

11

Cancer  
Stomach

## Cancer Stomach (ICD-10: C16)

**Table 11.1** Number of cases (n) registered for Cancer Stomach and its Relative Proportion to All Sites of Cancer (%), Crude (CR), Age Adjusted (AAR) and Truncated (TR) Incidence Rates per 100,000 population and its Rank in 28 PBCRs under NCRP

## Males

SI No	Registry	n	%	CR	AAR	TR	RANK
<b>NORTH</b>							
1	Delhi	806	2.6	2.9	3.8	6.9	22
2	Patiala district	143	2.7	2.7	2.9	5.9	25
<b>SOUTH</b>							
3	Hyderabad district	291	5.7	4.8	6.0	10.5	14
4	Kollam district	470	4.7	7.5	5.9	8.9	15
5	Thi'puram district	482	3.6	6.1	4.8	7.1	18
6	Bangalore	914	6.9	6.7	8.6	13.7	12
7	Chennai	1265	8.7	10.6	10.5	17.7	11
<b>EAST</b>							
8	Kolkata	469	4.6	5.1	4.2	7.7	21
<b>WEST</b>							
9	Ahmedabad urban	266	1.8	1.6	1.9	3.4	30
10	Aurangabad	64	3.3	1.9	2.6	4.4	27
11	Osmanabad & Beed	162	4.5	1.8	1.8	3.3	31
12	Barshi rural	32	4.4	2.4	2.3	4.6	28
13	Mumbai	1138	4.3	4.2	4.8	6.9	19
14	Pune	384	4.0	2.7	3.3	4.9	24
<b>CENTRAL</b>							
15	Wardha district	58	2.4	1.7	1.6	2.7	32
16	Bhopal	75	2.1	1.8	2.2	4.5	29
17	Nagpur	183	3.1	2.7	2.8	5.9	26
<b>NORTH EAST</b>							
18	Manipur state	257	6.9	3.3	4.5	7.5	20
	<i>Imphal West district</i>	41	3.6	3.1	3.6	4.4	23
19	Mizoram state	776	18.0	26.2	39.1	58.9	3
	<i>Aizawl district</i>	342	15.7	32.3	44.2	70.0	1
20	Sikkim state	198	16.9	11.8	15.7	22.9	7
21	Tripura state	404	6.2	4.1	5.0	9.6	17
22	West Arunachal	284	23.2	13.2	24.9	50.9	4
	<i>Papumpare district</i>	93	19.7	18.7	40.3	83.8	2
23	Meghalaya	296	6.3	5.8	12.2	20.7	10
	<i>East Khasi Hills district</i>	152	5.3	6.9	13.6	22.5	8
24	Nagaland	177	12.6	9.4	17.9	23.5	6
25	Pasighat	58	18.1	16.4	23.9	36.9	5
26	Cachar district	195	4.2	4.1	5.6	9.7	16
27	Dibrugarh district	185	7.3	5.3	7.0	11.3	13
28	Kamrup urban	389	6.3	11.9	13.4	21.2	9

Total number of cases (N) registered and reporting year of data for all sites is mentioned in Table 1.2

## Females

SI No	Registry	n	%	CR	AAR	TR	RANK
<b>NORTH</b>							
1	Delhi	482	1.7	2.0	2.4	4.5	19
2	Patiala district	100	1.7	2.1	2.1	3.9	21
<b>SOUTH</b>							
3	Hyderabad district	160	2.5	2.7	3.2	7.0	16
4	Kollam district	186	1.9	2.6	2.0	3.6	23
5	Thi'puram district	191	1.3	2.2	1.7	3.0	24
6	Bangalore	519	3.3	4.1	4.9	8.3	12
7	Chennai	654	3.9	5.5	5.1	9.0	11
<b>EAST</b>							
8	Kolkata	246	2.7	2.8	2.4	3.9	20
<b>WEST</b>							
9	Ahmedabad urban	169	1.5	1.1	1.2	2.3	29
10	Aurangabad	32	1.6	1.0	1.2	3.1	30
11	Osmanabad & Beed	100	2.2	1.2	1.1	2.2	31
12	Barshi rural	21	2.6	1.7	1.5	3.5	25
13	Mumbai	673	2.5	2.9	2.9	4.6	17
14	Pune	179	1.7	1.4	1.6	2.6	26
<b>CENTRAL</b>							
15	Wardha district	51	2.0	1.6	1.4	3.1	28
16	Bhopal	31	0.9	0.8	1.0	1.5	32
17	Nagpur	98	1.6	1.5	1.6	3.1	27
<b>NORTH EAST</b>							
18	Manipur state	158	3.5	2.0	2.7	4.6	18
	<i>Imphal West district</i>	45	3.0	3.2	3.7	6.3	14
19	Mizoram state	374	10.0	12.8	18.8	30.9	3
	<i>Aizawl district</i>	175	9.2	16.1	21.7	33.4	2
20	Sikkim state	83	7.3	5.5	7.9	10.6	8
21	Tripura state	183	3.7	1.9	2.1	4.6	22
22	West Arunachal	171	14.6	8.2	15.8	38.5	4
	<i>Papumpare district</i>	58	11.0	11.5	27.1	73.1	1
23	Meghalaya	205	7.2	4.0	6.9	13.0	10
	<i>East Khasi Hills district</i>	122	7.1	5.4	8.0	14.2	7
24	Nagaland	112	11.3	6.4	11.8	18.7	6
25	Pasighat	29	9.6	8.4	12.5	27.4	5
26	Cachar district	120	3.0	2.6	3.4	7.3	15
27	Dibrugarh district	118	5.3	3.5	4.1	8.3	13
28	Kamrup urban	223	4.7	7.0	7.9	14.3	9

Total number of cases (N) registered and reporting year of data for all sites is mentioned in Table 1.2

Among males, Aizawl district (44.2 per 100,000) had the highest rank in incidence rates of stomach cancer across all PBCRs and Papumpare district (27.1 per 100,000) had the highest rate among females.

Fig. 11.1 Age Specific Incidence Rates per 100,000 in 28 PBCRs under NCRP - Cancer Stomach

Males

Region	Registry	Five Year Age Group															
		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+
NORTH	Delhi	0.0	0.0	0.0	0.1	0.2	0.6	1.0	2.0	3.6	5.8	7.6	11.6	14.9	19.0	22.2	25.9
	Patiala district	0.0	0.0	0.0	0.7	0.2	0.4	0.7	1.9	3.0	7.0	4.9	13.3	8.7	12.6	14.8	9.5
SOUTH	Hyderabad district	0.0	0.0	0.0	0.0	0.3	0.8	1.1	2.1	4.1	11.8	15.6	18.1	17.0	35.3	48.3	28.4
	Kollam district	0.0	0.0	0.0	0.0	0.0	0.2	0.5	2.6	2.0	5.2	10.5	13.9	26.9	43.2	41.0	48.5
	Thi'puram district	0.0	0.0	0.0	0.2	0.5	0.5	1.6	1.9	3.2	4.8	8.5	12.1	17.5	29.7	35.7	41.0
	Bangalore	0.0	0.0	0.2	0.1	0.5	0.7	1.4	1.8	4.7	9.9	16.0	25.8	35.6	57.4	65.7	56.6
EAST	Chennai	0.0	0.1	0.1	0.5	0.6	0.8	1.8	2.8	7.1	12.7	24.2	29.2	43.8	66.6	62.0	73.6
	Kolkata	0.0	0.0	0.0	0.0	0.6	0.5	1.3	1.4	3.6	5.2	7.8	15.6	19.2	19.6	33.6	17.9
WEST	Ahmedabad urban	0.0	0.0	0.0	0.1	0.1	0.3	0.4	1.0	1.8	2.2	3.8	5.3	8.6	12.3	10.9	8.5
	Aurangabad	0.0	0.0	0.0	0.3	0.3	0.0	1.1	1.6	1.3	1.6	3.6	7.4	15.3	12.8	23.9	11.0
	Osamanabad & Beed	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	2.0	3.2	3.2	5.7	8.0	7.9	10.0	13.5
	Barshi rural	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	1.2	4.5	0.0	15.9	10.9	8.5	17.9	7.7
	Mumbai	0.0	0.1	0.0	0.0	0.2	0.3	0.9	1.6	3.0	4.9	7.0	12.4	18.0	28.8	38.0	44.5
	Pune	0.0	0.1	0.2	0.1	0.1	0.3	0.5	0.8	1.5	3.1	6.3	9.4	12.9	20.6	23.7	31.3
CENTRAL	Wardha district	0.0	0.4	0.0	0.0	0.0	0.0	0.0	1.1	1.2	2.7	3.2	2.9	6.8	14.1	5.8	7.7
	Bhopal	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.9	2.1	2.4	6.6	9.2	7.7	11.4	14.7	4.5
	Nagpur	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.3	3.3	3.8	9.5	9.3	12.1	15.3	16.2	8.8
NORTH EAST	Manipur state	0.0	0.0	0.0	0.0	0.0	0.3	0.3	1.9	2.5	4.8	8.2	14.2	20.2	28.3	32.7	29.9
	Imphal West district	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.5	4.5	11.2	11.8	30.1	38.6	30.2
	Mizoram state	0.0	0.0	0.0	0.0	0.3	1.4	1.2	5.1	18.8	32.7	84.5	108.9	157.4	235.9	329.1	345.6
	Aizawl district	0.0	0.0	0.0	0.0	0.0	1.0	1.1	10.6	24.0	37.2	90.8	133.7	187.7	279.3	301.0	396.8
	Sikkim state	0.0	0.0	0.0	0.0	0.0	0.5	1.9	1.6	8.3	9.2	23.9	41.9	76.8	107.7	130.8	128.5
	Tripura state	0.0	0.0	0.0	0.0	0.1	0.3	1.0	1.8	3.7	5.7	11.8	18.1	24.6	30.2	30.0	21.1
	West Arunachal	0.0	0.0	0.0	0.4	0.9	2.9	1.2	10.5	20.0	46.0	69.1	62.8	130.8	122.4	173.0	77.1
	Papumpare district	0.0	0.0	0.0	1.6	1.7	8.2	2.7	24.4	24.9	58.9	108.9	118.5	232.5	146.1	356.9	85.9
	Meghalaya	0.0	0.0	0.0	0.0	0.6	0.7	1.5	5.6	8.7	18.5	31.9	27.1	44.1	73.2	102.3	68.9
	East Khasi Hills district	0.0	0.0	0.0	0.0	0.4	0.0	1.9	5.0	10.2	14.2	39.9	25.1	55.6	98.3	108.7	66.6
NORTH WEST	Nagaland	0.0	0.0	0.0	0.0	1.0	2.1	2.5	2.2	9.5	12.9	38.0	33.7	64.0	109.8	126.4	220.3
	Pasighat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	17.0	25.0	31.9	70.7	105.7	176.7	179.2	178.1
	Cachar district	0.0	0.0	0.0	0.0	0.0	0.2	0.9	2.7	3.4	7.9	9.5	17.2	25.0	32.2	37.6	39.2
	Dibrugarh district	0.0	0.0	0.0	0.0	0.0	0.9	1.1	2.2	1.7	8.2	12.1	21.7	32.5	39.5	56.9	51.2
	Kamrup urban	0.0	0.0	0.0	0.0	0.3	3.2	1.8	3.4	4.5	13.7	26.4	53.5	45.3	75.5	100.4	109.6

0.0  396.8



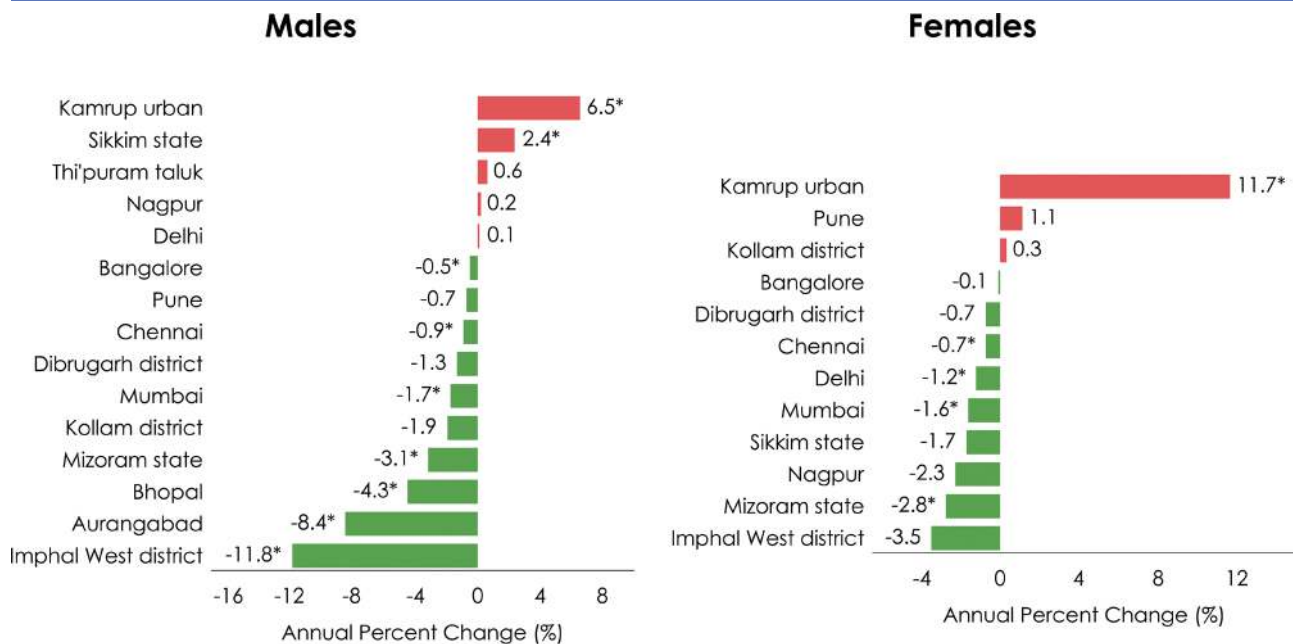
**Females**

Region	Registry	Five Year Age Group																
		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+	
NORTH	Delhi	0.0	0.0	0.0	0.0	0.3	0.4	0.9	1.6	2.6	3.8	4.8	6.7	10.3	11.8	13.4	11.4	
	Patiala district	0.0	0.0	0.0	0.0	0.2	1.5	0.5	1.4	1.5	3.7	4.4	6.1	8.3	9.6	15.2	5.5	
SOUTH	Hyderabad district	0.0	0.2	0.0	0.0	0.4	0.8	1.8	2.5	4.1	6.2	8.2	11.0	13.8	7.1	14.7	14.6	
	Kollam district	0.0	0.0	0.0	0.0	0.0	0.8	0.6	1.0	1.9	3.9	3.7	5.8	7.4	10.2	12.6	9.5	
	Thirupuram district	0.0	0.0	0.0	0.0	0.3	0.4	0.6	1.0	2.5	2.6	3.3	4.8	5.5	10.0	7.5	8.2	
	Bangalore	0.0	0.0	0.0	0.0	0.6	0.6	0.9	3.0	4.3	6.1	9.5	17.2	15.3	28.2	34.3	32.8	
	Chennai	0.0	0.0	0.0	0.0	0.4	1.5	1.8	3.0	4.2	8.9	11.1	12.9	18.6	28.4	28.6	32.4	
EAST	Kolkata	0.0	0.0	0.0	0.3	0.3	0.5	1.3	1.3	2.2	2.4	4.6	6.6	8.8	13.0	15.4	15.3	
WEST	Ahmedabad urban	0.0	0.0	0.0	0.0	0.1	0.3	0.7	1.0	1.3	2.0	3.2	2.9	4.9	6.0	5.2	4.7	
	Aurangabad	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	1.5	3.2	5.6	2.2	6.9	5.9	0.0	3.5	
	Osamanabad & Beed	0.0	0.0	0.0	0.0	0.1	0.6	0.2	0.7	2.6	1.4	1.5	1.4	7.0	3.6	4.8	4.7	
	Barshi rural	0.0	0.0	0.0	0.0	0.9	0.0	0.0	1.2	2.6	6.4	1.9	2.2	7.4	6.0	2.8	8.0	
	Mumbai	0.0	0.0	0.1	0.1	0.3	0.2	0.6	1.3	2.6	3.8	5.0	7.7	10.2	15.8	19.5	23.8	
	Pune	0.0	0.0	0.0	0.2	0.1	0.3	0.4	0.7	1.2	2.3	3.1	3.9	6.2	9.5	8.0	12.4	
CENTRAL	Wardha district	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.4	2.1	2.5	3.1	5.7	6.9	6.4	5.5	3.5	
	Bhopal	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.8	0.0	0.0	4.2	5.2	9.0	10.7	2.8	
	Nagpur	0.0	0.0	0.0	0.4	0.2	0.2	0.3	0.4	1.0	2.8	3.7	4.5	8.5	10.2	6.8	4.8	
NORTH EAST	Manipur state	0.0	0.0	0.0	0.3	0.0	0.1	1.0	1.3	0.8	6.0	3.8	6.3	12.5	22.5	14.9	11.8	
	Imphal West district	0.0	0.0	0.0	0.0	0.0	0.7	0.8	2.6	1.0	4.8	4.1	3.6	27.6	34.8	14.2	14.3	
	Mizoram state	0.0	0.0	0.0	0.0	0.3	2.1	2.0	6.2	10.5	17.5	38.2	48.6	91.7	121.8	136.1	125.7	
	Aizawl district	0.0	0.0	0.0	0.0	0.0	2.7	2.9	3.8	7.9	10.9	41.9	65.6	107.0	134.9	170.6	173.0	
	Sikkim state	0.0	0.0	0.0	0.0	0.6	0.0	1.5	3.7	1.1	4.0	13.1	13.9	38.9	32.7	98.5	77.1	
	Tripura state	0.0	0.0	0.0	0.0	0.2	0.7	1.2	1.9	2.6	4.0	5.3	9.1	7.4	10.9	2.9	9.0	
	West Arunachal	0.0	0.0	0.4	0.0	0.0	0.9	1.6	2.6	7.5	15.2	23.1	69.7	38.0	104.4	44.2	16.4	90.3
	Papumpare district	0.0	0.0	0.0	0.0	0.0	3.2	3.9	2.6	14.0	23.8	25.2	96.4	78.1	273.0	36.8	0.0	131.2
	Meghalaya	0.0	0.0	0.0	0.2	0.4	1.4	3.6	5.1	7.8	7.5	17.0	17.9	31.0	30.1	38.1	42.2	
	East Khasi Hills district	0.0	0.0	0.0	0.4	0.4	1.9	6.7	6.7	4.1	4.0	25.3	17.4	39.0	31.7	50.2	53.3	
	Nagaland	0.0	0.0	0.0	0.0	0.5	2.7	2.6	10.9	8.2	8.0	28.6	17.7	50.8	74.6	96.3	73.7	
	Pasighat	0.0	0.0	0.0	0.0	0.0	3.2	11.2	0.0	4.8	23.5	54.6	56.1	45.6	50.7	25.5	50.0	
	Cachar district	0.0	0.0	0.0	0.0	0.0	0.5	1.5	2.7	4.8	5.6	10.0	9.2	14.9	12.8	20.9	12.5	
	Dibrugarh district	0.0	0.0	0.0	0.3	0.8	1.5	2.6	4.5	5.8	4.4	7.0	9.2	23.9	15.3	31.3	6.8	
	Kamrup urban	0.0	0.0	0.0	0.0	0.6	0.9	2.6	5.6	7.3	14.3	21.2	21.4	21.8	37.1	40.8	63.9	

0.0  273.0

As age increased, the incidence rate increased in cancer stomach. North eastern registries like Mizoram, West Arunachal, Pasighat and Nagaland had higher incidence rate in the older age group compared to other PBCRs

**Fig. 11.2 Annual Percent Change (APC) in Age Adjusted Incidence Rates (AAR) over the Time Period - Cancer Stomach**

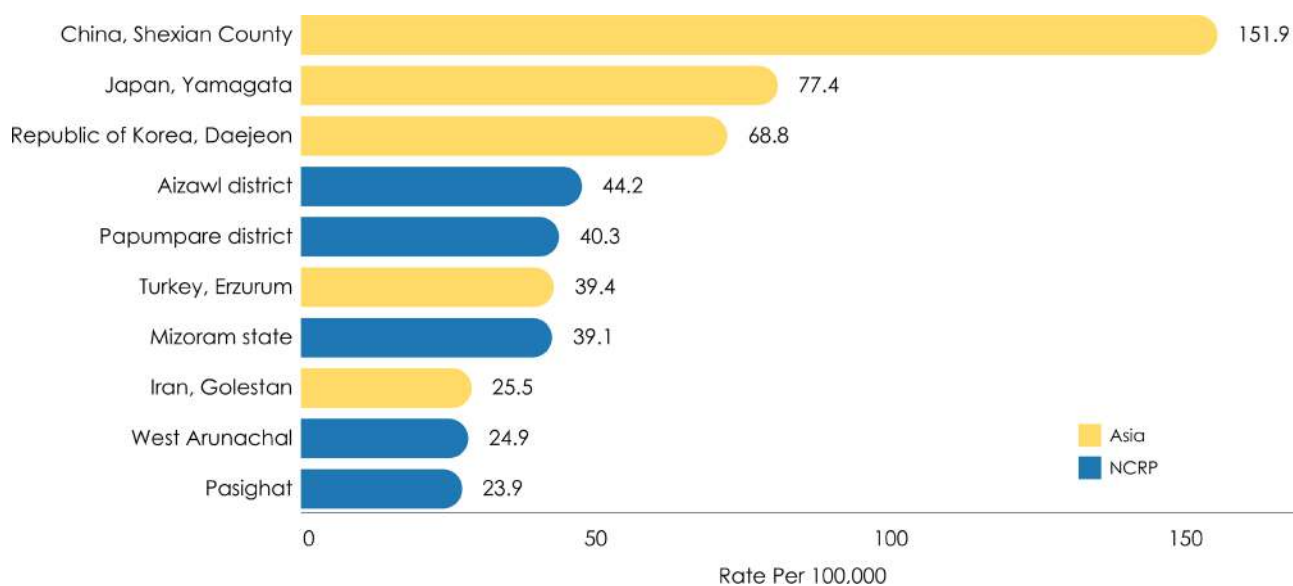


*Increase in APC, Decrease in APC ; \*Significant increase or decrease in APC at 95% confidence level*

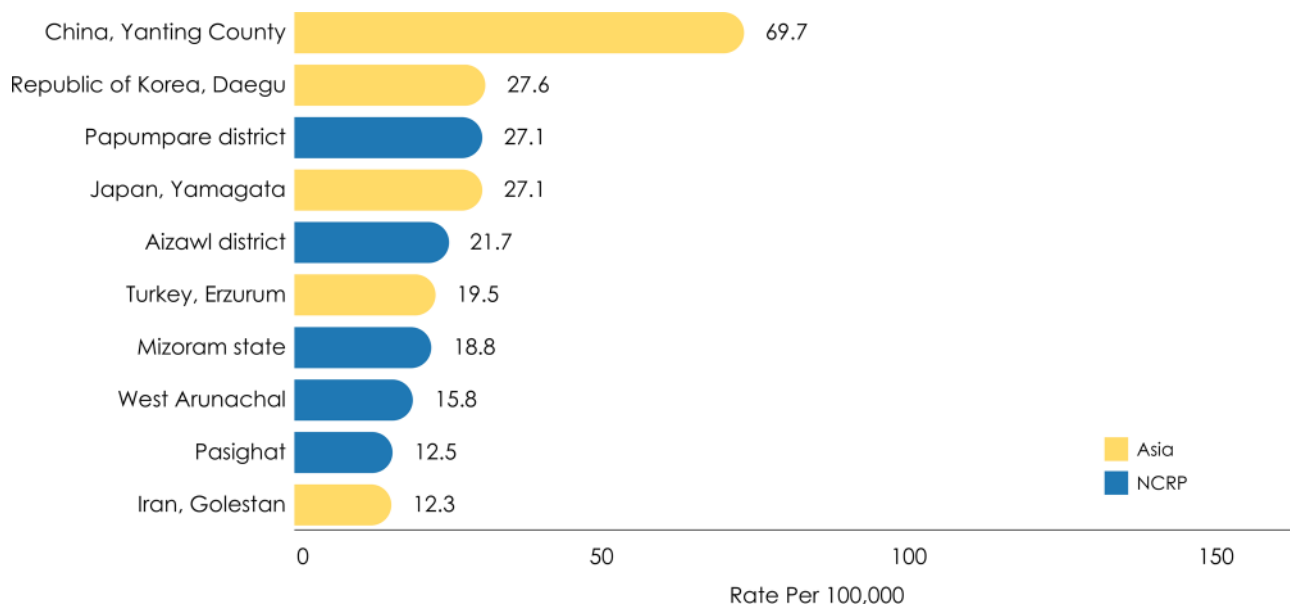
There was a significant increase in the incidence rates of stomach cancer in Kamrup urban in both genders. In the state of Sikkim stomach cancer increased significantly among males. Mizoram, Mumbai and Chennai PBCR had a significant decrease in the incidence rates of stomach cancer both in males and females.

**Fig. 11.3 Comparison of Age Adjusted Incidence Rates (AAR) of Asian countries with PBCRs under NCRP - Cancer Stomach**

**Males**



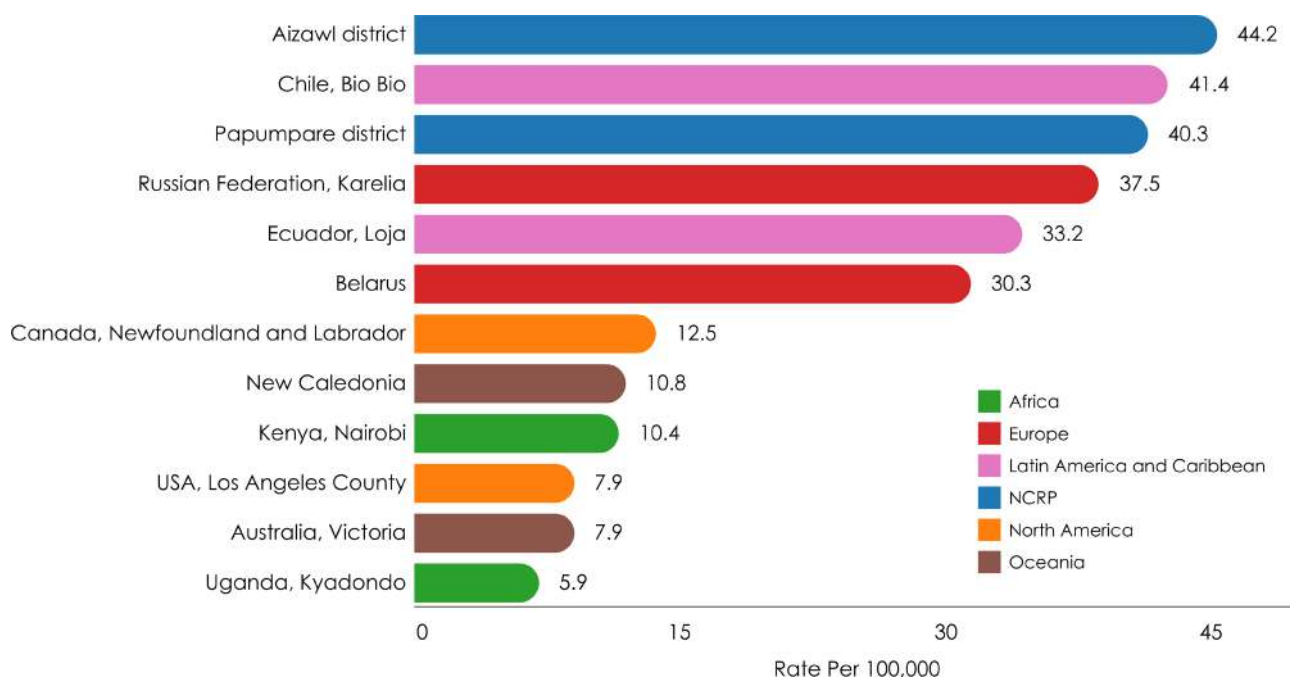
**Females**



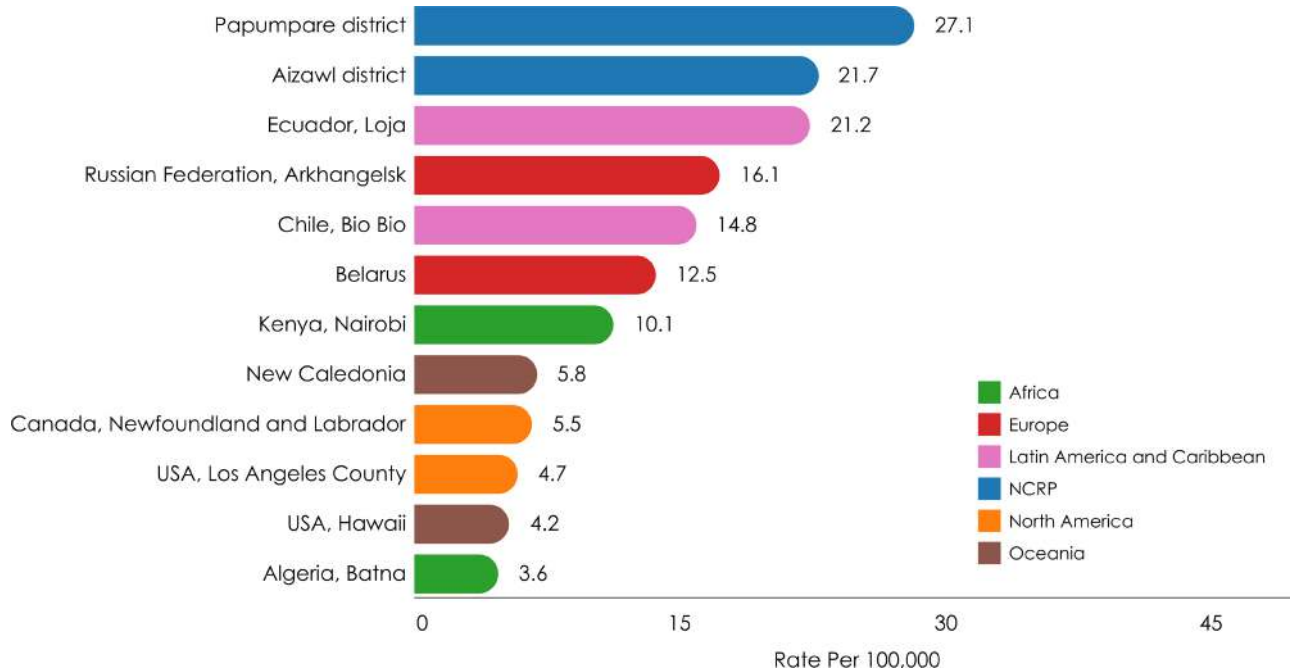
Shexian County (151.9 per 100,000) and Yanting County (69.7 per 100,000) in China had the highest incidence rate of stomach cancer among males and females, respectively in Asia and the world.

**Fig. 11.4 Comparison of Age Adjusted Incidence Rates (AAR) of Non-Asian countries with PBCRs under NCRP - Cancer Stomach**

**Males**



**Females**



Aizawl district (44.2 per 100,000) and Papumpare district (27.1 per 100,000) in India had the highest incidence rate of stomach cancer among males and females, respectively when compared to Non-Asian countries.



**Table 11.2** Number (n) and Relative Proportion (%) according to Clinical Extent of Disease - Cancer Stomach

Clinical Extent of Disease	Males		Females		Both Sexes	
	n	%	n	%	n	%
Localised only	1266	18.4	605	19.3	1871	18.7
Locoregional	3502	51.0	1581	50.3	5083	50.8
Distant Metastasis	1690	24.6	778	24.8	2468	24.7
Unknown	406	5.9	178	5.7	584	5.8
<b>Total</b>	<b>6864</b>	<b>100.0</b>	<b>3142</b>	<b>100.0</b>	<b>10006</b>	<b>100.0</b>

Locoregional spread was most common among patients with cancer of the stomach (males 51.0% and females 50.3%). Around 24% of stomach cancers cases had distant metastasis in both males and females.

**Table 11.3** Number (n) and Relative Proportion (%) of Types of Treatment according to Clinical Extent of Disease - Cancer Stomach**Males**

Treatment	Clinical Extent of Disease							
	Localised only		Locoregional		Distant Metastasis		Unknown	
	n	%	n	%	n	%	n	%
Surgery	265	21.0	526	15.1	99	5.9	76	18.8
Radiotherapy	29	2.3	168	4.8	162	9.7	15	3.7
Systemic Therapy	491	38.9	1296	37.3	1058	63.3	167	41.3
Multi-modality*	444	35.2	1413	40.7	290	17.3	112	27.7
Palliative Care	34	2.7	71	2.0	63	3.8	34	8.4
<b>Total</b>	<b>1263</b>	<b>100.0</b>	<b>3474</b>	<b>100.0</b>	<b>1672</b>	<b>100.0</b>	<b>404</b>	<b>100.0</b>

**Females**

Treatment	Clinical Extent of Disease							
	Localised only		Locoregional		Distant Metastasis		Unknown	
	n	%	n	%	n	%	n	%
Surgery	114	19.0	293	18.7	63	8.2	40	22.5
Radiotherapy	15	2.5	63	4.0	53	6.9	11	6.2
Systemic Therapy	281	46.8	604	38.6	493	64.4	64	36.0
Multi-modality*	176	29.3	575	36.8	129	16.8	55	30.9
Palliative Care	15	2.5	28	1.8	28	3.7	8	4.5
<b>Total</b>	<b>601</b>	<b>100.0</b>	<b>1563</b>	<b>100.0</b>	<b>766</b>	<b>100.0</b>	<b>178</b>	<b>100.0</b>

\*Multi-modality includes the combination of Surgery and/or Radiotherapy and/or Systemic Therapy

On the basis of clinical extent of disease, systemic therapy was the treatment of choice in distant metastasis (males 63.3%, females 64.4%) and localised disease (males 38.9%, females 46.8%) for stomach cancer patients.

**Table 11.4** Number (n) and Relative Proportion (%) by Educational Status - Cancer Stomach

Educational Status	Males		Females	
	n	%	n	%
Illiterate	1233	17.9	833	26.4
Literate	745	10.8	409	13.0
Primary	933	13.5	377	11.9
Secondary	1697	24.6	592	18.7
Higher Education	562	8.1	151	4.8
Unknown	1727	25.0	795	25.2
Not Applicable (for children below 5 Years)	1	<0.1	1	<0.1
<b>Total</b>	<b>6898</b>	<b>100.0</b>	<b>3158</b>	<b>100.0</b>

Among the cancer stomach patients, illiteracy was more in females (26.4%) than in males (17.9%). The proportion of levels of education were 10.8% and 13.0% literate, 13.5% and 11.9% primary, 24.6% and 18.7% secondary and 8.1% and 4.8% higher education in males and females, respectively.

**Table 11.5** Number (n) and Relative Proportion (%) by Broad Histological Classification - Cancer Stomach

Broad Histological Classification	Males		Females	
	n	%	n	%
Epithelial Tumours	6700	95.6	3038	94.3
Mesenchymal Tumours	105	4.5	73	5.7
Malignant Lymphoma	186		98	
Others	20		13	
<b>All Microscopic</b>	<b>7011</b>	<b>100.0</b>	<b>3222</b>	<b>100.0</b>

Among the different histologic types of stomach cancer, the most common type reported were epithelial tumours (males 95.6% and females 94.3%).