Singapore Cancer Registry
Interim Annual Registry Report
Trends in Cancer Incidence in Singapore
2009-2013

National Registry of Diseases Office
(NRDO)

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Acknowledgement

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CANCER REGISTRY REPORT FOR THE YEARS 2009 – 2013

1 GLOSSARY

Crude rate (CR): Crude incidence or mortality rate is the number of cancer cases or deaths divided by the mid-year general population respectively.

Age-standardised rate (ASR): Age-standardised incidence or mortality rate is the rate that would be observed if the general population had the age structure of an external world standard population. Age standardisation facilitates the comparison of rates across time, and also across countries. In this report, Segi's world population was used in direct age-standardisation.

Internally age-standardised rate (IASR): The internally age-standardised incidence rate is used to age-standardise incidence against the age structure of Singapore's population as at the 2010 Census. This metric is used to compare the incidence rates in Singapore over time.

The CR, ASR and IASR figures in this report are stated as per 100,000 population.

Observed Survival: Percentage of patients that survive after a specific time period. This estimate includes death from cancer and also from other causes.

2 EXECUTIVE SUMMARY

A total number of 58,654 incident cancer cases were diagnosed among the Resident population during the period 2009-2013 **(Table 1)**. Of these 28,475 (48.5%) were reported in males and 30,179 (51.5%) in females **(Table 2)**.

The crude incidence rates for total male and female cancer patients for the period 2009-2013 were 304.7 and 314 per 100,000 Singapore resident populations per year respectively **(Table 2)**. The corresponding age-standardised incidence rates were 228.9 and 213.4 per 100,000 person-years.

In both males and females, the crude and age-standardised rates were highest in Chinese followed by Malays and Indians **(Table 3)**.

Colorectal, lung and prostate cancer were the top ranked cancers among the male resident population **(Table 4)**. Among female residents, breast, colorectal and lung cancers were the most common **(Table 5)**.

The incidence (number and rates) of cancer for the period 2009-2013 has increased compared to the incidence reported for the period 2008-2012 though the type and order of top ranked cancers have remained the same.

Lung cancer and breast cancer had the highest mortality rates in males and females respectively **(Tables 9, 10)**.

3 INTRODUCTION

The Singapore Cancer Registry provides information on cancer patterns and trends in Singapore. The comprehensive population-based cancer registration in Singapore began in January 1968. In April 2001, the Cancer Registry came under the auspices of the National Registry of Diseases Office (NRDO).

MOH enacted the National Registry of Diseases Act in 2007 to enable the disease registries to access medical information while safeguarding data confidentiality. Cancer was the first disease to be covered by the Act.

4 SOURCE OF DATA AND DATA PROCESSING

Comprehensive cancer registration was achieved through data obtained from a combination of sources, viz., (a) notifications by the medical profession, (b) pathology records, (c) hospital records, and (d) mortality data from the Registry of Births and Deaths (RBD), Ministry of Home Affairs (MHA). Notifications were mandatory since 2009.

For cancer cases obtained from sources other than physician's notifications, the data were checked against known registered cases in the registry. For missed notifications, the doctors-in-charge would be informed and reminded to notify. About 10% of cases were not notified by physicians, and would need to be registered by the Registry staff.

Data Processing

Data were captured through electronic transfer of data from relevant institutions and manually (from case notes). All relevant information of new cases would be entered into a computerised system and checked for possible duplication against a master index. The clinical data would then be verified by NRDO staff and visiting consultant pathologist.

NRDO staffs do not have personal contact with the patients and are not involved in the clinical management of the patients.

The Cancer Registry adopted the International Classification of Diseases for Oncology, 2nd Edition (ICD-O-2) for the classification of primary sites and morphology during the period 1993 to 2002. From 2003 onwards, cases of cancer diagnosed were classified using the International Classification of Diseases for Oncology, 3rd Edition (ICD-O-3).

Cases of carcinoma-in-situ were registered but not included in the computation of incidence rates. Those which progressed to be invasive at a later stage would be re-registered in the year they were diagnosed as invasive carcinomas.

This report is based primarily on cancers registered in Singapore with the date of diagnosis falling within the period 1/1/2009 - 31/12/2013. The data reported are as at 14th May 2014.

All the results refer only to the resident population (citizens and permanent residents) only.

Population Denominators

In this report, we have used the population denominators obtained from Department of Statistics (DOS) to compute the rates. DOS releases mid-year population estimates annually and these population denominators are widely used in official publications in Singapore, including those published by the Ministry of Health. Segi's World Population was used for direct standardisation to calculate age-standardised rates.

Survival

Calculation of survival follows the methodology in 'Cancer Survival in Singapore, 1968-2007' except that the life table used to generate expected survival for 2003-2013 were obtained from DOS.

In addition, the Brenner method is now used for age-standardisation[1]. This was done so that age-standardised survival could still be obtained even if none of the patients within one or more age strata was followed up over the entire period of interest. Furthermore, this method also assures that age-adjustment using the study's population own age-distribution yields exactly the same result as obtained in the crude analysis.

The site-specific age groups in the distribution tables were based on the age categories for weights used to obtain age-standardised survival.

[1] H. Brenner et al. An alternative approach to age adjustment of cancer survival rates. *European Journal of Cancer* 40 (2004), 2317–2322.

5 OVERALL FINDINGS

5.1 Notifications by Year of Diagnosis

For the period 2009 to 2013, the number of notifications per year had increased year on year (Table 1).

Table 1: Number of Incident Cancers by Year of Diagnosis, 2009-2013

Year of diagnosis	2009	2010	2011	2012	2013	2009-2013
No. of notifications	10,817	11,367	11,653	12,124	12,693	58,654

5.2 Incidence of Cancers for the Period, 2009-2013

A total number of 58,654 incident cases were diagnosed among the Resident population during the period 2009-2013. Of these, 28,475 (48.5%) and 30,179 (51.5%) were reported in males and females respectively (Table 2).

Table 2: Incidence of Cancers by Gender, 2009-2013

Gender	Number	%	CR (95% CI)	ASR (95% CI)
Male	28,475	48.55	304.7 (301.2-308.2)	228.9 (226.2-231.7)
Female	30,179	51.45	314.0 (310.4-317.5)	213.4 (210.9-215.9)

The crude incidence rates for total male and female cancer patients for the period 2009-2013 were 304.7 and 314 per 100, 000 Singapore resident population per year respectively. The corresponding age-standardised incidence rates were 228.9 and 213.4 per 100,000 person-years.

Among the males, the crude and age-standardised rates were highest in Chinese followed by Malays and Indians. This was also seen in the females (Table 3).

Table 3: Age-Standardised Incidence Rates for All Cancers by Ethnic Groups and Gender, 2009-2013

Gender	Race	Number	CR (95% CI)	ASR (95% CI)
Male	Chinese	23,947	347.7 (343.3-352.1)	239.4 (236.2-242.5)
	Malay	2,454	194.7 (187.0-202.4)	188.9 (181.2-196.6)
	Indian	1,265	140.5 (132.7-148.2)	139.9 (131.8-148.1)
	All	28,475	304.7 (301.2-308.2)	228.9 (226.2-231.7)
Female	Chinese	24,890	347.1 (342.8-351.4)	218.2 (215.4-221.1)
	Malay	3,038	238.9 (230.4-247.4)	199.4 (192.0-206.7)
	Indian	1,555	184.6 (175.4-193.8)	170.5 (161.8-179.2)
	All	30,179	314.0 (310.4-317.5)	213.4 (210.9-215.9)

5.3 Ten Most Frequent Cancers, 2009-2013

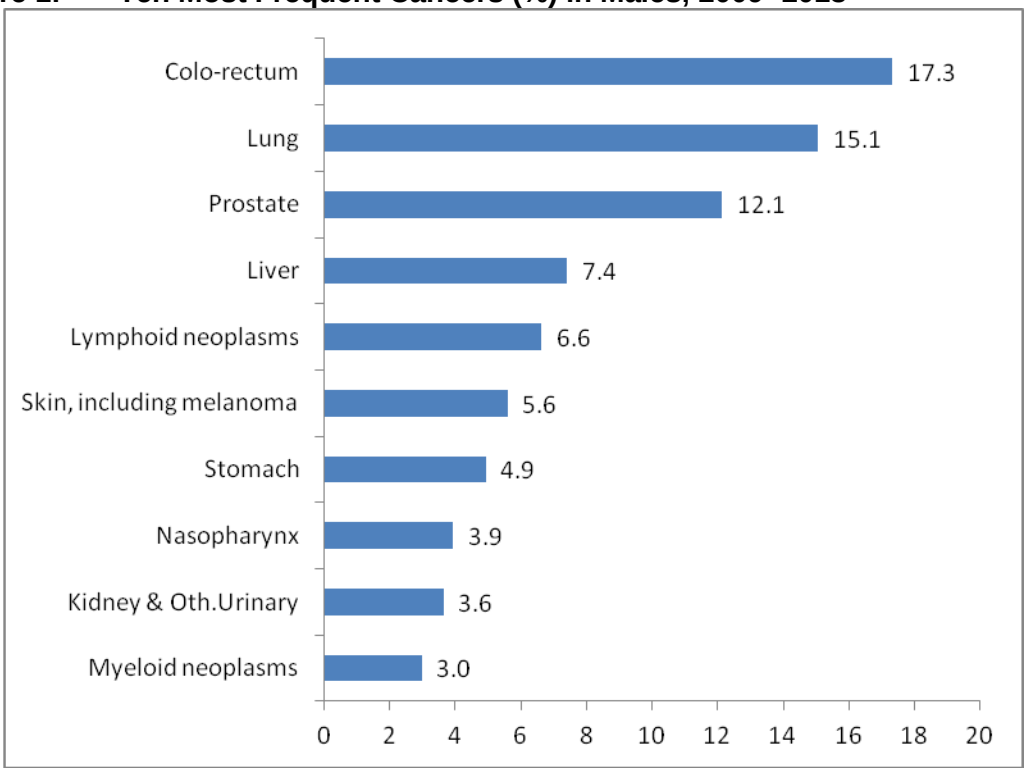
Similar to the findings of the trend report for the period 2008-2012, colorectal, lung and prostate cancer were the most common cancers among the male resident population (Table 4, Figure 1).

Table 4: Ten Most Frequent Cancers in Males, 2009-2013

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Colo-rectum	4,934	17.3	52.8 (51.3-54.3)	38.7 (37.6-39.8)
2	Lung	4,287	15.1	45.9 (44.5-47.2)	33.8 (32.7-34.8)
3	Prostate	3,456	12.2	37.0 (35.7-38.2)	28.1 (27.1-29.0)
4	Liver	2,110	7.4	22.6 (21.6-23.5)	16.6 (15.8-17.3)
5	Lymphoid neoplasms	1,888	6.6	20.2 (19.3-21.1)	16.7 (15.9-17.5)
6	Skin, including melanoma	1,595	5.6	17.1 (16.2-17.9)	12.5 (11.9-13.1)
7	Stomach	1,407	4.9	15.1 (14.3-15.8)	11.1 (10.5-11.7)
8	Nasopharynx	1,119	3.9	12.0 (11.3-12.7)	8.4 (7.9-8.9)
9	Kidney & Other Urinary	1037	3.7	11.1 (10.4-11.8)	8.1 (7.6-8.6)
10	Myeloid neoplasms	849	3.0	9.1 (8.5-9.7)	7.1 (6.6-7.6)
	Others	5,793	20.3		
	All	28,475	100.0	304.7 (301.2-308.2)	228.9 (226.2-231.7)

*Other urinary refers to renal pelvis, ureter, urethra etc.

Figure 1: Ten Most Frequent Cancers (%) in Males, 2009 -2013

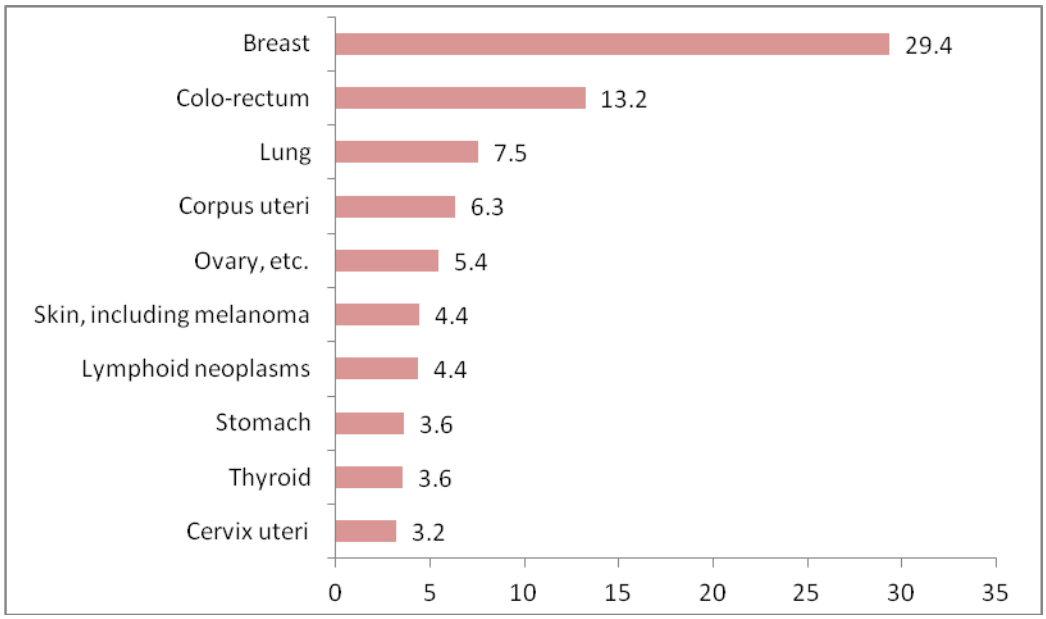


Among female residents, breast, colorectal and lung cancer were the top ranked cancers (Table 5, Figure 2). The findings for both males and females were similar to the trends reported for the period 2008-2012.

Table 5: Ten Most Frequent Cancers in Females, 2009-2013

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Breast	8,860	29.4	92.2 (90.3-94.1)	63.4 (62.1-64.7)
2	Colo-rectum	3,995	13.2	41.6 (40.3-42.8)	26.3 (25.5-27.1)
3	Lung	2,271	7.5	23.6 (22.7-24.6)	14.9 (14.2-15.5)
4	Corpus uteri	1,910	6.3	19.9 (19.0-20.8)	13.7 (13.1-14.3)
5	Ovary, etc.	1,640	5.4	17.1 (16.2-17.9)	12.4 (11.8-13.0)
6	Skin, including melanoma	1,331	4.4	13.8 (13.1-14.6)	8.4 (8.0-8.9)
7	Lymphoid neoplasms	1,320	4.4	13.7 (13.0-14.5)	10.8 (10.1-11.4)
8	Stomach	1,083	3.6	11.3 (10.6-11.9)	6.9 (6.4-7.3)
9	Thyroid	1,077	3.6	11.2 (10.5-11.9)	8.4 (7.8-8.9)
10	Cervix uteri	958	3.2	10.0 (9.3-10.6)	6.9 (6.4-7.3)
	Others	5,734	19.0		
	All	30,179	100.0	314.0 (310.4-317.5)	213.4 (210.9-215.9)

Figure 2: Ten Most Frequent Cancers in Singapore Females (%), 2009 – 2013



5.4 Highest Ranking Cancers in Different Ethnic Groups, 2009-2013

During the period 2009-2013, colorectal, lung and prostate cancer were the three most common male cancers among the Chinese and Indian residents. Among the Malay male residents, lung and colorectal cancer were the two most common cancers, followed by lymphoid neoplasm and prostate cancer (Tables 6, 7 and 8).

Breast cancer was the most common female cancer in each ethnic group. Colorectal cancer was the second most common cancer among the Chinese and Malay females and it was ranked as the third common cancer among Indian females. Cancer of Corpus uteri was the second common cancer in Indian females. Lung cancer and lymphoid neoplasms were the third most common cancers among Chinese and Malay females respectively.

Due to the small numbers of Indian residents, the confidence intervals of the incidence rates were wider.

Table 6: Highest Ranking Cancers among Chinese Residents, 2009-2013

Male	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Colo-rectum	4,315	18.0	62.7 (60.8-64.5)	41.9 (40.7-43.2)
2	Lung	3,634	15.2	52.8 (51.1-54.5)	35.3 (34.1-36.4)
3	Prostate	2,974	12.4	43.2 (41.6-44.7)	29.4 (28.4-30.5)
4	Liver	1,821	7.6	26.4 (25.2-27.7)	17.6 (16.8-18.5)
5	Lymphoid neoplasms	1,365	5.7	19.8 (18.8-20.9)	15.4 (14.5-16.3)
6	Stomach	1,263	5.3	18.3 (17.3-19.4)	12.3 (11.6-13.0)
7	Skin, including melanoma	1,260	5.3	18.3 (17.3-19.3)	12.4 (11.7-13.1)
8	Nasopharynx	1,015	4.2	14.7 (13.8-15.6)	9.9 (9.2-10.5)
9	Kidney & Other Urinary	881	3.7	12.8 (11.9-13.6)	8.6 (8.0-9.2)
10	Pancreas	683	2.8	9.9 (9.2-10.7)	6.6 (6.1-7.1)
	Others	4,736	19.8		
	All	23,947	100.0	347.7 (343.3-352.1)	239.4 (236.2-242.5)

Female	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Breast	7,100	28.5	99.0 (96.7-101.3)	64.3 (62.8-65.8)
2	Colo-rectum	3,485	14.0	48.6 (47.0-50.2)	27.8 (26.9-28.8)
3	Lung	2,012	8.1	28.1 (26.8-29.3)	16.0 (15.2-16.7)
4	Corpus uteri	1,508	6.1	21.0 (20.0-22.1)	13.6 (12.9-14.3)
5	Ovary, etc.	1,274	5.1	17.8 (16.8-18.7)	12.3 (11.6-13.0)
6	Skin, including melanoma	1,164	4.7	16.2 (15.3-17.2)	8.8 (8.3-9.4)
7	Lymphoid neoplasms	975	3.9	13.6 (12.7-14.4)	9.9 (9.2-10.7)
8	Stomach	973	3.9	13.6 (12.7-14.4)	7.4 (6.9-7.9)
9	Thyroid	852	3.4	11.9 (11.1-12.7)	8.6 (8.0-9.2)
10	Cervix uteri	782	3.1	10.9 (10.1-11.7)	7.0 (6.5-7.6)
	Others	4,765	19.2		
	All	24,890	100.0	347.1 (342.8-351.4)	218.2 (215.4-221.1)

Table 7: Highest Ranking Cancers among Malay Residents, 2009-2013

Male	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Lung	444	18.1	35.2 (31.9-38.5)	34.3 (30.9-37.6)
2	Colo-rectum	354	14.4	28.1 (25.2-31.0)	27.0 (24.1-30.0)
3	Lymphoid neoplasms	316	12.9	25.1 (22.3-27.8)	24.6 (21.8-27.4)
4	Prostate	229	9.3	18.2 (15.8-20.5)	19.4 (16.8-21.9)
5	Liver	179	7.3	14.2 (12.1-16.3)	13.6 (11.5-15.7)
6	Myeloid neoplasms	109	4.4	8.6 (7.0-10.3)	8.2 (6.6-9.8)
7	Bladder	85	3.5	6.7 (5.3-8.2)	6.6 (5.2-8.1)
8	Nasopharynx	83	3.4	6.6 (5.2-8.0)	5.5 (4.3-6.8)
9	Kidney & Oth.Urinary	80	3.3	6.3 (5.0-7.7)	6.0 (4.6-7.4)
10	Pancreas	64	2.6	5.1 (3.8-6.3)	5.0 (3.7-6.2)
	Others	511	20.8		
	All	2,454	100.0	194.7 (187.0-202.4)	188.9 (181.2-196.6)

Female	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Breast	936	30.8	73.6 (68.9-78.3)	58.7 (54.8-62.5)
2	Colo-rectum	339	11.2	26.7 (23.8-29.5)	22.4 (19.9-24.9)
3	Lymphoid neoplasms	234	7.7	18.4 (16.0-20.8)	16.5 (14.3-18.7)
4	Ovary, etc.	233	7.7	18.3 (16.0-20.7)	14.9 (12.9-16.8)
5	Corpus uteri	226	7.4	17.8 (15.5-20.1)	14.3 (12.4-16.2)
6	Lung	176	5.8	13.8 (11.8-15.9)	11.0 (9.3-12.7)
7	Thyroid	121	4.0	9.5 (7.8-11.2)	8.1 (6.6-9.6)
8	Cervix uteri	110	3.6	8.6 (7.0-10.3)	7.2 (5.8-8.6)
9	Myeloid neoplasms	85	2.8	6.7 (5.3-8.1)	5.9 (4.6-7.2)
10	Liver	65	2.1	5.1 (3.9-6.4)	4.5 (3.4-5.6)
	Others	513	16.9		
	All	3,038	100.0	238.9 (230.4-247.4)	199.4 (192.0-206.7)

Table 8: Highest Ranking Cancers among Indian Residents, 2009-2013

Male	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Colo-rectum	180	14.2	20.0 (17.1-22.9)	19.5 (16.5-22.5)
2	Prostate	151	11.9	16.8 (14.1-19.4)	18.9 (15.8-22.1)
3	Lung	150	11.9	16.7 (14.0-19.3)	17.1 (14.3-20.0)
4	Lymphoid neoplasms	147	11.6	16.3 (13.7-19.0)	16.3 (13.5-19.1)
5	Liver	76	6.0	8.4 (6.5-10.3)	8.7 (6.6-10.7)
6	Stomach	66	5.2	7.3 (5.6-9.1)	6.9 (5.1-8.7)
7	Kidney & Oth.Urinary	53	4.2	5.9 (4.3-7.5)	5.7 (4.1-7.3)
8	Myeloid neoplasms	48	3.8	5.3 (3.8-6.8)	4.9 (3.4-6.3)
9	Bladder	39	3.1	4.3 (3.0-5.7)	4.4 (3.0-5.9)
10	Pancreas	35	2.8	3.9 (2.6-5.2)	3.7 (2.4-5.0)
	Others	320	25.3		
	All	1,265	100.0	140.5 (132.7-148.2)	139.9 (131.8-148.1)
Female	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Female Breast	589	37.9	69.9 (64.3-75.6)	61.4 (56.3-66.5)
2	Corpus uteri	137	8.8	16.3 (13.5-19.0)	15.1 (12.5-17.7)
3	Colo-rectum	108	6.9	12.8 (10.4-15.2)	12.1 (9.7-14.4)
4	Ovary, etc.	101	6.5	12.0 (9.7-14.3)	11.1 (8.9-13.4)
5	Lymphoid neoplasms	81	5.2	9.6 (7.5-11.7)	9.8 (7.6-12.0)
6	Thyroid	63	4.1	7.5 (5.6-9.3)	6.2 (4.6-7.8)
7	Lung	55	3.5	6.5 (4.8-8.3)	6.4 (4.7-8.2)
8	Myeloid neoplasms	37	2.4	4.4 (3.0-5.8)	4.1 (2.7-5.5)
9	Stomach	36	2.3	4.3 (2.9-5.7)	4.1 (2.7-5.5)
10	Pancreas	35	2.3	4.2 (2.8-5.5)	4.1 (2.7-5.5)
	Others	313	20.1		
	All	1,555	100.0	184.6 (175.4-193.8)	170.5 (161.8-179.2)

5.5 Mortality Rates by Gender, 2009-2013

Although colorectal cancer and breast cancer were the most common cancers respectively in the male and female resident population, lung cancer and breast cancer had the highest mortality rates in males and females respectively, based on the mortality data from the Registry of Births and Deaths (RBD), Ministry of Home Affairs (MHA) (Tables 9 and 10).

Table 9: Ten Most Frequent Cancer Deaths in Males, 2009-2013 (Source: RBD, MHA)

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Lung	3,724	27.2	39.8 (38.6-41.1)	29.4 (28.5-30.4)
2	Colo-rectum	1,949	14.2	20.9 (19.9-21.8)	15.5 (14.8-16.2)
3	Liver	1,709	12.5	18.3 (17.4-19.2)	13.4 (12.8-14.0)
4	Stomach	913	6.7	9.8 (9.1-10.4)	7.1 (6.6-7.6)
5	Prostate	700	5.1	7.5 (6.9-8.0)	5.6 (5.2-6.0)
6	Pancreas	700	5.1	7.5 (6.9-8.0)	5.5 (5.1-5.9)
7	Nasopharynx	556	4.1	5.9 (5.5-6.4)	4.2 (3.9-4.6)
8	Lymphomas	415	3.0	4.4 (4.0-4.9)	3.3 (3.0-3.6)
9	Kidney & Oth.Urinary	386	2.8	4.1 (3.7-4.5)	2.9 (2.6-3.2)
10	Oesophagus	370	2.7	4.0 (3.6-4.4)	2.9 (2.6-3.2)
	All	13,692	100.0	146.5 (144.1-149.0)	108.4 (106.5-110.2)

Table 10: Ten Most Frequent Cancer Deaths in Females, 2009-2013 (Source: RBD, MHA)

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Breast	2,052	18.1	21.3 (20.4-22.3)	14.2 (13.6-14.8)
2	Lung	1,904	16.8	19.8 (18.9-20.7)	12.0 (11.4-12.6)
3	Colo-rectum	1,715	15.1	17.8 (17.0-18.7)	10.5 (9.9-11.0)
4	Liver	713	6.3	7.4 (6.9-8.0)	4.3 (4.0-4.7)
5	Stomach	690	6.1	7.2 (6.6-7.7)	4.2 (3.9-4.5)
6	Pancreas	663	5.8	6.9 (6.4-7.4)	4.2 (3.9-4.5)
7	Ovary, etc.	583	5.1	6.1 (5.6-6.6)	4.0 (3.6-4.3)
8	Cervix uteri	350	3.1	3.6 (3.3-4.0)	2.3 (2.1-2.6)
9	Leukaemias	280	2.5	2.9 (2.6-3.3)	2.0 (1.8-2.3)
10	Lymphomas	257	2.3	2.7 (2.3-3.0)	1.7 (1.5-1.9)
	All	11,368	100.0	118.3 (116.1-120.4)	73.5 (72.1-74.9)

6. Commentary on Selected Cancer Sites

6.1 Breast Cancer

Incidence

The age-standardised incidence rate of newly diagnosed breast cancers in females had increased significantly over the years. It had increased almost three-fold from 22.6 per 100,000 in 1974-1978 to 63.4 per 100,000 in 2009-2013 (Figure 1). The age-standardised incidence rate of non-invasive (in situ) breast cancer was 11.6 per 100,000 in 2004-08 and 10.9 per 100,000 in 2009-13 respectively.

Figure 1: Age-Standardised Incidence Rates for Breast Cancer, 1974-2013

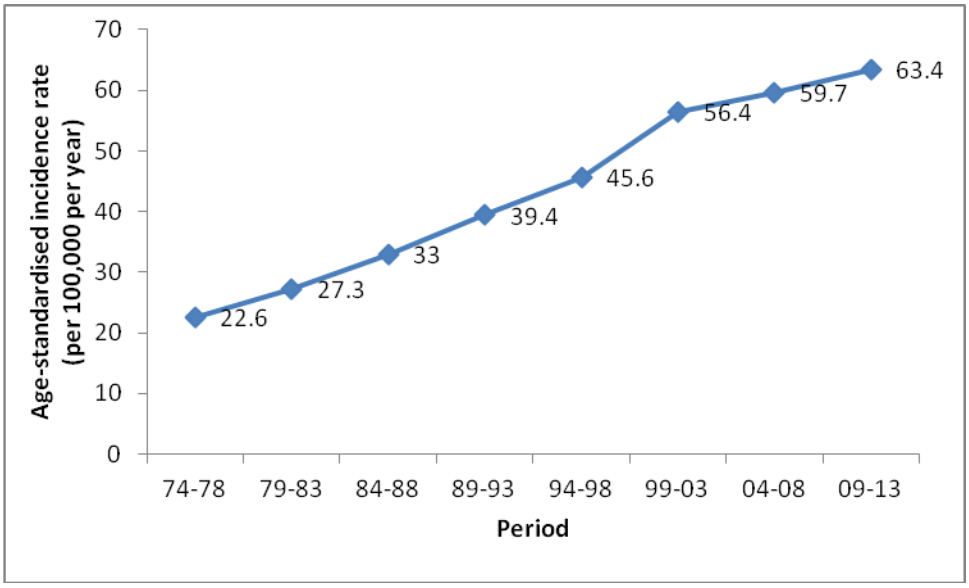


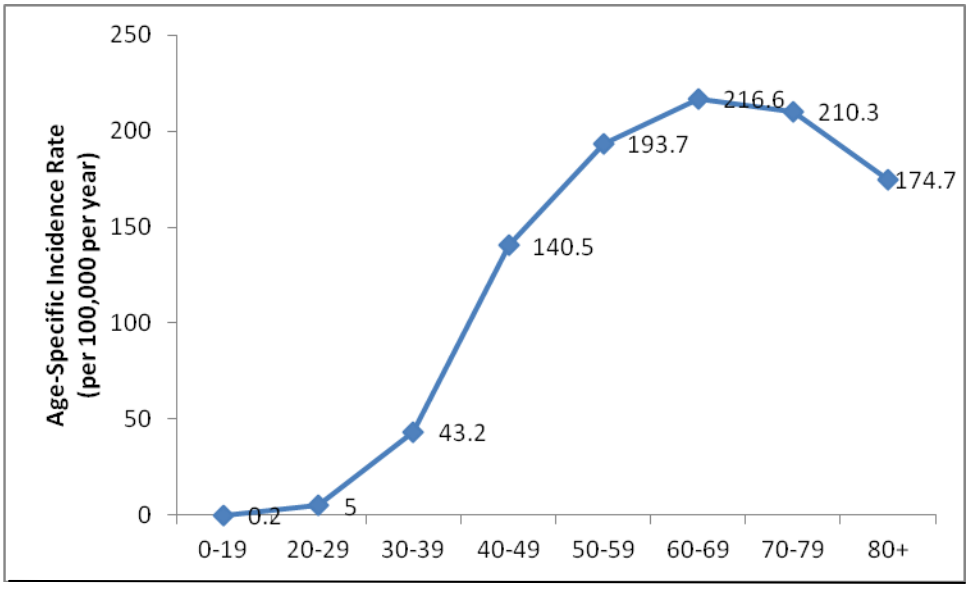
Table 1: Crude and Age-Standardised Incidence Rates for Breast Cancer by Ethnic Group, 2009-2013

Ethnic Group	No.	CIR (95% CI)	ASIR (95% CI)
Chinese	7100	99.0 (96.7-101.3)	64.3 (62.8-65.8)
Malay	936	73.6 (68.9-78.3)	58.7 (54.8-62.5)
Indian	589	69.9 (64.3-75.6)	61.4 (56.3-66.5)
Others	235	72.0 (62.8-81.2)	73.3 (62.3-84.2)
All	8860	92.2 (90.3-94.1)	63.4 (62.1-64.7)

Age at Diagnosis

In the period of 2009-2013, the age-specific incidence rate increased sharply from age 30 onwards, and peaked in the 60-69 age group. The rate then gradually declined in the 70 and above age groups (Figure 2).

Figure 2: Age-Specific Incidence Rates for Breast Cancer, 2009-2013



Mortality Rates

The age-standardised mortality rates have remained relatively stable since 1989-1993.

Figure 3: Age-Standardised Mortality Rates for Breast Cancer, 1974-2013

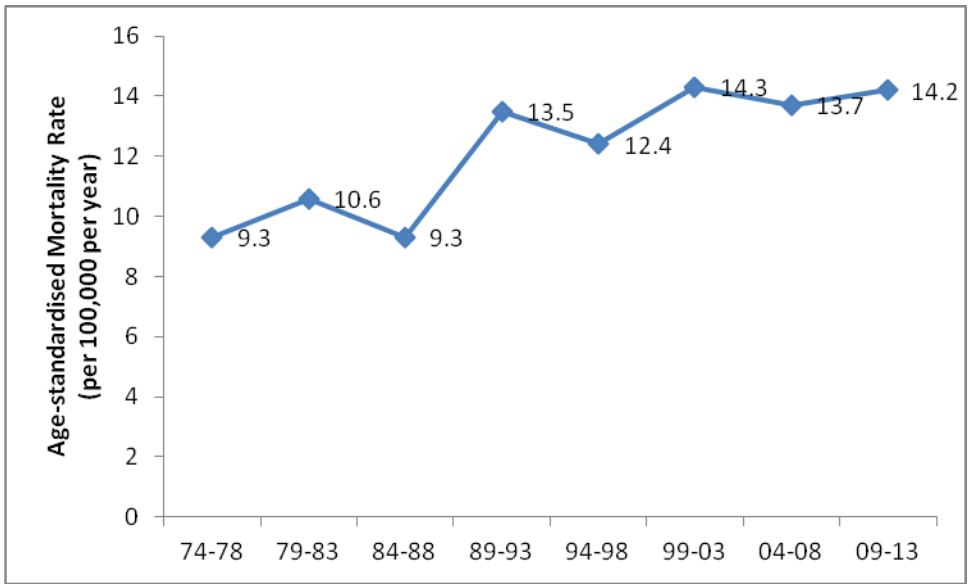


Table 2: Ethnic distribution of breast cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Ethnicity	No. of cases	Percent	No. of cases	Percent
Chinese	5,892	81.9	7,100	80.1
Malay	784	10.9	936	10.6
Indian	392	5.4	589	6.6
Others	126	1.8	235	2.7
Total	7,194	100.0	8,860	100.0

Table 3: Age distribution of breast cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	1	0.01	1	0.01
15-44	1,601	22.3	1,638	18.5
45-54	2,468	34.3	2,679	30.2
55-64	1,675	23.3	2,512	28.4
65-74	876	12.2	1,235	13.9
75+	573	7.9	795	9.0
Total	7,194	100.0	8,860	100.0

Table 4: 5-year Age-Standardised Observed Survival of Breast Cancer by Ethnicity and Age Group 2004-2013

	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	67.23	66.13,68.30	70.25	69.30, 71.17
Chinese	68.97	67.78,70.13	72.14	71.11, 73.14
Malay	50.11	46.52,53.58	54.76	51.62, 57.78
Indian	66.11	56.70,73.79	67.15	62.90, 71.03

Age Group	**5yr OS**	**95% CI**	**5yr OS**	**95% CI**
15-44	86.47	84.65,88.08	89.20	87.59, 90.62
45-54	85.14	83.61,86.55	85.62	84.22, 86.90
55-64	78.78	76.54,80.84	80.91	79.12, 82.57
65-74	73.01	69.69,76.03	74.21	71.39, 76.79
75+	46.34	41.64,50.90	53.47	49.50, 57.27

There was a significant increase in the survival of all breast cancer patients and among all ethnicities.

There was a significant increase in the survival of breast cancer patients aged 55-64 and aged 75+.

6.2 Cervical Cancer

Incidence

A total of 958 new cases of cervical cancer were diagnosed from 2009-2013. The incidence for cancer of the cervix has significantly declined since 1994-1998. The age-standardised incidence rates (ASR) dropped from 16.8 per 100,000 in 1974-1978 to 6.9 per 100,000 in 2009-2013 (Figure 4). Indian women had lower risk of developing cervical cancer compared to Chinese and Malay women (Table 5).

Figure 4: Age-Standardised Incidence Rates for Cervical Cancer, 1974-2013

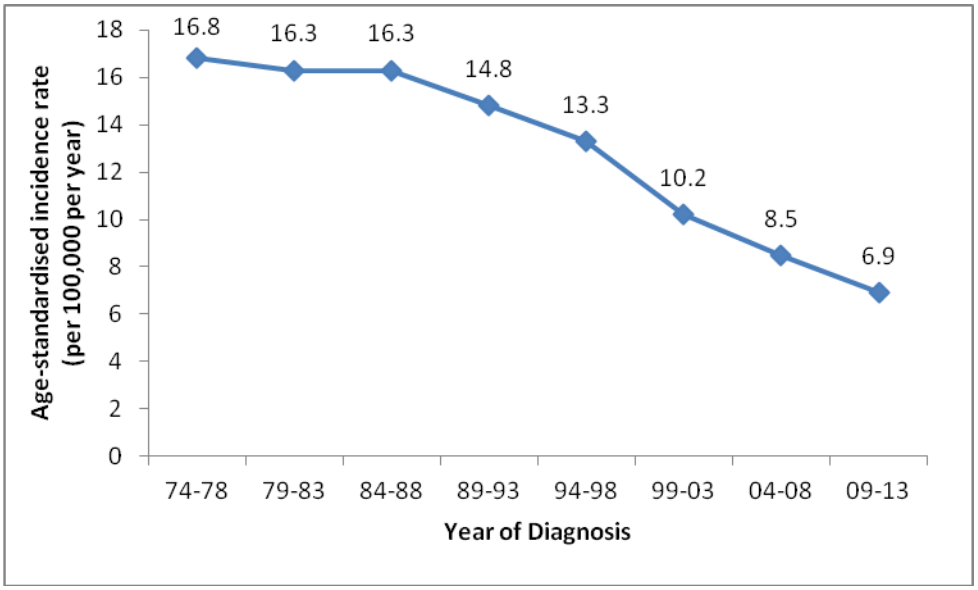


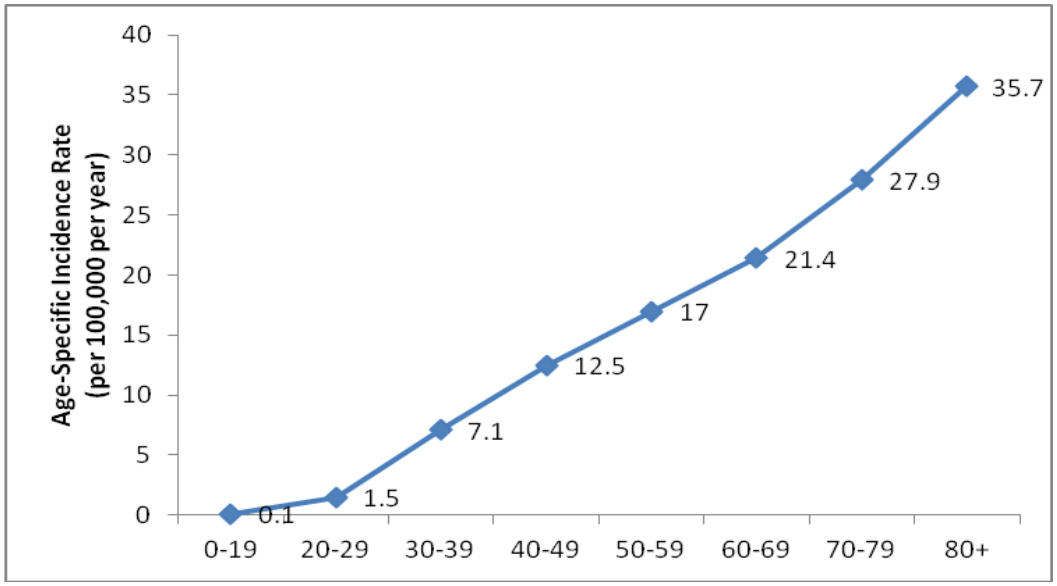
Table 5: Crude and Age-Standardised Incidence Rates for Cervical Cancer by Ethnic Group, 2009-2013

Ethnic Group	No.	CIR (95% CI)	ASIR(95% CI)
Chinese	782	10.9 (10.1-11.7)	7.0 (6.5-7.6)
Malay	110	8.6 (7.0-10.3)	7.2 (5.8-8.6)
Indian	33	3.9 (2.6-5.3)	3.7 (2.4-5.0)
Others	33	10.1 (6.7-13.6)	8.5 (5.2-11.7)
All	958	10.0 (9.3-10.6)	6.9 (6.4-7.3)

Age at Diagnosis

The age-specific incidence rate was lowest in the age group of 0-19, at 0.1 per 100,000 compared to 27.9 per 100,000 in women aged 70-79 (Figure 5).

Figure 5: Age-Specific Incidence Rate for Cervical Cancer, 2009-2013



Mortality Rates

Cervical cancer has the 8th highest cancer mortality rate in Singapore. The age-standardised mortality rate for cervical cancer was 6.8 per 100,000 per year for the period 1974-1978, and this decreased progressively to 2.3 per 100,000 for the period 2009-2013 (Figure 6). There were 350 deaths from cervical cancer in the period 2009-2013.

Figure 6: Age-standardised Mortality Rates for Cervical Cancer, 1974-2013

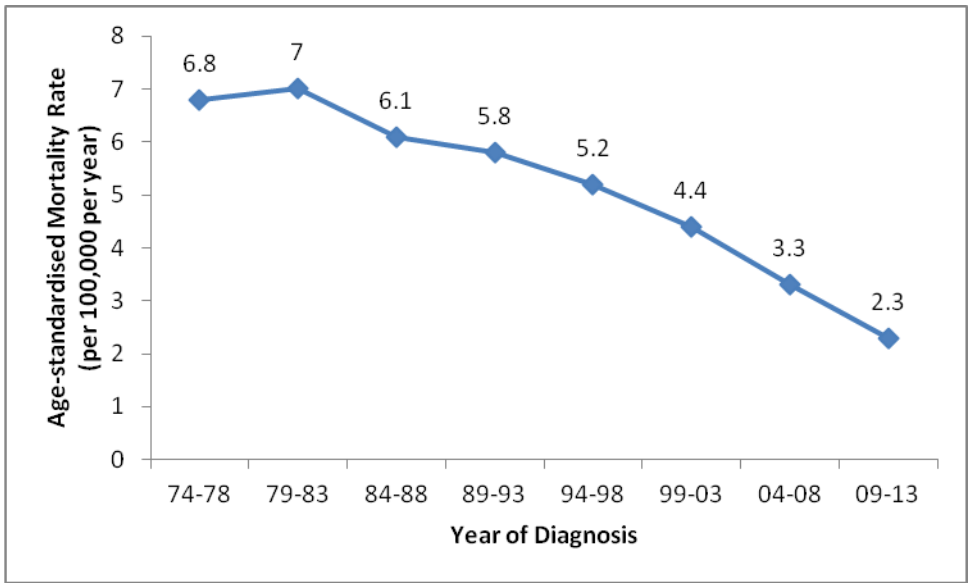


Table 6: Ethnic distribution of cervical cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Ethnicity	No. of cases	Percent	No. of cases	Percent
Chinese	846	84.3	782	81.6
Malay	110	11.0	110	11.5
Indian	24	2.4	33	3.5
Others	23	2.3	33	3.4
Total	1003	100.0	958	100.0

Table 7: Age distribution of cervical cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	0	0.0	1	0.1
15-44	219	21.8	224	23.4
45-54	265	26.4	226	23.6
55-64	191	19.1	212	22.1
65-74	199	19.8	156	16.3
75+	129	12.9	139	14.5
Total	1,003	100.0	958	100.0

Table 8: 5-year Age-Standardised Observed Survival of Cervical Cancer by Ethnicity and Age Group, 2004-2013

	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	58.03	55.14, 60.80	54.43	51.46, 57.29
Chinese	59.78	56.68, 62.73	56.31	53.08,59.41
Malay	42.93	33.73,51.79	41.08	31.90, 50.03
Indian	49.65	29.44,66.97	37.87	21.21, 54.44

Age Group	**5yr OS**	**95% CI**	**5yr OS**	**95% CI**
15-44	81.25	75.58,85.73	80.14	74.09, 84.92
45-54	70.56	64.88,75.49	71.36	65.01, 76.77
55-64	62.56	55.40,68.90	65.35	58.10, 71.65
65-74	57.18	49.66,64.00	52.60	44.79, 59.82
75+	31.31	22.60,40.39	27.86	20.80, 35.35

There was a significant decrease in the survival of cervical cancer patients among all ethnicities from 2004-2008 to 2009-2013.

6.3 Colorectal Cancer

Incidence

A total of 8,929 new cases of colorectal cancer were diagnosed from 2009-2013. The age-standardised incidence rates for colorectal cancer for both males and females have climbed consistently since 1974. However, the rates appeared to have plateaued since 2004-2008 (Figure 7).

Amongst the 3 ethnic groups, the age-standardised incidence rate was highest among the Chinese (Table 9).

Figure 7: Age-standardised Incidence Rate for Colorectal Cancer by Gender, 1974-2013

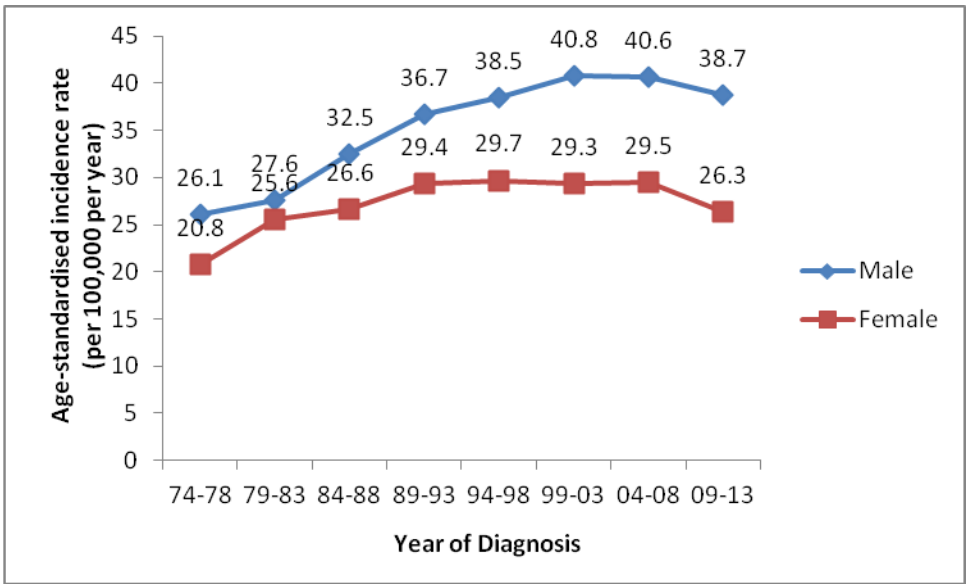


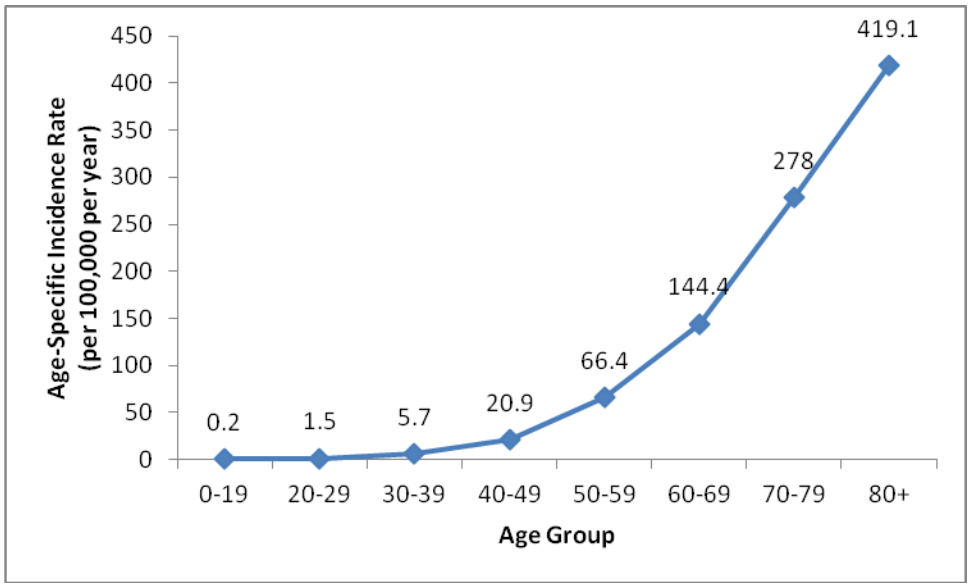
Table 9: Crude and Age-standardised Incidence Rates for Colorectal Cancer by Ethnic Group, 2009-2013

Ethnic Group	No.	CIR (95% CI)	ASIR (95% CI)
Chinese	7800	55.5 (54.3-56.7)	34.3 (33.5-35.1)
Malay	693	27.4 (25.3-29.4)	24.6 (22.7-26.5)
Indian	288	16.5 (14.6-18.4)	15.7 (13.8-17.5)
Others	148	23.7 (19.9-27.6)	30.9 (25.5-36.4)
All	8929	47.1 (46.1-48.1)	32.1 (31.4-32.8)

Age at Diagnosis

The age-specific incidence rate was lowest in the age group of 0-19, at 0.2 per 100,000 compared to 419.1 per 100,000 in the age group of 80 and above (Figure 8).

Figure 8: Age-Specific Incidence Rate for Colorectal Cancer, 2009-2013



Mortality Rates

Colorectal cancer has the 2nd highest cancer mortality rate among males and 3rd highest cancer mortality rate among females in Singapore. The age-standardised mortality rate for colorectal cancer appeared to have declined for both males and females. This is mainly due to advances in treatment such as adjuvant therapy combining chemo and radiotherapy, and total mesorectal excision (Figure 9). There were 3,664 deaths from colorectal cancer for the period 2009-2013.

Figure 9: Age-standardised Mortality Rates for Colorectal Cancer, 1974-2013

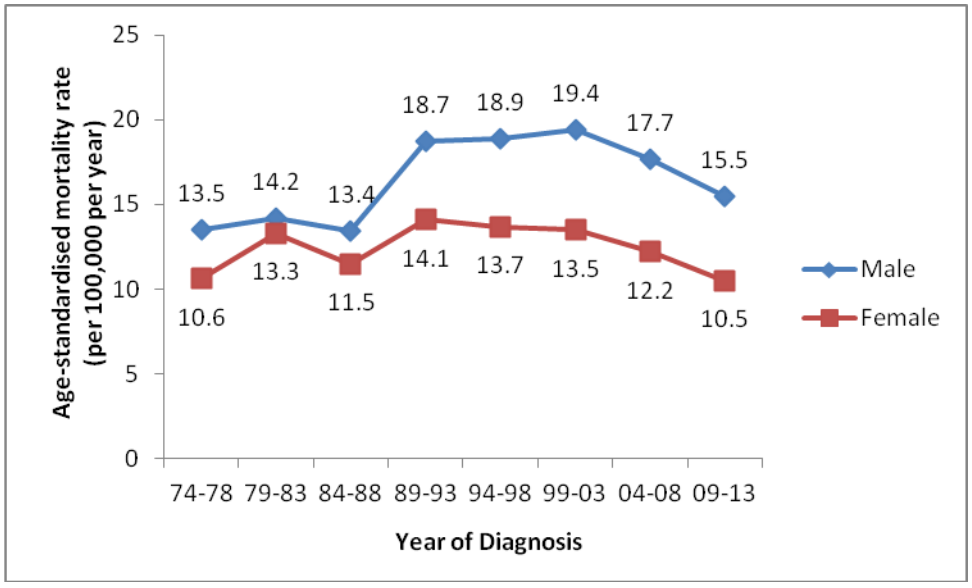


Table 10: Ethnic distribution of colorectal cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Ethnicity (Males)	No. of cases	Percent	No. of cases	Percent
Chinese	3,616	87.9	4,315	87.5
Malay	299	7.3	354	7.2
Indian	149	3.6	180	3.6
Others	50	1.2	85	1.7
Total	4,114	100.0	4,934	100.0

Period	2004-2008		2009-2013	
Ethnicity (Females)	No. of cases	Percent	No. of cases	Percent
Chinese	3,238	90.1	3,485	87.2
Malay	232	6.5	339	8.5
Indian	88	2.4	108	2.7
Others	36	1.0	63	1.6
Total	3,594	100.0	3,995	100.0

Table 11: Age distribution of colorectal cancer patients, 2004-2013

Males	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	0	0.0	1	0.02
15-44	231	5.6	228	4.6
45-54	638	15.5	708	14.3
55-64	1,037	25.2	1,405	28.5
65-74	1,191	29.0	1,380	28.0
75+	1,017	24.7	1,212	24.6
Total	4,114	100.0	4,934	100.0

Females	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	0	0.0	1	0.03
15-44	185	5.2	217	5.4
45-54	522	14.5	532	13.3
55-64	764	21.3	949	23.8
65-74	898	25.0	914	22.9
75+	1,225	34.1	1,382	34.6
Total	3,594	100.0	3,995	100.0

Table 12: 5-year Age-Standardised Observed Survival of Colorectal Cancer by Ethnicity and Age Group 2004-2013

Males	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	44.97	43.38,46.54	50.32	48.86, 51.75
Chinese	45.11	43.42,46.78	50.45	48.90,51.98
Malay	38.81	32.76,44.82	43.83	38.29,49.23
Indian	51.54	42.70,59.68	56.19	48.67,63.03

Age Group	**5yr OS**	**95% CI**	**5yr OS**	**95% CI**
15-44	61.80	55.02,67.86	66.04	59.20, 72.01
45-54	59.72	55.58,63.61	65.21	61.53, 68.63
55-64	56.50	53.18,59.68	62.13	59.33, 64.79
65-74	46.39	43.38, 49.34	52.78	49.96, 55.53
75+	30.90	27.86, 33.98	35.49	32.59, 38.40

Females	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	49.87	48.12,51.59	53.50	51.91, 55.07
Chinese	50.58	48.73,52.39	54.32	52.61,55.99
Malay	36.80	30.53,43.07	40.35	34.77,45.86
Indian	48.18	37.31,58.22	51.91	42.22,60.73

Age Group	**5yr OS**	**95% CI**	**5yr OS**	**95% CI**
15-44	60.24	52.84,66.85	69.28	62.48,75.09
45-54	62.83	58.36,66.96	65.79	61.45,69.77
55-64	60.48	56.54,64.18	64.69	61.39,67.78
65-74	54.04	50.59,57.36	60.20	56.88,63.34
75+	35.15	32.18,38.13	37.15	34.52,39.78

There was a significant increase in the survival of both male and female colorectal cancer patients.

There was a significant increase in the survival of Chinese male and female colorectal cancer patients.

There was a significant increase in the survival of colorectal cancer patients among both males and females aged 55-74.

6.4 Ovarian Cancer

Incidence

A total of 1,640 new cases of ovarian cancer were diagnosed from 2009-2013. The age-standardised incidence rate for ovarian cancer had climbed consistently over the last forty years from 6.7 per 100,000 in 1974-1978 to 12.4 per 100,000 in 2009-2013 (Figure 10).

Amongst the ethnic groups, the age-standardised incidence rate was the highest among the Chinese and Malays (Table 13).

Figure 10: Age-standardised Incidence Rate for Ovarian Cancer, 1974-2013

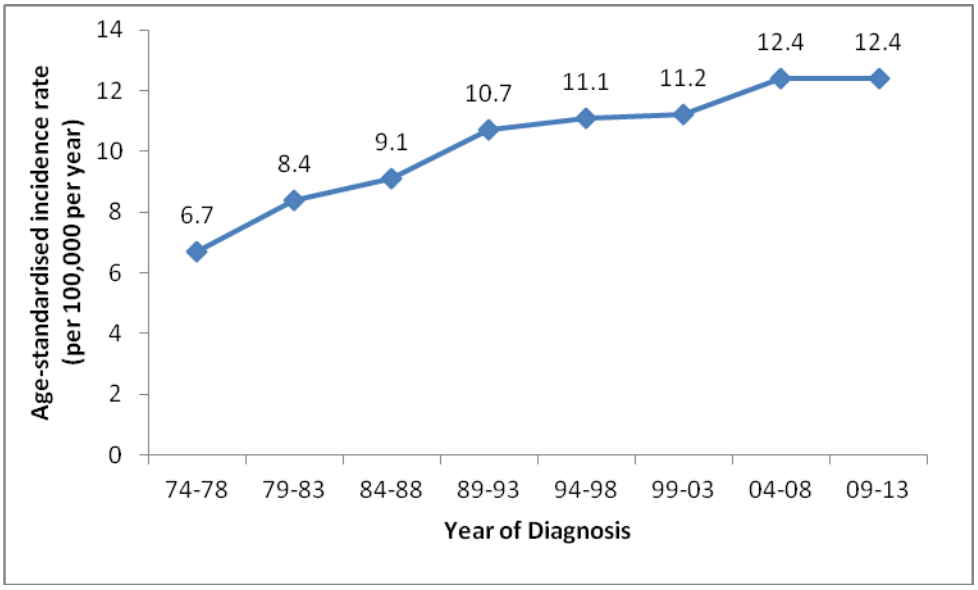


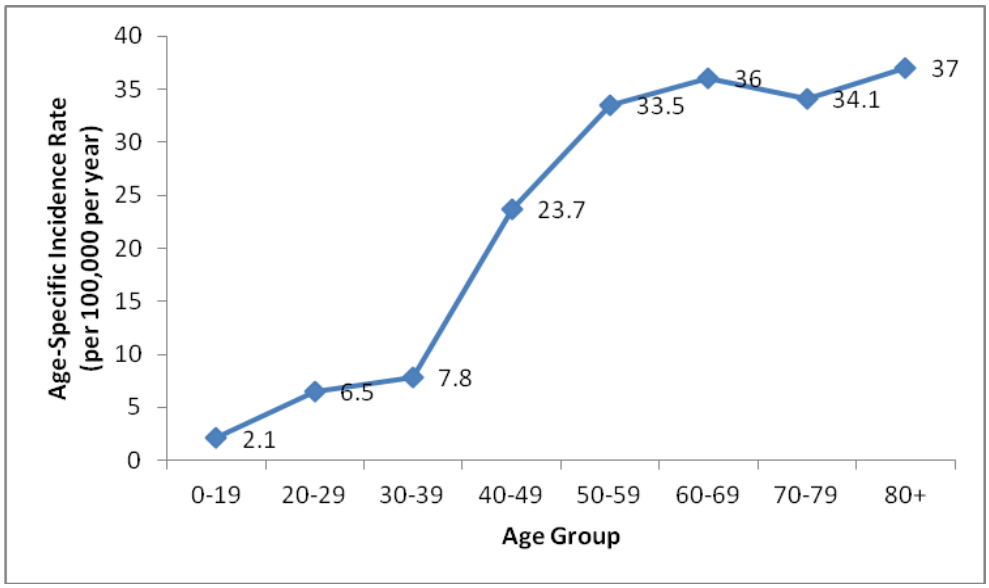
Table 13: Crude and Age-Standardised Incidence Rates for Ovarian Cancer by Ethnic Group, 2009-2013

Ethnic Group	No.	CIR (95% CI)	ASIR (95% CI)
Chinese	1274	17.8 (16.8-18.7)	12.3 (11.6-13.0)
Malay	233	18.3 (16.0-20.7)	14.9 (12.9-16.8)
Indian	101	12.0 (9.7-14.3)	11.1 (8.9-13.4)
Others	32	9.8 (6.4-13.2)	8.4 (5.0-11.8)
All	1640	17.1 (16.2-17.9)	12.4 (11.8-13.0)

Age at Diagnosis

The age-specific incidence rate was lowest in the age group of 0-19, at 2.1 per 100,000 compared to 37 per 100,000 in women aged 80 and above. Of note, the age-specific incidence rate rose steeply from 7.8 per 100,000 in the age group of 30-39 to 23.7 per 100,000 in the age group 40-49 (Figure 11).

Figure 11: Age-Specific Incidence Rate for Ovarian Cancer, 2009-2013



Mortality Rates

Ovarian cancer has the 7th highest cancer mortality in females in Singapore. The age-standardised mortality rate for ovarian cancer had remained fairly stable from 1994-1998 to 2009-2013 (Figure 12). There were 583 deaths from ovarian cancer for the period 2009-2013.

Figure 12: Age-standardised Mortality Rates for Ovarian Cancer, 1974-2013

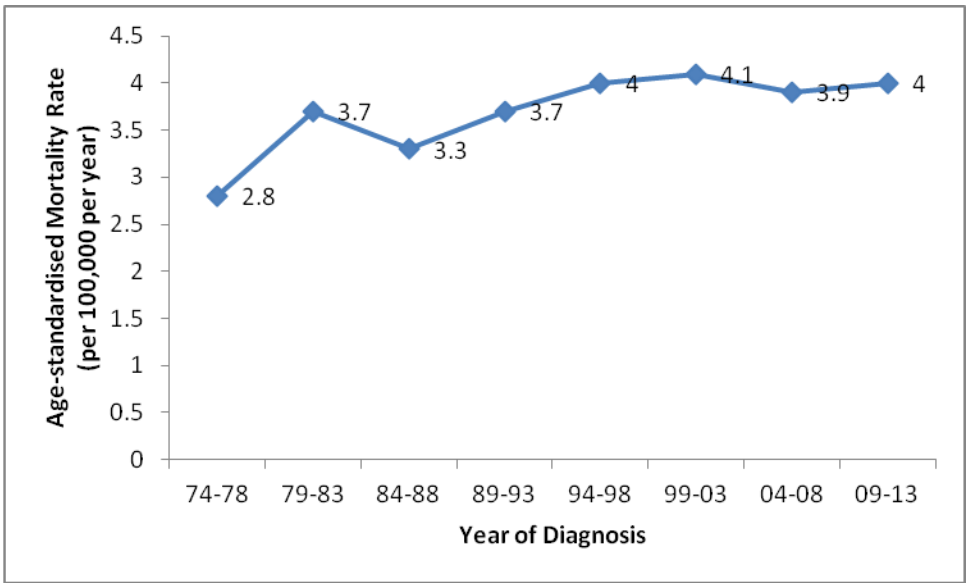


Table 14: Ethnic distribution of ovarian cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Ethnicity	No. of cases	Percent	No. of cases	Percent
Chinese	1140	80.6	1274	77.7
Malay	171	12.1	233	14.2
Indian	80	5.6	101	6.2
Others	24	1.7	32	1.9
Total	1415	100.0	1640	100.0

Table 15: Age distribution of ovarian cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	11	0.8	17	1.0
15-44	395	27.9	397	24.2
45-54	414	29.3	458	27.9
55-64	295	20.9	410	25.0
65-74	170	12.0	207	12.6
75+	130	9.2	151	9.2
Total	1,415	100.0	1,640	100.0

Table 16: 5-year Age-Standardised Observed Survival of Ovarian Cancer by Ethnicity and Age Group, 2004-2013

	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	43.74	41.33, 46.12	45.81	43.63, 47.97
Chinese	44.86	42.16, 47.53	48.34	45.84, 50.79
Malay	31.85	25.84, 38.00	30.10	25.01, 35.34
Indian	49.71	39.28, 59.28	35.91	28.13, 43.74

Age Group	**5yr OS**	**95% CI**	**5yr OS**	**95% CI**
15-44	81.25	75.58, 85.73	80.14	74.09, 84.92
45-54	70.56	64.88, 75.49	71.36	65.01, 76.77
55-64	62.56	55.40, 68.90	65.35	58.10, 71.65
65-74	57.18	49.66, 64.00	52.60	44.79, 59.82
75+	31.31	22.60, 40.39	27.86	20.80, 35.35

The survival for ovarian cancer seems to have remained stable.

6.5 Uterine Cancer

Incidence of Uterine cancers

A total of 1,910 new cases of uterine cancer were diagnosed from 2009-2013. The age-standardised incidence rate for uterine cancer has increased significantly over the last forty years from 4.3 per 100,000 in 1974-1978 to 13.7 per 100,000 in 2009-2013 (Figure 13).

Amongst the ethnic groups, the age-standardised incidence rate was highest among the Indians (Table 17).

Figure 13: Age-standardised Incidence Rate for Uterine Cancer, 1974-2013

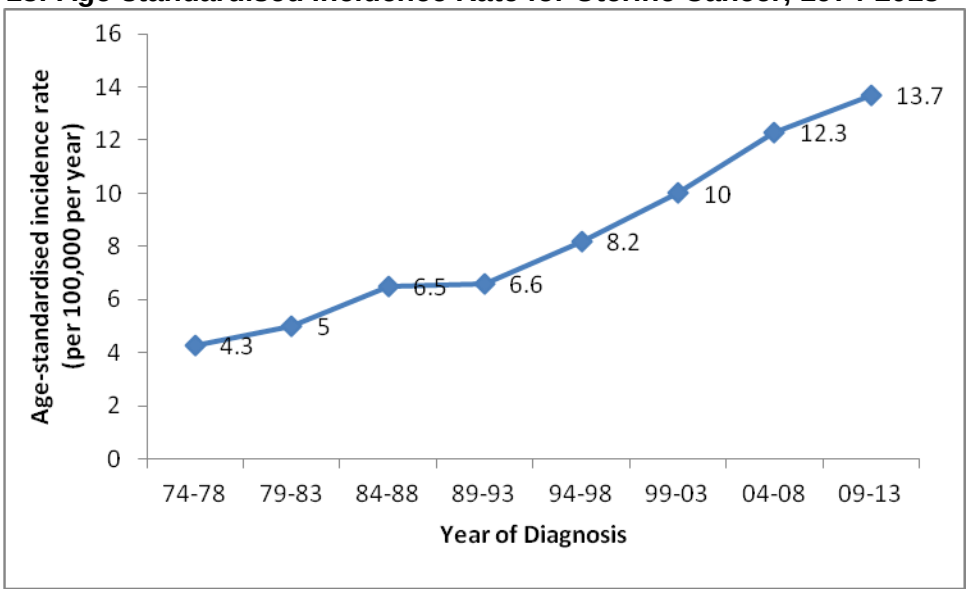


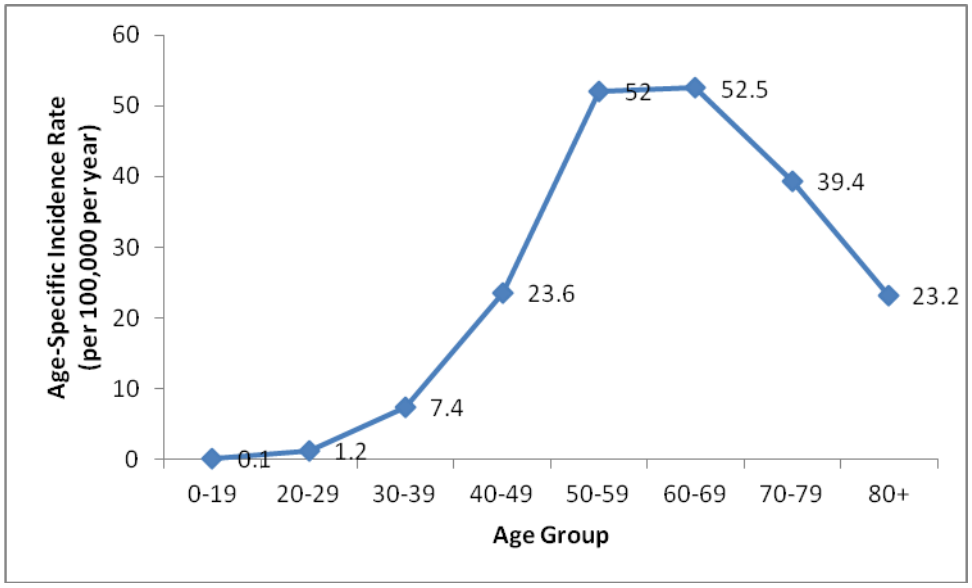
Table 17: Crude and Age-Standardised Incidence Rates for Uterine Cancer by Ethnic Group, 2009-2013

Ethnic Group	No.	CIR (95% CI)	ASIR (95% CI)
Chinese	1508	21.0 (20.0-22.1)	13.6 (12.9-14.3)
Malay	226	17.8 (15.5-20.1)	14.3 (12.4-16.2)
Indian	137	16.3 (13.5-19.0)	15.1 (12.5-17.7)
Others	39	12.0 (8.2-15.7)	12.0 (7.7-16.3)
All	1910	19.9 (19.0-20.8)	13.7 (13.1-14.3)

Age at Diagnosis

The age-specific incidence rate was the lowest in the age group of 0-19, at 0.1 per 100,000 and the highest in aged 50-69 women at 52 per 100,000 (Figure 14).

Figure 14: Age-Specific Incidence Rate for Uterine Cancer, 2009-2013



Mortality Rates

Uterine cancer has the 11th highest cancer mortality in females in Singapore. There were 215 deaths from uterine cancer for the period 2009-2013.

Figure 15: Age-standardised Mortality Rates for Uterine Cancer, 1974-2013

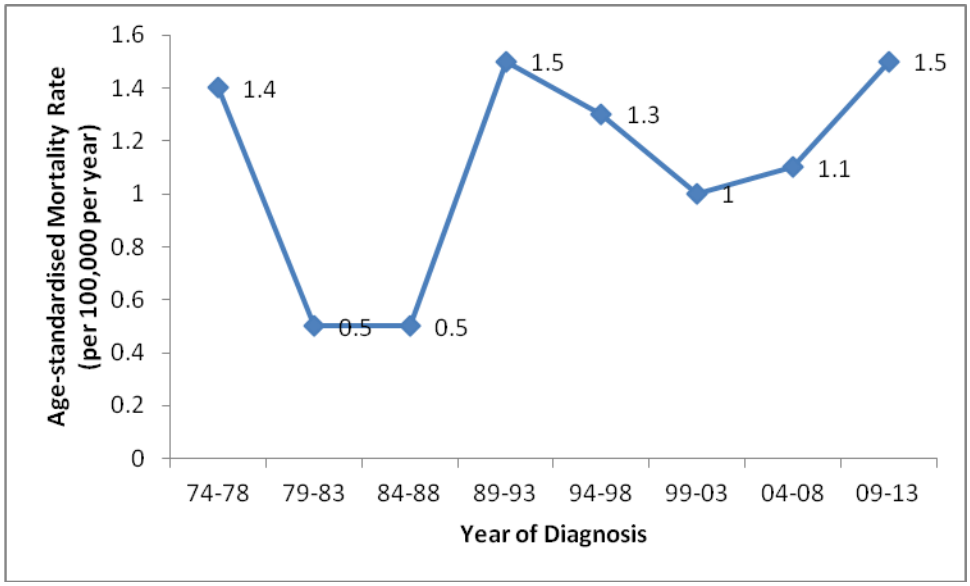


Table 18: Ethnic distribution of uterine cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Ethnicity	No. of cases	Percent	No. of cases	Percent
Chinese	1,195	82.3	1,508	79
Malay	147	10.1	226	11.8
Indian	96	6.6	137	7.2
Others	15	1.0	39	2
Total	1,453	100.0	1,910	100.0

Table 19: Age distribution of uterine cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	0	0	0	0
15-44	232	16.0	296	15.5
45-54	494	34.0	585	30.6
55-64	392	27.0	641	33.6
65-74	231	15.9	266	13.9
75+	104	7.1	122	6.4
Total	1,453	100.0	1,910	100.0

Table 20: 5-year Age-Standardised Observed Survival of Uterine Cancer by Ethnicity and Age Group, 2004-2013

	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	61.93	59.34, 64.41	65.08	62.92, 67.14
Chinese	64.51	61.68, 67.20	67.39	65.01, 69.65
Malay	55.39	47.23, 62.80	47.37	40.52, 53.90
Indian	46.24	34.53, 57.16	75.71	67.68, 82.01

Age Group	**5yr OS**	**95% CI**	**5yr OS**	**95% CI**
15-44	94.33	90.23, 96.74	92.00	87.85, 94.78
45-54	87.60	84.11, 90.38	87.53	84.37, 90.10
55-64	78.97	74.02, 83.10	79.35	75.62, 82.57
65-74	65.02	57.46, 71.58	66.14	59.76, 71.75
75+	37.94	27.51, 48.30	46.80	37.12, 55.89

There was a significant increase in survival for rall, Chinese and Indian uterine cancer patients.

6.6 Prostate Cancer

Incidence

A total of 3,456 new cases of prostate cancer were diagnosed from 2009-2013. The age-standardised incidence rate for prostate cancer has increased significantly over the last forty years from 5.7 per 100,000 in 1974-1978 to 28.1 per 100,000 in 2009-2013 (Figure 16).

The rapid rise in prostate cancer incidence in the 90s can be partly attributed to the advent of the PSA test. The rates of prostate cancer overdiagnosis due to PSA testing for cases diagnosed in the US between 1988 and 1998 were estimated by a simulation model[2].

Overdiagnosis in the study was defined as the detection of prostate cancer through PSA testing that otherwise would not have been diagnosed within the patient's lifetime. Overdiagnosis rates were found to be approximately 29% for white men and 44% for black men.

Amongst the ethnic groups, the age-standardised incidence rate was highest among the Chinese (Table 21).

[2] Etzioni R, Penson DF, Legler JM et al. (2002) Overdiagnosis due to prostate-specific antigen screening: Lessons from US Prostate Cancer Incidence Trends. JNCI 94(13): 981-990.

Figure 16: Age-standardised Incidence Rate for Prostate Cancer, 1974-2013

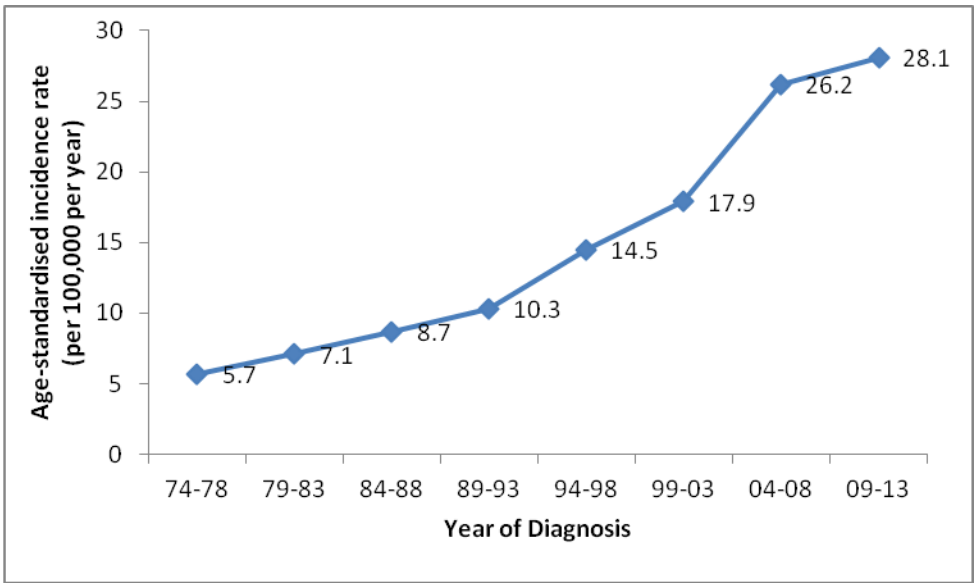


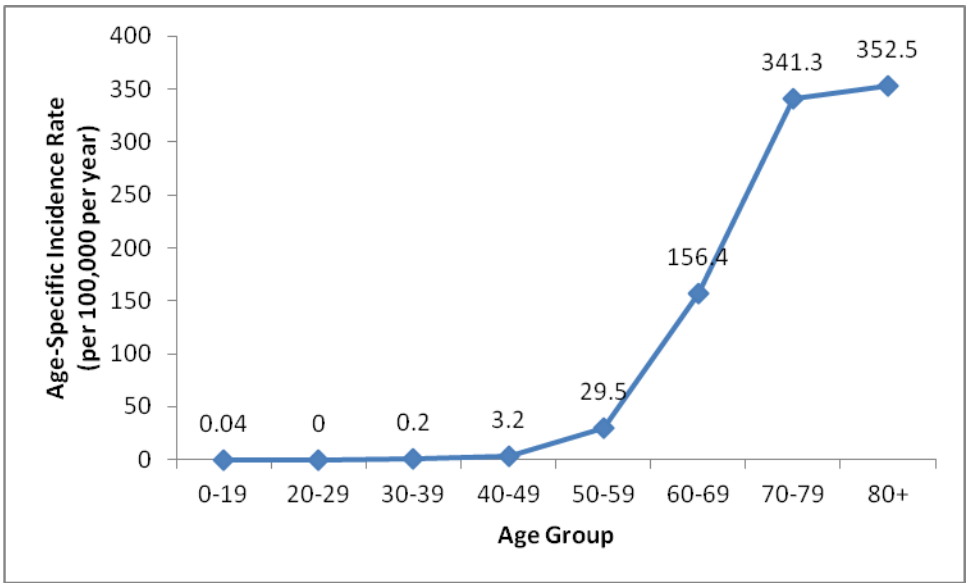
Table 21: Crude and Age-Standardised Incidence Rates for Prostate Cancer by Ethnic Group, 2009-2013

Ethnic Group	No.	CIR (95% CI)	ASIR (95% CI)
Chinese	2974	43.2 (41.6-44.7)	29.4 (28.4-30.5)
Malay	229	18.2 (15.8-20.5)	19.4 (16.8-21.9)
Indian	151	16.8 (14.1-19.4)	18.9 (15.8-22.1)
Others	102	34.3 (27.7-41.0)	48.4 (38.6-58.2)
All	3456	37.0 (35.7-38.2)	28.1 (27.1-29.0)

Age at Diagnosis

The age-specific incidence rate was the lowest in the age group under 49, at 3.2 per 100,000 which rose steeply to 341.3 per 100,000 in the age group 70 and above (Figure 17).

Figure 17: Age-Specific Incidence Rate for Prostate Cancer, 2009-2013



Mortality Rates

Prostate cancer has the 5th highest cancer mortality in Singapore. Overall, there was an increase in the age-standardised mortality rate for prostate cancer. This is probably due to the increased incidence of prostate cancer (Figure 18). There were 700 deaths from prostate cancer for the period 2009-2013.

Figure 18: Age-standardised Mortality Rates for Prostate Cancer, 1974-2013

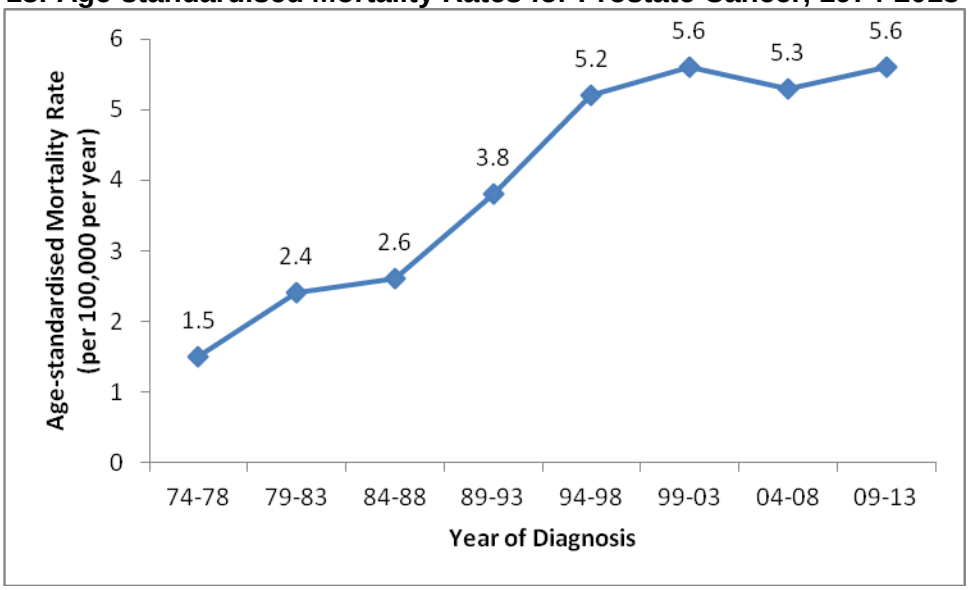


Table 22: Ethnic distribution of prostate cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Ethnicity	No. of cases	Percent	No. of cases	Percent
Chinese	2,115	84.7	2,974	86.1
Malay	188	7.5	229	6.6
Indian	133	5.3	151	4.4
Others	62	2.5	102	2.9
Total	2,498	100.0	3,456	100.0

Table 23: Age distribution of prostate cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	0	0.0	0	0.0
15-54	106	4.2	162	4.7
55-64	629	25.2	880	25.5
65-74	1,011	40.5	1,400	40.5
75+	752	30.1	1,014	29.3
Total	2,498	100.0	3,456	100.0

Table 24: 5-year Age-Standardised Observed Survival of Prostate Cancer by Ethnicity and Age Group, 2004-2013

Males	**2004-2008**		**2009-2013**	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	70.77	68.59, 72.83	74.86	73.25, 76.38
Chinese	71.83	69.45, 74.07	76.43	74.73, 78.04
Malay	55.03	47.05, 62.30	59.01	51.88, 65.44
Indian	70.95	60.83, 78.90	63.32	54.95, 70.55

Age Group	**5yr OS**	**95% CI**	**5yr OS**	**95% CI**
15-54	85.41	75.53, 91.52	91.00	84.67, 94.80
55-64	84.61	80.69, 87.80	86.97	84.35, 89.19
65-74	75.37	72.04, 78.37	79.80	77.39, 81.98
75+	47.60	43.40, 51.68	53.07	49.68, 56.33

There was a significant increase in survival for all and for Chinese prostate cancer patients.

There was a significant increase in survival for prostate cancer patients aged 65 and above.

6.7 Lung Cancer

Incidence

A total of 6,558 new cases of lung cancer were diagnosed from 2009-2013. Overall, the age-standardised incidence rate for male lung cancer has decreased significantly since 1988 while that for female lung cancer has declined consistently since 1998 (Fig. 19).

Amongst the ethnic groups, the age-standardised incidence rate was highest among the Chinese (Table 25).

Figure 19: Age-standardised Incidence Rate for Lung Cancer by Gender, 1974-2013

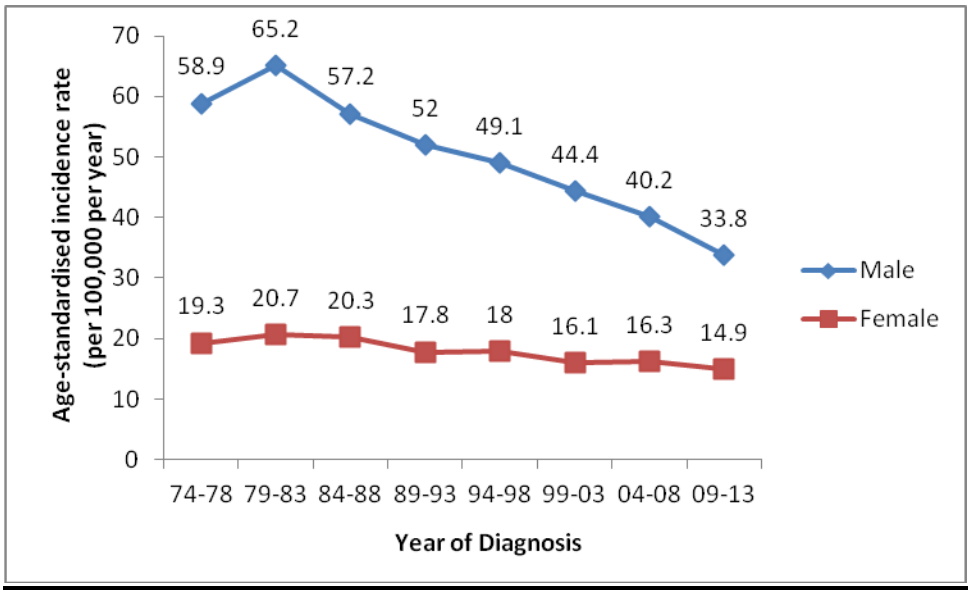


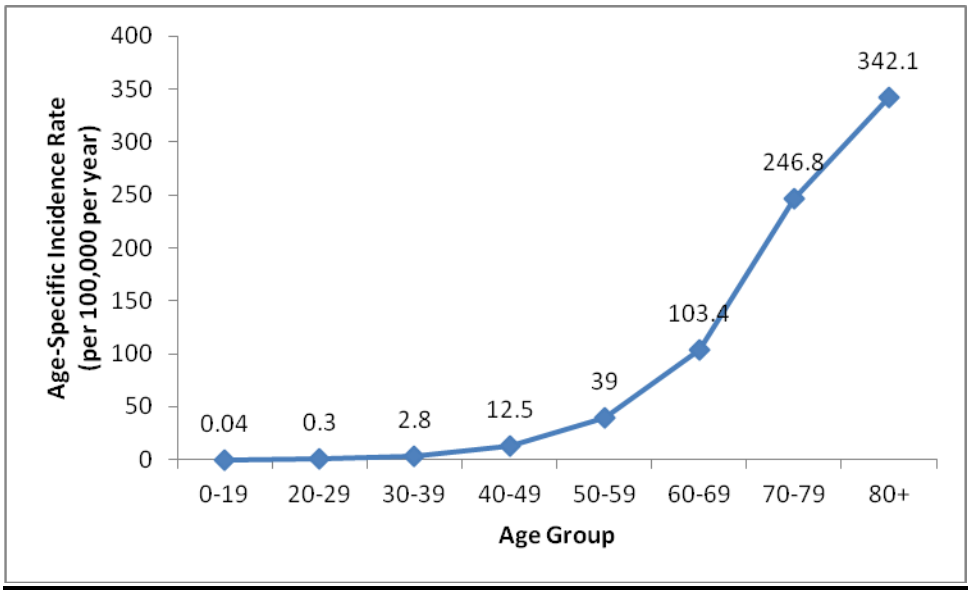
Table 25: Crude and Age-standardised Incidence Rates for Lung Cancer by Ethnic Group, 2009-2013

Ethnic Group	No.	CIR (95% CI)	ASIR (95% CI)
Chinese	5646	40.2 (39.1-41.2)	24.6 (24.0-25.3)
Malay	620	24.5 (22.6-26.4)	21.7 (19.9-23.5)
Indian	205	11.8 (10.2-13.4)	11.7 (10.0-13.3)
Others	87	14.0 (11.0-16.9)	18.9 (14.5-23.2)
All	6558	34.6 (33.8-35.4)	23.5 (22.9-24.0)

Age at Diagnosis

The age-specific incidence rate was lowest in the age group of 0-19, at 0.04 per 100,000 compared to 342.1 per 100,000 in the age group 80 and above (Fig 20).

Figure 20: Age-Specific Incidence Rate for Lung Cancer, 2009-2013



Mortality Rates

Lung cancer has the highest cancer mortality rate among males and 2nd highest cancer mortality rate among females in Singapore. The age-standardised mortality rate for lung cancer appeared to have declined for both males and females (Figure 21). There were 5628 deaths from lung cancer for the period 2009-2013.

Figure 21: Age-Standardised Mortality Rate for Lung Cancer, Singapore 2009-2013

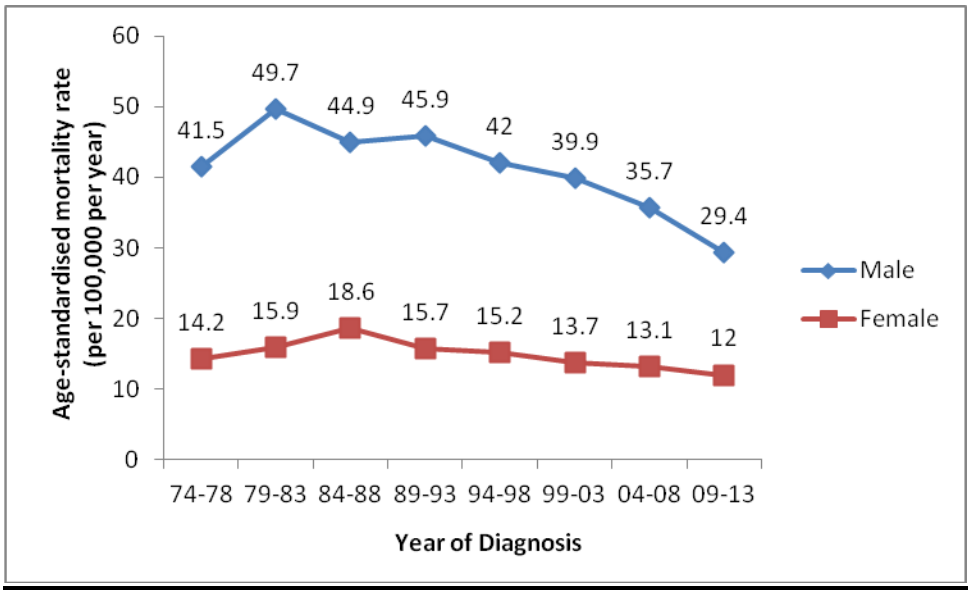


Table 26: Ethnic distribution of lung cancer patients, 2004-2013

Period	2004-2008		2009-2013	
Ethnicity (Males)	No. of cases	Percent	No. of cases	Percent
Chinese	3431	86.5	3634	84.8
Malay	368	9.3	444	10.3
Indian	133	3.3	150	3.5
Others	34	0.9	59	1.4
Total	3966	100.0	4287	100.0

Period	2004-2008		2009-2013	
Ethnicity (Females)	No. of cases	Percent	No. of cases	Percent
Chinese	1784	90.0	2012	88.6
Malay	153	7.7	176	7.8
Indian	25	1.3	55	2.4
Others	20	1.0	28	1.2
Total	1982	100.0	2271	100.0

Table 27: Age distribution of lung cancer patients, 2004-2013

Male	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	1	0.0	1	0.0
15-44	115	2.9	114	2.7
45-54	385	9.7	416	9.7
55-64	805	20.3	988	23
65-74	1,400	35.3	1,349	31.5
75+	1,260	31.8	1,419	33.1
Total	3,966	100.0	4,287	100.0

Female	2004-2008		2009-2013	
Age Group	No. of cases	Percent	No. of cases	Percent
0-14	1	0.0	0	0.0
15-44	85	4.3	99	4.4
45-54	229	11.6	302	13.3
55-64	387	19.5	478	21.1
65-74	565	28.5	561	24.7
75+	715	36.1	831	36.6
Total	1,982	100.0	2,271	100.0

Table 28: 5-year Age-Standardised Observed Survival of Lung Cancer by Ethnicity and Age Group, 2004-2013

Males	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	9.60	8.83, 10.41	11.84	11.03, 12.67
Chinese	9.59	8.77, 10.45	12.06	11.19, 12.97
Malay	8.33	6.04, 11.06	8.85	6.75, 11.28
Indian	11.73	6.80, 18.12	15.87	11.06, 21.47

Age Group	5yr OS	95% CI	5yr OS	95% CI
15-44	20.70	15.24, 26.76	28.48	22.42, 34.83
45-54	13.93	11.28, 16.85	20.06	17.08, 23.21
55-64	14.70	12.59, 16.97	18.12	16.04, 20.29
65-74	9.63	8.30, 11.07	11.62	10.19,13.14
75+	3.57	2.81, 4.45	3.44	2.74, 4.27

Females	2004-2008		2009-2013	
Ethnicity	**5yr ASOS**	**95% CI**	**5yr ASOS**	**95% CI**
All	12.46	10.87,14.17	14.57	13.02, 16.21
Chinese	12.74	11.04,14.58	14.63	12.99, 16.37
Malay	6.96	3.82,11.36	11.52	7.17, 17.00
Indian	6.66	0.75,22.28	25.49	10.20, 44.12

Age Group	5yr OS	95% CI	5yr OS	95% CI
15-44	14.51	7.12,24.4	27.68	18.88, 37.18
45-54	16.16	11.65,21.32	26.49	21.04, 32.23
55-64	19.33	14.81,24.3	22.32	18.18, 26.73
65-74	15.83	12.54,19.46	15.43	12.40, 18.77
75+	3.94	2.59,5.7	3.85	2.65, 5.38

There was a significant increase in survival for male and female lung cancer patients, as well as for Chinese patients, Malay and Indian female patients.

There was a significant increase in survival among males aged below 75 and among females aged 15-54.