

## Chapter 10

# Cancer survival in Cuba, 1994–1995

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### Abstract

The population-based cancer registry in Cuba is a national cancer registry established in 1964; cancer registration is entirely done by passive methods. Data on survival from 13 cancer sites or types registered during 1994–1995 are reported. Follow-up has been carried out predominantly by passive methods, with median follow-up ranging from 13–54 months. The proportion with histologically verified diagnosis for various cancers ranged between 34–100%; death certificates only (DCOs) comprised 8–50%; 50–89% of total registered cases were included for the survival analysis. The 5-year age-standardized relative survival for selected cancers were breast (69%), colon (41%), cervix (56%), urinary bladder (64%), rectum (48%) and non-Hodgkin lymphoma (49%). The 5-year relative survival by age group showed no distinct pattern or trend, and was fluctuating. A decreasing survival with increasing clinical extent of disease was noted for all cancers studied. The data on survival trend revealed that the 5-year relative survival of most cancers diagnosed in 1994–1995 was greater than that in 1988–1989.

### National cancer registry

The population-based cancer registry in Cuba is a national cancer registry started within the framework of the national health system in 1964 to describe the annual cancer burden in the country. Its central office is based at the National Institute of Oncology and Radiobiology, Havana. It has contributed data to the quinquennial IARC publication *Cancer Incidence in Five Continents* in volumes III, IV and VI [1]. A health ministry resolution of 1986 makes it mandatory for physicians to report cancer cases diagnosed in the country. Cancer registration is entirely done by passive methods. The principal source of data is the cancer report form in the Hospital Statistics Department in addition to the pathology, clinical laboratory and the hospital discharge reports. The registry caters to a population of about 11.2 million in 2002 with a sex ratio of 997 females to 1000 males. The average annual age-standardized incidence rate is 203.6 per 100 000 among males and 179.6 per 100 000 among females in 2002. The top ranking cancers among males are lung, non-melanoma skin, prostate and larynx. Among females, the order is breast, non-melanoma skin, cervix and lung.

The registry contributed data on survival for 16 cancer site or type in the first volume of the IARC publication on *Cancer Survival in Developing Countries* [2]. Data on survival from 13 cancer sites or types registered during 1994–1995 are reported in this volume.

### Data quality indices (Table 1)

The proportion of cases with histological confirmation of cancer diagnosis in this series is 64%, varying between 100% for lymphomas and 34% for cancer of the colon. The proportion of cases registered based on a death certificate only (DCO) is 32%, ranging from 8% in cancer of the anus to 50% in colon cancer. Cases excluded due to lack of follow-up information were negligible. The exclusion of cases from the survival analysis is the greatest in colon cancer (50%) and the least for cancer of the anus (11%). Thus, 50–89% of the total cases registered are included in the estimation of survival probability.

### Outcome of follow-up (Table 2)

Follow-up has been carried out predominantly by passive methods. A copy of the national death certificate file is obtained every year from the national statistical department of the Ministry of Health and is matched with the cancer registry database using record linkage techniques. The vital status of the unmatched incident cases are then ascertained by matching with the national identity registry, repeated scrutiny of hospital records and some minimal postal enquiries.

The closing date of follow-up was 31<sup>st</sup> December 1999. The median follow-up varied from 13 months in tongue cancer to 54 months for breast cancer. Complete follow-up at five years from the incidence

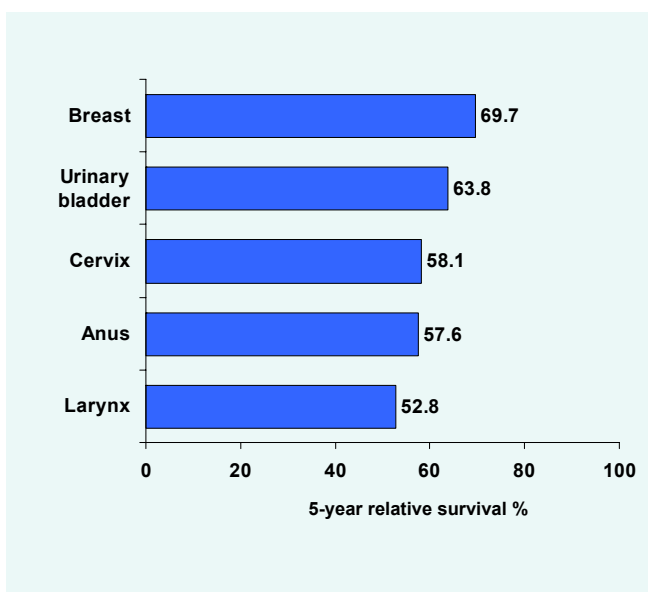
date ranged between 94–99%. The losses to follow-up generally occurred in the first year of follow-up.

### Survival statistics

#### All ages and both sexes together (Table 3)

The 5-year relative survival was the highest in cancer of the larynx (53%) among head and neck cancers. The corresponding survival estimates for cancers of the colon, rectum and anus were 41%, 49% and 58%, respectively. Hodgkin lymphoma had a better survival (52%) than non-Hodgkin lymphoma (47%).

**Figure 1a. Top five cancers (ranked by survival), Cuba, 1994–1995**



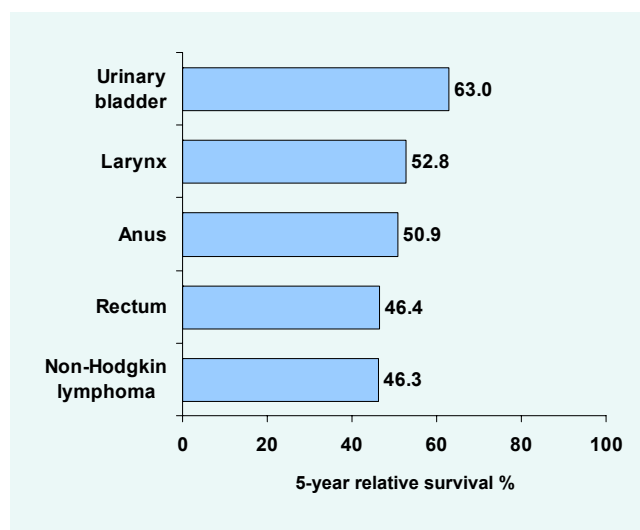
The 5-year age-standardized relative survival (ASRS) probability for all ages together is either greater than or similar to the corresponding unadjusted one for a majority of cancers. The 5-year ASRS (0–74 years of age) is observed to be either higher than or similar to the corresponding ASRS (all ages) for all cancers.

### Sex

#### Male (Table 4a)

The 5-year relative survival was the highest for cancer of the urinary bladder (63%) followed in order by larynx (53%), anus (51%), Hodgkin and non-Hodgkin lymphomas and rectum (46%).

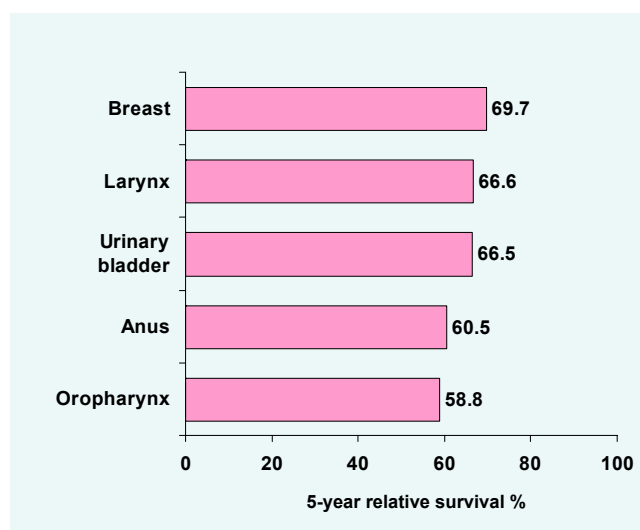
**Figure 1b. Top five cancers (ranked by survival), Male, Cuba, 1994–1995**



#### Female (Table 4a)

The top-ranking cancers in terms of 5-year relative survival were breast (70%), urinary bladder and tonsil (67%) and anus (60%). Survival from cervix cancer was 58%. Survival was markedly higher among females than males for cancers of the tongue, oral cavity, oropharynx including tonsil, anus and Hodgkin lymphoma.

**Figure 1c. Top five cancers (ranked by survival), Female, Cuba, 1994–1995**



#### Age group (Table 4b)

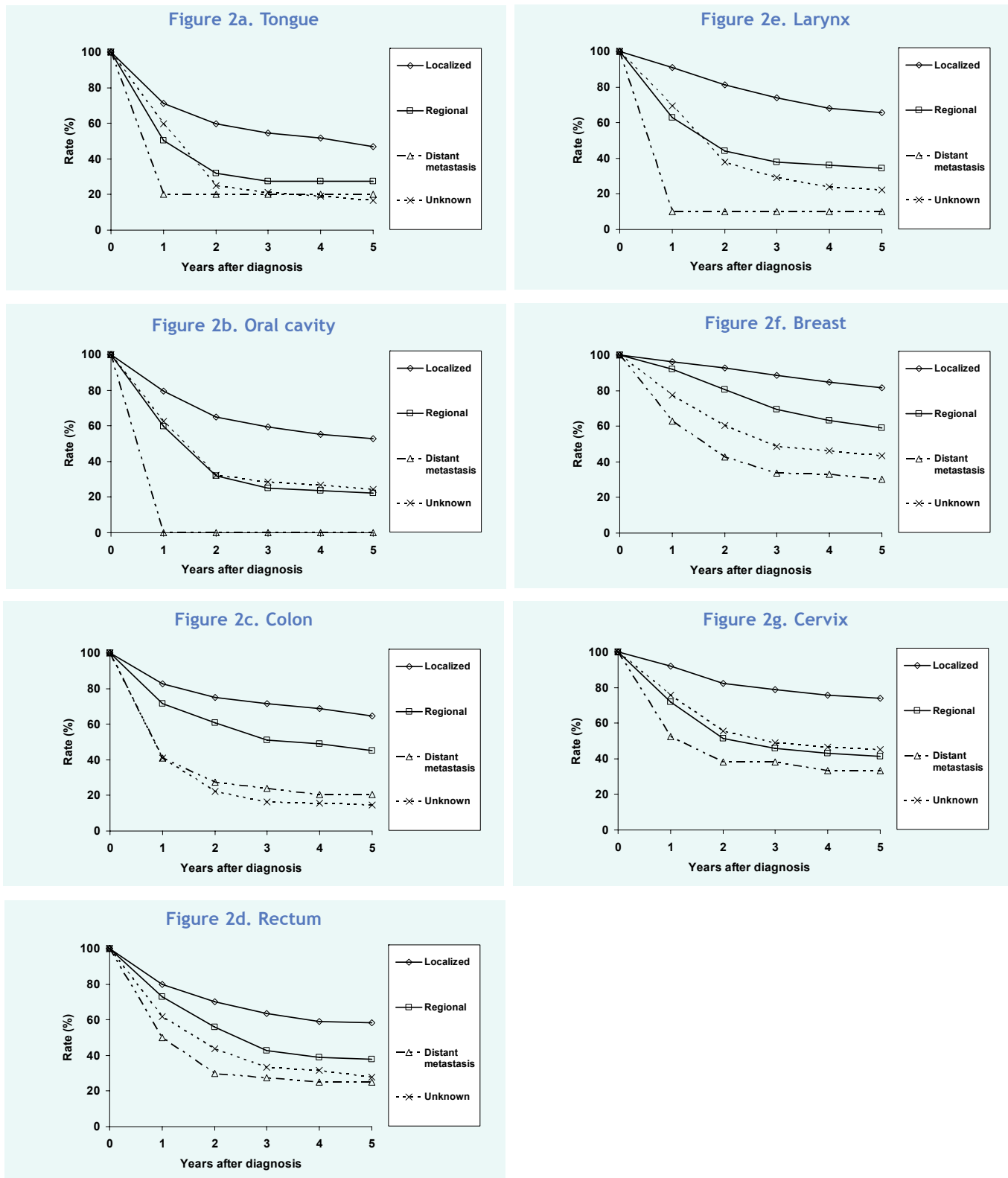
The 5-year relative survival by age group was seen to fluctuate, with no definite pattern or trend emerging.

Extent of disease (Table 5; Figure 2)

Among cancers except tongue cancer, a majority of cases have been diagnosed with a localized disease at diagnosis, from 51% for cancer of the larynx to 28% in cancer of the colon. Regional disease among tongue

cancers constituted 40%. The extent of disease was unknown in 18–42%. The 5-year absolute survival by extent of disease followed the expected pattern: highest for localized cases followed by regional and distant metastasis cases among known categories of extent of disease.

Figure 2. Absolute survival (%) from selected cancers by extent of disease, Cuba, 1994–1995



### Survival trend (Table 6)

The data on trends in cancer survival are available for 9 cancers registered in two time periods between 1988–1989 [2] and 1994–1995. The 5-year relative survival of most cancers diagnosed between 1994–1995 is greater than those registered in 1988–1989. The absolute difference exceeded 10% in cancers of tongue, oropharynx (including tonsil) and non-Hodgkin lymphoma. Hodgkin lymphoma and cancer of the oral cavity experienced a decrease in survival in 1994–1995 compared to 1988–1989.

### References

1. Parkin DM, Whelan SL, Ferlay J and Storm H. *Cancer Incidence in Five Continents, Vol I to VIII: IARC Cancerbase No. 7*. IARC Press, Lyon, 2005.
2. Garrote LF, Boschmonar MG, Alvarez YG, Cicilli ML, Garcia AM and Rodriguez RC. Cancer survival in Cuba. In: *Cancer Survival in Developing Countries* (eds) R Sankaranarayanan, RJ Black and DM Parkin. IARC Scientific Publications No. 145. IARC Press, Lyon, 1998, pp 51–59.

**Table 1. Data quality indices - Proportion of histologically verified and death certificate only cases, number and proportion of included and excluded cases by site: Cuba, 1994–1995 cases followed-up until 1999**

Site	ICD-10	Total registered	%		Excluded cases					Included cases	
			HV	DCO	DCO	Follow-up	Others	Total	%	No.	%
Tongue	C01-02	314	69.1	25.5	80	0	3	83	26.4	231	73.6
Oral cavity	C03-06	355	69.0	25.9	92	0	3	95	26.8	260	73.2
Tonsil	C09	82	62.2	32.9	27	0	1	28	34.1	54	65.9
Oropharynx	C10	60	80.0	20.0	12	0	0	12	20.0	48	80.0
Colon	C18	2 491	33.6	49.7	1238	0	5	1243	49.9	1 248	50.1
Rectum	C19-20	790	62.0	29.1	230	0	4	234	29.6	556	70.4
Anus	C21	106	84.0	8.5	9	1	2	12	11.3	94	88.7
Larynx	C32	1 165	61.6	30.7	358	0	7	365	31.3	800	68.7
Breast	C50	2 929	69.4	25.6	749	2	9	760	25.9	2 169	74.1
Cervix	C53	1 450	81.8	15.4	224	0	5	229	15.8	1 221	84.2
Urinary bladder	C67	1 182	60.2	29.5	349	0	14	363	30.7	819	69.3
Hodgkin lymphoma	C81	320	100.0	40.3	129	0	5	134	41.9	186	58.1
Non-Hodgkin lymphoma	C82-85+C96	771	100.0	39.7	306	0	1	307	39.8	464	60.2

*HV: histologically verified; DCO: death certificate only*

**Table 2. Number and proportion of cases with complete/incomplete follow-up (in years) and median follow-up (in months) by site: Cuba, 1994–1995 cases followed-up until 1999**

Site	ICD-10	Cases included	Complete FU		Incomplete FU: lost to FU						% with complete FU at 5 years	Median FU (in months)
			Alive/dead at end of FU		% lost to FU: years from diagnosis							
			No.	%	No.	%	< 1	1-3	3-5	> 5		
Tongue	C01-02	231	220	95.2	11	4.8	3.0	0.9	0.9	0.0	95.2	13.2
Oral cavity	C03-06	260	243	93.4	17	6.6	3.1	1.9	1.2	0.4	93.8	19.2
Tonsil	C09	54	53	98.1	1	1.9	0.0	0.0	1.9	0.0	98.1	20.5
Oropharynx	C10	48	47	97.9	1	2.1	2.1	0.0	0.0	0.0	97.9	13.8
Colon	C18	1 248	1 238	99.2	10	0.8	0.2	0.2	0.3	0.1	99.3	14.4
Rectum	C19-20	556	545	98.0	11	2.0	1.1	0.4	0.5	0.0	98.0	28.9
Anus	C21	94	93	98.9	1	1.1	1.1	0.0	0.0	0.0	98.9	50.7
Larynx	C32	800	771	96.3	29	3.7	1.5	0.9	1.0	0.3	96.6	40.6
Breast	C50	2 169	2 104	97.0	65	3.0	0.9	0.3	1.4	0.4	97.4	54.5
Cervix	C53	1 221	1 152	94.4	69	5.6	2.2	1.2	1.7	0.5	94.9	50.4
Urinary bladder	C67	819	798	97.4	21	2.6	1.2	0.0	1.0	0.4	97.8	50.1
Hodgkin lymphoma	C81	186	181	97.4	5	2.6	1.6	0.5	0.5	0.0	97.4	49.2
Non-Hodgkin lymphoma	C82-85+C96	464	453	97.7	11	2.3	0.6	0.6	1.1	0.0	97.7	25.1

FU: follow-up

**Table 3. Comparison of 1-, 3- and 5-year absolute and relative survival and 5-year age-standardized relative survival by site: Cuba, 1994–1995 cases followed-up until 1999**

Site	ICD-10	Cases included	% Absolute survival			% Relative survival			% ASRS at 5-years	
			1-year	3-year	5-year	1-year	3-year	5-year	all ages	0-74 years
Tongue	C01-02	231	59.1	35.2	31.4	60.8	38.2	36.3	37.9	38.9
Oral cavity	C03-06	260	68.8	40.6	35.8	70.7	44.2	41.6	43.3	43.7
Tonsil	C09	54	61.1	46.3	42.0	62.4	49.1	46.4	46.1	51.2
Oropharynx	C10	48	60.0	40.7	38.1	61.4	43.8	43.3	52.6	55.8
Colon	C18	1 248	58.7	39.5	35.3	60.6	43.3	41.2	40.5	46.4
Rectum	C19-20	556	70.9	47.0	42.1	72.8	50.9	48.5	47.6	50.7
Anus	C21	94	77.5	59.2	50.7	79.5	63.7	57.6	59.8	61.7
Larynx	C32	800	78.1	53.8	46.9	79.9	57.7	52.8	54.1	58.1
Breast	C50	2 169	89.7	72.3	64.6	91.0	75.6	69.7	69.4	70.4
Cervix	C53	1 221	80.7	60.2	55.7	81.3	61.6	58.1	55.8	56.3
Urinary bladder	C67	819	74.8	59.0	53.3	77.5	65.5	63.8	64.1	68.8
Hodgkin lymphoma	C81	186	72.9	56.4	50.0	73.6	57.8	51.9	55.5	57.5
Non-Hodgkin lymphoma	C82-85+C96	464	66.3	47.5	43.5	67.4	49.9	47.3	49.4	50.3

ASRS: age-standardized relative survival

**Table 4a. Site-wise number of cases, 5-year absolute and relative survival by sex: Cuba, 1994–1995 cases followed-up until 1999**

Site	ICD-10	Cases included	Male			Female		
			% 5-year survival			% 5-year survival		
			No.	Abs	Rel	No.	Abs	Rel
Tongue	C01-02	231	178	26.8	31.6	53	47.3	52.3
Oral cavity	C03-06	260	173	31.2	36.1	87	45.2	52.8
Tonsil	C09	54	46	39.1	43.0	8	60.0	66.6
Oropharynx	C10	48	36	32.8	38.4	12	55.4	58.8
Colon	C18	1 248	518	32.9	38.4	730	37.1	43.2
Rectum	C19-20	556	274	39.8	46.4	282	44.4	50.4
Anus	C21	94	28	42.2	50.9	66	54.4	60.5
Larynx	C32	800	683	46.8	52.8	117	47.7	53.1
Breast	C50	2 169				2 169	64.6	69.7
Cervix	C53	1 221				1 221	55.7	58.1
Urinary bladder	C67	819	631	52.5	63.0	188	56.2	66.5
Hodgkin lymphoma	C81	186	94	44.2	46.2	92	56.2	57.9
Non-Hodgkin lymphoma	C82-85+C96	464	247	42.2	46.3	217	45.1	48.5

*Abs: absolute survival; Rel: relative survival*

**Table 4b. Site-wise number of cases and relative survival by age group: Cuba, 1994–1995 cases followed-up until 1999**

Site	ICD-10	Cases included	Number of cases by age group					Relative survival by age group				
			% 5-year survival					% 5-year survival				
			< 45	45-54	55-64	65-74	> 75	< 45	45-54	55-64	65-74	> 75
Tongue	C01-02	231	18	30	59	60	64	50.5	37.5	34.9	37.2	32.8
Oral cavity	C03-06	260	12	35	67	72	74	51.0	41.2	47.3	36.6	39.8
Tonsil	C09	54	8	11	8	18	9	76.0	37.7	40.3	64.9	0.0
Oropharynx	C10	48	1	9	15	14	9	100.8	68.7	21.4	55.2	33.6
Colon	C18	1 248	74	124	247	345	458	51.8	40.8	43.3	49.7	31.7
Rectum	C19-20	556	40	79	113	167	157	52.0	52.9	52.6	47.5	42.9
Anus	C21	94	5	17	22	20	30	60.6	46.0	46.6	84.0	58.8
Larynx	C32	800	50	130	238	244	138	80.7	63.5	49.5	51.3	38.9
Breast	C50	2 169	424	515	502	435	293	71.7	67.0	70.7	72.6	65.4
Cervix	C53	1 221	531	284	184	155	67	65.3	55.3	46.7	54.5	53.0
Urinary bladder	C67	819	31	82	157	241	308	74.4	80.6	71.4	59.4	57.2
Hodgkin lymphoma	C81	186	108	15	22	25	16	63.6	61.4	43.9	18.4	20.3
Non-Hodgkin lymphoma	C82-85+C96	464	122	80	87	97	78	56.7	54.9	41.8	37.5	43.4

*Rel: relative survival*

Table 5. Proportion of cases and 5-year absolute survival by extent of disease and site: Cuba, 1994–1995

Site	ICD-10	Cases included	% of cases by extent of disease				% 5-year absolute survival			
			Localized	Regional	Dist. met.	Unknown	Localized	Regional	Dist. met.	Unknown
Tongue	C01-02	231	35.5	39.8	2.2	22.5	46.7	27.3	20.0	16.8
Oral cavity	C03-06	260	44.2	34.6	0.4	20.8	52.6	22.2	0.0	24.4
Colon	C18	1 248	28.0	20.3	9.6	42.1	64.7	45.0	20.5	14.6
Rectum	C19-20	556	38.8	25.4	7.2	28.6	58.5	38.0	25.0	27.7
Larynx	C32	800	51.3	23.0	1.3	24.5	65.5	34.5	10.0	22.2
Breast	C50	2 169	43.5	33.3	4.9	18.3	81.6	58.9	30.2	43.3
Cervix	C53	1 221	41.3	34.3	1.7	22.7	73.9	41.5	33.3	45.0

*Dis. met.:* distant metastasis

Table 6. Comparison of 5-year absolute and relative survival of cases diagnosed between 1988–1989 and 1994–1995, Cuba

Site	ICD-10	% 5-year absolute survival		% 5-year relative survival	
		1988–1989	1994–1995	1988–1989	1994–1995
Tongue	C01-02	19.0	31.4	25.5	36.3
Oral cavity	C03-06	38.5	35.8	49.1	41.6
Oropharynx	C10	27.0	38.1	33.7	43.3
Colon	C18	29.2	35.3	38.1	41.2
Rectum	C19-20	31.7	42.1	41.7	48.5
Breast	C50	54.0	64.6	60.8	69.7
Cervix	C53	52.3	55.7	55.9	58.1
Hodgkin lymphoma	C81	51.0	50.0	54.9	51.9
Non-Hodgkin lymphoma	C82-85+C96	31.8	43.5	37.0	47.3

*FU:* follow-up

