

Chapter 5

PROJECTION OF BURDEN OF CANCER

Projection of cancer burden means a systematic way of prediction of number of cancer cases for all anatomical sites or for a specific site and for a specified period of time. This could be based on time trend in incidence rates based on the projected population.

The present chapter projects the cancer cases for the country by sex for selected sites of cancer for the periods 2008-2010, 2015 & 2020 [Table 5(a) and 5(b)]. The incidence data generated by PBCRs at Bangalore, Barshi, Bhopal, Chennai, Delhi and Mumbai for the years 2001-2005 formed the sources of data. The Crude Incidence Rate (CR) was considered suitable for assessing the future load (magnitude) of cancer cases in the country. The CR is preferable to AAR as the latter is more suitable for comparison of rates between areas than for assessing the disease burden for the area. The combination of time trend in pooled crude rates of selected sites for past five years and population estimate by time was used to arrive at the projection for each of the above periods. The Linear Regression method was used to assess the time trend. For whichever sites the trend was not found to be significant, the latest rates were taken into consideration.

The pooled crude rates of the five urban registries (Bangalore, Barshi, Chennai, Delhi and Mumbai) were taken to represent the estimates for all Indian states excluding states from the North East region. The Crude Rate of various cancer sites provided in the report of 2005-2006 for the North East region were assumed to represent the estimates for the same area. The crude rate of cancers of cervix and breast of the rural registry at Barshi was taken into account to represent the rural areas of India. Accordingly, the weightage of 0.7 and 0.3 for rural and urban areas respectively was used to estimate the projection for Breast and Cervix cancers.

The Percentage change observed in decadal growth rate of 1991-2001 as compared to the decadal growth of 1981-1991 was assumed to continue and correspondingly the growth rate of India is calculated separately for both males and females to calculate the yearly populations for the year 2001-2020.

**Table 5(a): Projected Cases at India level for Selected Sites and Selected time periods
(2008-2010, 2015, 2020) - MALES**

ICD-10	Site Name	2008	2009	2010	2015	2020
C00-C96	All Sites	447399	454842	462408	497081	534354
C01-C02	Tongue	23932	24330	24735	26590	28584
C03-C06	Mouth	28066	29474	30921	38380	46785
C12-C13	Hypopharynx	14131	14366	14605	15700	16878
C15	Oesophagus	23573	23433	23281	22114	20642
C16	Stomach	24993	25408	25831	27768	29850
C18	Colon	11236	11423	11613	12484	13420
C19-C20	Rectum	11738	11933	12132	13041	14019
C22	Liver	14062	14295	14533	15623	16795
C23-C24	Gall Bladder	8396	8536	8678	9329	10028
C32	Larynx	24356	24761	25173	27060	29089
C33-C34	Lung	42863	43576	44301	47623	51194
C61	Prostate	25273	25693	26120	28079	30185
C70-C72	Brain NS	18238	18541	18850	20263	21782
C82-C95, C96	NHL	19835	20165	20501	22038	23690
C91	Lymp. Leuk.	9565	9724	9886	10627	11424
C92-C94	Myeloid Leuk.	11616	11809	12005	12905	13873

**Table 5(b): Projected Cases at India level for Selected Sites and Selected time periods
(2008-2010, 2015, 2020) - FEMALES**

ICD-10	Site Name	2008	2009	2010	2015	2020
C00-C96	All Sites	498773	507990	517378	563808	614404
C01-C02	Tongue	7687	7829	7974	8689	9469
C03-C06	Mouth	14402	14669	14940	16280	17741
C12-C13	Hypopharynx	4620	4706	4793	5223	5691
C15	Oesophagus	17755	18083	18417	20070	21871
C16	Stomach	12458	12689	12923	14083	15347
C18	Colon	10675	11276	11896	15206	19014
C19-C20	Rectum	9005	9172	9341	10180	11093
C22	Liver	7564	7943	8334	10412	12795
C23-C24	Gall Bladder	17839	18169	18505	20166	21975
C32	Larynx	3894	3966	4039	4401	4796
C33-C34	Lung	13009	13250	13494	14705	16025
C50	Breast	84805	87693	90659	106124	123634
C53	Cervix	100088	101938	103821	113138	123291
C54	Corpus Uteri	14314	14579	14848	16181	17633
C56	Ovary	29386	29929	30482	33218	36199
C70-C72	Brain NS	11232	11440	11651	12697	13836
C73	Thyroid Gland	11329	11538	11751	12806	13955
C82-C85, C96	NHL	11696	11913	12133	13222	14408
C91	Lymp. Leuk.	5703	5808	5916	6447	7025
C92-C94	Myeloid Leuk.	11070	11770	12492	16363	20828