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Cancer trends in Queensland

Incidence and mortality from 1982–2001 in light of cancer prevention strategies

The impact of cancer is multifaceted, ie. it worsens the quality of life of sufferers and increases the burden to caregivers, families, the community, and the government. The objective of this article is to provide some descriptive analyses of cancer trends in Queensland and discuss these in the light of cancer prevention policies and strategies in Australia. The overall trend indicates that one Queenslanders out of 3 will develop some form of malignancy in their lifetime if the cancer trend in Queensland continues. This estimate does not take into account the occurrence of multiple primary cancers in a cancer patient. Concerted efforts from research institutions, health care providers, individuals, and the government are needed to ensure effective interventions to reduce the incidence and mortality rates of cancer.

This article was written with reference to the data provided by the Queensland Cancer Registry.¹ All the rates reported are age standardised to the Australian population distribution in 2001. As data for incidence and mortality rates in any one year can be subject to considerable random variation, average rates for 5 year intervals (ie. 1982–1986, 1987–1991, 1992–1996, 1997–2001) are applied in the descriptive analyses. Statistics for annual percent change (ie. average rate of change in a cancer per year as determined by joinpoint analysis) are quoted with reference to the Queensland Health Information Circular.²

Cancer trends and their impact

The impact of cancer on patients, their families and caregivers, the community and government are multifaceted. Deterioration in quality of life, anxiety or depression that may lead to loss of productivity in patients and their families, and increased utilisation of health care facilities results in greater health care costs. This is reflected in:

- years of life loss due to mortality (YLL)
- years lost due to disability (YLD), and
- disability adjusted life year (DALY), which is calculated as the sum of YLL and YLD.

In Australia, lung and colorectal cancer are in the top 10 diseases and have caused 2 510 000 DALYs. Lung cancer attributed 3.6% of the total DALY (ie. 90 400 DALY) and colorectal cancer attributed 2.7% of the total DALY (ie. 67 800 DALY). At present, ischaemic heart disease tops the list in attribution to the total DALYs.

However, the alarming message is that cancers will be the largest cause of disease burden in the year 2016 as improvements in cardiovascular health will outgrow the slower improvements in cancer health.³

Queensland cancer trends

In Queensland, the overall cancer trend is shown in *Figure 1*. The male cancer incidence and mortality rates are consistently higher than that of females. For both genders, the overall cancer incidence rates show an upward trend, but the mortality rate decreased in 1997–2001.

Computation of the cumulative risks for cancers assumes that a person experiences the current age specific risk rates up to the age of 75 years, and does not factor in individual risk factors such as alcohol consumption and smoking.¹ The cumulative risk of cancer incidence is that one Queenslanders out of every 3 will be diagnosed with some form of malignancy in their lifetime if current rates continue. This estimate does not take into account the occurrence of multiple primary cancers in a cancer patient. The cumulative risk of mortality of cancer is one in 7.

Queenslander – male

In the period 1997–2001, the highest incidence rates of cancer in males were:

- prostate gland
- melanoma
- lung (including trachea and bronchus)
- colon, and
- bladder (*Figure 2*).

Prostate cancer has been at the top of the list for the past 20 years. Melanoma cancer overtook lung cancer in second position in 1996 and has remained second highest. Lung cancer incidence rates are decreasing by 1.5% per year.² Changes in bladder and colon cancer rates are not significant. The five leading mortality cancer sites in males were:

- lung (including trachea and bronchus)
- prostate gland
- colon
- ill defined sites or unknown primary site, and
- pancreas.

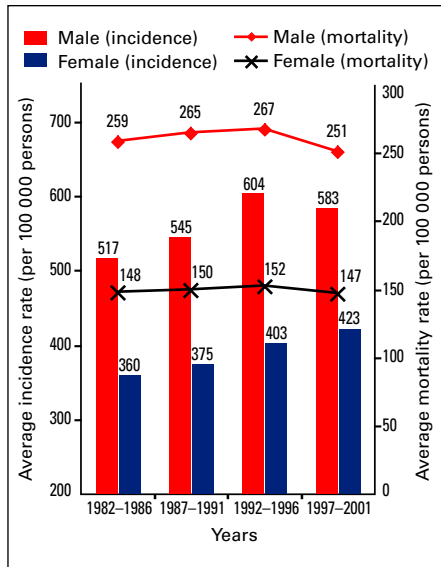


Figure 1. Incidence and mortality trends for all cancers combined in Queensland for the past 20 years (standardised to the Australian population 2001)

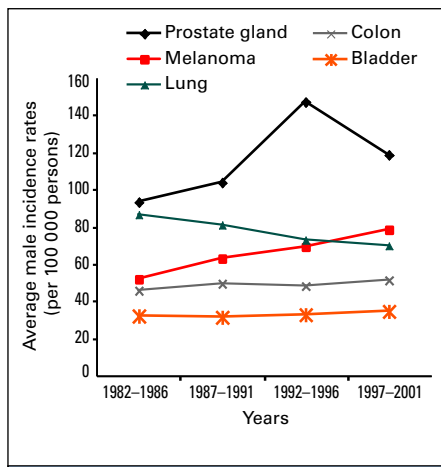


Figure 2. Average age standardised incidence rates (per 100 000 persons) for five leading cancer sites in Queensland males (standardised to the Australian population 2001)

Lung, prostate, and colon cancer were the top three killers in the period 1982–2001 (Figure 3).

Queenslander – female

Breast, melanoma, colon, lung (including trachea and bronchus), and corpus uteri have the highest incidence rates in females. Breast and melanoma cancers remain in first and second positions for the 20 year period (Figure 4). The five cancer sites with the highest mortality rates in females were:

- breast
- lung (include trachea and bronchus)
- colon
- ill defined sites or unknown primary site, and
- pancreas (Figure 5).

Breast cancer remains the top killer for the 20 year period. Lung cancer overtook colon cancer as the second killer of females in 1991 and remains in that position.

Common cancers to both genders

After excluding cancers that are specific to gender, one can compare the incidence and mortality rates of common cancers (Figure 6). This provides a snapshot view of the status of three common leading cancers (lung, melanoma, colon) in 1982–1986 versus 1997–2001. The average incidence and mortality rates of the common cancers are lower in females compared to males. However, the average incidence and mortality rates of lung cancer in females has increased over time. Melanoma and colon cancer rates in males have increased more rapidly than

in females, resulting in the widened gap in rates between genders (Figure 6).

Cancer prevention policies

Skin cancer

Skin cancer prevention policies in Australia have been reviewed and compared with other countries such as Canada, England and the USA.^{4,5} Skin cancer is managed as a social issue and public health problem in Australia instead of handling it as a personal or environmental problem. The communicators of sun safety (such as anticancer councils or agencies) are implementing sun safety programs. One such program – which began in 1980 – is the 'Slip! Slop! Slap!' campaign. The core messages is to: cover up and avoid the sun during peak hours of the day.

Despite these commendable efforts, the melanoma incidence rate in Queensland is increasing (2.5% increase per year in males and 1.1% in females²). This may in part be due to desensitisation to protection and prevention messages. The question of whether sun safety programs are less effectively implemented in Queensland, or if the upward trend may be attributed to the sunny climate, entails further investigation to compare the skin cancer rates and sun safety programs across Australia states.

Lung cancer

As it is accepted that smoking is the cause of most lung cancers, the discussion about lung cancer in this article is limited to policy related

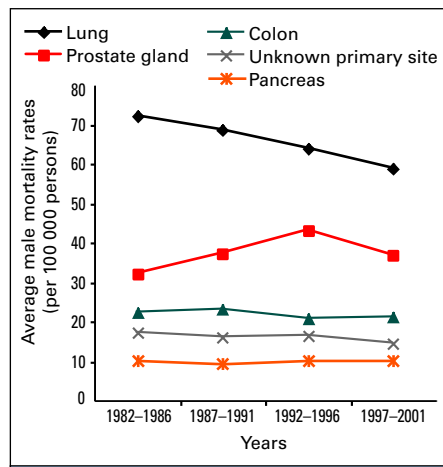


Figure 3. Average age standardised mortality rates (per 100 000 persons) for five leading cancer sites in Queensland males (standardised to the Australian population 2001)

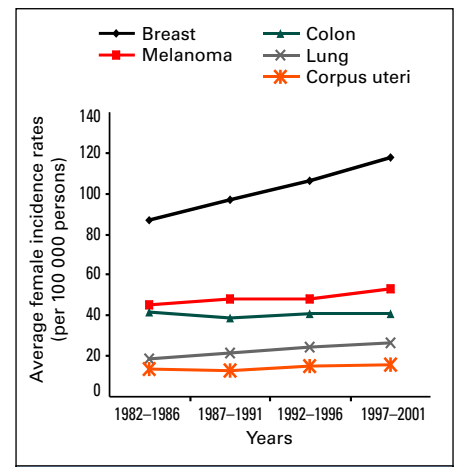


Figure 4. Average age standardised incidence rates (per 100 000 persons) for five leading cancer sites in Queensland females (standardised to the Australian population 2001)

to tobacco smoking. In Australia, policies and strategies include: bans on tobacco advertising; increased price of cigarettes; warning labels on cigarette packages; school antismoking programs; restriction on smoking in work and public places; and promoting smoking cessation (eg. nicotine replacement therapy).^{6,7}

It may be encouraging to note the decrease of 1.5 and 1.4% annually in the incidence and mortality rates of lung cancer in Queensland males.² However, the increase in incidence and mortality rates of 2.5 and 2.8% annually in females is of concern.² The percentage of Australians aged 16 years and over who are current smokers (regular and occasional) was 29.9% for males and 24.2% for females in 1998 compared to 37.0 and 30.1% respectively in 1985.^{6,8} The statistics show a decrease in smoking in both genders. Nonetheless, it is reported that smoking prevalence is higher in socioeconomically disadvantaged populations. Smoking prevalence in females from lower socioeconomic groups has increased from 35.8% in 1991 to 40.3% in 1995.^{6,8} Targeting smoking prevention strategies more effectively to these groups may be important to further reduce overall lung cancer rates.

Colon cancer

Results by the American Institute of Cancer Research provide convincing evidence that vegetables decrease the risk of colon cancer, while meat and alcohol increase the risk.^{6,9} In Australia, relevant strategies include:^{6,9}

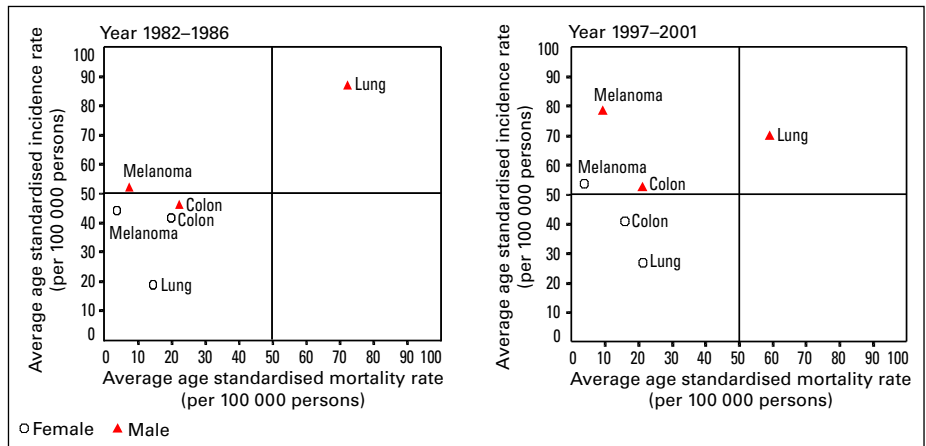


Figure 6. Common cancers between male and females: average incidence and mortality rates in Queensland, year 1982–1986 and 1997–2001 (standardised to the Australian population 2001)

- education (eg. media education to encourage healthy changes in diet and physical activity)
- increase the availability and accessibility of healthy foods (eg. increase food outlets that provide nutritional food, particularly in socially and geographically isolated areas)
- promote healthy public policy (eg. support legislation and regulations controlling the labelling and advertising of food)
- develop infrastructure and capacity to sustain change (eg. identify roles and responsibilities of relevant sectors such as food producers, manufacturers, retailers).

Evaluation on the effectiveness of interventional strategies may be revealed in subsequent surveys on healthy lifestyles and cancers. Nevertheless, the widened gap in the incidence and mortality rates of colon cancer in males and females in Queensland may lead us to wonder whether specific focused strategies to encourage men to adopt and maintain healthy lifestyles is required.

Conclusion

The initiative to establish, implement and maintain cancer registries such as the Queensland Cancer Registry is a remarkable effort. This descriptive analysis of cancer trends reveals patterns and changes in some leading cancers in Queensland over the past 20 years. Similar studies and reviews in other states will be useful for comparison. Concerted efforts from research institutions, health care providers, individuals, and the government are needed to ensure effective interventions to reduce the incidence and mortality rates of cancers.

Conflict of interest: none declared.

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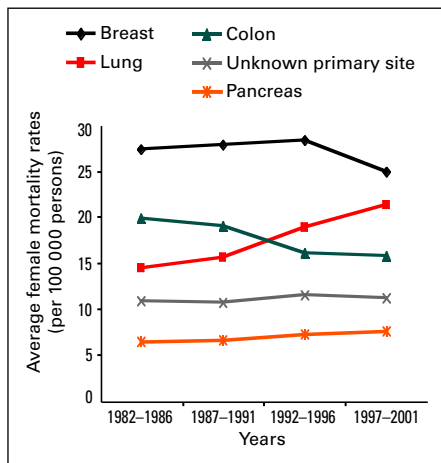


Figure 5. Average age standardised mortality rates (per 100 000 persons) for five leading cancer sites in Queensland females (standardised to the Australian population 2001)