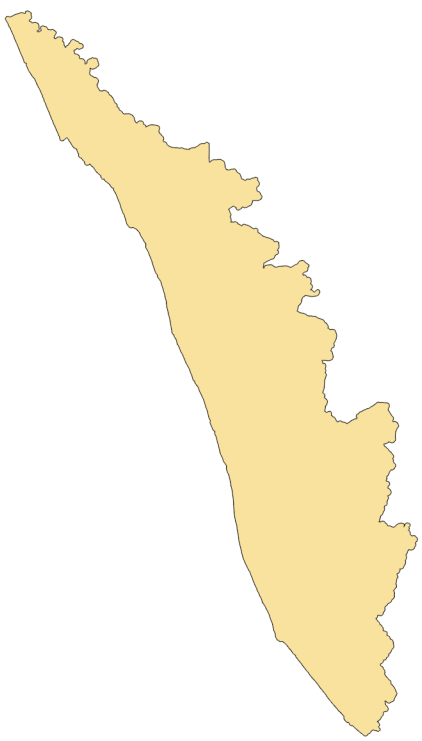


ICMR-National Centre for Disease Informatics and Research

Profile of Cancer and Related Factors - Kerala

2021



Kerala

Profile of Cancer and Related Factors

Background

Non Communicable Diseases (NCDs) include cardiovascular disease (heart attack and stroke), diabetes, cancer, and chronic respiratory diseases. In India, NCDs' are responsible for 63% of the deaths, among which cancers account for 9 of deaths.^[1] Cancer is a disease characterized by uncontrolled growth of the body cells in any part, which can spread to other parts of the body. The normal cells in the body are transformed into tumour cells, resulting from an interaction between an individual's genetic factors and exposure to external agents or 'carcinogens'. Many behavioural and environmental risk factors, such as tobacco use, alcohol use, unhealthy diet, physical inactivity, obesity, infections, air pollution, are associated with the risk of developing cancer. Close to half of the cancer deaths can be avoided by the prevention and control of risk factors.^[2]

In India, the National Cancer Registry Programme (NCRP) has systematically collected data on cancer since 1981. The NCRP is implemented by National Centre for Disease Informatics and Research (NCDIR) of the Indian Council of Medical Research at Bengaluru. Cancer data is collected through a network of population-based cancer registries (PBCRs) and hospital-based cancer registries (HBCRs).

The Cancer Fact Sheet presents the epidemiological profile and pattern of cancer in Kerala, based on findings from the 'Report of National Cancer Registry Programme 2020' ^[3]. In addition, related information on the socio-demographic profile, health status indicators and health infrastructure is also presented. These have a significant bearing on the occurrence and outcome of cancer.

Methodology used in cancer profile description

The cancer statistics presented in Section I are described in terms of cancer incidence, cumulative risk, leading sites of cancer and proportion of cancers in sites associated with tobacco use. These indicators are based on data from 2012-16 and calculated for the Population Based Cancer Registry areas (as shown in Section I). Cancer incidence and cumulative risk are defined as-

- (i) *Cancer incidence*
 - Crude incidence rate: The number of new cancers per 100,000 persons
 - Age adjusted incidence rate: The incidence rate a population would have if that population had a standard age structure. It is expressed as the number of new cancer cases per 100,000 population using world standard population.
 - Cancer incidence rates for childhood cancers are expressed as per million.
- (ii) *Cumulative risk* : Cumulative risk (probability that an individual will be diagnosed with cancer [0 to 74 year old age group] in the absence of any competing cause of death and assuming that the current trends prevail over time).

The Clinical Extent of Disease at presentation (%) for cancers of selected anatomical sites has been calculated from the six HBCRs in the state. However, this may not be representative for the entire state.

Projected incidence of cancer cases is given for the state for the year 2020 and 2025 according to gender using incidence data from the composite period of 2012-2016 was used as a reference. Estimated Age Specific Incidence Rates (ASpR) for the entire state is calculated (for the year 2020).

I. CANCER PROFILE

A. DESCRIPTION OF THE NATIONAL CANCER REGISTRY PROGRAMME IN KERALA

Population Based Cancer Registry- Reports on cancer incidence in a defined geographic area

PBCRs	Establishment Year	Location	Coverage Area	Area (in Sq.km)	Urban & Rural (%)
Kollam	2006	Regional Cancer Centre, Thiruvananthapuram, Kerala	Kollam District	2491	45.0 & 55.0
Thiruvananthapuram	Thiruvananthapuram District (2012) Alappuzha, Pathanamthitta (2019)	Regional Cancer Centre, Thiruvananthapuram, Kerala	Thiruvananthapuram, Alappuzha, Pathanamthitta District	6248	53.7 & 46.3
Malabar	2013	Malabar Cancer Centre, Kannur	Kannur, Kasaragod and Mahe	4959	56.6 & 43.4

Hospital Based Cancer Registry: Reports on the clinical profile of patients availing of care at a specific hospital

Number of Hospitals: 15

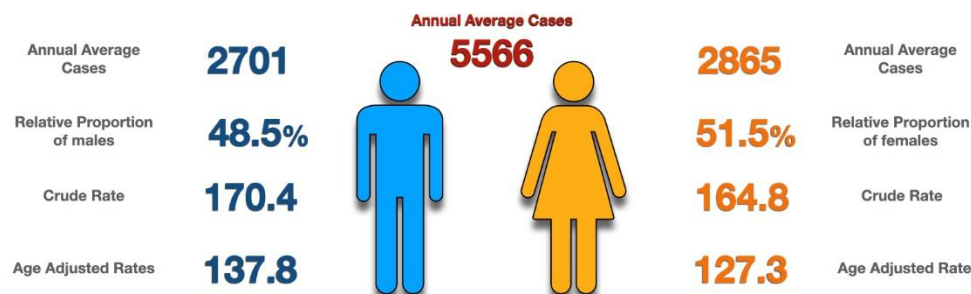
- Amrita Institute of Medical Sciences & Research Centre, Kochi
- Amala Institute of Medical Sciences, Thrissur
- Aster Medcity, Kuttisahib Road, Kochi
- Baby Memorial Hospital, Indira Gandhi Road, Kozhikode
- Cochin Cancer Research Centre, Kochi
- Government Dental College, Kozhikode
- Government Medical College, Thrissur
- General Hospital, Ernakulum
- Lakeshore Hospital and Research Centre Ltd., Kochi
- Malabar Cancer Centre, Kannur
- MES Medical College & Hospital, Perinthalmanna
- Monsignor Joseph Kandathil Memorial Cancer Research Centre, Cherthala
- MVR Cancer Center and Research Institute, Kozhikode
- Regional Cancer Centre, Thiruvananthapuram
- Pushpagiri Institute of Medical Sciences & Research Centre, Thiruvalla

B. CANCER INCIDENCE AND RISK

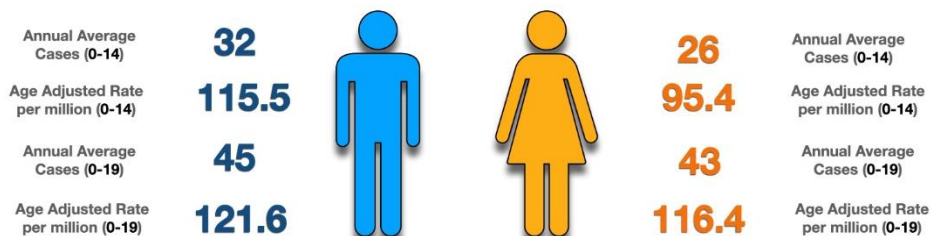
Average Annual number of Incidence and rates per 100,000 of all ages - Kollam



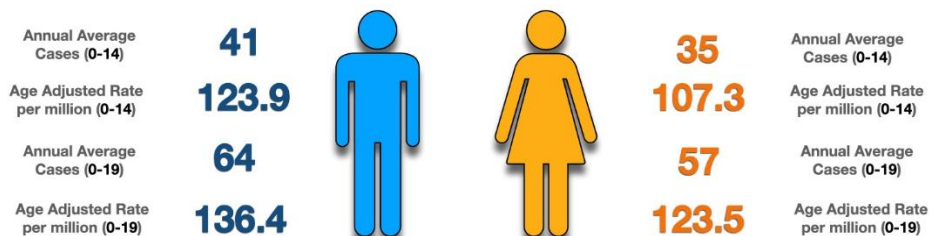
Average Annual number of Incidence and rates per 100,000 of all ages - Thiruvananthapuram



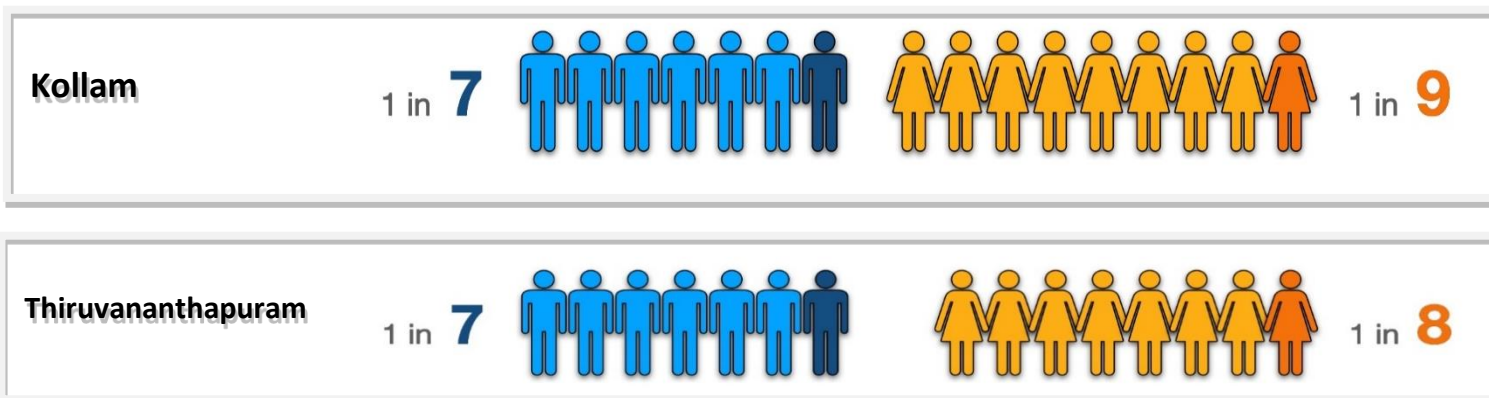
Age adjusted Incidence rates of childhood cancers per million – Kollam



Age adjusted Incidence rates of childhood cancers per million – Thiruvananthapuram



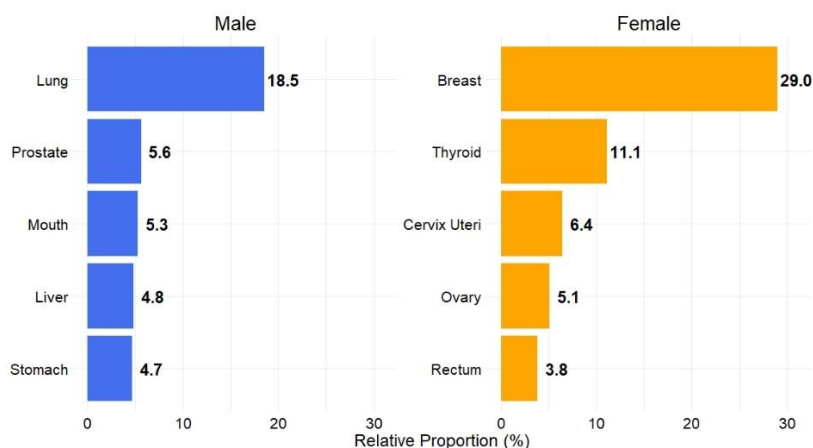
Cumulative risk of developing cancer of any site in 0-74 years of age group



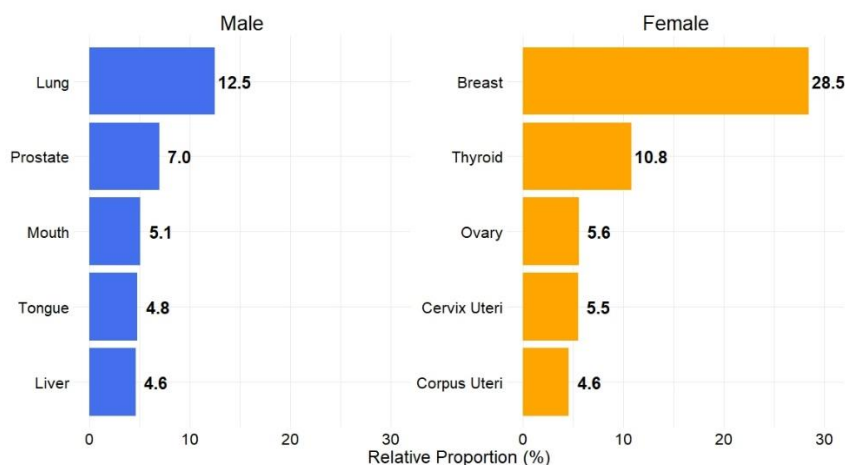
C. Leading Cancer Sites

Five Leading Sites of Cancers

Kollam

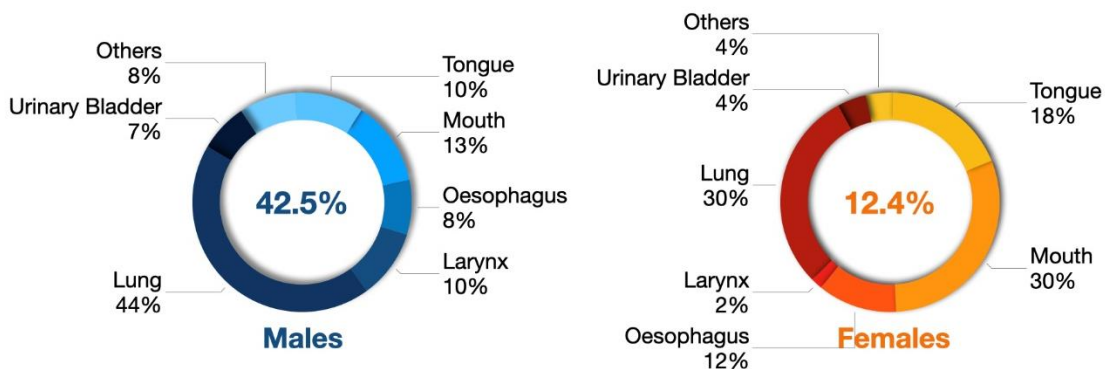


Thiruvananthapuram



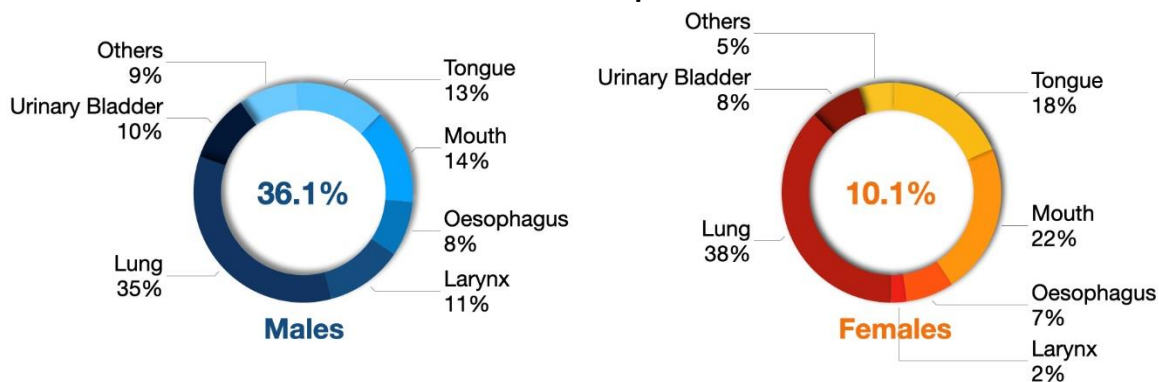
Proportion (%) of Cancer Sites associated with the use of tobacco

Kollam



Others - Lip, Other oropharynx, Hypopharynx, and Pharynx Unspecified

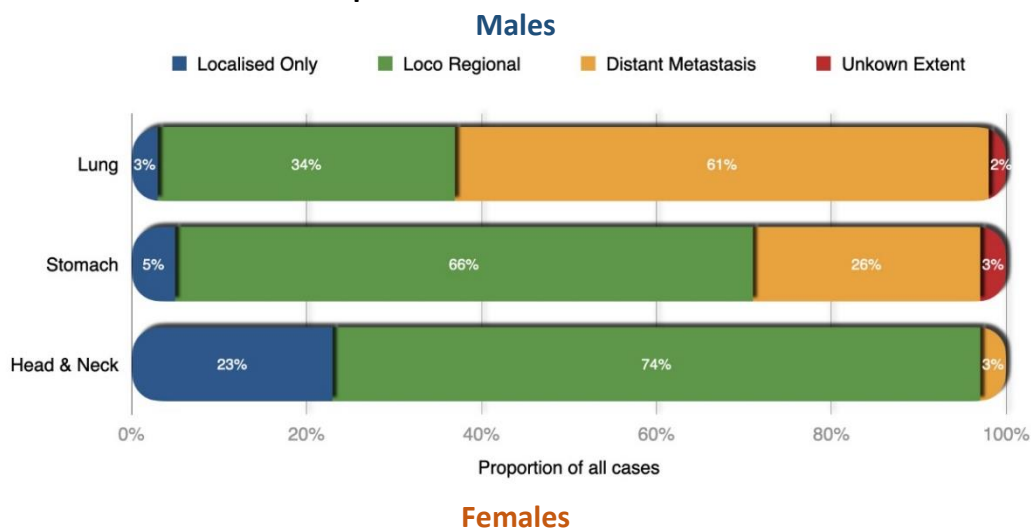
Thiruvananthapuram

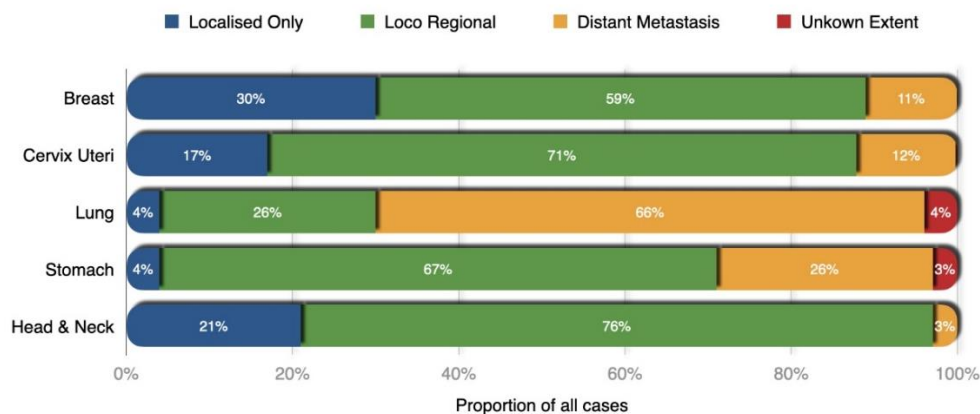


Others - Lip, Other oropharynx, Hypopharynx, and Pharynx Unspecified

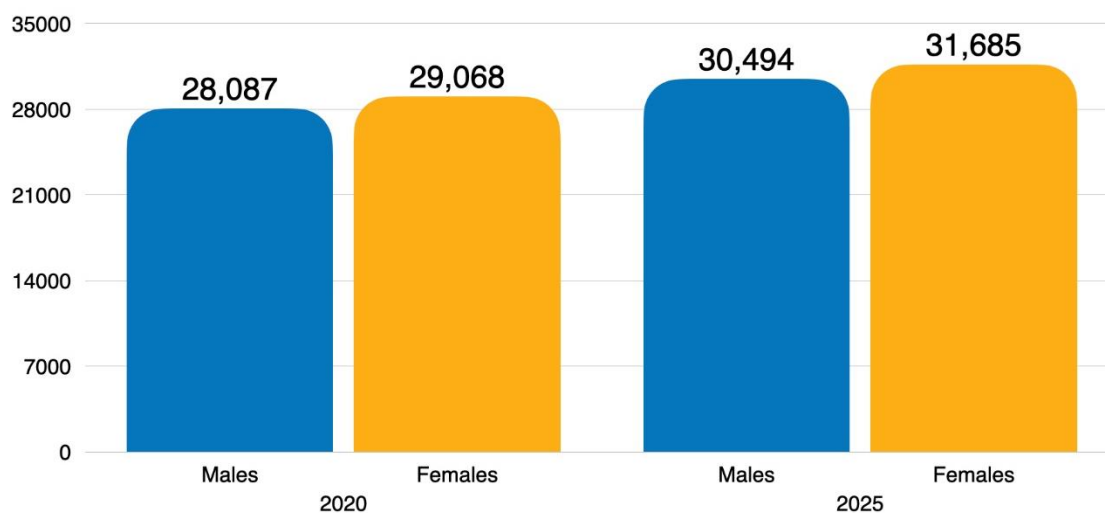
D. Clinical Profile

Clinical Extent of Disease at presentation for cancers of selected anatomical sites

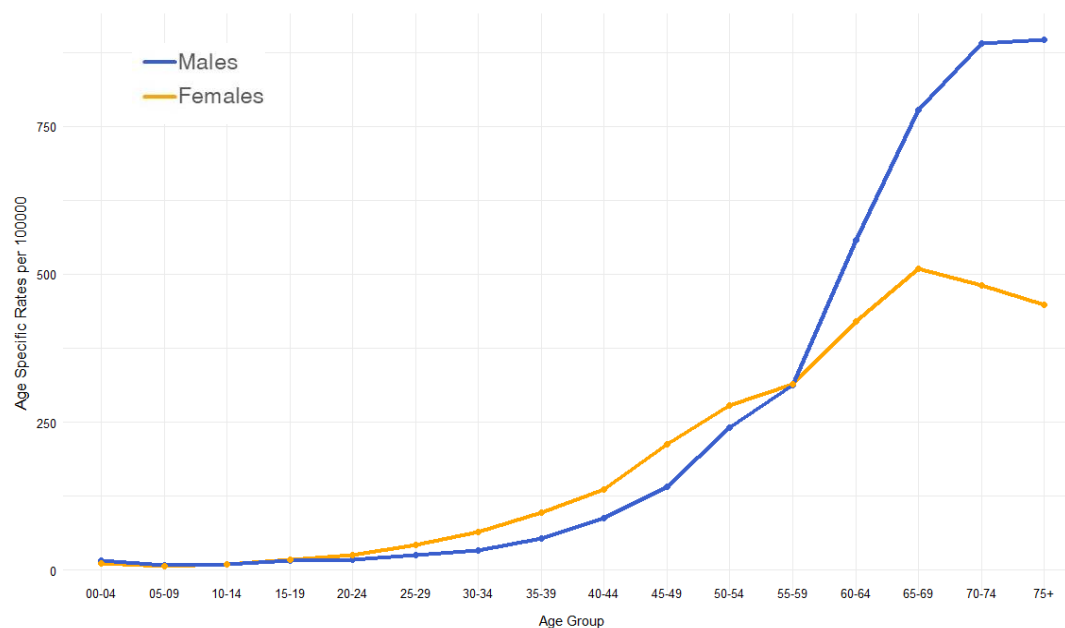




E. Projected Incidence of cancer cases for 2025



Estimated Age Specific Incidence Rates (All sites of Cancer - 2020)



II. CANCER RELATED INFORMATION

A. Socio-demographic profile ^[4]

(a) Population	Total	3,34,06,061
	Males	1,60,27,412
	Females	1,73,78,649
	Gender Ratio	1084
(b) Literacy Rate	Total	94.0 %
	Males	96.1 %
	Females	92.1 %

B. Health Indicators

(a) Life Expectancy (2016) ^[5]	Males	73.8 years
	Females	78.7 years
(b) Proportion of total disease burden from NCDs ¹ ^[5]		74.6 %
(c) Proportion of NCDs ¹ Medically Certified Deaths – Neoplasms ^[6]		16.4 %
(d) Prevalence of cancer related risk factors	Prevalence of current tobacco use (smoking and/or smokeless)-in adults over 15 years of age ^[7]	
	Total	12.7 %
	Males	22.9 %
	Females	3.6 %
Prevalence of alcohol use in males and females (age 15-49 years) ^[8]		
	Males	19.9 %
	Females	0.2 %
Proportion of consumption of dark green leafy vegetables at least once a week in males and females from 15 to 49 years of age ^[8]		
	Males	80.0 %
	Females	62.7 %
Proportion of consumption of fruits at least once a week in males and females from 15 to 49 years of age ^[8]		
	Males	81.8 %
	Females	82.6 %
	Proportion of households using clean fuel for cooking ^[8]	72.1 %
	Proportion of households reporting exposure to second hand smoke ^[8]	28.9 %
Proportion of overweight/obesity in males and females (age 15-49 years) ^[8]		
	Males	36.4 %
	Females	38.1 %
(e) Prevalence of other NCDs ¹ ^[8]	Hypertension (age 15-49 years)	
	Males	32.8 %
	Females	30.9 %

Raised random blood glucose level (age 15-49 years)

Males	27.0 %
Females	24.8 %

C. Health Infrastructure

(a) Government health facilities^[9]

• Sub-centres + Health and Wellness Centres – Sub Centres (HWC-SCs)	5380
• Primary Health Centres + Health and Wellness Centres - Primary Health Centres (HWC-PHCs)	931
• Community Health Centres	229
• District hospitals	18

(b) Number of medical colleges^[10]

31

(c) Regional / Tertiary Cancer Care Centres ^{[11],[12]}

- Regional Cancer Centre, Thiruvananthapuram (RCC*/SCI**)
 - Government Medical College, Kozhikode (TCCC ***)
-

(d) State Government Health Schemes^[13]

- Pradhan Mantri Jan Arogya Yojana - Karunya Arogya Suraksha Paddhati (PMJAY-KASP)
-

**Regional Cancer Centre*

****State Cancer Institute*

****Tertiary Cancer Care Centre*

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Suggested citation :

Profile of cancer and related factors: Kerala (ICMR-NCDIR), Bengaluru, India 2021

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