Major causes of disease burden: An analysis by age

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Introduction
The pattern and magnitude of disease at each life stage has important implications on policy and planning of public health interventions to achieve health gains across the course of life. This fact sheet describes the “burden of disease” across the life course for 2000 using the DALY health index.

The overall disease burden consists of a disability component expressed as years lost to disability (YLD) and a mortality component expressed as years of life lost (YLL). The distribution of the overall disease burden increases with age, but with minor peaks in early childhood and early adulthood. For 2000, in early adulthood when the burden was almost entirely accounted for by disability, mental disorders were the dominant disease group, particularly among females. In older age groups, cardiovascular diseases, cancer and neurological disorders contributed most to the burden among both genders and consequently the mortality burden accounted for the greatest proportion of the overall burden. The burden among males remained higher than among females across all age groups (Figure 1).

Figure 1: Age-specific rates of disability (YLD) and mortality (YLL) burden by gender

Figure 2: Leading specific causes of burden among children (0–14 years)

Children (0–14 years)
The disease burden among children (0–14 years) accounted for 9% of the total WA population burden. The burden among boys (11,074 DALYs) was greater than that among girls (8,373). Asthma dominated the disease burden profile and accounted for a fifth of the total burden among children. Mental disorders were the second leading cause of burden among both boys and girls, with attention-deficit disorder and depression ranking in the top ten of specific causes for both genders. Neonatal conditions also ranked highly mainly due to deaths of newborns with congenital disorders and by complications of pregnancy, labour or delivery.

The proportion of the burden among children for asthma was similar for boys and girls. Attention-deficit disorder, autism and Asperger’s syndrome and falls accounted for a higher proportion of the male burden than the female burden. Depression accounted for a greater proportion of the female burden than of male burden (Figure 2).
Youths (15–24 years)

The disease burden among youths (15–24 years) accounted for 9% of the total WA population burden, with a similar size burden in males (10,594 DALYs) and females (10,212). The burden was dominated by injury and mental health disorders in this age group. Among males, the leading cause of burden were substance abuse disorders and unintentional injury whilst among females depression was the leading cause of burden. Mental disorders made up eight of the top ten specific causes among males and seven among females.

Road traffic accidents, alcohol dependence and abuse and suicide among males contributed to a higher proportion of the burden than among females. Depression, affective disorders, eating disorders and asthma contributed to a higher proportion of the burden among females than among males (Figure 3).

Young adults (25–44 years)

The disease burden among adults aged 25 to 44 years accounted for 18% of the total WA population burden. The size of the burden among males (22,562 DALYs) was greater than that among females (18,542). Leading causes of burden among this age group were injuries and mental disorders, although burden due to chronic disease such as cancer, cardiovascular disease and chronic respiratory disease was prominent.

Depression was the leading specific cause of burden in adults aged 25 to 44 years, with a greater burden in females than males. Similarly, greater disease burden occurred in females for breast cancer, anxiety disorders, asthma and other unintentional injuries. Suicide and self-inflicted injuries was the leading cause of disease burden in males, being nearly four times greater than that of females. Road traffic accidents, alcohol and other drug dependence and abuse also accounted for a higher proportion of the male burden than the female burden (Figure 4).
Adults (45–64 years)
The disease burden among adults aged 45 to 64 years accounted for 25% of the total burden of disease for the WA population. The size of the burden among males (30,516 DALYs) was greater than that among females (24,560). Cardiovascular diseases and cancer contributed 44% of the burden among males and 43% among females.

While diabetes ranks highly among leading specific causes of burden for both genders, there are differences in the leading specific causes between the genders. Males have a greater burden contributed by cardiovascular diseases than females as a result of the high male ischaemic heart disease burden. Also, the proportion of the male burden accounted for by hearing loss, COPD and suicide was much greater than that contributed to the female burden. Osteoarthritis was the leading cause among females. Apart from breast cancer, the proportion of the female burden contributed by osteoarthritis, depression, dementia and stroke was greater than that contributed to the male burden (Figure 5).

Elderly (65 years and older)
The disease burden among persons aged 65 years and older accounted for 39% of the total WA population burden of disease. The size of the burden among males (42,086 DALYs) was similar to that among females (43,752). Cardiovascular disease and cancers account for 61% of male and 52% of female burden. Neurological disorders was the next most common group among both genders, with a higher proportion of burden among females than males.

Ischaemic heart disease, stroke, lung cancer and dementia were the four leading specific causes for both genders. The gender specific cancers of prostate and breast cancer accounted for a substantial proportion of the burden for each gender. Ischaemic heart disease, lung cancer, COPD and hearing loss contributed more of the male burden than the female burden. The burden from stroke, dementia and vision loss was higher for females than males (Figure 6).
Key findings

- The leading causes of disease burden varied with age and between genders of the same age.
- Among children the major conditions contributing to disease burden were asthma, neonatal conditions, congenital anomalies, injury and mental disorders.
- Mental disorders, including substance abuse and injury dominated the leading causes for ages 15 to 44 years.
- As age increases so does the proportion of disease burden contributed by cancer, cardiovascular conditions, diabetes, musculoskeletal disorders and neurological disorders such as dementia, hearing and vision loss.

Implications

- High rates of mental disorders for people aged 0-44 years indicates the importance of promotion/prevention, early detection and intervention for mental health conditions, especially for children and young people.
- More specifically, for children aged 0–14 years the high level of disease burden attributed to asthma strongly suggests that strategies and programs that directly or indirectly address this condition and its underlying risk factors should receive priority. Policies that focus on neonatal and early childhood detection (possibly through increased focus on policies that improve maternal health outcomes) and treatment of chromosomal, sensory and mental disorders could further reduce the disease burden in this age group.
- For 15–24 year-olds, the major gains in reducing disease burden lies in addressing self-esteem and mental health-related issues. While chronic diseases do not contribute greatly to the disease burden of this age group, they are an important group to target with prevention strategies.
- The 25–44 year age group encompasses an important transition in disease burden whereby the impact of chronic disease burden becomes evident whilst mental health conditions remain. This phase of the life course may represent one of the more receptive to public health intervention.
- For the 45–64 year-old age group, the largest proportion of disease burden is attributed to cancer that highlights the importance of appropriate cancer services (early detection, treatment and support) foremost to this group. Other policies targeting this age group need to focus on the management of diabetes, coronary heart disease and depression with the view of reducing disease progression and minimisation of complications.
- Increased prevalence of chronic and often coexisting conditions in the oldest age group indicates the need for strategies that promote integration of geriatric, support and treatment services.

References