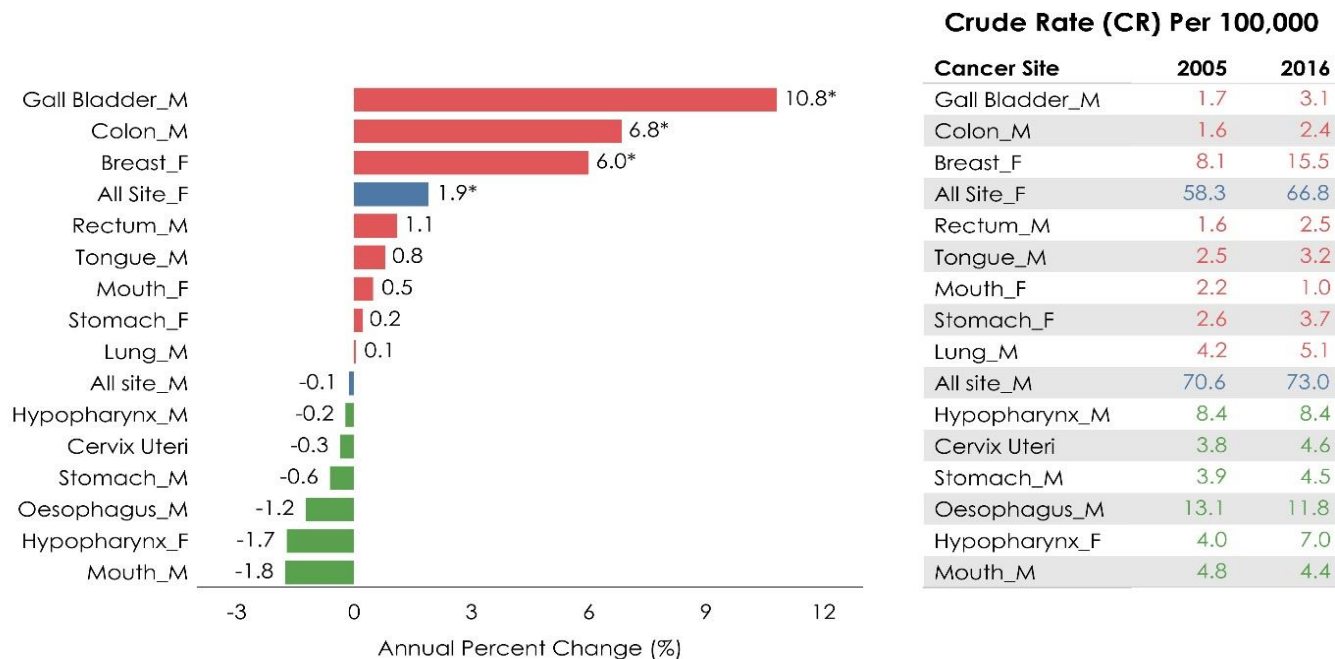
Total may not be 100%, because unspecified/unknown ethnic group cases are excluded.

The ethnic groups in which cancers are frequently encountered comprise of Kayastha (15.4%) in Cachar district, Ahom (28.6%) in Dibrugarh district and Kalita (12.5%) in Kamrup urban.



3.13 Trends over time in cancer incidence

3.13.1 Dibrugarh district



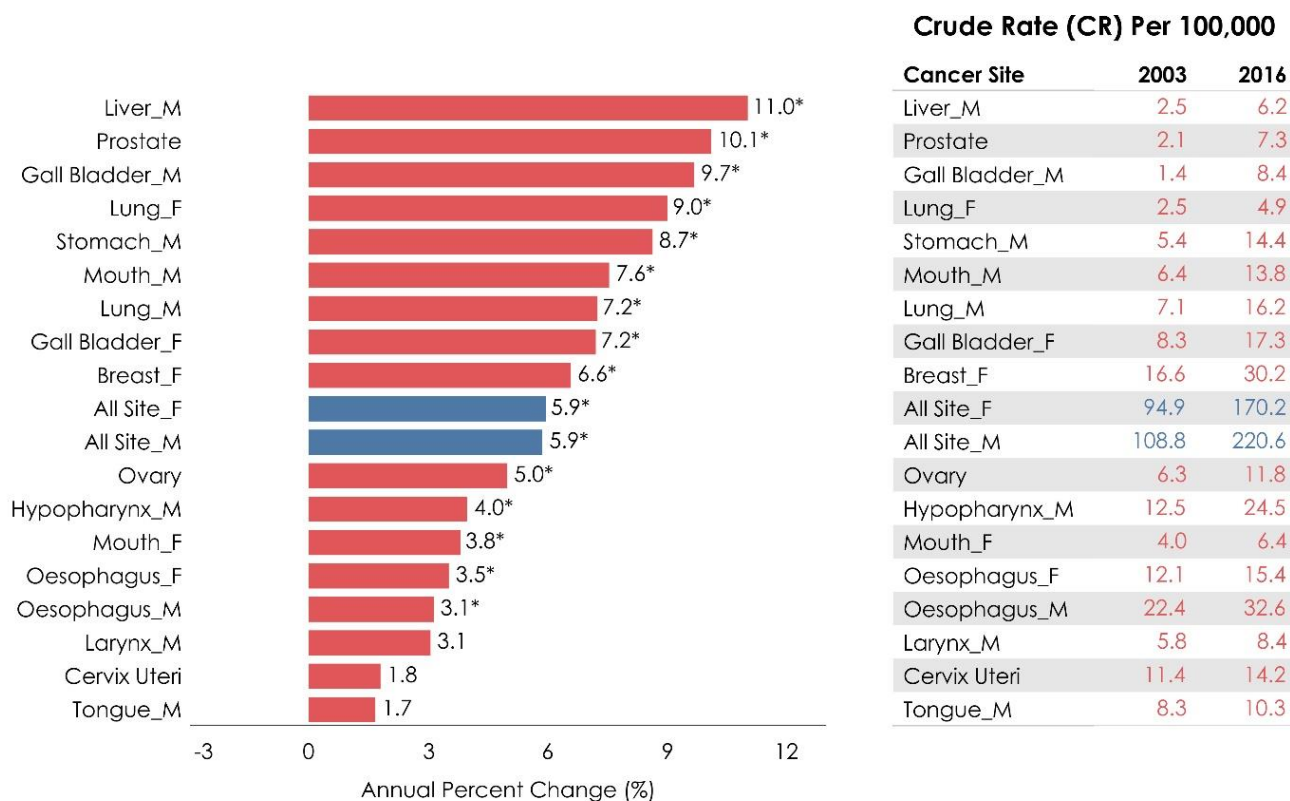
Increase in APC, Decrease in APC, Increase or Decrease in APC for All Sites; * Significant Increase or Decrease at 95% Confidence Level

In Dibrugarh district, the annual percent change (APC) in cancer incidence for all cancer sites is 1.9% (statistically significant) in females and –0.1% in males, from 2005 to 2016. In females, breast, mouth, and stomach cancer showed an increasing trend, whereas cancer of the cervix-uteri and hypopharynx showed a decline. In males, cancer of gallbladder, colon, rectum, tongue and lung display an increasing trend; whereas cancer stomach, oesophagus, mouth and hypopharynx show a decline. The APC for gallbladder cancer (10.8%) and colon cancer (6.8%) in males, and the APC for breast cancer (6.0%) in females are statistically significant.





3.13.2 Kamrup urban



Cancer Site	2003	2016
Liver_M	2.5	6.2
Prostate	2.1	7.3
Gall Bladder_M	1.4	8.4
Lung_F	2.5	4.9
Stomach_M	5.4	14.4
Mouth_M	6.4	13.8
Lung_M	7.1	16.2
Gall Bladder_F	8.3	17.3
Breast_F	16.6	30.2
All Site_F	94.9	170.2
All Site_M	108.8	220.6
Ovary	6.3	11.8
Hypopharynx_M	12.5	24.5
Mouth_F	4.0	6.4
Oesophagus_F	12.1	15.4
Oesophagus_M	22.4	32.6
Larynx_M	5.8	8.4
Cervix Uteri	11.4	14.2
Tongue_M	8.3	10.3

*Increase in APC, Decrease in APC, Increase or Decrease in APC for All Sites; * Significant Increase or Decrease at 95% Confidence Level*

In Kamrup urban, the annual percent change (APC) in cancer incidence for all cancer sites is 5.9% in males and females, from 2003 to 2016, which also was statistically significant. In males, the APC increase for cancer of liver, prostate, gallbladder, stomach, mouth, lung, hypopharynx and oesophagus is significant. In females, APC increases are significant for cancer of the lung, gallbladder, breast, mouth, ovary, and oesophagus.





3.14 Case-Fatality Ratio:

3.14.1 Cachar district

Case Fatality Ratio (CFR)			
Cachar district	Incident cancer cases	Deaths	CFR%
Males	4663	895	19.2
Females	3943	617	15.6
Total	8606	1512	17.6

The total case fatality ratio is 17.6 % in Cachar district; it is reported to be slightly higher in males (19.2%) than females (15.6%).

3.14.2 Dibrugarh district

Case Fatality Ratio (CFR)			
Dibrugarh district	Incident cancer cases	Deaths	CFR%
Males	2535	669	26.4
Females	2238	396	17.7
Total	4773	1065	22.3

The total case fatality ratio is 22.3% in Dibrugarh district, higher in males (26.4%) than females (17.7%).

3.14.3 Kamrup urban

Case Fatality Ratio (CFR)			
Kamrup Urban	Incident cancer cases	Deaths	CFR%
Males	6223	1913	30.7
Females	4790	1002	20.9
Total	11013	2915	26.5

The total case-fatality ratio is 26.5% in Kamrup urban, higher in males (30.7%) than females (20.9%).



Key Observations

- Cancer ranks among the top five leading causes of death.
- Cancer of the oesophagus ranks as the first leading site in males and among the top five leading site in females.
- Cancer of the gall bladder is among the top three leading sites in females.
- The trend of cancer in all sites in both genders is rising in Kamrup urban.
- In Dibrugarh, the incidence is growing in females and declining in males.
- About half of the population currently use tobacco and alcohol consumption is reported in a quarter of males.
- About one third of the households in rural areas use clean fuel for cooking.
- The cause is medically certified in only one-tenth of the deaths.