



**Singapore Cancer Registry  
Annual Registry Report  
Trends in Cancer Incidence in Singapore  
2009 – 2013**

**National Registry of Diseases Office  
(NRDO)**

## **Acknowledgement**

This report was produced with joint effort from the following:

### **Singapore Cancer Registry Advisory Committee**

Prof Lee Hin Peng            Chairman    Saw Swee Hock School of Public Health,  
NUS

### **Health Promotion Board**

*Research & Strategic Planning Division*

Dr Chew Ling                Director

*National Registry of Diseases Office*

Dr Chow Khuan Yew        Deputy Director

Ms Zheng Huili             Senior Executive (Biostatistics)

Mr William Ho              Manager (Data Management)

## Table of Contents

1	GLOSSARY .....	6
2	EXECUTIVE SUMMARY .....	7
3	INTRODUCTION .....	8
4	SOURCE OF DATA AND DATA PROCESSING .....	9
5	OVERALL FINDINGS .....	12
5.1	Notifications by Year of Diagnosis .....	12
	Table 5.1: Number of Incident Cancers by Year of Diagnosis, 2009 – 2013 .....	12
5.2	Incidence of Cancers for the Period, 2009 – 2013 .....	12
	Table 5.2.1: Incidence of Cancers by Gender, 2009 – 2013 .....	12
	Table 5.2.2: Age-Standardised Incidence Rates for All Cancers by Ethnicity and Gender, 2009 – 2013 .....	13
5.3	10 Most Frequent Cancers, 2009 – 2013 .....	13
	Table 5.3.1: 10 Most Frequent Cancers in Males, 2009 – 2013 .....	13
	Figure 5.3.1: 10 Most Frequent Cancers (%) in Males, 2009 – 2013 .....	14
	Table 5.3.2: 10 Most Frequent Cancers in Females, 2009 – 2013 .....	14
	Figure 5.3.2: 10 Most Frequent Cancers in Females (%), 2009 – 2013 .....	15
5.4	Highest Ranking Cancers by Ethnicities, 2009 – 2013 .....	15
	Table 5.4.1.1: Highest Ranking Cancers among Chinese Male Residents, 2009 – 2013 .....	16
	Table 5.4.1.2: Highest Ranking Cancers among Chinese Female Residents, 2009 – 2013 .....	16
	Table 5.4.2.1: Highest Ranking Cancers among Malay Male Residents, 2009 – 2013 .....	17
	Table 5.4.2.2: Highest Ranking Cancers among Malay Female Residents, 2009 – 2013 .....	17
	Table 5.4.3.1: Highest Ranking Cancers among Indian Male Residents, 2009 – 2013 .....	18
	Table 5.4.3.1: Highest Ranking Cancers among Indian Female Residents, 2009 – 2013 .....	18
5.5	Mortality Rates by Gender, 2009 – 2013 .....	19
	Table 5.5.1: 10 Most Frequent Cancer Deaths in Males, 2009 – 2013 .....	19
	Table 5.5.2: 10 Most Frequent Cancer Deaths in Females, 2009 – 2013 .....	19
6.	COMMENTARY ON SELECTED CANCER SITES .....	20
6.1	Breast Cancer (ICD 9: 174) .....	20
	Figure 6.1.1: Age-standardised Incidence Rates for Breast Cancer, 1974 – 2013 .....	21
	Table 6.1.1: Crude and Age-standardised Incidence Rates for Breast Cancer by Ethnicity, 2009 – 2013 .....	21
	Table 6.1.2: Stage distribution of Breast Cancer patients, 2004 – 2008 & 2009 – 2013 .....	22
	Table 6.1.3: Ethnic distribution of Breast Cancer patients, 2004 – 2008 & 2009 – 2013 .....	22

Table 6.1.4: Age distribution of Breast Cancer patients, 2004 – 2008 & 2009 – 2013.....	22
Figure 6.1.2: Age-specific Incidence Rates for Breast Cancer, 2009 – 2013.....	23
Figure 6.1.3: Age-standardised Mortality Rates for Breast Cancer, 1974 – 2013.....	24
Table 6.1.5: 5-year Age-standardised Observed Survival of Breast Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013.....	25
6.2 Cervical Cancer (ICD 9: 180) .....	26
Figure 6.2.1: Age-standardised Incidence Rates for Cervical Cancer, 1974 – 2013 .....	27
Table 6.2.1: Crude and Age-standardised Incidence Rates for Cervical Cancer by Ethnicity, 2009 – 2013 ..	27
Table 6.2.2: Stage distribution of Cervical Cancer patients, 2004 – 2008 & 2009 – 2013 .....	28
Table 6.2.3: Ethnic distribution of Cervical Cancer patients, 2004 – 2008 & 2009 – 2013 .....	28
Table 6.2.4: Age distribution of Cervical Cancer patients, 2004 – 2008 & 2009 – 2013 .....	28
Figure 6.2.2: Age-specific Incidence Rates for Cervical Cancer, 2009 – 2013 .....	29
Figure 6.2.3: Age-standardised Mortality Rates for Cervical Cancer, 1974 – 2013 .....	30
Table 6.2.5: 5-year Age-standardised Observed Survival of Cervical Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013 .....	31
6.3 Colorectal Cancer (ICD 9: 153 – 154).....	32
Figure 6.3.1: Age-standardised Incidence Rates for Colorectal Cancer, 1974 – 2013 .....	33
Table 6.3.1: Crude and Age-standardised Incidence Rates for Colorectal Cancer by Gender and Ethnicity, 2009 – 2013 .....	33
Table 6.3.2: Stage distribution of Colorectal Cancer patients, 2004 – 2008 & 2009 – 2013.....	34
Table 6.3.3: Ethnic distribution of Colorectal Cancer patients, 2004 – 2008 & 2009 – 2013 .....	34
Table 6.3.4: Age distribution of Colorectal Cancer patients, 2004 – 2008 & 2009 – 2013.....	35
Figure 6.3.2: Age-specific Incidence Rates for Colorectal Cancer, 2009 – 2013.....	36
Figure 6.3.3: Age-standardised Mortality Rates for Colorectal Cancer, 1974 – 2013.....	37
Table 6.3.5.1: 5-year Age-standardised Observed Survival of Colorectal Cancer by Stage, Ethnicity and Age Group for Males, 2004 – 2008 & 2009 – 2013 .....	38
Table 6.3.5.2: 5-year Age-standardised Observed Survival of Colorectal Cancer by Stage, Ethnicity and Age Group for Females, 2004 – 2008 & 2009 – 2013 .....	39
6.4 Ovarian Cancer (ICD 9: 183).....	40
Figure 6.4.1: Age-standardised Incidence Rates for Ovarian Cancer, 1974 – 2013.....	40
Table 6.4.1: Crude and Age-standardised Incidence Rates for Ovarian Cancer by Ethnicity, 2009 – 2013 ..	41
Table 6.4.2: Stage distribution of Ovarian Cancer patients, 2004 – 2008 & 2009 – 2013 .....	41
Table 6.4.3: Ethnic distribution of Ovarian Cancer patients, 2004 – 2008 & 2009 – 2013.....	41
Table 6.4.4: Age distribution of Ovarian Cancer patients, 2004 – 2008 & 2009 – 2013 .....	42
Figure 6.4.2: Age-specific Incidence Rates for Ovarian Cancer, 2009 – 2013 .....	42
Figure 6.4.3: Age-standardised Mortality Rates for Ovarian Cancer, 1974 – 2013.....	43
Table 6.4.5: 5-year Age-standardised Observed Survival of Ovarian Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013.....	44
6.5 Uterine Cancer (ICD 9: 182).....	45
Figure 6.5.1: Age-standardised Incidence Rates for Uterine Cancer, 1974 – 2013.....	45
Table 6.5.1: Crude and Age-standardised Incidence Rates for Uterine Cancer by Ethnicity, 2009 – 2013 ...	46
Table 6.5.2: Stage distribution of Uterine Cancer patients, 2004 – 2008 & 2009 – 2013 .....	46
Table 6.5.3: Ethnic distribution of Uterine Cancer patients, 2004 – 2008 & 2009 – 2013.....	46
Table 6.5.4: Age distribution of Uterine Cancer patients, 2004 – 2008 & 2009 – 2013 .....	47

Figure 6.5.2: Age-specific Incidence Rates for Uterine Cancer, 2009 – 2013 .....	47
Figure 6.5.3: Age-standardised Mortality Rates for Uterine Cancer, 1974 – 2013.....	48
Table 6.5.5: 5-year Age-standardised Observed Survival of Uterine Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013.....	49
6.6            Prostate Cancer (ICD 9: 185).....	50
Figure 6.6.1: Age-standardised Incidence Rates for Prostate Cancer, 1974 – 2013.....	50
Table 6.6.1: Crude and Age-standardised Incidence Rates for Prostate Cancer by Ethnicity, 2009 – 2013..	51
Table 6.6.2: Stage distribution of Prostate Cancer patients, 2004 – 2008 & 2009 – 2013 .....	51
Table 6.6.3: Ethnic distribution of Prostate Cancer patients, 2004 – 2008 & 2009 – 2013.....	51
Table 6.6.4: Age distribution of Prostate Cancer patients, 2004 – 2008 & 2009 – 2013 .....	52
Figure 6.6.2: Age-specific Incidence Rates for Prostate Cancer, 2009 – 2013.....	52
Figure 6.6.3: Age-standardised Mortality Rates for Prostate Cancer, 1974 – 2013.....	53
Table 6.6.5: 5-year Age-standardised Observed Survival of Prostate Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013.....	54
6.7            Lung Cancer (ICD 9: 162) .....	55
Figure 6.7.1: Age-standardised Incidence Rates for Lung Cancer, 1974 – 2013 .....	55
Table 6.7.1: Crude and Age-standardised Incidence Rates for Lung Cancer by Gender and Ethnicity, 2009 – 2013 .....	56
Table 6.7.2: Stage distribution of Lung Cancer patients, 2004 – 2008 & 2009 – 2013.....	56
Table 6.7.3: Ethnic distribution of Lung Cancer patients, 2004 – 2008 & 2009 – 2013 .....	57
Table 6.7.4: Age distribution of Lung Cancer patients, 2004 – 2008 & 2009 – 2013.....	57
Figure 6.7.2: Age-specific Incidence Rates for Lung Cancer, 2009 – 2013 .....	58
Figure 6.7.3: Age-standardised Mortality Rates for Lung Cancer, 1974 – 2013 .....	59
Table 6.7.5.1: 5-year Age-standardised Observed Survival of Lung Cancer by Stage, Ethnicity and Age Group for Males, 2004 – 2008 & 2009 – 2013.....	60
Table 6.7.5.2: 5-year Age-standardised Observed Survival of Lung Cancer by Stage, Ethnicity and Age Group for Females, 2004 – 2008 & 2009 – 2013.....	61

# 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.

The CR and ASR figures in this report are stated as per 100,000 Singapore resident 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 58757 incident cancer cases were diagnosed among the resident population during the period 2009 – 2013 (**Table 5.1**). Of these, 28520 (48.5%) cases were males and 30237 (51.5%) were females (**Table 5.2.1**).

The crude incidence rates for total male and female cancer patients for the period 2009 – 2013 were 305.2 and 314.6 per 100,000 person-years respectively (**Table 5.2.1**). The corresponding age-standardised incidence rates were 229.3 and 213.8 per 100,000 person-years.

In both males and females, the crude and age-standardised rates were highest in the Chinese followed by the Malays and Indians (**Table 5.2.2**).

Colorectal, lung and prostate cancer were the top ranked cancers among the males (**Table 5.3.1**). Among the females, breast, colorectal and lung cancer were the most common (**Table 5.3.2**).

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

Lung cancer and breast cancer had the highest mortality rates in males and females respectively (**Tables 5.5.1 & 5.5.2**).

### **3 INTRODUCTION**

The Singapore Cancer Registry provides information on cancer patterns and trends in Singapore. This 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 from healthcare providers 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 had been mandatory since 2009.

For cancer cases obtained from sources other than physician's notification, the data was checked against known registered cases in the registry.

### **Data Processing**

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

NRDO staff 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, 2<sup>nd</sup> 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, 3<sup>rd</sup> 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 January 1, 2009 to December 31, 2013 (inclusive of the stated dates). The data in the report are as of 3 September 2014.

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

## **Cancer Prevalence**

Prevalence represents new and pre-existing cases alive on a certain date, in contrast to incidence which reflects new cases of a condition diagnosed during a given period of time. Prevalence is a function of both the incidence of the disease and survival and is useful in ascertaining the burden of cancer on the healthcare system. This metric is especially relevant as the number of newly diagnosed cancer patients continues to increase and the survival of cancer patients continues to rise.

Prevalence can either be calculated to include the number of people living with cancer or the number of tumours (i.e. including multiple primaries) in living patients on a specified date. The latter method has been regarded to be more useful as multiple cancers in an individual are usually treated independently, and this is the method that was used.

2-year prevalence was estimated by counting the number of invasive primary cancers diagnosed from January 1, 2012 to December 31, 2013 in persons who were still alive on January 1, 2014. Similarly, 5- and 10-year prevalence estimates were based on cases diagnosed back to 2009 and 2004, respectively. The prevalence proportions (per 100,000) were obtained by dividing the prevalent counts by the population on January 1, 2014 and multiplying by 100,000.

## 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 2013 was obtained from DOS.

In addition, the Brenner method is now used for age-standardisation<sup>1</sup>. 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.

---

<sup>1</sup> 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 cancer notifications per year had increased year on year (Table 5.1).

**Table 5.1: Number of Incident Cancers by Year of Diagnosis, 2009 – 2013**

Year of diagnosis	2009	2010	2011	2012	2013	2009-2013
No. of notifications	10824	11404	11680	12185	12664	58757

### 5.2 Incidence of Cancers for the Period, 2009 – 2013

A total number of 58757 incident cases were diagnosed among the resident population during the period 2009 – 2013. Of these, 28520 (48.5%) and 30237 (51.5%) cases were males and females respectively. The crude incidence rates for total male and female cancer patients for the period 2009 – 2013 were 305.2 and 314.6 per 100,000 person-years respectively. The corresponding age-standardised incidence rates were 229.3 and 213.8 per 100,000 person-years (Table 5.2.1).

**Table 5.2.1: Incidence of Cancers by Gender, 2009 – 2013**

Gender	Number	%	CR (95% CI)	ASR (95% CI)
Male	28520	48.5	305.2 (301.6 – 308.7)	229.3 (226.5 – 232.0)
Female	30237	51.5	314.6 (311.0 – 318.1)	213.8 (211.3 – 216.3)

Among the males, the crude and age-standardised rates were highest in the Chinese followed by the Malays and Indians. This was also seen in the females (Table 5.2.2).

**Table 5.2.2: Age-Standardised Incidence Rates for All Cancers by Ethnicity and Gender, 2009 – 2013**

Gender	Race	Number	CR (95% CI)	ASR (95% CI)
Male	Chinese	23994	348.4 (344.0 – 352.8)	239.8 (236.7 – 242.9)
	Malay	2459	195.1 (187.4 – 202.8)	189.1 (181.4 – 196.9)
	Indian	1272	141.3 (133.5 – 149.0)	140.7 (132.6 – 148.9)
	All	28520	305.2 (301.6 – 308.7)	229.3 (226.5 – 232.0)
Female	Chinese	24948	347.9 (343.6 – 352.2)	218.6 (215.8 – 221.5)
	Malay	3049	239.7 (231.2 – 248.2)	200.2 (192.8 – 207.5)
	Indian	1559	185.1 (175.9 – 194.3)	170.7 (162.0 – 179.4)
	All	30237	314.6 (311.0 – 318.1)	213.8 (211.3 – 216.3)

### 5.3 10 Most Frequent Cancers, 2009 – 2013

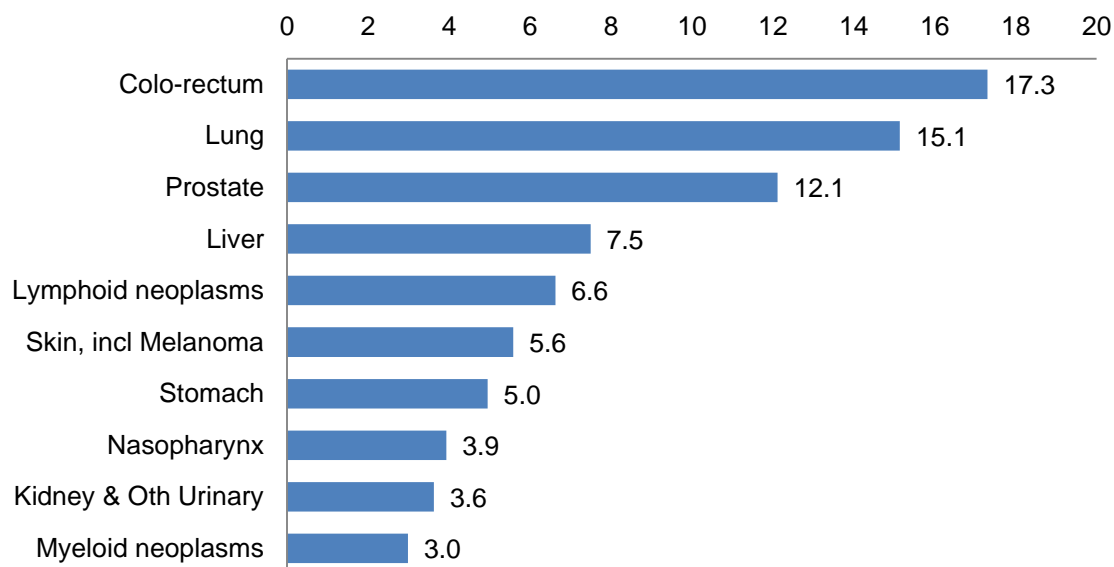
Similar to the findings of the trend report for the period 2008 – 2012, colorectal, lung and prostate cancer were the three most common cancers among the males (Table 5.3.1, Figure 5.3.1).

**Table 5.3.1: 10 Most Frequent Cancers in Males, 2009 – 2013**

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Colo-rectum	4935	17.3	52.8 (51.3 – 54.3)	38.7 (37.6 – 39.8)
2	Lung	4318	15.1	46.2 (44.8 – 47.6)	34.0 (33.0 – 35.0)
3	Prostate	3456	12.1	37.0 (35.7 – 38.2)	28.1 (27.1 – 29.0)
4	Liver	2138	7.5	22.9 (21.9 – 23.8)	16.8 (16.1 – 17.5)
5	Lymphoid neoplasms	1890	6.6	20.2 (19.3 – 21.1)	16.7 (15.9 – 17.5)
6	Skin, including Melanoma	1594	5.6	17.1 (16.2 – 17.9)	12.5 (11.9 – 13.1)
7	Stomach	1414	5.0	15.1 (14.3 – 15.9)	11.1 (10.5 – 11.7)
8	Nasopharynx	1122	3.9	12.0 (11.3 – 12.7)	8.4 (7.9 – 8.9)
9	Kidney & Other urinary*	1035	3.6	11.1 (10.4 – 11.7)	8.1 (7.6 – 8.6)
10	Myeloid neoplasms	852	3.0	9.1 (8.5 – 9.7)	7.1 (6.6 – 7.6)
	Others	5766	20.2	-	-
	All	28520	100	305.2 (301.6 – 308.7)	229.3 (226.5 – 232.0)

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

**Figure 5.3.1: 10 Most Frequent Cancers (%) in Males, 2009 – 2013**

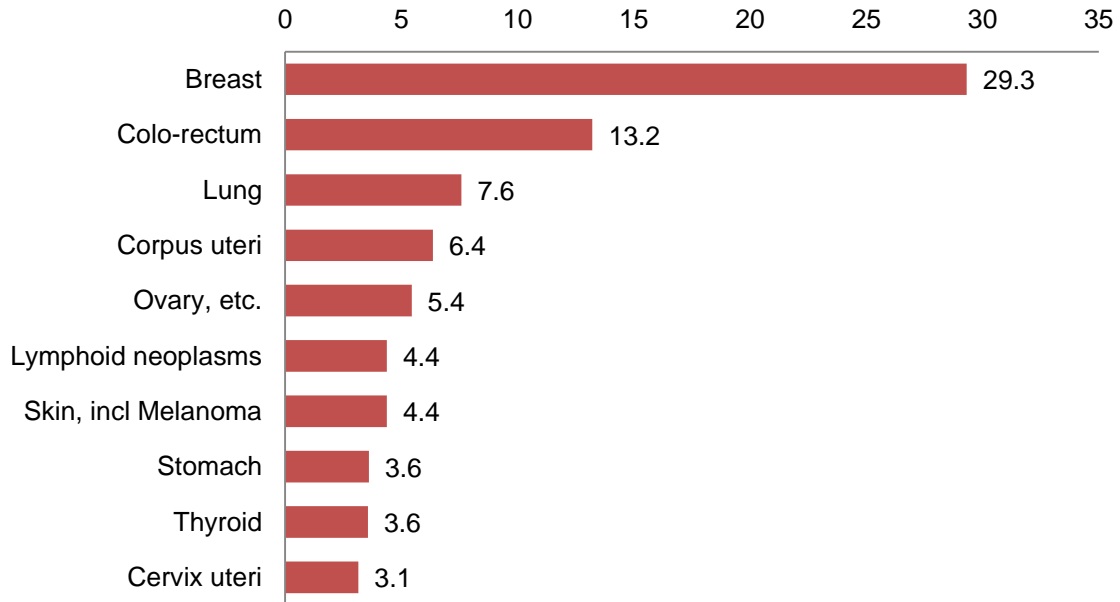


Among the females, breast, colorectal and lung cancer were the top three cancers (Table 5.3.2, Figure 5.3.2). The results for females were similar to the trends reported for the period 2008 – 2012, except that lymphoid neoplasms and skin cancer had swapped position.

**Table 5.3.2: 10 Most Frequent Cancers in Females, 2009 – 2013**

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Female Breast	8867	29.3	92.2 (90.3 – 94.2)	63.4 (62.1 – 64.8)
2	Colo-rectum	3996	13.2	41.6 (40.3 – 42.9)	26.3 (25.5 – 27.1)
3	Lung	2294	7.6	23.9 (22.9 – 24.8)	15.0 (14.4 – 15.6)
4	Corpus uteri	1922	6.4	20.0 (19.1 – 20.9)	13.8 (13.2 – 14.4)
5	Ovary, etc.	1646	5.4	17.1 (16.3 – 18.0)	12.5 (11.8 – 13.1)
6	Lymphoid neoplasms	1323	4.4	13.8 (13.0 – 14.5)	10.8 (10.2 – 11.5)
7	Skin, including Melanoma	1321	4.4	13.7 (13.0 – 14.5)	8.4 (7.9 – 8.8)
8	Stomach	1089	3.6	11.3 (10.7 – 12.0)	6.9 (6.5 – 7.3)
9	Thyroid	1076	3.6	11.2 (10.5 – 11.9)	8.4 (7.8 – 8.9)
10	Cervix uteri	952	3.1	9.9 (9.3 – 10.5)	6.8 (6.4 – 7.3)
	Others	5751	19.0	-	-
	All	30237	100	314.6 (311.0 – 318.1)	213.8 (211.3 – 216.3)

**Figure 5.3.2: 10 Most Frequent Cancers in Females (%), 2009 – 2013**



#### **5.4 Highest Ranking Cancers by Ethnicities, 2009 – 2013**

In 2009 – 2013, colorectal, lung and prostate cancer were the three most common cancers among the Chinese and Indian males. Among the Malay males, lung cancer, colorectal cancer and lymphoid neoplasms were the three most common cancers (Tables 5.4.1.1 – 5.4.3.2).

Breast and colorectal cancer were consistently ranked among the top three common female cancers across all ethnicities. Lung cancer was among the top three cancers for Chinese females, while lymphoid neoplasms and corpus-uteri cancer were among the top three cancers for Malay and Indian females respectively (Tables 5.4.1.1 – 5.4.3.2).

**Table 5.4.1.1: Highest Ranking Cancers among Chinese Male Residents, 2009 – 2013**

Male	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Colo-rectum	4316	18.0	62.7 (60.8 – 64.5)	41.9 (40.7 – 43.2)
2	Lung	3664	15.3	53.2 (51.5 – 54.9)	35.6 (34.4 – 36.7)
3	Prostate	2978	12.4	43.2 (41.7 – 44.8)	29.5 (28.4 – 30.6)
4	Liver	1847	7.7	26.8 (25.6 – 28.0)	17.9 (17.1 – 18.7)
5	Lymphoid neoplasms	1367	5.7	19.8 (18.8 – 20.9)	15.4 (14.5 – 16.3)
6	Stomach	1269	5.3	18.4 (17.4 – 19.4)	12.4 (11.7 – 13.1)
7	Skin, including Melanoma	1259	5.2	18.3 (17.3 – 19.3)	12.4 (11.7 – 13.1)
8	Nasopharynx	1018	4.2	14.8 (13.9 – 15.7)	9.9 (9.3 – 10.5)
9	Kidney & Other urinary	879	3.7	12.8 (11.9 – 13.6)	8.6 (8.0 – 9.2)
10	Pancreas	694	2.9	10.1 (9.3 – 10.8)	6.7 (6.2 – 7.3)
	Others	4703	19.6	-	-
	All	23994	100	348.4 (344.0 – 352.8)	239.8 (236.7 – 242.9)

**Table 5.4.1.2: Highest Ranking Cancers among Chinese Female Residents, 2009 – 2013**

Female	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Female Breast	7107	28.5	99.1 (96.8 – 101.4)	64.3 (62.8 – 65.9)
2	Colo-rectum	3491	14.0	48.7 (47.1 – 50.3)	27.9 (26.9 – 28.8)
3	Lung	2033	8.1	28.3 (27.1 – 29.6)	16.1 (15.4 – 16.8)
4	Corpus uteri	1514	6.1	21.1 (20.0 – 22.2)	13.7 (13.0 – 14.4)
5	Ovary, etc.	1276	5.1	17.8 (16.8 – 18.8)	12.3 (11.6 – 13.0)
6	Skin, including Melanoma	1155	4.6	16.1 (15.2 – 17.0)	8.8 (8.2 – 9.3)
7	Stomach	979	3.9	13.7 (12.8 – 14.5)	7.4 (6.9 – 7.9)
8	Lymphoid neoplasms	976	3.9	13.6 (12.8 – 14.5)	10.0 (9.2 – 10.7)
9	Thyroid	853	3.4	11.9 (11.1 – 12.7)	8.6 (8.0 – 9.2)
10	Cervix uteri	780	3.1	10.9 (10.1 – 11.6)	7.0 (6.5 – 7.5)
	Others	4784	19.2	-	-
	All	24948	100	347.9 (343.6 – 352.2)	218.6 (215.8 – 221.5)



**Table 5.4.2.1: Highest Ranking Cancers among Malay Male Residents, 2009 – 2013**

Male	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Lung	449	18.3	35.6 (32.3 – 38.9)	34.7 (31.4 – 38.1)
2	Colo-rectum	353	14.4	28.0 (25.1 – 30.9)	26.9 (24.0 – 29.8)
3	Lymphoid neoplasms	316	12.9	25.1 (22.3 – 27.8)	24.6 (21.8 – 27.4)
4	Prostate	227	9.2	18.0 (15.7 – 20.4)	19.1 (16.6 – 21.7)
5	Liver	181	7.4	14.4 (12.3 – 16.5)	13.7 (11.6 – 15.8)
6	Myeloid neoplasm	111	4.5	8.8 (7.2 – 10.4)	8.4 (6.8 – 10.0)
7	Bladder	86	3.5	6.8 (5.4 – 8.3)	6.7 (5.2 – 8.1)
8	Nasopharynx	83	3.4	6.6 (5.2 – 8.0)	5.5 (4.3 – 6.8)
9	Kidney & Other 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	509	20.7	-	-
	All	2459	100	195.1 (187.4 – 202.8)	189.1 (181.4 – 196.9)

**Table 5.4.2.2: Highest Ranking Cancers among Malay Female Residents, 2009 – 2013**

Female	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Female Breast	938	30.8	73.7 (69.0 – 78.5)	58.8 (55.0 – 62.7)
2	Colo-rectum	338	11.1	26.6 (23.7 – 29.4)	22.4 (19.9 – 24.8)
3	Lymphoid neoplasms	235	7.7	18.5 (16.1 – 20.8)	16.6 (14.3 – 18.8)
4	Ovary, etc.	235	7.7	18.5 (16.1 – 20.8)	15.0 (13.0 – 16.9)
5	Corpus uteri	228	7.5	17.9 (15.6 – 20.3)	14.4 (12.5 – 16.3)
6	Lung	179	5.9	14.1 (12.0 – 16.1)	11.1 (9.5 – 12.8)
7	Thyroid	121	4.0	9.5 (7.8 – 11.2)	8.1 (6.6 – 9.6)
8	Cervix uteri	111	3.6	8.7 (7.1 – 10.4)	7.3 (5.9 – 8.7)
9	Myeloid neoplasms	85	2.8	6.7 (5.3 – 8.1)	5.9 (4.6 – 7.2)
10	Liver	67	2.2	5.3 (4.0 – 6.5)	4.7 (3.5 – 5.8)
	Others	512	16.8	-	-
	All	3049	100	239.7 (231.2 – 248.2)	200.2 (192.8 – 207.5)

**Table 5.4.3.1: Highest Ranking Cancers among Indian Male Residents, 2009 – 2013**

Male	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Colo-rectum	181	14.2	20.1 (17.2 – 23.0)	19.6 (16.6 – 22.6)
2	Prostate	155	12.2	17.2 (14.5 – 19.9)	19.4 (16.2 – 22.6)
3	Lung	150	11.8	16.7 (14.0 – 19.3)	17.2 (14.3 – 20.1)
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	67	5.3	7.4 (5.7 – 9.2)	7.0 (5.2 – 8.7)
7	Kidney & Other urinary	54	4.2	6.0 (4.4 – 7.6)	5.8 (4.1 – 7.4)
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	36	2.8	4.0 (2.7 – 5.3)	3.8 (2.5 – 5.1)
	Others	339	26.7	-	-
	All	1272	100	141.3 (133.5 – 149.0)	140.7 (132.6 – 148.9)

**Table 5.4.3.1: Highest Ranking Cancers among Indian Female Residents, 2009 – 2013**

Female	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Female Breast	590	37.8	70.0 (64.4 – 75.7)	61.4 (56.4 – 66.5)
2	Corpus uteri	141	9.0	16.7 (14.0 – 19.5)	15.6 (12.9 – 18.2)
3	Colo-rectum	108	6.9	12.8 (10.4 – 15.2)	12.0 (9.7 – 14.3)
4	Ovary, etc.	103	6.6	12.2 (9.9 – 14.6)	11.4 (9.1 – 13.6)
5	Lymphoid neoplasms	82	5.3	9.7 (7.6 – 11.8)	9.9 (7.6 – 12.1)
6	Thyroid	64	4.1	7.6 (5.7 – 9.5)	6.3 (4.7 – 7.9)
7	Lung	55	3.5	6.5 (4.8 – 8.3)	6.4 (4.7 – 8.2)
8	Stomach	36	2.3	4.3 (2.9 – 5.7)	4.1 (2.7 – 5.5)
9	Myeloid neoplasms	36	2.3	4.3 (2.9 – 5.7)	4.0 (2.6 – 5.4)
10	Pancreas	35	2.2	4.2 (2.8 – 5.5)	4.1 (2.7 – 5.5)
	Others	309	19.8	-	-
	All	1559	100	185.1 (175.9 – 194.3)	170.7 (162.0 – 179.4)

## 5.5 Mortality Rates by Gender, 2009 – 2013

Although colorectal and breast cancer were the most common cancers respectively in the male and female resident population, lung 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, Ministry of Home Affairs (Tables 5.5.1 & 5.5.2).

**Table 5.5.1: 10 Most Frequent Cancer Deaths in Males, 2009 – 2013**

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Lung	3724	27.2	39.8 (38.6 – 41.1)	29.4 (28.5 – 30.4)
2	Colo-rectum	1949	14.2	20.9 (19.9 – 21.8)	15.5 (14.8 – 16.2)
3	Liver	1709	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 & Other 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	13692	100	146.5 (144.1 – 149.0)	108.4 (106.5 – 110.2)

**Table 5.5.2: 10 Most Frequent Cancer Deaths in Females, 2009 – 2013**

Rank	Site	Number	%	CR (95% CI)	ASR (95% CI)
1	Female Breast	2052	18.1	21.3 (20.4 – 22.3)	14.2 (13.6 – 14.8)
2	Lung	1904	16.7	19.8 (18.9 – 20.7)	12.0 (11.4 – 12.6)
3	Colo-rectum	1715	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	11368	100	118.3 (116.1 – 120.4)	73.5 (72.1 – 74.9)

## **6. Commentary on Selected Cancer Sites**

### **6.1 Breast Cancer (ICD 9: 174)**

#### **Incidence**

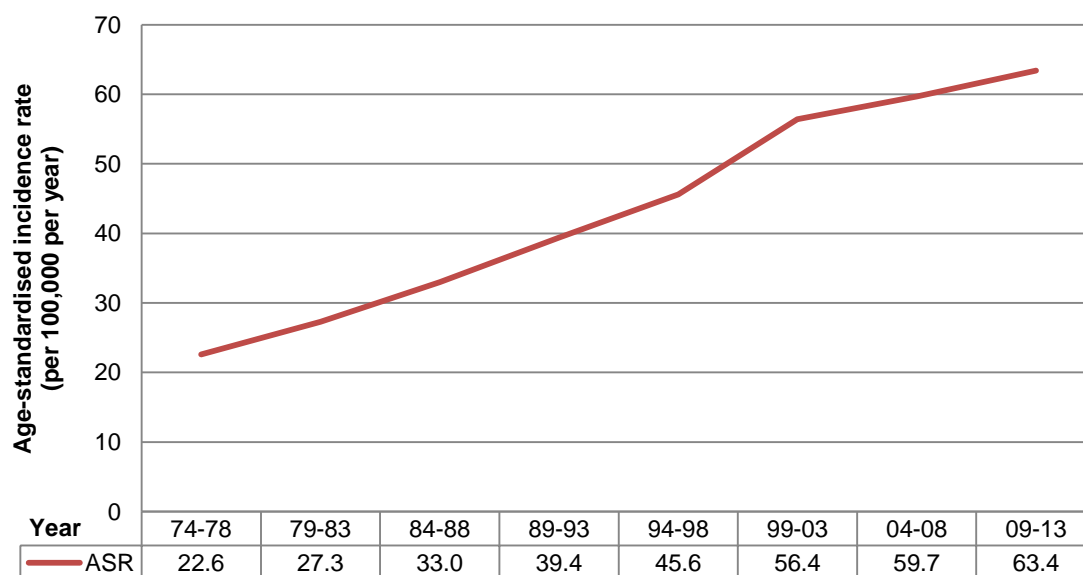
A total of 8867 new cases of breast cancer were diagnosed in 2009 – 2013. The age-standardised incidence rate of newly diagnosed breast cancer in females had been increasing since 1974. It rose about three-fold from 22.6 per 100,000 person-years in 1974 – 1978 to 63.4 per 100,000 person-years in 2009 – 2013 (Figure 6.1.1).

Chinese women had higher risk of developing breast cancer compared to Malay and Indian women (Table 6.1.1).

Most of the breast cancer cases were non-screen detected and the proportion of screen detected cases remained quite stable over the years (Table 6.1.2).

Majority of the breast cancer cases were stage I and II (Table 6.1.3) and aged 45 – 64 (Table 6.1.5).

**Figure 6.1.1: Age-standardised Incidence Rates for Breast Cancer, 1974 – 2013**



**Table 6.1.1: Crude and Age-standardised Incidence Rates for Breast Cancer by Ethnicity, 2009 – 2013**

Ethnicity	Number	CR (95% CI)	ASR (95% CI)
Chinese	7107	99.1 (96.8 – 101.4)	64.3 (62.8 – 65.9)
Malay	938	73.7 (69.0 – 78.5)	58.8 (55.0 – 62.7)
Indian	590	70.0 (64.4 – 75.7)	61.4 (56.4 – 66.5)
Others	232	71.1 (62.0 – 80.3)	71.8 (61.0 – 82.6)
All	8867	92.2 (90.3 – 94.2)	63.4 (62.1 – 64.8)

**Table 6.1.2: Stage distribution of Breast Cancer patients, 2004 – 2008 & 2009 – 2013**

Stage	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Stage I	2234	33.6	2712	33.0
Stage II	2494	37.5	3170	38.6
Stage III	1328	20.0	1543	18.8
Stage IV	599	9.0	785	9.6

\* Cancers of unknown stage were excluded.

**Table 6.1.3: Ethnic distribution of Breast Cancer patients, 2004 – 2008 & 2009 – 2013**

Ethnicity	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Chinese	5893	81.9	7107	80.2
Malay	784	10.9	938	10.6
Indian	392	5.4	590	6.7
Others	126	1.8	232	2.6
All	7195	100	8867	100

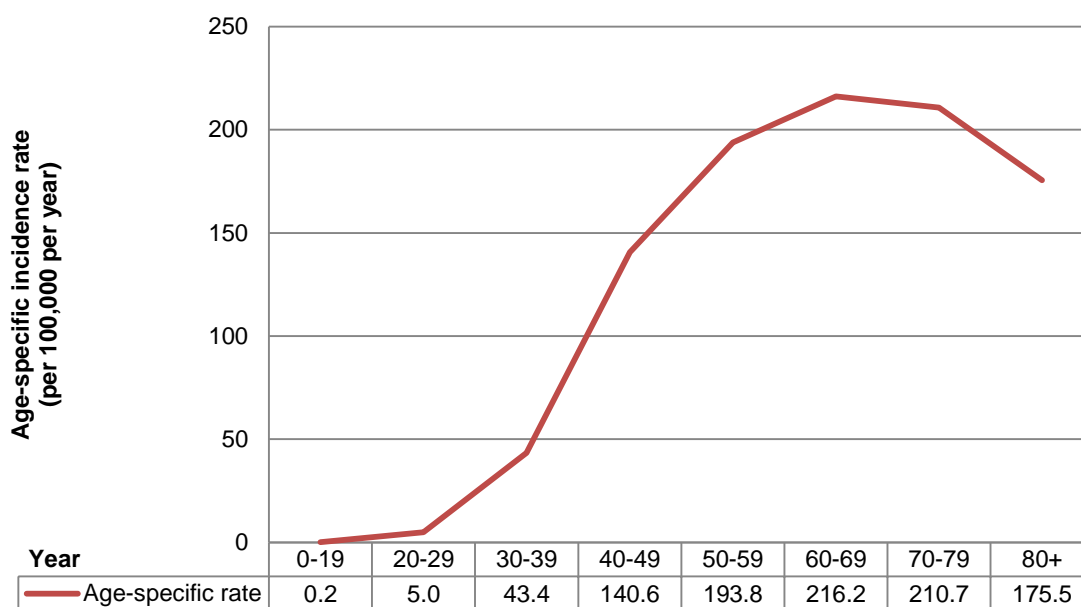
**Table 6.1.4: Age distribution of Breast Cancer patients, 2004 – 2008 & 2009 – 2013**

Age Group	2004 – 2008		2009 – 2013	
	Number	%	Number	%
0-44	1602	22.3	1644	18.5
45-54	2469	34.3	2680	30.2
55-64	1675	23.3	2510	28.3
65-74	876	12.2	1235	13.9
75+	573	8.0	798	9.0
All	7195	100	8867	100

## Age at Diagnosis

In 2009 – 2013, the age-specific incidence rate increased sharply from age 30 onwards and reached a peak in age 60 – 69 before gradually declining from age 70 onwards (Figure 6.1.2).

**Figure 6.1.2: Age-specific Incidence Rates for Breast Cancer, 2009 – 2013**

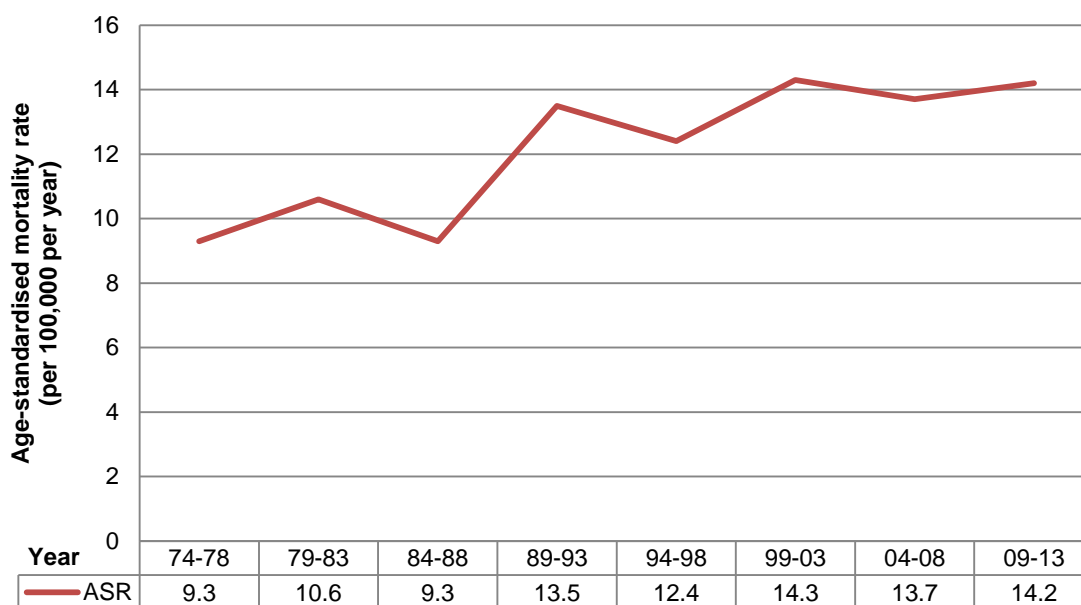


## Mortality Rates

A total of 2052 women died from breast cancer in 2009 – 2013. The age-standardised mortality rates had remained relatively stable since 1989 (Figure 6.1.3).

Chinese women had better survival than Malay and Indian women (Table 6.1.6).

**Figure 6.1.3: Age-standardised Mortality Rates for Breast Cancer, 1974 – 2013**





**Table 6.1.5: 5-year Age-standardised Observed Survival of Breast Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	89.68	87.42, 91.55	90.00	88.74, 91.12
II	79.08	76.54, 81.39	81.45	79.97, 82.83
III	56.92	52.73, 60.89	61.04	58.46, 63.52
IV	21.07	16.46, 26.06	20.03	17.07, 23.16
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	69.01	67.82, 70.16	72.10	71.07, 73.10
Malay	50.20	46.61, 53.67	54.64	51.51, 57.67
Indian	66.61	61.50, 71.21	67.51	63.18, 71.46
Others	65.78	57.02, 73.18	62.33	55.46, 68.44
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	86.47	84.66, 88.09	89.24	87.63, 90.64
45-54	85.16	83.63, 86.56	85.56	84.17, 86.85
55-64	78.81	76.85, 80.87	80.91	79.12, 82.57
65-74	73.02	69.71, 76.04	74.17	71.35, 76.76
75+	46.59	41.91, 51.14	53.44	49.48, 57.23
All	67.25	66.16, 68.32	70.18	69.24, 71.10

## **6.2 Cervical Cancer (ICD 9: 180)**

### **Incidence**

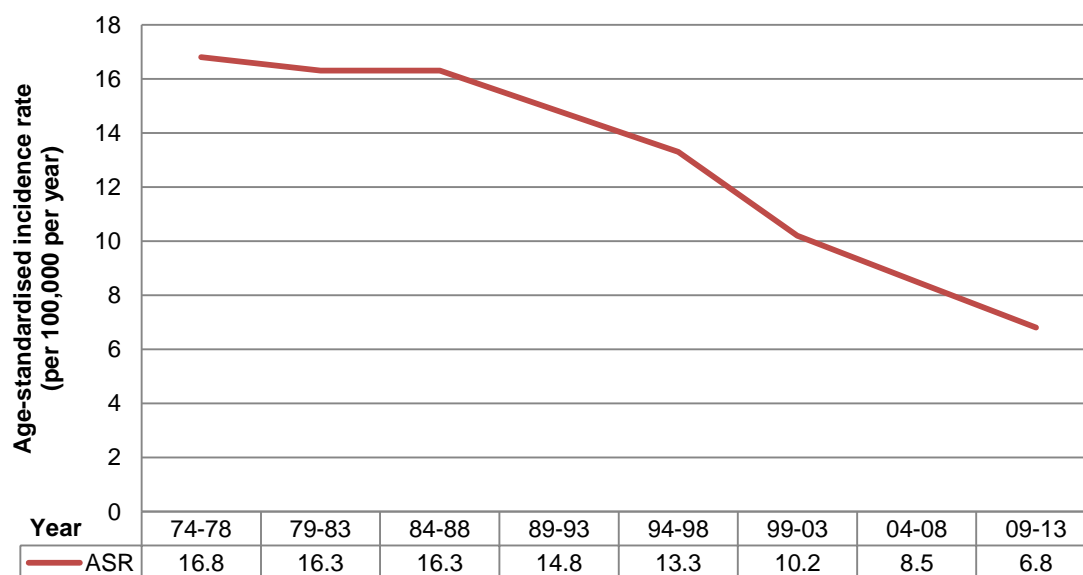
A total of 952 new cases of cervical cancer were diagnosed in 2009 – 2013. The age-standardised incidence rate of newly diagnosed cervical cancer in females had been decreasing since 1974. It had dropped by more than half from 16.8 per 100,000 person-years in 1974 – 1978 to 6.8 per 100,000 person-years in 2009 – 2013 (Figure 6.2.1).

Chinese women had higher risk of developing cervical cancer compared to Malay and Indian women (Table 6.2.1).

Most of the cervical cancer cases were non-screen detected and the proportion of screen detected cases increased over the years, especially for stage I cases (Table 6.2.2).

Majority of the cervical cancer cases were stage I and II (Table 6.2.3) and aged 54 or below (Table 6.2.5).

**Figure 6.2.1: Age-standardised Incidence Rates for Cervical Cancer, 1974 – 2013**



**Table 6.2.1: Crude and Age-standardised Incidence Rates for Cervical Cancer by Ethnicity, 2009 – 2013**

Ethnicity	Number	CR (95% CI)	ASR (95% CI)
Chinese	780	10.9 (10.1 – 11.6)	7.0 (6.5 – 7.5)
Malay	111	8.7 (7.1 – 10.4)	7.3 (5.9 – 8.7)
Indian	30	3.6 (2.3 – 4.8)	3.4 (2.2 – 4.7)
Others	31	9.5 (6.2 – 12.8)	7.9 (4.7 – 11.0)
All	952	9.9 (9.3 – 10.5)	6.8 (6.4 – 7.3)

**Table 6.2.2: Stage distribution of Cervical Cancer patients, 2004 – 2008 & 2009 – 2013**

Stage	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Stage I	427	47.4	357	42.0
Stage II	234	26.0	228	26.8
Stage III	153	17.0	133	15.6
Stage IV	87	9.7	132	15.5

\* Cancers of unknown stage were excluded.

**Table 6.2.3: Ethnic distribution of Cervical Cancer patients, 2004 – 2008 & 2009 – 2013**

Ethnicity	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Chinese	846	84.3	780	81.9
Malay	110	11.0	111	11.7
Indian	24	2.4	30	3.2
Others	23	2.3	31	3.3
All	1003	100	952	100

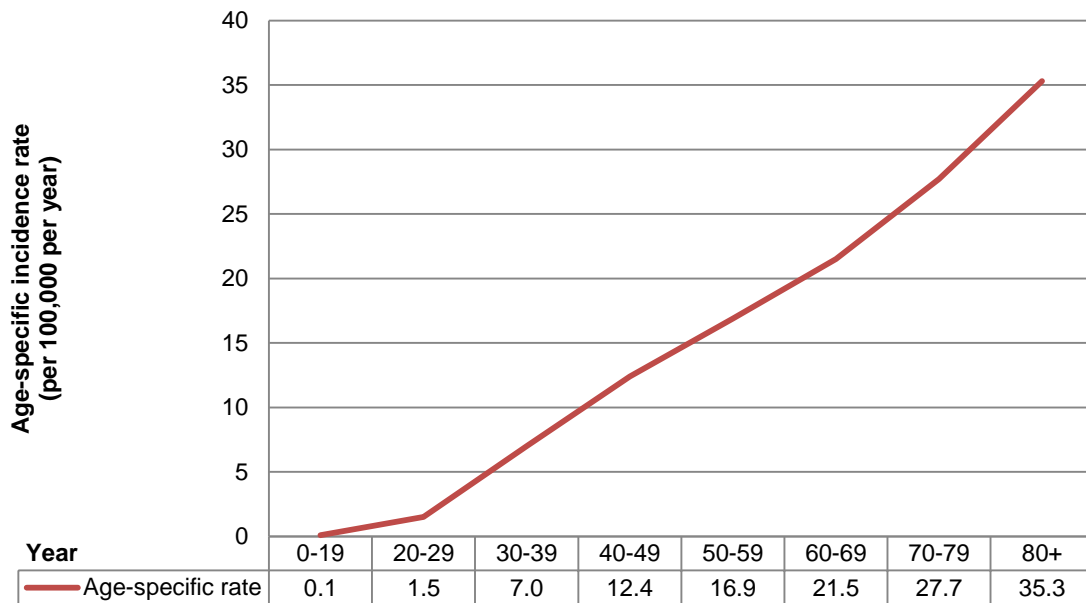
**Table 6.2.4: Age distribution of Cervical Cancer patients, 2004 – 2008 & 2009 – 2013**

Age Group	2004 – 2008		2009 – 2013	
	Number	%	Number	%
0-44	219	21.8	222	23.3
45-54	265	26.4	224	23.5
55-64	191	19.0	212	22.3
65-74	199	19.8	156	16.4
75+	129	12.9	138	14.5
All	1003	100	952	100

## Age at Diagnosis

In 2009 – 2013, the age-specific incidence rate increased steadily with age from 0.1 per 100,000 person-years for women aged 0 – 19 to 35.3 per 100,000 person-years for women aged 80 or above (Figure 6.2.2).

**Figure 6.2.2: Age-specific Incidence Rates for Cervical Cancer, 2009 – 2013**

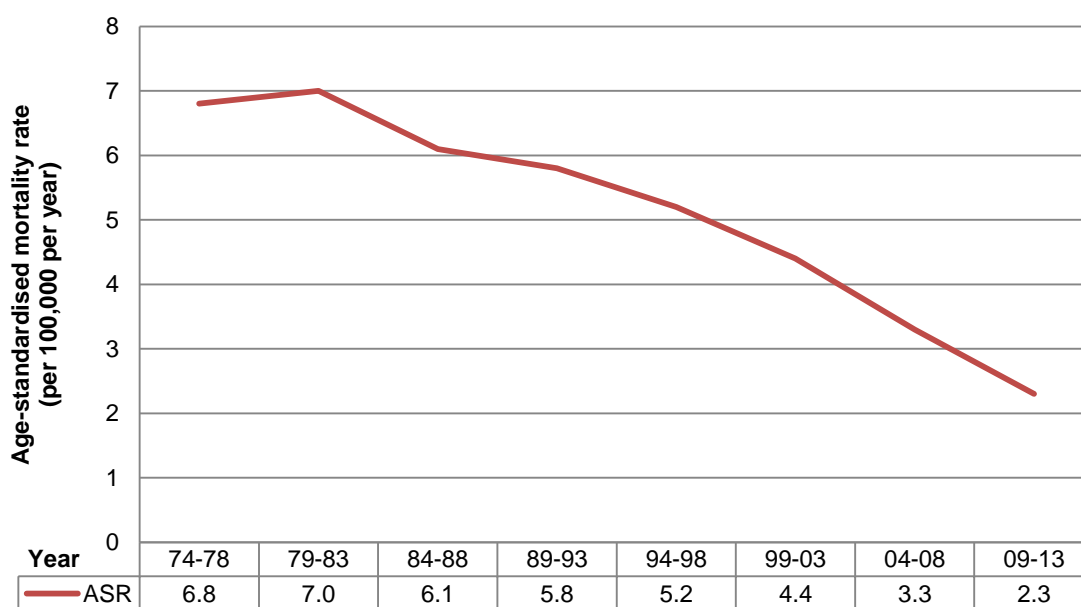


## Mortality Rates

A total of 350 women died from cervical cancer in 2009 – 2013. The age-standardised mortality rate was 7.0 per 100,000 person-years in 1979 – 1983 and it decreased progressively to 2.3 per 100,000 person-years in 2009 – 2013 (Figure 6.2.3).

Chinese women had better survival compared to Malay and Indian women (Table 6.2.6).

**Figure 6.2.3: Age-standardised Mortality Rates for Cervical Cancer, 1974 – 2013**



**Table 6.2.5: 5-year Age-standardised Observed Survival of Cervical Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	85.03	80.50, 88.58	79.89	75.64, 83.48
II	61.09	53.16, 68.09	56.29	49.47, 62.56
III	36.63	27.52, 45.76	46.28	37.10, 54.95
IV*	-	-	21.75	13.63, 31.10
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	59.51	56.42, 62.45	55.92	52.70, 59.01
Malay	42.15	33.07, 50.95	40.79	31.63, 49.72
Indian	49.39	29.09, 66.83	35.18	18.77, 52.07
Others	63.31	39.98, 79.62	59.41	42.97, 72.55
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	81.25	75.58, 85.73	80.14	74.09, 84.92
45-54	70.31	64.64, 75.25	71.13	64.79, 76.53
55-64	62.56	55.40, 68.90	65.05	57.82, 71.36
65-74	56.93	49.43, 63.74	52.56	44.75, 59.78
75+	31.31	22.60, 40.39	27.98	20.87, 35.50
All	57.68	54.80, 60.44	54.11	51.16, 56.97

\* There were no stage IV patients in the period of 2004 – 2008 that survived up to 5 years from date of diagnosis.

### **6.3 Colorectal Cancer (ICD 9: 153 – 154)**

#### **Incidence**

A total of 8931 new cases of colorectal cancer were diagnosed in 2009 – 2013. The age-standardised incidence rate of newly diagnosed colorectal cancer for both genders first increased since 1974 then plateaued around 1999 onwards (Figure 6.3.1).

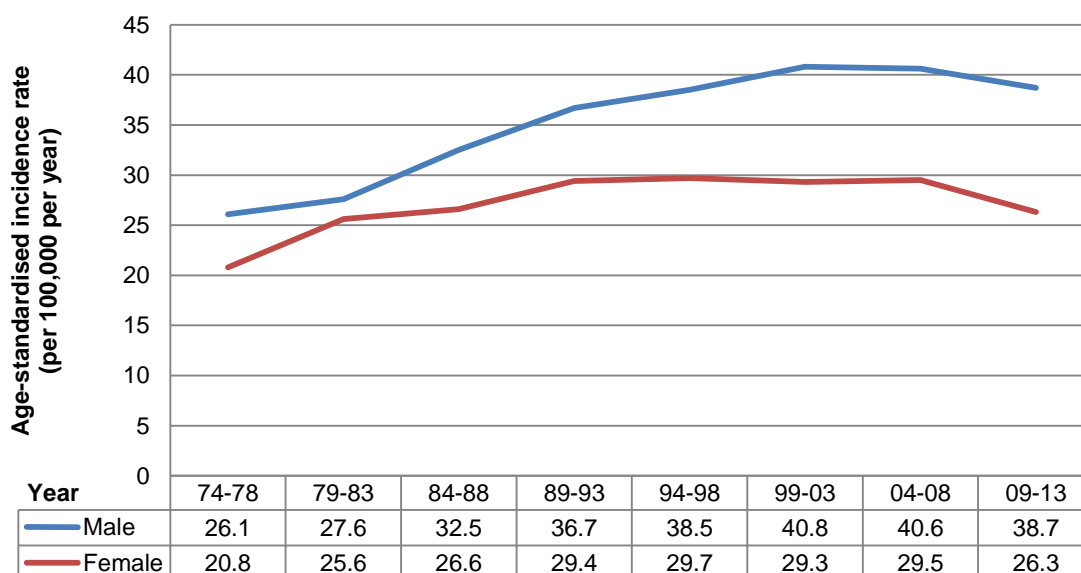
Chinese men and women had higher risk of developing colorectal cancer compared to their Malay and Indian counterparts (Table 6.3.1).

Most of the colorectal cancer cases were non-screen detected and the proportion of screen detected cases remained quite stable over the years (Table 6.3.2).

Majority of the colorectal cases were stage II and III (Table 6.3.3) and aged 55 or above (Table 6.3.5).



**Figure 6.3.1: Age-standardised Incidence Rates for Colorectal Cancer, 1974 – 2013**



**Table 6.3.1: Crude and Age-standardised Incidence Rates for Colorectal Cancer by Gender and Ethnicity, 2009 – 2013**

Gender	Ethnicity	Number	CR (95% CI)	ASR (95% CI)
Male	Chinese	4316	62.7 (60.8 – 64.5)	41.9 (40.7 – 43.2)
	Malay	353	28.0 (25.1 – 30.9)	26.9 (24.0 – 29.8)
	Indian	181	20.1 (17.2 – 23.0)	19.6 (16.6 – 22.6)
	Others	85	28.6 (22.5 – 34.7)	35.3 (27.2 – 43.5)
	All	4935	52.8 (51.3 – 54.3)	38.7 (37.6 – 39.8)
Female	Chinese	3491	48.7 (47.1 – 50.3)	27.9 (26.9 – 28.8)
	Malay	338	26.6 (23.7 – 29.4)	22.4 (19.9 – 24.8)
	Indian	108	12.8 (10.4 – 15.2)	12.0 (9.7 – 14.3)
	Others	59	18.1 (13.5 – 22.7)	24.4 (17.4 – 31.5)
	All	3996	41.6 (40.3 – 42.9)	26.3 (25.5 – 27.1)

**Table 6.3.2: Stage distribution of Colorectal Cancer patients, 2004 – 2008 & 2009 – 2013**

Gender	Stage	2004 – 2008		2009 – 2013	
		Number	%	Number	%
Male	Stage I	463	12.7	720	16.1
	Stage II	1025	28.1	1190	26.7
	Stage III	1298	35.6	1461	32.8
	Stage IV	865	23.7	1089	24.4
Female	Stage I	407	13.0	506	14.2
	Stage II	886	28.3	937	26.3
	Stage III	1135	36.3	1230	34.6
	Stage IV	702	22.4	883	24.8

\* Cancers of unknown stage were excluded.

**Table 6.3.3: Ethnic distribution of Colorectal Cancer patients, 2004 – 2008 & 2009 – 2013**

Gender	Ethnicity	2004 – 2008		2009 – 2013	
		Number	%	Number	%
Male	Chinese	3616	87.9	4316	87.5
	Malay	299	7.3	353	7.2
	Indian	149	3.6	181	3.7
	Others	50	1.2	85	1.7
	All	4114	100	4935	100
Female	Chinese	3238	90.1	3491	87.4
	Malay	232	6.5	338	8.5
	Indian	88	2.4	108	2.7
	Others	36	1.0	59	1.5
	All	3594	100	3996	100

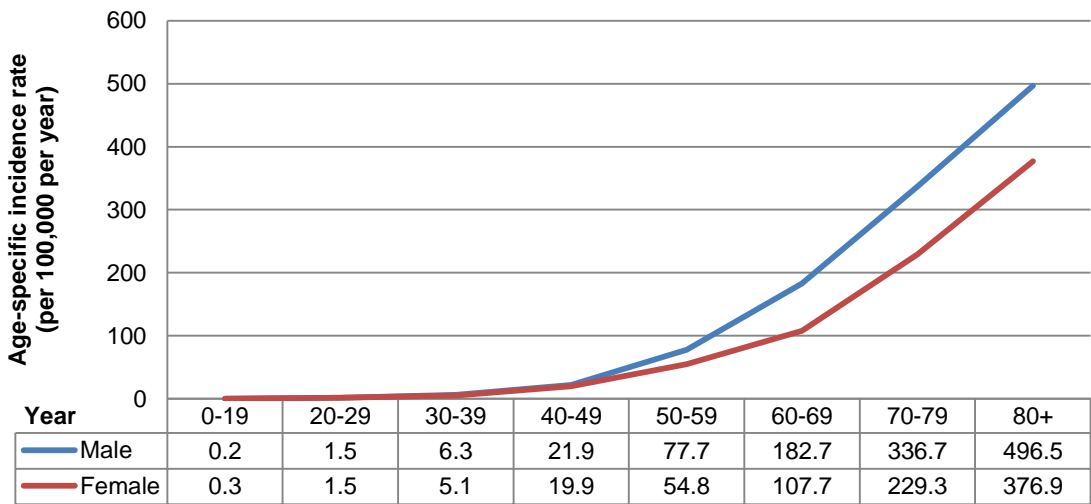
**Table 6.3.4: Age distribution of Colorectal Cancer patients, 2004 – 2008 & 2009 – 2013**

Gender	Age Group	2004 – 2008		2009 – 2013	
		Number	%	Number	%
Male	0-44	231	5.6	229	4.6
	45-54	638	15.5	710	14.4
	55-64	1036	25.2	1404	28.4
	65-74	1192	29.0	1379	27.9
	75+	1017	24.7	1213	24.6
	All	4114	100	4935	100
Female	0-44	185	5.1	218	5.5
	45-54	522	14.5	530	13.3
	55-64	764	21.3	945	23.6
	65-74	898	25.0	918	23.0
	75+	1225	34.1	1385	34.7
	All	3594	100	3996	100

### Age at Diagnosis

In 2009 – 2013, the age-specific incidence rate increased steeply with age for people of both genders once past age 50. The rate for males rose from 21.9 per 100,000 person-years for men aged 40 – 49 to 496.5 per 100,000 person-years for men aged 80 or above, while the rate for females rose from 19.9 per 100,000 person-years for women aged 40 – 49 to 376.9 for women aged 80 or above (Figure 6.3.2).

**Figure 6.3.2: Age-specific Incidence Rates for Colorectal Cancer, 2009 – 2013**

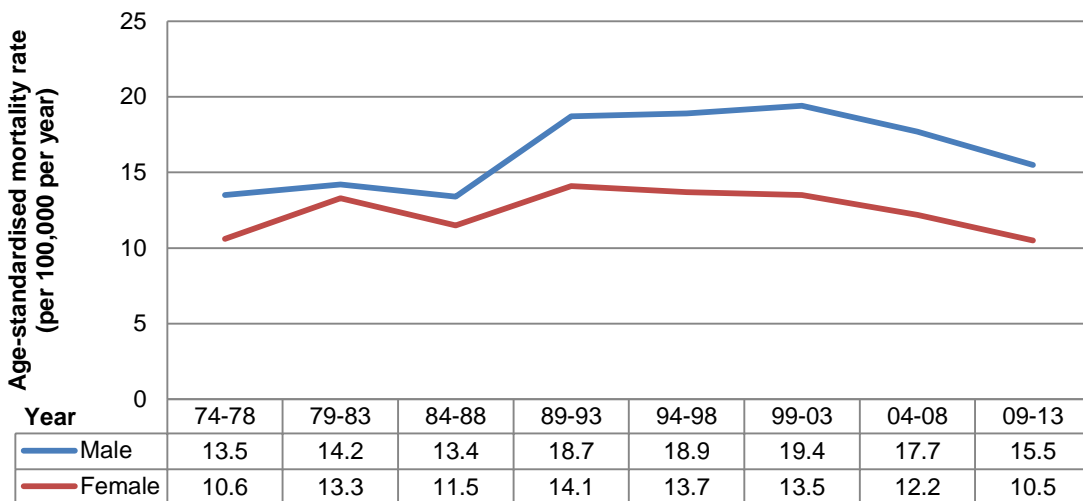


## Mortality Rates

A total of 3664 people died from colorectal cancer in 2009 – 2013. The age-standardised mortality rate for both genders decreased from 1999 onwards. This is mainly due to advances in treatment, such as adjuvant therapy combining chemotherapy, radiotherapy and total mesorectal excision (Figure 6.3.3).

Indian men had better survival than Chinese and Malay men (Table 6.3.6.1), while Chinese women had better survival compared to Malay and Indian women (Table 6.3.6.2).

**Figure 6.3.3: Age-standardised Mortality Rates for Colorectal Cancer, 1974 – 2013**



**Table 6.3.5.1: 5-year Age-standardised Observed Survival of Colorectal Cancer by Stage, Ethnicity and Age Group for Males, 2004 – 2008 & 2009 – 2013**

	2004 - 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	77.83	70.29, 83.68	82.48	79.14, 85.34
II	68.12	64.09, 71.80	70.06	67.26, 72.67
III	46.07	41.98, 50.07	53.39	50.72, 55.99
IV	6.40	4.28, 9.10	10.39	8.45, 12.56
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	44.95	43.28, 46.61	50.40	48.86, 51.92
Malay	38.63	32.59, 44.63	42.39	36.95, 47.72
Indian	52.83	43.92, 60.97	54.69	47.06, 61.68
Others	45.69	31.27, 58.98	58.07	45.64, 68.61
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	61.85	55.08, 67.91	66.11	59.27, 72.07
45-54	59.77	55.63, 63.66	65.08	61.40, 68.50
55-64	56.49	53.17, 59.66	62.09	59.30, 64.75
65-74	46.28	43.29, 49.21	52.67	49.87, 55.39
75+	30.78	27.77, 33.85	35.34	32.46, 38.22
All	44.79	43.22, 46.36	50.11	48.67, 51.54

**Table 6.3.5.2: 5-year Age-standardised Observed Survival of Colorectal Cancer by Stage, Ethnicity and Age Group for Females, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	81.41	73.20, 87.32	84.98	81.36, 87.94
II	72.33	67.98, 76.19	77.61	74.69, 80.23
III	54.41	50.28, 58.35	61.44	58.59, 64.15
IV	6.36	4.00, 9.46	10.58	8.52, 12.90
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	50.44	48.60, 52.24	54.06	52.36, 55.72
Malay	36.85	30.59, 43.11	40.51	34.89, 46.06
Indian	49.07	37.96, 59.26	51.56	41.77, 60.50
Others	46.66	27.40, 63.83	71.17	58.71, 80.47
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	60.35	52.96, 66.95	68.89	62.15, 74.69
45-54	62.91	58.45, 67.03	65.72	61.39, 69.69
55-64	60.68	56.76, 64.36	64.58	61.29, 67.67
65-74	54.04	50.59, 57.36	60.03	56.72, 63.16
75+	35.08	32.12, 38.05	37.23	34.61, 39.85
All	49.73	47.99, 51.44	53.30	51.71, 54.86

## 6.4 Ovarian Cancer (ICD 9: 183)

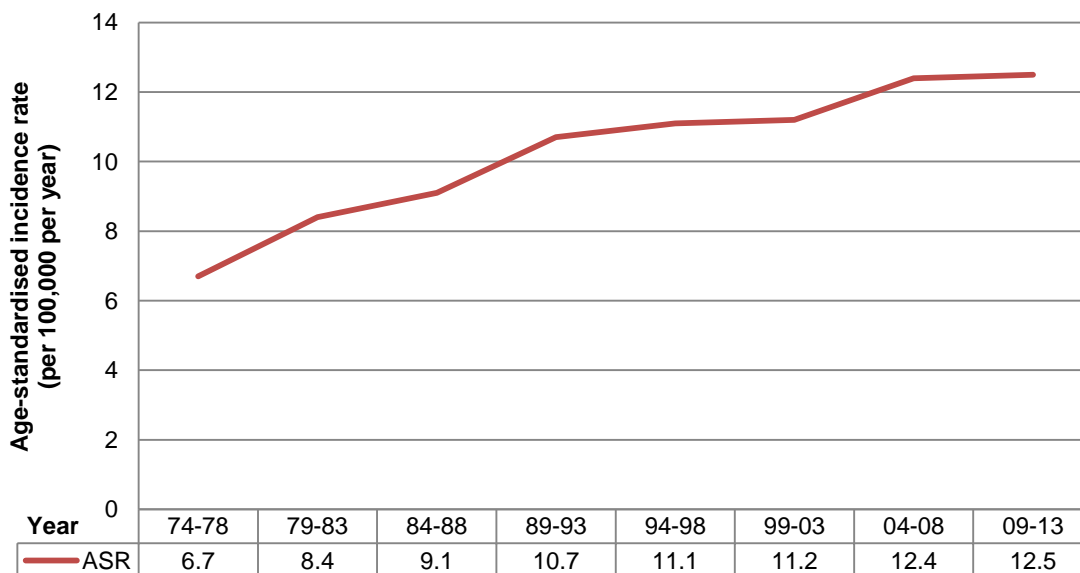
### Incidence

A total of 1646 new cases of ovarian cancer were diagnosed in 2009 – 2013. The age-standardised incidence rate of newly diagnosed ovarian cancer in females had been increasing over the last forty years. It almost doubled from 6.7 per 100,000 person-years in 1974 – 1978 to 12.5 per 100,000 person-years in 2009 – 2013 (Figure 6.4.1).

Malay women had higher risk of developing ovarian cancer compared to Chinese and Indian women (Table 6.4.1).

Majority of the ovarian cancer cases were stage I and III (Table 6.4.2) and aged 54 or below (Table 6.4.4).

**Figure 6.4.1: Age-standardised Incidence Rates for Ovarian Cancer, 1974 – 2013**





**Table 6.4.1: Crude and Age-standardised Incidence Rates for Ovarian Cancer by Ethnicity, 2009 – 2013**

Ethnicity	Number	CR (95% CI)	ASR (95% CI)
Chinese	1276	17.8 (16.8 – 18.8)	12.3 (11.6 – 13.0)
Malay	235	18.5 (16.1 – 20.8)	15.0 (13.0 – 16.9)
Indian	103	12.2 (9.9 – 14.6)	11.4 (9.1 – 13.6)
Others	32	9.8 (6.4 – 13.2)	8.4 (5.0 – 11.8)
All	1646	17.1 (16.3 – 18.0)	12.5 (11.8 – 13.1)

**Table 6.4.2: Stage distribution of Ovarian Cancer patients, 2004 – 2008 & 2009 – 2013**

Stage	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Stage I	391	41.1	480	40.1
Stage II	106	11.1	91	7.6
Stage III	302	31.7	400	33.4
Stage IV	153	16.1	227	18.9

\* Cancers of unknown stage were excluded.

**Table 6.4.3: Ethnic distribution of Ovarian Cancer patients, 2004 – 2008 & 2009 – 2013**

Ethnicity	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Chinese	1141	80.6	1276	77.5
Malay	171	12.1	235	14.3
Indian	80	5.6	103	6.3
Others	24	1.7	32	1.9
All	1416	100	1646	100

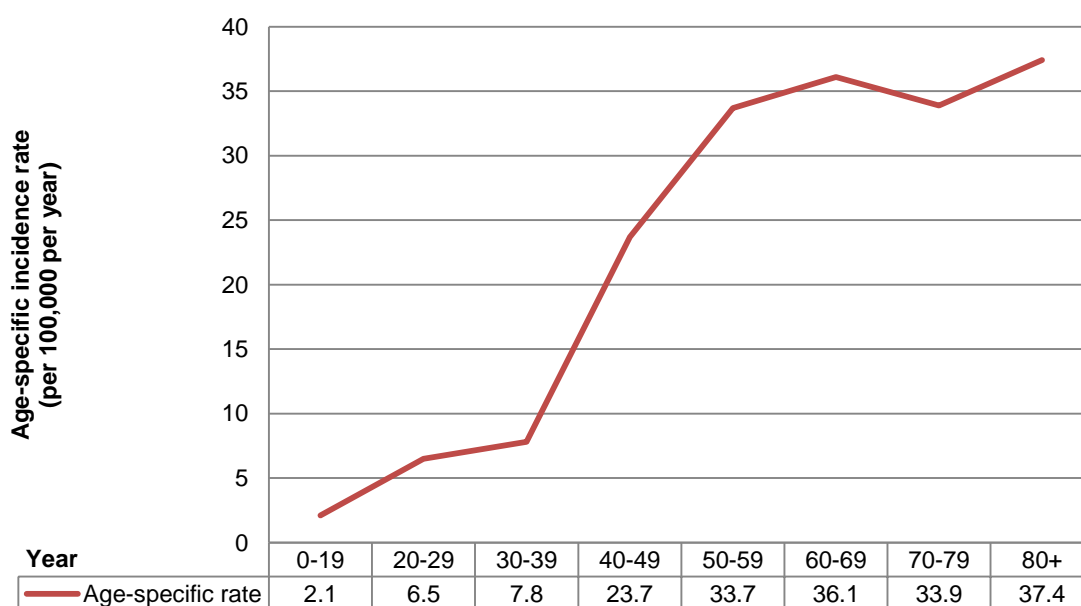
**Table 6.4.4: Age distribution of Ovarian Cancer patients, 2004 – 2008 & 2009 – 2013**

Age Group	2004 – 2008		2009 – 2013	
	Number	%	Number	%
0-44	406	28.7	415	25.2
45-54	414	29.2	460	27.9
55-64	295	20.8	410	24.9
65-74	170	12.0	210	12.8
75+	131	9.3	151	9.2
All	1416	100	1646	100

### Age at Diagnosis

In 2009 – 2013, the age-specific incidence rate rose drastically from 7.8 per 100,000 person-years for women aged 30 – 39 to 33.7 per 100,000 person-years for women aged 50 – 59. The rate then remained relatively stable after 59 years old (Figure 6.4.2).

**Figure 6.4.2: Age-specific Incidence Rates for Ovarian Cancer, 2009 – 2013**

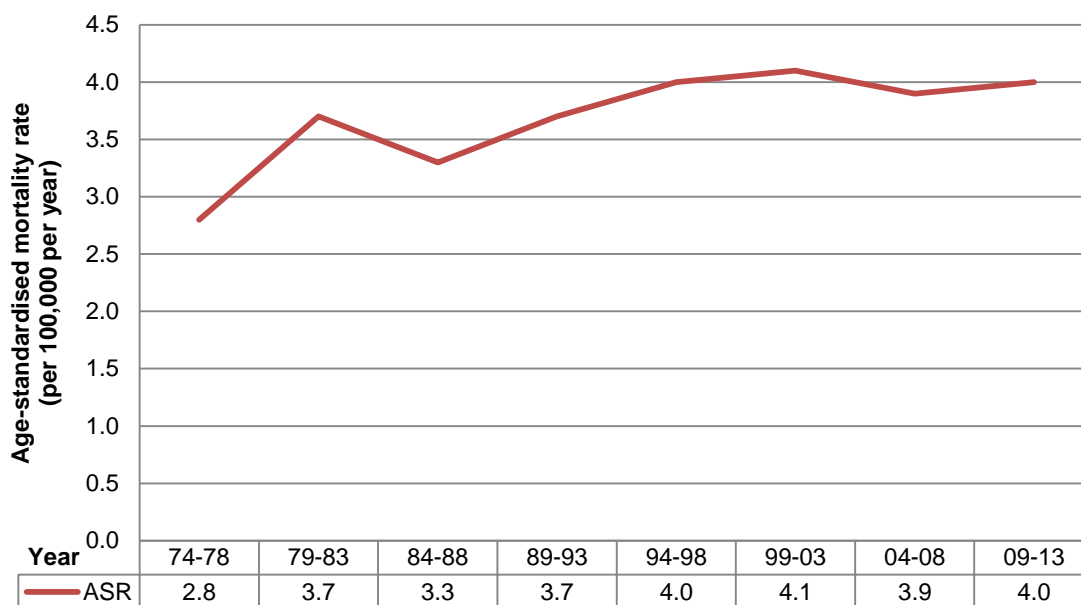


## Mortality Rates

A total of 583 women died from ovarian cancer in 2009 – 2013. The age-standardised mortality rate remained fairly stable since 1994 (Figure 6.4.3).

In 2004 – 2008, Indian women had better survival than Chinese and Malay women, but in 2009 – 2013 the survival of Chinese women surpassed that of the Indian women (Table 6.4.5).

**Figure 6.4.3: Age-standardised Mortality Rates for Ovarian Cancer, 1974 – 2013**



**Table 6.4.5: 5-year Age-standardised Observed Survival of Ovarian Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	81.97	76.29, 86.41	80.04	75.88, 83.56
II	79.44	66.46, 87.84	52.66	43.28, 61.20
III	35.95	28.63, 43.31	33.52	28.81, 38.28
IV	14.57	7.88, 23.21	13.62	9.15, 18.98
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	44.89	42.25, 47.49	48.22	45.78, 50.61
Malay	32.08	26.14, 38.17	33.85	28.60, 39.18
Indian	50.11	40.02, 59.38	37.05	29.12, 44.97
Others	38.91	20.00, 57.48	51.31	36.73, 64.11
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	84.11	80.08, 87.39	87.87	84.26, 90.69
45-54	69.15	64.08, 73.65	75.31	70.99, 79.08
55-64	63.56	57.25, 69.19	59.94	54.60, 64.87
65-74	40.95	33.05, 48.68	56.62	49.04, 63.51
75+	25.76	17.85, 34.37	19.61	13.59, 24.46
All	43.74	41.40, 46.06	46.01	43.88, 48.11

## 6.5 Uterine Cancer (ICD 9: 182)

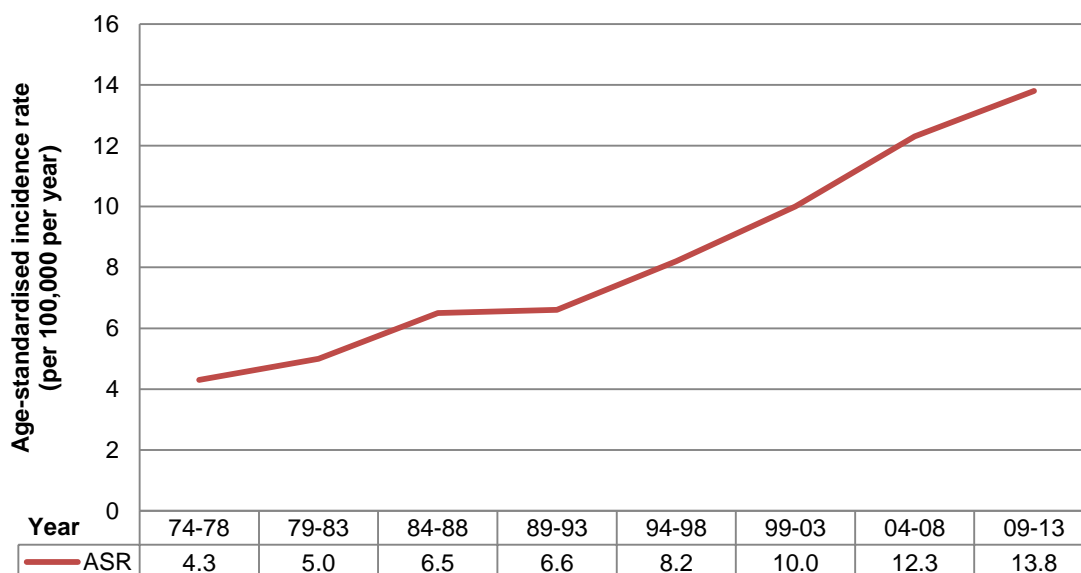
### Incidence

A total of 1922 new cases of uterine cancer were diagnosed in 2009 – 2013. The age-standardised incidence rate of newly diagnosed uterine cancer in females had been increasing for the past forty years. It increased more than three times from 4.3 per 100,000 person-years in 1974 – 1978 to 13.8 per 100,000 person-years in 2009 – 2013 (Figure 6.5.1).

The various ethnic groups had approximately similar risk of developing uterine cancer (Table 6.5.1).

Majority of the uterine cancer cases were stage I and III (Table 6.5.2) and aged 45 – 64 (Table 6.5.4).

**Figure 6.5.1: Age-standardised Incidence Rates for Uterine Cancer, 1974 – 2013**



**Table 6.5.1: Crude and Age-standardised Incidence Rates for Uterine Cancer by Ethnicity, 2009 – 2013**

Ethnicity	Number	CR (95% CI)	ASR (95% CI)
Chinese	1514	21.1 (20.0 – 22.2)	13.7 (13.0 – 14.4)
Malay	228	17.9 (15.6 – 20.3)	14.4 (12.5 – 16.3)
Indian	141	16.7 (14.0 – 19.5)	15.6 (12.9 – 18.2)
Others	39	12.0 (8.2 – 15.7)	12.0 (7.7 – 16.3)
All	1922	20.0 (19.1 – 20.9)	13.8 (13.2 – 14.4)

**Table 6.5.2: Stage distribution of Uterine Cancer patients, 2004 – 2008 & 2009 – 2013**

Stage	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Stage I	824	66.2	1129	67.8
Stage II	110	8.8	125	7.5
Stage III	201	16.1	245	14.7
Stage IV	110	8.8	166	10.0

\* Cancers of unknown stage were excluded.

**Table 6.5.3: Ethnic distribution of Uterine Cancer patients, 2004 – 2008 & 2009 – 2013**

Ethnicity	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Chinese	1195	82.2	1514	78.8
Malay	147	10.1	228	11.9
Indian	96	6.6	141	7.3
Others	15	1.0	39	2.0
All	1453	100	1922	100

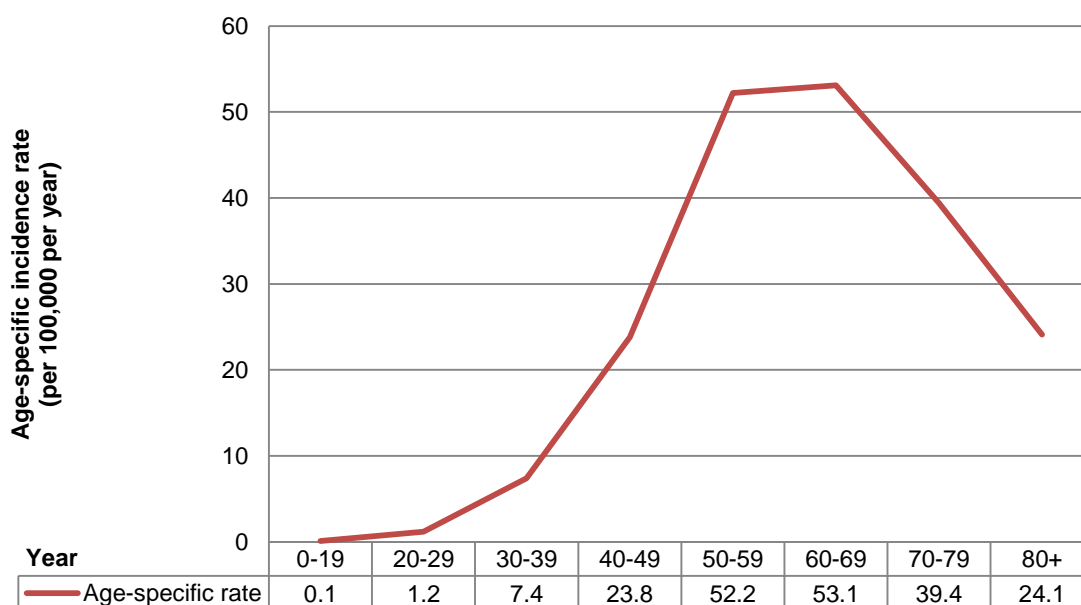
**Table 6.5.4: Age distribution of Uterine Cancer patients, 2004 – 2008 & 2009 – 2013**

Age Group	2004 – 2008		2009 – 2013	
	Number	%	Number	%
0-44	232	16.0	297	15.5
45-54	494	34.0	589	30.6
55-64	392	27.0	646	33.6
65-74	231	15.9	266	13.8
75+	104	7.2	124	6.5
All	1453	100	1922	100

### Age at Diagnosis

In 2009 – 2013, the age-specific incidence rate rose quickly from 7.4 per 100,000 person-years for women aged 30 – 39 to 52.2 per 100,000 person-years for women aged 50 – 59. However, the rate declined with age after 69 years old (Figure 6.5.2).

**Figure 6.5.2: Age-specific Incidence Rates for Uterine Cancer, 2009 – 2013**

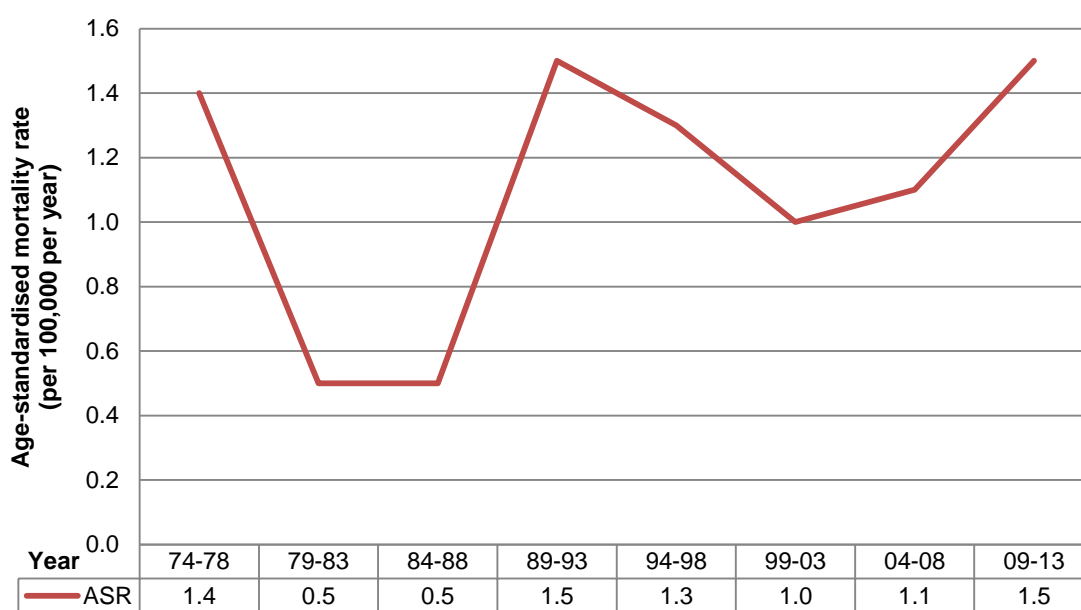


## Mortality Rates

A total of 215 women died from uterine cancer in 2009 – 2013. The age-standardised mortality rate ranged from 0.5 per 100,000 person-years to 1.5 per 100,000 person-years over the last four decades (Figure 6.5.3).

In 2004 – 2008, Chinese women had better survival than Malay and Indian women, but in 2009 – 2013 the survival of Indian women surpassed that of the Chinese women (Table 6.5.5).

**Figure 6.5.3: Age-standardised Mortality Rates for Uterine Cancer, 1974 – 2013**





**Table 6.5.5: 5-year Age-standardised Observed Survival of Uterine Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	86.02	82.94, 88.59	85.85	83.49, 87.89
II	77.66	62.82, 87.15	78.58	70.42, 84.73
III	50.51	41.15, 59.14	52.48	45.68, 58.82
IV	14.33	6.62, 24.89	13.13	8.41, 18.92
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	64.30	61.50, 66.95	67.60	65.25, 69.83
Malay	54.91	46.90, 62.20	49.44	42.60, 55.92
Indian	45.79	34.03, 56.78	74.10	65.94, 80.60
Others	52.14	30.64, 69.86	50.79	35.72, 64.02
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	94.08	90.01, 96.52	91.85	87.74, 94.62
45-54	87.24	83.79, 90.00	87.40	84.28, 89.94
55-64	79.18	74.26, 83.26	79.36	75.67, 82.55
65-74	64.84	57.31, 71.37	66.57	60.24, 72.13
75+	37.94	27.51, 48.30	46.88	37.24, 55.93
All	61.72	59.16, 64.16	65.16	63.03, 67.19

## 6.6 Prostate Cancer (ICD 9: 185)

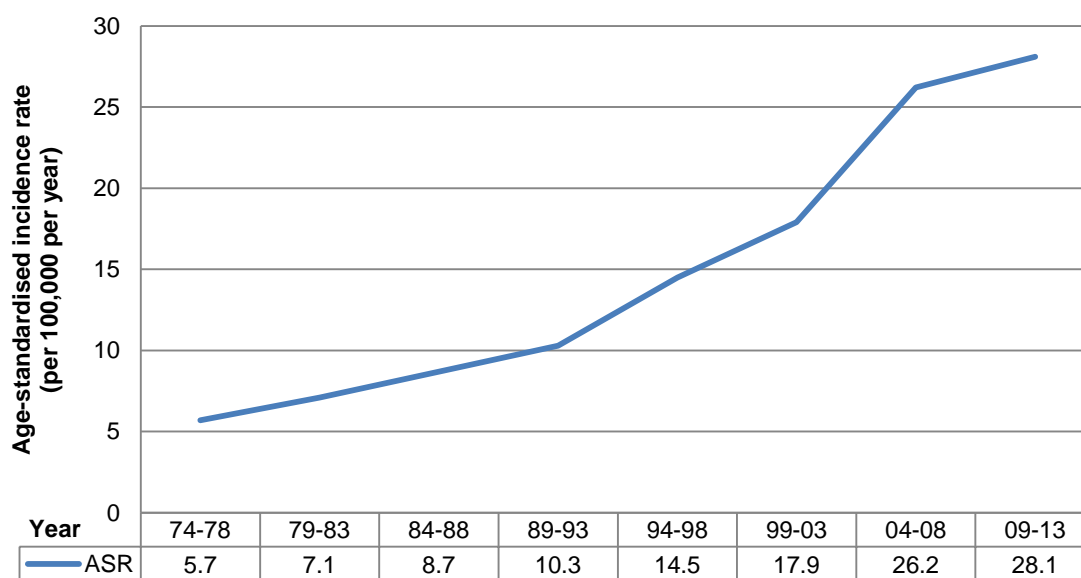
### Incidence

A total of 3456 new cases of prostate cancer were diagnosed in 2009 – 2013. The age-standardised incidence rate of newly diagnosed prostate cancer in males had been increasing since 1974. It increased from 5.7 per 100,000 person-years in 1974 – 1978 to 28.1 per 100,000 person-years in 2009 – 2013 (Figure 6.6.1).

Chinese men had higher risk of developing prostate cancer compared to Malay and Indian women (Table 6.6.1).

Majority of the prostate cancer cases were stage II and IV (Table 6.6.2) and aged 65 or above (Table 6.6.4).

**Figure 6.6.1: Age-standardised Incidence Rates for Prostate Cancer, 1974 – 2013**



**Table 6.6.1: Crude and Age-standardised Incidence Rates for Prostate Cancer by Ethnicity, 2009 – 2013**

Ethnicity	Number	CR (95% CI)	ASR (95% CI)
Chinese	2978	43.2 (41.7 – 44.8)	29.5 (28.4 – 30.6)
Malay	227	18.0 (15.7 – 20.4)	19.1 (16.6 – 21.7)
Indian	155	17.2 (14.5 – 19.9)	19.4 (16.2 – 22.6)
Others	96	32.3 (25.8 – 38.8)	45.1 (35.7 – 54.6)
All	3456	37.0 (35.7 – 38.2)	28.1 (27.1 – 29.0)

**Table 6.6.2: Stage distribution of Prostate Cancer patients, 2004 – 2008 & 2009 – 2013**

Stage	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Stage I	16	0.7	390	12.3
Stage II	1399	63.7	1563	49.3
Stage III	235	10.7	335	10.6
Stage IV	546	24.9	882	27.8

\* Cancers of unknown stage were excluded.

**Table 6.6.3: Ethnic distribution of Prostate Cancer patients, 2004 – 2008 & 2009 – 2013**

Ethnicity	2004 – 2008		2009 – 2013	
	Number	%	Number	%
Chinese	2115	84.7	2978	86.2
Malay	188	7.5	227	6.6
Indian	133	5.3	155	4.5
Others	62	2.5	96	2.8
All	2498	100	3456	100

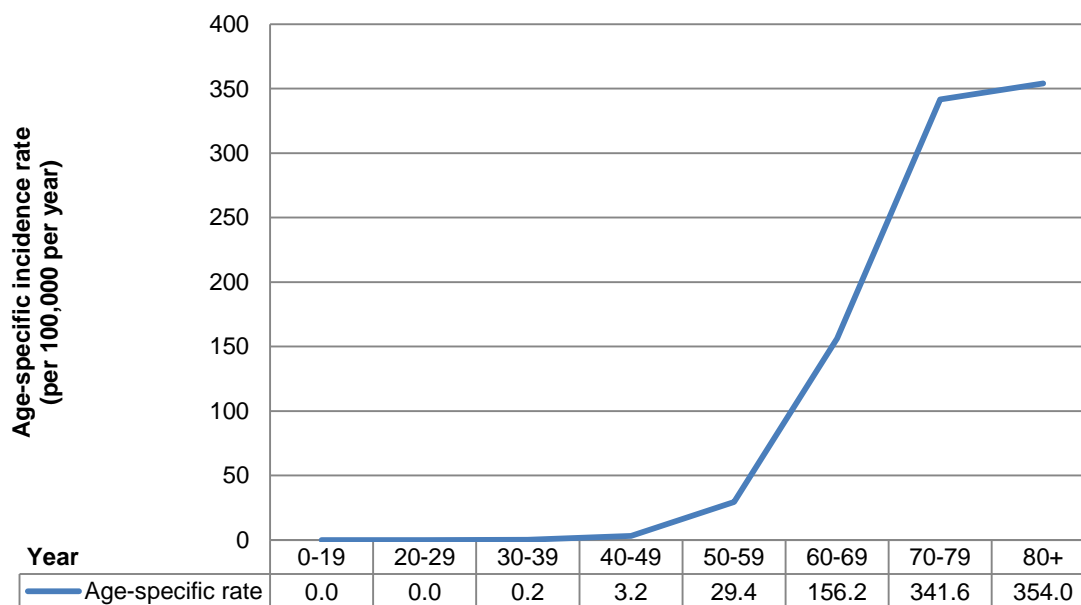
**Table 6.6.4: Age distribution of Prostate Cancer patients, 2004 – 2008 & 2009 – 2013**

Age Group	2004 – 2008		2009 – 2013	
	Number	%	Number	%
0-44	6	0.2	13	0.4
45-54	100	4.0	149	4.3
55-64	627	25.1	878	25.4
65-74	1013	40.6	1400	40.5
75+	752	30.1	1016	29.4
All	2498	100	3456	100

### Age at Diagnosis

In 2009 – 2013, the age-specific incidence rate rose sharply from 29.4 per 100,000 person-years for men aged 50 – 59 to 341.6 per 100,000 person-years for men aged 70 – 79. The rate continued to rise with age, albeit less drastically, from age 80 onwards (Figure 6.6.2).

**Figure 6.6.2: Age-specific Incidence Rates for Prostate Cancer, 2009 – 2013**

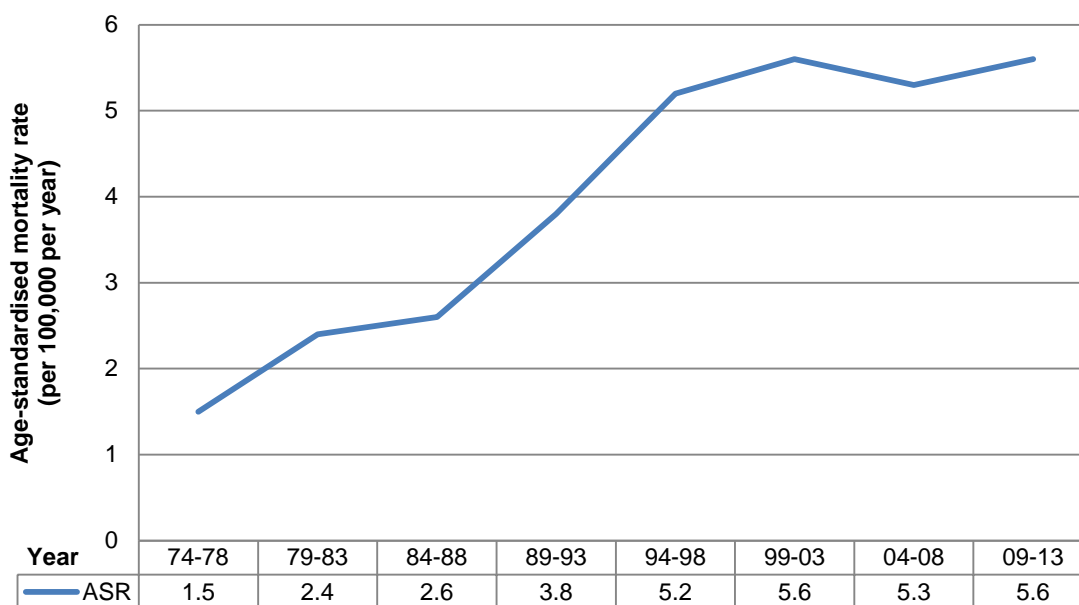


## Mortality Rates

A total of 700 men died from prostate cancer in 2009 – 2013. The age-standardised mortality rate climbed from 1.5 per 100,000 person-years in 1974 – 1978 to 5.6 per 100,000 person-years in 1999 – 2003. The rate then remained stable till 2013 (Figure 6.6.3).

Chinese men had better survival compared to Malay and Indian men (Table 6.6.5).

**Figure 6.6.3: Age-standardised Mortality Rates for Prostate Cancer, 1974 – 2013**



**Table 6.6.5: 5-year Age-standardised Observed Survival of Prostate Cancer by Stage, Ethnicity and Age Group, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	100.00	100.00, 100.00	92.44	86.08, 95.96
II	85.42	81.72, 88.42	88.88	87.22, 90.34
III	71.53	61.78, 79.21	85.18	80.11, 89.05
IV	34.60	28.00, 41.29	36.76	33.05, 40.48
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	71.76	69.37, 73.99	76.34	74.64, 77.95
Malay	55.31	47.23, 62.65	58.31	50.99, 64.92
Indian	70.13	59.36, 78.56	63.12	54.56, 70.50
Others	79.66	66.13, 88.25	78.93	69.09, 85.95
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-54	85.46	75.61, 91.54	91.06	84.76, 94.84
55-64	84.66	80.75, 87.83	86.97	84.34, 89.18
65-74	75.41	72.09, 78.40	79.69	77.28, 81.88
75+	47.52	43.34, 51.58	53.06	49.68, 56.32
All	70.63	68.45, 72.69	74.75	73.15, 76.28

## 6.7 Lung Cancer (ICD 9: 162)

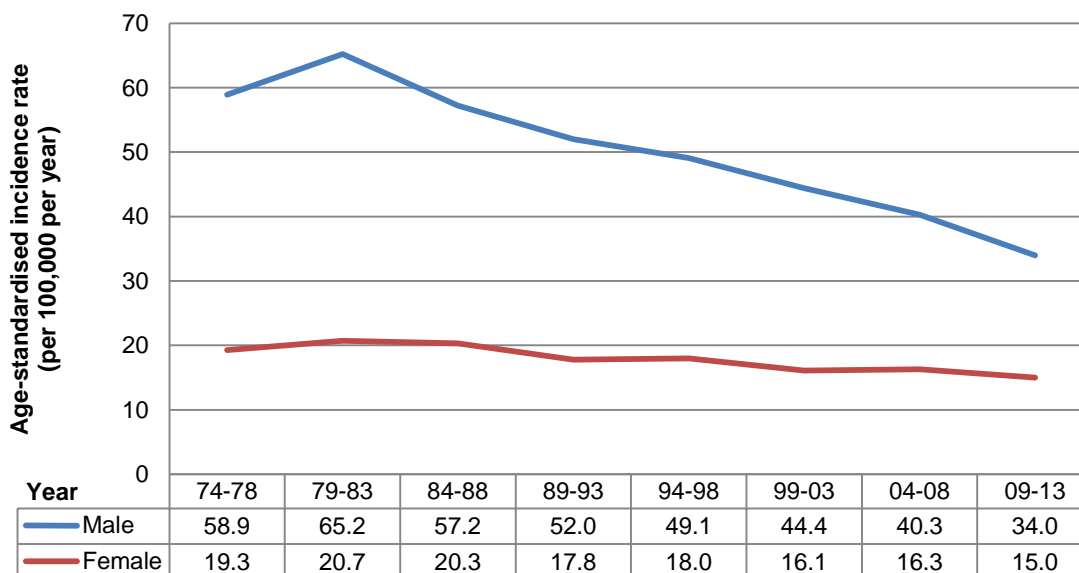
### Incidence

A total of 6612 new cases of lung cancer were diagnosed in 2009 – 2013. The age-standardised incidence rate of newly diagnosed lung cancer for males had been declining since 1979. It dropped from 65.2 per 100,000 person-years in 1979 – 1983 to 34.0 per 100,000 person-years in 2009 – 2013. On the other hand, the age-standardised incidence rate of newly diagnosed lung cancer for females had been relatively stable and fluctuating between 15.0 and 20.7 per 100,000 person-years in 1974 – 2013 (Figure 6.7.1).

The Chinese had higher risk of developing lung cancer compared to the Malays and Indians (Table 6.7.1).

Majority of the lung cancer cases were stage III and IV (Table 6.7.2) and aged 65 or above (Table 6.7.4).

**Figure 6.7.1: Age-standardised Incidence Rates for Lung Cancer, 1974 – 2013**



**Table 6.7.1: Crude and Age-standardised Incidence Rates for Lung Cancer by Gender and Ethnicity, 2009 – 2013**

Gender	Ethnicity	Number	CR (95% CI)	ASR (95% CI)
Male	Chinese	3664	53.2 (51.5 – 54.9)	35.6 (34.4 – 36.7)
	Malay	449	35.6 (32.3 – 38.9)	34.7 (31.4 – 38.1)
	Indian	150	16.7 (14.0 – 19.3)	17.2 (14.3 – 20.1)
	Others	55	18.5 (13.6 – 23.4)	25.1 (18.0 – 32.2)
	All	4318	46.2 (44.8 – 47.6)	34.0 (33.0 – 35.0)
Female	Chinese	2033	28.3 (27.1 – 29.6)	16.1 (15.4 – 16.8)
	Malay	179	14.1 (12.0 – 16.1)	11.1 (9.5 – 12.8)
	Indian	55	6.5 (4.8 – 8.3)	6.4 (4.7 – 8.2)
	Others	27	8.3 (5.2 – 11.4)	10.8 (6.1 – 15.5)
	All	2294	23.9 (22.9 – 24.8)	15.0 (14.4 – 15.6)

**Table 6.7.2: Stage distribution of Lung Cancer patients, 2004 – 2008 & 2009 – 2013**

Gender	Stage	2004 – 2008		2009 – 2013	
		Number	%	Number	%
Male	Stage I	324	9.8	340	8.6
	Stage II	144	4.3	189	4.8
	Stage III	891	26.8	900	22.8
	Stage IV	1963	59.1	2520	63.8
Female	Stage I	187	11.8	286	13.8
	Stage II	46	2.9	74	3.6
	Stage III	349	22.0	282	13.6
	Stage IV	1002	63.3	1425	68.9

\* Cancers of unknown stage were excluded.



**Table 6.7.3: Ethnic distribution of Lung Cancer patients, 2004 – 2008 & 2009 – 2013**

Gender	Ethnicity	2004 – 2008		2009 – 2013	
		Number	%	Number	%
Male	Chinese	3435	86.5	3664	84.9
	Malay	367	9.2	449	10.4
	Indian	135	3.4	150	3.5
	Others	34	0.9	55	1.3
	All	3971	100	4318	100
Female	Chinese	1787	90.0	2033	88.6
	Malay	153	7.7	179	7.8
	Indian	25	1.3	55	2.4
	Others	20	1.0	27	1.2
	All	1985	100	2294	100

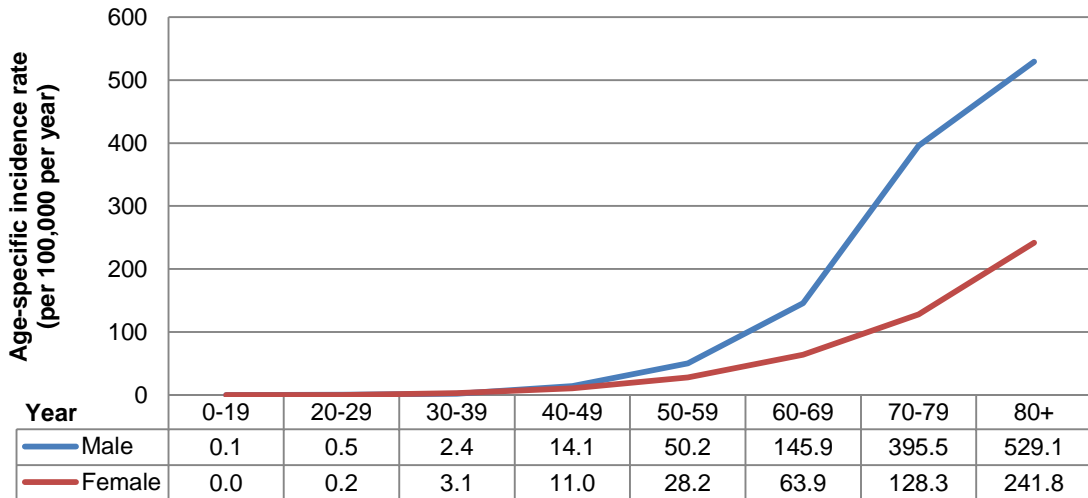
**Table 6.7.4: Age distribution of Lung Cancer patients, 2004 – 2008 & 2009 – 2013**

Gender	Age Group	2004 – 2008		2009 – 2013	
		Number	%	Number	%
Male	0-44	117	2.9	115	2.6
	45-54	385	9.7	418	9.7
	55-64	808	20.3	995	23.0
	65-74	1401	35.3	1360	31.5
	75+	1260	31.7	1430	33.1
	All	3971	100	4318	100
Female	0-44	87	4.3	98	4.3
	45-54	230	11.6	305	13.3
	55-64	387	19.5	480	20.9
	65-74	566	28.5	564	24.6
	75+	715	36.0	847	36.9
	All	1985	100	2294	100

## Age at Diagnosis

In 2009 – 2013, the age-specific incidence rate increased slightly with age for people of both genders below age 40. However, the rate increased significantly with age from age 40 onwards, especially for men, where it rose from 14.1 per 100,000 person-years for men aged 40 – 49 to 529.1 per 100,000 person-years for men aged 80 onwards. The age-specific incidence rate for women increased from 11.0 per 100,000 person-years for women aged 40 – 49 to 241.8 per 100,000 person-years for women aged 80 onwards (Figure 6.7.2).

**Figure 6.7.2: Age-specific Incidence Rates for Lung Cancer, 2009 – 2013**

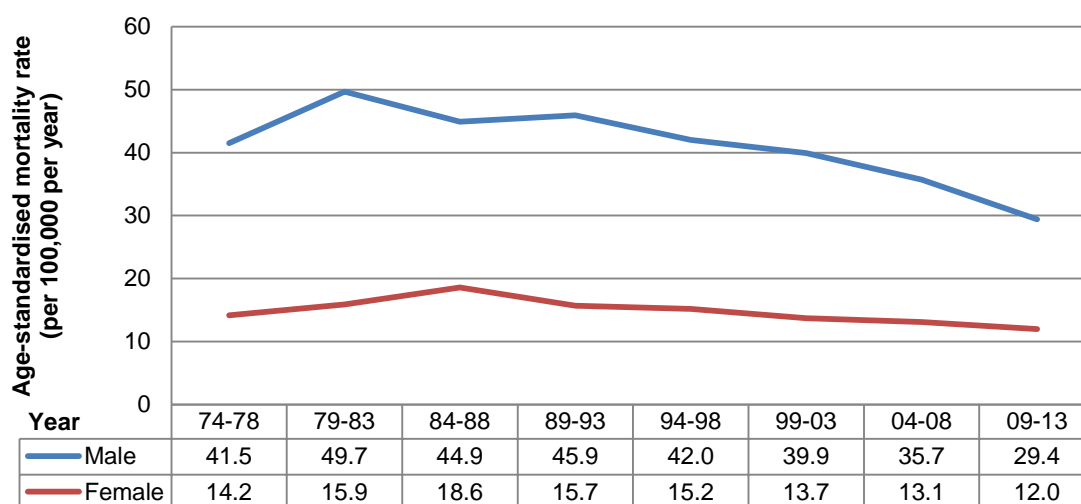


## Mortality Rates

A total of 5628 people died from lung cancer in 2009 – 2013. The age-standardised mortality rate for both genders decreased from 1989 onwards. The rate for men declined from 45.9 per 100,000 person-years in 1989 – 1993 to 29.4 per 100,000 person-years in 2009 – 2013, while that for women dropped from 15.7 per 100,000 person-years in 1989 – 1993 to 12.0 per 100,000 person-years in 2009 – 2013 (Figure 6.7.3).

Indian men had better survival compared to Chinese and Malay men throughout the two 5-year periods (Table 6.7.5.1). Chinese women had better survival than Malay and Indian women in 2004 – 2008, but the survival of Indian women surpassed that of the Chinese women in 2009 – 2013 (Table 6.7.5.2).

**Figure 6.7.3: Age-standardised Mortality Rates for Lung Cancer, 1974 – 2013**



**Table 6.7.5.1: 5-year Age-standardised Observed Survival of Lung Cancer by Stage, Ethnicity and Age Group for Males, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	45.23	36.71, 53.36	51.16	45.64, 56.39
II	17.32	9.17, 27.62	35.03	27.39, 42.76
III	10.09	7.59, 13.00	11.45	9.45, 13.67
IV	1.54	0.91, 2.44	2.52	1.89, 3.29
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	8.21	7.31, 9.18	10.10	9.12, 11.14
Malay	7.15	4.68, 10.30	8.56	6.10, 11.52
Indian	11.50	6.23, 18.56	12.97	8.30, 18.70
Others	11.54	4.11, 23.22	13.46	6.40, 23.15
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	20.69	13.90, 28.43	26.54	18.79, 34.89
45-54	12.09	9.10, 15.53	16.30	12.86, 20.10
55-64	12.34	10.09, 14.82	15.88	13.56, 18.36
65-74	7.67	6.29, 9.22	9.00	7.56, 10.60
75+	3.39	2.50, 4.47	3.35	2.47, 4.42
All	8.20	7.35, 9.10	10.00	9.11, 10.95

**Table 6.7.5.2: 5-year Age-standardised Observed Survival of Lung Cancer by Stage, Ethnicity and Age Group for Females, 2004 – 2008 & 2009 – 2013**

	2004 – 2008		2009 – 2013	
Stage	5yr ASOS	95% CI	5yr ASOS	95% CI
I	58.25	46.09, 68.59	67.91	61.24, 73.69
II	53.03	34.55, 68.48	38.90	25.04, 52.53
III	9.63	5.39, 15.33	16.76	12.80, 21.20
IV	4.36	2.73, 6.57	3.73	2.69, 5.03
Ethnicity	5yr ASOS	95% CI	5yr ASOS	95% CI
Chinese	12.47	10.83, 14.22	15.40	13.75, 17.13
Malay	9.09	5.24, 14.24	10.16	6.38, 14.95
Indian	4.02	0.19, 19.33	20.66	8.02, 37.32
Others	48.46	24.42, 68.93	34.00	16.00, 52.99
Age Group	5yr ASOS	95% CI	5yr ASOS	95% CI
0-44	19.60	11.51, 29.28	31.10	21.84, 40.79
45-54	16.78	12.00, 22.25	25.67	20.55, 31.08
55-64	19.72	15.23, 24.64	22.32	18.31, 26.58
65-74	15.03	11.99, 18.39	18.17	14.88, 21.73
75+	3.91	2.62, 5.58	3.62	2.52, 5.03
All	12.49	10.93, 14.15	15.11	13.57, 16.73