Cancer in Queensland

A statistical overview 2012

Toward Tomorrow's Queensland

Queensland Government

Queensland Cancer Control Analysis Team

Acknowledgements

The Authors acknowledge and appreciate the work of the staff of the Cancer Council Queensland who operate and maintain the Queensland Cancer Registry and the Queensland Health staff who contribute to and participate in the maintenance of the Queensland Cancer Registry, the online Oncology Analysis System (OASys) and other tools which support the collection, analysis and interpretation of cancer data in Queensland. We acknowledge the Viertel Centre for Research in Cancer Control, Cancer Council Queensland for survival and prevalence information sourced from Queensland Cancer Statistics On-Line.

The report was prepared by Dr Justin Westhuyzen, Dr Dannie Zarate, Shoni Colquist and Hazel Harden. The 2008 edition of OASys was prepared by Nancy Tran. This report is modelled after the statistical report of Cancer Care Ontario who have also kindly provided methodological advice.

Dr Euan Walpole and members of the Queensland Cancer Control Safety and Quality Partnership are thanked for their comments on a draft of the report.

For more information:
Queensland Cancer Control Analysis Team
Queensland Health
GPO Box 48 Brisbane, Queensland 4001 Australia
Tel: (+61) (07) 3239 0886
Email: qccat@health.qld.gov.au
https://qccat.health.qld.gov.au

Cancer in Queensland: A Statistical Overview 2012

Suggested citation:
Queensland Government. Cancer in Queensland: A Statistical Overview. 2012. Queensland Health, Brisbane, 2012

ISBN: 978-1-921707-78-0

Published by Queensland Health
March 2012

qccat
queensland cancer control analysis team

Cancer in Queensland

A statistical overview 2012

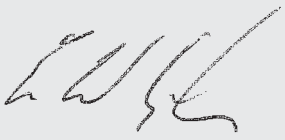
Table of contents

Message from the Chair

As chair of the Queensland Cancer Control Safety and Quality Partnership, I am pleased to introduce our first comprehensive epidemiological report of cancer incidence and survival in Queensland. This report is the first in a series of reports by the Partnership which aims to provide more than a historical picture of cancer in Queensland. Our aim with these publications is to provide 'data for today'. Data which can inform our decision making as we move through the process of health reform. Our focus on today, rather than the past, has guided our approach to the development of this statistical report.

Following our theme, 'data for today', we have chosen to begin this report with cancer projections for 2012. We follow up the projections with a detailed analysis of cancer incidence, mortality and survival in Queensland from 2000-2008. Unlike other diseases, records exist for all cancers diagnosed in Queensland since 1982. However, this data is more than a historical description of cancer; it is the robust dataset which underpins our ability to estimate the impact of cancer in Queensland in 2012.

In the final part of the report we present, for the first time in Queensland, cancer incidence and mortality data by Health Service Districts. While the analysis by Health Service District offers a new perspective, we realise that like the Queensland data, it is an important source of information for understanding our current context. We invite your feedback on the value and benefit of this, our first report. Our next report in this series will therefore centre on cancer at the district level. We aim to provide 2012 cancer projections by Local Health and Hospital Network and a more detailed analysis of their historical data. We hope that by focussing on 'data for today' our publications will make a positive contribution to the future of cancer care.



Euan Walpole
Chair
Queensland Cancer Control Safety and Quality Partnership

Highlights and summary

Cancer in Queensland: A Statistical Overview 2012 provides information on cancer incidence and mortality for the state and individual Health Service Districts (HSDs). This report presents cancer data for 2008 and projections for 2012 and is the first of a series which will provide information on patterns and trends for cancer, the largest cause of premature death and disability in Queensland.[1]

Cancer incidence rates in Queensland are among the highest in the world. Incidence rates are not uniform across the state, with a tendency to slightly higher rates recorded in remote and very remote areas.

The growth in **new cases of cancer** is largely being driven by population growth and ageing. The underlying cancer rate has increased only slightly since 1982:

- In 2008, 22,967 new cases of cancer were diagnosed; of these 13,158 cases were reported in males and 9,809 in females.
- The most common cancer diagnoses in males were prostate cancer (30%) and melanoma (14%), followed by colorectal (12%) and haematological cancers (10%).
- The most common cancer diagnoses in females were breast cancer (28%), colorectal cancer (13%), melanoma (12%) and haematological cancers (9%).
- In children and young adults, the most common diagnoses were haematological cancers (43%), cancers of the central nervous system (17%) and cancers of bone and soft tissue (14%).
- In 2012, an estimated 26,640 new cases of cancer will be diagnosed in Queensland.

The prevalence of cancer is increasing as more people are diagnosed with cancer and survival improves:

- By the end of 2008, more than 68,000 people were living with a diagnosis of cancer in the previous five years (1.6% of all Queenslanders).
- Prostate cancer followed by breast cancer and melanoma were the most prevalent cancers.

Cancer survival appears to be improving for many cancers:

- The average five-year relative survival for 2004–2008 was 67%, compared to 64% for 1998–2002.
- The greatest gains were observed for prostate and kidney cancers, non-Hodgkin lymphoma and myeloid leukaemia.

The **number of cancer deaths** continues to increase in Queensland:

- In 2008, 4,352 deaths were attributed to cancer in males and 3,105 deaths to cancer in females.
- Lung cancer was the most common cause of cancer death, accounting for 23% of deaths in males and 16% of deaths in females.
- Prostate and colorectal cancers (14% and 11% respectively) were the next most common causes of cancer death in males, and breast and colorectal cancers (16% and 14% respectively) the next most common causes of cancer death in females.
- In 2012, an estimated 8,865 deaths will be attributed to cancer.

The **mortality rate for cancer** has been in decline since the mid-1990s. However, cancer mortality rates are not uniform across the state. Mortality rates from cancer are substantially higher in remote and very remote areas, where rates are 35% higher than the Queensland average for males and 49% higher than the Queensland average for females.

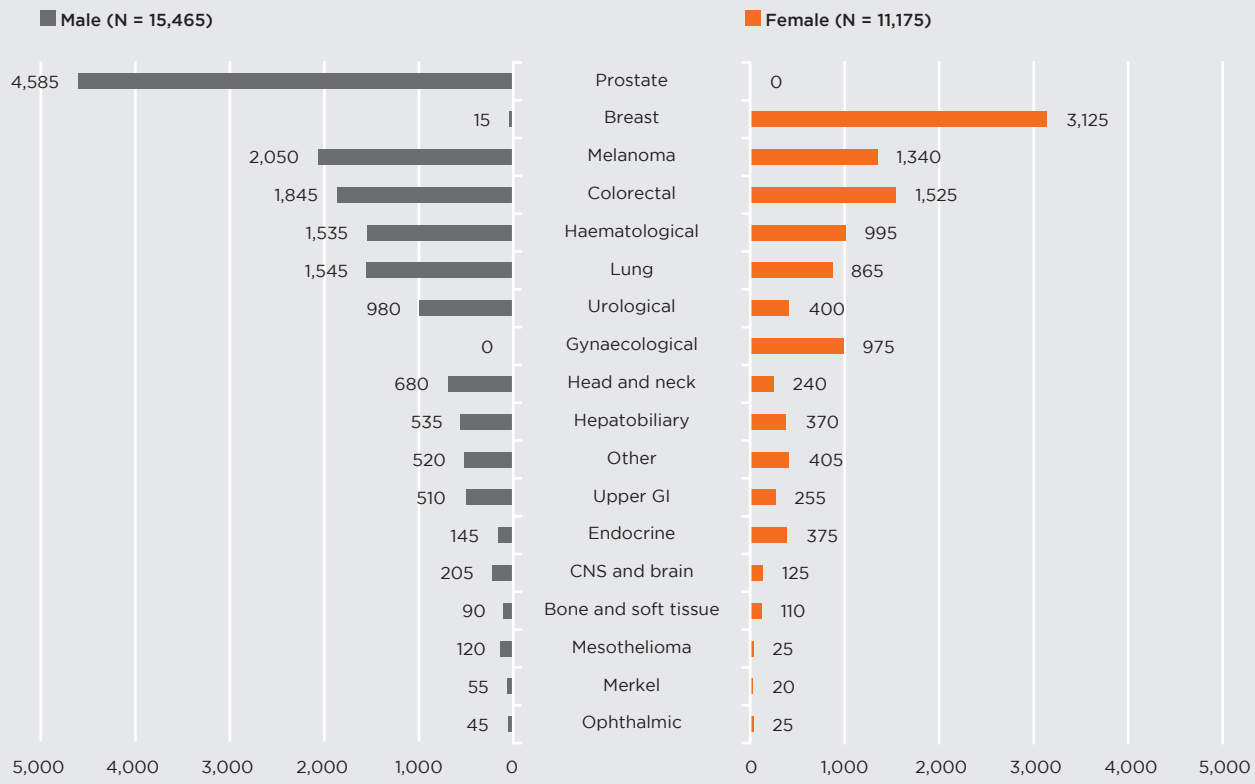
The presentation of **cancer data by Queensland Health Service District** demonstrates the significant regional variation in the burden of cancer across the state.

Cancer projections

Cancer projections Queensland, 2012

In 2012, an estimated 26,640 new cases of invasive cancers will be diagnosed among Queensland residents (Figure 1), while an estimated 8,865 Queenslanders will die of the disease (Figure 2).

Figure 1: Expected cancer incidence, common cancers, Queensland, 2012

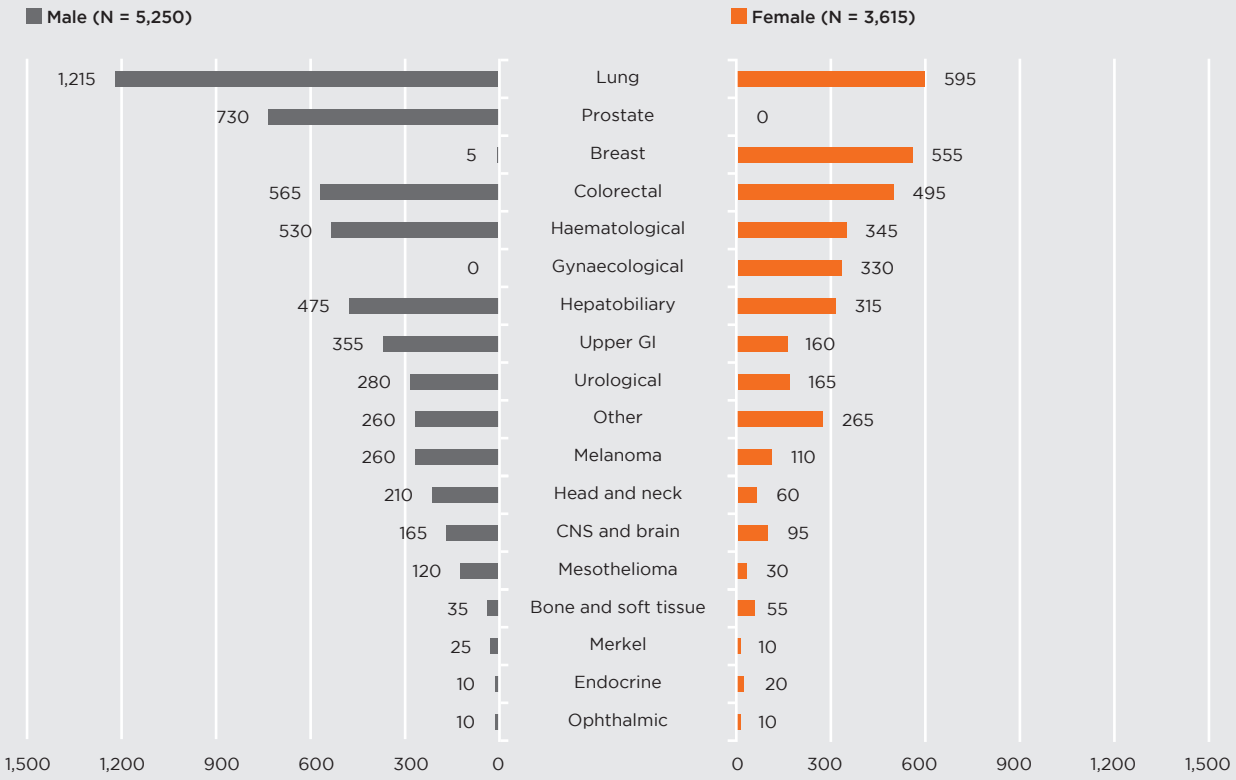


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team. The figures, which have been rounded to the nearest five cases, are provided as a guide and should be used with care. Projections are calculated by applying the most recent estimates of cancer rates (2008), stratified by age and sex, to the expected Queensland population in 2012.

Nearly 60% of new cancers as well as cancer deaths will be among males. Prostate and breast cancers are expected to remain the most commonly diagnosed cancers in males and females respectively, while lung cancer will continue to be the leading cause of cancer death in both sexes.

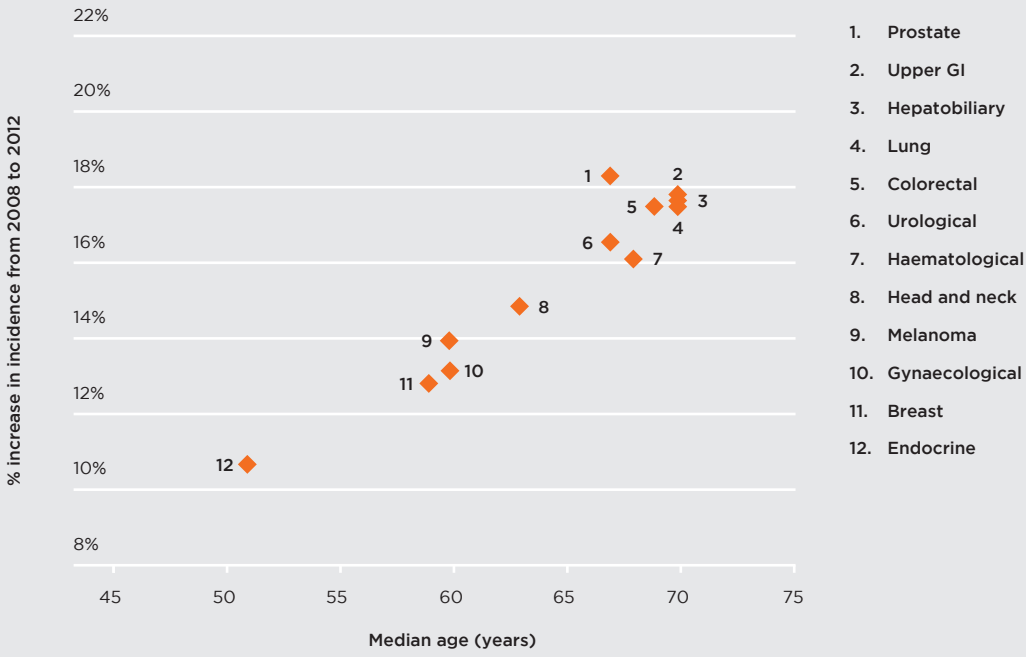
These projections provide an indication of the likely burden of cancer and the demand for cancer services in 2012. As with any forecast, they should be used with care and amended to reflect local trends whenever possible.

Figure 2: Expected cancer mortality, common cancers, Queensland, 2012



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team. The figures, which have been rounded to the nearest five cases, are provided as a guide and should be used with care. Projections are calculated by applying the most recent estimates of cancer rates (2008), stratified by age and sex, to the expected Queensland population in 2012.

Figure 3: Relationship between the projected increase in cancer incidence from 2008 to 2012 and the median age at diagnosis for common cancers (see text for details)



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 3 shows the expected relative increases in the incidence of common cancers from 2008 to 2012. Assuming no change in incidence rates over this period, cancers which are common in older persons (e.g. prostate cancers) are projected to increase at a faster rate than cancers which are more common in younger people (e.g. endocrine cancers). These trends are a direct consequence of projected changes in the age distribution of Queensland over this period, as the number of people aged 65 years and older is expected to grow at a much faster rate than the rest of the population.

Cancers which are more common in older people are projected to increase at a faster rate than cancers which are more common in younger people.

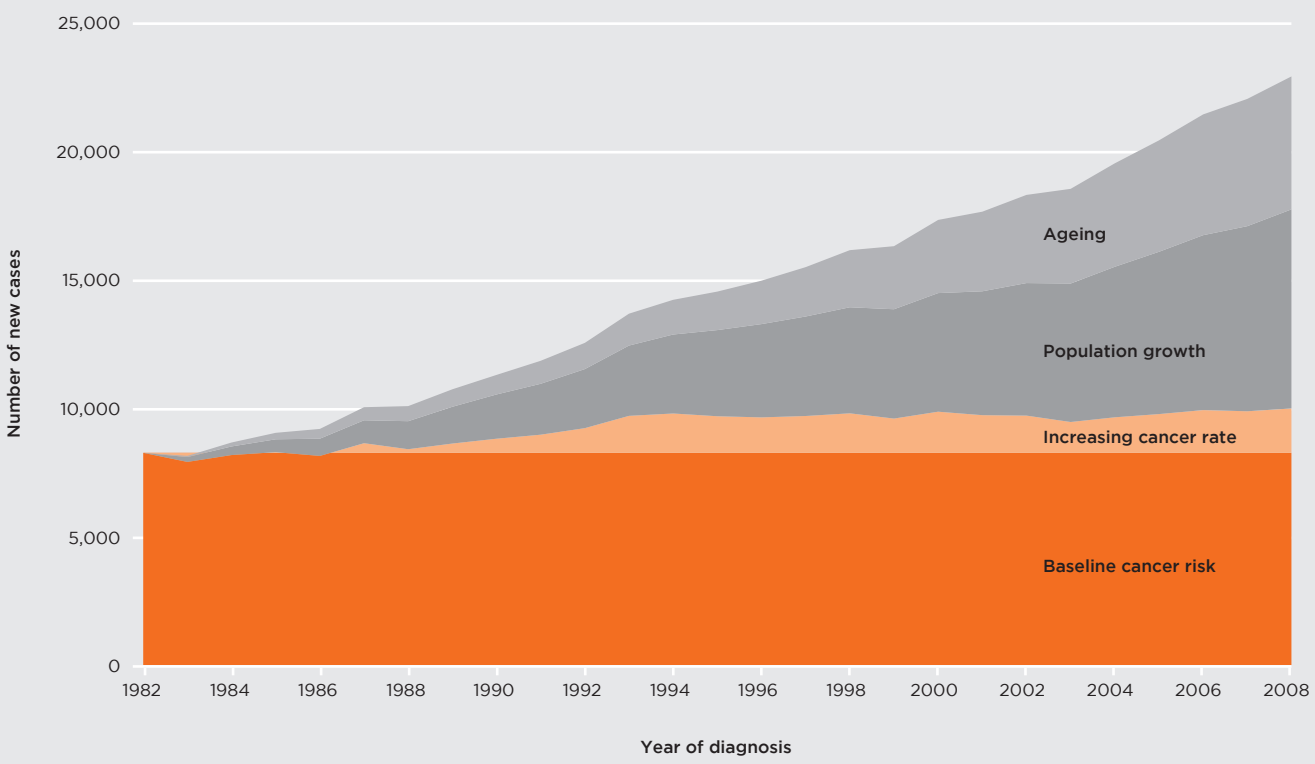
Cancer in Queensland

Incidence and mortality

The number of new cases of cancer among Queensland residents has increased by more than 177% between 1982 and 2008. For males, the number of new cases increased from 4,606 in 1982 to 13,158 (186%) in 2008; for females, the number of new cases increased from 3,675 to 9,809 (167%). These increases are due largely to population growth and ageing (Figure 4).

Queensland's population increased from 2.4 million in 1982 to 4.3 million in 2008, an increase of 78%, making Queensland the fastest growing state in Australia and one of the fastest among developed countries. The proportion of persons 65 years and older also increased, from 9.7% in 1982 to 12.2% in 2008. Changes in cancer incidence rate accounted for only a small proportion of the total increase in incidence.

Figure 4: Growth in new cases of cancer, Queensland, 1982–2008

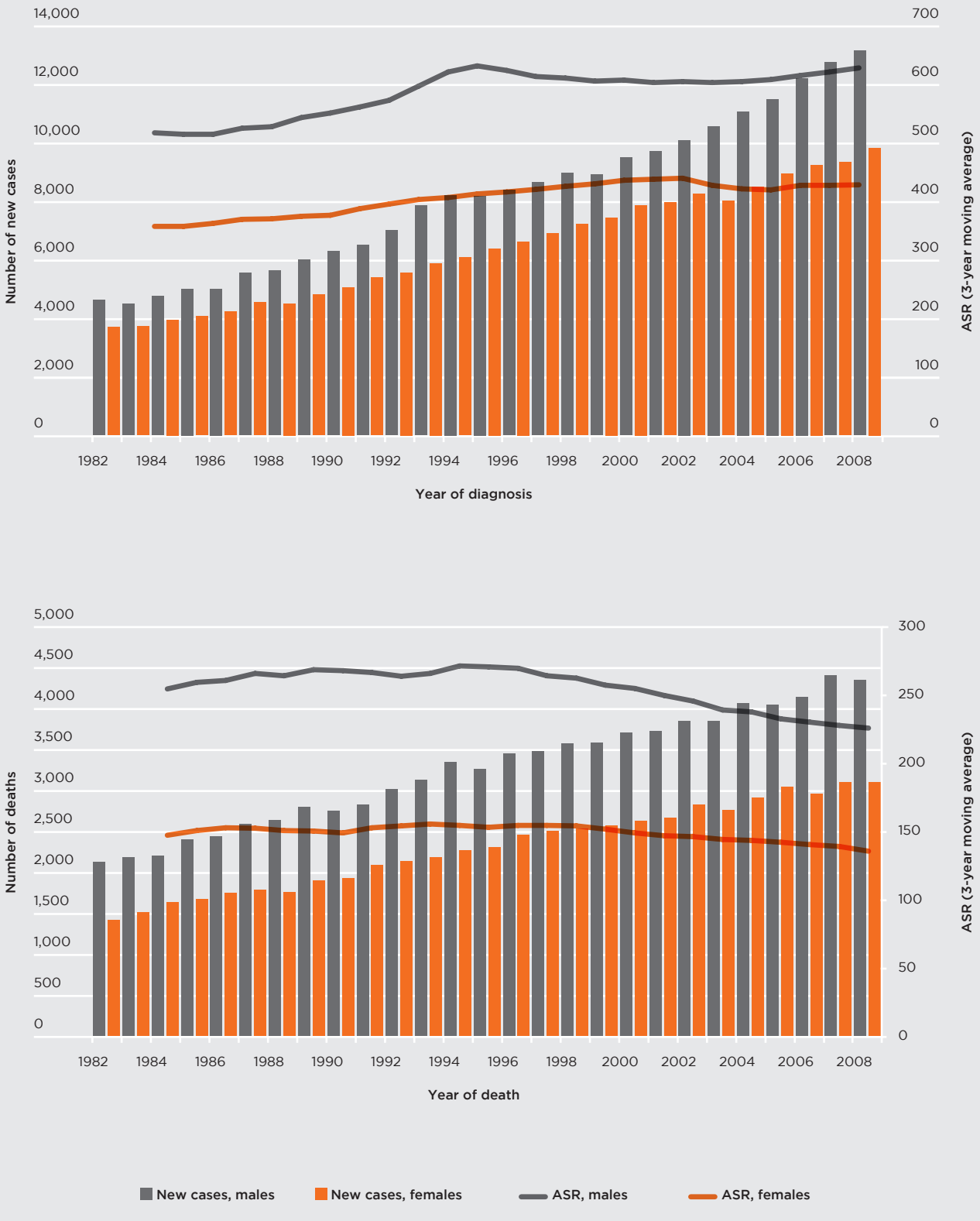


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Trends in incidence rates for all invasive cancers and the number of new cases diagnosed annually are summarised in Figure 5. The incidence rate for all invasive cancers rose in both males and females, reaching a peak in males of 638 per 100,000 population in 1994 and 444 per 100,000 in 2000 in females. While a trough in incidence rates was observed around 1999 in males and 2003 in females, the number of new cases continues to rise in both genders.

In contrast, mortality rates have been in decline since the mid-1990s for both males and females (Figure 5). The number of deaths, however, has continued to rise due to the increase in the number of new cases each year and the ageing population.

Figure 5: Trends in numbers and rates for all cancers, Queensland, 1982–2008



ASR: Age-standardised rate per 100,000, standardised to 2001 Australian population.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Most common cancers and cancer deaths

In 2008, 22,967 new cases of cancer were diagnosed; 7,457 deaths were attributed to cancer during the year (Figures 6 and 7).

MOST COMMON CANCERS

Cancers were more common in males (13,158 new cases, 630 per 100,000) than in females (9,809 cases, 431 per 100,000). For both sexes, three body sites accounted for over half of all cancers: in males, prostate cancer represented 30% of cases (3,876 cases), followed by melanoma (1,779 cases) and colorectal cancer (1,558 cases), accounting for 14% and 12% of all male cancers respectively. For females, breast cancer was the most common cancer with 2,769 new cases (28% of the total), followed by colorectal cancer (1,311 cases) and melanoma (1,197 cases), representing 13% and 12% respectively of new cancers in females. Lung, urological and head and neck cancers were much more common in males than in females; incidence rates for these cancers were between two to three times higher in males than females. On the other hand, endocrine cancers were three times more common in females than males.

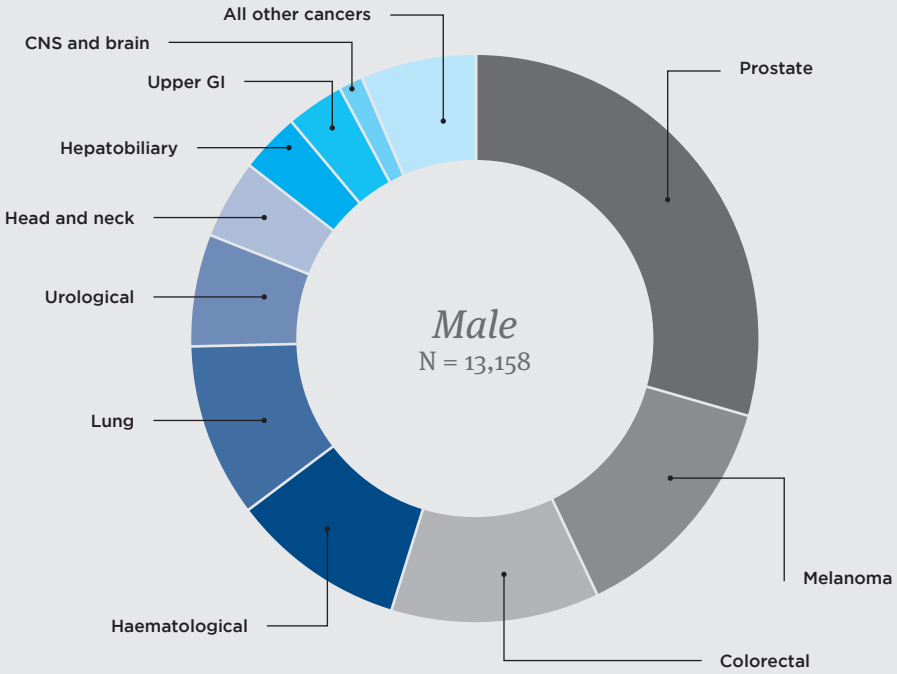
MOST COMMON CANCER DEATHS

During 2008, more cancer deaths in Queensland were recorded for males (4,352 deaths, 221 per 100,000) than for females (3,105 deaths, 133 per 100,000). Lung cancer was the leading cause of cancer death with 1,015 deaths in males (23%) and 514 deaths in females (16%) (Figure 7). In males, prostate cancer was the next most common cause of cancer death with 586 deaths (14%) followed by colorectal cancer with 469 deaths (11%). Among females, breast cancer was the second most common cause of death with 483 deaths (16%) followed by colorectal cancer with 421 deaths (14%). Lung cancer, prostate/breast cancer and colorectal cancer accounted for nearly half the deaths in both males (48%) and females (46%).

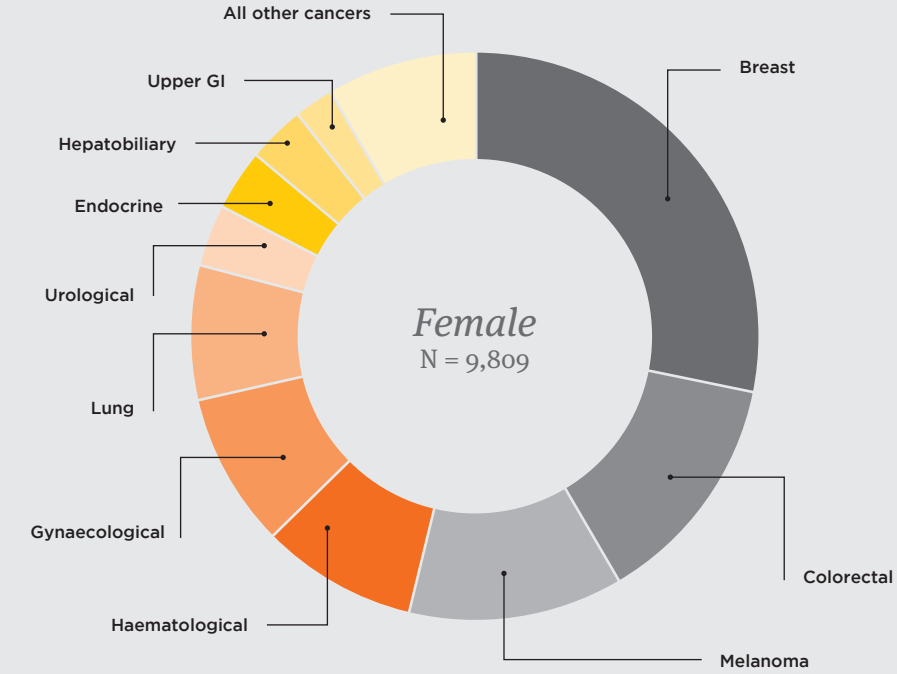
The most common cancers in Queensland are cancers of the prostate and breast, colorectal cancer and melanoma.

Lung cancer is the leading cause of cancer death in Queensland.

Figure 6: Most common cancer diagnoses, Queensland, 2008



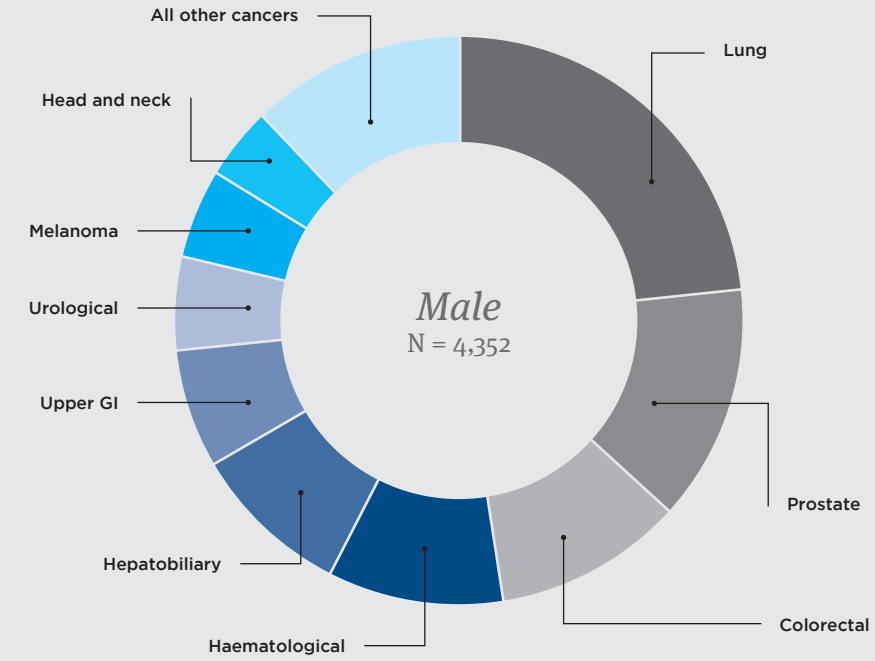
Prostate	30%
Melanoma	14%
Colorectal	12%
Haematological	10%
Lung	10%
Urological	6%
Head and neck	5%
Hepatobiliary	3%
Upper GI	3%
CNS and brain	1%
All other cancers	6%



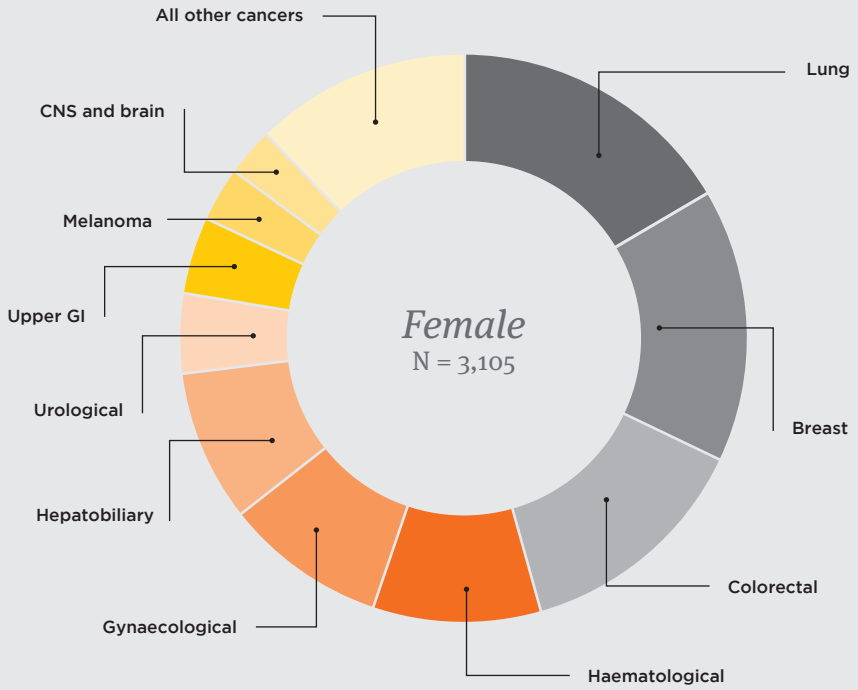
Breast	28%
Colorectal	13%
Melanoma	12%
Haematological	9%
Gynaecological	9%
Lung	8%
Urological	4%
Endocrine	4%
Hepatobiliary	3%
Upper GI	2%
All other cancers	8%

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 7: Most common cancer deaths, Queensland, 2008



Lung	23%
Prostate	14%
Colorectal	11%
Haematological	10%
Hepatobiliary	9%
Upper GI	7%
Urological	5%
Melanoma	5%
Head and neck	4%
All other cancers	12%



Lung	16%
Breast	16%
Colorectal	14%
Haematological	10%
Gynaecological	9%
Hepatobiliary	9%
Urological	4%
Upper GI	4%
Melanoma	3%
CNS and brain	3%
All other cancers	12%

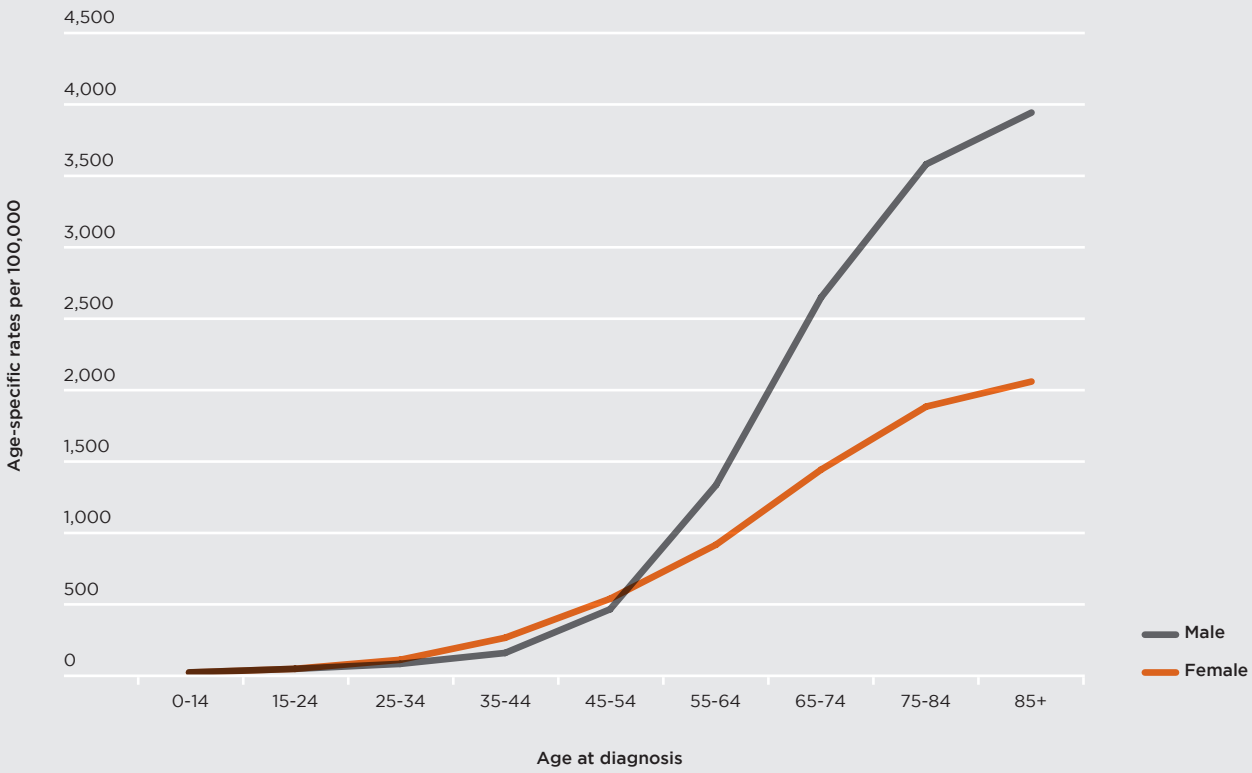
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

New cases and deaths by age

AGE-SPECIFIC INCIDENCE RATES

Cancer incidence rates increase with age in both sexes (Figure 8). After childhood, incidence rates are slightly lower for males than females until around the age of 55, beyond which incidence rates for males increase sharply. The higher rate for males over 55 reflects the higher rates for cancers common in older males, including prostate, colorectal and lung cancer. The higher rate for females in the 30–49 year old age group reflects the contribution of breast cancer to the cancer burden in this cohort.

Figure 8: Incidence rates for all cancers, by age at diagnosis, Queensland 2004–2008

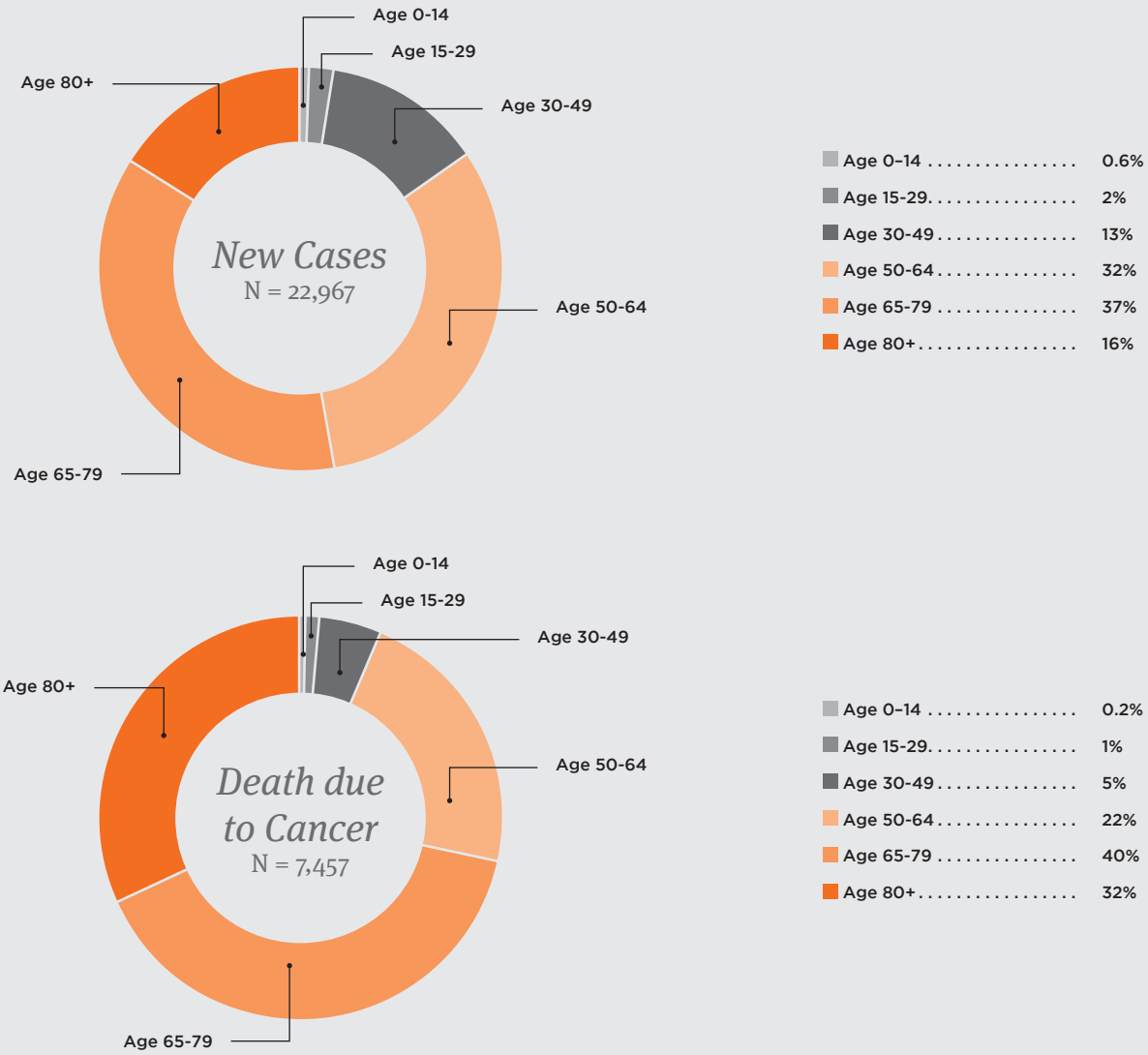


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

CANCER BY AGE GROUP

Cancers in childhood (defined as 0–14 years) represent 0.6% of all newly diagnosed cancers; cancer in adolescents and young adults (aged 15–29 years) represent 2% of cancers and adults aged 30–49 years 13% (Figure 9). The incidence of new cancers is highest in adults aged 65–79 years (37%), followed by adults 50–64 years (32%) and adults aged 80 years and over (16%).

Figure 9: Cancer by age group, Queensland, 2008



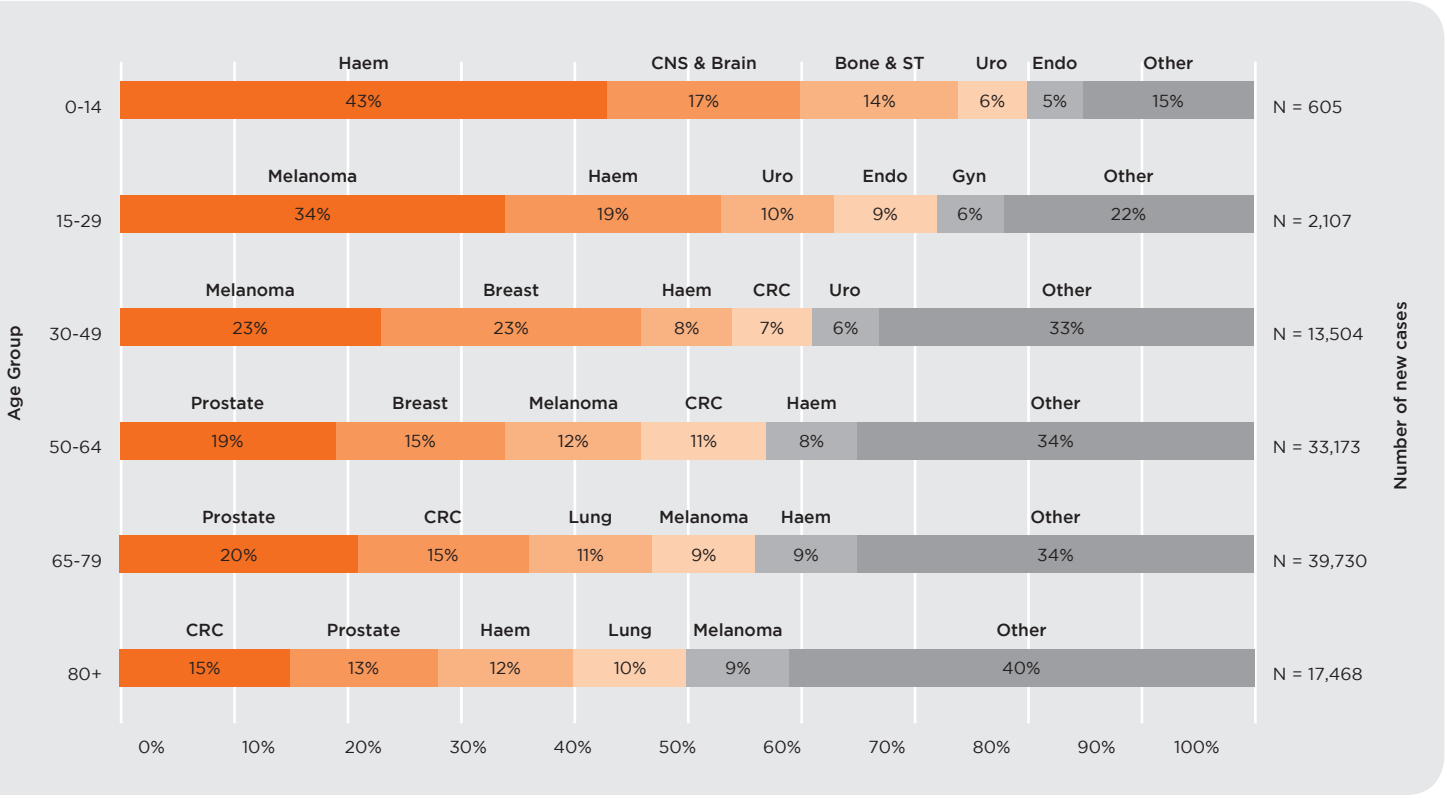
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Cancer deaths are much more common in adults aged 65 years and older compared to younger adults (aged 15–29 years). Cancer mortality rates were 1,022 and four per 100,000 in older (65+) and younger adults respectively. Deaths due to cancer are relatively uncommon in persons under 50 years of age, accounting for only 6% of all cancer deaths.

MOST COMMON CANCERS BY AGE GROUP

Haematological cancers[i] were the most common cancer diagnosis in childhood (43%), followed by cancers of the central nervous system (17%) and bone and soft tissue (14%) (Figure 10).

Figure 10: The top five most common cancer diagnoses by age group, Queensland, 2004-2008



Abbreviations: Bone & ST: Bone and soft tissue / CNS & brain: Central nervous system and brain / CRC: Colorectal / Endo: Endocrine / Gyn: Gynaecological / Haem: Haematological / Uro: Urological
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Among adolescents and young adults (15–29 years), melanoma was the most frequently diagnosed cancer (34%), followed by haematological cancers (19%) and urological cancers (10%). Breast cancer and melanoma were the most common cancers diagnosed at age 30–49 (both 23%), with haematological and colorectal cancers accounting for 8% and 7% of new cases respectively. Prostate cancer was more commonly diagnosed in older Queenslanders, representing 19% of the total in the 50–64 age group and 20% in the 65–79 age group. Colorectal cancer was similarly more common in these age groups (11% and 15% respectively) and the most commonly diagnosed cancer in the 80+ age group.

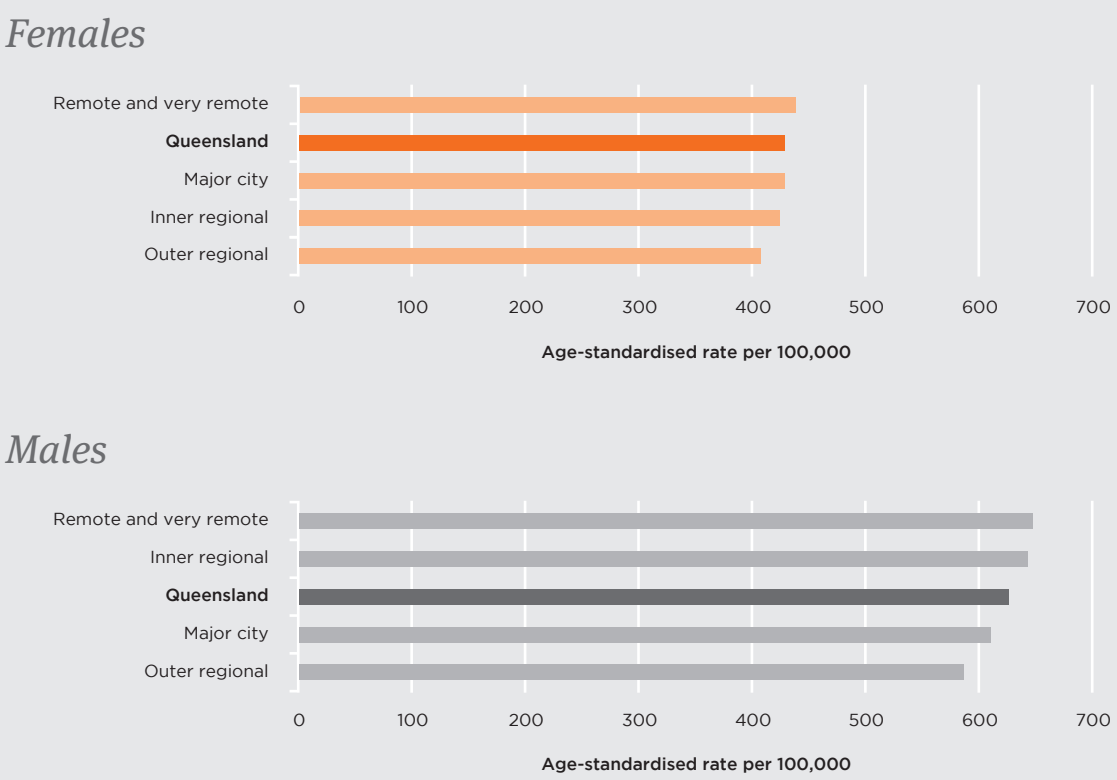
i. The term 'haematological cancers' includes all haematological malignancies, for example, Hodgkin's lymphoma, non-Hodgkin lymphoma and the leukaemias.

Most cancers and cancer-related deaths occur in Queenslanders after the age of 55 years. The pattern of cancers noted in childhood and adolescents is completely different to the patterns recognised in adult cohorts.

Regional, national and international variation in incidence[ii]

Incidence rates for all invasive cancers varied by remoteness for both males and females (Figure 11; see the Glossary for a definition of remoteness). Remote and very remote areas tended to have a higher incidence rate for all cancers than metropolitan areas and outer regional areas.

Figure 11: Cancer incidence rates by remoteness of residence, Queensland, 2008

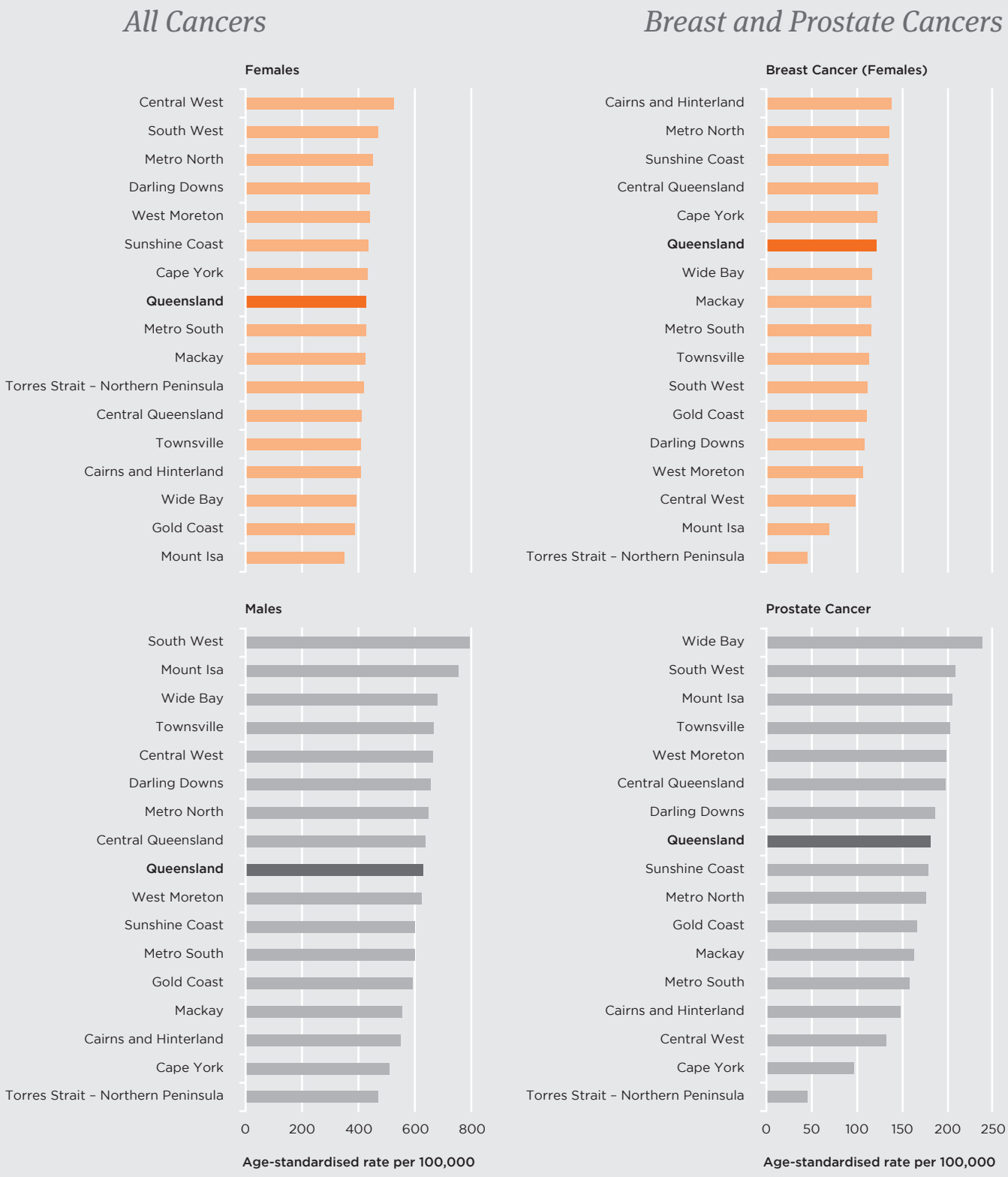


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

At the district level, age-standardised incidence rates varied across the state for all invasive cancers considered collectively as well as for the most common cancers (Figure 12). Differences in regional variations in incidence rates were also evident for the sexes. Reasons for the variations are diverse and complex and include exposure to environmental factors, socioeconomic status, access to health services and chance.[2]

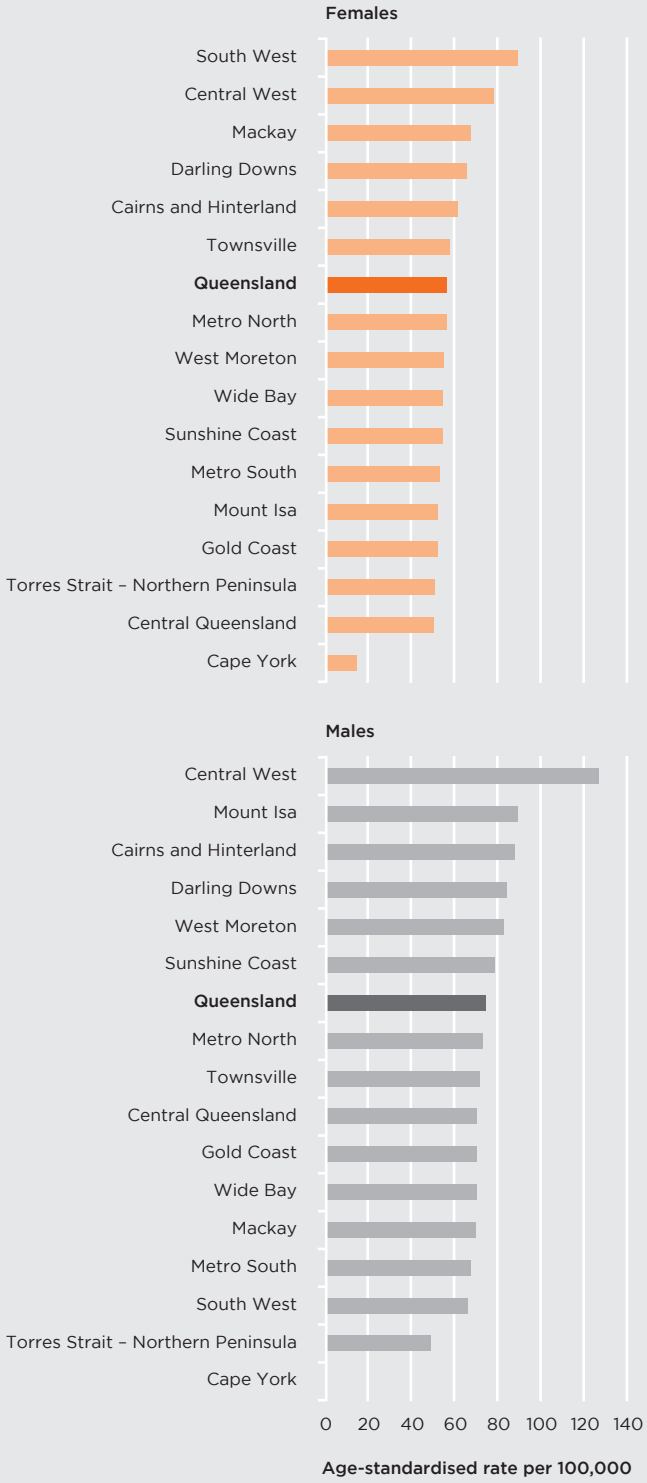
ii. In the interest of completeness, incidence and mortality rates have been included for all districts including those with fewer than 16 cases. Incidence and mortality rates based on small numbers of cases should be interpreted with caution due to the poor reliability of rate calculations based on small numbers. For example, the relative standard error (RSE) will be equal or greater than 25% when incidence rates are based on fewer than 16 cases. For more information, refer to the technical notes available at: http://www.cdc.gov/cancer/npcr/uscs/2007/technical_notes/stat_methods/suppression.htm

Figure 12: Cancer incidence rates by Health Service District, Queensland, 2008

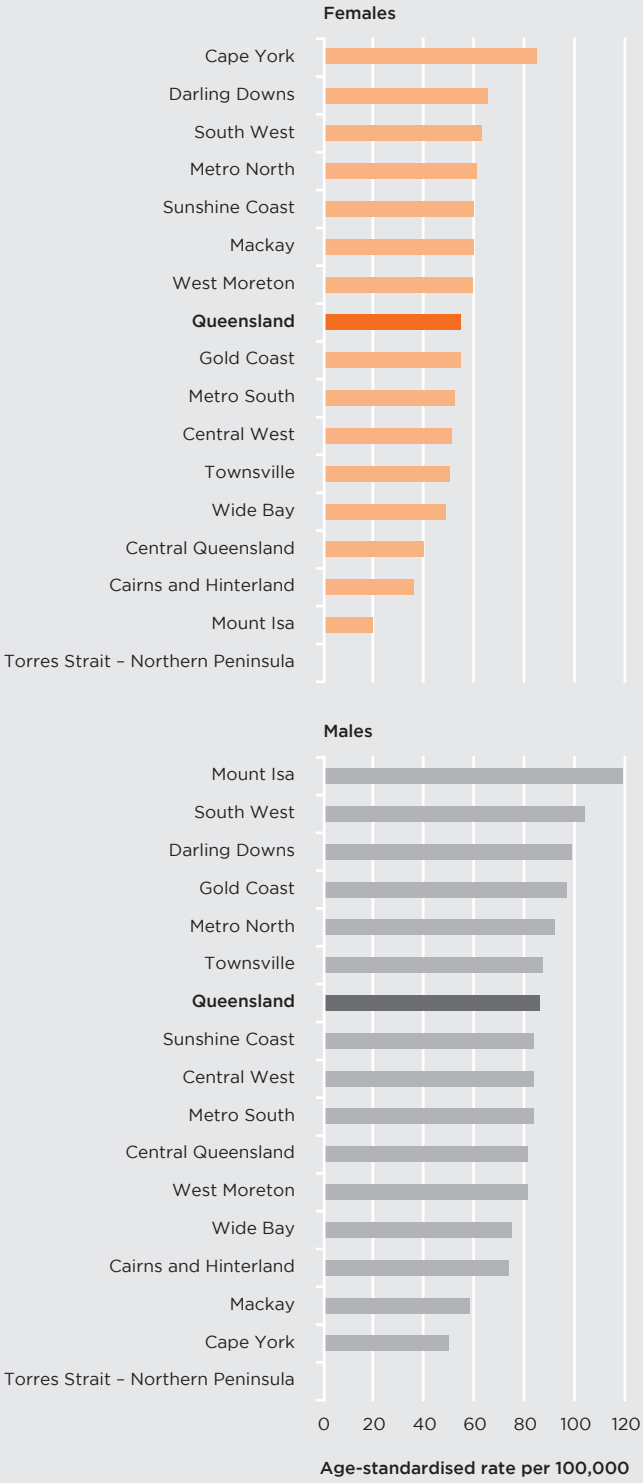


Note: Incidence rates for districts with fewer than 16 cases should be treated with caution.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Colorectal Cancer

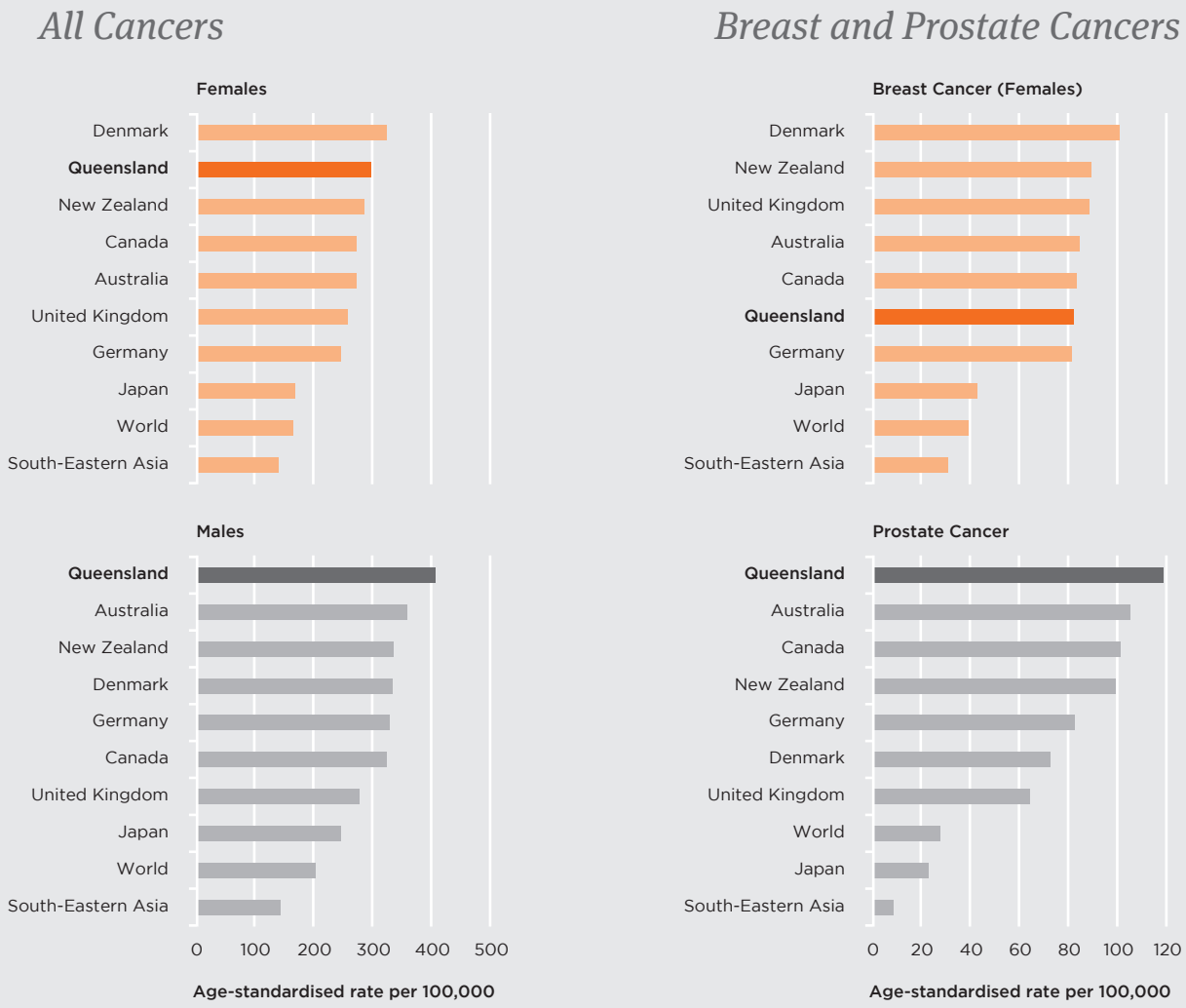


Melanoma



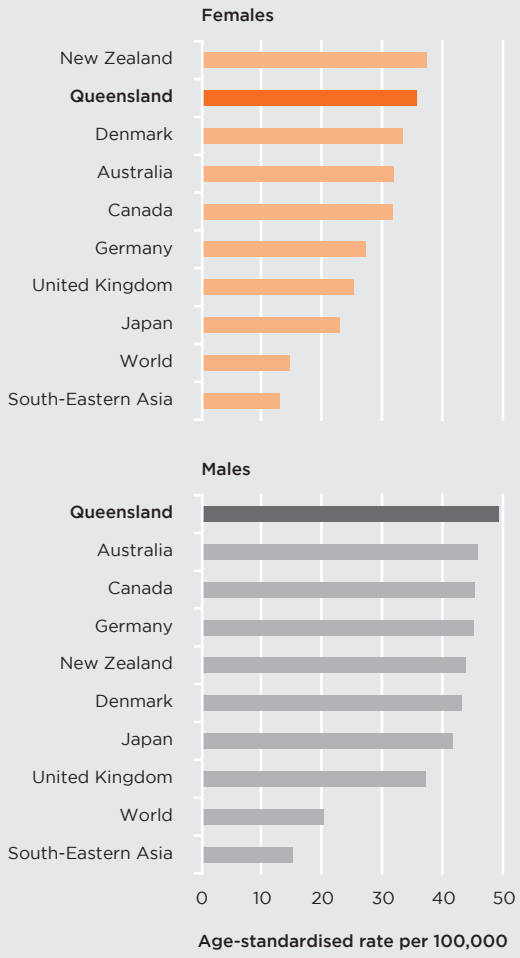
Cancer incidence rates in Queensland are among the highest in the world (Figure 13). Cancer rates are somewhat higher than most other developed parts of the world and substantially higher than less developed regions.

Figure 13: Cancer incidence rates for selected international regions and Queensland, 2008

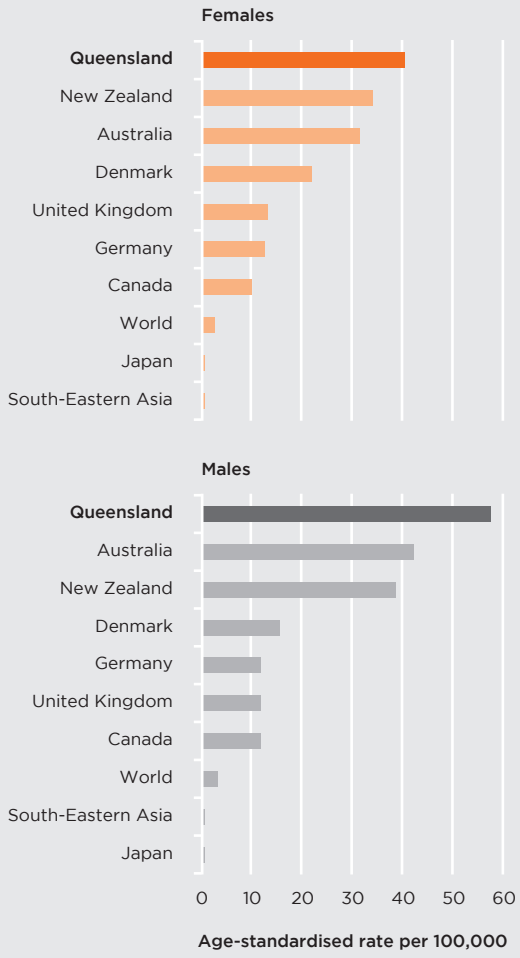


Note: Cancer incidence estimated by the International Agency for Research on Cancer (IARC) for 2008 (GLOBOCAN 2008)[3] except for Queensland which is based on Queensland Oncology Repository data for 2008. All rates are standardised to World Standard Population.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Colorectal Cancer



Melanoma



Cancer incidence rates in Queensland are among the highest in the world. Geographic variation is a feature of cancer in Queensland.

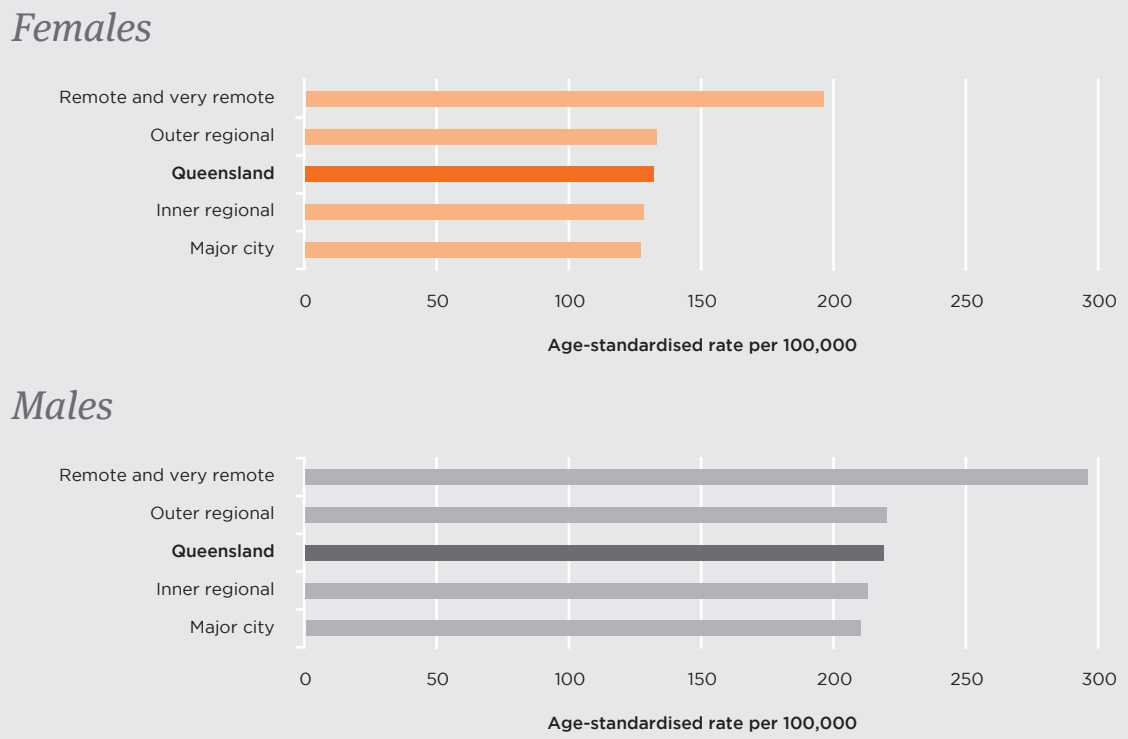
Regional, national and international variation in mortality

Mortality rates for all invasive cancers varied by remoteness for both males and females (Figure 14). Remote and very remote areas had substantially higher cancer mortality rates than other areas. Thus, compared to the Queensland average, mortality rates in these areas were 35% higher for males and 49% higher for females. Mortality rates were lowest in the major cities.

At the district level, age-standardised mortality rates varied across the state for all invasive cancers considered collectively as well as for the most common cancers (Figure 15). Differences in regional variations in mortality rates were also evident for the sexes. Reasons for the variations are diverse and complex and include exposure to environmental factors, socioeconomic status, access to health services and chance. It should be noted that remote districts have small populations and estimates of mortality rates based on such small numbers may not be as accurate as those for areas with larger populations.

While cancer incidence rates in Queensland are among the highest in the world (Figure 13), mortality rates overall compare favourably with other regions including South-Eastern Asia (Figure 16). However, cancer mortality rates vary widely according to the cancer site and also by sex. In international regional comparisons, colorectal cancer mortality rates are relatively high in females and relatively low in males. Mortality rates attributable to breast cancer are lower than most of the selected international regions, while rates due to prostate cancer are somewhat higher. Lung cancer mortality rates are average in females but better than average in males.

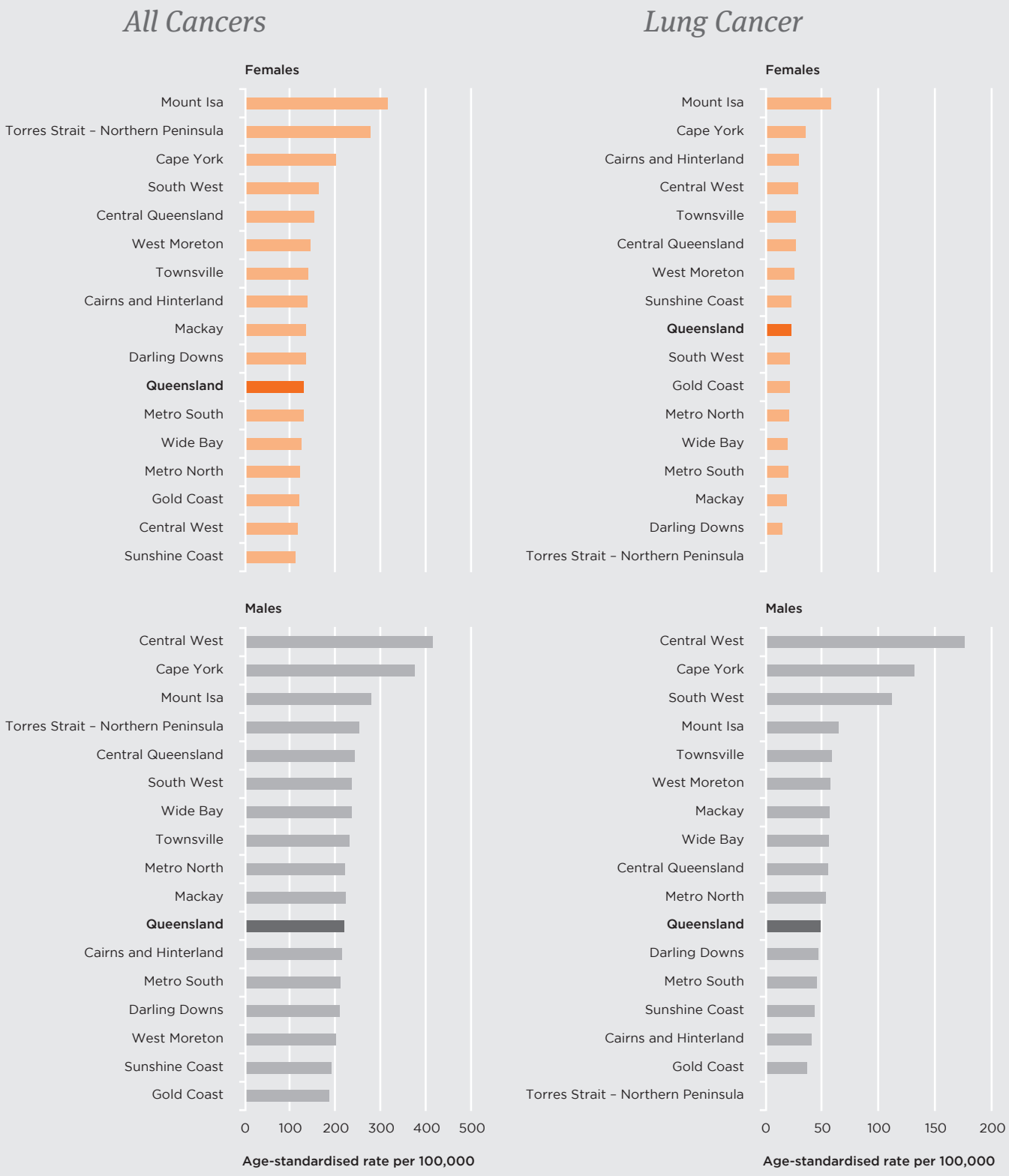
Figure 14: Cancer mortality rates by remoteness of residence, Queensland, 2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

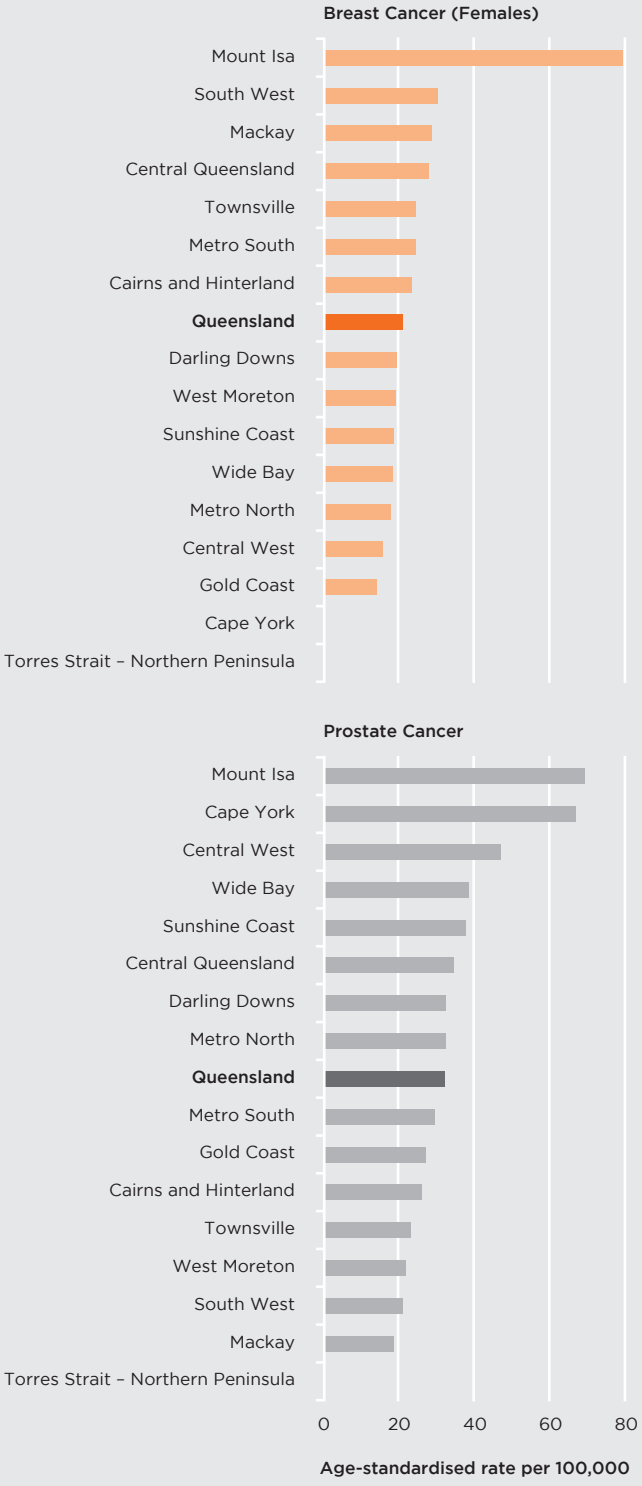
Cancer mortality rates in remote areas of Queensland are higher than that in major cities.

Figure 15: Cancer mortality rates by Health Service District, Queensland, 2008



Note: Where no cases were reported during 2008, the graph is intentionally left blank.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Breast and Prostate Cancers



Colorectal Cancer

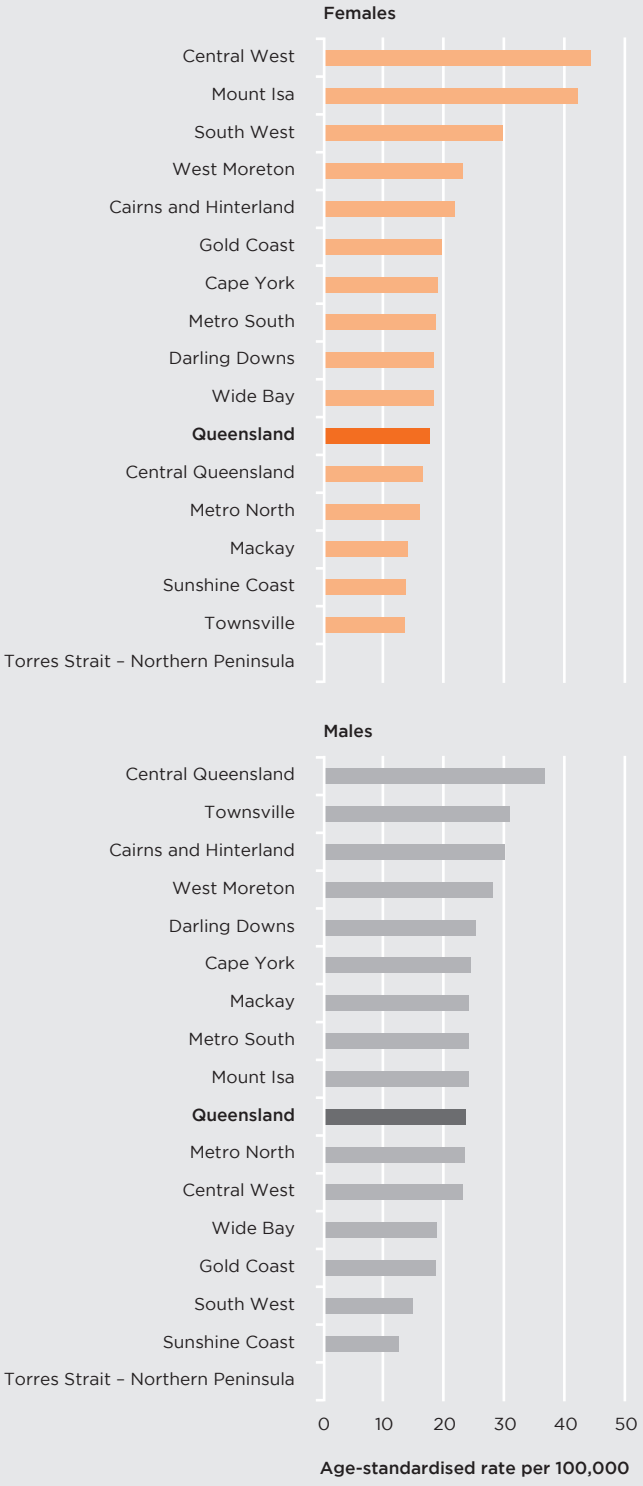
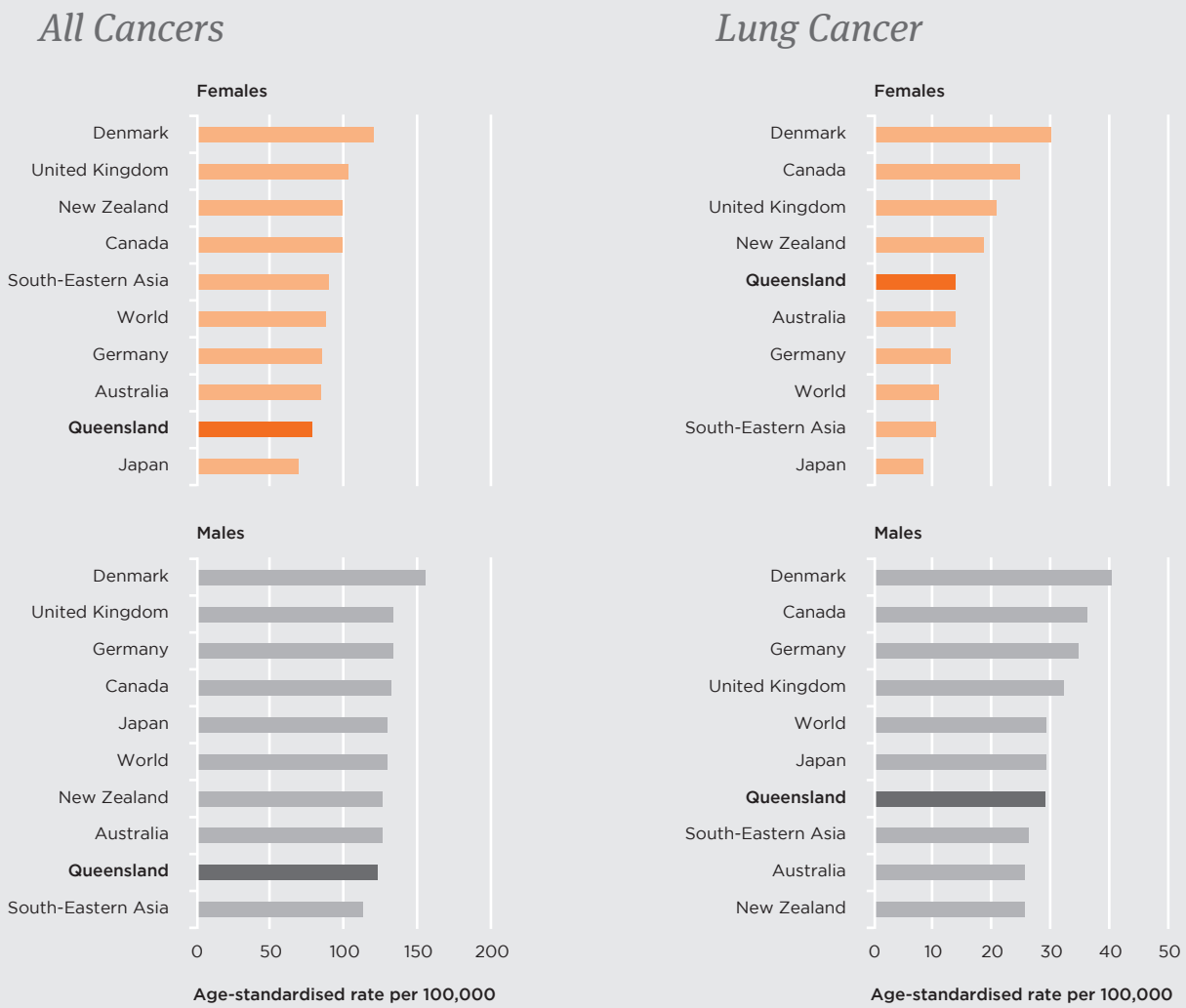
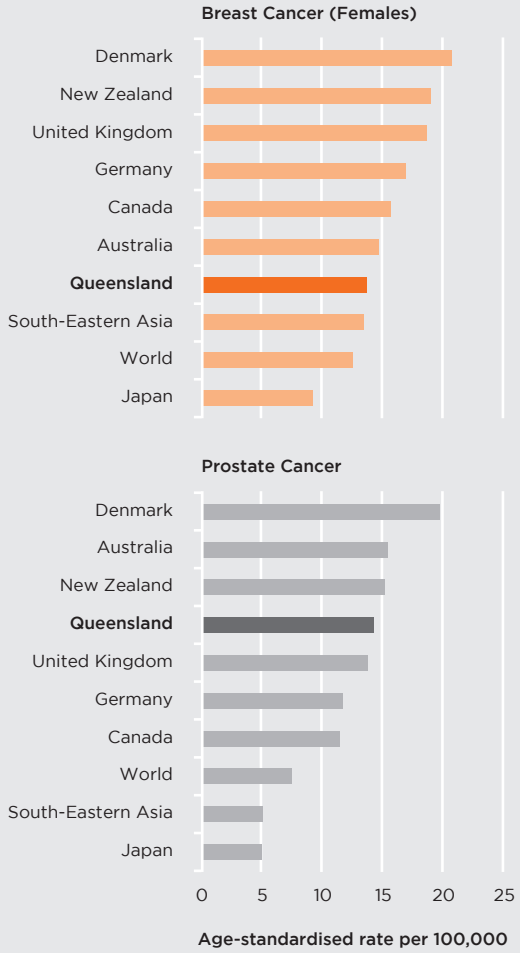


Figure 16: Cancer mortality rates for selected international regions and Queensland, 2008

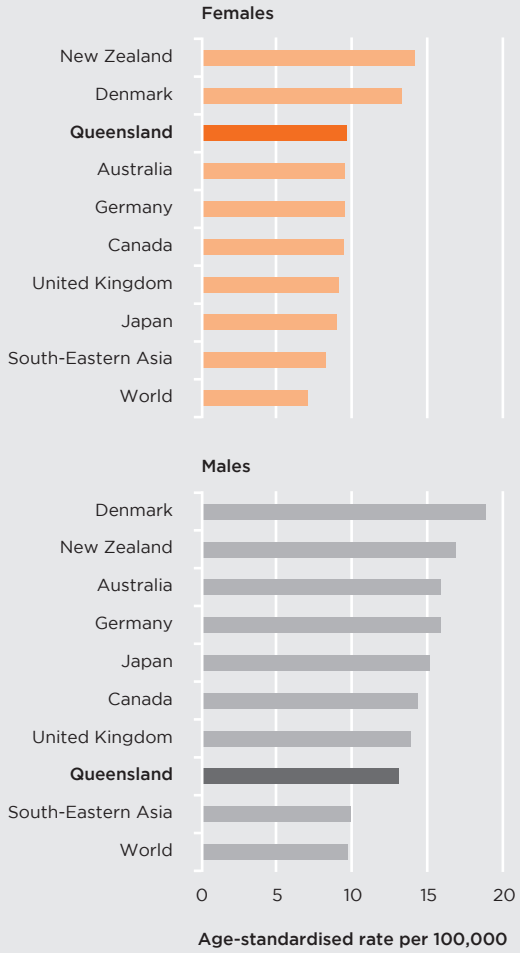


Source: Cancer mortality estimated by the International Agency for Research on Cancer (IARC) for 2008 (GLOBOCAN 2008)[3] except for Queensland which is based on Queensland Oncology Repository data for 2008. All rates are standardised to World Standard Population. Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Breast and Prostate Cancers



Colorectal Cancer



Overall Queensland cancer mortality rates compare favourably with the rest of Australia and other countries.

Prevalence

Prevalence represents the number of people living with a chronic condition such as cancer and is a measure of the burden of the disease for the individual, families and society. The prevalence of cancer is increasing in Queensland as more people are diagnosed with the disease and survival improves. By the end of 2008, more than 68,000 people were living with a diagnosis of cancer in the previous five years, representing nearly 2% of all Queenslanders. Cancer prevalence is summarised in Table 1.

Table 1: Five-year prevalence, most common cancers, Queensland, 31 December 2008

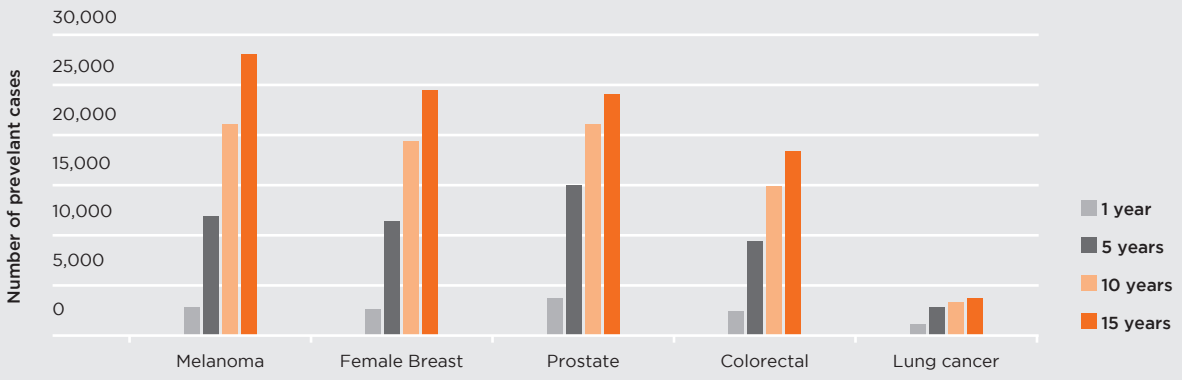
	Both sexes		Male		Female	
	Count	Percent*	Count	Percent*	Count	Percent*
All cancers	68,149	1.59	37,373	0.87	30,776	0.72
Prostate	14,980	0.35	14,980	0.35		
Melanoma	12,004	0.28	6,886	0.16	5,118	0.12
Breast	11,428	0.27	91	0.00	11,337	0.26
Colorectal	9,517	0.22	5,235	0.12	4,282	0.10
All lymphomas	3,117	0.07	1,725	0.04	1,392	0.03

** Percent of Queensland population as at 30 June 2008 (4.29 million) (Australian Bureau of Statistics)*
Source: Cancer Council Queensland (2011).[4]

Prostate cancer had the highest prevalence, due to high incidence and good survival, followed by melanoma and breast cancer. These three cancers accounted for more than half (56.3%) of all cancers prevalent in Queenslanders. It is worth noting that lung cancer, representing 8–10% of all new cancers, has a relatively low prevalence (2,634 cases or 4% of all cancers) due to relatively poor survival.[iii]

The prevalence of common cancers by time since diagnosis is shown in Figure 17. For cancers with relatively long survival times such as melanoma and breast cancer, increasing time since diagnosis is associated with increasing prevalence; for cancers with short survival times such as lung cancer, increasing time since diagnosis is associated with smaller proportional increases in prevalence. It has been pointed out that the time periods used for prevalence (Figure 17) approximate different periods of the patient journey, from post-diagnosis and primary treatment (<1 year), through to follow-up (1 to 5 years) and long-term survivorship (>5 years).[5]

Figure 17: Prevalence for the most common cancers, by time since diagnosis, Queensland, 31 Dec 2008



Source: Queensland Cancer Statistics On-Line, 2011. Viertel Centre for Research in Cancer Control, Cancer Council Queensland (www.cancerqld.org.au/research/qcsol). Based on data released by the Queensland Cancer Registry (1982-2008; released November 2011).

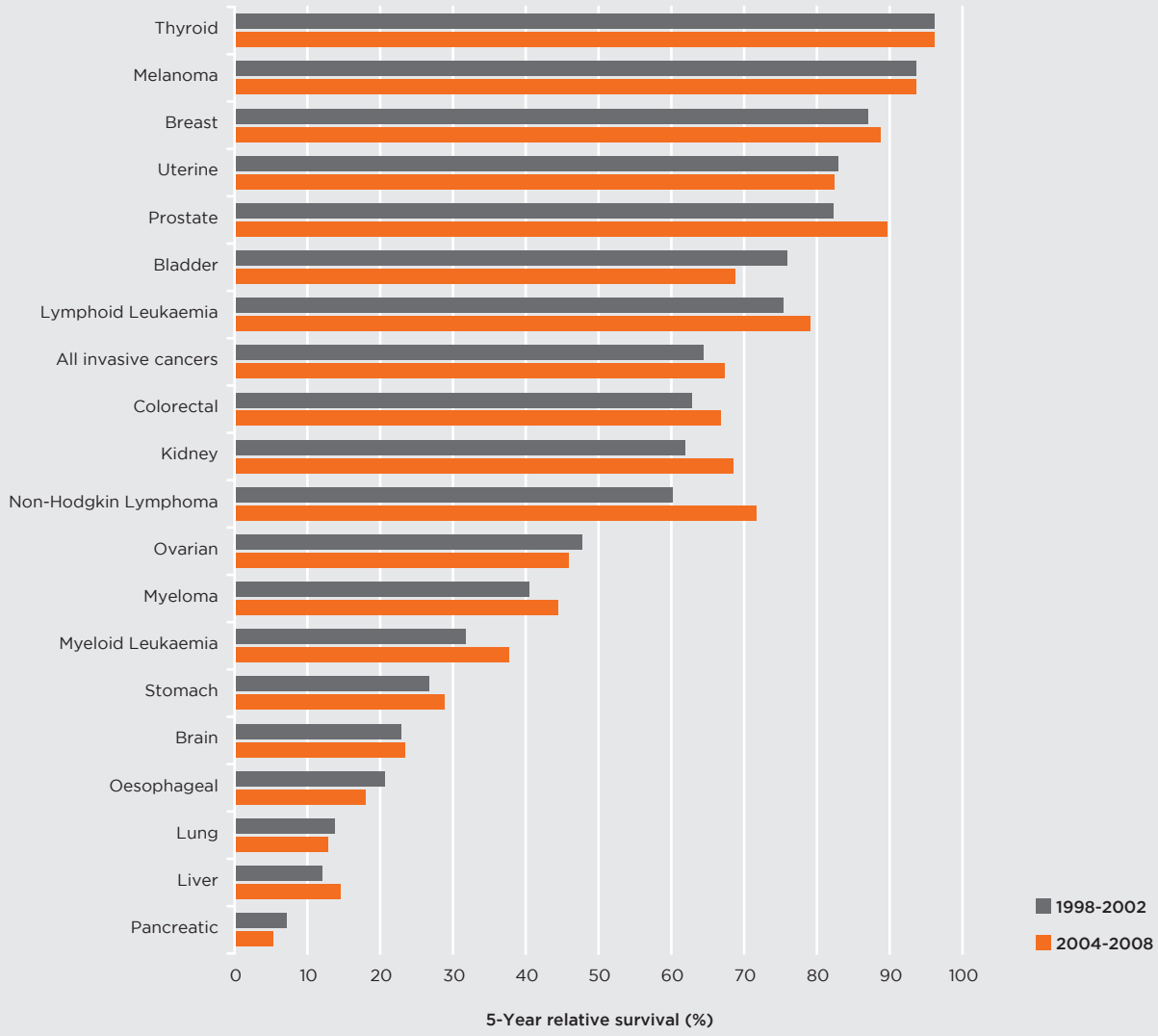
iii. Note: Prevalence data is for International Classification of Diseases for Oncology, 3rd edition (ICD-03) site C33,C34: Trachea, bronchus and lung.

Survival

Relative survival is a measure of the survival of a group of persons with a condition, such as cancer, relative to a comparable group from the general population without the condition. For cancer, five-year relative survival represents the proportion of patients alive five years after diagnosis, taking into account age, gender and year of diagnosis.

Survival varies widely and depends on the type of cancer. Thus, five-year survival ratios vary from over 95% for thyroid cancer to under 20% for oesophageal, lung and pancreatic cancer (Figure 18). Considered collectively, the average survival ratio for all invasive cancers is 67%.

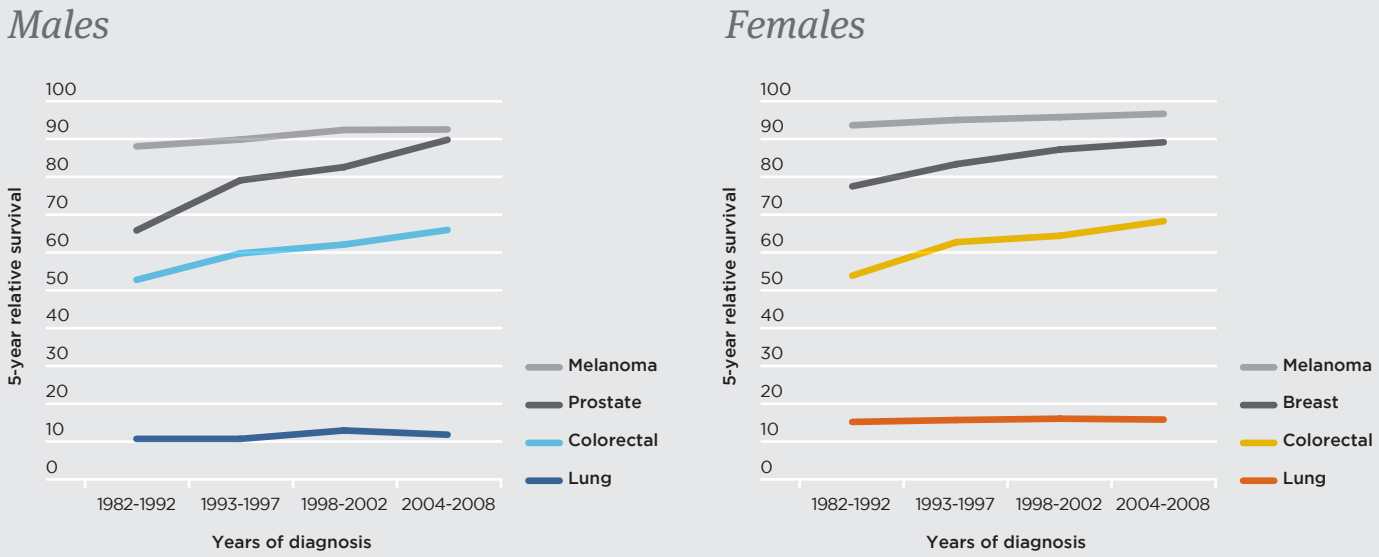
Figure 18: Five-year relative survival for the most common cancers diagnosed in Queensland, 1998–2002 vs 2004–2008



Notes: Relative survival was calculated using the period approach for persons aged 0–89 years at time of diagnosis. 'All invasive cancers' exclude basal and squamous skin cell cancers.
Source: Queensland Cancer Statistics On-Line, 2011. Viertel Centre for Research in Cancer Control, Cancer Council Queensland (www.cancerqld.org.au/research/qcsol). Based on data released by the Queensland Cancer Registry (1982-2008; released November 2011).

The relative survival ratios for many common cancers appear to be improving, with greatest gains between 1998–2002 and 2004–2008 observed for prostate and kidney cancers, non-Hodgkin lymphoma and myeloid leukaemia (Figure 18). Smaller increases in survival are noted for breast and colorectal cancers (Figure 19). Improvements in survival may be related to earlier detection and improved treatments. The small declines in survival ratios for bladder, oesophageal and pancreatic cancers are more difficult to explain, but may include changes in patient characteristics, treatment practices and chance.

Figure 19: Five-year relative survival for the most common cancers, Queensland, 1982–1992 to 2004–2008



Source: Queensland Cancer Statistics On-Line, 2011. Viertel Centre for Research in Cancer Control, Cancer Council Queensland (www.cancerqld.org.au/research/qcsol). Based on data released by the Queensland Cancer Registry (1982-2008; released November 2011).

Cancer survival rates in Queensland have improved, with the greatest gains observed for prostate cancer and non-Hodgkin lymphoma.

Incidence and mortality trends: Most common cancers

Trends in incidence or mortality can be characterised by the rate of change and summarised by the annual percentage change (APC) and may be positive (rates increasing) or negative (rates decreasing). Cancer incidence and mortality trends for the most common cancers are summarised in Table 2 and Figures 20 to 23. Rates of change which are statistically significant are highlighted in the Table.

Table 2: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Queensland, 1982–2008

	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer	Period	APC	Period	APC	Period	APC	Period	APC
All cancers	1982–1986 1986–1994 1994–2001 2001–2008	-0.4 **2.6*** -0.7 0.8	1982–1999 1999–2008	**1.3*** -0.3	1982–1994 1994–2008	**0.5*** **-1.5***	1982–1996 1996–2008	**0.4*** **-1.2***
Prostate	1982–1988 1988–1994 1994–1997 1997–2008	-0.02 **11.0*** -12.3 **4.2***			1982–1993 1993–2008	**3.6*** **-2.1***		
Female breast			1982–1999 1999–2008	**2.1*** -0.3			1982–1993 1993–2008	0.6 **-2.3***
Colorectal	1982–1995 1995–2008	**1.5*** -0.4	1982–1990 1990–1993 1993–2008	-0.8 3.2 -0.2	1982–1994 1994–2008	0.9 **-2.4***	1982–2008	**-1.5***
Melanoma	1982–1997 1997–2008	**3.1*** 0.2	1982–1986 1986–1993 1993–1997 1997–2008	**6.7*** -1.5 4.8 -0.5	1982–1986 1986–2008	7.3 **1.0***	1982–2008	0.3
Haematological	1982–1987 1987–2000 2000–2005 2005–2008	0.1 **3.1*** -2.2 3.0	1982–2000 2000–2008	**2.5*** -1.1	1982–1998 1998–2008	**1.3*** **-2.3***	1982–1997 1997–2008	**1.5*** **-2.6***
Hepatobiliary	1982–1984 1984–2008	-9.8 **1.3***	1982–2008	**0.6***	1982–2008	**0.9***	1982–2008	**0.6***
Gynaecological			1982–2008	**0.9***			1982–2008	**-1.3***
Lung	1982–2008	**-1.5***	1982–2008	**2.5***	1982–2008	**-1.5***	1982–2008	**2.6***
Urological	1982–1989 1989–1997 1999–2006 2006–2008	-0.5 **2.1*** **-1.6*** **-10.6***	1982–1998 1996–2008	**1.6*** **-2.8***	1982–1996 1996–2008	0.5 **-2.1***	1982–1991 1991–2008	**3.4*** **-1.7***
Head and Neck	1982–2008	**-1.2***	1982–1994 1994–2008	**2.8*** **-2.0***	1982–2008	**-1.0***	1982–2008	-0.5
Endocrine	1982–2008	**4.3***	1982–2008	**5.9***	1982–2008	-0.5	1982–2008	0.5
Upper GI	1982–2008	**-1.0***	1982–2008	**-1.0***	1982–2008	**-1.5***	1982–2008	**-1.9***
CNS	1982–2008	**-0.6***	1982–2008	-0.3	1982–2008	0.5	1982–1998 1998–2008	4.9 **-1.0***

** Indicates a significant increase or decrease in annual percentage change (APC).*
Abbreviations: APC: annual percentage change; GI: gastrointestinal; CNS: Central nervous system (including brain).
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Most common cancers

PROSTATE CANCER

Prostate cancer is the most common cancer in males (Figure 6). Incidence rates increased significantly between 1988 and 1994 (Figure 20), coinciding with the increased use of prostate-specific antigen (PSA) testing. The incidence rate declined between 1994 and 1997, probably due to the identification of most prevalent cases by the new diagnostic procedures, before increasing at an annual rate of 4.2% per year. Mortality rates from prostate cancer peaked in Queensland in 1993 and thereafter have declined at an annual rate of 2.1% (Table 2; Figure 22). The decline in mortality rates is not clearly understood. Increased PSA testing may be a contributing factor, although this is controversial.[6, 7, 8, 9] It is also suggested that improved treatment of early-stage disease with surgery or radiotherapy, or better treatment of advanced cancers with anti-androgenic therapies may be contributing to the lower rates of mortality.[10]

FEMALE BREAST CANCER

Breast cancer is the most common cancer in females (Figure 6). Incidence rates increased significantly between 1982 and 1999 (Table 2; Figure 20), in large part a reflection of increased breast cancer screening during this period. The decrease in incidence rate since 1999 (0.3% per year) is not significant. Mortality rates peaked in the 1990s and rates have declined by 2.3% per year since 1993 (Figure 22). The decrease, which is significant and has been observed in other countries, is likely due to more effective anticancer treatments[11] along with increased participation in breast screening.[12] Between January 2007 and December 2008, 404,630 women were screened by BreastScreen Queensland; of these 262,354 (64.8%) were in the 50–69 year-old target group.[13]

COLORECTAL CANCER

Colorectal cancer is the second most common cancer in Queensland (Figure 6). While the incidence rate of colorectal cancer in females varied insignificantly over the period 1982 to 2008, incidence rates in males increased significantly between 1982 and 1995 (APC 1.5%) before declining slowly thereafter (Figure 22). Mortality rates for males decreased significantly after 1994 (APC -2.4%); rates for females on the other hand have decreased steadily and significantly over the entire period (APC -1.5%).

MELANOMA

Australia has the highest incidence rate of melanoma of any country and Queensland has the highest rate of any Australian state or territory.[10] Melanoma is the third most common cancer in Queensland (Figure 6). Incidence rates for melanoma have risen significantly in both males and females (Table 2), particularly in the 1980s and 1990s, while mortality rates have risen significantly in males only (APC 1.0%; Figure 22). Incidence rates for melanoma are susceptible to fluctuations in public awareness.

HAEMATOLOGICAL MALIGNANCIES

The incidence of haematological malignancies increased significantly in both males and females, reaching a peak in the year 2000 and declining slightly thereafter (Table 2, Figure 21). Mortality rates also increased, peaking a few years earlier (1998 for males, 1997 for females) before decreasing significantly thereafter (APC -2.3% for males, -2.6% for females). The decreases in mortality (most likely) reflect the slight decline in incidence combined with improved chemotherapy treatments, particularly for young patients.[14]

LUNG CANCER

Lung cancer incidence rates declined significantly between 1982 and 2008 for males (APC -1.5%) but rates increased significantly for females (APC 2.5%) (Figure 21). Mortality rates followed similar trends (APC -1.5% for males; 2.6% for females); the changes are significant (Figure 23). The differences in incidence and mortality rates between males and females have been attributed to past patterns of smoking prevalence.[10] Lung cancer is the leading cause of cancer death in females, exceeding those due to breast cancer (Figure 7).

ENDOCRINE CANCERS

Endocrine cancers are increasing in incidence, particularly in females (Figure 21). The annual percentage change (APC) over the period 1982 to 2008 was 4.3% in males, and 5.9% in females, making these cancers among the most rapidly changing cancers in Queensland. Mortality rates, however, have remained relatively stable over this period. The increase in incidence is largely due to increases in the incidence of thyroid cancer in females, with three out of four thyroid cancers occurring in females (73.6%) and thyroid cancer representing 92.8% of all new endocrine cancers in 2008.

UPPER GASTROINTESTINAL TRACT CANCERS

The incidence of cancers of the upper gastrointestinal tract (stomach, oesophagus and small intestine) declined by around 1% per year since 1982 (Table 2); these changes are significant. Mortality rates also decreased significantly since 1982 (APC -1.5% in males, -1.9% in females)(Figure 23), mirroring trends in other countries.[15]

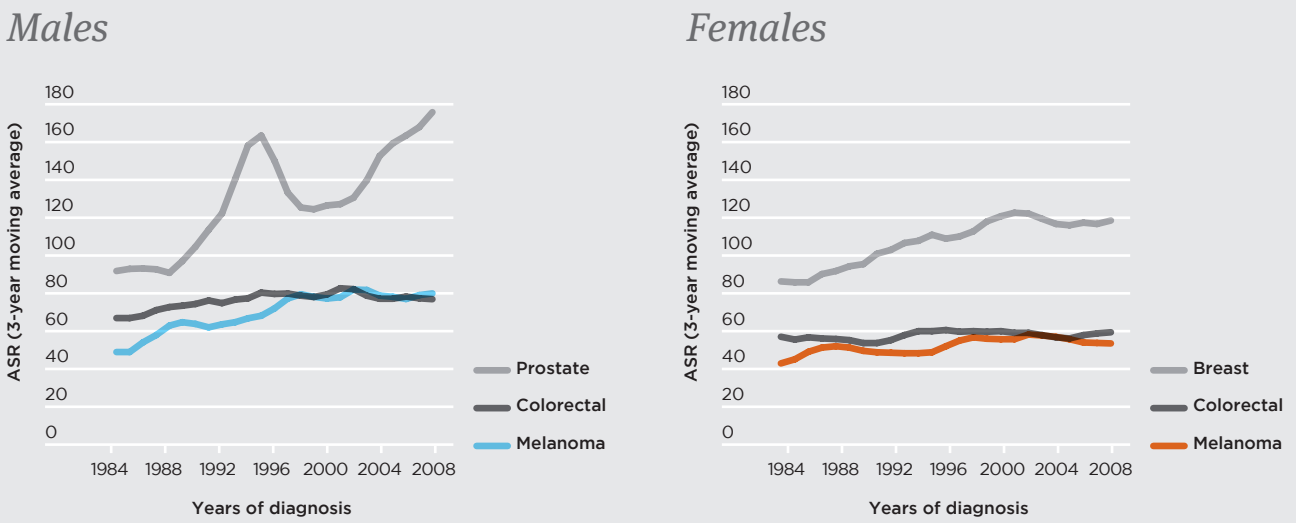
HEPATOBILIARY CANCERS

Incidence rates for hepatobiliary cancers increased significantly in males and females during the period under review (1.3% and 0.6% respectively; Table 2; Figure 21). Mortality rates have followed the trend, with rates increasing by 0.9% in males and 0.6% per year in females (both significant).

Lung cancer incidence and mortality rates have decreased among males, but show an increasing trend in females.

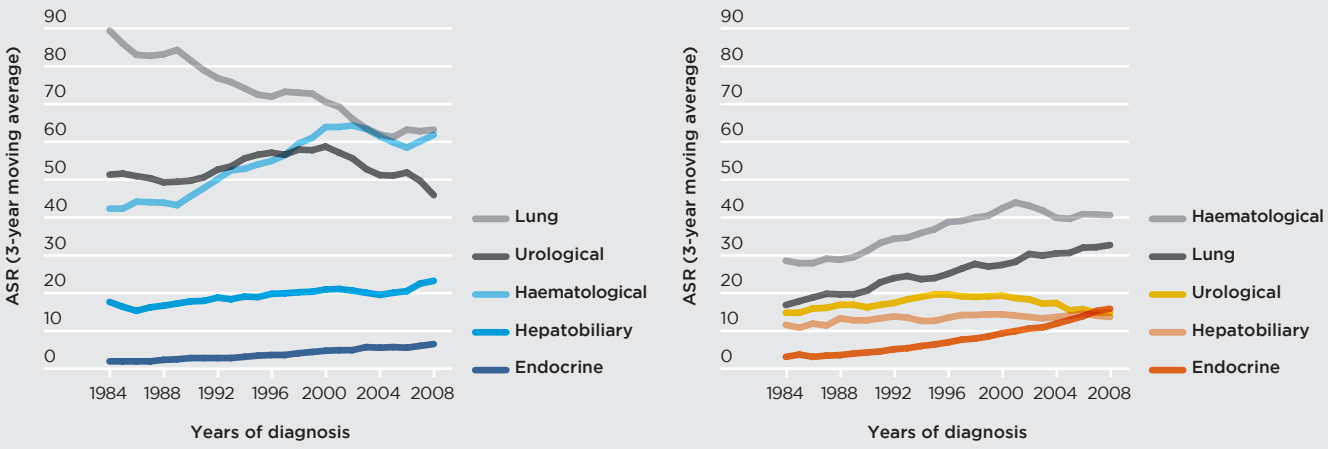
Melanoma incidence rate in Queensland – the highest in the world – has not changed significantly over the past decade.

Figure 20: Incidence trends for the most common cancers, Queensland, 1982–2008



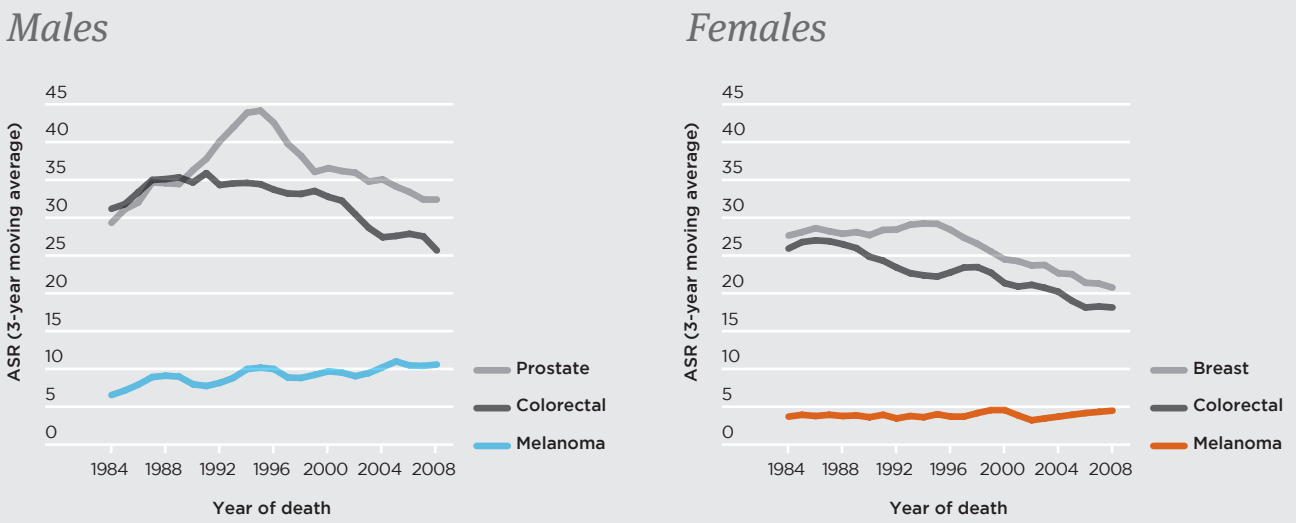
Abbreviation: ASR: Age-standardised rate per 100,000.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 21: Incidence trends for the most rapidly changing cancers, Queensland, 1982–2008



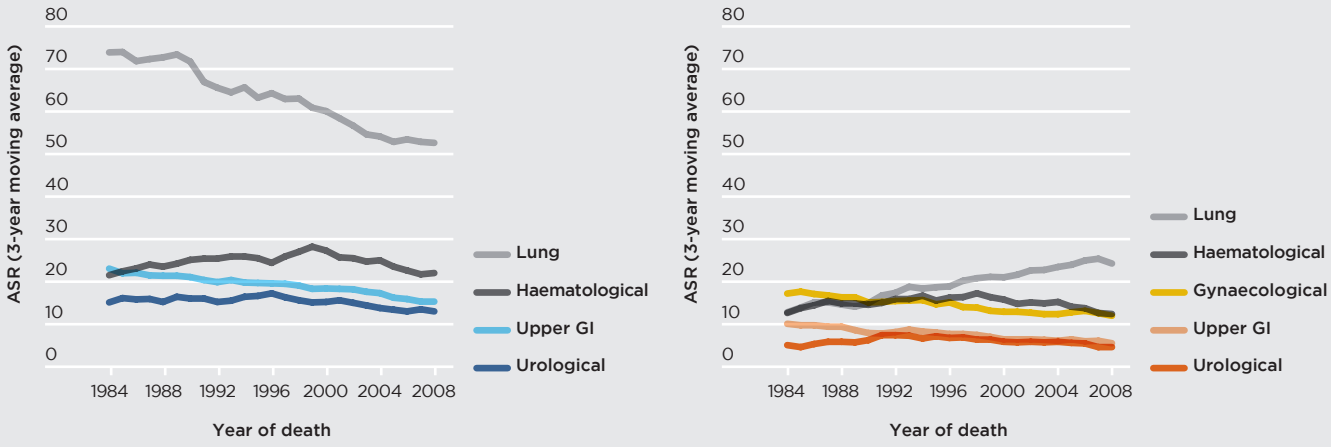
Abbreviation: ASR: Age-standardised rate per 100,000.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 22: Mortality trends for the most common cancers, Queensland, 1982–2008



Abbreviation: ASR: Age-standardised rate per 100,000.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 23: Mortality trends for the most rapidly changing cancers, Queensland, 1982–2008



Abbreviation: ASR: Age-standardised rate per 100,000.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Incidence and mortality trends by age group

Table 3: Annual percentage change (APC) in age-specific incidence rates, most common cancers, by age group, Queensland, 1982–2008

		Males				Females			
		2004–2008		Trend §		2004–2008		Trend §	
Age group	Cancer†	New cases	Average rate‡	Period	APC*	New cases	Average rate‡	Period	APC*
0–14	All cancers	318	14.8	1982–2008	-0.26	287	14.1	1982–2008	**1.2***
	Haematological	150	7.0	1982–2008	-0.0	112	5.5	1982–2008	**1.6***
	CNS	64	3.0	1982–2008	0.5	37	1.8	1982–2008	0.5
	Bone & soft tissue	31	1.4	1982–2008	-0.8	52	2.6	1982–2008	**3.9***
	Urological	18	0.8	1982–2008	-1.1	19	0.9	1982–2008	-0.7
	Endocrine	15	0.7	1982–2008	0.4	17	0.8	1982–2008	0.3
15–29	All cancers	1,023	46.9	1996–2008	**-2.0***	1,084	51.3	1982–2008	0.1
	Melanoma	322	14.8	1997–2008	**-4.6***	386	18.3	1995–2008	**-3.4***
	Haematological	221	10.1	1982–2008	**1.6***	177	8.4	1991–2008	-0.2
	Urological	210	9.6	1982–2008	**1.9***	7	0.3	1989–2008	-5.2
	Gynaecological					131	6.2	1982–2008	**-2.2***
	Endocrine	26	1.2	1982–2008	3.2	161	7.6	1982–2008	**4.0***
30–49	All cancers	5,345	181.4	1997–2008	0.0	8,159	271.8	1982–2008	**0.7***
	Melanoma	1,482	50.3	1996–2008	**-2.2***	1,600	53.3	2006–2008	12.8
	Female breast					3,084	102.8	1982–2008	**1.5***
	Colorectal	472	16.0	1982–2008	-0.1	455	15.2	1988–2008	0.4
	Haematological	597	20.3	1982–2008	**1.0***	496	16.5	1982–2008	**1.7***
	Urological	701	23.8	1982–2008	**1.0***	168	5.6	1982–2008	**1.5***
50–64	All cancers	19,021	1051.2	1999–2008	**2.6***	14,152	791.8	1998–2008	-0.3
	Melanoma	2, 465	136.2	1982–2008	**1.8***	1,621	90.7	1988–2008	-0.7
	Prostate	6,266	346.3	1998–2008	**12.4***				
	Female breast					5,014	280.5	2000–2008	-1.1
	Colorectal	2,227	123.1	1992–2008	**-1.8***	1,492	83.5	1994–2008	**-2.1***
	Haematological	1,558	86.1	1993–2008	**0.7***	1,072	60.0	1982–2008	**1.3***
65–79	All cancers	25,530	2834.9	1993–2008	-0.1	14,200	1517.3	2000–2008	-0.6
	Melanoma	2,497	277.3	1998–2008	1.0	1,254	134.0	1987–2008	**1.5***
	Prostate	8,127	902.4	1997–2008	**3.7***				
	Colorectal	3,547	393.9	2001–2008	-0.7	2,578	275.5	1982–2008	**1.1***
	Lung	3,064	340.2	1982–2008	**-1.1***	1,484	158.6	2001–2008	0.2
	Haematological	2,191	243.3	1999–2008	0.0	1,380	147.5	2001–2008	-2.2
80+	All cancers	9,501	3871.5	1990–2008	**-0.4***	7,967	2,021.0	1998–2008	-0.3
	Melanoma	976	397.7	1982–2008	**4.0***	641	162.6	1982–2008	**2.8***
	Prostate	2,194	894.0	2003–2008	**-5.2***				
	Colorectal	1,216	495.5	1982–2008	0.4	1,484	376.4	1987–2008	0.2
	Lung	1,151	469.0	1982–2008	-0.0	681	172.7	1982–2008	**4.9***
	Haematological	1,109	451.9	1982–2008	**2.3***	1,012	256.7	2000–2008	-1.6

† The five most common cancers in each age group are listed.
‡ Average annual age-specific incidence rate per 100,000 for the period 2004–2008. Rates for fewer than 16 cases are presented for completeness but should be treated with caution.
§ Trends were analysed for 1982–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) in the most recent time period is shown.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
Abbreviations: APC: annual percentage change; CNS: Central nervous system (including brain).
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Tables 3 and 4 and Figure 24 show incidence and mortality rate trends for the period 1982–2008 for the most common cancers according to age: childhood, adolescents and young adults, and adults.

CHILDHOOD CANCERS

In children aged 0–14 years, cancer incidence and mortality rates were higher in boys than girls (Figure 24). Cancer incidence rates for boys were relatively stable over the period 1982–2008, both for all cancers combined and the common cancers of childhood. In contrast, incidence rates for all cancers combined increased significantly for girls between 1982 and 2008 (APC 1.2%). The incidence of haematological cancers and cancers of bone and soft tissue in girls increased by 1.6% and 3.9% per year respectively during this period (Table 3).

Considering all cancers together, cancer mortality rates declined significantly in both boys and girls during this period. The decreases in mortality are likely due to improvements in treatment, particularly for the haematological cancers which are the most common cancers in childhood.

Table 4: Annual percentage change (APC) in age-specific mortality rates, most common cancers, by age group, Queensland, 1982–2008

		Males				Females			
		2004–2008		Trend §		2004–2008		Trend §	
Age group	Cancer†	Deaths	Average rate‡	Period	APC*	Deaths	Average rate‡	Period	APC*
0–14	All cancers	63	2.9	1982–2008	**-3.5***	41	2.0	1982–2008	**-2.4***
15–29	All cancers	105	4.8	1982–2008	-0.1	99	4.7	1982–2008	-0.0
30–49	All cancers	1,002	34.0	1982–2008	**-1.1***	1,097	36.6	1982–2008	**-1.5***
	Melanoma	115	3.9	1982–2008	-0.2	74	2.5	1982–2008	**-1.2***
	Female beast					325	10.8	1992–2008	**-3.1***
	Colorectal	113	3.8	1982–2008	**-2.1***	93	3.1	1982–2008	**-2.2***
	Haematological	96	3.3	1995–2008	**-6.4***	68	2.3	1982–2008	**-3.1***
	Urological	60	2.0	1982–2008	-0.9	17	0.6	1982–2008	**-3.4***
50–64	All cancers	4,621	255.4	1987–2008	**-2.5***	3,367	188.4	1991–2008	**-2.2***
	Melanoma	239	13.2	1982–2008	-0.3	109	6.1	1982–2008	-0.1
	Prostate	230	12.7	1987–2008	**-2.2***				
	Female breast					741	41.5	1993–2008	**-2.8***
	Colorectal	576	31.8	1987–2008	**-3.6***	342	19.1	1982–2008	**-3.7***
	Haematological	313	17.3	1982–2008	**-2.5***	219	12.3	1982–2008	**-1.7***
65–79	All cancers	9,240	1026.0	1997–2008	**-2.0***	5,517	589.5	2001–2008	**-2.2***
	Melanoma	378	42.0	1982–2008	**2.3***	127	13.6	1982–2008	0.9
	Prostate	1,196	132.8	1994–2008	**-2.7***				
	Colorectal	1,126	125.0	2001–2008	**-4.5***	783	83.7	2004–2008	**-4.4***
	Lung	2,489	276.4	2000–2008	**-2.4***	1,172	125.2	1992–2008	**2.2***
	Haematological	844	93.7	1998–2008	**-3.5***	539	57.6	2002–2008	**-6.5***
80+	All cancers	5,994	2442.5	1990–2008	-0.3	5,005	1,269.6	1982–2008	**0.7***
	Melanoma	250	101.9	1982–2008	**4.1***	122	30.9	1982–2008	**2.6***
	Prostate	1,401	570.9	1993–2008	**-1.4***				
	Colorectal	682	277.9	1982–2008	-0.3	811	205.7	1982–2008	**-0.7***
	Lung	1,076	438.5	1982–2008	-0.2	620	157.3	1982–2008	**4.8***
	Haematological	700	285.2	1982–2008	**1.7***	625	158.5	1996–2008	-1.1

† The five most common cancers in each age group are listed.
‡ Average annual age-specific mortality rate per 100,000 for the period 2004–2008.
§ Trends were analysed for 1982–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) in the most recent time period is shown.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

CANCERS IN ADOLESCENTS AND YOUNG ADULTS

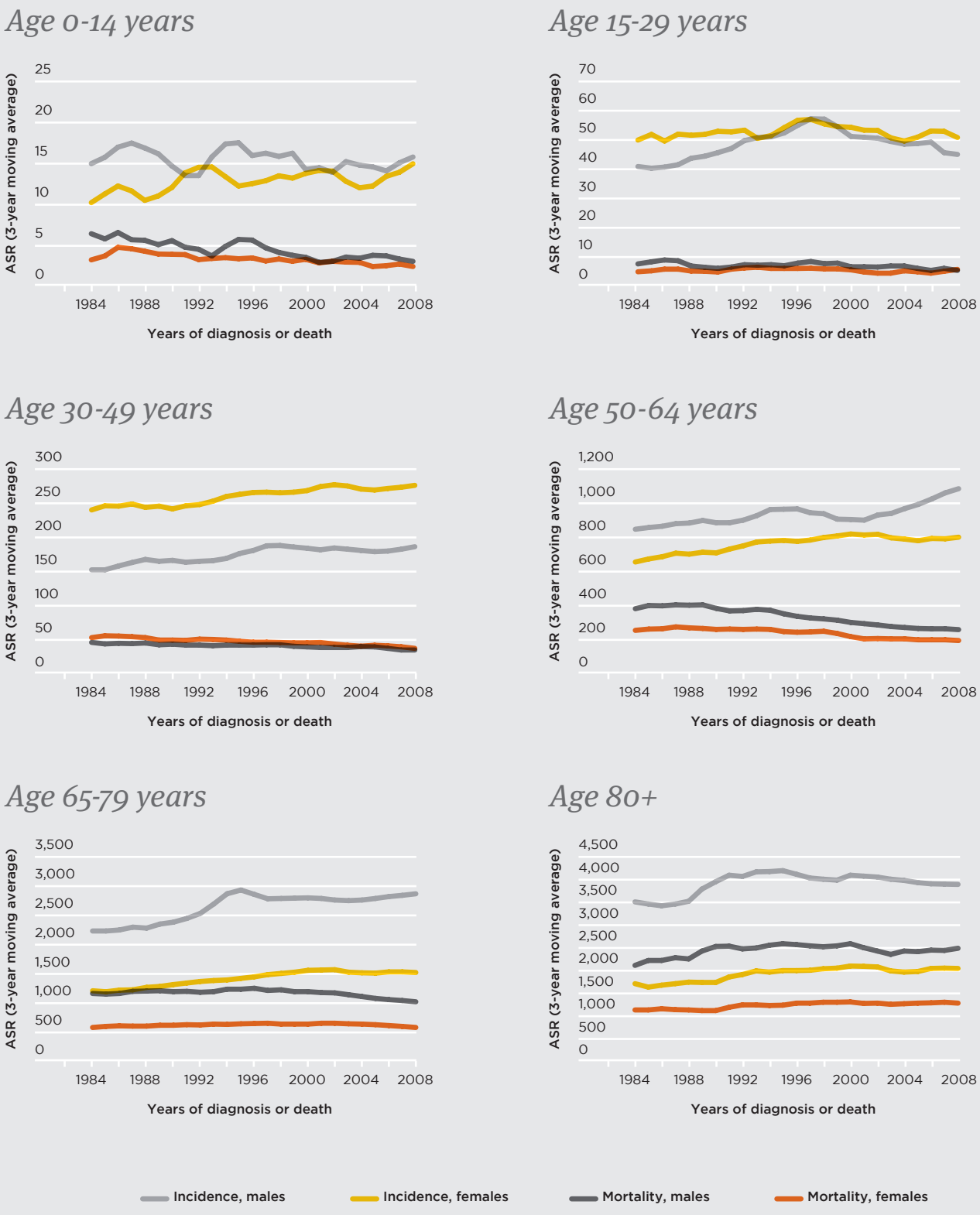
In males aged 15–29, the incidence rate for all cancers decreased significantly between 1996 and 2008, largely due to a decrease in the incidence of the most common cancer, melanoma (APC -4.6%). The incidence rates of haematological and urological cancers on the other hand increased between 1982 and 2008 (APC 1.6% and 1.9% respectively). In females aged 15–29, the incidence rate for all cancers combined was stable during this period, with the incidence rate for endocrine cancers (mostly thyroid cancer) increasing significantly (APC 4.0%) and the incidence rates for melanoma and gynaecological cancers decreasing significantly (APC -3.4% and -2.2% respectively; Table 3). Mortality rates for both males and females overall did not change between 1982 and 2008.

CANCERS IN ADULTS

Incidence and mortality rates for all cancers were higher in females aged 30–49 years than males, but the situation was reversed for persons over 50 years (Figure 24). In the latter age groups, incidence and mortality rates for individual cancers were generally higher in males than females (Tables 3 and 4).

- **Melanoma** incidence rates decreased in adult males aged 30–49 years from the mid-1990s, but have remained unchanged or increased significantly in adults (male and female) aged 50 years and over. Although mortality rates decreased in females aged 30–49 years, mortality rates have increased in the older age groups (males over 65 years; males and females over 80 years).
- **Female breast cancer** incidence rates increased in females aged 30–49 years from 1982 (APC 1.5%), but mortality rates for females—including those at high risk for breast cancer (aged 50–64 years)—have decreased significantly from the early 1990s.
- **Prostate cancer** incidence rates have increased markedly in males under 80 years from the late 1990s; incidence rates in males over 80 years decreased significantly between 2003 and 2008. In the past 15–20 years, mortality rates from prostate cancer have decreased significantly in all age groups.
- **Colorectal cancer** incidence rates have decreased in the 50–64 year old age group since the early 1990s but increased in the 65–79 year old female cohort. Mortality rates have decreased significantly in all age groups in the past 25 years.
- **Lung cancer** incidence rates show a clear gender difference. The incidence rate for males 65–79 years decreased while the rate for older females increased significantly: the annual percentage change in the 80 years and over age group of 4.9% is the highest rate of change for any cancer in females. Mortality rates reflect these trends with the highest rate of change for elderly females (APC 4.8% for the over 80+ year old group).
- Incidence rates for **haematological cancers** increased in most adult age groups, with the exception of males aged 65–79 years and females 65 years and older. Apart from adults 80 years and older, mortality rates from haematological cancers have consistently decreased—the decreases are the largest noted among the common cancers (APC -6.4% in males 30–49; -6.5% in females aged 65–79 years).

Figure 24: Incidence and mortality trends for all cancers by age group, Queensland, 1982–2008



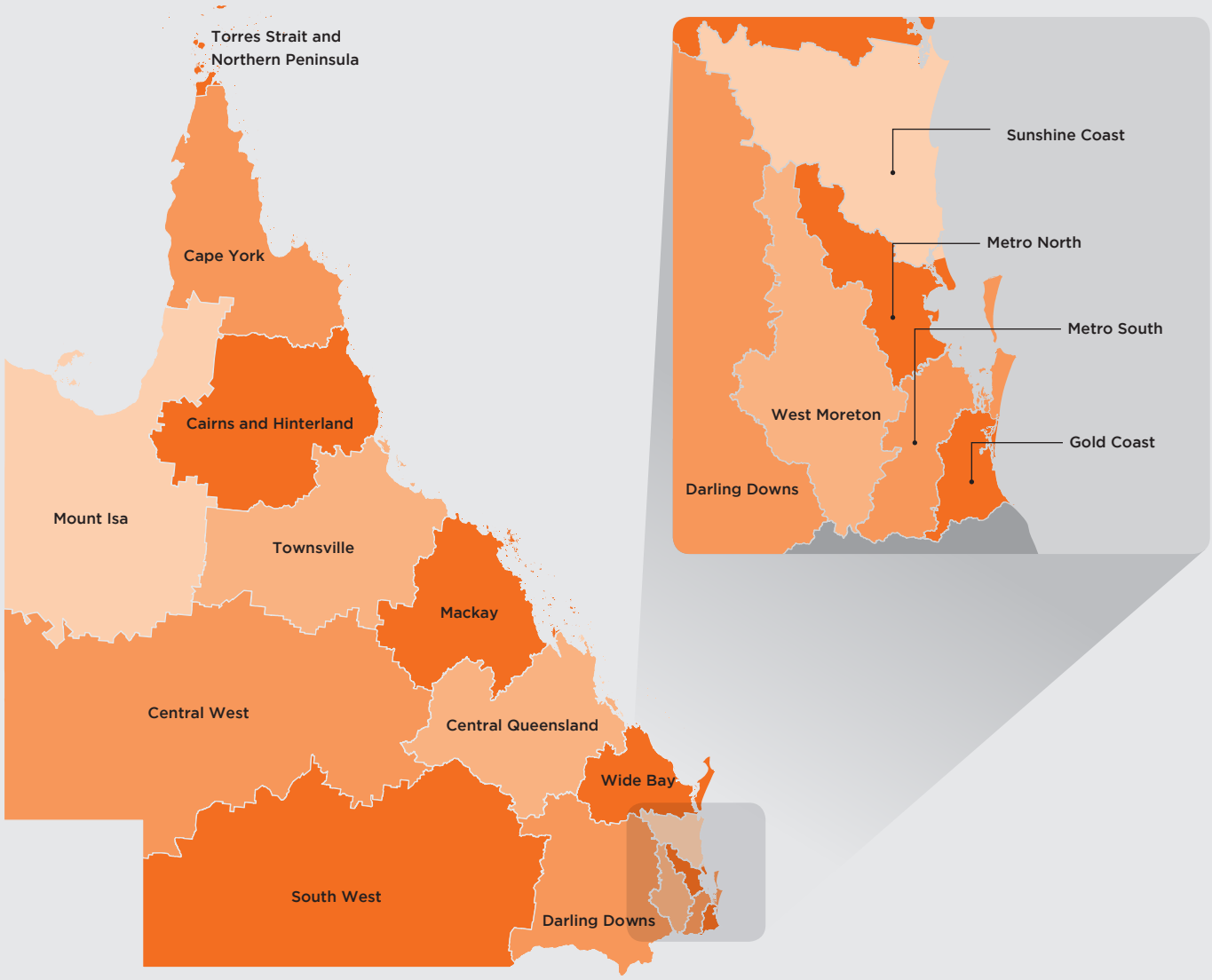
Abbreviation: ASR: Age-standardised rate per 100,000.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Health Service Districts

Cancer overview by Health Service District (HSD)

In this section, an overview of cancer incidence and mortality are presented for the sixteen Health Service Districts (HSDs)[iv] in Queensland and are aligned with the Health and Hospital Networks (LHHNs) which will come into effect on 1 July 2012.

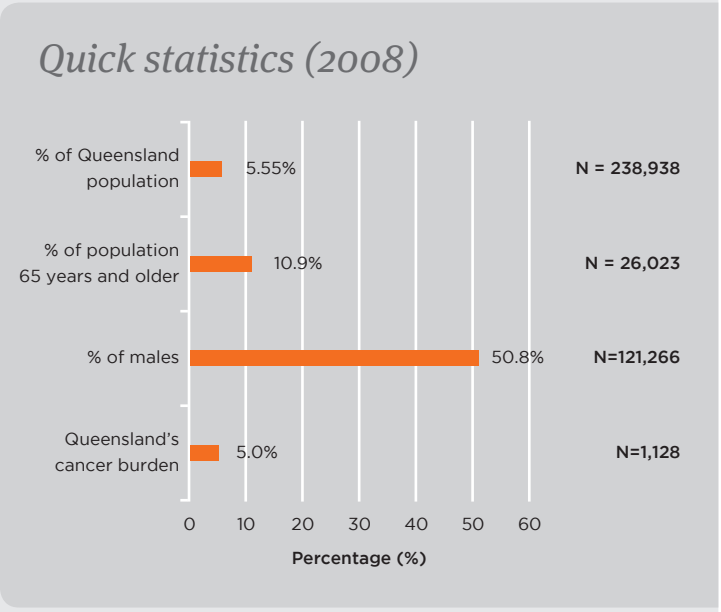
Figure 25: Map of Health Service Districts, Queensland



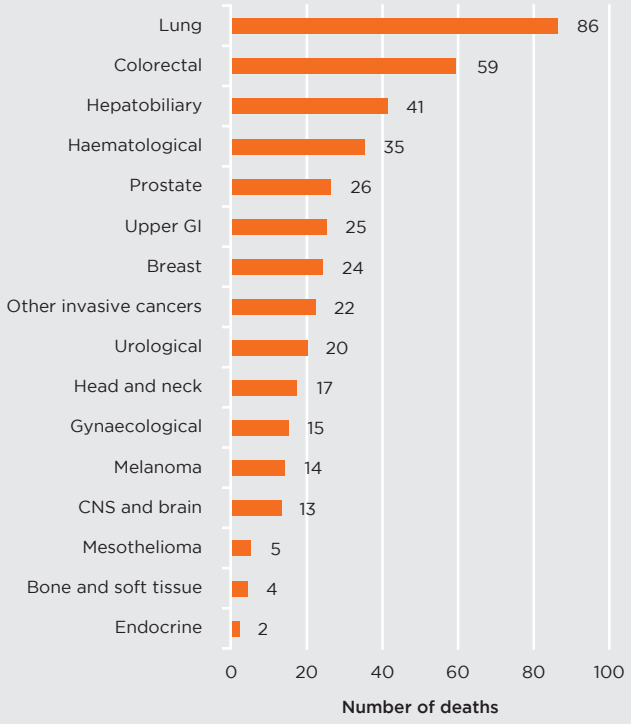
iv. While the Children's Health Service District is a recognised HSD in Queensland, children, adolescents and young adults are counted according to their usual place of residence and not by their place of specialist treatment. Consequently, the Children's Health Service District is not included as a geographical district in this report.
Source: Statistical Output, Health Statistics Centre, 28 June 2011 – Health Service Districts and Facilities as at 1 July 2011.

Cairns and Hinterland

Figure 26: Cairns and Hinterland HSD overview



Most common cancer deaths:
Cairns and Hinterland HSD, annual average, 2006–2008

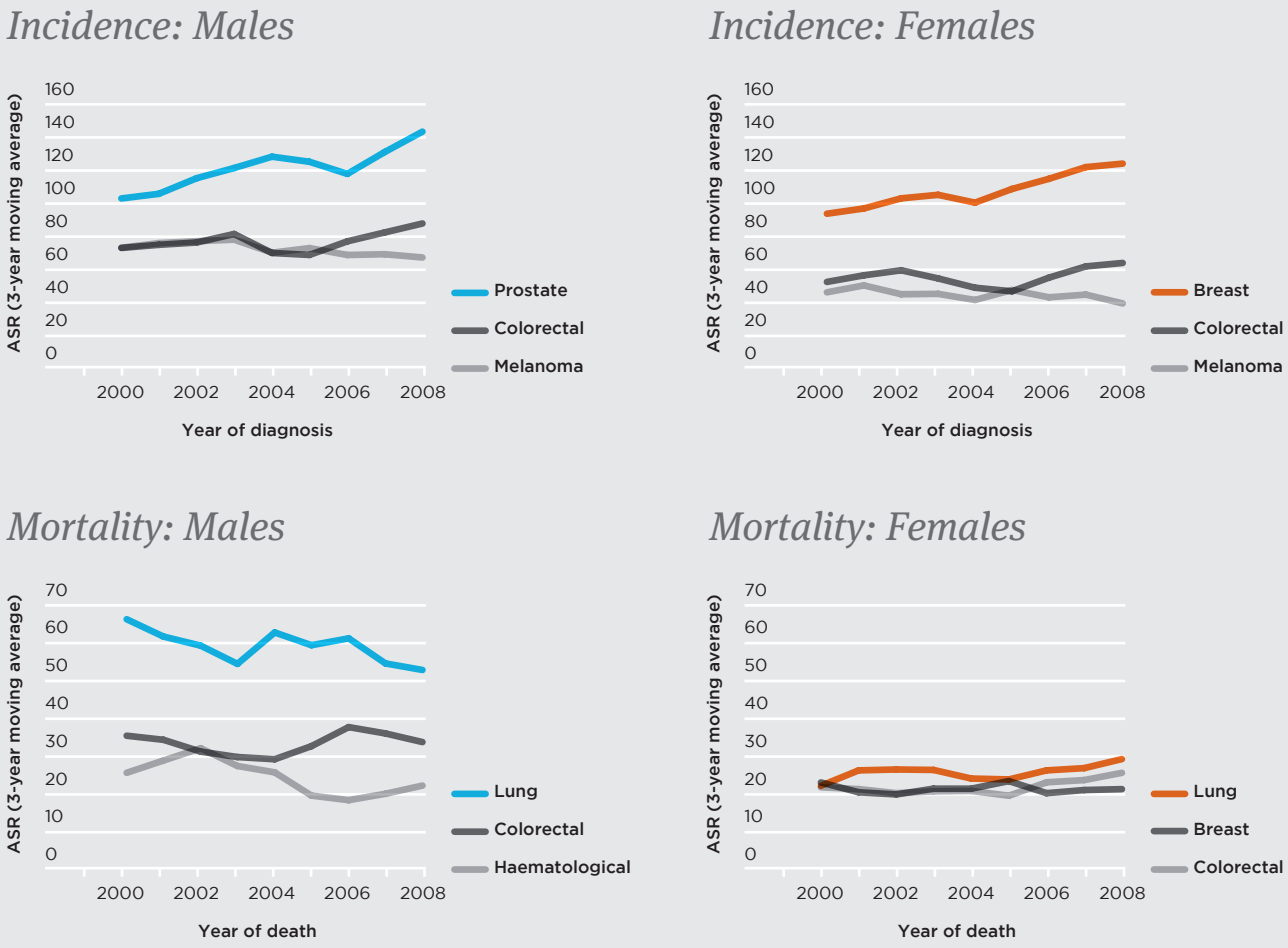


Most common cancer diagnoses:
Cairns and Hinterland HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Colorectal	95	68	163
Prostate	163		163
Breast		144	144
Melanoma	76	44	120
Haematological	61	43	103
Lung	61	39	100
Urological	37	14	51
Head and neck	39	10	49
Hepatobiliary	27	18	45
Gynaecological		42	42
Other invasive cancers	20	18	37
Upper GI	23	10	33
Endocrine	5	15	20
CNS and brain	12	6	18
Bone and soft tissue	5	3	8
Mesothelioma	4	1	5
Ophthalmic	2	2	4
All invasive cancers	**631**	**475**	**1,106**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 27: Trends for the most common cancers, Cairns and Hinterland HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 5: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Cairns and Hinterland HSD, 1998–2008

	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period	APC	Period	APC	Period	APC	Period	APC
Prostate	1998–2008	**4.2***						
Lung					1998–2008	-2.8	1998–2008	2.6
Female breast			1998–2008	**3.5***			1998–2008	-0.1
Colorectal	1998–2008	1.0	1998–2008	2.1	1998–2008	-0.8	1998–2008	0.9
Melanoma	1998–2008	-1.1	1998–2008	-1.5				
Haematological					1998–2008	-0.5		

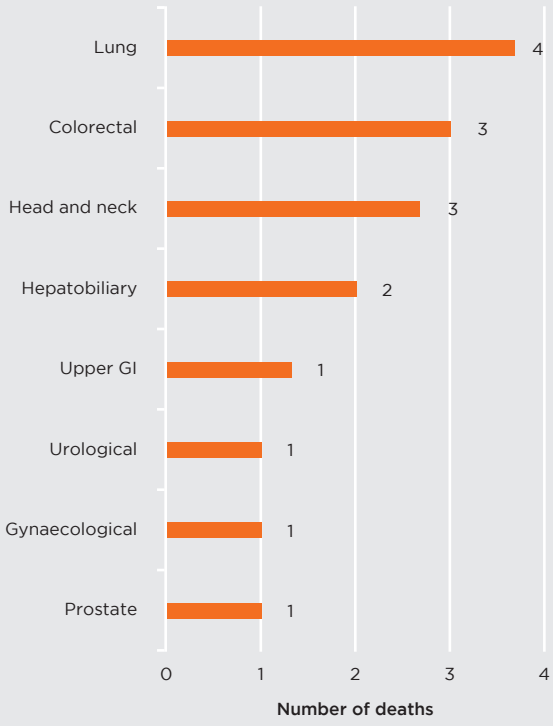
† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Cape York

Figure 28: Cape York HSD overview

Quick statistics (2008)

Most common cancer deaths:
Cape York HSD, annual average, 2006–2008



Most common cancer diagnoses:
Cape York HSD, annual average, 2006–2008

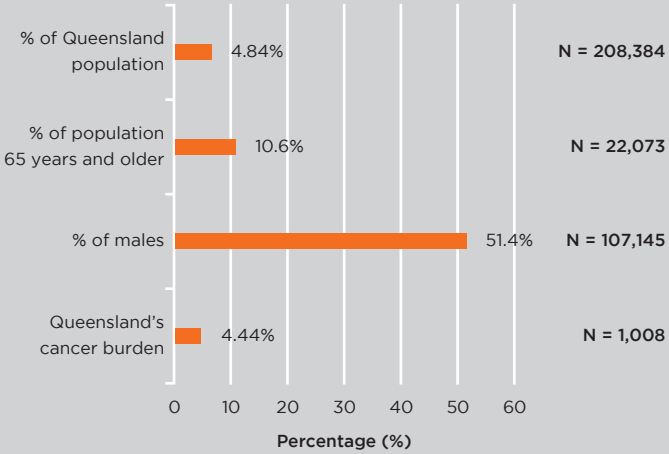
Cancer site	Male	Female	Total
Lung	4	1	6
Head and neck	5		5
Colorectal	3	2	5
Melanoma	1	2	3
Prostate	3		3
Breast		3	3
Gynaecological		2	2
Urological	2	1	2
Haematological	1	1	2
Hepatobiliary	1	1	2
Upper GI	1	1	2
Other invasive cancers	1	1	2
Endocrine	1	1	1
All invasive cancers	**23**	**15**	**38**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

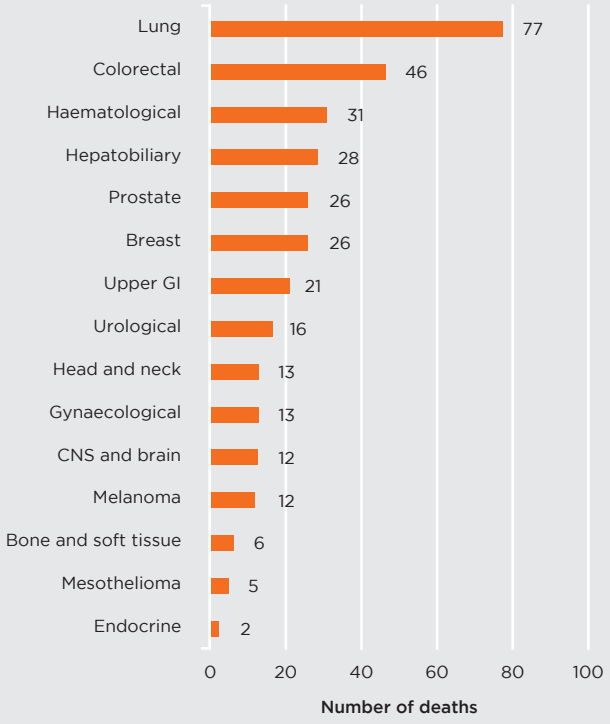
Central Queensland

Figure 29: Central Queensland HSD overview

Quick statistics (2008)



Most common cancer deaths:
Central Queensland HSD, annual average, 2006–2008

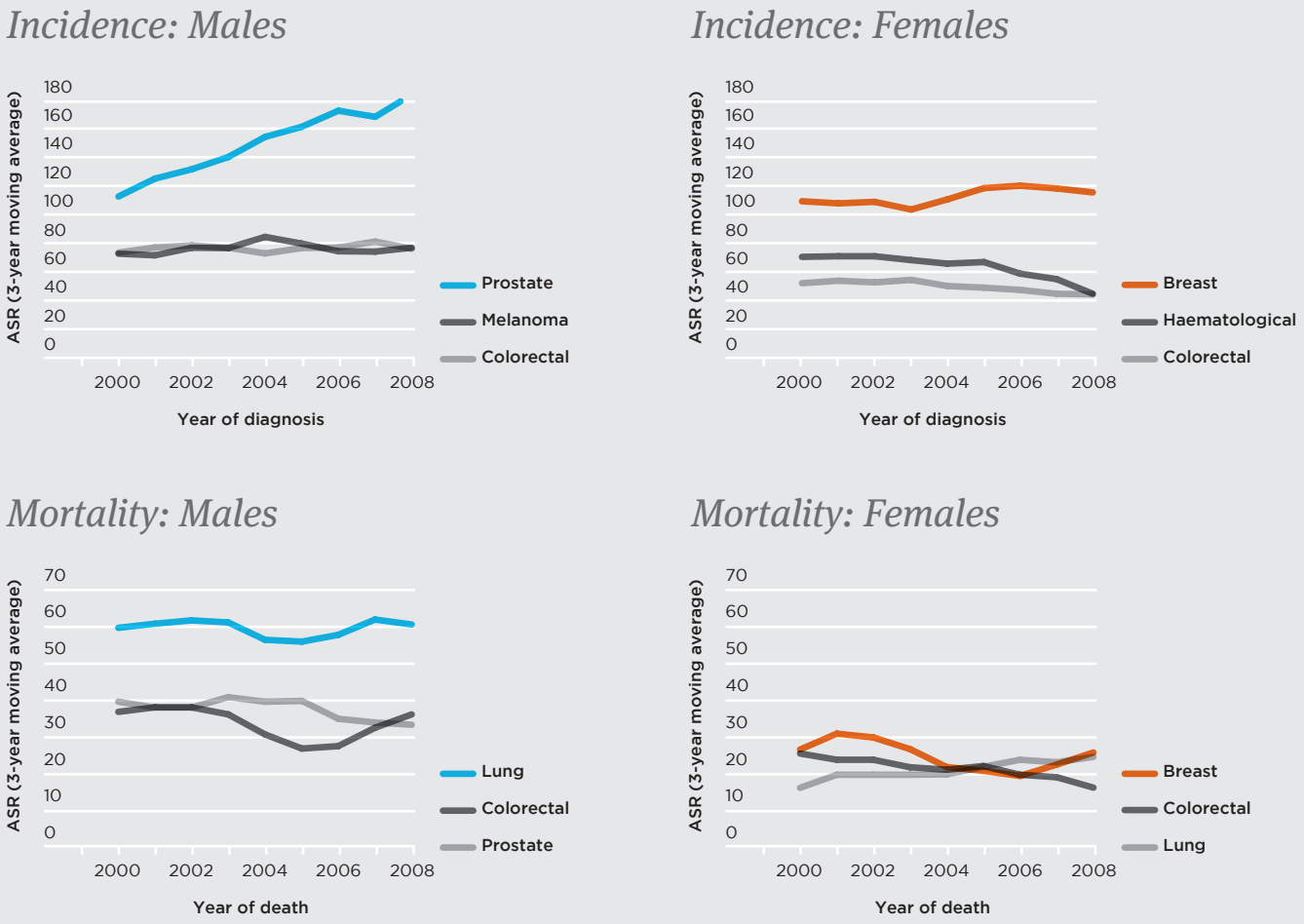


Most common cancer diagnoses:
Central Queensland HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	169		169
Melanoma	74	41	115
Breast	1	112	113
Colorectal	70	40	110
Lung	69	31	100
Haematological	54	40	94
Urological	40	20	61
Gynaecological		38	38
Head and neck	25	7	32
Hepatobiliary	17	15	32
Upper GI	21	9	30
Other invasive cancers	16	13	29
CNS and brain	10	4	14
Endocrine	5	7	12
Bone and soft tissue	5	5	10
Mesothelioma	3	1	4
Merkel	2		2
Ophthalmic	1	1	2
All invasive cancers	**583**	**385**	**968**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 30: Trends for the most common cancers, Central Queensland HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 6: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Central Queensland HSD, 1998–2008

	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period §	APC	Period §	APC	Period §	APC	Period §	APC
Prostate	1998–2008	**5.9***			1998–2008	-2.1		
Breast			1998–2008	1.5			1998–2008	-1.1
Colorectal	1998–2008	0.6	1998–2008	-2.9	1998–2001 2001–2004 2004–2008	5.6 -15.7 12.3	1998–2008	**-4.5***
Haematological			1998–2008	**-5.6***				
Melanoma	1998–2008	1.5						
Lung					1998–2008	-0.4	1998–2008	**5.0***

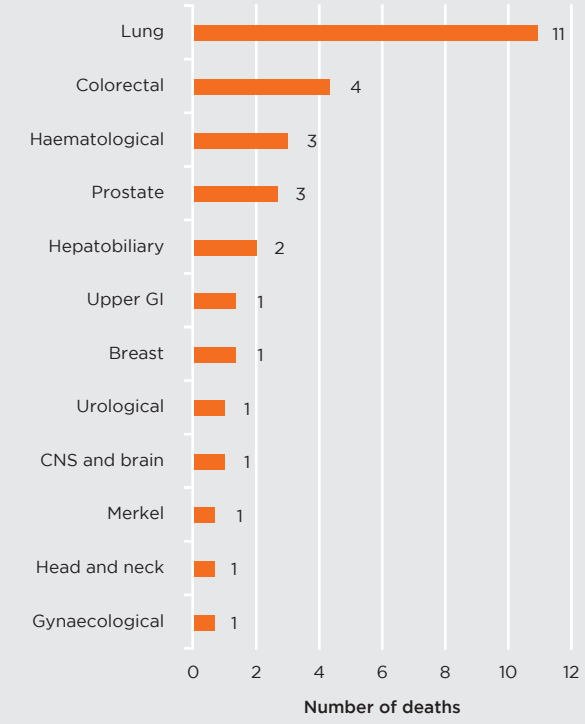
† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
§ Trends were analysed for 1998–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) for the respective time periods are shown.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Central West

Figure 31: Central West HSD overview

Quick statistics (2008)

Most common cancer deaths:
Central West HSD, annual average, 2006–2008



Most common cancer diagnoses:
Central West HSD, annual average, 2006–2008

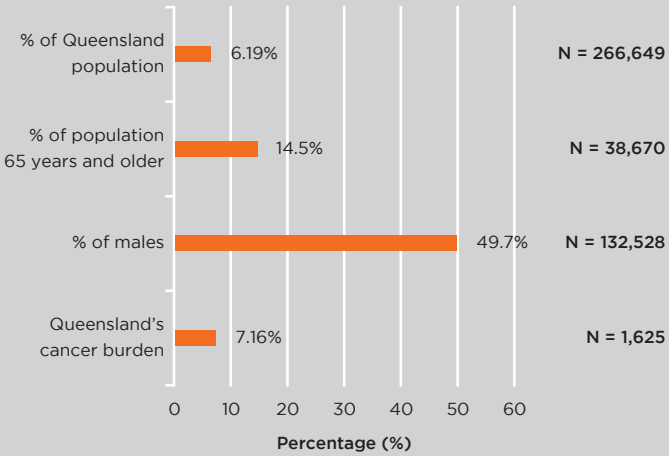
Cancer site	Male	Female	Total
Lung	9	4	13
Prostate	11		11
Colorectal	5	4	10
Breast		7	7
Haematological	3	4	7
Melanoma	4	2	6
Gynaecological	0	2	2
Head and neck	2	0	2
Hepatobiliary	1	2	2
Urological	2	0	2
Endocrine	0	2	2
CNS and brain	1	0	1
Upper GI	0	1	1
Merkel	1	0	1
Ophthalmic	0	0	1
All invasive cancers	**40**	**30**	**70**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

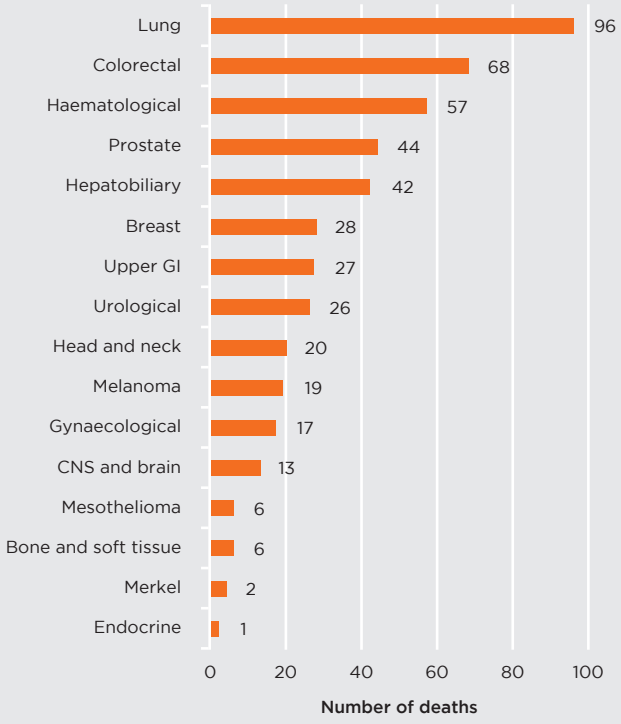
Darling Downs

Figure 32: Darling Downs HSD overview

Quick statistics (2008)



Most common cancer deaths:
Darling Downs HSD, annual average, 2006–2008

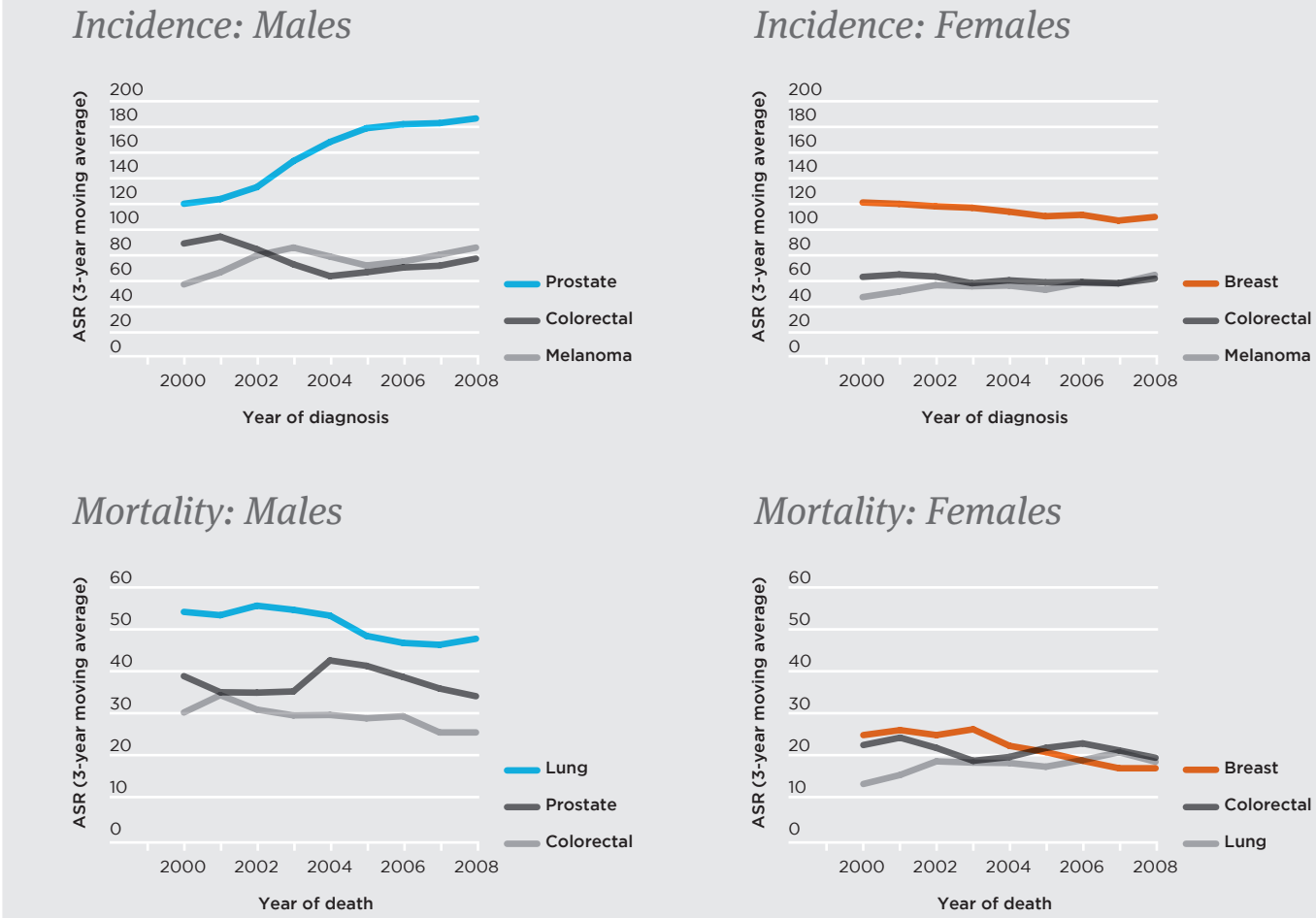


Most common cancer diagnoses:
Darling Downs HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	269		269
Melanoma	116	91	207
Colorectal	106	95	202
Haematological	96	68	164
Breast	1	159	160
Lung	79	39	117
Urological	57	21	78
Head and neck	54	16	70
Gynaecological		60	60
Other invasive cancers	28	28	57
Hepatobiliary	25	19	44
Upper GI	31	13	43
Endocrine	10	27	37
CNS and brain	9	5	14
Bone and soft tissue	6	8	14
Mesothelioma	6	2	8
Merkel	3	1	5
Ophthalmic	2	3	5
All invasive cancers	**897**	**657**	**1,554**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 33: Trends for the most common cancers, Darling Downs HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 7: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Darling Downs HSD, 1998–2008

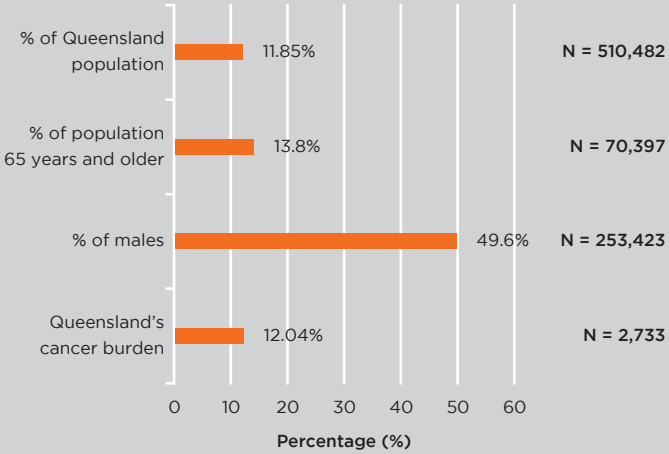
	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period §	APC	Period §	APC	Period §	APC	Period §	APC
Lung					1998–2008	**-1.9***	1998–2008	3.9
Prostate	1998–2008	**5.8***			1998–2008	-0.1		
Breast			1998–2008	**-1.6***			1998–2008	**-5.1***
Colorectal	1998–2000 2000–2003 2003–2008	11.6 -15.7 **6.6***	1998–2008	0.1	1998–2008	-1.8	1998–2008	-0.6
Melanoma	1998–2008	**4.2***	1998–2008	3.2				

† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
§ Trends were analysed for 1998–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) for the respective time periods are shown.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

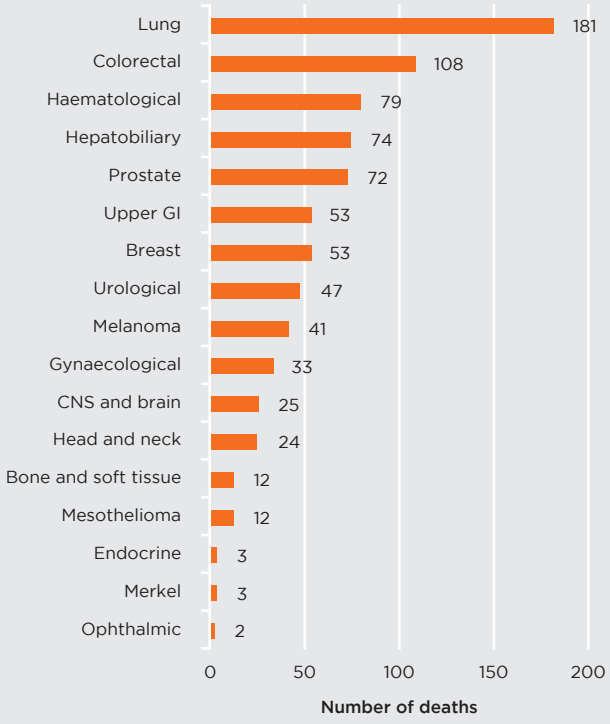
Gold Coast

Figure 34: Gold Coast HSD overview

Quick statistics (2008)



Most common cancer deaths:
Gold Coast HSD, annual average, 2006–2008

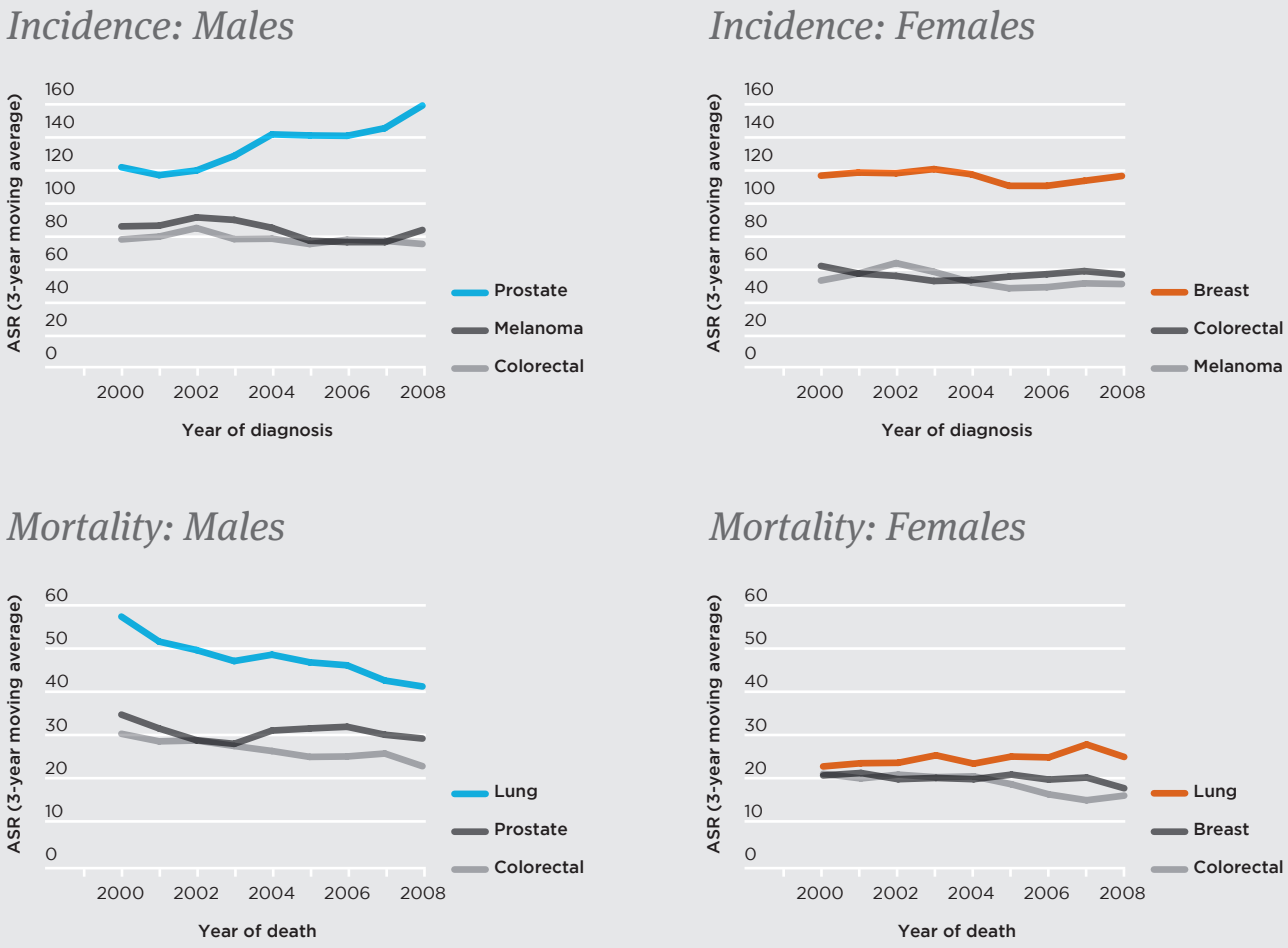


Most common cancer diagnoses:
Gold Coast HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	428		428
Colorectal	195	163	358
Melanoma	216	139	355
Breast	2	325	326
Haematological	144	103	247
Lung	137	91	228
Urological	122	42	164
Other invasive cancers	56	46	102
Hepatobiliary	55	34	89
Gynaecological		85	85
Head and neck	57	22	79
Upper GI	46	25	71
CNS and brain	25	12	37
Endocrine	8	25	33
Bone and soft tissue	14	13	27
Mesothelioma	11	2	13
Ophthalmic	5	4	9
Merkel	6	1	7
All invasive cancers	**1,528**	**1,130**	**2,657**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 35: Trends for the most common cancers, Gold Coast HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 8: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Gold Coast HSD, 1998–2008

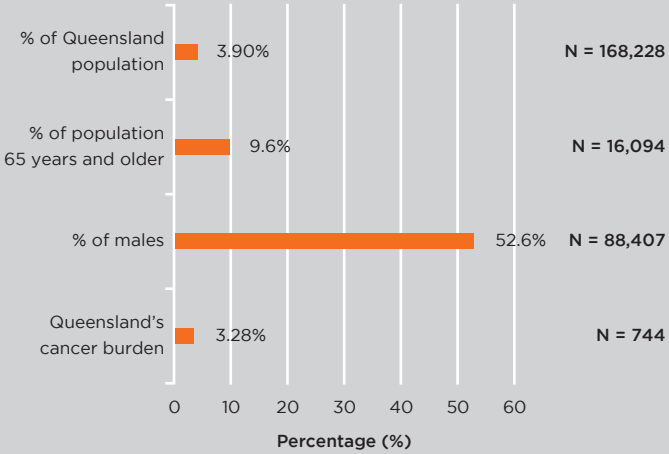
	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period	APC	Period	APC	Period	APC	Period	APC
Lung					1998–2008	**-4.0***	1998–2008	0.8
Prostate	1998–2008	**3.6***			1998–2008	-1.7		
Breast			1998–2008	-0.5			1998–2008	-2.0
Colorectal	1998–2008	-0.4	1998–2008	-0.8	1998–2008	**-3.7***	1998–2008	**-3.0***
Melanoma	1998–2008	-0.9	1998–2008	-0.9				

† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

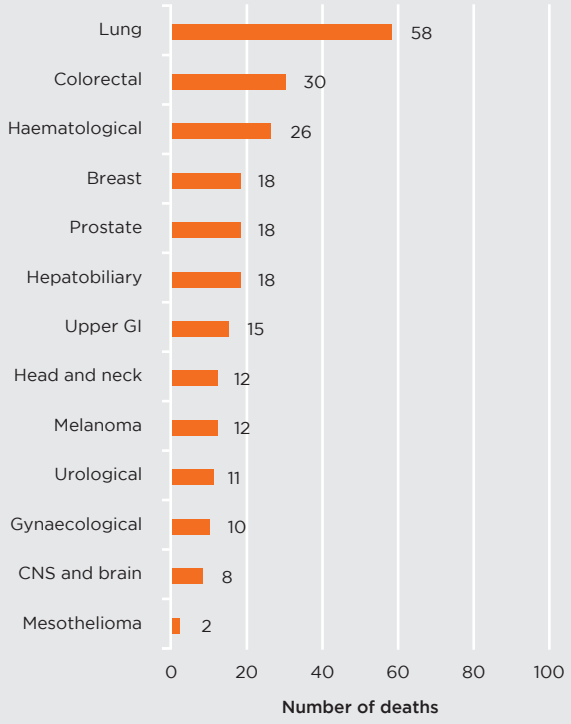
Mackay

Figure 36: Mackay HSD overview

Quick statistics (2008)



Most common cancer deaths:
Mackay HSD, annual average, 2006–2008

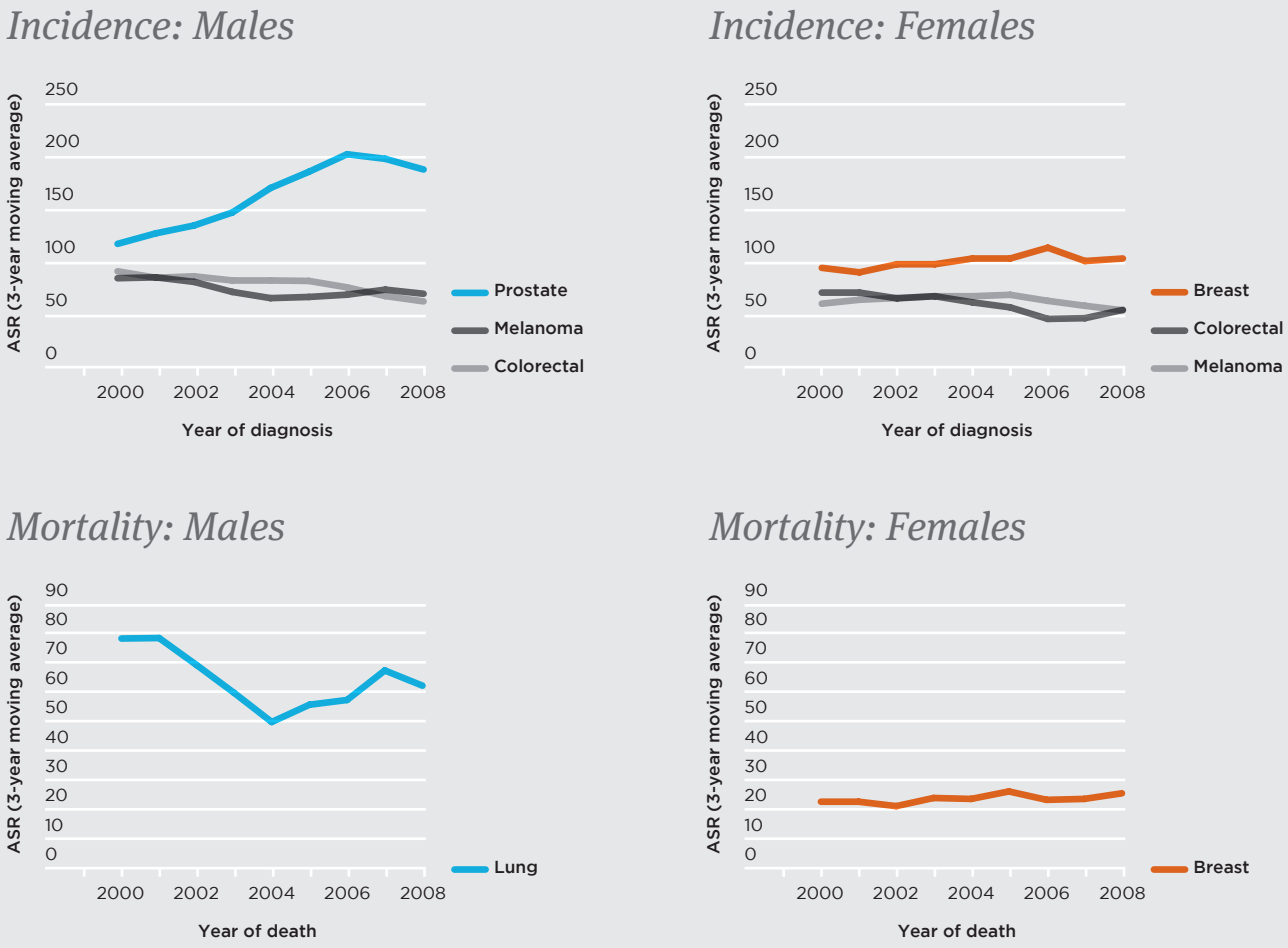


Most common cancer diagnoses:
Mackay HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	139		139
Melanoma	54	40	94
Colorectal	45	37	83
Breast	1	77	78
Haematological	44	26	70
Lung	51	18	69
Urological	33	9	43
Head and neck	23	6	29
Gynaecological		28	28
Hepatobiliary	14	8	22
Other invasive cancers	13	9	22
Upper GI	15	6	21
Endocrine	4	12	16
CNS and brain	6	4	10
Bone and soft tissue	3	2	5
Mesothelioma	2		2
Ophthalmic	1	1	1
Merkel	1		1
All invasive cancers	**448**	**284**	**732**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 37: Trends for the most common cancers, Mackay HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 9: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Mackay HSD, 1998–2008

	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period §	APC	Period §	APC	Period §	APC	Period §	APC
Prostate	1998–2006 2006–2008	**9.3*** -12.9						
Breast			1998–2008	0.8			1998–2008	1.8
Colorectal	1998–2008	**-4.0***	1998–2003 2003–2006 2006–2008	-1.8 -15.7 32.8				
Lung	1998–2008	-2.8			1998–2008	-2.8		
Melanoma			1998–2008	-0.8				

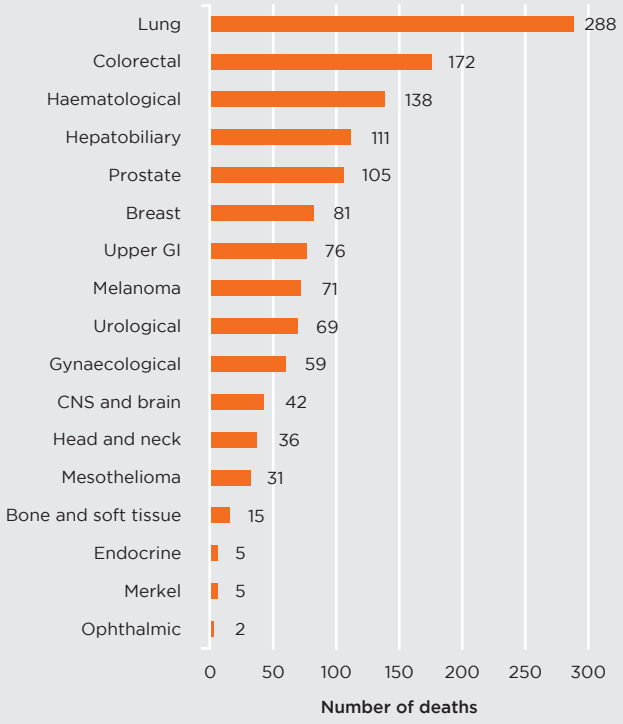
† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
§ Trends were analysed for 1998–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) for the respective time periods are shown.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Metro North

Figure 38: Metro North HSD overview

Quick statistics (2008)

Most common cancer deaths:
Metro North HSD, annual average, 2006–2008

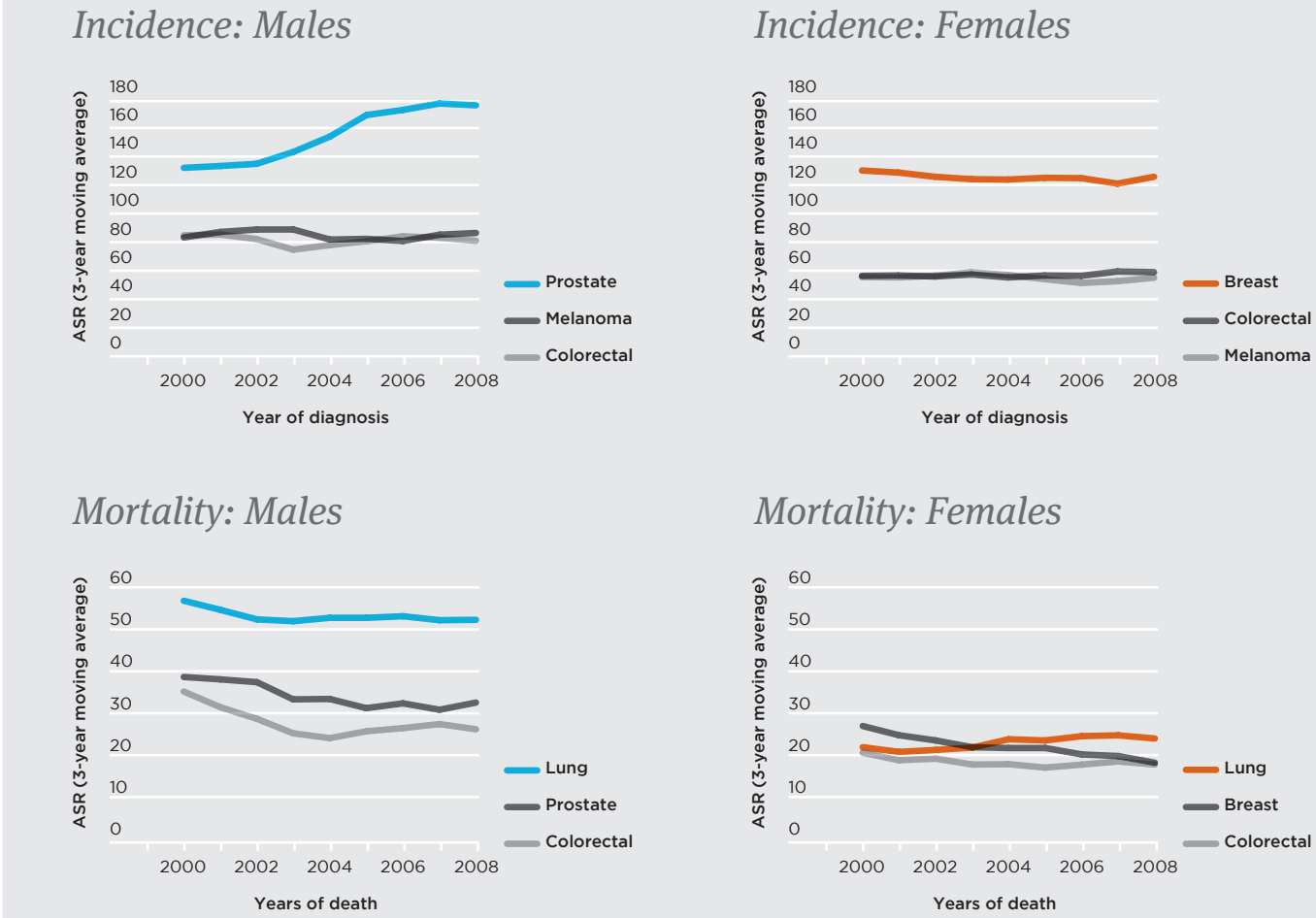


Most common cancer diagnoses:
Metro North HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	665		665
Melanoma	324	236	560
Colorectal	294	257	551
Breast	5	538	543
Haematological	229	170	399
Lung	235	132	367
Urological	189	70	259
Gynaecological		182	182
Head and neck	117	44	161
Other invasive cancers	73	67	140
Hepatobiliary	78	59	137
Upper GI	79	45	124
Endocrine	26	76	102
CNS and brain	25	23	48
Bone and soft tissue	14	22	36
Mesothelioma	26	4	30
Merkel	10	3	13
Ophthalmic	5	6	12
All invasive cancers	**2,394**	**1,935**	**4,329**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 39: Trends for the most common cancers, Metro North HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 10: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Metro North HSD, 1998–2008

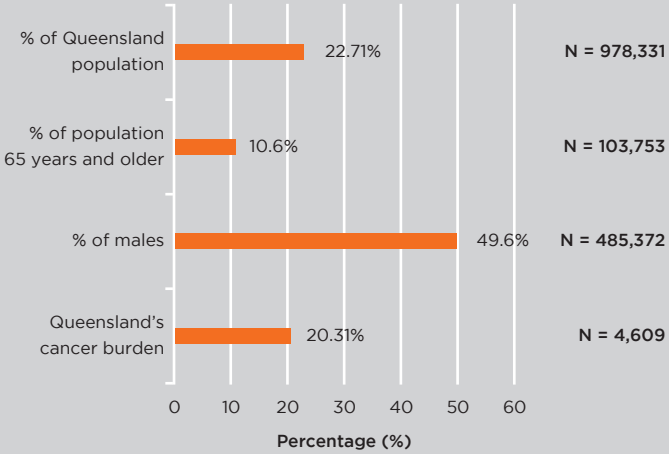
	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period	APC	Period	APC	Period	APC	Period	APC
Lung					1998–2008	-0.9	1998–2008	1.1
Prostate	1998–2008	**4.0***			1998–2008	-2.3		
Breast			1998–2008	-0.4			1998–2008	**-4.3***
Colorectal	1998–2008	-0.2	1998–2008	0.4	1998–2008	**-3.4***	1998–2008	-1.9
Melanoma	1998–2008	0.3	1998–2008	-0.3				

† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

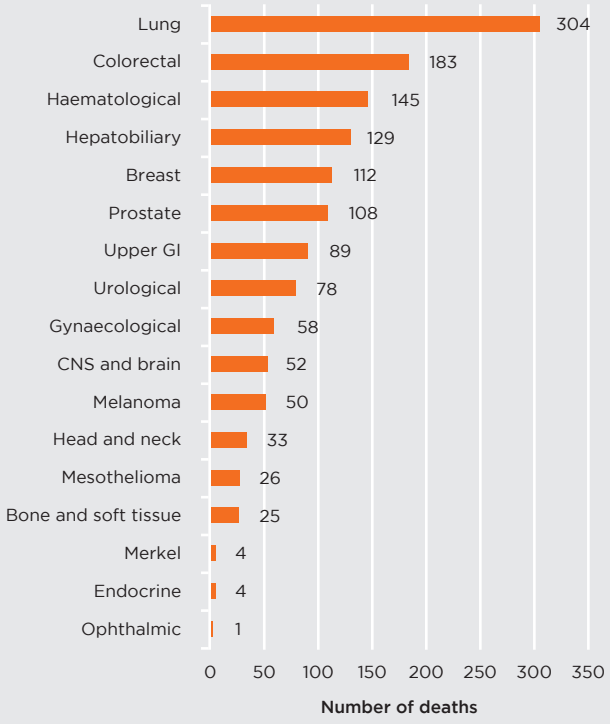
Metro South

Figure 40: Metro South HSD overview

Quick statistics (2008)



Most common cancer deaths:
Metro South HSD, annual average, 2006–2008

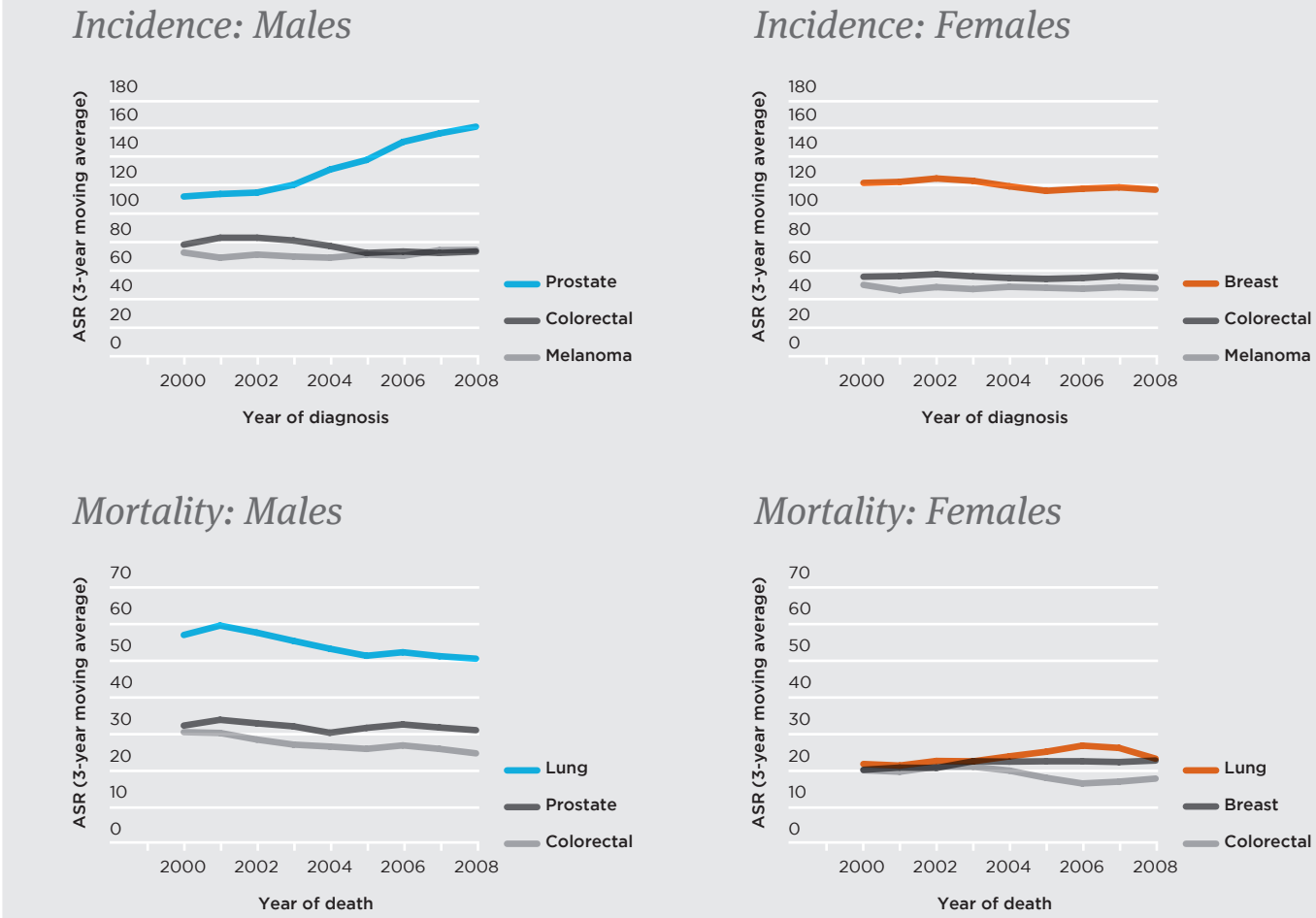


Most common cancer diagnoses:
Metro South HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	674		674
Breast	5	559	564
Colorectal	296	265	561
Melanoma	316	231	547
Haematological	252	208	460
Lung	243	159	402
Urological	189	78	267
Gynaecological		189	189
Head and neck	123	50	173
Hepatobiliary	99	70	169
Upper GI	97	51	147
Other invasive cancers	70	68	138
Endocrine	25	96	122
CNS and brain	40	28	68
Bone and soft tissue	23	20	43
Mesothelioma	26	4	30
Merkel	8	3	11
Ophthalmic	6	2	8
All invasive cancers	**2,492**	**2,082**	**4,574**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 41: Trends for the most common cancers, Metro South HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 11: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Metro South HSD, 1998–2008

	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period	APC	Period	APC	Period	APC	Period §	APC
Lung					1998–2008	**-1.9***	1998–2006 2006–2008	**3.7*** -15.0
Prostate	1998–2008	**4.6***			1998–2008	-0.7		
Breast			1998–2008	-0.7			1998–2008	1.3
Colorectal	1998–2008	-1.4	1998–2008	-0.2	1998–2008	**-2.4***	1998–2008	-2.0
Melanoma	1998–2008	0.8	1998–2008	-0.3				

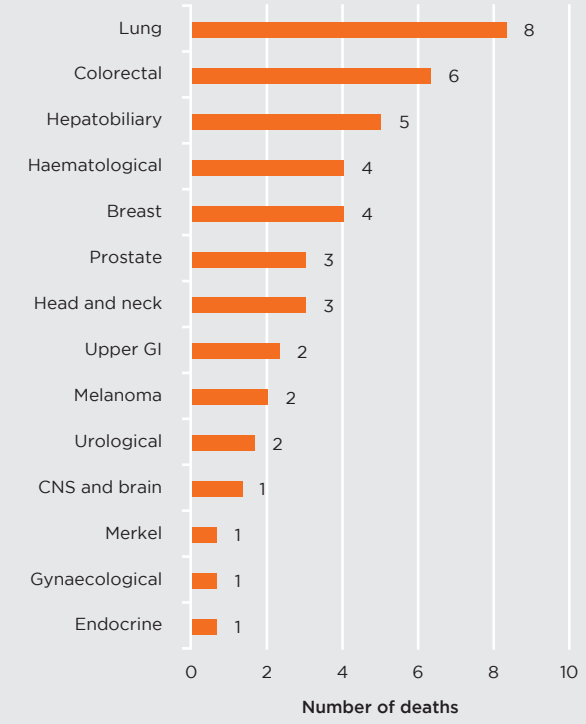
† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
§ Trends were analysed for 1998–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) for the respective time periods are shown.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Mount Isa

Figure 42: Mount Isa HSD overview

Quick statistics (2008)

Most common cancer deaths:
Mount Isa HSD, annual average, 2006–2008



Most common cancer diagnoses:
Mount Isa HSD, annual average, 2006–2008

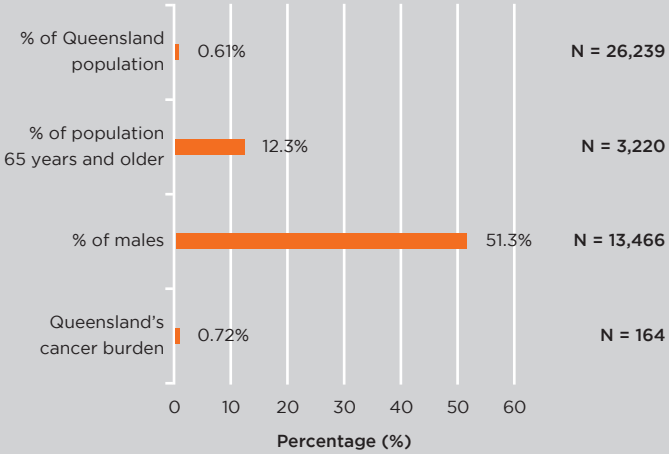
Cancer site	Male	Female	Total
Prostate	15		15
Melanoma	9	4	13
Lung	8	5	12
Colorectal	8	3	11
Breast		11	11
Haematological	7	3	10
Head and neck	7	1	8
Urological	6	1	7
Hepatobiliary	4	2	6
CNS and brain	2	1	3
Endocrine	1	2	3
Upper GI	2		3
Gynaecological		2	2
Bone and soft tissue	1		1
Merkel		1	1
Ophthalmic			1
All invasive cancers	**72**	**38**	**111**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

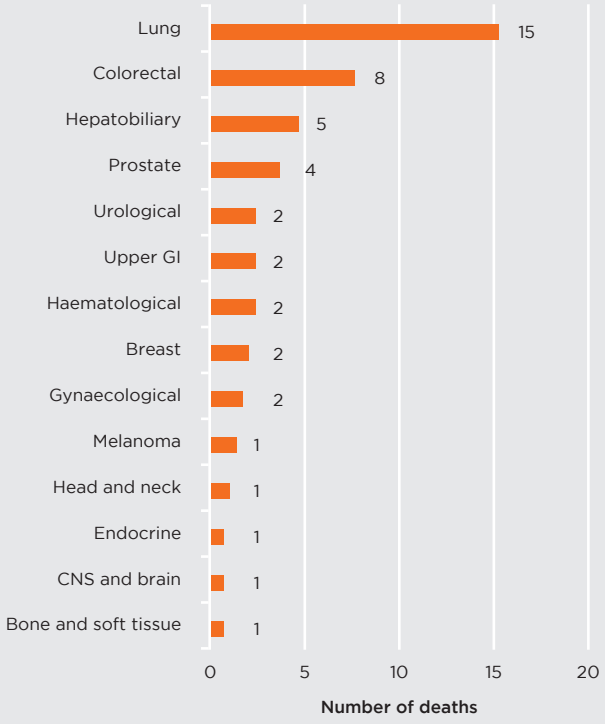
South West

Figure 43: South West HSD overview

Quick statistics (2008)



Most common cancer deaths:
South West HSD, annual average, 2006–2008



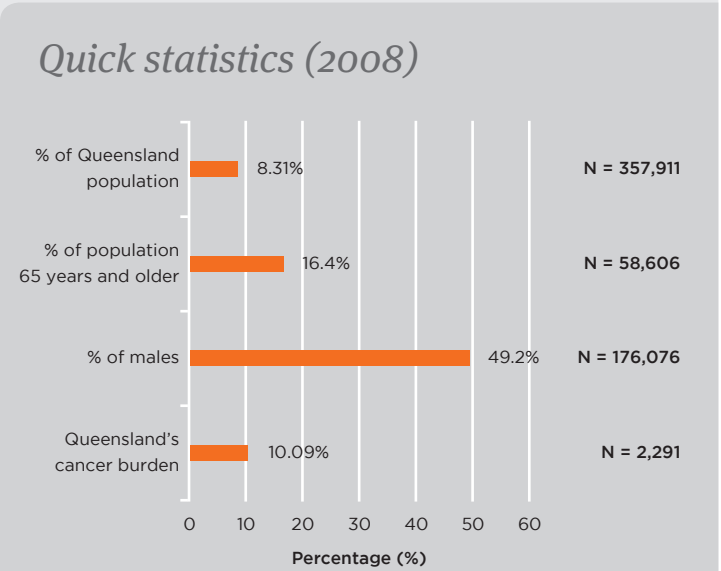
Most common cancer diagnoses:
South West HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	22		22
Lung	12	5	17
Colorectal	8	8	16
Melanoma	9	6	15
Breast		13	14
Haematological	8	5	13
Urological	7	2	9
Other invasive cancers	4	2	6
Head and neck	4	1	5
Hepatobiliary	2	3	5
Gynaecological		5	5
Upper GI	2	1	3
Endocrine		2	3
Bone and soft tissue	1	1	2
CNS and brain		1	1
All invasive cancers	**82**	**55**	**136**

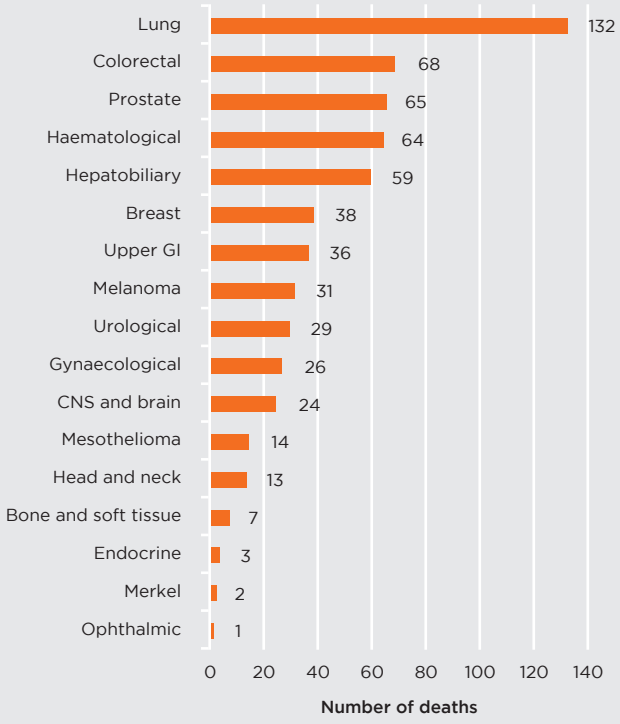
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Sunshine Coast

Figure 44: Sunshine Coast HSD overview



Most common cancer deaths:
Sunshine Coast HSD, annual average, 2006–2008

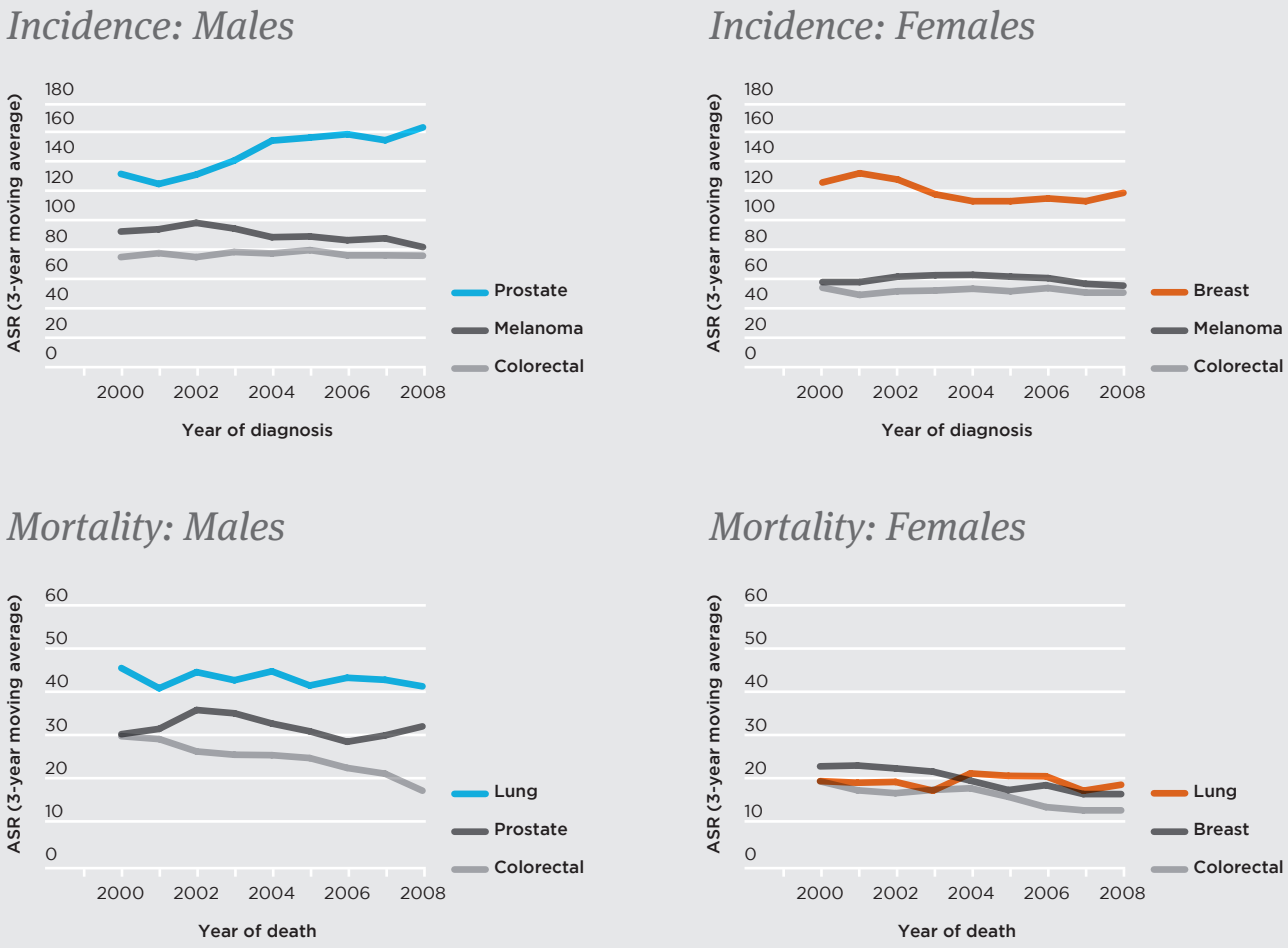


Most common cancer diagnoses:
Sunshine Coast HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	356		356
Colorectal	161	117	277
Melanoma	160	111	272
Breast	2	257	259
Haematological	120	76	196
Lung	112	66	179
Urological	81	30	111
Head and neck	56	20	76
Hepatobiliary	44	32	75
Gynaecological		70	70
Other invasive cancers	34	28	61
Upper GI	40	19	58
Endocrine	8	23	31
CNS and brain	18	11	28
Mesothelioma	14	4	19
Bone and soft tissue	9	8	18
Ophthalmic	6	2	8
Merkel	5	2	7
All invasive cancers	**1,226**	**876**	**2,102**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 45: Trends for the most common cancers, Sunshine Coast HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 12: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Sunshine Coast HSD, 1998–2008

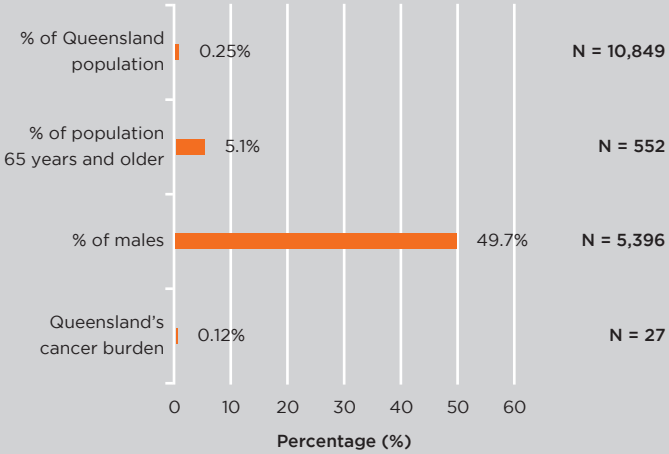
	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period	APC	Period	APC	Period	APC	Period	APC
Lung					1998–2008	-0.8	1998–2008	0.9
Prostate	1998–2008	**2.8***			1998–2008	0.8		
Breast			1998–2008	-0.4			1998–2008	**-4.5***
Colorectal	1998–2008	0.2	1998–2008	-0.9	1998–2008	**-6.4***	1998–2008	**-4.8***
Melanoma	1998–2008	-1.4	1998–2008	-0.6				

† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

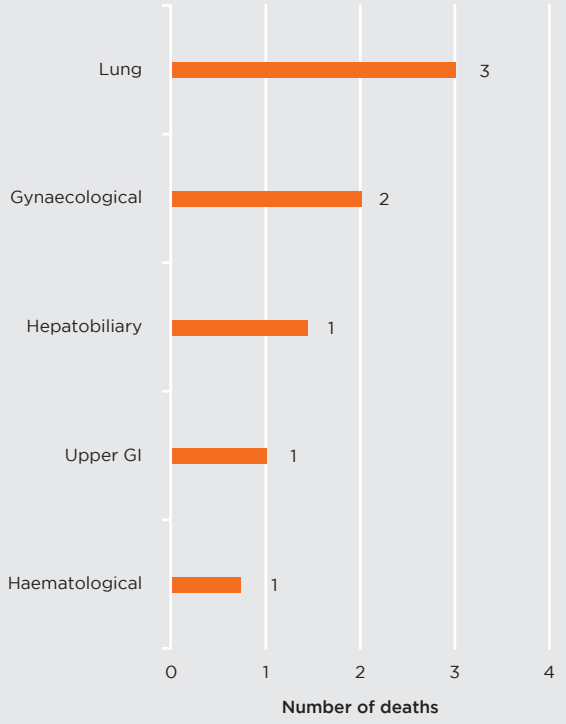
Torres Strait and Northern Peninsula

Figure 46: Torres Strait and Northern Peninsula HSD overview

Quick statistics (2008)



Most common cancer deaths:
Torres Strait and Northern Peninsula HSD, annual average, 2006–2008



Most common cancer diagnoses:
Torres Strait and Northern Peninsula HSD, annual average, 2006–2008

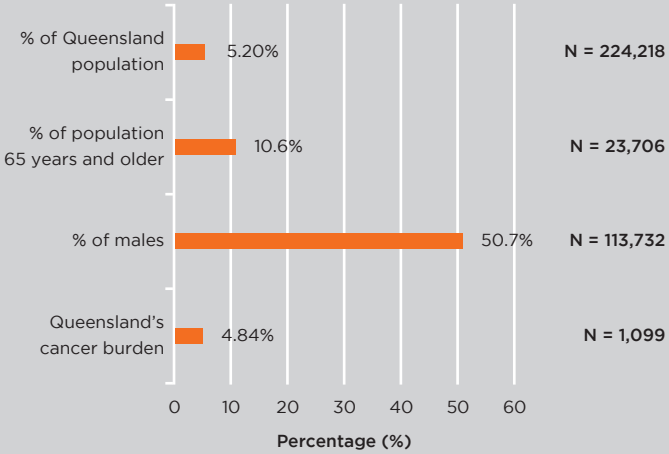
Cancer site	Male	Female	Total
Gynaecological		4	4
Lung	2	1	3
Hepatobiliary	1	1	2
Colorectal	1	1	2
Haematological	1	1	2
Breast		2	2
Head and neck	1	1	2
Upper GI	1	1	2
Prostate	1		1
Bone and soft tissue			1
CNS and brain			1
Endocrine			1
Urological	1		1
All invasive cancers	**11**	**12**	**23**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

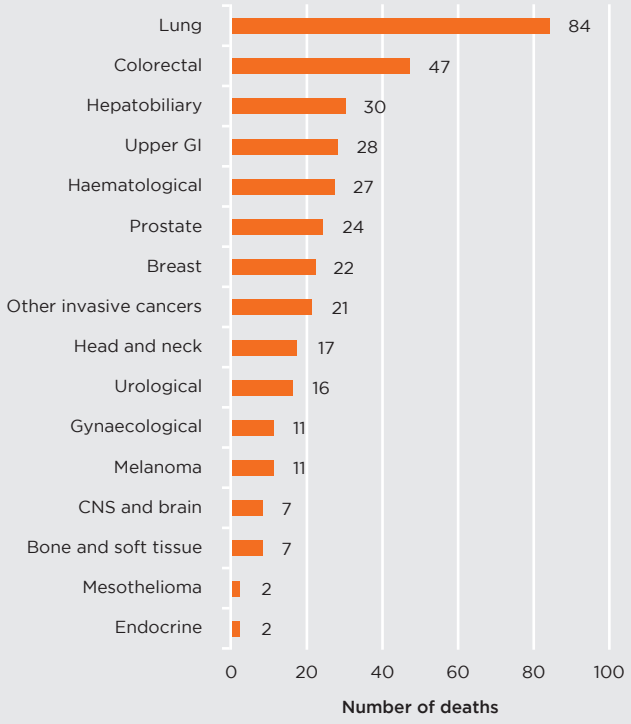
Townsville

Figure 47: Townsville HSD overview

Quick statistics (2008)



Most common cancer deaths:
Townsville HSD, annual average, 2006–2008

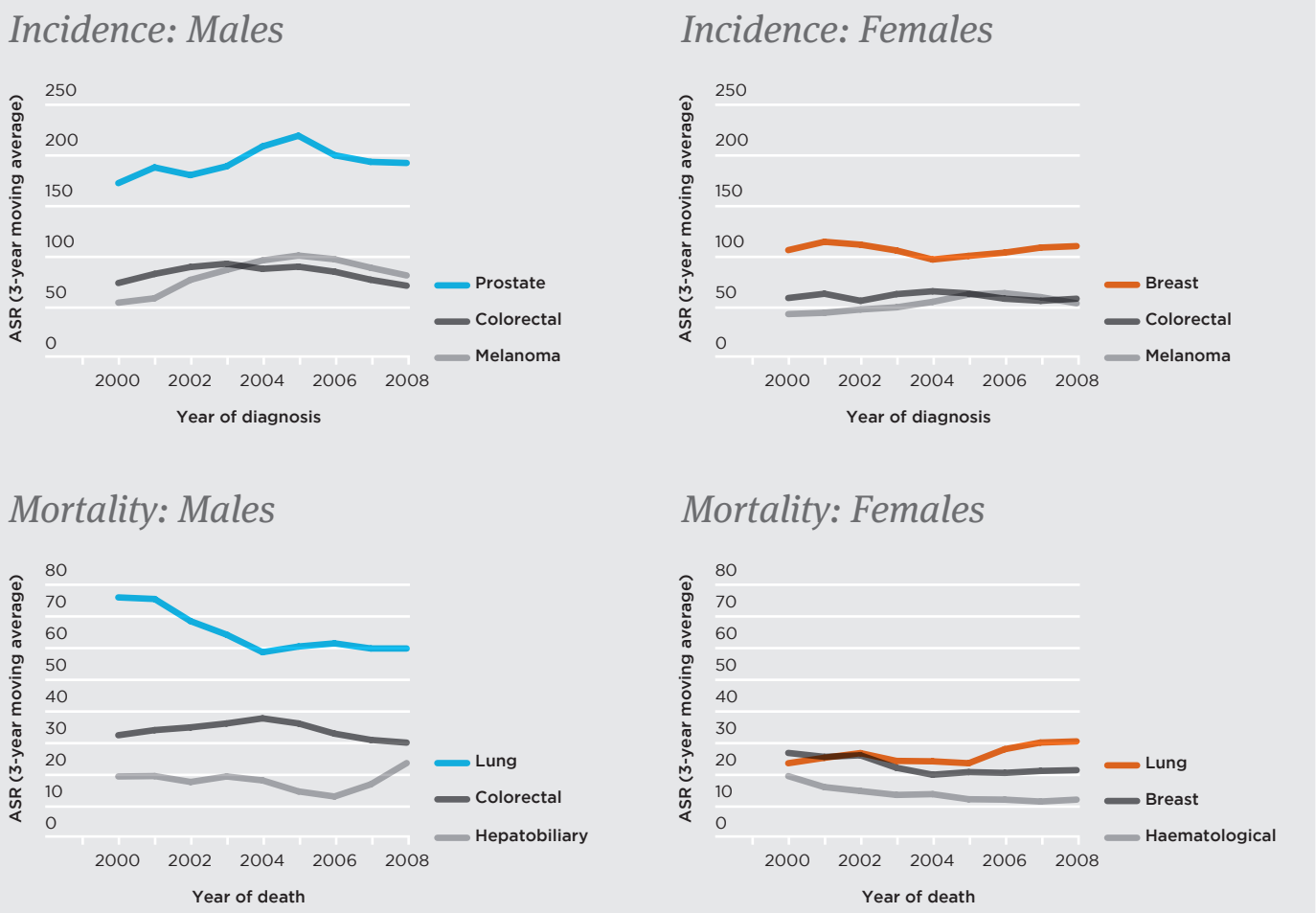


Most common cancer diagnoses:
Townsville HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	186		186
Melanoma	79	55	134
Colorectal	67	58	125
Breast	2	113	114
Lung	65	36	101
Haematological	51	31	82
Urological	41	17	58
Head and neck	42	7	49
Other invasive cancers	19	20	39
Gynaecological		38	38
Upper GI	24	12	36
Hepatobiliary	23	11	34
Endocrine	8	14	22
CNS and brain	6	6	13
Bone and soft tissue	5	6	11
Merkel	1	3	4
Ophthalmic	1	2	4
Mesothelioma	2	1	3
All invasive cancers	**623**	**431**	**1,054**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 48: Trends for the most common cancers, Townsville HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 13: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Townsville HSD, 1998–2008

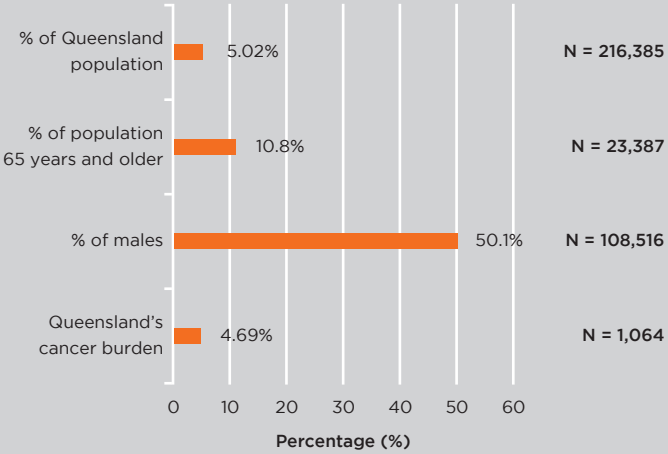
	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period	APC	Period §	APC	Period	APC	Period	APC
Lung					1998–2008	**-3.1***	1998–2008	2.7
Prostate	1998–2008	3.0						
Breast			1998–2008	0.6			1998–2008	-2.4
Colorectal	1998–2008	-0.6	1998–2008	0.6	1998–2008	-0.7		
Melanoma	1998–2008	**5.6***	1998–2005 2005–2008	**7.7*** -9.1				
Hepatobiliary					1998–2008	1.3		
Haematological							1998–2008	**-5.6***

† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
§ Trends were analysed for 1998–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) for the respective time periods are shown.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

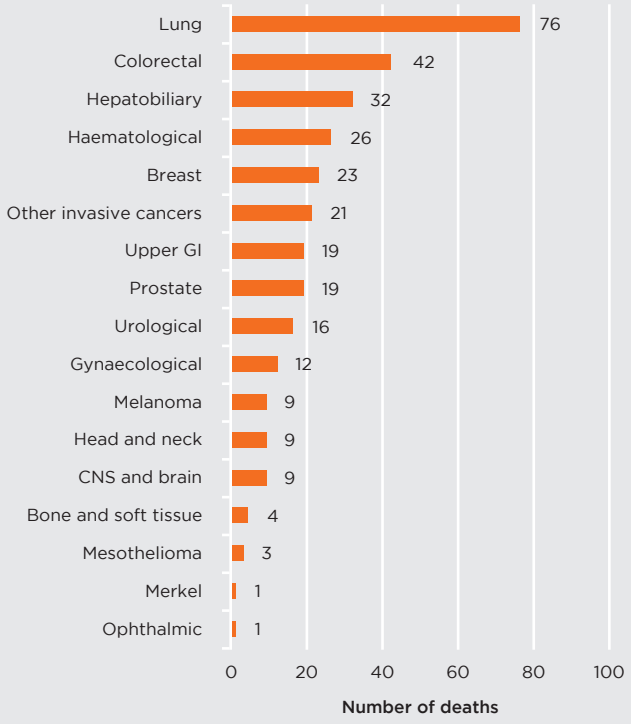
West Moreton

Figure 49: West Moreton HSD overview

Quick statistics (2008)



Most common cancer deaths:
West Moreton HSD, annual average, 2006–2008

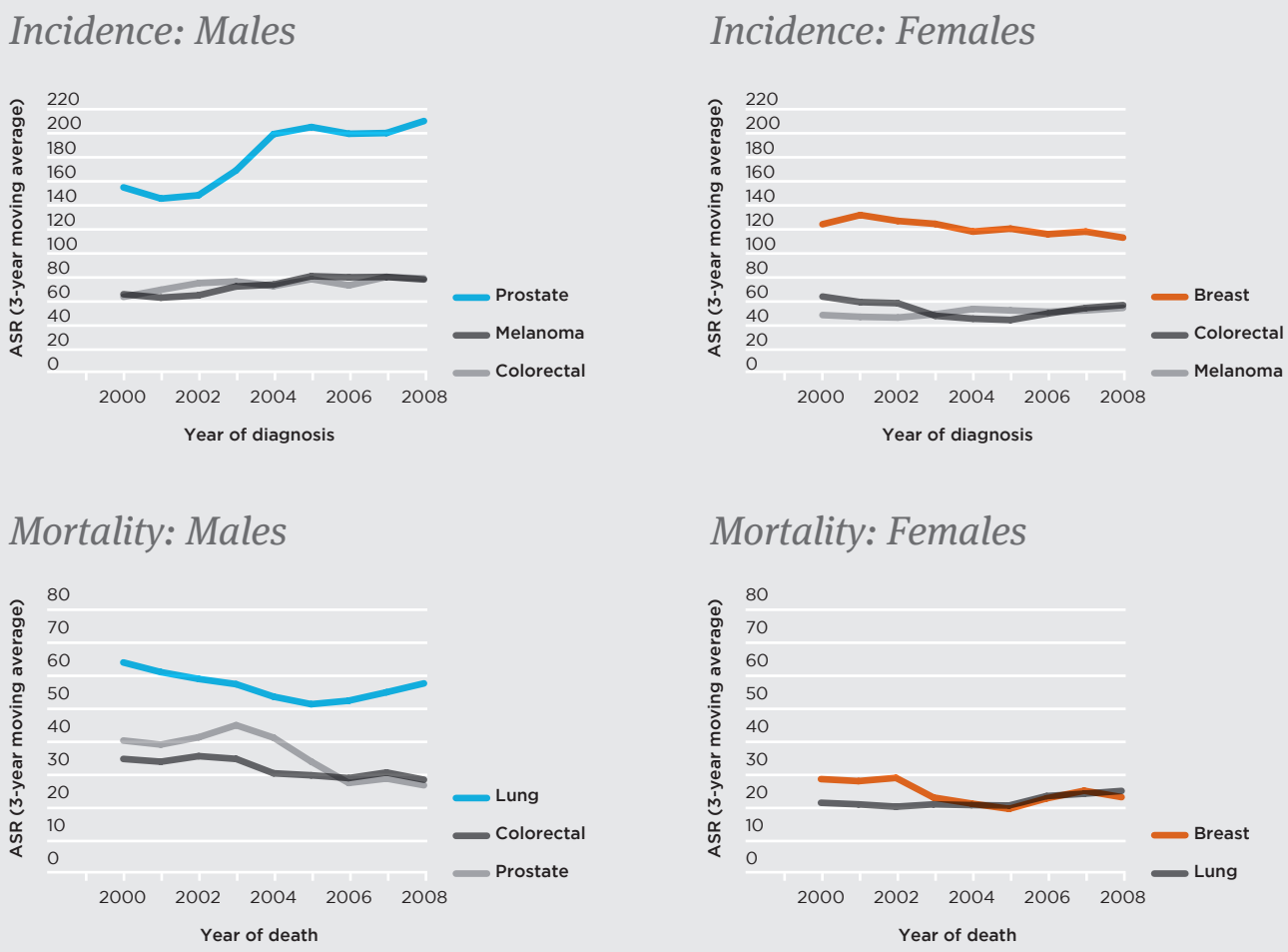


Most common cancer diagnoses:
West Moreton HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	200		200
Melanoma	75	54	129
Colorectal	74	54	128
Breast	1	113	114
Lung	68	34	102
Haematological	44	36	81
Urological	39	17	55
Gynaecological		45	45
Other invasive cancers	23	21	43
Hepatobiliary	26	13	39
Head and neck	27	11	38
Upper GI	20	8	28
Endocrine	8	16	24
CNS and brain	7	4	11
Bone and soft tissue	4	6	10
Merkel	2	1	3
Mesothelioma	2		2
All invasive cancers	**620**	**434**	**1,054**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 50: Trends for the most common cancers, West Moreton HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 14: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, West Moreton HSD, 1998–2008

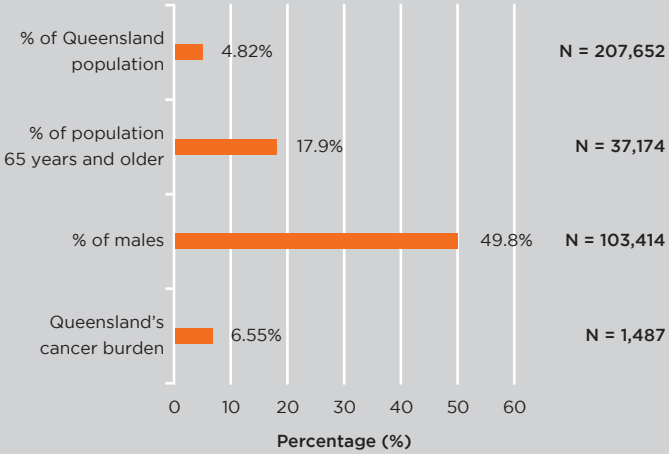
	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period §	APC	Period §	APC	Period §	APC	Period §	APC
Lung					1998–2008	-1.7	1998–2008	1.5
Prostate	1998–2008	**4.2***			1998–2008	**-5.9***		
Breast			1998–2008	-1.1			1998–2008	-2.8
Colorectal	1998–2008	**3.4***	1998–2003 2003–2008	**-9.5*** 7.0	1998–2008	-2.8	1998–2008	
Melanoma	1998–2008	2.3	1998–2008	2.6				

† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
§ Trends were analysed for 1998–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) for the respective time periods are shown.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

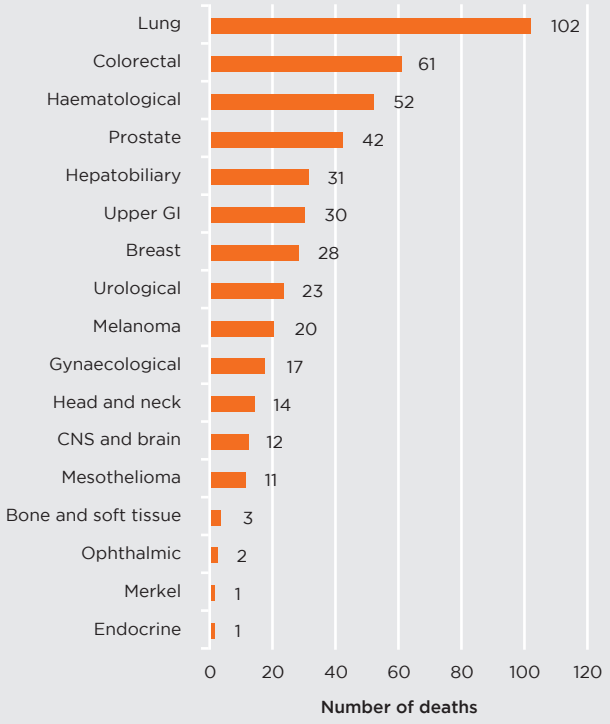
Wide Bay

Figure 51: Wide Bay HSD overview

Quick statistics (2008)



Most common cancer deaths:
Wide Bay HSD, annual average, 2006–2008

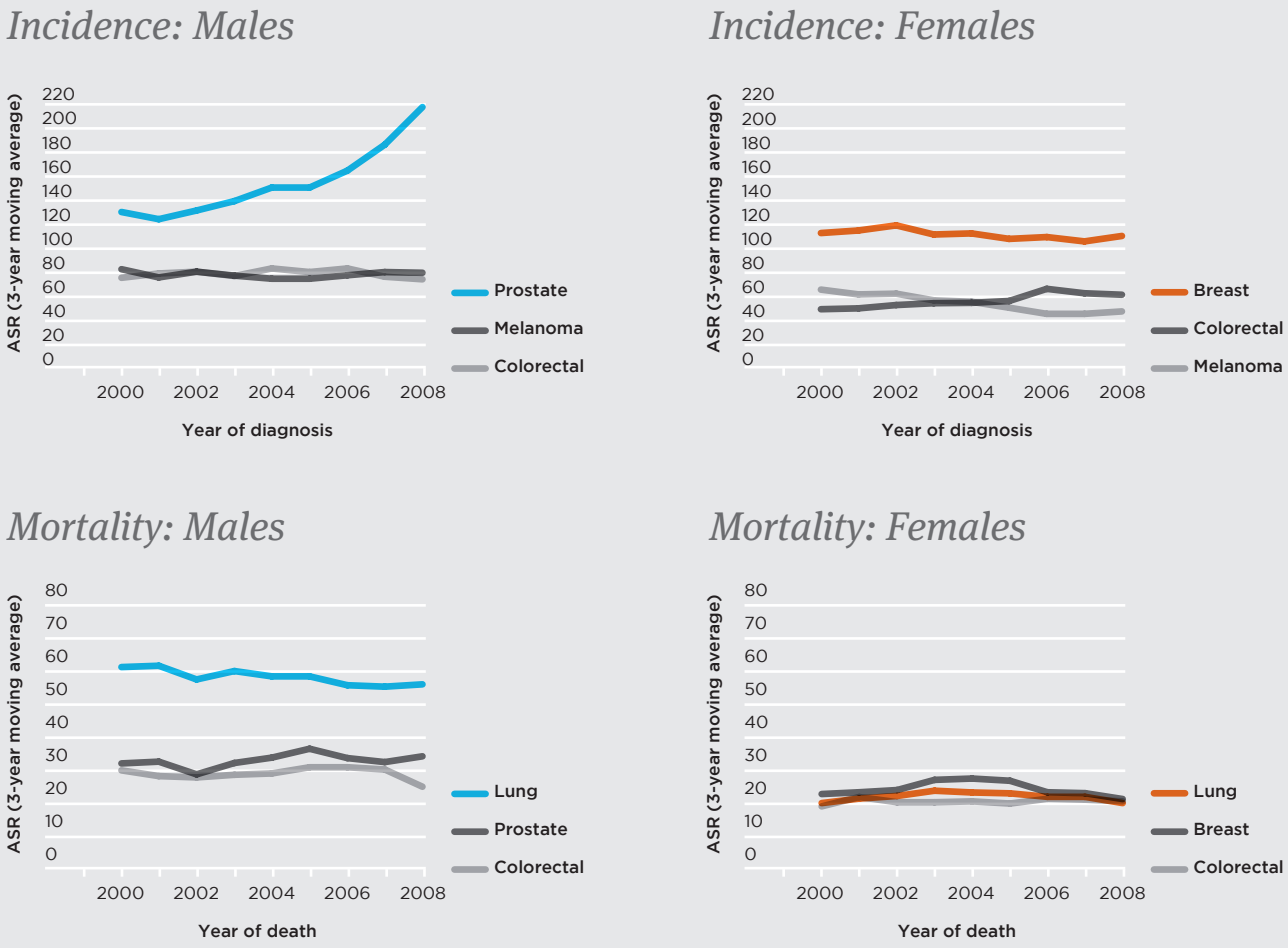


Most common cancer diagnoses:
Wide Bay HSD, annual average, 2006–2008

Cancer site	Male	Female	Total
Prostate	308		308
Colorectal	101	83	184
Melanoma	99	56	155
Breast	1	142	143
Lung	100	38	139
Haematological	85	47	131
Urological	64	26	89
Gynaecological		49	49
Head and neck	36	12	49
Upper GI	31	16	47
Other invasive cancers	22	22	44
Hepatobiliary	24	16	40
Endocrine	6	13	19
CNS and brain	12	5	17
Mesothelioma	9	2	11
Bone and soft tissue	5	4	9
Ophthalmic	4	1	5
Merkel	2	1	3
All invasive cancers	**911**	**531**	**1,442**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Figure 52: Trends for the most common cancers, Wide Bay HSD, 2000–2008



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Table 15: Annual percentage change (APC) in age-standardised incidence and mortality rates, most common cancers, Wide Bay HSD, 1998–2008

	Incidence				Mortality			
	Males		Females		Males		Females	
Cancer†	Period §	APC	Period §	APC	Period §	APC	Period §	APC
Lung					1998–2008	-1.1	1998–2008	0.3
Prostate	1998-2008	**6.3***			1998–2008	1.1		
Breast			1998–2008	-0.1			1998–2008	-1.1
Colorectal	1998–2008	0.3	1998–2008	1.9	1998–2000 2000–2005 2005–2008	-12.5 5.2 -14.8	1998–2008	1.8
Melanoma	1998–2008	-0.6	1998–2008	**-3.9***				

† Most common cancers for males and females are listed.
** Bold figures with asterisk indicate a significant change (increase or decrease) in APC.*
§ Trends were analysed for 1998–2008. If the slope of the trend was not constant over the entire time period, the annual percentage change (APC) for the respective time periods are shown.
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team.

Data for today:

Our aim is to provide data which can inform our decision making as we move through the process of health reform. The challenge now faced by us all is to incorporate this knowledge into our day to day decision making.

Appendix

Glossary and common abbreviations

Age-specific incidence/mortality rate
The number of new cases/deaths attributed to a cancer in a defined age group during a year divided by the number of persons in the age group during the year, expressed as a rate per 100,000 persons in that year.

Age-standardised incidence/mortality rate (ASR)
The number of new cases or deaths per 100,000 that would have occurred in a given population if the age distribution of that population was the same as that of the Australian population in 2001 and if the age-specific rates observed in the population of interest had prevailed. In international comparisons, the World Standard Population was used as the reference population.

Age-standardised rates are independent of the age-structure of the population of interest and are therefore useful in making comparisons between different populations and time periods.

Annual percentage change (APC)
The annual rate of increase or decrease in cancer incidence or mortality. The APC is calculated by fitting a linear model to the annual rates after logarithmic transformation; the slope represents the APC for the time period. The APCs were calculated using Joinpoint Software Version 3.5.2 from the Surveillance Research Program, National Cancer Institute (US). The software identifies significant changes in rates over time and estimates the periods characterised by different rates.[16]

HSD
See Queensland Health Service District.

Incidence (new cases)
The number of new cases of cancer diagnosed in a defined population during a specified time period. For example, 2008 incidence is the number of cancers which were first diagnosed between 1 January 2008 and 31 December 2008.

Mortality (deaths)
The number of deaths attributed to cancer in a defined population during a specified time period regardless of when the diagnosis of cancer was made.

Prevalence
The number of Queenslanders with a diagnosis of cancer who were alive on 31 December 2008.

Queensland Health Service District (HSD)
For residence considerations, a Health Service District is a geographic area defined by a collection of Statistical Local Areas (SLA). For public hospitals and health service facilities, the term Health Service District is synonymous with a group of Queensland Health facilities and staff responsible for providing and delivering health resources and services to an area which may consist of one or more residential districts.

Relative survival
The rate of survival of persons diagnosed with cancer relative to the expected survival rate of the general population. Five-year relative survival represents the proportion of patients alive five years after diagnosis, taking into account age, gender and year of diagnosis.

Remoteness
The relative remoteness of residence at time of diagnosis, based on the Australian Standard Geographical Classification (ASGC)[17]. In this report, remoteness is classified into four groups: Major City, Inner Regional, Outer Regional, and Remote & Very Remote.
More on the QCCAT website
For more details on the calculations and the definitions of terms, go to OASys on https://qool.health.qld.gov.au/OASys/ and open the Help file.

Methods

The incidence and mortality data in this report are based on cancer registrations for 2008 and for 1982–2008 for trend analysis. Rates for common cancers are aggregated over five years (2004–2008). Incidence and mortality counts for common cancers by Health Service District are averaged over three years (2006–2008). Unless otherwise stated, information presented in this report is sourced from the database of the Queensland Oncology Repository as of 30 October 2011. Except where noted, incidence and mortality rates are standardised to the Australian age-specific population in 2001.

Data Sources

ONCOLOGY ANALYSIS SYSTEM

Oncology Analysis System (OASys) is a statewide clinical cancer database with diagnostic, treatment, and outcome data on registry-notifiable invasive cancers diagnosed among Queensland residents of all ages (including children) from 1982 to 2008. The database includes inpatient data for public and private admissions and information systems for radiation oncology, pharmacy and pathology. Benign (non-invasive) cancers are excluded. New cancer cases are counted following the rules for counting multiple primary cancers as defined by the International Association for Research on Cancer (IARC). All data are de-identified and aggregated.
The data collection, linking and reporting of OASys data is performed under the auspices of Queensland Cancer Control Safety and Quality Partnership, a Quality Assurance Committee gazetted under Section 31, The Health Services Act 1991.

QUEENSLAND ONCOLOGY REPOSITORY

The Queensland Oncology Repository (QOR) is a cancer patient database developed and maintained by the Queensland Cancer Control Analysis Team (QCCAT; Queensland Health) to support Queensland's cancer control, safety, and quality assurance initiatives. QOR consolidates cancer patient information for the state and contains data on cancer diagnoses and deaths, surgery, chemotherapy, and radiotherapy. QOR also includes data collected by clinicians at multidisciplinary team (MDT) meetings across the state. For more information, visit https://qccat.health.qld.gov.au/QOR.

QUEENSLAND CANCER REGISTRY

The Queensland Cancer Registry (QCR) operates under the Public Health Act 2005 to receive information on cancer in Queensland. The Cancer Registry is a population-based registry and maintains a register of all cases of cancer diagnosed in Queensland since the beginning of 1982 (excluding basal and squamous cell carcinomas). The Cancer Registry codes the site and the histology of the cancers to the International Classification of Diseases for Oncology, 3rd edition (ICD-O-3). Prior to July 2004, the primary site of cancer was coded to the International Classification of Diseases for Oncology, 2nd edition (ICD-O-2).

Notification of cancer is a statutory requirement for all public and private hospitals, nursing homes and pathology services. Notifications are received for all persons with cancer separated from public and private hospitals and nursing homes. Cancer-related pathology reports are received from Queensland pathology laboratories. Mortality data with cancer identified as the underlying cause of death as well as cancer-related deaths are abstracted from the mortality files of the Registrar of Births, Deaths and Marriages.

More on the QCCAT website

For more details on the calculations and the definitions of terms, go to OASys on:
https://qool.health.qld.gov.au/OASys and open the Help file.

References

1. Queensland Health. The Health of Queenslanders 2010: Prevention of Chronic Disease. Third Report of the Chief Health Officer of Queensland, Queensland Health. Brisbane, 2010

2. Cramb SM, Mengersen KL, Baade PD. Atlas of Cancer in Queensland: Geographical variation in incidence and survival, 1998 to 2007. Viertel Centre for Research in Cancer Control, Cancer Council Queensland. Brisbane, Queensland 2011

3. Ferlay J, Shin HR, Bray F, Forman D, Mathers C and Parkin DM. GLOBOCAN 2008 v1.2, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 10 [Internet]. Lyon, France: International Agency for Research on Cancer; 2010. Available from: http://globocan.iarc.fr, accessed 17 October 2011

4. Cancer in Queensland, 1982 to 2008. Incidence, Mortality, Survival and Prevalence. Statistical tables. Queensland Cancer Registry. Cancer Council Queensland, 2011

5. Cancer in Ontario: Overview. A Statistical Report. Toronto, Canada, 2010

6. Andriole GL, Crawford ED, Grubb RL III, et al. Mortality results from a randomized prostate-cancer screening trial. N Engl J Med 2009;360:1310–9

7. Schröder FH, Hugosson J, Roobol MJ, et al. Screening and prostate-cancer mortality in a randomized European study. N Engl J Med 2009;360:1320–8

8. Hugosson J, Carlsson S, Aus G, et al. Mortality results from the Göteborg randomised population-based prostate cancer screening trial. Lancet Oncol. Epub 2010 Jun 30. DOI:10.1016/S1470–2045(10)70146–7

9. Denham JW, Bender R, Paradice WEJ. It's time to depolarise the unhelpful PSA-testing debate and put into practice lessons from the two major international screening trials. MJA 2010;192:393-6

10. Wills R-A, Dinh B, Khor S-L, Coory M. Mortality and incidence trends for leading cancers in Queensland, 1982 to 2004. Information Circular 76, Queensland Health, November 2007

11. Autier P, Boniol M, Gavin A, Vatten LJ. Breast cancer mortality in neighbouring European countries with different levels of screening but similar access to treatment: trend analysis of WHO mortality database. BMJ 2011; 343:d4411. Viewed 10 October 2011 at: http://www.bmj.com/content/343/bmj.d4411.full

12. BreastScreen Australia EAC (Evaluation Advisory Committee) 2009a. BreastScreen Australia Evaluation: evaluation final report. Screening monograph no. 1/2009. Canberra: Department of Health and Ageing. Viewed 10 October 2011 at: http://www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/br-evaluation-report-cnt

13. Australian Institute of Health and Welfare 2010. BreastScreen Australia monitoring report 2006-2007 and 2007-2008. Cancer series no. 55. Cat. No. CAN 51. Canberra: AIHW. Viewed 7 October 2011 at: http://www.aihw.gov.au/publication-detail/?id=6442468382&tab=2

14. Pinkerton R, Wills R-A, Coory MD, Fraser CJ. Survival from haematological malignancy in childhood, adolescence and young adulthood in Australia: is the age-related gap narrowing? MJA 2010; 193 (4): 217-221

15. Jemal A, Ward E, Thun M (2010) Declining death rates reflect progress against cancer. PLoS ONE 5(3): e9584. doi:10.1371/journal.pone.0009584

16. Kim H, Fay M, Feuer E, Midthune D (2000). Permutation tests for joinpoint regression with applications to cancer rates. Statistics in Medicine 19:335–51

17. Australian Bureau of Statistics. ASGC Remoteness Classification: Purpose and Use (Census Paper No. 03/01). Commonwealth of Australia 2003. Viewed 28 October 2011 at: http://www.abs.gov.au/websitedbs/d3110122.nsf/0/f9c96fb635cce780ca256d420005dc02/$FILE/Remoteness_Paper_text_final.pdf

Notes

FOR MORE INFORMATION

Queensland Cancer Control Analysis Team
Queensland Health
GPO Box 48 Brisbane, Queensland 4001 Australia
Tel: (+61) (07) 3239 0886
Email: qccat@health.qld.gov.au
https://qccat.health.qld.gov.au

ISBN-13: 978-1-921707-78-0