


Estimates of Life Expectancy (at Birth)



Life expectancy (LE) estimates are derived from the mortality experience of populations and are prepared for all Victorian local government areas (LGAs) by the Department of Health (DoH) Prevention and Population Health Branch.¹ LE estimates refer to an expected average life span of persons at birth, providing prevailing mortality rates continue indefinitely into the future. However LE estimates are likely to underestimate the length of time people born today may be expected to live as mortality rates are continuing to decline. Therefore, the impact of mortality experienced by populations in the future is likely to be less than it is currently, thereby increasing the actual life expectancies of populations relative to what we can predict about them today.

One other limitation to LE estimates is that they give no indication as to the of number years that might be lived in less than full health or the number of years that might be lost to early death because of disease and/or disability. This is where burden of disease measures are more useful than estimates of LE in describing the health status of a given population (see the sections that follow).

The table below includes the most current (2006) estimates of LE (at birth) for females and males in the Eastern Metropolitan Region (EMR) LGAs, based on five years (2002–2006) of aggregated mortality and population data. According to the figures:

- The estimated LE of females in the EMR is 84.9 years which is higher than that for Victorian females (84.3 years).
- At birth, females in the EMR can be expected to live longer than males, to 84.9 years and 81.7 years respectively.
- The higher LE of females compared with males for the region is reflected across the LGAs. The greatest difference is in Maroondah and Yarra Ranges, where females at birth can be expected to outlive their male counterparts by 4.7 years.
- Across the LGAs, the LE of females ranges from 82.7 years in Knox to 85.3 years in Boroondara and Manningham. The LE of females in Knox is significantly lower than that for Victorian females.



¹ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Life Expectancy by Local Government Area (Males and Females)*, <http://www.health.vic.gov.au/healthstatus/le.htm>, accessed 14/09/10.

Life Expectancies by Sex, 2006 Eastern Metropolitan Region Local Government Areas and Victoria					
	Females		Males		LE Difference Females Males (Years)
	LE (Years)	LE Relative to Victoria	LE (Years)	LE Relative to Victoria	
Boroondara	85.3	H	81.5	H	3.8
Knox	82.7	L	79.2	-	3.5
Manningham	85.3	H	81.4	H	3.9
Maroondah	84.4	-	79.7	-	4.7
Monash	85.2	H	81.2	H	4.0
Whitehorse	85.1	H	81.1	H	4.0
Yarra Ranges	84.4	-	79.7	-	4.7
EMR	84.9	H	81.7	H	3.1
Victoria	84.3	N/A	80.0	N/A	4.3

Source: Department of Health, *Life Expectancy at Birth Victoria 2002–2006 Database*²

Introduction to Burden of Disease Methodology

Measures of Health Status: DALY, YLL and YLD

One way to explore the health status of populations is through burden of disease studies, such as those undertaken by the Prevention and Population Health Branch, DoH, for Victoria's LGAs.³

Burden of disease methodology is an internationally accepted approach used to estimate the impact of health problems, or amount of ill health, in any given population. This methodology introduces a single measure that combines disability (defined broadly to encompass disease, disability and injury) and premature death, and expresses that measure as a quantifiable amount known as a population's 'disability adjusted life years' (DALY). The methodology also allows for an adjustment to LE estimates based on the number of years lived in less than full health. The adjustment to LE is calculated by subtracting the number of years lived in less

² 'Low' indicates a life expectancy at birth that is significantly lower than that for Victoria. 'High' indicates a life expectancy at birth that is significantly higher than that for Victoria. '-' indicates no significant differences between the LE estimate for a given LGA and Victoria.

³ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – Victoria*, http://www.health.vic.gov.au/healthstatus/bod/bod_vic.htm, accessed 14/09/10.

than full health, and the adjusted figure is known as a population's 'disability adjusted life expectancy' (DALE).⁴

DALY figures are derived from two key components: the number of 'years of life lost' due to early death (YLL) and the number of 'years lived with disability' (YLD). In considering YLL, YLD and DALY, it is useful to point out their specific applications to our understandings of health and illness at the population level.

- YLL are measures of the *mortality burden* of populations and are useful in examining loss of life due to early preventable death.
- YLD are measures of the *disability burden* of populations and are useful in examining healthy life lost due to disability – with disability broadly defined to encompass the impact on health of disease, injury and disability.
- DALY (YLL + YLD) are measures of the *disease burden* of populations and are useful in examining the overall health status – or more accurately the amount of ill health – experienced at the population level.

Because disease and death are much more common with increasing age, populations with older age structures are more likely to have a higher number of DALY compared with others (with all things remaining equal, for example size). It is therefore important when comparing LGAs, and determining whether one population is 'healthier' or 'sicker' than another, that the impact of differences in age structure is eliminated. The process of age standardising DALY rates enables areas to be compared in the knowledge that any differences are not caused by the differing ages of the population but are instead the result of the spread of the disease burden.

⁴ DALE figures are generally 7.0% to 9.0% lower than LE estimates. Comparing DALE and LE figures presents only minor changes to the relative ranking of the mortality experiences of the areas concerned. The most recent DALE figures are for 1996, and because of their lack of currency are not included in this report. Figures can be accessed at <https://hns.dhs.vic.gov.au/3netapps/vhisspublicsite/ViewContent.aspx?TopicID=1&SubTopicID=3>.

Methodological Minefields

Notwithstanding the usefulness of DALY, YLL and YLD as measures of health/illness for Victorian LGAs, it must be noted that burden of disease methodology is framed by biomedical understandings that bring with them certain limitations. Not all factors that contribute to disability or early death are included in burden of disease calculations – especially factors framed by *social* rather than biomedical understandings. Such factors include prevailing gender norms that tend to bestow privileges to men and disempower women – economically, socially and ideologically. In this sense, burden of disease methodology can be considered ‘gender blind’. In the context of women’s health, the main criticisms of burden of disease methodology are expanded below.⁵

Under-measurement of Health Status

YLD figures for populations are calculated as the number of years lived with disability ‘adjusted for severity’. The adjustment is determined by applying a weighting system originally formulated for the 1993 *Global Burden of Disease Study* (GBD study) carried out for the World Bank. As noted by Women’s Health Victoria, the weights were chosen by a group of 12 independent experts (incidentally all men) from around the world.⁶

This weighting system – along with those from a similar study undertaken in the Netherlands – was first adopted in Victoria for the first burden of disease study at the LGA level published in 2000 (estimates for 1996). The follow up Victorian study published in 2005 (estimates for 2001) also applied the weights from the Dutch and GBD studies in the absence of local weights for health states relevant to Australia.⁷

The problem with the weighting system is that only a handful of people (men) were consulted to formulate them, and it is their values and assumptions that are now shaping the way health and illness is measured across populations.⁸ Whilst, for example, a reduction in the

⁵ The criticisms covered here are an updated version of a previous discussion contained in Women’s Health In the North (2005) *Women in Melbourne’s North: A Data Book for Program and Service Planning in Health*, Thornbury, available on request at <http://www.whin.org.au>.

⁶ K Johnstone, S Brown and M Beaumont, ‘Victorian Burden of Disease: Women’s Health and Gender’, in Women’s Health Victoria (2002) *Gender in Health Think Tank: Proceedings of the Women’s Health Victoria Forum*, Melbourne.

⁷ Reports can be accessed at Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – Victoria*, http://www.health.vic.gov.au/healthstatus/bod/bod_vic.htm.

⁸ K Hanson (2002) ‘Measuring Up: Gender, Burden of Disease, and Priority Setting’ in G Sen, A George and P Östlin (eds) *Engendering International Health: The Challenge of Equity*, MIT Press: Cambridge, Massachusetts.

functional capacity to care for oneself is included in the adjustment for severity for YLD calculations, the system does not take into account a reduction in the functional capacity to care for *others* – a key role of many women with primary care responsibilities for families and households. Thus, the amount of YLD (and as a consequence the DALY) experienced by populations is likely to be an under-measurement of the actual burden experienced by women living with diseases or conditions that contribute to disability (as defined by burden of disease methodology).

There are also gender-specific conditions with associated morbidities that are difficult to measure. For women, these include indirect obstetric complications, gynaecological and contraceptive complications, miscarriage, unplanned pregnancies, abortion, and stillbirths. The morbidities associated with such conditions are, however, not generally included in burden of disease studies, suggesting a shortfall in the actual measurement of disability and disease burden that they contain. Indeed, the World Health Organisation has recommended that burden of disease studies be expanded to include conditions such as those listed above.⁹

Side-stepping Social Factors

Perhaps the most serious criticism made of burden of disease studies is that the methodology is framed by biomedical understandings of health and illness. This means an over-emphasis on individual (behavioural) risk factors at the expense of socio-economic determinants. Thus, whilst factors such as tobacco consumption, physical inactivity and obesity are often given significant attention in terms of their role in a population's disease burden, little insight is shed on gender norms as determinants of health and wellbeing.

From a social rather than biomedical point of view, gender norms significantly influence the health status of women. Gender norms express themselves through a range of factors that have an important bearing on women's health outcomes (usually for the poorer). These include (but are not limited to) the following:

- The gendered division of labour (or public and private distinction) that constitutes women's 'natural' role as primary carers of households/families and creates unique challenges for engagement with aspects of public life (e.g. economic participation, civic participation, decision making).
- The pressures of the 'double day' (that is, both paid and unpaid work). There is an implicit assumption that women who enter the paid workforce will nonetheless

⁹ K Hanson (2002) 'Measuring Up: Gender, Burden of Disease, and Priority Setting' in G Sen, A George and P Östlin (eds) *Engendering International Health: The Challenge of Equity*, MIT Press: Cambridge, Massachusetts.

continue to be primarily responsible for unpaid work in the home, resulting in two 'shifts' through the working day/week.

- Women's generally lower socio-economic status relative to men. This is the result of women earning less than men over a lifetime and their higher risk of under-employment, unemployment, financial insecurity, and poverty.
- Women's experiences of violence, harassment and abuse often at the hands of men who are known to them. The predominantly 'privatised' nature of these experiences contributes further to poorer health and wellbeing outcomes.
- Women's experiences of discrimination and exclusion in societies that are generally male-dominated, hetero-normative and (white) ethnocentric. The association between social inclusion and good health and wellbeing is well evidenced; women experience unique forms of discrimination and exclusion based on their gender and the intersections of gender with other axes of difference.

It is important to bear in mind that attention is rarely given to such social factors in burden of disease studies. Health planners at the local level would do well to think about such methodological limitations before making resource decisions based on more 'popular' (but not necessarily more important) risk factors.

Intimate Partner Violence as Attributable Burden: A Ground-breaking Study

To get beyond the gender-blindness, burden of disease studies require a rethinking of the methodology 'from the ground up' so that the realities of women's lives are taken into account.

One Victorian approach that makes a promising start in redressing the gender-blindness of burden of disease studies is: the *Health Costs of Violence: Measuring the Burden of Disease Caused by Intimate Partner Violence* study by the Victorian Health Promotion Foundation (VicHealth).¹⁰ Whilst this study does not alter the ways in which measures such as DALY and YLD are derived in the Victorian burden of disease methodology, it at least attempts to think about intimate partner violence as an attributable burden, thereby setting this factor alongside the list of 'usual' (individual/behavioural) suspects (tobacco consumption, physical inactivity, obesity, etc).

Intimate partner violence is defined as violence that occurs across a continuum, from psychological, economic and emotional abuse to physical and sexual violence. The VicHealth study focuses only on physical and sexual violence perpetrated against women by

¹⁰ VicHealth (2004) *The Health Costs of Violence: Measuring the Burden of Disease Caused by Intimate Partner Violence*, VicHealth: Melbourne, <http://www.vichealth.vic.gov.au/Programs-and-Projects/Freedom-from-violence/Intimate-Partner-Violence.aspx>.

their intimate partners (current or former). Prevalence estimates – notoriously difficult to pinpoint because of under-reporting by women – have been derived from two sources: the *Women's Safety Survey* conducted by the Australian Bureau of Statistics (ABS) in 1996, and the current 20 year *Women's Health Australia Longitudinal Study* funded by the Australian Government Department of Health and Ageing since 1995. A review was also prepared on the known health impacts (diseases and conditions) resulting from physical and sexual violence against women.

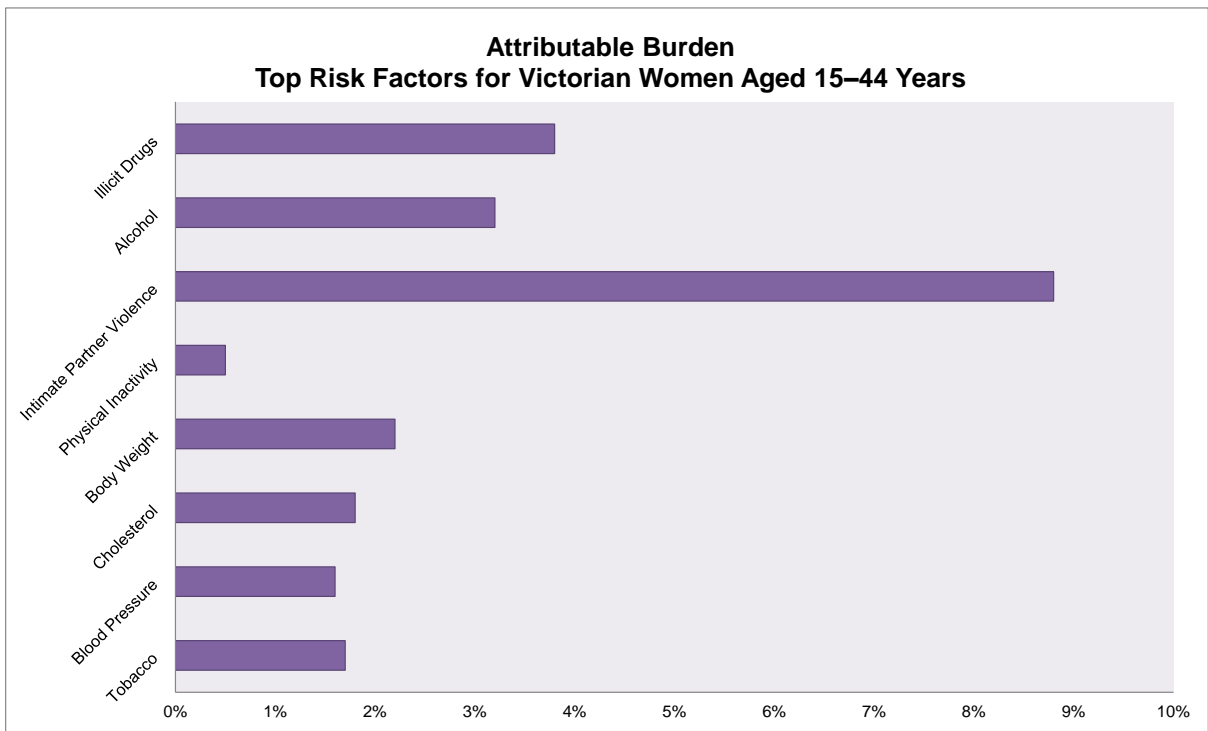
To determine how much of the total disease burden can be attributed to physical and sexual violence by intimate partners, the VicHealth study estimated the amount of 'less disease' there would have been in the population if no woman had ever experienced such forms of violence. This proportion was then multiplied by the estimates for each of the main known health impacts identified through the review (particularly mental health impacts and substance abuse). The results were finally added up to calculate the proportion of the total burden attributable to women's exposure to intimate partner violence.

The key finding from the VicHealth study is that 9.0% of the total disease burden for women aged 15–44 years can be attributed to intimate partner violence. Moreover, as a risk factor, intimate partner violence far outweighs every other factor identified in Victorian burden of disease studies.

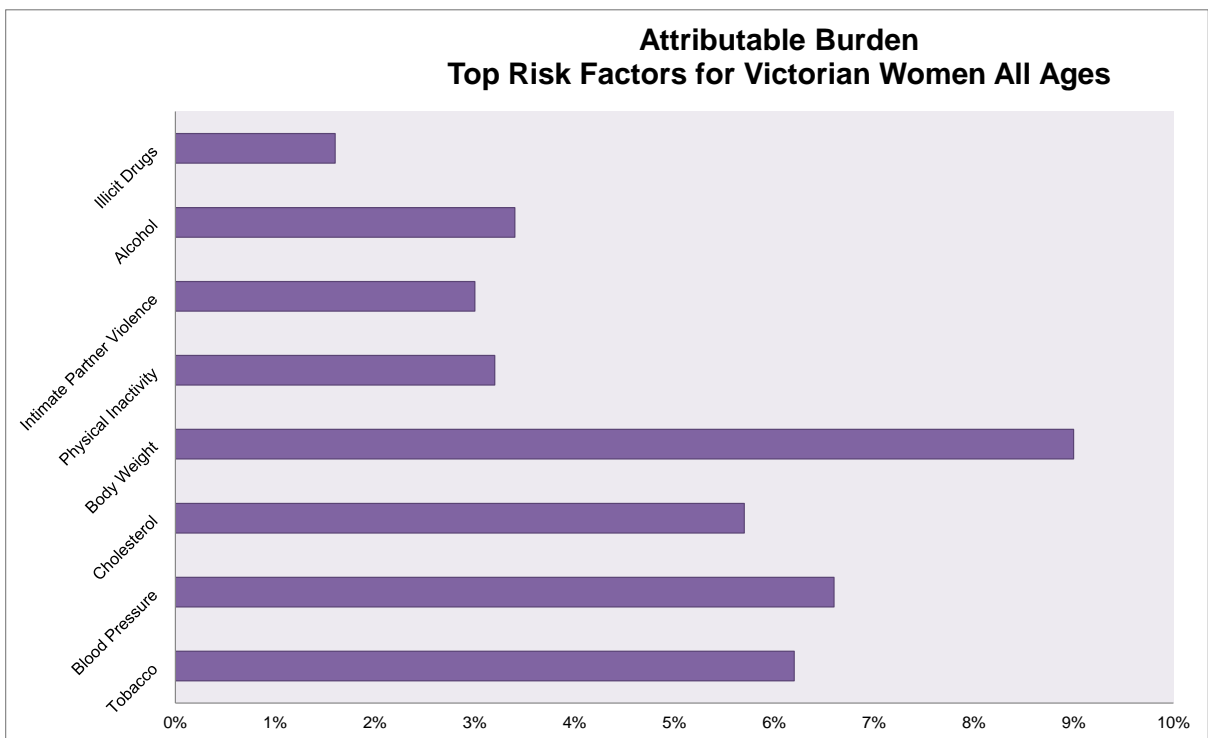
The amount of attribution that can be given to intimate partner violence for the disease burden of women of all ages is less than other more traditional factors because of the increased role that such factors play in age-related morbidities; however, intimate partner violence is still within the top eight most significant risk factors for Victorian women of all ages.

The findings suggest that any planning or priority setting based on burden of disease studies would be well placed to acknowledge the contribution of intimate partner violence to women's disease burden, particularly for women aged 15–44 years. Further, in terms of reducing the total disease burden of women, strategies that seek to eliminate intimate partner violence are equally relevant (if not more so) than those tackling tobacco consumption, physical inactivity and obesity – 'traditional' health issues that currently receive their fair share of resources.

So significant is the finding from the VicHealth study that it has since been incorporated into the most recent Victorian burden of disease study, published in 2005. The results of this study for females in the EMR LGAs are presented below (see the section, 'Attributable Burden'). The discussion begins with YLL and YLD figures, and then explores DALY figures/rates and attributable burden.



Continued ...



Source: VicHealth *The Health Costs of Violence*, 2004



Mortality Burden (YLL)

YLL measure the mortality burden of populations due to premature or early death. For example, a person dying at age 50 years from a particular condition is said to lose 30 years of life because of that condition, assuming a life expectancy of 80 years. The older the person is, the fewer the remaining years of life expectancy that person has and the fewer YLL that person would contribute to the total mortality burden. Conversely, the death of a younger person contributes more YLL to the total mortality burden. Deaths at all ages contribute years to the total mortality burden since for every age there is a remaining life expectancy.

The following points refer to figures extracted from *Burden of Disease – LGAs and Regions 2001 Database* and presented in detailed tables over the next pages.¹¹

Broad Causes of YLL

Females in the EMR experience 28,842.3 YLL because of premature or early death, and this figure is less than that of males (31,600.4 YLL). For both females and males, malignant cancers and cardiovascular disease account for nearly two-thirds of all YLL at 66.1% and 62.3% respectively. For females, the contribution of malignant cancers to YLL is greater than that of males at 36.5% and 33.7% respectively. Injuries (intentional and unintentional) also contribute differently to the total YLL at 5.8% of YLL for females but 11.8% of YLL for males.

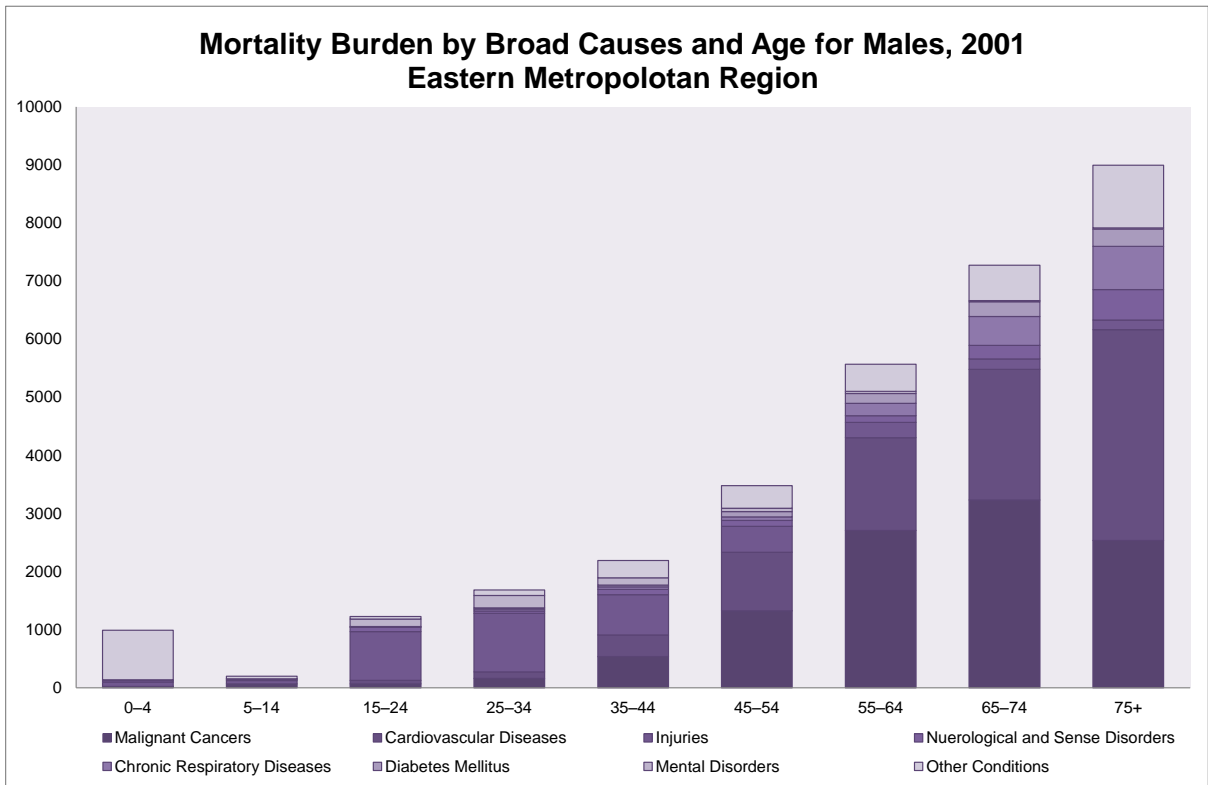
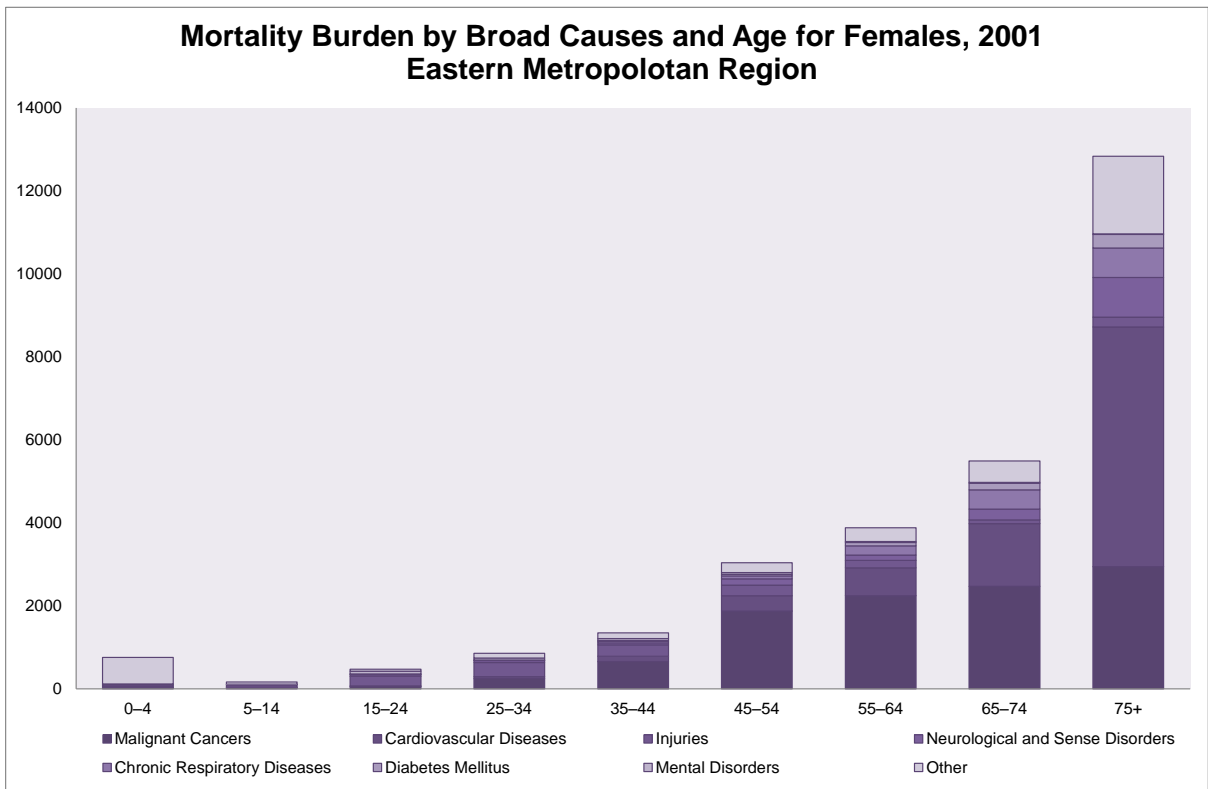
Whilst females have fewer YLL than males, those aged 75 years or more experience more YLL compared with their male counterparts. This is explained by women's longer life expectancy and the greater number of women aged 75+ years, with each loss of life contributing to the YLL for this age group.

¹¹ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*, http://www.health.vic.gov.au/healthstatus/bod/bod_reg.htm, accessed 14/09/10 using the 'Search BoD Estimates' function.

Mortality Burden (YLL) by Broad Causes for Females and Males, 2001 Eastern Metropolitan Region				
	Females		Males	
	YLL	% Total	YLL	% Total
All Causes	28842.3	100.0%	31600.4	100.0%
Malignant Cancers	10533.4	36.5%	10645.6	33.7%
Cardiovascular Diseases	8542.6	29.6%	9035.1	28.6%
Injuries (Intentional and Unintentional)	1698.2	5.8%	3722.5	11.8%
Neurological and Sense Disorders	1673.2	5.8%	1226.4	3.9%
Chronic Respiratory Diseases	1549.5	5.4%	1622.0	5.1%
Diabetes Mellitus	627.6	2.2%	862.4	2.7%
Mental Disorders	266.8	0.9%	613.3	1.9%
Other Conditions	3951.2	13.8%	3873.2	12.4%

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*¹²

¹² Other conditions include digestive disorders, genito-urinary disorders, respiratory infections, infectious diseases, endocrine and metabolic disorders, neonatal conditions, congenital abnormalities, musculo-skeletal diseases, benign neoplasms, skin diseases, nutritional disorders, oral health conditions, maternal health conditions and miscellaneous conditions (e.g. chronic fatigue).



Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

Mortality Burden (YLL) by Broad Causes and Age for Females, 2001 Eastern Metropolitan Region										
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total
All Causes	756.4	162.9	473.4	855.6	1348.1	3036.5	3882.7	5492.3	12834.3	28842.3
Malignant Cancers	17.3	29.1	56.0	243.3	653.8	1875.3	2242.8	2470.7	2945.0	10533.4
CV Diseases	17.9	11.5	13.2	49.4	130.0	364.7	672.4	1508.8	5774.6	8542.6
Injuries	36.0	50.4	229.5	341.7	277.0	259.6	177.5	89.6	236.8	1698.2
NS Disorders	30.6	15.9	40.7	45.5	44.2	147.5	129.6	261.6	957.6	1673.2
CR Diseases	15.5	4.8	11.9	8.7	40.3	74.7	222.3	462.4	708.8	1549.5
Diabetes Mellitus	0.0	0.0	5.1	4.6	15.5	34.9	81.9	160.1	325.5	627.6
Mental Disorders	0.0	0.0	65.9	47.7	50.8	44.7	20.8	20.4	16.5	266.8
Other Conditions	639.2	51.3	50.9	114.7	136.5	235	335.4	518.6	1869.5	3951.1

Mortality Burden (YLL) by Broad Causes and Age for Males, 2001 Eastern Metropolitan Region										
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total
All Causes	989.9	198.0	1227.6	1682.9	2188.9	3477.9	5567.7	7273.0	8994.6	31600.4
Malignant Cancers	16.8	65.8	66.6	161.2	536.8	1323.2	2707.0	3231.8	2536.6	10645.6
CV Diseases	5.0	0.0	61.3	112.6	373.1	1008.9	1597.5	2249.6	3627.0	9035.1
Injuries	72.3	58.1	839.1	1007.4	692.4	446.4	264.3	178.0	164.4	3722.5
NS Disorders	27.5	21.9	72.0	38.8	91.2	100.1	114.5	234.2	526.0	1226.4
CR Diseases	15.0	4.2	9.1	36.4	42.3	62.9	212.3	496.5	743.2	1622.0
Diabetes Mellitus	0.0	0.0	5.7	19.7	30.3	90.8	168.7	252.5	294.7	862.4
Mental Disorders	0.0	5.7	128.5	211.3	125.0	56.7	38.5	22.2	25.4	613.3
Other Conditions	853.0	42.1	45.1	95.5	297.7	389.0	464.9	608.4	1077.2	3873.2

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

Specific Contributing Diseases or Conditions

Ischaemic heart disease reflects the most significant specific disease or condition contributing to the total YLL of females across all seven LGAs. Its contribution ranges from 13.9% of YLL in Manningham to 16.8% of YLL in Boroondara (see also Whitehorse with a 16.4% contribution).

The next three specific diseases or conditions contributing to the YLL of females across the LGAs are stroke, breast cancer and lung cancer, although not always in this order. In Knox, Manningham, and Yarra Ranges, for instance, breast cancer is ranked second as a contributing disease or condition.

Detailed tables for each LGA showing the top ten specific diseases and conditions contributing to the YLL of females follow below.

Mortality Burden (YLL) by Top Ten Specific Diseases and Conditions, 2001 Females in Boroondara		
	YLL	%
All Causes	5661.2	100.0%
1 Ischaemic Heart Disease	949.0	16.8%
2 Stroke	566.6	10.0%
3 Cancer Breast	389.2	6.9%
4 Cancer Lung	295.2	5.2%
5 Cancer Colon/Rectum	255.0	4.5%
6 Dementia	204.1	3.6%
7 COPD (Emphysema, Chronic Bronchitis)	199.1	3.5%
8 Cancer Ovary	120.0	2.1%
9 Suicide	119.6	2.1%
10 Cancer Pancreas	116.1	2.1%
Mortality Burden (YLL) by Top Ten Specific Diseases and Conditions, 2001 Females in Knox		
	YLL	%
All Causes	3466.1	100.0%
1 Ischaemic Heart Disease	491.0	14.2%
2 Cancer Breast	282.4	8.1%
3 Stroke	273.0	7.9%
4 Cancer Lung	185.7	5.4%
5 Cancer Colon/Rectum	154.5	4.5%
6 COPD (Emphysema, Chronic Bronchitis)	120.4	3.5%
7 Suicide	103.1	3.0%
8 Dementia	79.8	2.3%
9 Cancer Ovary	78.9	2.3%
10 Diabetes Mellitus (Non-insulin Dependent)	73.5	2.1%

Continued ...

Mortality Burden (YLL) by Top Ten Specific Diseases and Conditions, 2001 Females in Manningham		
	YLL	%
All Causes	3160.1	100.0%
1 Ischaemic Heart Disease	440.5	13.9%
2 Cancer Breast	272.6	8.6%
3 Stroke	265.4	8.4%
4 Cancer Lung	193.3	6.1%
5 Cancer Colon/Rectum	160.7	5.1%
6 COPD (Emphysema and Chronic Bronchitis)	111.9	3.5%
7 Suicide	84.3	2.7%
8 Dementia	82.4	2.6%
9 Cancer Ovary	79.8	2.5%
10 Cancer Pancreas	65.8	2.1%

Mortality Burden (YLL) by Top Ten Specific Diseases and Conditions, 2001 Females in Maroondah		
	YLL	%
All Causes	2764.1	100.0%
1 Ischaemic Heart Disease	420.9	15.2%
2 Stroke	227.8	8.2%
3 Cancer Breast	206.4	7.5%
4 Cancer Lung	152.1	5.5%
5 Cancer Colon/Rectum	122.3	4.4%
6 COPD (Emphysema and chronic bronchitis)	104.3	3.8%
7 Diabetes Mellitus (Non-insulin Dependent)	67.4	2.4%
8 Suicide	67.3	2.4%
9 Dementia	67.3	2.4%
10 Cancer Ovary	62.6	2.3%

Mortality Burden (YLL) by Top Ten Specific Diseases and Conditions, 2001 Females in Monash		
	YLL	%
All Causes	5094.1	100.0%
1 Ischaemic Heart Disease	781.8	15.3%
2 Stroke	450.1	8.8%
3 Cancer Breast	381.4	7.5%
4 Cancer Lung	306.9	6.0%
5 Cancer Colon/Rectum	250.8	4.9%
6 COPD (Emphysema and Chronic Bronchitis)	195.1	3.8%
7 Dementia	145.4	2.9%
8 Cancer Ovary	123.7	2.4%
9 Suicide	112.7	2.2%
10 Cancer Pancreas	105.4	2.1%

Continued ...

Mortality Burden (YLL) by Top Ten Specific Diseases and Conditions, 2001 Females in Whitehorse		
	YLL	%
All Causes	5228.6	100.0%
1 Ischaemic Heart Disease	858.9	16.4%
2 Stroke	492.2	9.4%
3 Cancer Breast	363.7	7.0%
4 Cancer Lung	289.5	5.5%
5 Cancer Colon/Rectum	238.8	4.6%
6 COPD (Emphysema and Chronic Bronchitis)	197.0	3.8%
7 Dementia	164.3	3.1%
8 Cancer Ovary	116.1	2.2%
9 Suicide	105.4	2.0%
10 Cancer Pancreas	105.1	2.0%

Mortality Burden (YLL) by Top Ten Specific Diseases and Conditions, 2001 Females in Yarra Ranges		
	YLL	%
All Causes	3468.1	100.0%
1 Ischaemic Heart Disease	491.1	14.2%
2 Cancer Breast	281.7	8.1%
3 Stroke	264.2	7.6%
4 Cancer Lung	193.3	5.6%
5 Cancer Colon/Rectum	158.8	4.6%
6 COPD (Emphysema and Chronic Bronchitis)	122.7	3.5%
7 Suicide	94.7	2.7%
8 Dementia	80.5	2.3%
9 Diabetes Mellitus (Non-insulin Dependent)	79.0	2.3%
10 Cancer Ovary	78.8	2.3%

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

Disability Burden (YLD)

YLD measure the morbidity experience of populations insofar as they capture the number of years lived in less than full health. One YLD represents one year of healthy life lost due to disability, disease or injury (adjusted for severity).¹³ YLD estimates allow the relative ranking of non-fatal diseases and conditions. They are an important measure because they reflect non-fatal health outcomes, and often produce a substantially different picture from that of mortality-based health assessments. For example, YLD show the impacts of mental disorders, hearing loss, arthritis and other painful or disabling but non-fatal conditions experienced at the population level.

The following points refer to figures extracted from *Burden of Disease – LGAs and Regions 2001 Database* and presented in detailed tables over the next pages.¹⁴

Broad Causes of YLD

According to the figures, females in the EMR experience 34,524.8 YLD and this figure is higher than that of males (33,258.0 YLD).

Mental disorders are the most significant cause of YLD in the EMR population, reflecting 25.8% of YLD for females and 25.0% of YLD for males. Neurological and sense disorders are also a major contributor to the morbidity experienced accounting for 20.3% of YLD for females and 17.8% of YLD for males. Whilst malignant cancers and cardiovascular diseases contribute most to the mortality experience of females and males in the EMR (as seen in the previous section) they account for far less of the disability burden.

The overall per capita disability burden increases with age because of the onset of age-related morbidities. Mental disorders are the most important cause of disability for those in the 15–24 to 45–54 years age groups; after this, the most significant cause of YLD comes from neurological and sense disorders.

¹³ Disability weights range from 0.02 (for mild vision loss) to 0.95 (for terminal cancer). For criticisms of the weighting system, see the discussion above, 'Methodological Minefields'.

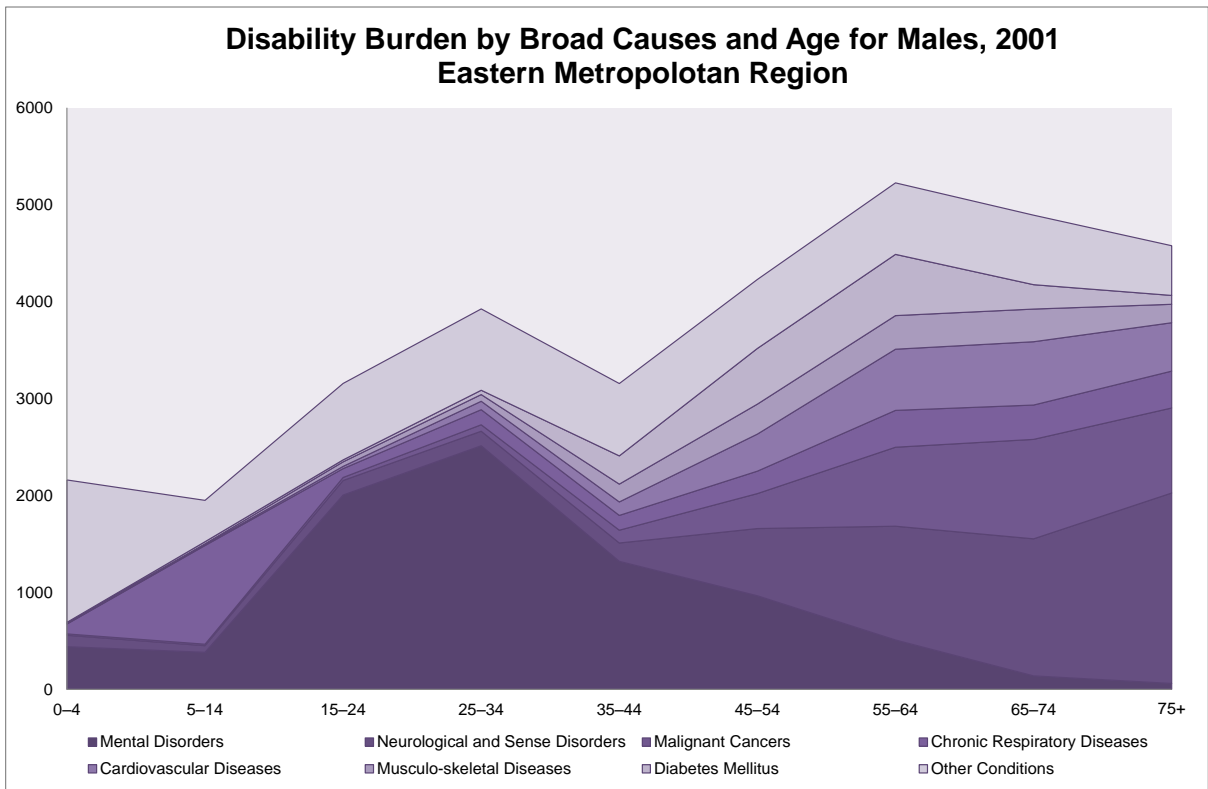
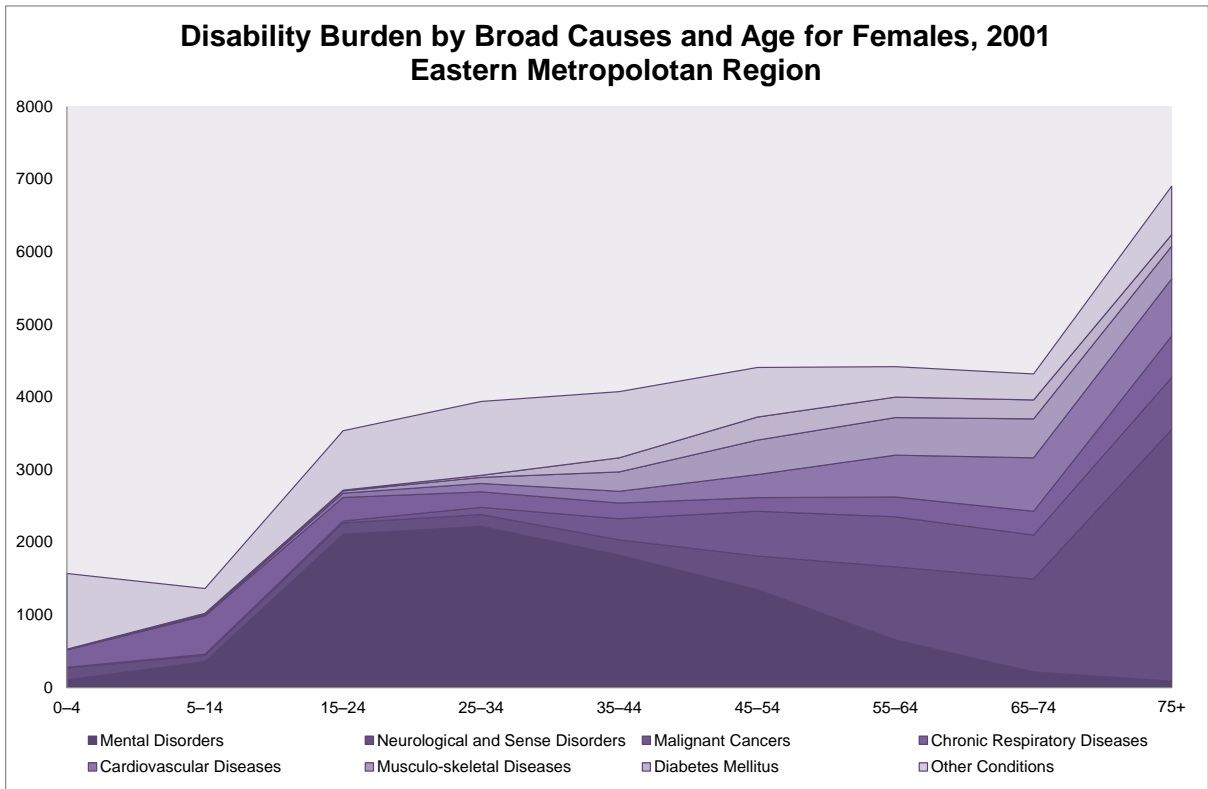
¹⁴ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*, http://www.health.vic.gov.au/healthstatus/bod/bod_reg.htm, accessed 14/09/10 using the 'Search BoD Estimates' function.

Females aged 75 years or more experience 6,902.9 YLD compared with their male counterparts at 4,575.5 YLD. This is explained by the longer life expectancy of females and a greater number of females in these older years.

Disability Burden (YLD) by Broad Causes for Females and Males, 2001 Eastern Metropolitan Region				
	Females		Males	
	YLL	% Total	YLL	% Total
All Causes	34524.8	100.0%	33258.0	100.0%
Mental Disorders	8915.1	25.8%	8328.2	25.0%
Neurological and Sense Disorders	6995.4	20.3%	5920.5	17.8%
Malignant Cancers	3063.1	8.9%	3337.8	10.0%
Chronic Respiratory Diseases	2887	8.4%	2865.2	8.6%
Cardiovascular Diseases	2766.4	8.0%	2430.7	7.3%
Musculo-skeletal Diseases	2368.7	6.9%	1493.7	4.5%
Diabetes Mellitus	1273.6	3.7%	1935.1	5.8%
Other Conditions	6255.6	18.0%	6946.7	20.8%

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*¹⁵

¹⁵ Other conditions include genito-urinary disorders, injuries, oral health conditions, congenital abnormalities, digestive disorders, endocrine and metabolic disorders, respiratory infections, infectious diseases, skin diseases, neonatal conditions, nutritional disorders, miscellaneous conditions (e.g. chronic fatigue) and maternal health conditions.



Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

Disability Burden (YLD) by Broad Causes and Age for Females, 2001 Eastern Metropolitan Region										
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total
All Causes	1569.7	1363.0	3535.3	3938.4	4074.1	4406.6	4417.6	4317.2	6902.9	34524.8
Mental Disorders	104.6	355.9	2110.4	2218.2	1823.8	1347.7	653.6	213.8	87.0	8915.1
NS Disorders	163.0	89.0	156.0	162.9	209.1	462.8	1006.4	1280.5	3465.7	6995.4
Malignant Cancers	10.2	13.1	25.3	99.1	290.5	616.7	689.6	604.3	714.4	3063.1
CR Diseases	239.6	529.9	324.9	213.7	216.1	187.3	273.8	327.8	573.9	2887.0
CV Diseases	3.2	9.6	59.6	115.4	162.3	317.4	576.0	736.1	786.8	2766.4
MS Diseases	2.4	9.8	29.7	84.2	266.7	474.2	517.4	536.3	447.9	2368.7
Diabetes Mellitus	5.1	14.6	11.5	28.2	194.3	317.7	281.6	260.6	160.0	1273.6
Other Conditions	1041.6	341.1	817.9	1016.7	911.0	682.7	419.2	357.9	667.1	6255.6

Disability Burden (YLD) by Broad Causes and Age for Males, 2001 Eastern Metropolitan Region										
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total
All Causes	2159.3	1948.8	3154.7	3923.7	3153.9	4227.7	5224.0	4890.6	4575.5	33258.1
Mental Disorders	439.5	381.4	2003.7	2512.2	1319.8	964.7	508.5	138.4	60.1	8328.2
NS Disorders	117.5	68.3	150.3	149.9	189.3	693.4	1173.7	1413.7	1964.4	5920.5
Malignant Cancers	14.3	15.3	30.9	66.6	132.1	360.7	814.8	1025.9	877.3	3337.8
CR Diseases	101.7	1018.1	91.3	155.7	152.5	231.5	380.1	354.2	380.2	2865.2
CV Diseases	6.4	9.8	23.2	86.9	139.0	382.2	631.0	653.0	499.2	2430.7
MS Diseases	3.3	7.9	46.8	68.9	183.8	309.1	346.6	337.0	190.2	1493.7
Diabetes Mellitus	7.6	21.5	20.4	44.6	291.3	574.6	631.9	251.7	91.6	1935.1
Other Conditions	1469.0	426.4	788.3	838.9	746.0	711.4	737.4	716.8	512.6	6946.7

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

Specific Contributing Diseases or Conditions

Dementia represents the most significant specific disease or condition contributing to the total YLD of females in Boroondara (698.9 YLD), Monash (534.7 YLD) and Whitehorse (580.4 YLD). Depression represents the most significant specific disease or condition contributing to the YLD of females in Knox (484.5 YLD), Manningham (317.0 YLD), Maroondah (342.5 YLD) and Yarra Ranges (519.4 YLD). The next most significant specific diseases or conditions contributing to the YLD of females across the LGAs include generalised anxiety disorder (for all LGAs except Whitehorse) and stroke (for Whitehorse).

Detailed tables for each LGA showing the top ten specific diseases and conditions contributing to the YLD of females follow below.

Disability Burden (YLD) by Top Ten Specific Diseases and Conditions, 2001 Females in Boroondara		
	YLD	%
All Causes	6171.7	100.0%
1 Dementia	698.9	11.3%
2 Depression	437.5	7.1%
3 Generalised Anxiety Disorder	287.8	4.7%
4 Osteoarthritis	278.3	4.5%
5 Cancer Breast	275.8	4.5%
6 Stroke	266.0	4.3%
7 Asthma	240.9	3.9%
8 Hearing Loss	201.3	3.3%
9 Other Chronic Respiratory Diseases	150.9	2.4%
10 Dental Caries	145.7	2.4%

Disability Burden (YLD) by Top Ten Specific Diseases and Conditions, 2001 Females in Knox		
	YLD	%
All Causes	4709.2	100.0%
1 Depression	484.5	10.3%
2 Dementia	287.3	6.1%
3 Generalised Anxiety Disorder	262.9	5.6%
4 Asthma	232.7	4.9%
5 Stroke	202.4	4.3%
6 Diabetes Mellitus (Non-insulin Dependent)	190.2	4.0%
7 Cancer Breast	183.1	3.9%
8 Hearing Loss	152.9	3.2%
9 Dental Caries	127.9	2.7%
10 Osteoarthritis	124.9	2.7%

Continued ...

Disability Burden (YLD) by Top Ten Specific Diseases and Conditions, 2001 Females in Manningham		
	YLD	%
All Causes	3962.8	100.0%
1 Depression	317.0	8.0%
2 Dementia	314.3	7.9%
3 Generalised Anxiety Disorder	205.2	5.2%
4 Cancer Breast	196.7	5.0%
5 Stroke	189.0	4.8%
6 Osteoarthritis	180.0	4.5%
7 Asthma	168.7	4.3%
8 Hearing loss	150.7	3.8%
9 Diabetes Mellitus (Non-insulin Dependent)	103.4	2.6%
10 Dental Caries	99.3	2.5%

Disability Burden (YLD) by Top Ten Specific Diseases and Conditions, 2001 Females in Maroondah		
	YLD	%
All Causes	3393.7	100.0%
1 Depression	342.5	10.1%
2 Dementia	242.0	7.1%
3 Generalised Anxiety Disorder	174.6	5.1%
4 Stroke	159.4	4.7%
5 Diabetes Mellitus (Non-insulin Dependent)	154.7	4.6%
6 Asthma	148.4	4.4%
7 Cancer Breast	131.7	3.9%
8 Hearing Loss	116.3	3.4%
9 Osteoarthritis	95.3	2.8%
10 Dental Caries	87.5	2.6%

Continued ...

Disability Burden (YLD) by Top Ten Specific Diseases and Conditions, 2001 Females in Monash		
	YLD	%
All Causes	5988.4	100.0%
1 Dementia	534.7	8.9%
2 Depression	482.1	8.1%
3 Generalised Anxiety Disorder	290.0	4.8%
4 Stroke	280.1	4.7%
5 Osteoarthritis	274.7	4.6%
6 Cancer Breast	259.5	4.3%
7 Asthma	246.7	4.1%
8 Hearing Loss	213.0	3.6%
9 Diabetes Mellitus (Non-insulin Dependent)	207.0	3.5%
10 Dental Caries	143.2	2.4%

Disability Burden (YLD) by Top Ten Specific Diseases and Conditions, 2001 Females in Whitehorse		
	YLD	%
All Causes	5663.3	100.0%
1 Dementia	580.4	10.2%
2 Depression	439.8	7.8%
3 Stroke	271.4	4.8%
4 Generalised Anxiety Disorder	260.2	4.6%
5 Cancer Breast	250.5	4.4%
6 Osteoarthritis	237.8	4.2%
7 Asthma	209.2	3.7%
8 Hearing Loss	200.9	3.5%
9 Diabetes Mellitus (Non-insulin Dependent)	186.0	3.3%
10 Other Chronic Respiratory Diseases	142.5	2.5%

Continued ...

Disability Burden (YLD) by Top Ten Specific Diseases and Conditions, 2001 Females in Yarra Ranges		
	YLD	%
All Causes	4635.8	100.0%
1 Depression	519.4	11.2%
2 Dementia	293.3	6.3%
3 Generalised Anxiety Disorder	250.5	5.4%
4 Asthma	230.0	5.0%
5 Diabetes Mellitus (Non-insulin dependent)	221.3	4.8%
6 Stroke	203.9	4.4%
7 Cancer Breast	173.1	3.7%
8 Hearing Loss	154.8	3.3%
9 Dental Caries	122.8	2.6%
10 Osteoarthritis	112.8	2.4%

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*¹⁶

Disease Burden (DALY)

DALY reflect a population's disease burden insofar as they are calculated by adding YLL and YLD. In other words, DALY combine (in quantifiable terms) the total number of years of life lost to premature/early death with the total number of years of life lived with disability in a given population. **DALY = YLL + YLD**. The greater the DALY, the less health (or more illness) there is in the population being considered.

DALY are often referred to as 'gap measures' because they identify a gap between the current health (illness) status of a population and an ideal state where everyone lives to a ripe old age free of disability, disease or injury. Note that the term, 'disability', is used broadly in DALY measures to include all departures from a complete state of health resulting from disease, injury or disability.

The following points refer to figures extracted from *Burden of Disease – LGAs and Regions 2001 Database* and presented in detailed tables over the next pages.¹⁷

¹⁶ Other chronic respiratory diseases exclude COPD (emphysema and chronic bronchitis) and asthma.

¹⁷ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*, http://www.health.vic.gov.au/healthstatus/bod/bod_reg.htm, accessed 14/09/10 using the 'Search BoD Estimates' function.

Broad Causes of DALY

According to the figures, females in the EMR experience 63,367.1 DALY and this figure is lower than that of males (64,858.5 DALY). This difference is explained by the lesser mortality burden (YLL) experienced by females compared with males (see above).

Malignant cancers, cardiovascular diseases and mental disorders contribute most to the total DALY for females and males in the region. They are responsible for 53.8% of DALY for females and 53.1% of DALY for males. Both malignant cancers and cardiovascular diseases represent similar proportions of the total DALY for females and males. But mental disorders reflect a higher proportion of the total DALY for females than males, at 14.5% and 13.8% respectively. One other gender difference lies with injuries (intentional and unintentional): for males, 7.8% of the disease burden is attributable to injuries, which is more than twice that of females (3.8%).

Per capita, the disease burden increases exponentially with age for both females and males. Mental disorders are the most important single group of causes of DALY for the 15–24 and 35–44 year age groups, after which their contribution decreases. The contribution from malignant cancers and cardiovascular diseases becomes more important from the age of 45 onwards and increases thereafter to reflect over half of the disease burden in the older age groups (65 years or more).

In terms of trends in broad disease causes, the most current *Victorian Burden of Disease Study* notes that the relative contribution of cardiovascular disease to total DALY for Victoria has fallen since the last estimates.¹⁸ Concurrently, the relative contributions of malignant cancers, neurological and sense disorders, diabetes and mental disorders have slightly increased. These changes are related to three main reasons: the ageing of the population, the methodology in estimating the morbidity component of DALY (that is, the YLD) and the methodology in estimating disease incidence.

¹⁸ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – Victoria*, http://www.health.vic.gov.au/healthstatus/bod/bod_vic.htm, accessed 14/09/10. In particular, see the current report of the *Victorian Burden of Disease Study*, p. 4.

Disease Burden (DALY) by Broad Causes for Females and Males, 2001 Eastern Metropolitan Region				
	Females		Males	
	DALY	% Total	DALY	% Total
All Causes	63367.1	100.0%	64858.5	100.0%
Malignant Cancers	13596.5	21.5%	13983.4	21.6%
Cardiovascular Diseases	11308.9	17.8%	11465.8	17.7%
Mental Disorders	9181.9	14.5%	8941.5	13.8%
Neurological and Sense Disorders	8668.5	13.7%	7146.9	11.0%
Chronic Respiratory Diseases	4436.5	7.0%	4487.1	6.9%
Diabetes Mellitus	1901.2	3.0%	2797.4	4.3%
Injuries	2414.9	3.8%	5093.3	7.8%
Other Conditions	11858.6	18.7%	10943.0	16.8%

Source: Department of Health *Burden of Disease – LGAs and Regions 2001 Database*¹⁹

Continued ...

¹⁹ Other conditions include musculo-skeletal diseases, genito-urinary disorders, digestive disorders, oral health conditions, congenital abnormalities, respiratory infections, infectious diseases, endocrine and metabolic disorders, neonatal conditions, skin diseases, nutritional disorders, benign neoplasms, maternal health conditions and miscellaneous conditions (e.g. chronic fatigue).

Disease Burden (DALY) by Broad Causes and Age for Females, 2001 Eastern Metropolitan Region										
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total
All Causes	2326.1	1526.0	4008.7	4794.0	5422.2	7443.1	8300.3	9809.5	19737.2	63367.1
Malignant Cancers	27.5	42.1	81.3	342.4	944.3	2491.9	2932.5	3075.0	3659.5	13596.5
Cardiovascular Diseases	21.1	21.1	72.8	164.8	292.4	682.1	1248.4	2244.9	6561.4	11308.9
Mental Disorders	104.6	355.9	2176.3	2265.9	1874.6	1392.5	674.4	234.2	103.5	9181.9
Neurological and Sense Disorders	193.5	104.9	196.7	208.3	253.3	610.4	1136.0	1542.1	4423.3	8668.5
Chronic Respiratory Diseases	255.2	534.7	336.8	222.4	256.4	262.1	496.1	790.2	1282.7	4436.5
Musculo-skeletal Diseases	2.4	9.8	36.0	105.4	271.4	483.5	543.7	609.5	593.5	2655.2
Genito-urinary Disorders	2.1	4.4	204.2	357.1	310.0	212.9	52.3	138.7	626.5	1908.3
Diabetes Mellitus	5.1	14.6	16.6	32.8	209.9	352.6	363.5	420.7	485.5	1901.2
Unintentional Injuries	91.3	113.3	247.1	206.3	183.0	175.8	165.1	115.2	326.1	1623.2
Digestive Disorders	1.7	24.5	88.5	122.1	128.0	181.7	179.9	194.9	548.2	1469.6
Oral Health	47.0	102.6	114.9	129.6	160.8	162.8	119.5	79.8	103.6	1020.7
Congenital Abnormalities	752.9	11.2	15.5	29.0	14.6	6.5	21.2	5.5	2.3	858.7
Respiratory Infections	66.2	49.5	71.4	53.1	52.5	49.2	36.0	79.1	356.5	813.3
Intentional Injuries	0.3	7.7	110.2	246.4	175.9	154.0	64.1	21.1	12.0	791.7
Infectious Diseases	81.2	26.5	75.0	123.7	89.6	48.8	66.4	62.7	208.9	782.9
Other Endocrine and Metabolic Disorders	53.7	17.2	12.8	28.2	34.2	33.2	115.7	122.5	240.3	657.8
Neonatal Conditions	564.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	564.3
Skin Diseases	10.9	40.6	70.3	36.2	37.8	35.9	20.4	25.5	35.4	313.1
Nutritional Disorders	20.9	31.1	38.8	45.6	45.3	42.1	8.5	10.7	50.9	293.8
Benign Neoplasms	6.8	14.0	6.0	9.2	20.6	33.8	45.8	35.4	113.5	285.1
Miscellaneous Conditions	17.4	0.0	25.9	25.1	51.0	31.3	10.9	1.7	3.6	167.0
Maternal Conditions	0.0	0.0	11.5	40.4	16.7	0.2	0.0	0.0	0.0	68.8

Disease Burden (DALY) by Broad Causes and Age for Males, 2001 Eastern Metropolitan Region										
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+	Total
All Causes	3149.2	2146.8	4382.3	5606.5	5342.8	7705.5	10791.7	12163.6	13570.1	64858.5
Malignant Cancers	31.1	81.1	97.4	227.8	668.9	1683.9	3521.8	4257.7	3413.8	13983.4
Cardiovascular Diseases	11.4	9.8	84.5	199.5	512.1	1391.1	2228.4	2902.6	4126.3	11465.8
Mental Disorders	439.5	387.1	2132.2	2723.5	1444.8	1021.3	547.0	160.6	85.5	8941.5
Neurological and Sense Disorders	145.0	90.3	222.4	188.7	280.5	793.5	1288.2	1647.8	2490.5	7146.9
Chronic Respiratory Diseases	116.7	1022.4	100.4	192.1	194.8	294.4	592.4	850.6	1123.4	4487.1
Musculo-skeletal Diseases	3.3	7.9	46.8	68.9	196.9	317.6	374.8	370.7	232.5	1619.5
Genito-urinary Disorders	2.7	2.5	84.8	166.6	136.4	172.9	318.7	461.7	561.8	1908.3
Diabetes Mellitus	7.6	21.5	26.0	64.3	321.6	665.3	800.6	504.2	386.4	2797.4
Unintentional Injuries	137.7	182.2	851.0	674.0	464.6	331.9	222.0	164.3	169.2	3196.8
Digestive Disorders	5.3	20.8	69.5	91.0	156.9	231.1	259.5	231.6	280.2	1346.0
Oral Health	49.2	106.4	119.3	126.7	134.9	138.2	109.0	71.9	52.2	907.8
Congenital Abnormalities	1150.0	7.0	4.6	24.3	29.9	14.4	10.9	2.1	3.1	1246.4
Respiratory Infections	68.5	52.3	48.4	37.3	26.5	58.3	65.1	95.6	209.5	661.4
Intentional Injuries	13.6	6.2	357.2	601.9	445.9	244.2	134.2	62.7	30.7	1896.5
Infectious Diseases	38.4	32.4	33.3	81.7	197.7	128.4	66.1	105.6	106.8	790.4
Other Endocrine and Metabolic Disorders	73.6	61.6	31.9	57.9	57.3	126.8	178.3	181.2	160.0	928.6
Neonatal Conditions	766.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	766.5
Skin Diseases	11.9	26.4	58.0	47.9	37.8	42.0	28.6	29.8	27.6	310.0
Nutritional Disorders	21.6	28.8	6.7	6.8	6.8	6.4	13.6	18.0	24.8	133.6
Benign Neoplasms	6.3	0.1	0.5	18.7	11.6	24.6	26.7	44.0	86.0	218.5
Miscellaneous Conditions	49.1	0.0	7.4	7.0	16.7	19.0	5.7	1.0	0.0	106.0
Maternal Conditions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

Specific Contributing Diseases or Conditions

Ischaemic heart disease reflects the most significant specific contributing disease/condition to the total DALY for females across the region. Its contribution ranges from 7.0% of DALY in Knox to 9.2% of DALY in Boroondara. Other specific diseases/conditions that figure highly in their contribution to the total DALY for females include stroke, depression, dementia and breast cancer. In Maroondah, Monash and Whitehorse, the second most significant specific contributing disease/condition to the total DALY is stroke. In Knox and Yarra Ranges, it is depression. In Boroondara it is dementia. And in Manningham it is breast cancer.

Detailed tables for each LGA showing the top ten specific diseases and conditions contributing to the DALY of females follow below.

Disease Burden (DALY) by Top Ten Specific Diseases and Conditions, 2001 Females in Boroondara		
	YLD	%
All Causes	11832.8	100.0%
1 Ischaemic Heart Disease	1092.0	9.2%
2 Dementia	903.0	7.6%
3 Stroke	832.6	7.0%
4 Cancer Breast	665.0	5.6%
5 Depression	440.6	3.7%
6 Cancer Colon/Rectum	336.9	2.8%
7 Cancer Lung	322.4	2.7%
8 COPD (Emphysema and Chronic Bronchitis)	312.0	2.6%
9 Generalised Anxiety Disorder	287.8	2.4%
10 Osteoarthritis	281.2	2.4%

Continued ...

Disease Burden (DALY) by Top Ten Specific Diseases and Conditions, 2001 Females in Knox		
	YLD	%
All Causes	8175.3	100.0%
1 Ischaemic Heart Disease	575.4	7.0%
2 Depression	485.6	5.9%
3 Stroke	475.3	5.8%
4 Cancer Breast	465.5	5.7%
5 Dementia	367.1	4.5%
6 Diabetes Mellitus (Non-insulin Dependent)	263.7	3.2%
7 Generalised Anxiety Disorder	262.9	3.2%
8 Asthma	248.5	3.0%
9 COPD (Emphysema and Chronic Bronchitis)	208.8	2.6%
10 Cancer Lung	205.5	2.5%

Disease Burden (DALY) by Top Ten Specific Diseases and Conditions, 2001 Females in Manningham		
	YLD	%
All Causes	7122.9	100.0%
1 Ischaemic Heart Disease	517.4	7.3%
2 Cancer Breast	469.3	6.6%
3 Stroke	454.5	6.4%
4 Dementia	396.7	5.6%
5 Depression	318.3	4.5%
6 Cancer Lung	211.5	3.0%
7 Cancer Colon/Rectum	208.8	2.9%
8 Generalised Anxiety Disorder	205.2	2.9%
9 COPD (Emphysema and Chronic Bronchitis)	186.1	2.6%
10 Osteoarthritis	181.5	2.5%

Continued ...

Disease Burden (DALY) by Top Ten Specific Diseases and Conditions, 2001 Females in Maroondah		
	YLD	%
All Causes	6157.8	100.0%
1 Ischaemic Heart Disease	492.3	8.0%
2 Stroke	387.2	6.3%
3 Depression	343.3	5.6%
4 Cancer Breast	338.1	5.5%
5 Dementia	309.2	5.0%
6 Diabetes Mellitus (Non-insulin Dependent)	222.1	3.6%
7 Generalised anxiety disorder	174.6	2.8%
8 COPD (Emphysema and Chronic Bronchitis)	171.0	2.8%
9 Cancer Lung	168.7	2.7%
10 Asthma	161.3	2.6%

Disease Burden (DALY) by Top Ten Specific Diseases and Conditions, 2001 Females in Monash		
	YLD	%
All Causes	11082.5	100.0%
1 Ischaemic heart disease	912.0	8.2%
2 Stroke	730.2	6.6%
3 Dementia	680.1	6.1%
4 Cancer breast	640.9	5.8%
5 Depression	484.5	4.4%
6 Cancer lung	333.9	3.0%
7 Cancer colon/rectum	321.6	2.9%
8 COPD (Emphysema and Chronic Bronchitis)	311.2	2.8%
9 Diabetes Mellitus (Non-insulin Dependent)	292.5	2.6%
10 Generalised Anxiety Disorder	290.0	2.6%

Continued ...

Disease Burden (DALY) by Top Ten Specific Diseases and Conditions, 2001 Females in Whitehorse		
	YLD	%
All Causes	10891.9	100.0%
1 Ischaemic Heart Disease	995.6	9.1%
2 Stroke	763.6	7.0%
3 Dementia	744.7	6.8%
4 Cancer Breast	614.3	5.6%
5 Depression	442.2	4.1%
6 Cancer Lung	318.0	2.9%
7 Cancer Colon/Rectum	313.9	2.9%
8 COPD (Emphysema and Chronic Bronchi	307.6	2.8%
9 Diabetes Mellitus (Non-insulin Dependent)	284.0	2.6%
10 Generalised anxiety disorder	260.2	2.4%

Disease Burden (DALY) by Top Ten Specific Diseases and Conditions, 2001 Females in Yarra Ranges		
	YLD	%
All Causes	8103.9	100.0%
1 Ischaemic heart disease	572.2	7.1%
2 Depression	520.5	6.4%
3 Stroke	468.1	5.8%
4 Cancer breast	454.9	5.6%
5 Dementia	373.9	4.6%
6 Diabetes Mellitus (Non-insulin Dependent)	300.2	3.7%
7 Generalised anxiety disorder	250.5	3.1%
8 Asthma	246.7	3.0%
9 Cancer lung	212.6	2.6%
10 COPD (Emphysema and Chronic Bronchitis)	211.9	2.6%

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*



Disease Burden: Age-standardised Rates

Age-standardised rates of the disease burden per 1,000 persons can be used to compare the health (illness) status of different local government areas. A higher DALY rate indicates poorer health status for the population being considered; a lower DALY rate reflects better health status. Comparisons can also be made for all broad causes and specific conditions or diseases and the amount of DALY per 1,000 persons that they are responsible for.

The following tables show the DALY rates for females across the region's LGAs.²⁰ The information shows that females in Yarra Ranges experience the poorest health in the region with a disease burden rate of 127.4 DALY per 1,000. By comparison, females in Knox and Maroondah experience relatively better health with disease burden rates of 123.9 and 123.8 DALY per 1,000 respectively.

In terms of specific conditions or diseases (selected features):

- Females in Boroondara and Manningham experience the highest rates of DALY caused by breast cancer, cancer of the colon/rectum, dementia and osteoarthritis.
- Females in Yarra Ranges experience the highest rate of DALY caused by lung cancer, ischaemic heart disease, COPD (emphysema and chronic bronchitis), diabetes mellitus – non-insulin dependent, depression and unintentional injuries.
- Females in Boroondara, Manningham, Whitehorse and Yarra Ranges experience the highest rate of DALY caused by stroke.
- Females in Monash experience the highest rate of DALY caused by asthma.

²⁰ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*, http://www.health.vic.gov.au/healthstatus/bod/bod_reg.htm, accessed 14/09/10 using the 'Search BoD Estimates' function.

DALY Rates (per 1,000) by Disease Groups, Broad Causes and Specific Diseases and Conditions for Females, 2001
Eastern Metropolitan Region Local Government Areas

	Boroondara	Knox	Manningham	Maroondah	Monash	Whitehorse	Yarra Ranges	EMR	Victoria
All Causes	125.0	123.9	125.0	123.8	124.5	124.6	127.4	124.9	129.1
Infectious Diseases, Maternal, Neonatal Conditions	5.2	5.2	5.2	5.1	5.0	5.2	5.2	5.2	5.3
Infectious Diseases	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6
Respiratory Infections	1.6	1.6	1.6	1.7	1.6	1.6	1.7	1.6	1.6
Lower Respiratory Tract Infections: Pneumonia	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9
Maternal Conditions	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.2
Neonatal Conditions	1.3	1.2	1.3	1.2	1.2	1.2	1.2	1.2	1.4
Nutritional Disorders	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Non-communicable Diseases	115.1	113.9	115.1	113.8	114.8	114.6	117.0	114.9	118.8
Malignant Cancers	26.8	25.9	26.8	25.8	26.1	26.4	26.1	26.3	26.2
Mouth and Oropharynx Cancers	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cancer Oesophagus	0.4	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.4
Cancer Stomach	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Cancer Colon/Rectum	3.5	3.3	3.5	3.2	3.4	3.4	3.4	3.4	3.5
Cancer Pancreas	1.2	1.1	1.2	1.1	1.2	1.2	1.1	1.1	1.1
Cancer Lung	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.6
Melanoma	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Cancer Breast	7.3	6.8	7.3	6.8	6.9	7.1	6.7	7.0	6.6
Cancer Ovary	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Cancer Prostate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cancer Kidney	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cancer Brain	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Lymphoma	1.3	1.3	1.3	1.2	1.2	1.3	1.2	1.3	1.2
Leukaemia	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.8
Other Malignant Cancers	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0

	Boroondara	Knox	Manningham	Maroondah	Monash	Whitehorse	Yarra Ranges	EMR	Victoria
Benign Neoplasms	0.6	0.5	0.6	0.5	0.6	0.6	0.5	0.6	0.6
Diabetes Mellitus	2.7	4.5	2.7	4.9	3.5	3.5	5.1	3.7	5.7
Diabetes Mellitus – Non-insulin Dependent	2.4	4.1	2.4	4.5	3.1	3.2	4.7	3.4	5.2
Other Endocrine and Metabolic Disorders	1.2	1.4	1.2	1.4	1.2	1.3	1.4	1.3	1.4
Other Endocrine and Metabolic Disorders	1.0	1.2	1.0	1.2	1.0	1.1	1.2	1.1	1.1
Mental Disorders	17.7	18.5	17.7	18.7	18.3	18.1	19.3	18.3	19.7
Alcohol Abuse/Dependence	0.5	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4
Heroin Abuse/Dependence	0.3	0.5	0.3	0.6	0.4	0.4	0.6	0.4	0.4
Schizophrenia	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Depression	5.2	6.4	5.2	6.8	5.7	5.8	7.2	6.0	7.1
Bipolar Disorder	0.9	0.5	0.9	0.4	0.9	0.7	0.5	0.7	0.8
Social Phobia	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Generalised Anxiety Disorder	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Borderline Personality Disorder	1.5	1.1	1.5	1.0	1.6	1.3	1.1	1.3	1.6
Neurological and Sense Disorders	18.0	15.9	18.0	15.5	17.2	17.1	16.5	17.0	16.6
Dementia	8.0	6.6	8.0	6.5	7.5	7.4	7.2	7.4	7.2
Epilepsy	1.3	0.6	1.3	0.4	1.1	1.0	0.5	0.9	0.7
Parkinsons	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Vision Loss Correctable by Spectacles	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hearing Loss	2.3	2.3	2.3	2.3	2.2	2.3	2.4	2.3	2.2
Other Nervous System and Sense Organ Disorders	1.5	1.4	1.5	1.4	1.5	1.5	1.5	1.5	1.7
Cardiovascular Diseases	22.2	22.1	22.2	22.0	21.9	22.1	22.8	22.2	22.4
Ischaemic Heart Disease	10.0	10.2	10.0	10.2	10.0	10.1	10.6	10.1	10.5
Stroke	8.1	7.9	8.1	7.9	7.9	8.1	8.1	8.0	7.8
Inflammatory Heart Disease	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Other Cardiovascular Disease	1.3	1.2	1.3	1.2	1.2	1.3	1.2	1.3	1.3

	Boroondara	Knox	Manningham	Maroondah	Monash	Whitehorse	Yarra Ranges	EMR	Victoria
Chronic Respiratory Diseases	8.7	8.9	8.7	8.9	9.0	8.8	9.1	8.9	9.5
COPD (Emphysema and Chronic Bronchitis)	3.2	3.4	3.2	3.5	3.3	3.3	3.6	3.4	3.5
Asthma	3.3	3.2	3.3	3.1	3.5	3.2	3.3	3.3	3.7
Other Chronic Respiratory Diseases	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3
Digestive Disorders	2.8	3.0	2.8	3.0	2.8	2.9	3.0	2.9	3.0
Liver Cirrhosis	0.4	0.5	0.4	0.5	0.4	0.4	0.5	0.4	0.5
Genito-urinary Disorders	3.9	3.7	3.9	3.6	3.9	3.8	3.7	3.8	3.8
Nephritis/Nephrosis	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.1
Benign Prostatic Hypertrophy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infertility	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Skin Diseases	0.7	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Musculo-skeletal Diseases	5.6	4.7	5.6	4.5	5.5	5.2	4.5	5.2	5.1
Rheumatoid Arthritis	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Osteoarthritis	3.0	2.1	3.0	2.0	2.9	2.6	1.9	2.6	2.5
Congenital Abnormalities	1.8	1.9	1.8	1.9	1.8	1.8	2.0	1.9	1.9
Other Non-specific Congenital Anomalies	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.4	0.5
Oral Health	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Dental Caries	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Miscellaneous Conditions Chronic Fatigue/SIDS	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Injuries	4.7	4.8	4.7	4.9	4.7	4.8	5.2	4.8	5.0
Unintentional injuries	3.1	3.3	3.1	3.3	3.2	3.2	3.6	3.2	3.5
Road and traffic accidents	1.0	1.1	1.0	1.2	1.1	1.1	1.3	1.1	1.3
Falls	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0
Intentional injuries	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.5
Suicide	1.4	1.4	1.4	1.3	1.3	1.4	1.3	1.4	1.3

Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

Spotlight on Diabetes

Figures from Diabetes Australia – Victoria show that the rates of diabetes in the region’s LGAs have increased markedly since 2001.²¹ Diabetes Australia – Victoria notes further that for every person diagnosed with the condition there may be another who is symptomatic but undiagnosed. Prevalence figures are therefore likely to be an underestimate of actual rates experienced at the population level.

Figures by LGA for the years 2001 and 2008 (non-sex disaggregated) are shown in the table below. According to the information, Monash has the highest rate in the region of diagnosed diabetes, at 3.9% of its population. Diabetes Australia – Victoria defines diabetes ‘hotspots’ as areas with a diagnosis rate of greater than 4.0% of the population. In 2008, there were 41 hotspots in Victoria. By this definition, Monash can almost be considered a hotspot, and is currently ranked 43rd. Other LGAs that are close to being hotspots are Manningham (ranked 47th) and Whitehorse (ranked 44th).

For the period 2001 to 2008, the greatest increases in the rates of diagnosed diabetes in the population occurred in Knox and Yarra Ranges, by 124.0% and 123.0% respectively. These LGAs are not yet hotspots, but on current trends it is likely that they are not far off from being considered as such.

Diabetes Prevalence Rates, 2001 and 2008								
Eastern Metropolitan Region Local Government Areas								
	Boroondara		Knox		Manningham		Maroondah	
	2001	2008	2001	2008	2001	2008	2001	2008
No. Diagnosed	2238	3990	2224	4989	2096	4353	1659	3469
% Population	1.4%	2.4%	1.5%	3.2%	1.8%	3.7%	1.7%	3.3%
LGA Rank in Vic.	70 th	72 nd	67 th	61 st	52 nd	47 th	63 rd	58 th

	Monash		Whitehorse		Yarra Ranges	
	2001	2008	2001	2008	2001	2008
No. Diagnosed	3488	6777	2952	5887	2169	4829
% Population	2.1%	3.9%	2.0%	3.8%	1.5%	3.3%
LGA Rank in Vic.	37 th	43 rd	44 th	44 th	66 th	60 th



Source: Diabetes Australia – Victoria

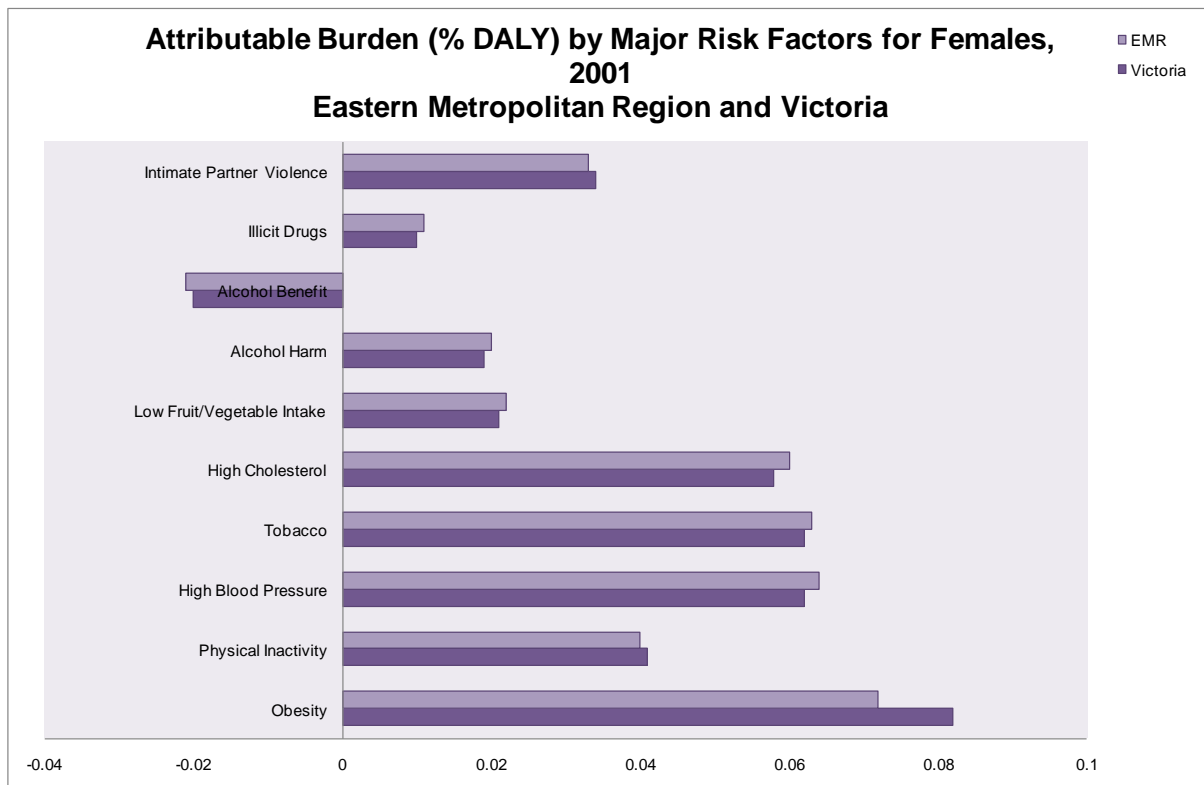
²¹ Diabetes Australia – Victoria, Diabetes Epidemic Mapping Website, <http://www.diabetesvic.org.au/media-centre/diabetes-epidemic>, accessed 27/09/10.



Attributable Burden

Attributable fractions of the total disease burden experienced by females in the region have been estimated for the following major risk factors: obesity, physical inactivity, high blood pressure, tobacco, high cholesterol, low fruit and vegetable intake, alcohol harm, illicit drugs, and intimate partner violence. Interventions targeted at these modifiable factors would influence the disease burden over time.

The risk factor chart for females in the region compared with Victorian females as a whole is reproduced below.²² It shows that for females in the region, a slightly higher proportion of the total disease burden can be attributed to illicit drugs, alcohol harm, low fruit and vegetable intake, high cholesterol, tobacco and high blood pressure relative to other commonly identified risk factors.



Source: Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*

²² Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Burden of Disease – LGAs and Regions 2001 Database*, http://www.health.vic.gov.au/healthstatus/bod/bod_reg.htm, accessed 14/09/10 using the 'Search BoD Estimates' function.

Hospital Admissions

Health service utilisation data such as hospital admissions can provide insight into the activity of our health system but are not necessarily indicators of health (illness) status. This is because they do not measure the prevalence of conditions or diseases at the population level. People do not always access health services for many of the conditions and diseases that contribute to the disease burden. And people can only use health services that exist or are accessible and appropriate to them. In other words, the population's experience of illness might be far and above what health service utilisation data tell us.

One way of evaluating the activity of the health system is through the *Victorian Ambulatory Care Sensitive Conditions (ACSC) Study*, managed by the Health Intelligence Unit, Prevention and Population Health Branch, DoH.²³ ACSC are conditions for which hospitalisation is thought to be avoidable with the application of public health interventions and early disease management, usually delivered in an ambulatory setting such as primary care. Hospitalisations can be significantly reduced through preventing the onset of illnesses or conditions, or controlling acute episodic illnesses or conditions, or managing chronic diseases or conditions outside of the acute setting. There are three kinds of ACSC:

- Vaccine-preventable. This group of ACSC includes influenza, bacterial pneumonia, tetanus, measles, mumps, rubella, pertussis and polio-conditions for which vaccinations are available.
- Acute. This group of ACSC includes dehydration/gastroenteritis, kidney infection, perforated ulcer, cellulitis, pelvic inflammatory disease, dental conditions, and ear, nose and throat infections. Acute ACSC might not be preventable but need not result in hospitalisation if adequate and timely primary care is received.
- Chronic. This group of ACSC includes diabetes, asthma, angina, hypertension, congestive heart failure and COPD. Chronic ACSC are preventable through health and lifestyle-related behaviours or can be managed through primary care to avoid hospitalisation.

High rates of hospital admissions for ACSC in a given area can indicate problems with patient access to primary healthcare, inadequate skills and resources, disconnection with specialist services, or a combination of these and other factors. ACSC hospital admissions

²³ Prevention and Population Health Branch, Wellbeing, Integrated Care and Ageing Division, Department of Health, *Victorian Ambulatory Care Sensitive Conditions Study*, <http://www.health.vic.gov.au/healthstatus/acsc/index.htm>.