Melanoma in Queensland an Overview 2012

Queensland Government

Acknowledgements

The authors acknowledge and appreciate the work of Queensland Health staff who contribute to and participate in the maintenance of the Queensland Oncology Repository and the Oncology Analysis System which supports the collection, analysis and interpretation of cancer information in Queensland.

This report was prepared by Michael Blake, Shoni Colquist, Danica Cossio, Tracey Guan, Hazel Harden and Dannie Zarate.

We wish to thank Associate Professor Mark Smithers for reviewing this report and providing valuable comments.

For more information:
Queensland Cancer Control Analysis Team
Queensland Health
GPO Box 48 Brisbane, Queensland, 4001, Australia
Ph: +61 (07) 3239 0886
Fax: +61 (07) 3239 0930
Email: qccat@health.qld.gov.au
https://qccat.health.qld.gov.au

Melanoma in Queensland: An Overview 2012

Suggested citation:
Queensland Government. Melanoma in Queensland: An overview 2012. Queensland Health, Brisbane, 2012

ISBN: 978-1-921707-90-2
Published by Queensland Health
November 2012

qccat
queensland cancer control analysis team

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Foreword

Melanoma in Queensland: An Overview 2012 provides clinicians, cancer patients and their families with up to date and relevant information on melanoma in Queensland.

Melanoma is one of the most common cancers in Queensland. This report examines the impact of melanoma in Queensland. This report presents cancer data for 2009 and projections for 2013. It is part of a series of cancer specific reports and part of the Oncology Analysis System (OASys) online library.

Part one of this report presents Queensland melanoma statistics including projections for 2013. Part two presents melanoma statistics by Hospital and Health Service.

We hope that the inclusion Hospital and Health Service information provides a new perspective to assist in the planning, management and treatment of melanoma in Queensland.

Highlights

In 2013:

- The projected incidence shows a 14% increase from 2009.
- Melanoma is expected to account for 4% of all cancer deaths.

In 2009:

- 3,060 new cases of melanoma were diagnosed in Queensland; of these 1,793 cases were reported in males and 1,267 in females.
- There were an estimated 12,590 people living with melanoma who had been diagnosed in the previous five years.
- Melanoma survival was very high, with 82% of males and 88% of females surviving 25 years.

From 2007 to 2009:

- Melanoma was the most common cancer in Queenslanders aged between 15 – 44 years, making up 29% of all cancer cases for this age group.
- The age-standardised incidence rate was 82 per 100,000 for males and 54 per 100,000 for females.
- Age-standardised incidence and mortality rates varied by Hospital and Health Service. Darling Downs had the highest rate of melanoma incidence (80 cases per 100,000) and North West had the highest rate of melanoma mortality (14 deaths per 100,000).
- Incidence rates for melanoma varied very little by remoteness of residence for both males and females. The highest average rate was seen in those who lived in inner regional areas, with 87 per 100,000 for males and 57 per 100,000 for females.

Part 1

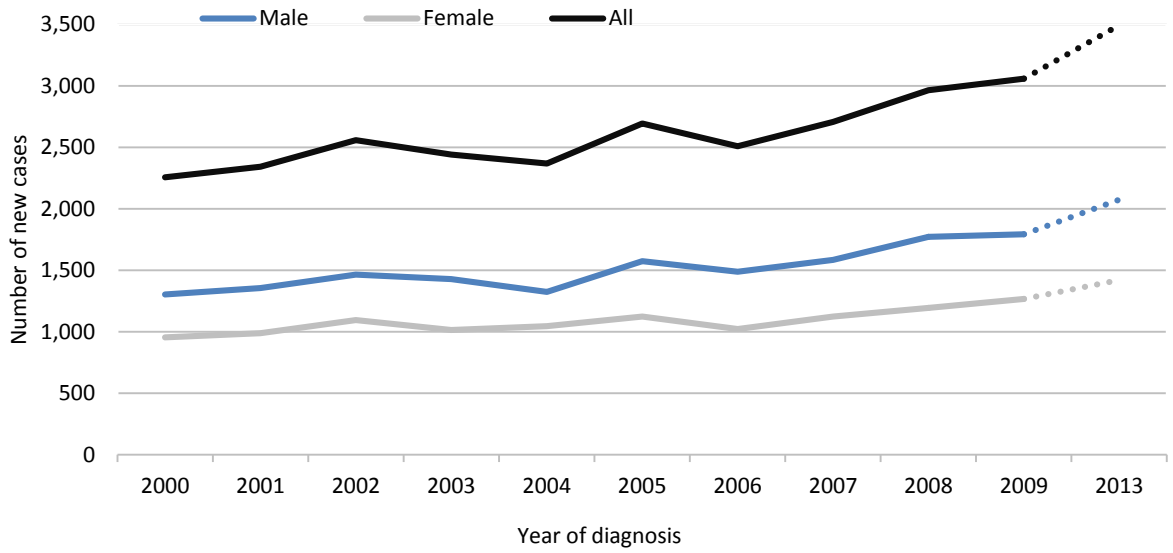
Melanoma in Queensland

The International Classification of Diseases for Oncology (ICD-10-AM) defines melanoma as a primary site of C44 – skin and morphology between 872 and 879.[1] Patients with a diagnosis of basal and squamous cell carcinomas of the skin and those patients who reside outside of Queensland have been excluded from this report.

Projections 2013

It is estimated that 3,495 new cases of melanoma will be diagnosed in 2013 (Figure 1). The projected figures show that melanoma is expected to continue to be more common in males (2,075 new cases) than in females (1,420 new cases). The projected incidence for 2013 shows a 14% increase from the 2009 incidence of 3,060 cases (Figure 1).

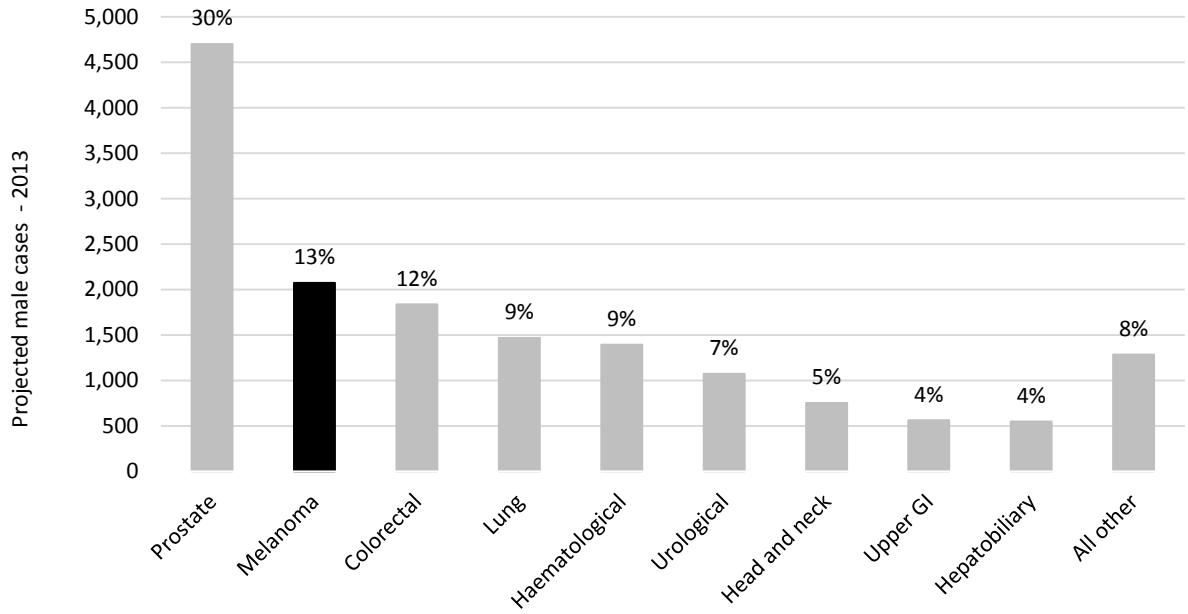
Figure 1: Actual and projected melanoma incidence, Queensland, 2000-2013



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

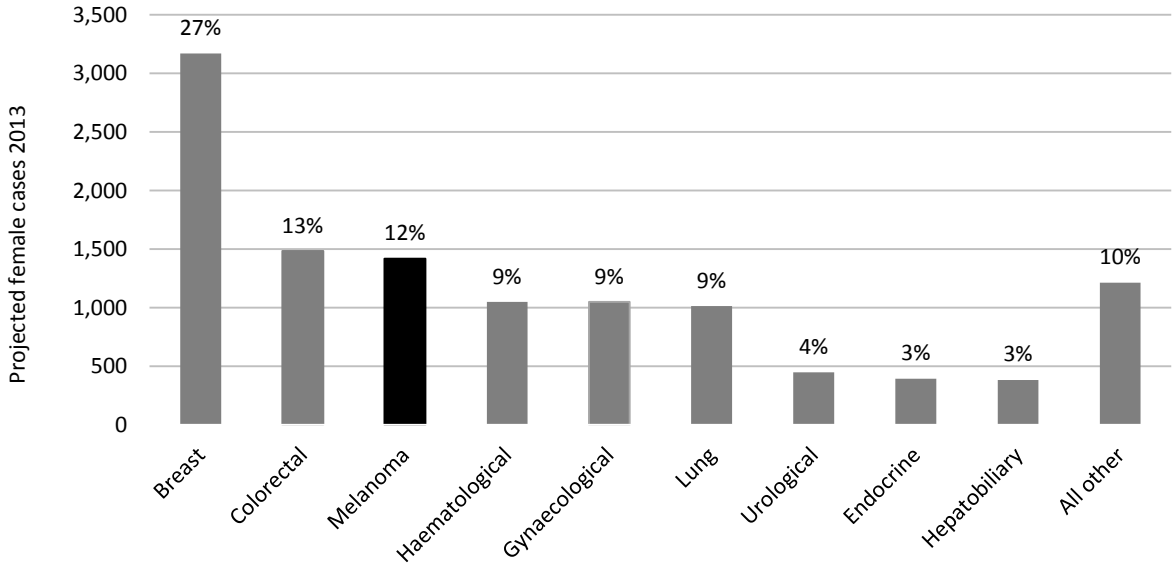
In 2013, it is expected that melanoma incidence will be ranked 2nd amongst all invasive cancers for males (Figure 2) and 3rd for females (Figure 3).

Figure 2: Top 10 most commonly diagnosed cancers in males, Queensland, 2013



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Figure 3: Top 10 most commonly diagnosed cancers in females, Queensland, 2013

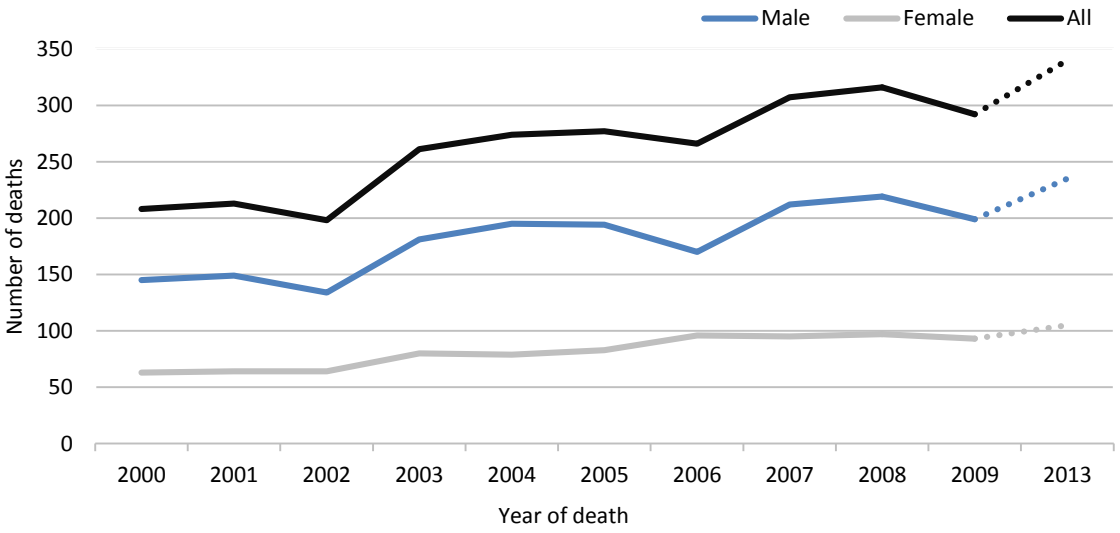


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Expected mortality

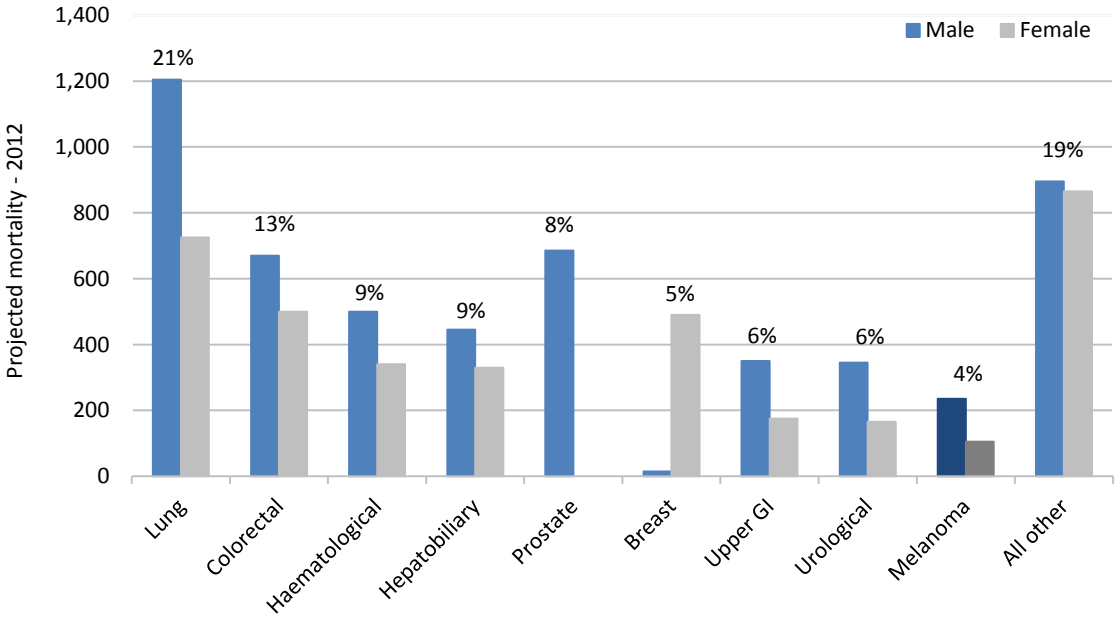
It is estimated that 335 Queenslanders will die of melanoma in 2013. This represents a 15% increase since 2009 (Figure 4). In 2013, it is expected that melanoma mortality will be ranked 9th amongst all invasive cancers with 4% of all cancer deaths attributed to melanoma (Figure 5).

Figure 4: Actual and expected melanoma mortality, Queensland, 2000-2013



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Figure 5: Top 10 cancers by expected mortality, males and females, Queensland, 2013



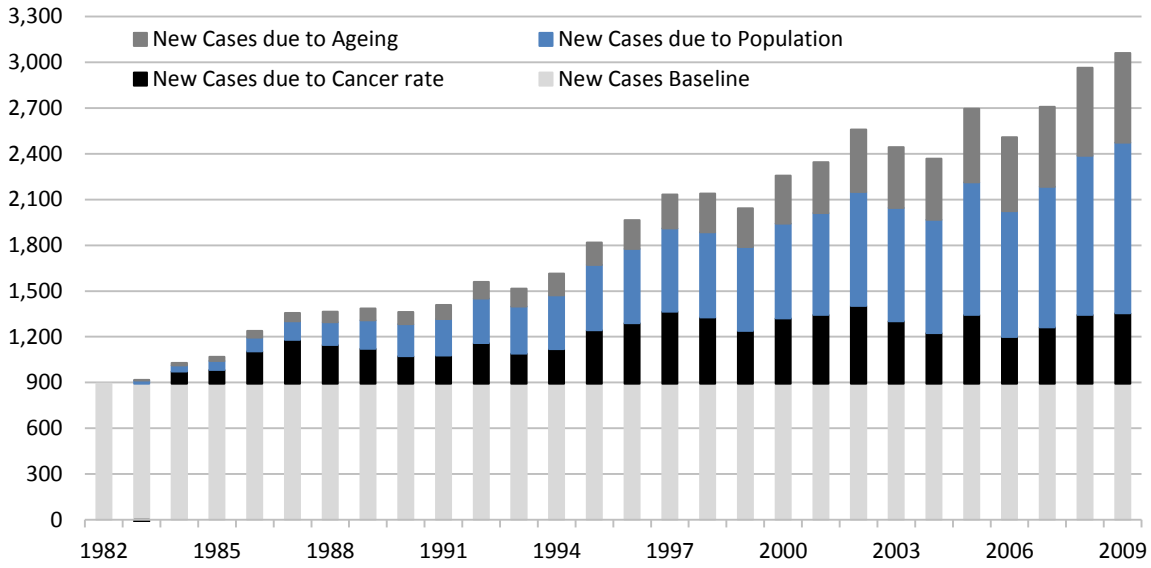
Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Incidence and mortality

Between 1982 and 2009 the number of new cases of melanoma among Queensland residents increased by 243%. In 1982, 892 cases of melanoma were identified, increasing to 3,060 in 2009. This increase is due to population growth, ageing and cancer rate (Figure 6).

Queensland is the fastest growing state in Australia and one of the fastest growing among developed countries. Queensland's population increased from 2.4 million in 1982 to 4.4 million in 2009, an increase of 83%. The proportion of persons 65 years and older also increased, from 9% in 1982 to 12% in 2009.

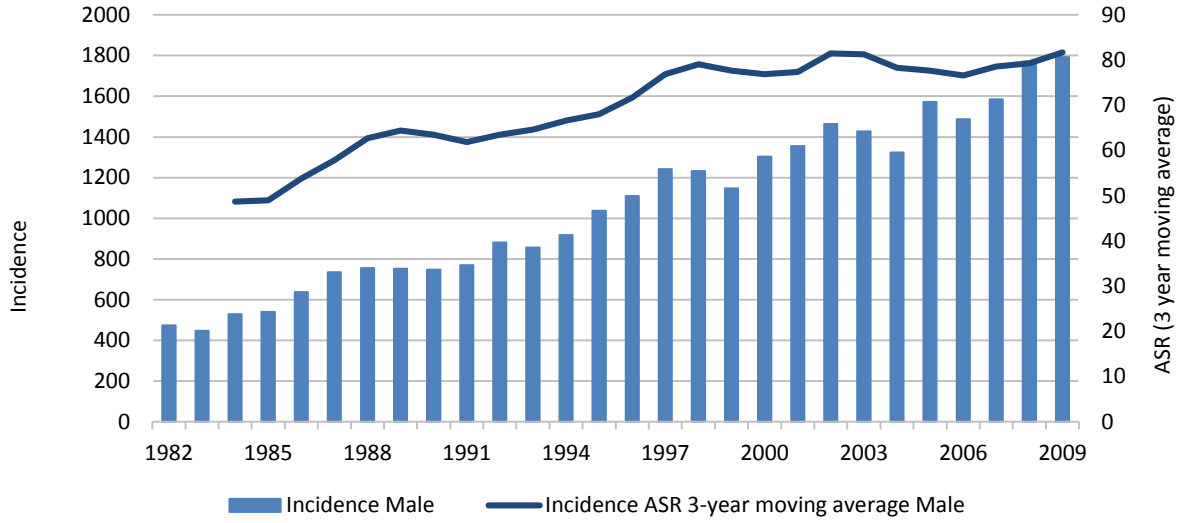
Figure 6: Growth in new cases of melanoma, Queensland, 1982-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

For males, the number of new cases increased from 474 in 1982 to 1,793 in 2009; an increase of 278%. This increase is due to population growth, ageing and an increase in the cancer rate (Figure 6). Melanoma incidence rates for males have increased from 49 per 100,000 in 1984 to 82 per 100,000 in 2009 (Figure 7).

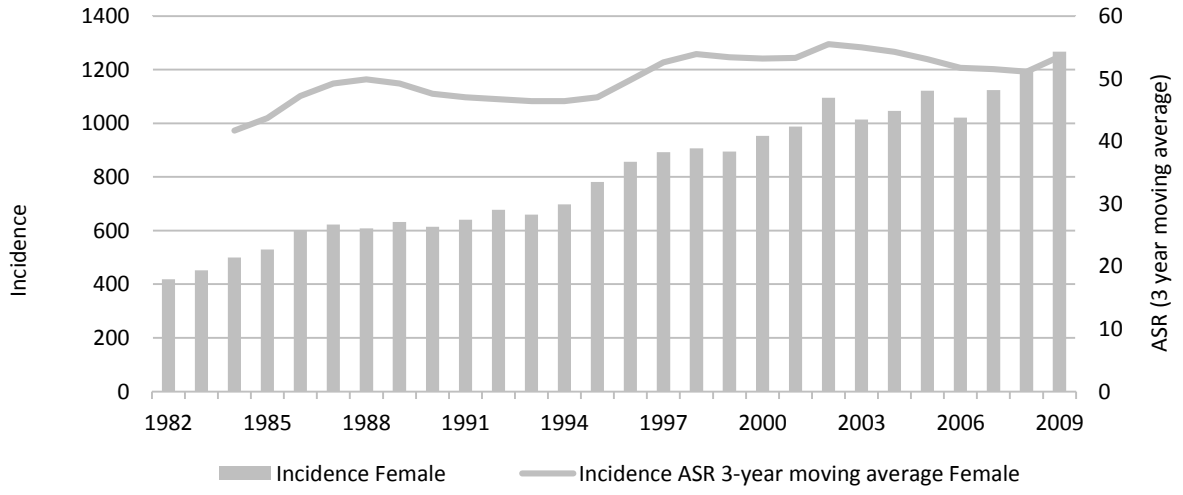
Figure 7: Male trends in numbers and rates for melanoma incidence, Queensland, 1982-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

For females, the number of new cases increased from 418 in 1982 to 1,267 in 2009; an increase of 203%. This increase is due to population growth, ageing and an increase in the cancer rate (Figure 6). Melanoma incidence rates for females have increased from 42 per 100,000 women in 1984 to 54 per 100,000 women in 2009 (Figure 8).

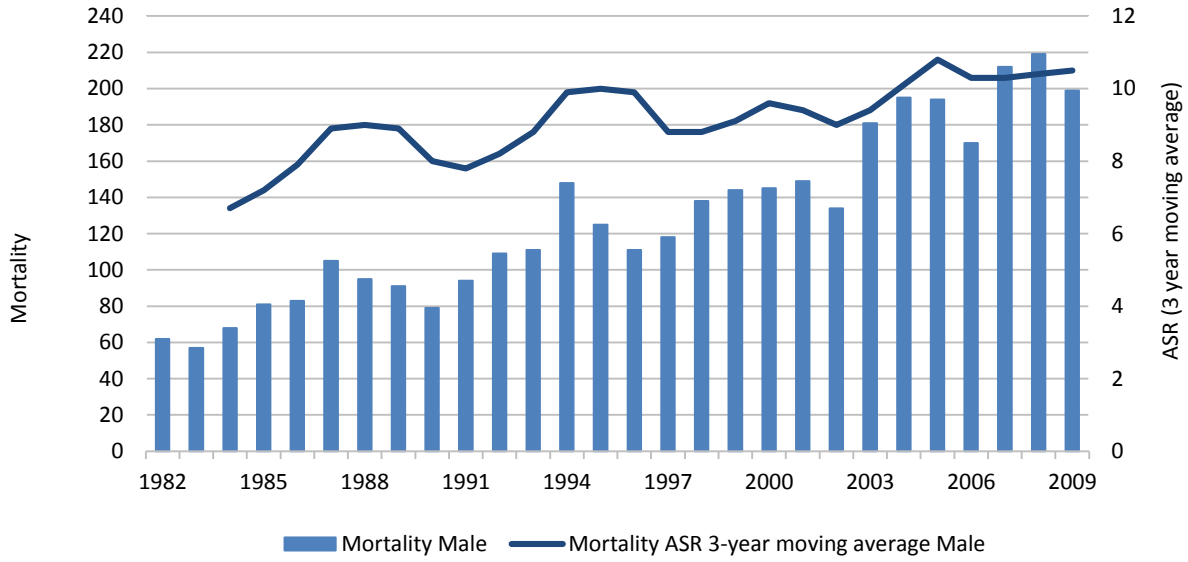
Figure 8: Female trends in numbers and rates for melanoma incidence, Queensland, 1982-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

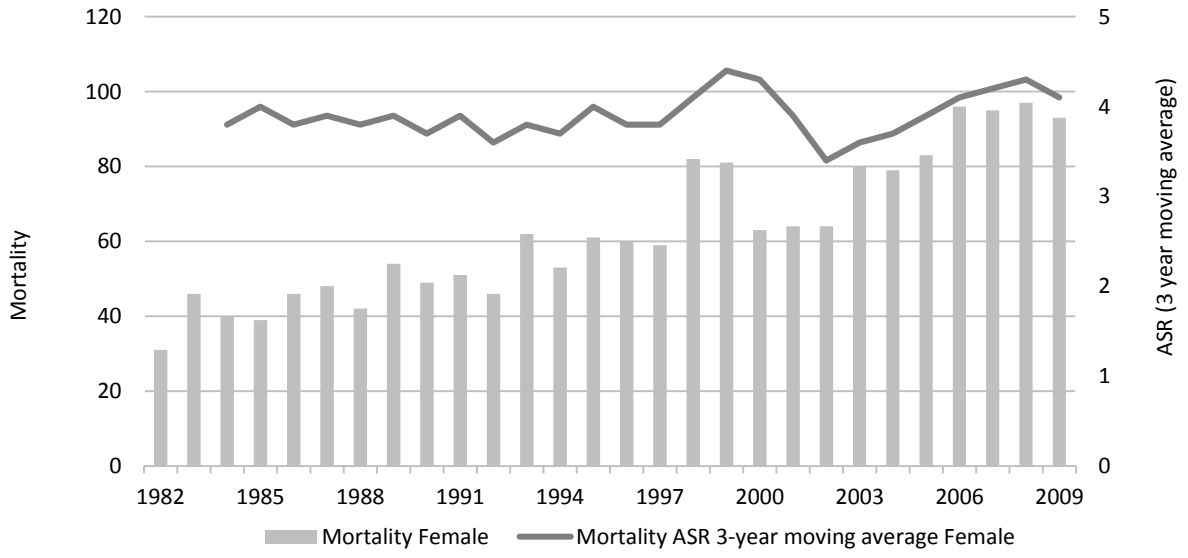
Melanoma mortality rates for women in Queensland have remained steady between 1982 and 2009. In 1982 the mortality rate was 3.8 for every 100,000 women and in 2009 the rate was 4.1 for every 100,000 women (Figure 10). Mortality rates for men however, have increased from 6.7 for every 100,000 males in 1982 to 10.5 per 100,000 males in 2009 (Figure 9).

Figure 9: Male trends in numbers and rates for melanoma mortality, Queensland, 1982-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

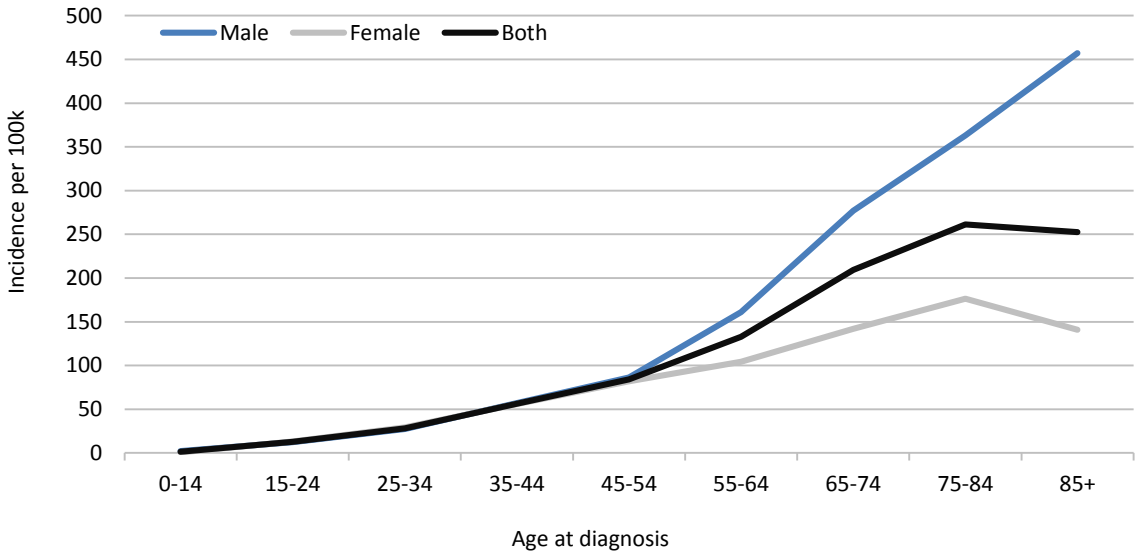
Figure 10: Female trends in numbers and rates for melanoma mortality, Queensland, 1982-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

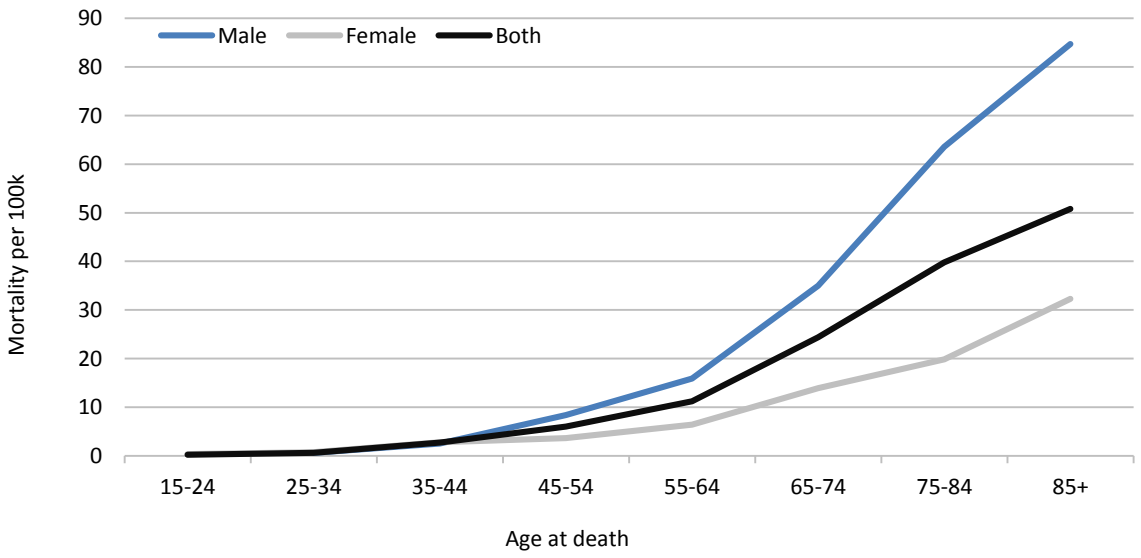
Melanoma incidence and mortality rates increase with age. For every 100,000 people aged 85 and older 252 are diagnosed with, and 51 die from melanoma (Figures 11, 12).

Figure 11: Melanoma incidence per 100k, by age group, Queensland, 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

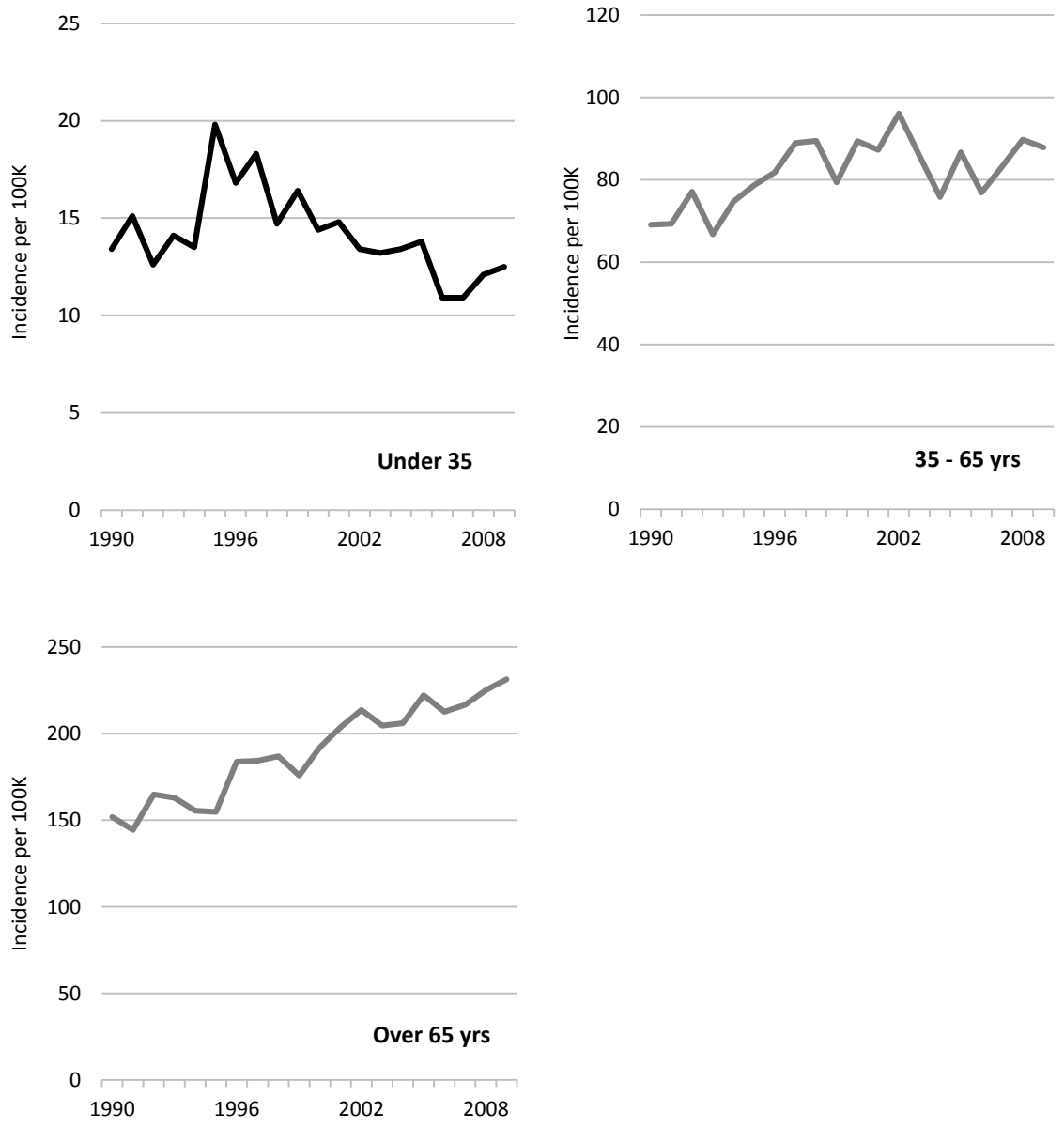
Figure 12: Melanoma mortality per 100k, by age group, Queensland, 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Three distinct age-related patterns are apparent in the Queensland melanoma rate over the past two decades. In young people under 35 years of age, the rate rose to a peak in the mid-1990s but declined steadily since by 4% per annum to levels similar to those 20 years ago. In 35-64 year olds, the rate peaked in 2002 then remained largely unchanged over the following 7 years. In people aged 65 and over, the rate increased linearly by 2% per annum over the entire period, from 152 per 100,000 in 1990 to 231 per 100,000 in 2009 (Figure 13). The patterns are similar for males and females.

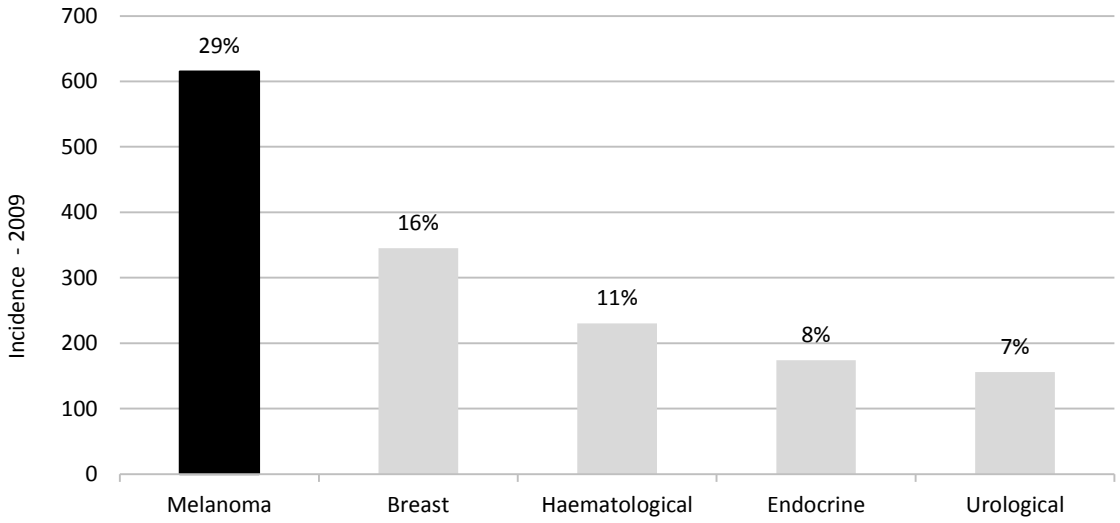
Figure 13: Age related patterns of Melanoma, Queensland, 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

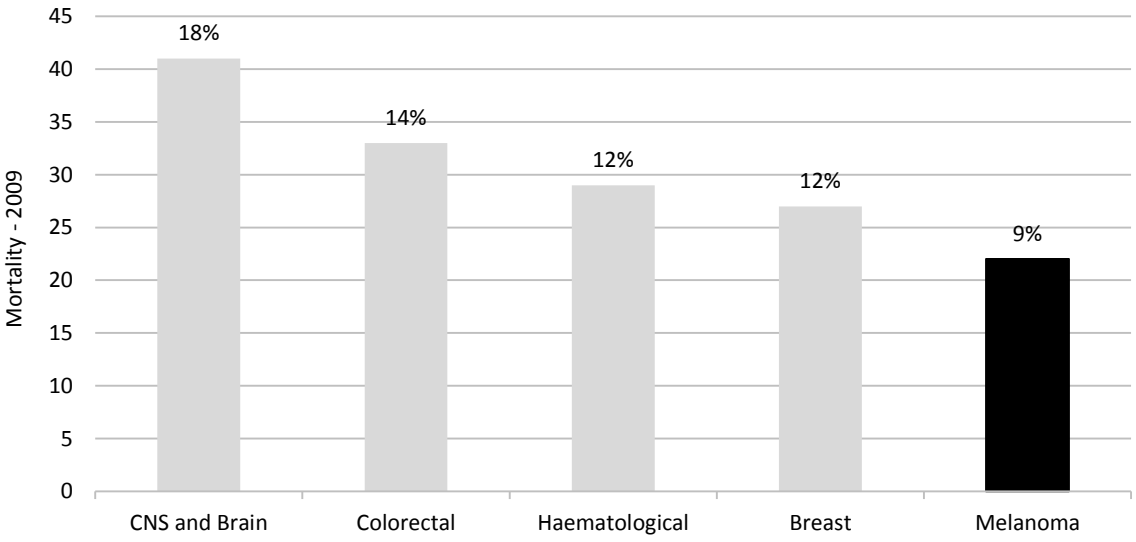
Melanoma is the most common cancer in Queenslanders, aged between 15 – 44 years, making up 29% of all cancer cases for this age group (Figure 14). However, it is ranked 5th in the most common cancers by mortality for males and females aged between 15 – 44 years (Figure 15).

Figure 14: Top 5 cancers by incidence for males and females, aged between 15 – 44yrs, Queensland, 2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Figure 15: Top 5 cancers by mortality for males and females, aged between 15 – 44 years, Queensland, 2009

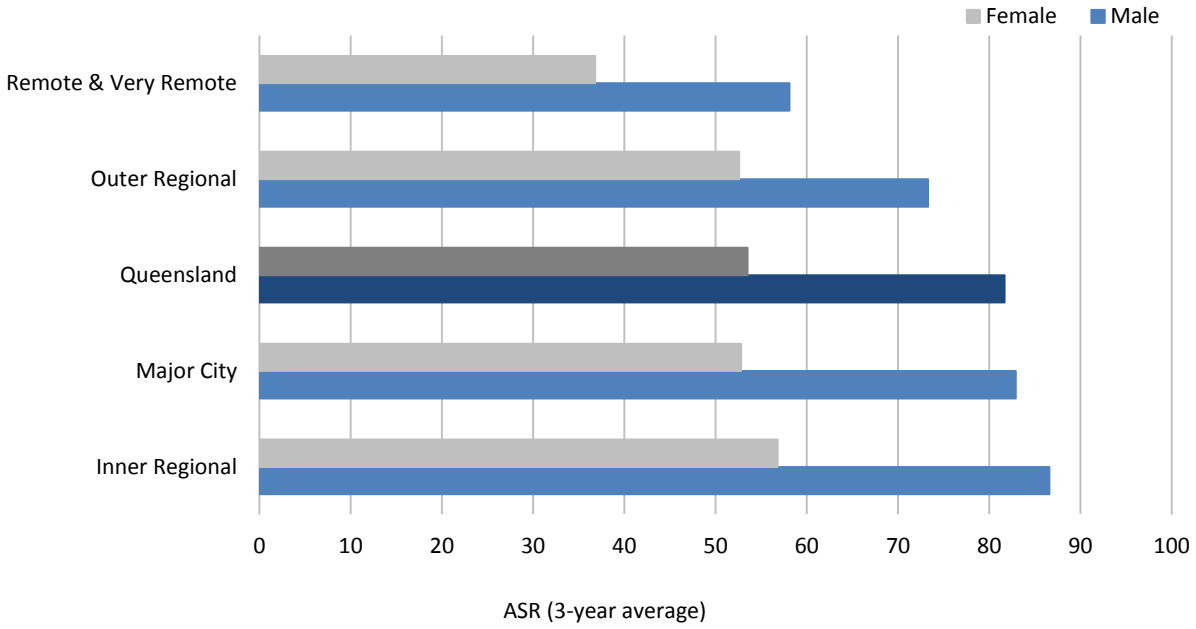


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Regional variation in incidence and mortality

Incidence rates for melanoma varied very little by remoteness of residence for both males and females from 2007 to 2009 (Figure 16). In contrast to most other cancers, those who lived in rural and remote areas experienced the lowest incidence. The highest average rate was seen in those who lived in inner regional areas, with 87 per 100,000 for males and 57 per 100,000 for females.

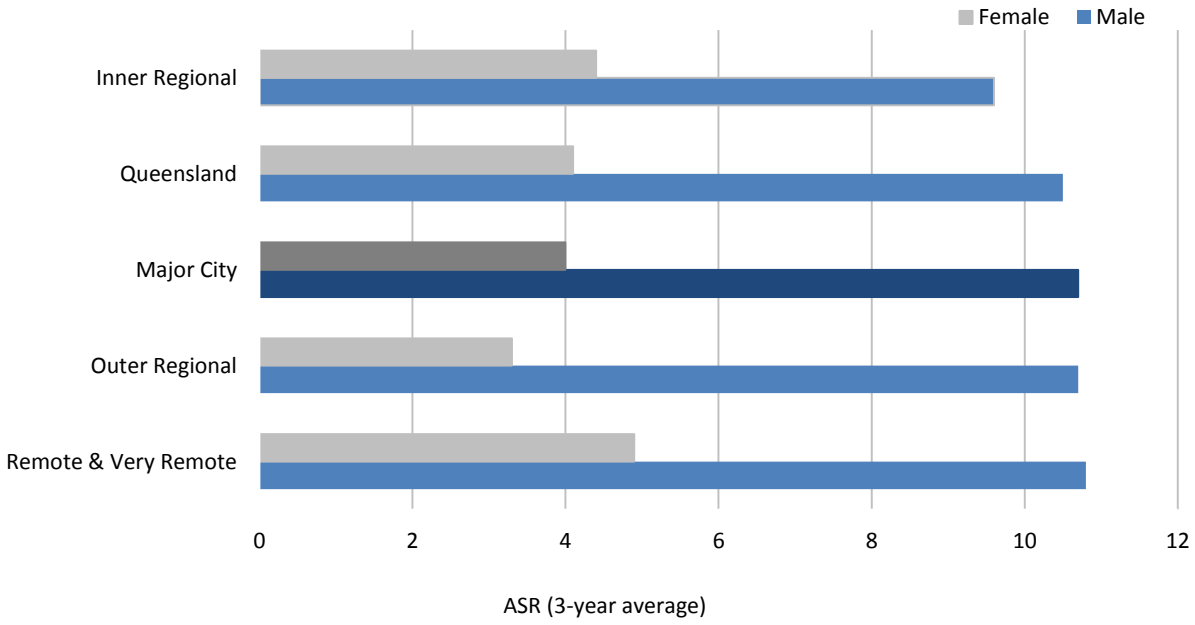
Figure 16: Melanoma age-standardised average incidence rates by remoteness of residence, Queensland, 2007-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Mortality rates for melanoma varied very little by remoteness of residence for both males and females from 2007 to 2009 (Figure 17). Rates were approximately 10 in every 100,000 for Queensland males regardless of residence. Female mortality rates were similar across Queensland with around 4 in every 100,000 women dying from melanoma.

Figure 17: Melanoma age-standardised average mortality rates by remoteness of residence, Queensland, 2007-2009

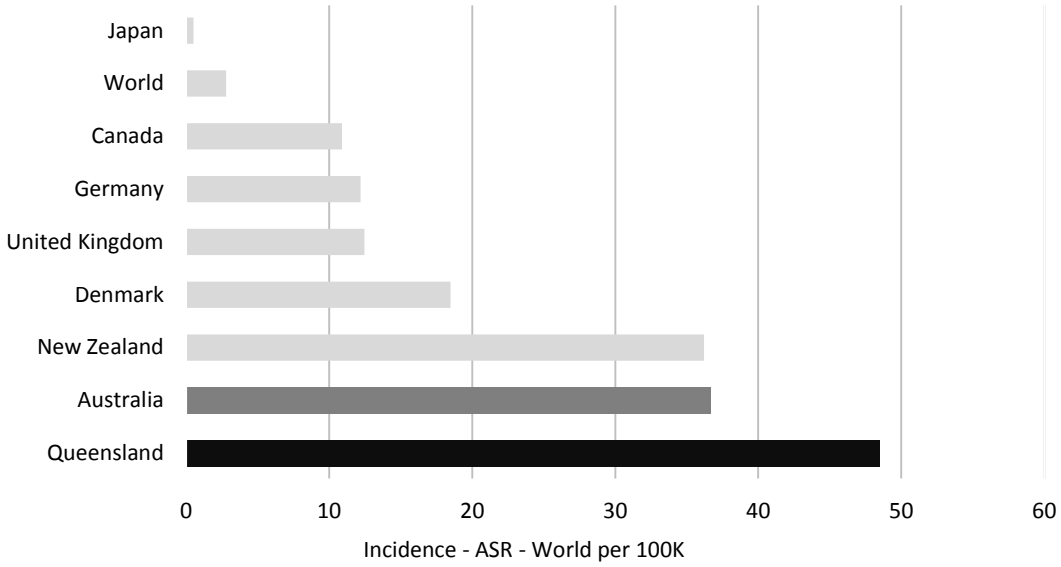


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

National and International variation in incidence and mortality

Australia and New Zealand experience the highest melanoma incidence world-wide, with around 36 cases per 100,000. The Queensland melanoma incidence rate of 49 cases per 100,000 per year is greater than both Australia and New Zealand and 17 times higher than the World at 3 cases per 100,000 (Figure 18).

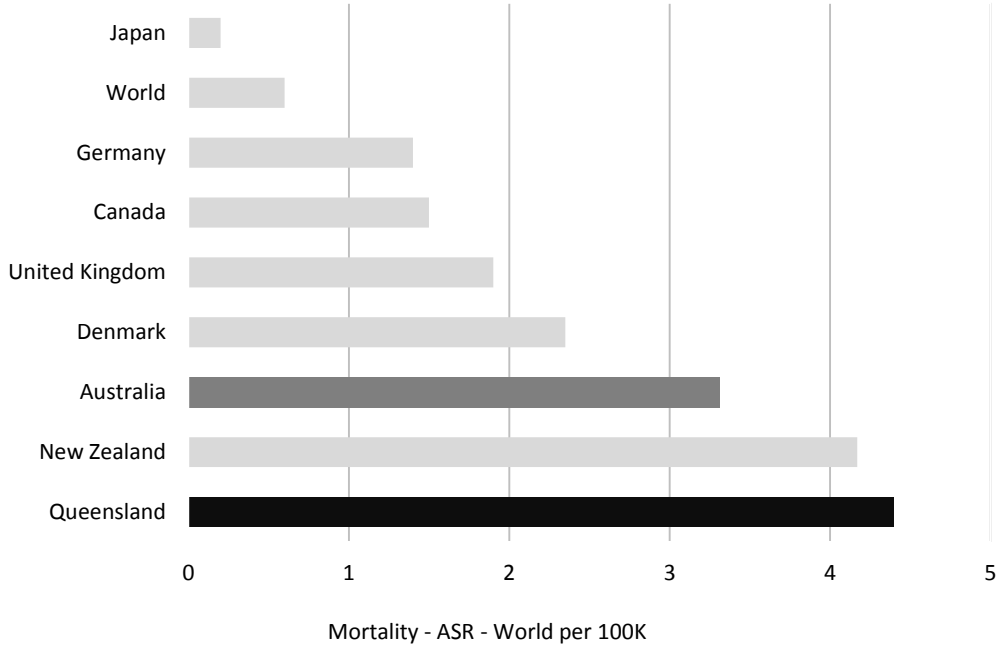
Figure 18: Melanoma incidence age-standardised rate for selected international regions and Queensland, 2008



Source: Cancer incidence estimated by the International Agency for Research on Cancer (IARC) for 2008 (GLOBOCAN 2008)[2] except for Queensland which is sourced from Oncology Analysis System, Queensland Cancer Control Analysis Team

The age-standardised mortality rate for melanoma in Australia (3.3 cases per 100,000) is 7 times that of the World (0.6 cases per 100,000). The Queensland rate was higher again at 4.4 per 100,000 cases (Figure 19).

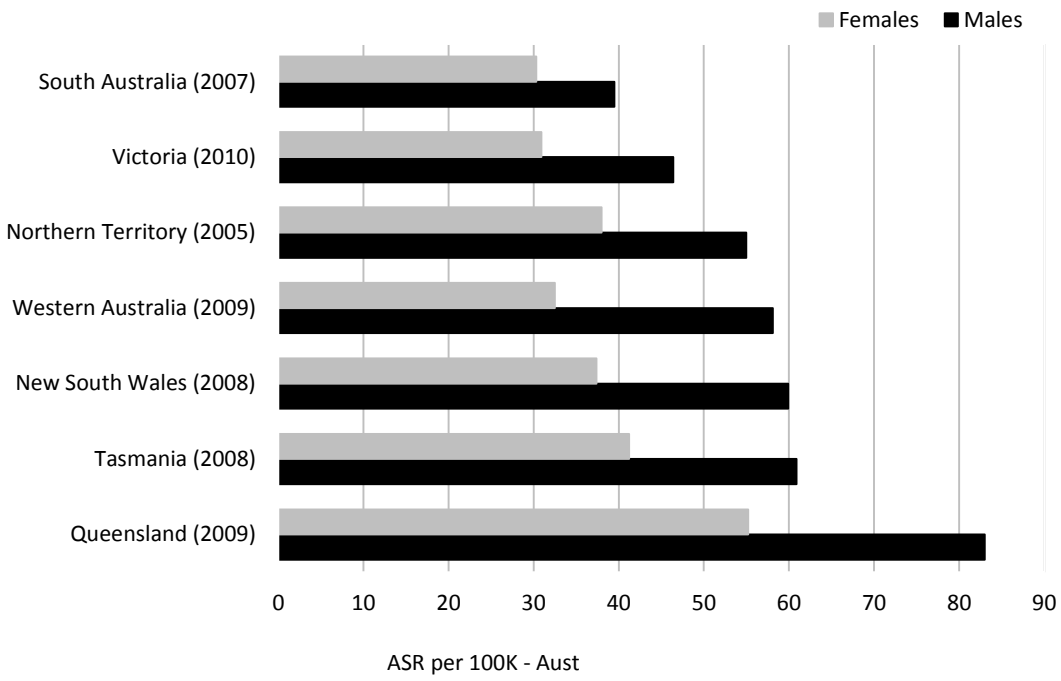
Figure 19: Melanoma mortality age-standardised rate for selected international regions and Queensland, 2008



Source: Cancer incidence estimated by the International Agency for Research on Cancer (IARC) for 2008 (GLOBOCAN 2008) [2] ***except for Queensland which is sourced from Oncology Analysis System, Queensland Cancer Control Analysis Team***

Males residing in Queensland experienced the highest melanoma incidence rate of 83 per 100,000 per year. This is significantly higher than the other states and territories which range between 40 and 61 per 100,000 per year. Females from Queensland also had the highest incidence rate nationally at 55 per 100,000 per year (Figure 20).

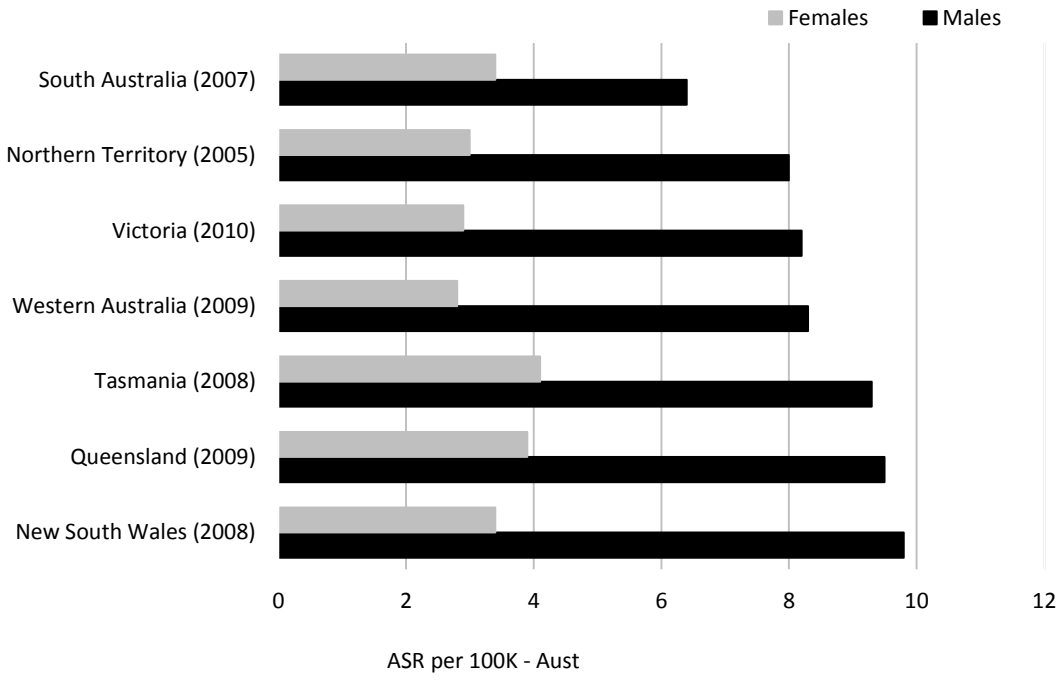
Figure 20: Melanoma incidence age-standardised rate for Australian states and territories



Source: Cancer incidence has been sourced from multiple publications[4,5,6,7,8,9] except for Queensland which is sourced from Oncology Analysis System, Queensland Cancer Control Analysis Team

Mortality rates for melanoma are fairly consistent between the state and territories. NSW, Queensland and Tasmanian men experience the highest mortality rate between 9-10 per 100,000 per year. Women residing in Tasmania had the highest mortality rate at 4.1 per 100,000 per year (Figure 21).

Figure 21: Melanoma mortality age-standardised rate for Australian states and territories

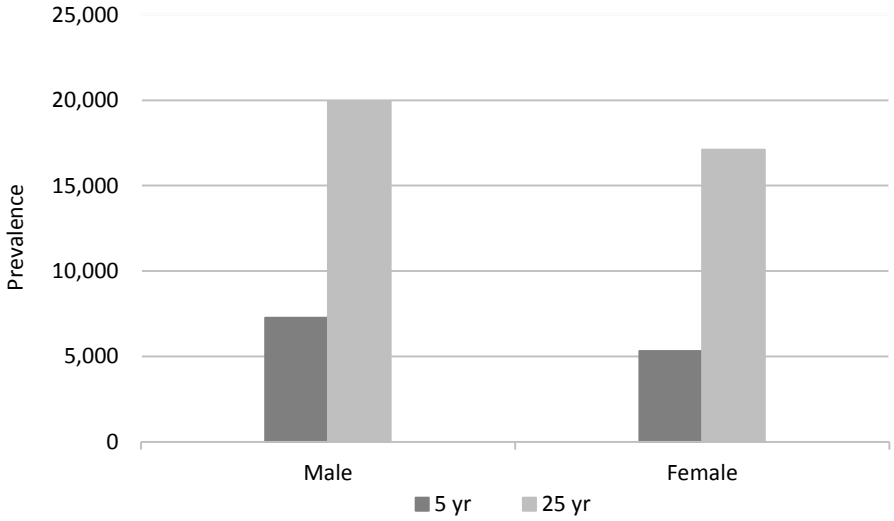


Source: Cancer incidence has been sourced from multiple publications[4,5,6,7,8,9] except for Queensland which is sourced from Oncology Analysis System, Queensland Cancer Control Analysis Team

Prevalence

Prevalence represents the number of people living with a cancer and is a measure of the burden of the disease for the individual, families and society. There were an estimated 12,590 people living in Queensland at the end of 2009 who had been diagnosed with melanoma in the previous five years (Figure 22).[3]

Figure 22: Prevalence of melanoma cancer, by time since diagnosis, Queensland, 2009



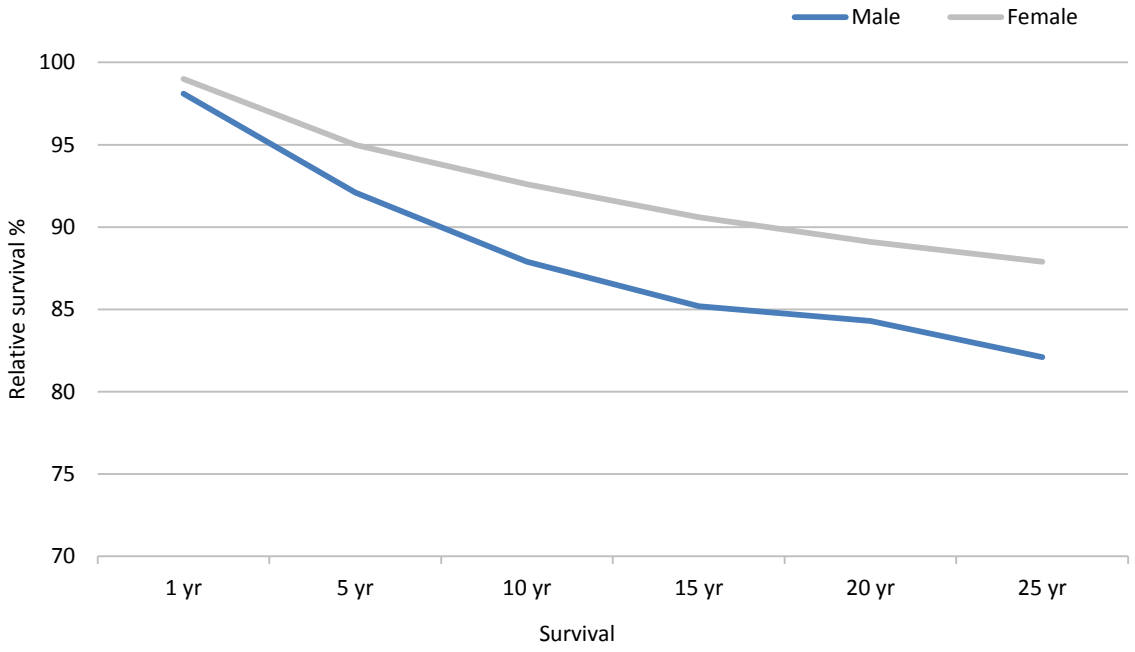
Source: Cancer in Queensland 1982-2009. Incidence, mortality, survival and prevalence. Queensland Cancer Registry, Cancer Council Queensland: Brisbane

Survival

Relative survival is a measure of the survival of a group of people 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.

Melanoma survival is very high, with 82% of males and 88% of females surviving 25 years (Figure 23).[3]

Figure 23: Relative survival 1yr to 25yrs, Queensland, 2005-2009



Source: Cancer in Queensland 1982-2009. Incidence, mortality, survival and prevalence. Queensland Cancer Registry, Cancer Council Queensland: Brisbane

Part 2

Melanoma by Hospital and Health Service

Patient Characteristics

Melanoma is more commonly diagnosed between 55 and 64 years of age. Median age ranges from 47 to 61 years across Hospital and Health Services (HHS). Melanoma is more common in males, representing between 51% and 66% amongst the HHS. The majority of melanoma patients reside in Metro South and Metro North, together they contribute 40% of total incidence.

Literature suggests that poor prognosis is linked with living in rural and remote communities, lower socioeconomic areas and Aboriginal and Torres Strait Islander communities.[10] Torres Strait-Northern Peninsula, Wide Bay and Darling Downs HHS show the highest rates of socioeconomic disadvantage in Queensland (Table 1).

Table 1: Melanoma cancer patients by Hospital and Health Service, Queensland, 2007-2009

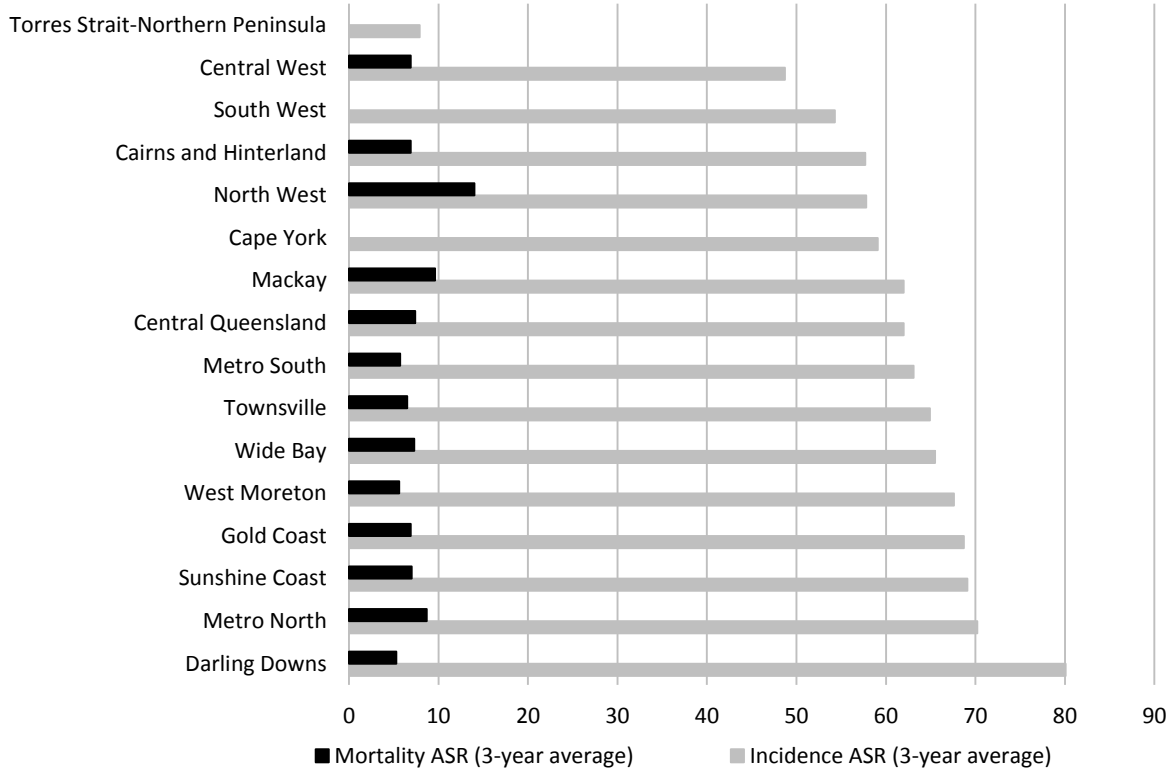
Hospital and Health Service	Incidence Annual Avg.	Median Age	% Male	Socioeconomic Status		
				% Affluent	% Middle	% Disadvantaged
Metro South	587	56	55	30	61	9
Metro North	585	58	56	42	52	6
Gold Coast	381	60	60	10	90	
Sunshine Coast	289	60	59		93	7
Darling Downs	228	57	54	3	74	23
Wide Bay	165	61	58		42	58
Townsville	144	56	59	8	78	14
West Moreton	137	55	56	4	87	9
Cairns and Hinterland	129	56	58		89	12
Central Queensland	122	52	53		98	17
Mackay	98	52	56		90	10
North West	14	50	66		93	7
South West	14	54	53		86	14
Cape York	6	48	55		100	
Central West	6	56	58		83	17
Qld Unknown	6	52	51			100
Torres Strait-Northern Peninsula	1	47	57			100
Queensland	**2911**	**57**	**57**	**17**	**72**	**11**

Source: Oncology Analysis System, Queensland Cancer Control Analysis Team
**** Shading represents those who have more than 20% disadvantaged (Australian standard)***

Incidence and Mortality

Age-standardised incidence and mortality rates vary by Hospital and Health Service (Figure 24). Darling Downs has the highest rate of melanoma incidence (80 cases per 100,000) and North West has the highest rate of melanoma mortality (14 deaths per 100,000).

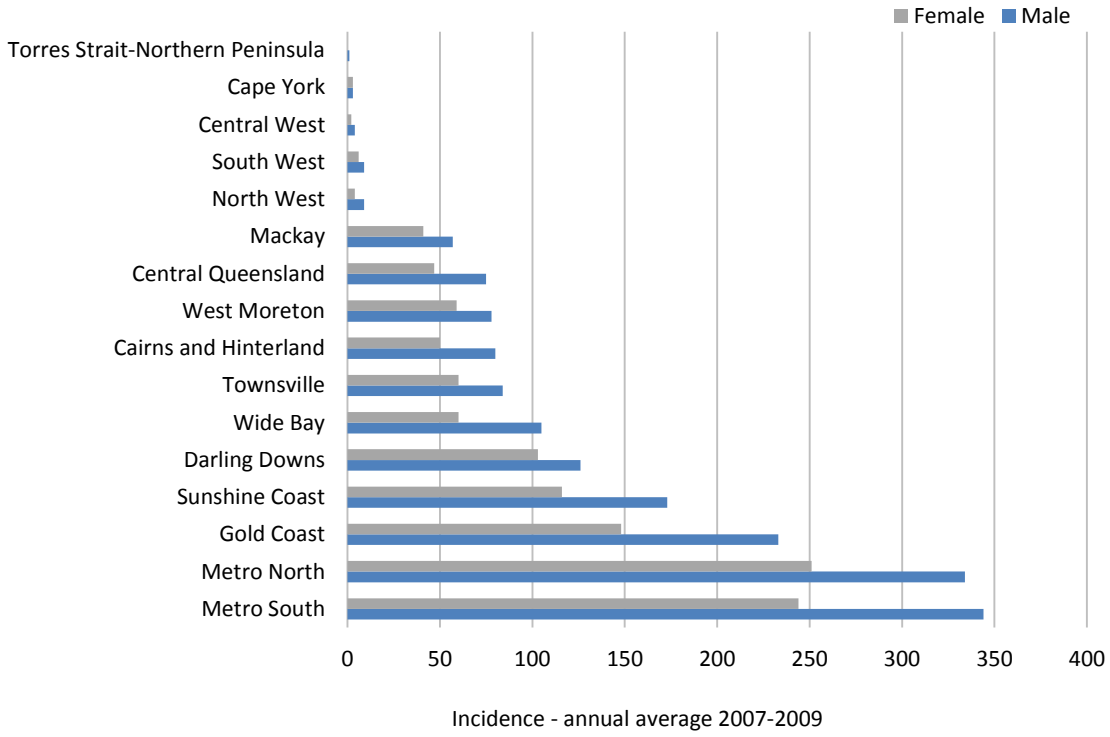
Figure 24: Melanoma ASR 3-yr average incidence and mortality by Hospital and Health Service, Queensland, 2007-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

The annual average incidence (2007-2009) for melanoma was highest in Metro South (587 cases) and Metro North (585 cases) Hospital and Health Services. Together these Hospital and Health Services account for 40% of the overall incidence in Queensland (Figure 25).

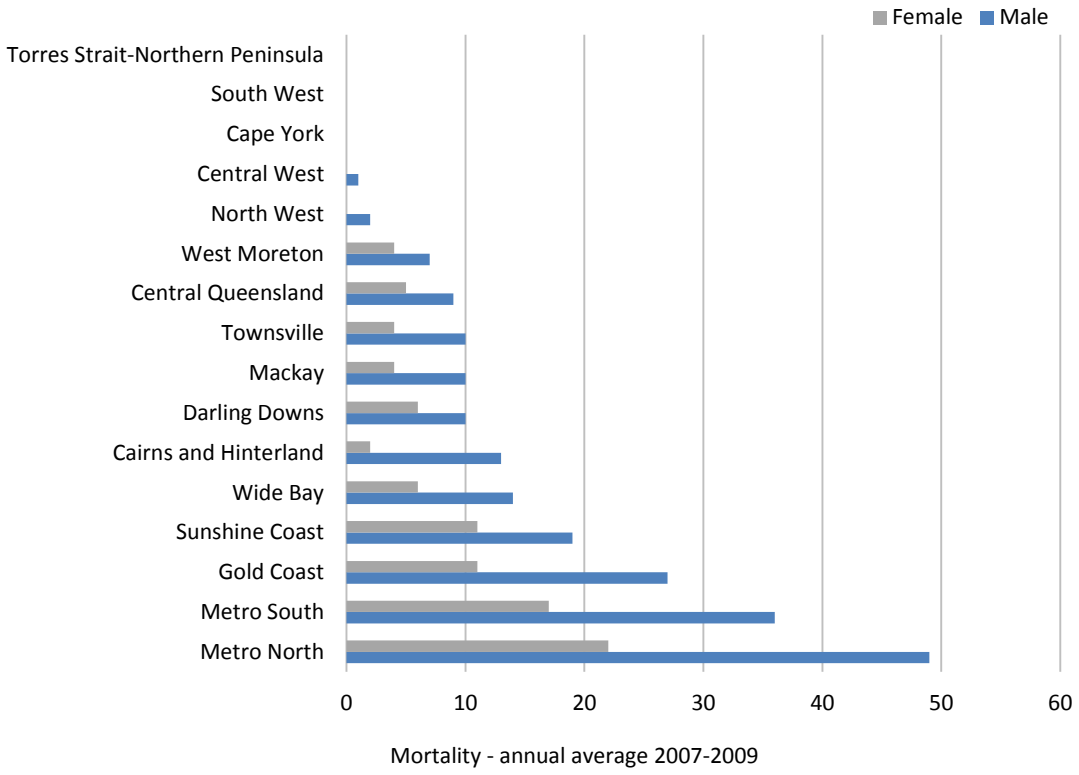
Figure 25: Melanoma incidence, Hospital and Health Service, annual average, Queensland, 2007-2009.



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

The annual average mortality (2007-2009) for melanoma is also highest in Metro South and Metro North Hospital and Health Services. These areas account for 41% of the overall mortality in Queensland (Figure 26). The annual average mortality (2007-2009) for males with melanoma cancer is double that of females across Queensland.

Figure 26: Melanoma mortality, Hospital and Health Service, annual average, Queensland 2007-2009

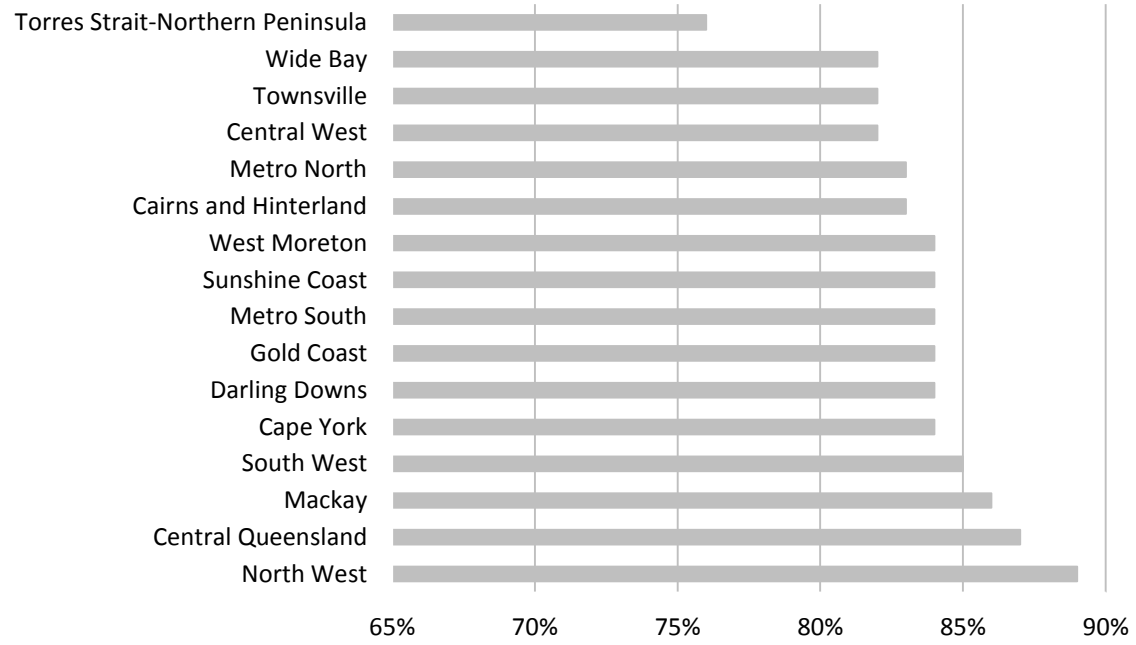


Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Survival

There is little regional variation for five year crude survival for melanoma between Hospital and Health Services. Crude survival ranges from 76% in Torres Strait-Northern Peninsula to 89% in North West (Figure 27).

Figure 27: Melanoma five year crude survival by Hospital and Health Service, Queensland, 1982-2009



Source: Oncology Analysis System, Queensland Cancer Control Analysis Team

Appendix

Sources of Data

Oncology Analysis System

Oncology Analysis System (OASys) is a state-wide 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 2009. The database includes inpatient data for public and private hospital 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).

The 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 of 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 Oncology Online

Queensland Oncology Online (QOOL) is an innovative web based system that integrates existing "data silos" and makes available just in time clinical information for multidisciplinary case conferencing, service improvement, monitoring safety and quality, and research.

QOOL has been developed to support clinicians to participate in multidisciplinary care and support the information needs of clinical networks and cancer services. This state-wide clinical registry aims to link patient information from multiple systems and facilitates the sharing of information between clinicians and facilities, producing a single patient summary view across the state.

QOOL provides the following functionality to cancer providers:

- Auto-population of demographic, pathology and death data from routine electronic sources, combined with additional clinical data, to provide an online clinical summary.
- Secure web access to a clinical summary for online scheduling, case conferencing, cancer care coordination and updating of clinical summary.
- Auto-generated GP/Specialist letter and case notes summary.

- Enables clinicians to record the critical information for each cancer episode, building a profile of the patient's journey, which is accessible by the multidisciplinary clinical team, independent of location of care.

As a result of collecting this information, clinicians are able to more effectively participate in audit and peer review activities as part of routine clinical practice. QCCAT, in collaboration with partners and teams, will apply a strong multidisciplinary approach to cancer service activities that includes primary care, community, allied health, clinicians and consumers. There is further hope that a strong partnership between public and private providers of oncology services will allow a greater focus on service improvement and safety.

In 2012 QOOL is being utilised by 23 hospitals across Queensland supporting 51 individual multidisciplinary meetings.

Glossary and common abbreviations

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.

Except where noted, incidence and mortality rates are standardised to the Australian age-specific population in 2001.

All-cause crude survival

All-cause crude survival: the percentage of cancer cases still alive after a specified period of time from diagnosis.

Hospital and Health Services (HHS)

For residence considerations, a Hospital and Health Service is a geographic area defined by a collection of Statistical Local Areas (SLA). For public hospitals and health service facilities, the term Hospital and Health Service 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.

Incidence (new cases)

The number of new cases of cancer diagnosed in a defined population during a specified time period. For example, 2009 incidence is the number of cancers which were first diagnosed between 1 January 2009 and 31 December 2009.

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 2009.

Relative Survival

The rate of survival of people 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)[11]. In this report, remoteness is classified into four groups: Major City, Inner Regional, Outer Regional, and Remote & Very Remote.

More on the QCCAT website

Go to https://qccat.health.qld.gov.au

Citation Guidelines

Full Citation

Queensland Government. Melanoma in Queensland: An overview 2012. Queensland Health, Brisbane, 2012.

Abbreviated Citation

Source: Melanoma in Queensland: An Overview 2012, Queensland Health.

Which Citation to use

Use the Full Citation in journal articles or reports with a separate Reference section. Use the Abbreviated Citation at the bottom of graphs or tables in slides or reports where a separate Reference section is not provided.

References

1. Fritz A, Percy C, Jack A, Shanmugaratham K, Sobin L, Parkin D, Whelan S (ed.). 2000, International Classification of Diseases for Oncology, 3rd edition, World Health Organisation

2. 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 12th April 2012

3. Cancer in Queensland 1982-2009. Incidence, mortality, survival and prevalence. Queensland Cancer Registry, Cancer Council Queensland: Brisbane.

4. Thursfield V, Farrugia H. Cancer in Victoria: Statistics and trends 2010. Cancer Council Victoria, Melbourne 2011

5. South Australian Cancer Registry (2010) Cancer in South Australia 2007 – with projections to 2010. Adelaide: South Australian Department of Health

6. Threlfall TJ, Thompson JR (2012). Cancer incidence and mortality in Western Australia, 2010. Department of Health, Western Australia, Perth. Statistical Series Number 94

7. Dalton M, Venn A, Albion T, Otahal P. Cancer in Tasmania: Incidence and Mortality 2008. Menzies Research Institute, Hobart, 2011

8. Zhang X, Condon J, Dempsey K & Garling L. Cancer incidence and mortality, Northern Territory 1991–2005. Department of Health and Families, Darwin, 2008

9. Tracey E, Kerr T, Dobrovic A, Currow D. Cancer In NSW: Incidence and Mortality Report 2008. Sydney: Cancer Institute NSW, August 2010

10. 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

11. 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_test_final.pdf