Overview of the burden of disease and injury in Queensland, 2006

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Key findings

- Between 2003 and 2006 there was a 7% increase in total disease burden: 10% increase in disability burden and 4% increase in premature mortality burden. However, the overall burden per head of population decreased by 10%.
- Cancers and cardiovascular disease continue to be the leading broad cause groups, together causing more than one third of the total burden of disease and injury in Queensland in 2006. Since 2003, the relative burden of cancers has increased compared to a declining cardiovascular disease burden.
- The greatest change in overall burden between 2003 and 2006 was for diabetes with a 17.2% increase, followed by nervous system and sense organ disorders with a 14.1% increase.
- Chronic (non-communicable) conditions account for 88% of total burden: 93% of disability burden and 83% of premature mortality burden.
- Mental disorders were the leading cause of disability (24.6%) and the third leading cause of overall burden.
- Cancers were the leading cause of premature mortality (33.6%) followed by cardiovascular disease (27.0%).
- Lifestyle related diseases are among the leading causes of burden – with tobacco, high body mass, high blood pressure, physical inactivity and high cholesterol the leading risk factors.
- The rate of burden increases into old age with peaks also in infancy and young adulthood.
- Aboriginal and Torres Strait Islander people living in Queensland experience burden at a rate 2.3 times that of other Queenslanders.
- The rate of burden in remote areas was 1.5 times higher than major cities.
- The rate of burden in areas of socioeconomic disadvantage was 1.4 times higher than in advantaged areas.

Introduction

This is the first Circular in the second Series that reports on the burden of disease and injury in Queensland. The second Series reports on data from 2006 and builds on the analysis of 2003 data reported in the first Series. This first Circular provides a general overview of the main results. It includes for the first time a section on prevalent disability. The remaining Circulars explore in more detail the leading broad cause groups, burden by age, risk factors, population differentials and burden by Health Services Districts. These Circulars expand upon the findings presented in the 2008 Chief Health Officer’s Report. Comparisons between Queensland and Australia were undertaken in Series 1 but as there has been no more recent analysis of the Australian data, no further comparisons are available.

Burden of disease and injury is an important summary measure of population health and is the gap between the current health situation and an ideal where everyone lives into old age, free of disease and disability. This gap can be measured by disability-adjusted life years (DALYs). The DALY gives a richer picture than that provided by traditional mortality and hospital statistics by combining both fatal (premature mortality) and non-fatal (disability) outcomes into a single measure.

One DALY is one year of ‘healthy’ life lost by either premature death or disability. DALYS have a mortality component, years of life lost due to premature mortality (YLL), and a disability component, years of life lost due to disability (YLD) associated with disease or injury.

Queensland burden of disease and injury circular series 2

Burden of disease and injury in Queensland

In 2006 there were an estimated 522,794 DALYs in Queensland - 7.0 per cent more than in 2003 (Figure 1). The 2006 age standardised DALY rate was 118.3 per 1,000 persons, about 8 per cent lower than in 2003 (128.5 per 1,000 persons). No national comparison in 2006 is possible as there has been no comparable national reporting.

Chronic or non-communicable diseases caused the majority of burden (88.2 per cent) experienced by Queenslanders in 2006, a further 7.1 per cent was due to injuries and the remaining 4.6 per cent was due to communicable, maternal, neonatal and nutritional conditions. The proportion of burden due to non-communicable or chronic diseases in 2006 was 8 per cent higher than in 2003.

The premature mortality component accounted for 45 per cent of total burden and was slightly lower in 2006 than in 2003 (Figure 2). While males make up half of the Queensland population (50 per cent), they experience over half the total burden (53 per cent) and as in 2003 had a 13 per cent higher rate of burden than females. The proportion of total burden due to disability was higher in 2006 than in 2003 (55 per cent and 53 per cent respectively) and an increase was evident for both males and females.

Leading broad cause groups

Cancer was the leading cause of burden in 2006, causing 18.9 per cent of the total burden. Cardiovascular disease was responsible for a slightly smaller proportion of the overall burden (16.3 per cent), followed by mental disorders (14 per cent). The leading three broad cause groups together accounted for half of the total burden (49 per cent) (Figure 3). Neurological disorders were the fourth leading cause and were responsible for 12.5 per cent of the total burden.

While the majority of the cancer and cardiovascular disease burden was due to premature mortality, mental disorders and musculoskeletal burden was overwhelmingly due to disability (Figure 2).
Of the leading broad cause groups, the greatest disparity between the sexes was for unintentional injury where males experienced 70 per cent of the burden (Figure 2). The burden from the other leading broad cause groups was more evenly distributed between males and females.

Leading specific conditions

Of the specific conditions, coronary heart disease was the largest contributor, accounting for 9.0 per cent of the total burden in Queensland in 2006, followed by anxiety and depression, and Type 2 diabetes, contributing 7.9 and 5.2 per cent respectively. This ranking was the same as in 2003, but the relative contribution of diabetes has increased in these three years (from 4.8 to 5.2 per cent).

The ranking of specific conditions differed for males and females (Table 1). For females anxiety and depression was the leading specific condition, while for males it was coronary heart disease. Lung cancer and adult onset hearing loss were of greater relative importance to males than females, while for females dementia and asthma were ranked higher than they were for males. The burden of disease due to specific conditions is discussed in detail in Circular 2 of this Series.

<table>
<thead>
<tr>
<th>Male</th>
<th>% total</th>
<th>Female</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Anxiety and depression</td>
<td>11.1</td>
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<tr>
<td>Type 2 diabetes</td>
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<td>Stroke</td>
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<tr>
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<tr>
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<tr>
<td>Dementia</td>
<td>2.6</td>
<td>Adult-onset hearing loss</td>
<td>2.0</td>
</tr>
</tbody>
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Age

The rate of burden varied by age, as did the distribution of conditions that contributed to the burden at each age. The rate of burden generally increased into older age with a major peak in infancy and slight elevation in young adulthood (Figure 4). Similar to 2003, mental disorders and injuries were the broad cause groups responsible for the greatest proportion of burden in younger ages. In the older age groups, the greatest proportion of burden was caused by cancers and cardiovascular disease.

Circular 3 discusses further the burden of disease and injury by five broad age groups (0-14, 15-24, 25-44, 45-64 and 65 years and older).

Differentials

The burden of disease and injury is not equally distributed between sub-populations in Queensland. In 2006, Aboriginal and Torres Strait Islander people (Indigenous people) living in Queensland experienced a rate of burden 2.3 times that of the non-Indigenous population and 2.2 times higher than the total Queensland population. Burden also varied by socioeconomic status, where those in the areas of greatest socioeconomic disadvantage had a burden rate 42 per cent higher than those in the most advantaged areas. Similarly, burden varied by remoteness, where those living in remote areas had a burden rate 50 per cent higher than those in major cities.

Circular 4 explores these differentials in more detail and Circular 5 presents differentials in burden by Queensland Health Service Districts.

Risk factors

Thirteen selected measurable risk factors together accounted for one third of the total burden in Queensland in 2006 (Figure 5). Tobacco smoking and high body mass were the leading risk factors. Considering broad cause groups, about two thirds of cardiovascular disease could be attributed to the joint effect of these risk factors, as was over 60 per cent of diabetes, about one third of cancer and of injury, and one quarter of mental health burden. Circular 6 discusses risk factors in detail.
Prevalent disability burden

Prevalent non-fatal burden (PYLD) is the number of healthy years lost due to disability in the population based on prevalent cases. This is in contrast to YLD, which is calculated based on incident cases. Both approaches measure the long-term impact of chronic disease, but in different ways (Figure 6). The latter attributes the stream of health loss back to the age at incidence, whereas the former attributes it to the age it is experienced. An important point to note from a technical perspective is that in the DALY (including YLD), time is discounted, meaning the long-term impact of chronic disease is diminished relative to a prevalence approach. Prevalent burden is useful from a service utilisation or expenditure perspective as it measures the amount of disability (but not the fatal burden) being experienced in a population at a point in time.

The magnitude of the prevalent chronic burden is evident across all age groups (Figure 7) and comprises 90 per cent of the total prevalent burden. The injury prevalent burden is much smaller (5 per cent), begins in younger age groups and continues into the middle years. The communicable prevalent disease burden is similarly small (6 per cent), begins in infancy and continues into older age groups.

When a selection of common conditions are contrasted (Figure 8) the impact of long standing or ongoing disability is well demonstrated. Low birth weight occurs in infancy, but its impact continues into older age. In contrast, breast cancer begins in adulthood and has a relatively low prevalent burden. Anxiety and depression is the leading cause of incident disability burden, but the magnitude of the burden is particularly evident in prevalent burden. Asthma is a leading childhood condition with ongoing impact. Osteoarthritis has its greatest impact in middle to older years. Type 2 diabetes and cardiovascular diseases begin in early adult years and continue as both incident and prevalent burden into old age.