

The impact of tobacco smoking on health in Western Australia 1984 - 1995

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This report, regional profiles of drug related problems and other publications concerned with Western Australian Drug Control Strategy can be down loaded as PDF documents from the Office's web page at: <http://www.wa.gov.au/cdco/>.

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List of abbreviations

ASR	Age standardised rate
EPS	Encapsulated postscript
HMDS	Hospital Morbidity Database System
HDWA	Health Department of Western Australia
HIC	Health Information Centre
ICD 9	Manual of the international statistical classification of diseases, injuries and causes of death, 9 th revision
ICD 9 CM	International classification of diseases, 9 th revision, clinical modification
LGA	Local Government Area
PDF	Portable document file
SD	Statistical Division (as defined by the Australian Bureau of Statistics)
SIDS	Sudden infant death syndrome
SLA	Statistical Local Area
SMR	Standardised mortality/morbidity rate
WMF	Windows meta file

Executive Summary

This report contains the results of a new study using the most recent aetiological fractions. It shows that tobacco smoking has a major impact on the health of Western Australians in terms of death and hospitalisation.

From 1993 to 1995, smoking was estimated to have been responsible for a total of 35,237 admissions to hospital in this State, representing 2.5% of all admissions over this period. This was a total 247,246 bed days in hospitals in this State. On an annual basis this cost the State over \$36 million; an average of \$21 per head of population.

The unnecessary loss of life from diseases caused by smoking was found to be substantial. There was a total of 17,637 deaths over the 12 year period from 1984 to 1995, representing 15% of all deaths in WA.

The slow development of the major diseases (ischaemic heart disease, chronic obstructive pulmonary disease and stroke) caused by smoking, means that many of the deaths affect the elderly. Those aged 60 years and over accounted for 81% of deaths, 58% of admissions and 68% of bed days caused by smoking related conditions.

There was a marked difference between males and females, with smoking caused conditions having a greater impact on males compared to females. It was found three times as many males died and twice as many were admitted to hospital from smoking caused conditions than females.

These age and sex linked patterns support health and education campaigns to prevent young people from taking up smoking. It is believed that the recent trend of more young women taking up smoking will lead to more female deaths and hospitalisation due to smoking than males.

The study pinpoints the particular risks to young children as a consequence of smoking. It was found that smoking during pregnancy, passive smoking and other smoking related conditions were responsible for the death of 235 children under five years of age over the 12 year period; an average of nearly 20 children per year.

This means that just over one out every 100 (1.3%) of all smoking related deaths involved children below five years of age. It was also found that 3.0% of hospital admissions and 6.9% of bed days due to smoking related conditions involved children under five years of age.

The study also highlights regional differences in rates of smoking caused illness and death in WA. Compared to the State crude rate of mortality caused by smoking, **below** average rates occurred in the Pilbara and Kimberley Statistical Divisions (SDs); whereas **above** average rates occurred in the South West and Lower Great Southern SDs. Compared to the State crude rate of hospitalisation caused by smoking, **below** average rates occurred in the Pilbara and Perth SDs; whereas **above** average rates occurred in the other non metropolitan SDs.

The annual cost of smoking caused hospitalisation ranged from \$15 per head of population in the Pilbara Statistical Division to \$31 per head of population in the Midlands SD.

A more detailed analysis of the metropolitan area, by local government area, found most of the metropolitan local government areas (LGAs) had crude rates of smoking caused mortality significantly different to the State, ranging from 0.3 deaths to 2.3 deaths per 1,000 population.

Most of the metropolitan LGAs had crude rates for smoking caused hospital admissions significantly different to the State rate, ranging from 2 admissions to 16 admissions per 1,000. There was considerable variation in the annual cost of smoking caused hospitalisation per head of population by LGA, ranging from \$6 per person to \$50 per head of population.

1. Introduction

This report estimates the number of deaths, hospital admissions and bed days that were caused by tobacco smoking in Western Australia (WA). Mortality data for the period 1984 to 1995, and hospitalisation data for the last three available years (1993-1995), were analysed. An analysis of mortality and hospitalisation data has been provided for the State as a whole and for each of its nine Statistical Divisions (SDs). As about 73% of the State's population lives in the Perth metropolitan area, a more detailed analysis was undertaken by the local government areas (LGAs) that constitute the Perth SD. The report also updates and expands upon earlier studies of smoking caused mortality in Western Australia (Hayward 1988; Swensen 1992).

2. Method

The number of deaths, hospital admissions and bed days caused (or prevented¹) by smoking were estimated using the aetiologic fractions method, developed in 1990 (Holman et al 1990), and recently updated (English et al 1995). Aetiologic fractions are sex, age and condition specific. The **ICD 9** codes and the aetiologic fractions for tobacco related conditions are shown in Appendix 3.

Hospitalisation and mortality data for conditions known to be related to smoking were extracted from the Hospital Morbidity Data System (HMDS)² and the mortality database³, which are maintained by the Health Statistics Branch of the Health Department of Western Australia (HDWA). The HMDS records the principal diagnosis and up to 18 other diagnostic codes, but in this report only the principal diagnosis was used to select cases.

Mortality data for the required period was selected using the year of death variable for those persons whose usual place of residence was recorded as in WA.

As one tobacco related condition, tobacco abuse (ICD 9 305.1), is wholly attributable to smoking and accordingly has an aetiologic fraction of 1.0, all cases coded to this condition are wholly caused by tobacco use. However, most tobacco related conditions cannot be attributed wholly to the use of tobacco. In these cases, an indirect estimate of tobacco caused mortality or morbidity is obtained by applying the aetiologic fraction (which is less than 1.0) to the number of cases from a particular condition.⁴

For example, 23% of male deaths from fire injuries (ICD9 codes E890-E899), can be attributed to smoking. The number of male deaths resulting from fire injuries is calculated by applying the aetiologic fraction of 0.23. If there were 100 deaths recorded as due to fire injuries, then 23 of such deaths would be attributed to smoking.

Apart from perinatal conditions, fire injuries, sudden infant death syndrome (SIDS) and tobacco abuse, it is assumed that smoking does not cause mortality or morbidity in children.

Five tobacco related conditions are specific to females: endometrial cancer, cervical cancer, vulvar cancer, ectopic pregnancy, and spontaneous abortion. A further four conditions: antepartum haemorrhage, hypertension in pregnancy, low birthweight, and premature rupture of membranes, are specific to females between the ages of 10 and 54 years, but fractions are applied to babies of both sexes.

¹ Smoking is thought to have a protective effect against developing Parkinson's disease and ulcerative colitis (for younger people) for both males and females, and endometrial cancer and hypertension in pregnancy for females. Accordingly the aetiologic fractions for these conditions are negative (see Appendix 3).

² The HMDS covers all public and private hospitals in WA, including the inpatient detoxification program at the Central Drug Unit run by the Alcohol and Drug Authority, but excluding stays at psychiatric hospitals. As only episodes of treatment requiring an inpatient stay are captured on the HMDS, tobacco caused conditions which received outpatient treatment are not included in this report.

³ The mortality database is based on notifications of deaths to the Registrar General's Office.

⁴ Using aetiologic fractions may give estimated numbers of cases which are not integers. This sometimes causes slight discrepancies in the totals due to rounding errors.

Penile cancer is the only condition specific to males.

The statistical measures used in this report were crude rates, age specific rates, age standardised rates, and standardised mortality rates (for deaths) and standardised morbidity rates (for hospitalisation)⁵.

Crude rates were calculated by dividing the estimated number of cases by the population of the area, and then multiplying by 1,000 to express the rates as cases per 1,000 population. Crude rates do not take into account the age structure of the population.

Age specific and age standardised rates (ASRs) were calculated using a program called the *Health Statistics Calculator*.⁵ Age specific rates were calculated by dividing the number of cases in a particular age group by the population of that age group. Age standardisation uses a standard population⁶ to eliminate the effects of differences in the age structure of various populations. This allows comparisons between groups with different age compositions. In this report, age specific and age standardised rates are expressed per 100,000 persons.

Standardised morbidity/mortality rates (SMRs) were calculated by dividing the observed number of cases by the expected number of cases. The expected number of cases were estimated by applying the State sex and age specific rates to the population of the area. The State SMR is always 1.0. For instance, a SMR of 2.0 indicates that the observed rate of tobacco related mortality/morbidity in a particular area is twice that expected, based on the State rate. Confidence intervals (95%) applied to the SMRs determined whether differences were significant or not, compared to the State.

The main body of the report contains a State overview and summarises the impact of smoking on health by LGAs and SDs. Tables in Appendices 1 and 2 give the estimated numbers of tobacco caused deaths, hospital admissions, and bed day costs for each metropolitan LGA and all SDs, by broad categories of tobacco related conditions [Table 1].

Postcodes that fall into more than one LGA are allocated to the LGA where the majority of the postcode's population resides. Therefore the Fremantle Inner LGA was incorporated into Fremantle LGA and Peppermint Grove LGA included with the Cottesloe LGA; the latter referred to this report as the Cottesloe/Peppermint Grove LGA.

On 1st July 1994, four LGAs were created from the partition of the City of Perth. The former name is given in brackets: Vincent (Perth North); Perth (Perth Inner and Perth Outer); Victoria Park (Perth South) and Cambridge (Perth Wembley Coastal).

Table 1: Broad categories and ICD 9 CM codes for tobacco related conditions

Tobacco related categories	ICD 9 CM codes
Lung cancer	162,231
Mouth and throat cancer	141,143-146,148-150,161
Other cancers	151,154.2,154.3,157,179,180,182, 184.4,187.1-187.4,188,189.0,189.1,233.1
Heart disease	410-417,427-429
Stroke	430-438
Atherosclerosis	440-448
Chronic bronchitis	490-492,496,
Complications of pregnancy/infancy	633,634,640,641,642,656.5,658.1,658.2,760.0,761.1,761.4,761.8,762.0,762.1,764, 765,798
Other conditions	305.1,332,480-487,531-534,555,556,E890-E899

⁵ Developed by Dr J Codde, Director of Epidemiology and Analytical Services, HDWA.

⁶ The Australian 1991 population was used as the standard.

3. Results

3.1 Deaths

3.1.1 Overview of the state

During the 12 year period 1984 to 1995, there were an estimated 17,637 deaths in WA caused by tobacco smoking, an average of 1,470 deaths each year. These deaths accounted for 15% of the total of 115,089 deaths from all causes that occurred over this period in WA.

From 1984 to 1995, the proportion of all deaths which were caused by smoking fell slightly, from 22.7% to 19.2% for males, and from 8.7% to 8.3% for females. There were three times the number of male deaths caused by smoking compared to females.

Three diseases were responsible for nearly three quarters of deaths caused by smoking between 1984 and 1995:

lung cancer (28.3%);
ischaemic heart disease (24.7%); and
chronic obstructive pulmonary disease (19.9%) [Table 2].

The highest number of smoking caused deaths, an estimated 2,806, involved those aged between 75 and 79 years [Figure 1a]. People aged 60 years and over accounted for 81% of such deaths, and those aged 70 years and over for 55%.

A small number of smoking caused deaths (an estimated 235 or 1.3%) involved children under five years of age. This highlights the risk posed to the unborn and very young children through passive smoking and smoking during pregnancy.

The age specific mortality rates for smoking caused deaths began to rise in middle age and continued to increase with age [Figure 1b], reflecting the preponderance of deaths from chronic conditions with long latent periods (eg cancers) that are related to long term smoking.

3.1.2 Statistical divisions

An estimated 12,916 deaths, or 73% of smoking caused deaths, occurred in the metropolitan area (ie Perth SD). The second highest number of deaths (1,752) occurred in the South West SD [Table 3].

The South West and Lower Great Southern SDs had higher crude smoking caused mortality rates than the State, whilst the Pilbara, and Kimberley SDs had lower crude rates than the State. The Pilbara rate of 0.3 deaths per 1,000 population (males 0.5; females 0.2) was particularly low. The estimated numbers of smoking caused deaths by smoking related condition for each SD are presented in the tables in Appendix 1.

Due to variations in the age structure of the SDs, SMRs were calculated to determine whether the observed number of smoking caused deaths varied from that expected based on the State rate.

Males in the Pilbara and Kimberley SDs had significantly lower SMRs compared to the State, whilst males in the South West and Lower Great Southern SDs had significantly higher SMRs [Figure 2a]

For females, the Upper Great Southern, South Eastern, and Pilbara SDs had significantly lower SMRs compared to the State, while the Perth and the South West SDs had significantly higher SMRs [Figure 2b].

Table 2: Estimated number and percentage of smoking caused deaths by tobacco related conditions and sex, WA, 1984-1995

	Males		Females		Persons	
	Number	%	Number	%	Number	%
Oropharyngeal cancer	224	1.7	56	1.3	279	1.6
Oesophageal cancer	236	1.8	65	1.5	301	1.7
Stomach cancer	103	0.8	33	0.7	136	0.8
Anal cancer	4	0.0	4	0.1	8	0.0
Pancreatic cancer	134	1.0	66	1.5	200	1.1
Laryngeal cancer	128	1.0	14	0.3	142	0.8
Lung cancer	3,848	29.2	1,144	25.7	4,992	28.3
Endometrial cancer	0	0.0	-16	-	-16	-
Cervical cancer	0	0.0	62	1.4	62	0.4
Vulvar cancer	0	0.0	10	0.2	10	0.1
Penile cancer	4	0.0	0	0.0	4	0.0
Bladder cancer	188	1.4	37	0.8	225	1.3
Renal parenchymal cancer	93	0.7	35	0.8	129	0.7
Renal pelvic cancer	3	0.0	4	0.1	7	0.0
Parkinson's disease	-104	-	-26	-	-130	-
Ischaemic heart disease	3,417	25.9	942	21.1	4,359	24.7
Pulmonary circulatory diseases	84	0.6	105	2.4	189	1.1
Cardiac dysrhythmias	48	0.4	25	0.6	73	0.4
Heart failure	164	1.2	78	1.7	242	1.4
Stroke	833	6.3	474	10.6	1,307	7.4
Atherosclerosis	591	4.5	250	5.6	841	4.8
Pneumonia	191	1.4	61	1.4	252	1.4
Chronic obstructive pulmonary disease	2,679	20.3	832	18.7	3,511	19.9
Peptic ulcer	161	1.2	89	2.0	250	1.4
Crohn's disease	2	0.0	4	0.1	6	0.0
Ulcerative colitis	1	0.0	1	0.0	2	0.0
Ectopic pregnancy	0	0.0	0	0.0	0	0.0
Antepartum haemorrhage	0	0.0	0	0.0	0	0.0
Low birthweight	28	0.2	25	0.6	53	0.3
SIDS	103	0.8	77	1.7	179	1.0
Fire injuries	14	0.1	8	0.2	22	0.1
Total	13,178	100.0	4,460	100.0	17,637	100.0

Figure 1a: Estimated number of smoking caused deaths by age group and sex, WA, 1984-1995

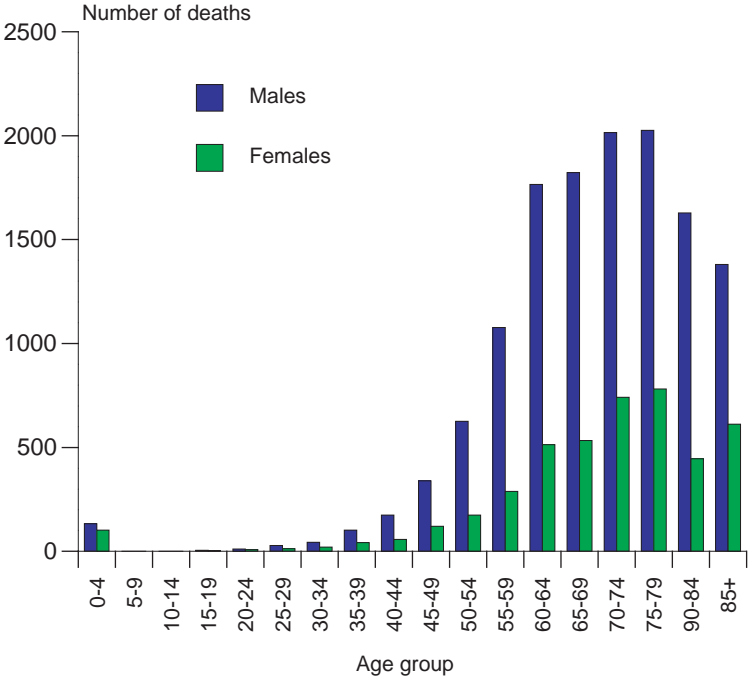


Figure 1b: Age-specific rates for smoking caused deaths by age group and sex, WA, 1984-1995

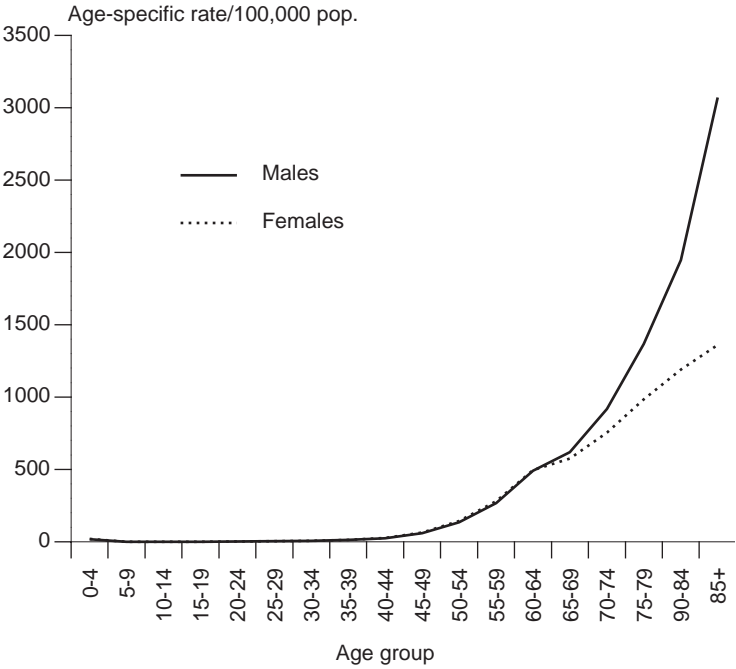


Figure 2a: Standardised mortality rates, with 95% confidence intervals by SDs WA, 1984-1995: males

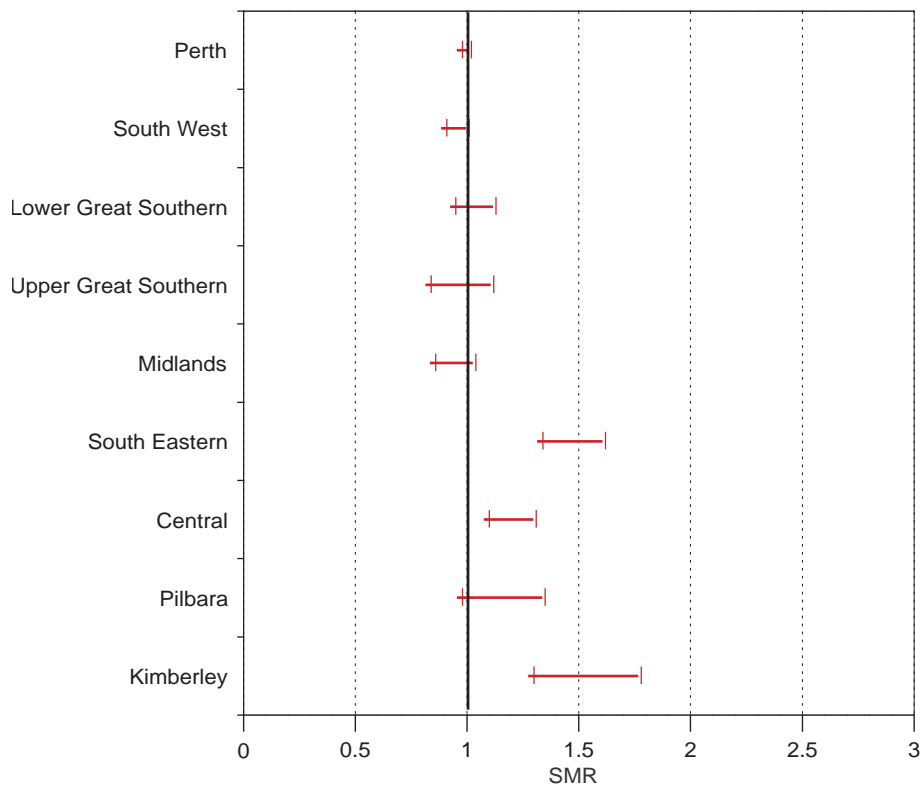


Figure 2b: Standardised mortality rates, with 95% confidence intervals by SDs WA, 1984-1995: females

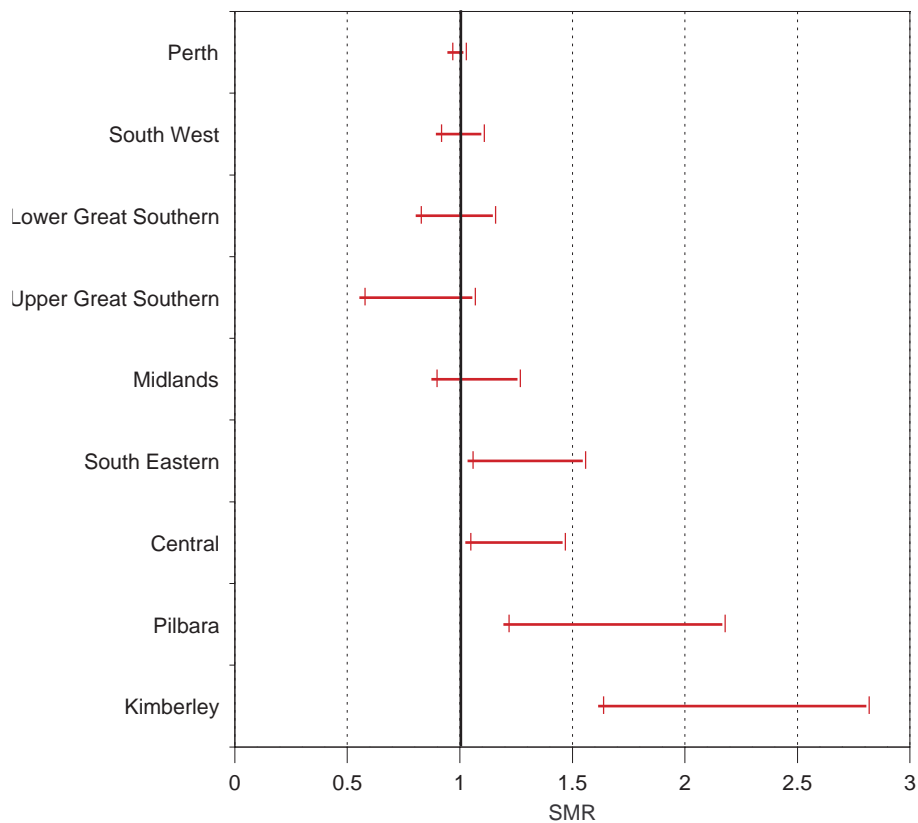


Table 3: Estimated number and crude rates¹ for smoking caused deaths by SDs and sex, WA, 1984-1995

	Males		Females		Persons	
	Number	Crude rate	Number	Crude rate	Number	Crude rate
Perth	9,522	1.4	3,394	0.5	12,916	0.9
South West	1,333	*1.6	419	0.5	1,752	*1.1
Lower Great Southern	474	*1.6	136	0.5	610	*1.1
Upper Great Southern	181	1.3	43	*0.3	224	0.8
Midlands	422	1.3	127	0.4	549	0.9
South Eastern	430	1.3	106	*0.4	535	0.9
Central	501	1.4	137	0.4	639	0.9
Pilbara	148	*0.5	45	*0.2	193	*0.3
Kimberley	157	*1.1	52	0.4	210	*0.8
State	13,178	1.4	4,460	0.5	17,637	0.9

¹ These crude rates are expressed as the number of admissions per 1,000 population

* indicates a significant difference ($p < 0.05$) relative to the State rate.

3.1.3 Metropolitan local government areas

In the Perth metropolitan area, where nearly three quarters of smoking caused deaths occurred, three of the 30 LGAs accounted for 20% of the tobacco caused mortality. Wanneroo LGA had the most deaths (981 or 7.6%), followed by Stirling Central LGA (818 or 6.3%) and Canning LGA (791 or 6.1%) [Table 4]. This reflects the large population in these areas.

The estimated number of deaths by tobacco related condition for each of the 30 LGAs are presented in the tables in Appendix 2.

Most of the metropolitan LGAs had crude mortality rates significantly different to the State rate, but the Metropolitan area as a whole had a similar rate to the State (0.9 deaths per 1,000 persons).

The LGAs with the highest crude rates (deaths per 1,000 population) were:
Stirling South Eastern (3.0) and
Claremont (1.9).

The LGAs with the lowest crude rates for tobacco caused deaths were:
Kalamunda (0.3) and
Mundaring (0.3).

Due to variations in the age structure of the LGAs, SMRs were calculated to determine whether the observed number of hospital admissions varied from that expected based on the State rate.

Males in the Claremont, East Fremantle, Kwinana, Mosman Park, and Rockingham LGAs had SMRs similar to the State, whilst 13 LGAs had significantly higher SMRs than the State and 12 LGAs had significantly lower SMRs [Figure 3a].

Females in Bayswater, Belmont, Cambridge, Claremont, Cottesloe/Peppermint Grove, East Fremantle, Mosman Park, Perth, Rockingham, Serpentine-Jarrahdale, Victoria Park, Vincent and Wanneroo LGAs had SMRs similar to the State, whilst 10 LGAs had significantly higher SMRs than the State and eight LGAs had significantly lower SMRs [Figure 3b].

Table 4: Estimated number and crude rates¹ for smoking caused deaths by metropolitan LGAs and sex, WA, 1984-1995

	Males		Females		Persons	
	Number	Crude rate	Number	Crude rate	Number	Crude rate
Armadale	451	*1.6	163	*0.6	614	*1.1
Bassendean	211	*2.6	66	*0.8	277	*1.7
Bayswater	476	*1.8	150	0.6	626	*1.2
Belmont	367	*2.2	113	*0.7	480	*1.4
Cambridge	176	1.5	83	*0.6	259	1.0
Canning	562	1.4	229	0.6	791	1.0
Claremont	138	*2.7	63	*1.1	201	*1.9
Cockburn	461	*1.6	160	0.5	621	*1.1
Cottesloe/Peppermint Grove	69	*1.4	29	0.5	98	*0.9
East Fremantle	83	*2.3	29	*0.7	112	*1.5
Fremantle	214	*1.5	61	0.4	275	1.0
Gosnells	496	*1.2	164	0.4	660	*0.8
Kalamunda	129	*0.5	32	*0.1	161	*0.3
Kwinana	139	1.4	51	0.5	190	0.9
Melville	554	*1.1	195	*0.4	749	*0.7
Mosman Park	77	*1.8	35	*0.7	112	*1.2
Mundaring	67	*0.4	27	*0.2	94	*0.3
Nedlands	259	*2.2	80	*0.6	339	*1.4
Perth	211	*2.5	51	*0.7	262	*1.7
Rockingham	388	*1.5	118	0.5	506	1.0
Serpentine-Jarrahdale	38	*0.8	9	*0.2	47	*0.5
South Perth	429	*2.2	215	*1.0	644	*1.5
Stirling Central	611	*1.0	206	*0.3	817	*0.7
Stirling West	414	1.3	148	0.4	562	*0.9
Stirling South Eastern	522	*4.3	214	*1.7	736	*3.0
Subiaco	208	*2.4	89	*0.9	297	*1.6
Swan	451	1.5	165	0.6	616	1.0
Victoria Park	312	*2.2	101	*0.7	413	*1.4
Vincent	280	*2.3	95	*0.7	375	*1.5
Wanneroo	730	*0.7	251	*0.3	981	*0.5
Total Metro	9,522	1.4	3,394	0.5	12,916	0.9
STATE	13,178	1.4	4,460	0.5	17,637	0.9

¹ These crude rates are expressed as the number of admissions per 1,000 population

* indicates a significant difference (p =< 0.05) relative to the State rate.

Figure 3a: Standardised mortality rates, with 95% confidence intervals by metropolitan LGAs, WA, 1984-1995: males

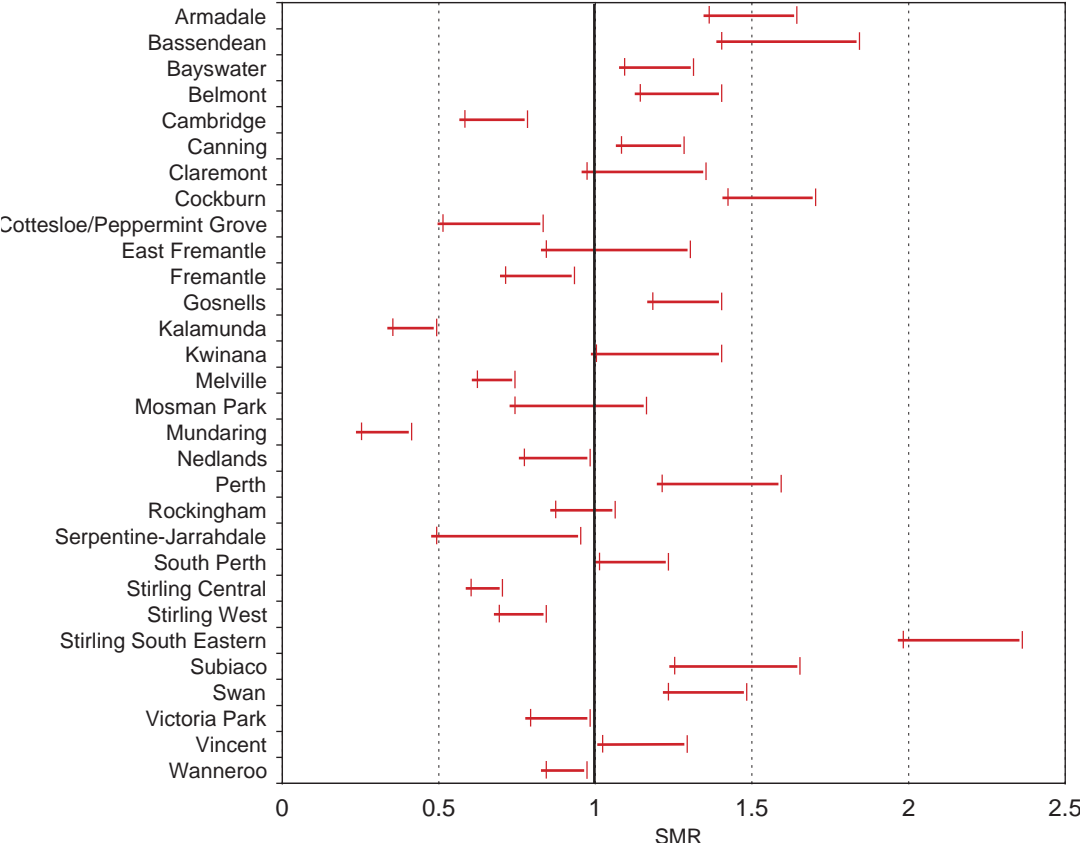
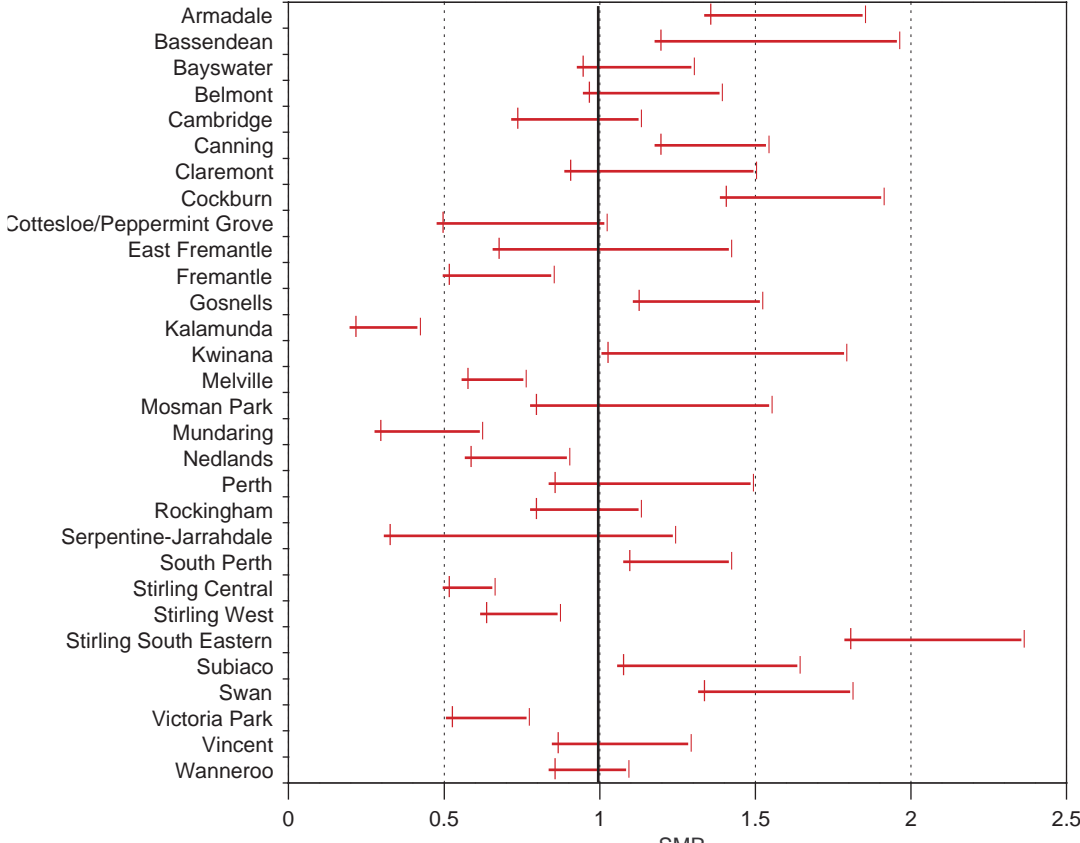


Figure 3b: Standardised mortality rates, with 95% confidence intervals by metropolitan LGAs, WA, 1984-1995: females



3.2 Hospitalisation

3.2.1 Overview of the State

During the three year period 1993 to 1995, there were an estimated total of 35,237 admissions caused by tobacco smoking which resulted in a total of 247,246 bed days of hospital stays in WA. This is an average of 11,746 admissions and 82,415 bed days each year. These accounted for 2.5% of the total of 1,409,804 admissions and 4.2% of the total of 5,953,758 bed days from all causes that occurred over this period.

From 1993 to 1995, the proportion of all male admissions which were caused by smoking fell slightly, from 3.9% to 3.6%, whereas there was no change for females. There were twice the number of male admissions and bed days caused by smoking compared to females.

The estimated average annual cost of tobacco caused hospitalisation in Western Australia was over \$36 million.

Three diseases were responsible for nearly half the smoking caused admissions between 1993 and 1995: ischaemic heart disease (24.5%); chronic obstructive pulmonary disease (16.7%); and stroke (7.6%) [Table 5].

The same three diseases were responsible for the most smoking caused bed days, but in a slightly different order:

chronic obstructive pulmonary disease (22.9%);
ischaemic heart disease (15.8%); and
stroke (10.2%) [Table 6].

The highest number of admissions (4,648) involved people aged 60 to 64 years, but the highest number of bed days (36,166) involved the 70 to 74 years age group. People aged 60 years and over accounted for 58% of admissions and 68% of bed days. Those aged 70 years and over accounted for 33% of such admissions and 44% of such bed days [Figure 4a].

An estimated 1,059 admissions and 16,959 bed days (3.0% of smoking caused admissions; 6.9% of smoking caused bed days) involved children under five years of age. This highlights the risk posed to the unborn and very young children through passive smoking and smoking during pregnancy.

The age specific rates for admissions began to rise in middle age and continued to increase with age, apart from a plateau between the ages of 60 to 69 years [Figure 4a], reflecting the preponderance of chronic conditions with long latent periods (eg cancers) that are related to long term smoking. Male and female admission rates were similar until the 70 to 74 years age group. Male admission rates peaked in people aged 85 years and over (7,002 admissions /100,000 population), but female rates peaked in the 75 to 79 years age group (4,263) then dropped [Figure 4b].

Figure 4a: Estimated number of smoking caused hospital admissions by age group and sex, WA, 1993-1995

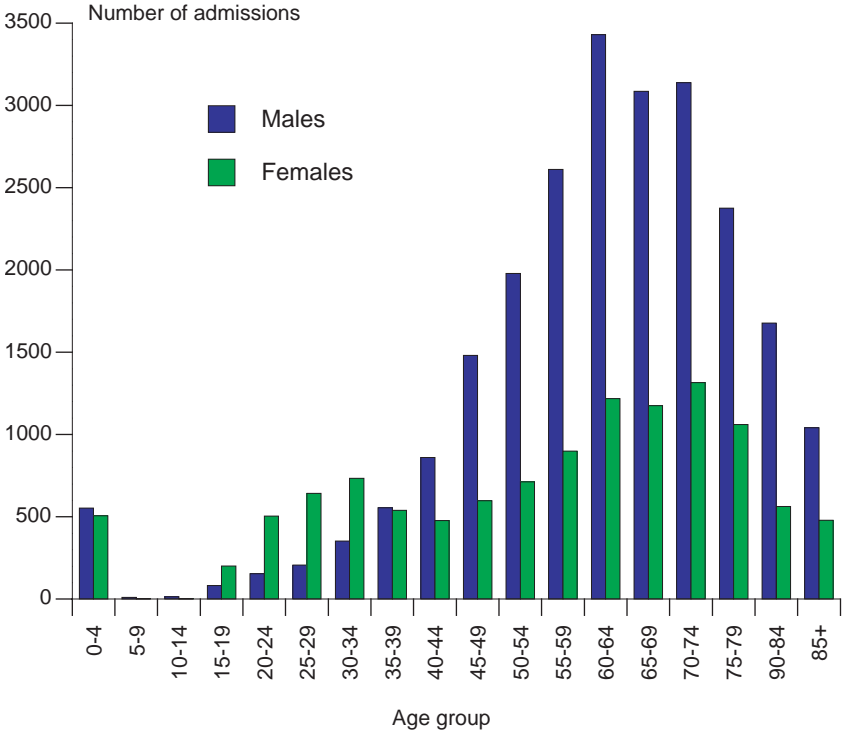


Figure 4b: Age-specific rates for smoking caused hospital admissions by age group and sex, WA, 1993-1995

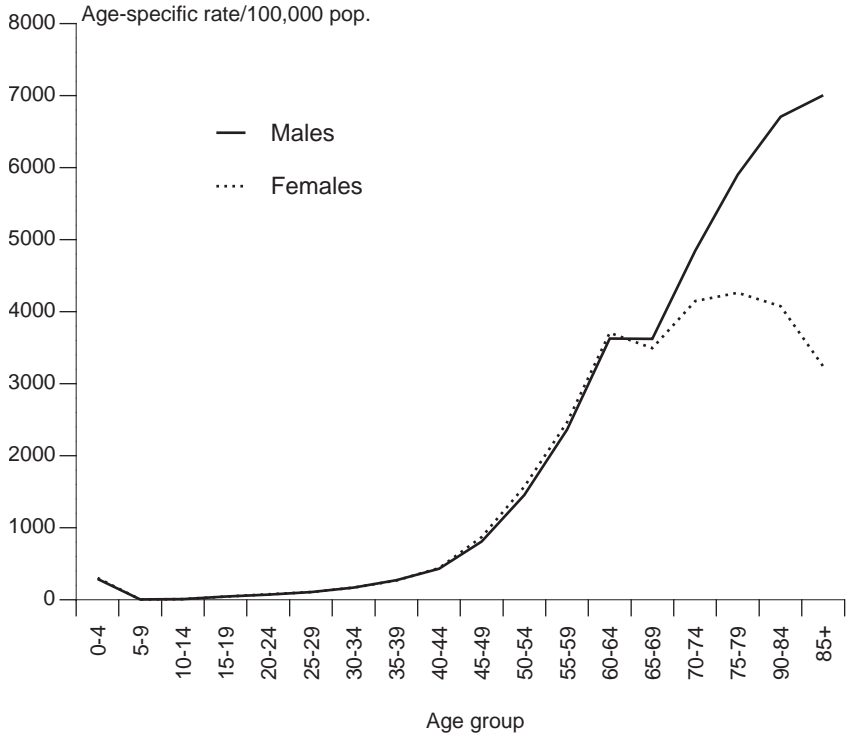


Table 5: Estimated number and percentage of smoking caused hospital admissions by tobacco related conditions and sex, WA, 1993-1995

	Males		Females		Persons	
	Number	%	Number	%	Number	%
Oropharyngeal cancer	251	1.1	91	0.8	342	1.0
Oesophageal cancer	214	0.9	71	0.6	285	0.8
Stomach cancer	80	0.3	21	0.2	101	0.3
Anal cancer	11	0.0	7	0.1	18	0.1
Pancreatic cancer	69	0.3	33	0.3	102	0.3
Laryngeal cancer	180	0.8	22	0.2	202	0.6
Lung cancer	1,854	7.9	675	5.8	2,529	7.2
Endometrial cancer	0	0.0	-40	-	-40	-
Cervical cancer	0	0.0	348	3.0	348	1.0
Vulvar cancer	0	0.0	21	0.2	21	0.1
Penile cancer	6	0.0	0	0.0	6	0.0
Bladder cancer	1,090	4.6	175	1.5	1,265	3.6
Renal parenchymal cancer	84	0.4	35	0.3	119	0.3
Renal pelvic cancer	18	0.1	6	0.1	24	0.1
Respiratory carcinoma in situ	55	0.2	11	0.1	66	0.2
Tobacco abuse	3	0.0	4	0.0	7	0.0
Parkinson's disease	-208	-	-63	-	-271	-
Ischaemic heart disease	6,840	29.0	1,804	15.5	8,644	24.5
Pulmonary circulatory diseases	392	1.7	440	3.8	832	2.4
Cardiac dysrhythmias	1,093	4.6	521	4.5	1,614	4.6
Heart failure	1,002	4.2	439	3.8	1,441	4.1
Stroke	1,340	5.7	643	5.5	1,983	5.6
Atherosclerosis	2,050	8.7	637	5.5	2,687	7.6
Pneumonia	972	4.1	475	4.1	1,447	4.1
Chronic obstructive pulmonary disease	3,759	15.9	2,120	18.2	5,879	16.7
Peptic ulcer	1,489	6.3	757	6.5	2,246	6.4
Crohn's disease	170	0.7	321	2.8	491	1.4
Ulcerative colitis	74	0.3	21	0.2	95	0.3
Ectopic pregnancy	0	0.0	231	2.0	231	0.7
Spontaneous abortion	0	0.0	520	4.5	520	1.5
Antepartum haemorrhage	2	0.0	631	5.4	633	1.8
Hypertension in pregnancy	0	0.0	-531	-	-531	-
Low birthweight	534	2.3	661	5.7	1,195	3.4
Premature rupture of membranes	1	0.0	463	4.0	464	1.3
SIDS	1	0.0	1	0.0	2	0.0
Fire injuries	182	0.8	62	0.5	244	0.7
Total	23,605	100.0	11,632	100.0	35,237	100.0

Table 6: Estimated number and percentage of smoking caused hospital bed days by tobacco related conditions and sex, WA, 1993-1995

	Males		Females		Persons	
	Number	%	Number	%	Number	%
Oropharyngeal cancer	2,549	1.5	782	1.0	3,331	1.3
Oesophageal cancer	2,104	1.3	554	0.7	2,658	1.1
Stomach cancer	786	0.5	215	0.3	1,001	0.4
Anal cancer	220	0.1	88	0.1	308	0.1
Pancreatic cancer	673	0.4	356	0.4	1,029	0.4
Laryngeal cancer	1,324	0.8	140	0.2	1,464	0.6
Lung cancer	16,865	10.2	6,367	7.8	23,232	9.4
Endometrial cancer	0	0.0	-226	-	-226	-
Cervical cancer	0	0.0	1,121	1.4	1,121	0.5
Vulvar cancer	0	0.0	192	0.2	192	0.1
Penile cancer	48	0.0	0	0.0	48	0.0
Bladder cancer	3,938	2.4	648	0.8	4,586	1.9
Renal parenchymal cancer	795	0.5	403	0.5	1,198	0.5
Renal pelvic cancer	147	0.1	50	0.1	197	0.1
Respiratory carcinoma in situ	156	0.1	51	0.1	207	0.1
Tobacco abuse	22	0.0	8	0.0	30	0.0
Parkinson's disease	-4,298	-	-1,485	-	-5,783	-
Ischaemic heart disease	30,520	18.4	8,501	10.4	39,021	15.8
Pulmonary circulatory diseases	3,616	2.2	4,230	5.2	7,846	3.2
Cardiac dysrhythmias	3,216	1.9	1,717	2.1	4,933	2.0
Heart failure	8,229	5.0	3,866	4.7	12,095	4.9
Stroke	17,033	10.3	8,182	10.0	25,215	10.2
Atherosclerosis	16,250	9.8	4,455	5.4	20,705	8.4
Pneumonia	7,855	4.7	3,356	4.1	11,211	4.5
Chronic obstructive pulmonary disease	36,529	22.1	19,986	24.4	56,515	22.9
Peptic ulcer	5,239	3.2	2,702	3.3	7,941	3.2
Crohn's disease	1,092	0.7	1,704	2.1	2,796	1.1
Ulcerative colitis	295	0.2	92	0.1	387	0.2
Ectopic pregnancy	0	0.0	719	0.9	719	0.3
Spontaneous abortion	0	0.0	693	0.8	693	0.3
Antepartum haemorrhage	5	0.0	2,822	3.5	2,827	1.1
Hypertension in pregnancy	0	0.0	-2,841	-	-2,841	-
Low birthweight	8,656	5.2	9,119	11.1	17,775	7.2
Premature rupture of membranes	4	0.0	2,587	3.2	2,591	1.0
SIDS	1	0.0	1	0.0	2	0.0
Fire injuries	1,581	1.0	641	0.8	2,222	0.9
Total	165,451	100.0	81,795	100.0	247,246	100.0

An estimated 23,994 admissions, or 68% of smoking caused admissions, occurred in the Perth SD. The second highest number of admissions (4,008) occurred in the South West SD [Table 7]. Perth and Pilbara SDs had lower crude rates of admissions than the State, whilst the other country SDs had higher rates than the State.

The estimated numbers and cost of smoking caused admissions by tobacco related condition for each SD are presented in the tables in Appendix 1. The State's annual average cost of smoking caused hospitalisation was \$21 per head of population, with the Pilbara SD having the lowest annual cost of \$15 per head of population and the Midlands SD having the highest annual cost of \$31 per head of population [Table 8].

Due to variations in the age structure of the SDs, SMRs were calculated to determine whether the observed number of hospital admissions varied from that expected based on the State rate.

For males, the Perth and Lower Great Southern SDs had significantly lower SMRs compared to the

Table 7: Estimated number and crude rates¹ for smoking caused hospital admissions by SDs and sex, WA, 1993-1995

	Males		Females		Persons	
	Number	Crude rate	Number	Crude rate	Number	Crude rate
Perth	16,112	*8.7	7,882	*4.2	23,994	*6.4
South West	2,699	*11.2	1,309	*5.6	4,008	*8.5
Lower Great Southern	733	*9.7	378	*5.1	1,111	*7.4
Upper Great Southern	341	*10.1	166	*5.3	507	*7.8
Midlands	990	*12.4	439	*6.0	1,429	*9.4
South Eastern	834	*9.7	401	*5.5	1,235	*7.8
Central	983	*10.2	517	*6.0	1,500	*8.2
Pilbara	487	*6.8	275	4.7	762	*5.9
Kimberley	424	*10.9	263	*7.8	687	*9.5
State	23,605	9.2	11,632	4.6	35,237	6.9

¹ These crude rates are expressed as the number of admissions per 1,000 population

* indicates a significant difference ($p < 0.05$) relative to the State rate.

Table 8: Estimated number, total cost, and cost per head of population of smoking caused hospital bed days by SDs, WA, 1993-1995

Statistical Division	Total number of bed days	Average annual bedday cost ¹	Annual cost per head of population
Perth	170,254	\$25.0M	\$20
South West	27,281	\$4.0M	\$25
Lower Great Southern	7,291	\$1.1M	\$21
Upper Great Southern	3,143	\$0.5M	\$21
Midlands	10,776	\$1.6M	\$31
South Eastern	9,262	\$1.4M	\$26
Central	10,332	\$1.5M	\$25
Pilbara	4,438	\$0.7M	\$15
Kimberley	4,455	\$0.7M	\$27
State	247,246	\$36.3M	\$21

¹ Calculated using the average cost of \$440 per bed day, from *Time Series Analysis, 1994/95*. Finance and Assets, Health Department of Western Australia, 1996

State, the Upper Great Southern SD had a similar SMR to the State, and the other SDs had statistically higher SMRs compared to the State [Figure 5a].

For females, the Perth SD had a significantly lower SMR than the State, the Lower Great Southern SD had a similar SMR to the State, and the other SDs had statistically higher SMRs compared to the State [Figure 5b].

Figure 5a: Standardised morbidity rates, with 95% confidence intervals by SDs WA, 1993-1995: males

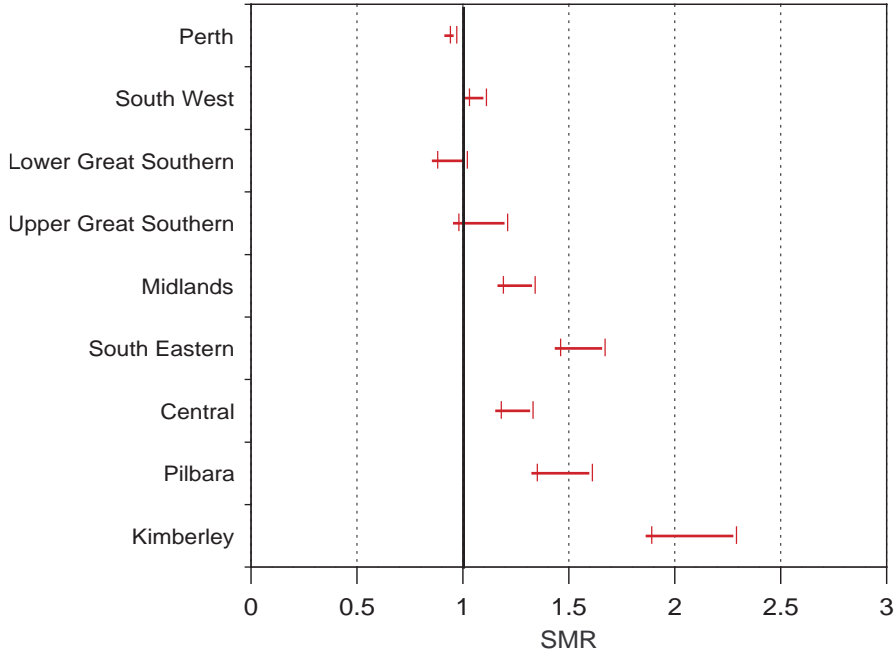
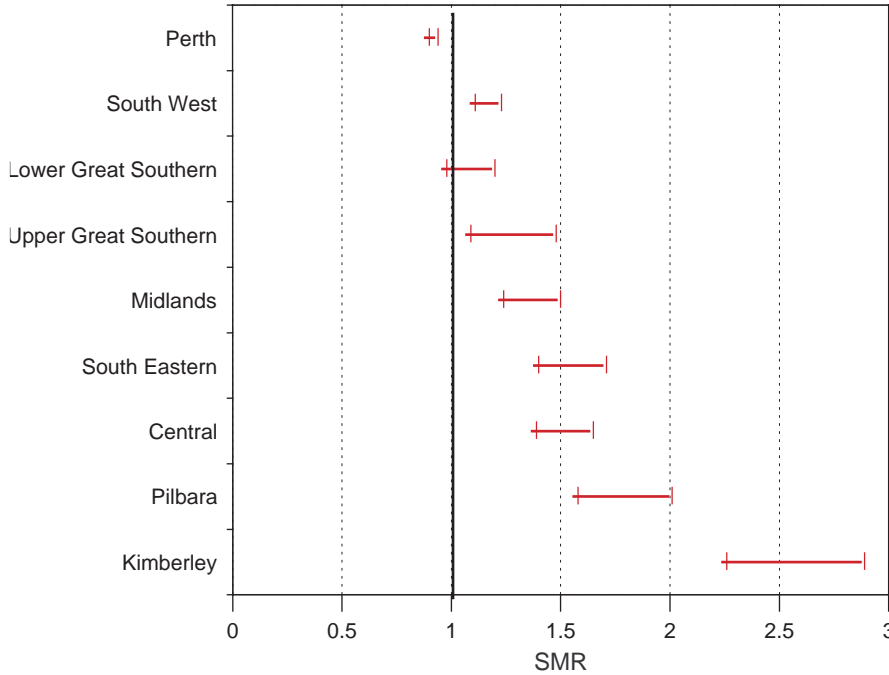


Figure 5b: Standardised morbidity rates, with 95% confidence intervals by SDs WA, 1993-1995: females



3.2.3 Metropolitan local government areas

In the Perth metropolitan area, where nearly 70% of smoking caused admissions occurred, three of the 30 LGAs were responsible for over a quarter of smoking caused admissions.

Wanneroo LGA had the highest number of admissions (3,001 or 12.5%), followed by Stirling Central LGA (1,638 or 6.8%) and Canning LGA (1,494 or 6.2%) [Table 8]. This pattern of hospitalisation reflects the large population in these areas.

Table 9: Estimated number and crude rates¹ for smoking caused hospital admissions by metropolitan LGAs and sex, WA, 1993-1995

	Males		Females		Persons	
	Number	Crude rate	Number	Crude rate	Number	Crude rate
Armadale	890	*11.6	429	*5.6	1,319	*8.6
Bassendean	255	*12.3	144	*6.8	399	*9.6
Bayswater	951	*13.7	425	*6.1	1,376	*9.9
Belmont	537	*13.4	261	*6.4	798	*9.9
Cambridge	312	*9.9	150	4.4	462	7.0
Canning	1,036	*9.9	458	*4.3	1,494	7.1
Claremont	171	*13.1	96	*6.4	267	*9.5
Cockburn	919	*11.0	450	*5.4	1,369	*8.2
Cottesloe/Peppermint Grove	95	7.5	53	*3.7	148	5.5
East Fremantle	89	*9.7	44	4.4	133	6.9
Fremantle	291	*8.1	119	*3.3	410	*5.7
Gosnells	964	*8.7	434	*4.0	1,398	*6.3
Kalamunda	229	*3.2	126	*1.7	355	*2.5
Kwinana	305	*10.5	166	*5.7	471	*8.1
Melville	962	*7.2	433	*3.0	1,395	*5.0
Mosman Park	124	*11.7	60	4.8	184	*8.0
Mundaring	128	*2.6	72	*1.5	200	*2.1
Nedlands	213	*7.1	97	*3.0	310	*5.0
Perth	248	*15.1	77	*5.7	325	*10.9
Rockingham	900	*11.1	452	*5.5	1,352	*8.3
Serpentine-Jarrahdale	59	*4.1	33	*2.5	92	*3.3
South Perth	494	*9.7	266	*4.8	760	7.2
Stirling Central	1,108	*7.3	530	*3.3	1,638	*5.3
Stirling West	683	*8.4	316	*3.8	999	*6.1
Stirling South Eastern	550	*18.1	274	*8.7	824	*13.3
Subiaco	153	*7.1	89	*3.8	242	*5.4
Swan	840	*8.6	443	4.6	1,283	6.6
Victoria Park	381	*10.4	174	4.4	555	*7.3
Vincent	285	*8.7	149	4.5	434	6.6
Wanneroo	1,939	*6.5	1,062	*3.6	3,001	*5.1
Total Metro	16,112	*8.7	7,882	*4.2	23,994	*6.4
STATE	23,605	9.2	11,632	4.6	35,237	6.9

¹ These crude rates are expressed as the number of admissions per 1,000 population.

* indicates a significant difference ($p < 0.05$) relative to the State rate.

The estimated numbers and cost of smoking caused admissions by tobacco related condition for each LGA are presented in the tables in Appendix 2.

The annual average cost of smoking caused hospitalisation in the metropolitan area was \$20 per head of population, with Mundaring LGA having the lowest annual cost of \$6 per head of population and the Stirling South Eastern LGA having the highest annual cost of \$50 per head of population [Table 10].

Table 10: Estimated number, total cost, and cost per head of population of smoking caused hospital bed days by metropolitan LGAs, WA, 1993-1995

Metropolitan LGA	Total number of bed days	Average annual bed day cost ¹	Annual cost per head of population
Armadale	9,921	\$1.5M	\$28
Bassendean	2,918	\$0.4M	\$31
Bayswater	9,960	\$1.5M	\$32
Belmont	5,947	\$0.9M	\$32
Cambridge	3,549	\$0.5M	\$24
Canning	10,092	\$1.5M	\$21
Claremont	2,006	\$0.3M	\$31
Cockburn	8,067	\$1.2M	\$21
Cottesloe/Peppermint Grove	1,123	\$0.2M	\$18
East Fremantle	770	\$0.1M	\$18
Fremantle	2,988	\$0.4M	\$18
Gosnells	9,863	\$1.4M	\$20
Kalamunda	2,315	\$0.3M	\$7
Kwinana	2,758	\$0.4M	\$21
Melville	9,173	\$1.3M	\$15
Mosman Park	1,417	\$0.2M	\$27
Mundaring	1,375	\$0.2M	\$6
Nedlands	2,629	\$0.4M	\$19
Perth	2,976	\$0.4M	\$44
Rockingham	8,100	\$1.2M	\$22
Serpentine-Jarrahdale	559	\$0.1M	\$9
South Perth	6,834	\$1.0M	\$28
Stirling Central	11,992	\$1.8M	\$17
Stirling West	7,494	\$1.1M	\$20
Stirling South Eastern	7,000	\$1.0M	\$50
Subiaco	2,401	\$0.4M	\$23
Swan	8,998	\$1.3M	\$20
Victoria Park	4,622	\$0.7M	\$27
Vincent	3,620	\$0.5M	\$24
Wanneroo	18,786	\$2.8M	\$14
Total Metro	170,254	\$25.0M	\$20
STATE	247,246	\$36.3M	\$21

¹ Calculated using the average cost of \$440 per bed day, from *Time Series Analysis, 1994/95*. Finance and Assets, Health Department of Western Australia, 1996.

Figure 6a: Standardised morbidity rates with 95% confidence intervals by metropolitan LGAs, WA, 1993-1995: males

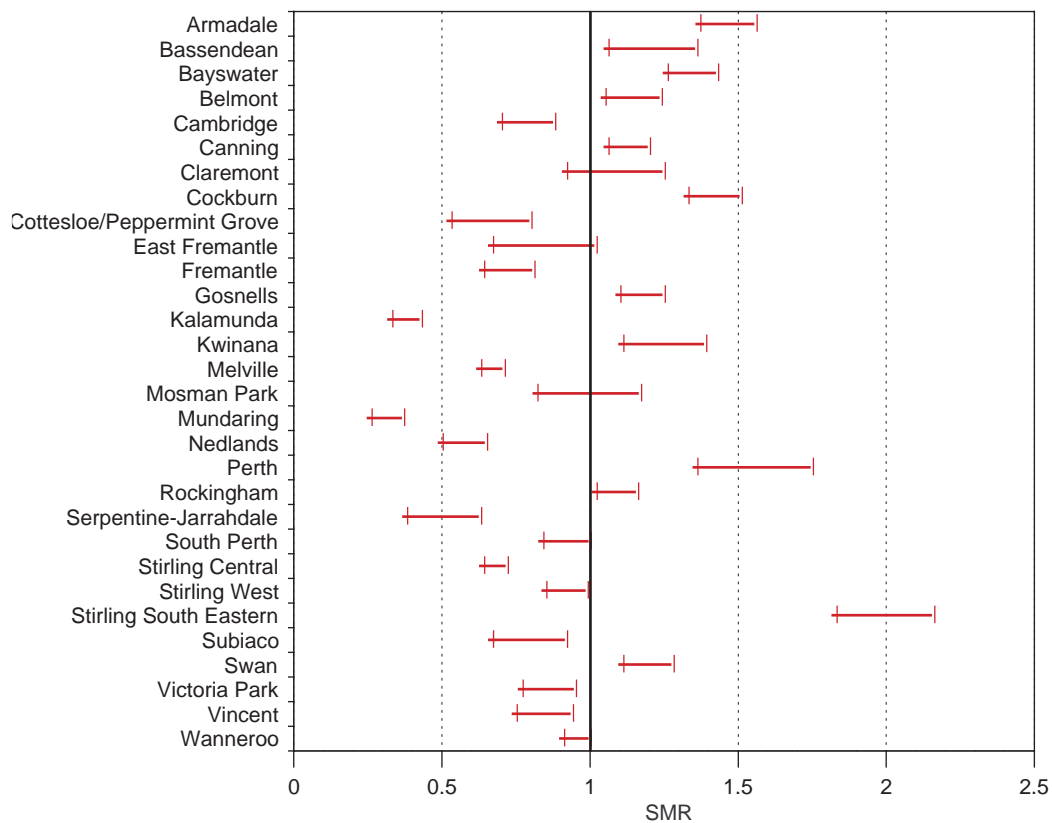
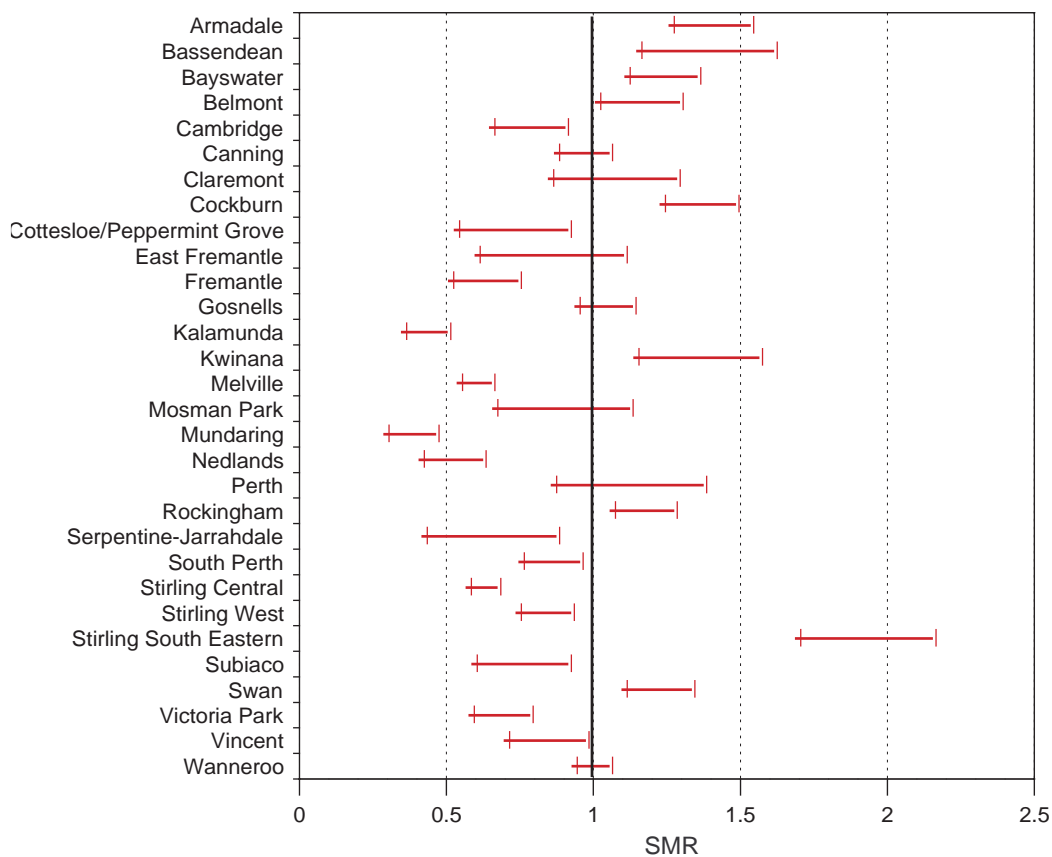


Figure 6b: Standardised morbidity rates with 95% confidence intervals by metropolitan LGAs, WA, 1993-1995: females



Most of the metropolitan LGAs had crude rates for smoking caused admissions significantly different to the State rate, and the metropolitan area as a whole had a significantly lower rate compared to the State (6.4 admissions per 1,000 persons compared to 6.9).

The LGA with the highest crude rate of hospitalisation, nearly more than twice the State rate of 6.9 admissions per 1,000 population, was Stirling South Eastern (13.3). The LGA with the lowest crude rate was Mundaring (2.1).

Due to variations in the age structure of the LGAs, SMRs were calculated to determine whether the observed number of admissions varied from that expected based on the State rate. Overall Stirling South Eastern LGA had the highest SMR (1.94) and Mundaring LGA had the lowest (0.32).

Males in the Claremont, East Fremantle, and Mosman Park LGAs had similar SMRs to the State, whilst 12 LGAs had significantly higher SMRs than the State, and 15 LGAs had significantly lower SMRs [Figure 6a].

Females, in Canning, Claremont, East Fremantle, Gosnells, Mosman Park, Perth, and Wanneroo LGAs had SMRs similar to the State, whilst nine LGAs had significantly higher SMRs than the State, and 14 LGAs had significantly lower SMRs [Figure 6b].

4. Conclusion

I have every sympathy with the American who was so horrified by what he had read about the effects of smoking that he gave up reading. - Henry G. Strauss

Tobacco smoke contains over 4,000 compounds, many of which have been linked to human disease (Department of Human Services and Health 1994). In WA tobacco smoking is responsible for about 80% of all drug caused deaths (Unwin 1996), 15% of all deaths, 2.5% of all hospital admissions and 4.2% of all bed days.

In 1992, the tangible and intangible costs of tobacco abuse in Australia were estimated at more than \$12,736 million (Collins and Lapsley 1996). In this State the estimated average annual bed day cost for smoking caused hospitalisation was over \$36 million, or \$21 per head of population per year.

The two diseases that accounted for over half the smoking caused deaths, lung cancer and ischaemic disease, are chronic conditions that result from long term smoking. As these diseases have long latent periods, current death rates due to smoking largely reflect the smoking patterns of the population in past decades.

The proportion of smokers in West Australia fell between 1984 and 1995, by 25% for males and by 14% for females (Unwin 1996a). Another report (Unwin 1996b), showed similar reductions in the ASRs for smoking caused deaths between 1984 and 1994, the death rate for males fell by 28% and for females by 16%.

The present study shows that there was a reduction in the proportion of total deaths that were caused by smoking from 1984 to 1995, of 15% for males and 5% for females.

For hospital admissions, the reduction was less marked, the proportion of total male deaths caused by smoking fell by 8% but there was no change for females.

The large variations in tobacco caused mortality and morbidity between different geographical areas of Western Australia, particularly at the LGA level, are partly due to the different age structures of the populations. Although these effects often persist after using age standardising techniques, more detailed information is required to explain these variations.

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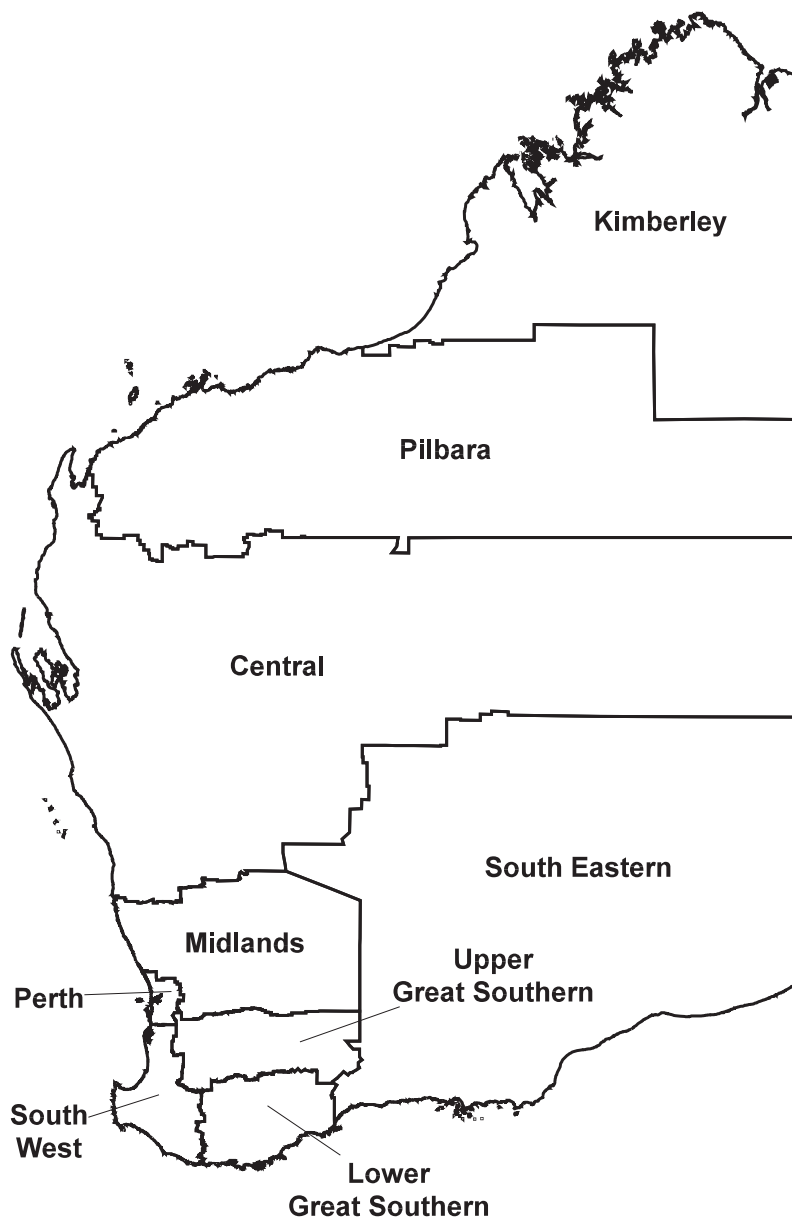
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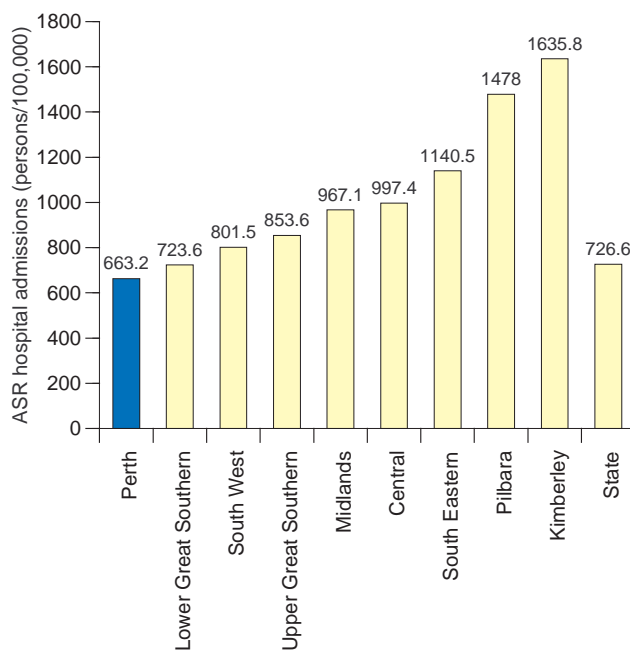
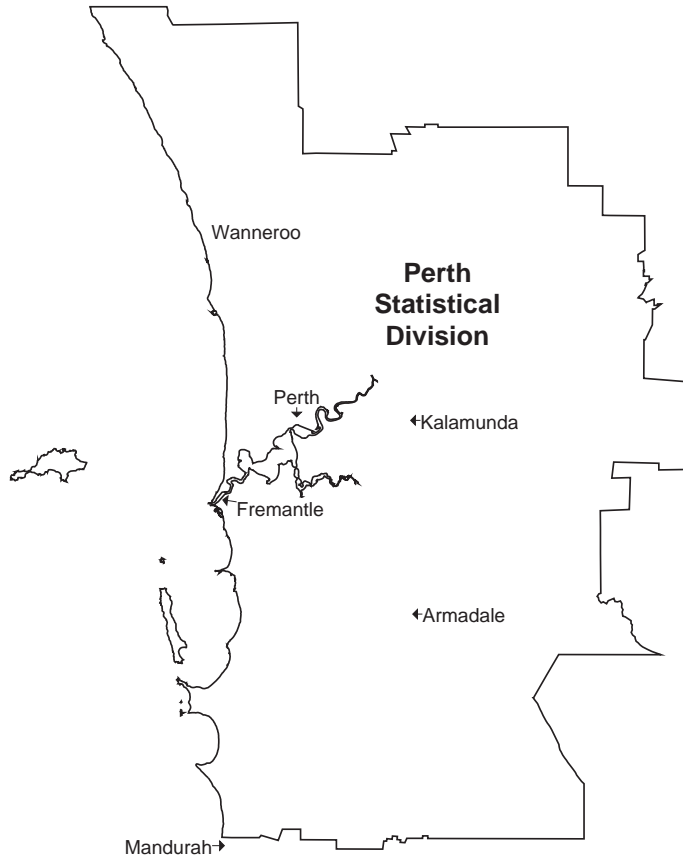
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Appendix 1

Summary sheets of the impact of tobacco smoking on health by Statistical Divisions



Perth Statistical Division



Perth Statistical Division

Estimated resident population in 1995: 1,262,156
Projected population size in 2001: 1,383,096

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	3,756	1,846	8.7	9.5
Mouth & throat cancer	510	566	8.6	2.8
Other cancers	590	1,492	4.5	4.0
Heart disease	3,505	8,858	5.2	27.0
Stroke	962	1,340	13.6	10.7
Atherosclerosis	612	2,063	7.4	9.0
Chronic bronchitis	2,565	3,579	10.3	21.6
Complications of pregnancy/infancy	139	1,623	9.3	8.8
Other conditions	276	2,627	4.3	6.7
Total	12,915	23,994	7.1	100.0

Deaths (1984-1995)

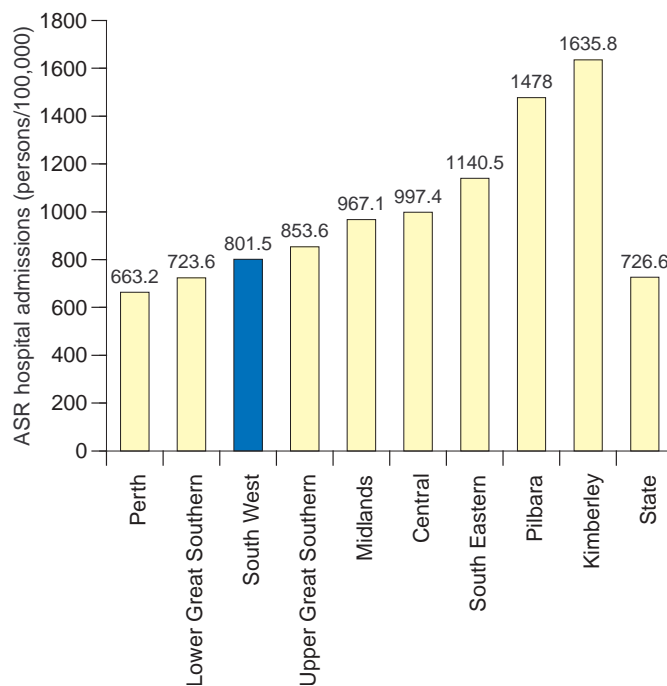
- The average number of tobacco caused deaths in the Perth Statistical Division was 1,076 people per year
- The number of tobacco caused deaths per head of population was not significantly higher in the Perth Statistical Division (94 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the Perth Statistical Division was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the Perth Statistical Division was \$24,970,147¹ per year, equivalent to \$20 per head of population.
- The average number of tobacco caused hospital admissions in the Perth Statistical Division was 7,998 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly lower in the Perth Statistical Division (645 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the Perth Statistical Division was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

South West Statistical Division



South West Statistical Division

Estimated resident population in 1995: 162,258
Projected population size in 2001: 186,177

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	499	324	8.7	10.4
Mouth & throat cancer	71	94	9.7	3.3
Other cancers	67	182	4.8	3.2
Heart disease	473	1,380	4.6	23.1
Stroke	122	261	10.7	10.3
Atherosclerosis	107	284	8.1	8.4
Chronic bronchitis	362	823	9.9	30.0
Complications of pregnancy/infancy	18	230	7.2	6.0
Other conditions	34	431	3.3	5.2
Total	1,753	4,009	6.8	100.0

Deaths (1984-1995)

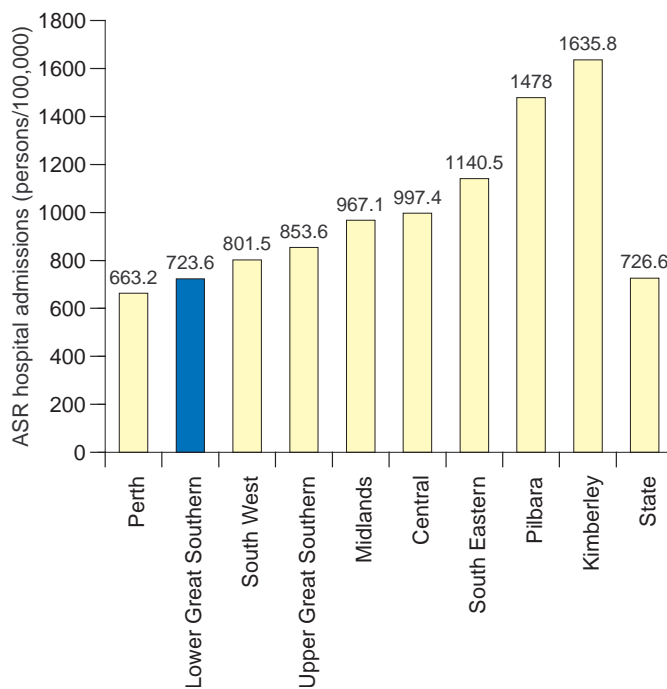
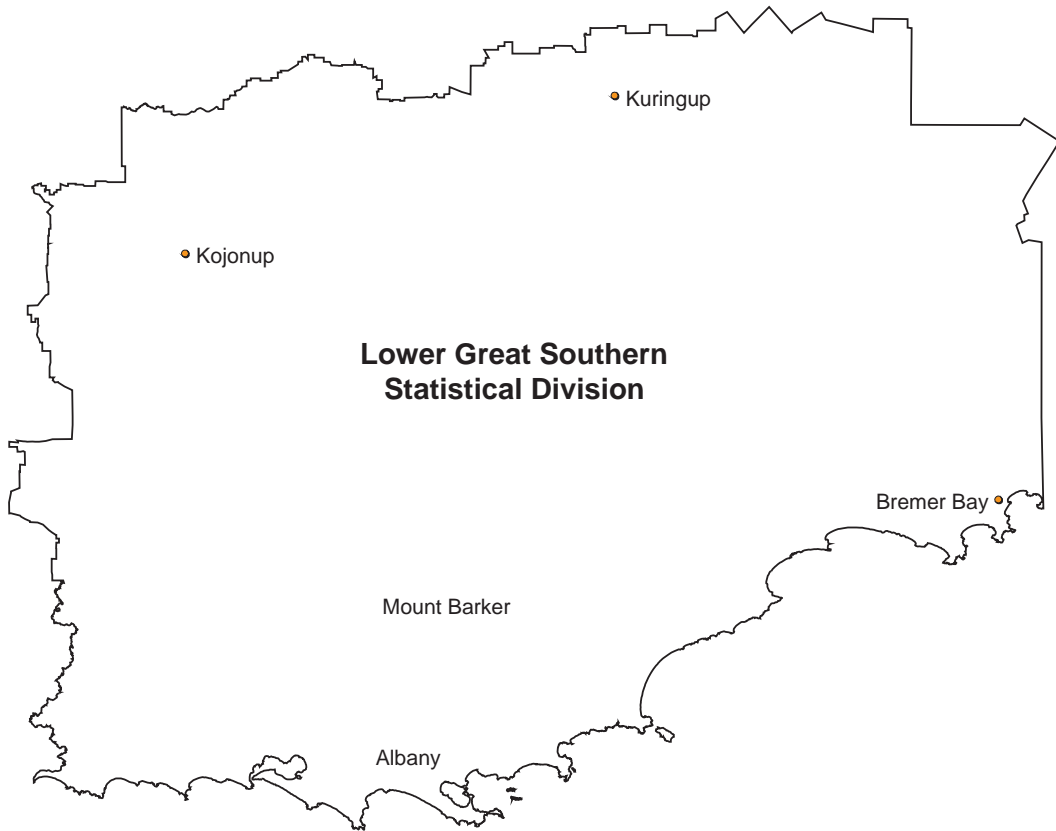
- The average number of tobacco caused deaths in the South West Statistical Division was 146 people per year.
- The number of tobacco caused deaths per head of population was significantly higher in the South West Statistical Division (108 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the South West Statistical Division was not significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the South West Statistical Division was \$4,000,920¹ per year, equivalent to \$25 per head of population.
- The average number of tobacco caused hospital admissions in the South West Statistical Division was 1,336 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly higher in the South West Statistical Division (846 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the South West Statistical Division was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Lower Great Southern Statistical Division



Lower Great Southern Statistical Division

Estimated resident population in 1995: 50,516
Projected population size in 2001: 53,758

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	141	67	6.8	6.2
Mouth & throat cancer	22	21	9.8	2.8
Other cancers	24	59	6.8	5.5
Heart disease	189	390	5.4	29.1
Stroke	48	81	10.8	12.0
Atherosclerosis	35	69	10.4	9.8
Chronic bronchitis	128	186	7.8	20.0
Complications of pregnancy/infancy	11	72	5.6	5.5
Other conditions	11	166	4.0	9.1
Total	609	1,111	6.6	100.0

Deaths (1984-1995)

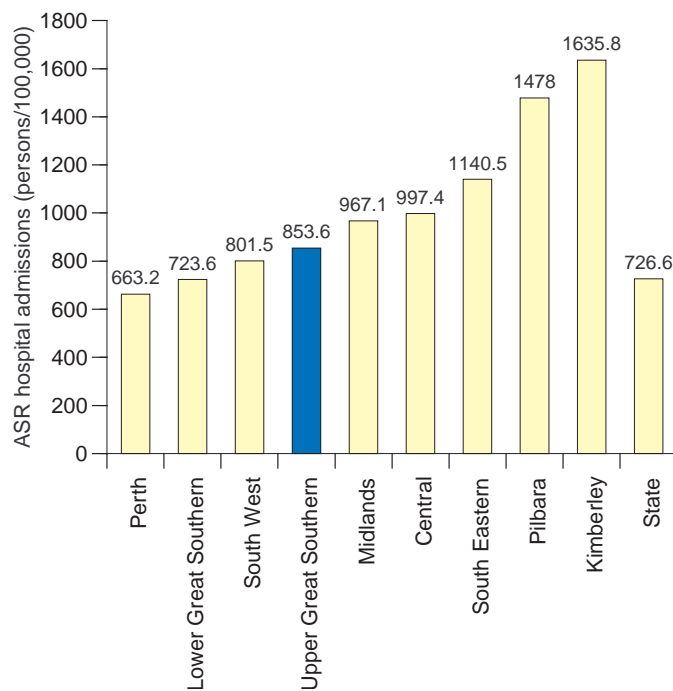
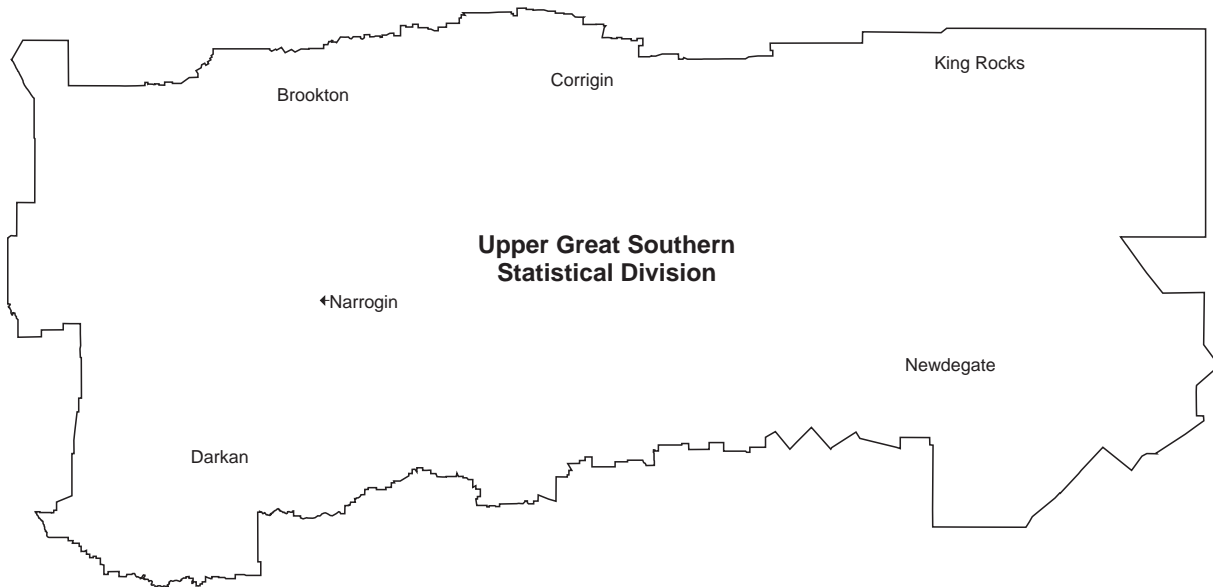
- The average number of tobacco caused deaths in the Lower Great Southern Statistical Division was 50 people per year.
- The number of tobacco caused deaths per head of population was significantly higher in the Lower Great Southern Statistical Division (106 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the Lower Great Southern Statistical Division was not significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the Lower Great Southern Statistical Division was \$1,069,493¹ per year, equivalent to \$21 per head of population.
- The average number of tobacco caused hospital admissions in the Lower Great Southern Statistical Division was 370 admissions per year.
- The number of tobacco caused hospital admissions per head of population was not significantly higher in the Lower Great Southern Statistical Division (740 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the Lower Great Southern Statistical Division was not significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Upper Great Southern Statistical Division



Upper Great Southern Statistical Division

Estimated resident population in 1995: 21,329
Projected population size in 2001: 21,777

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	56	22	9.5	6.6
Mouth & throat cancer	4	7	10.7	2.4
Other cancers	8	19	5.8	3.5
Heart disease	72	175	4.7	26.1
Stroke	16	30	8.4	8.0
Atherosclerosis	13	32	9.3	9.5
Chronic bronchitis	42	113	6.7	23.9
Complications of pregnancy/infancy	5	39	6.4	8.0
Other conditions	8	70	5.3	11.9
Total	224	507	6.2	100.0

Deaths (1984-1995)

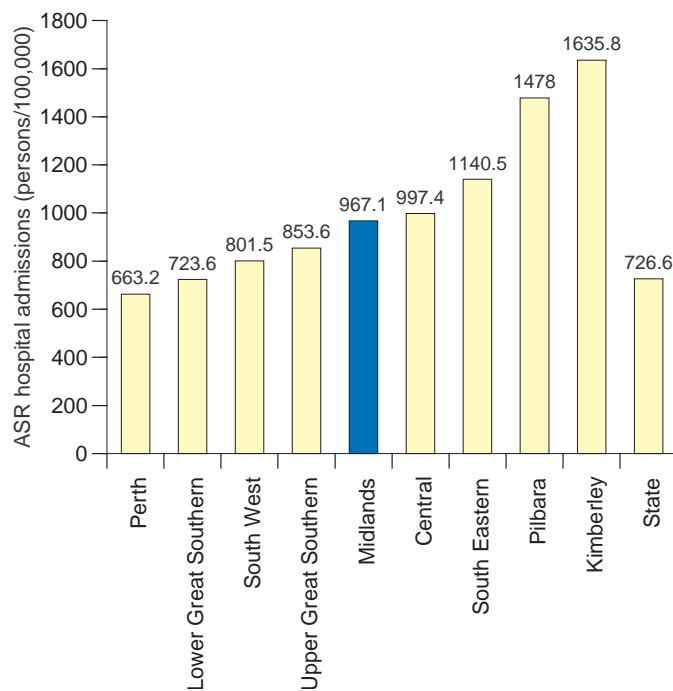
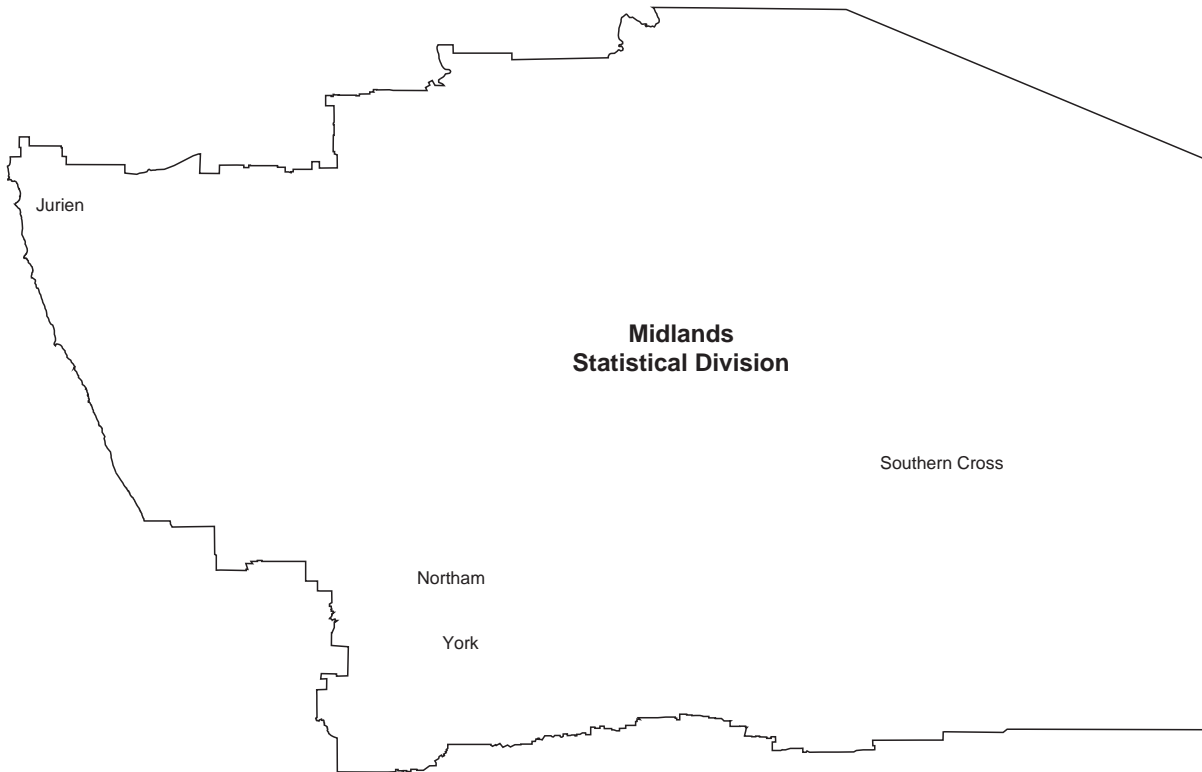
- The average number of tobacco caused deaths in the Upper Great Southern Statistical Division was 18 people per year.
- The number of tobacco caused deaths per head of population was not significantly lower in the Upper Great Southern Statistical Division (83 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the Upper Great Southern Statistical Division was not significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the Upper Great Southern Statistical Division was \$460,533¹ per year, equivalent to \$21 per head of population.
- The average number of tobacco caused hospital admissions in the Upper Great Southern Statistical Division was 169 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly higher in the Upper Great Southern Statistical Division (781 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the Upper Great Southern Statistical Division was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Midlands Statistical Division



Midlands Statistical Division

Estimated resident population in 1995: 51,048
Projected population size in 2001: 51,610

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	155	109	13.0	13.1
Mouth & throat cancer	31	35	12.5	4.1
Other cancers	22	51	5.7	2.7
Heart disease	161	470	5.2	22.8
Stroke	36	69	9.7	6.2
Atherosclerosis	20	75	7.6	5.3
Chronic bronchitis	94	324	8.6	25.9
Complications of pregnancy/infancy	11	95	11.3	10.0
Other conditions	19	204	5.2	9.9
Total	549	1,432	7.5	100.0

Deaths (1984-1995)

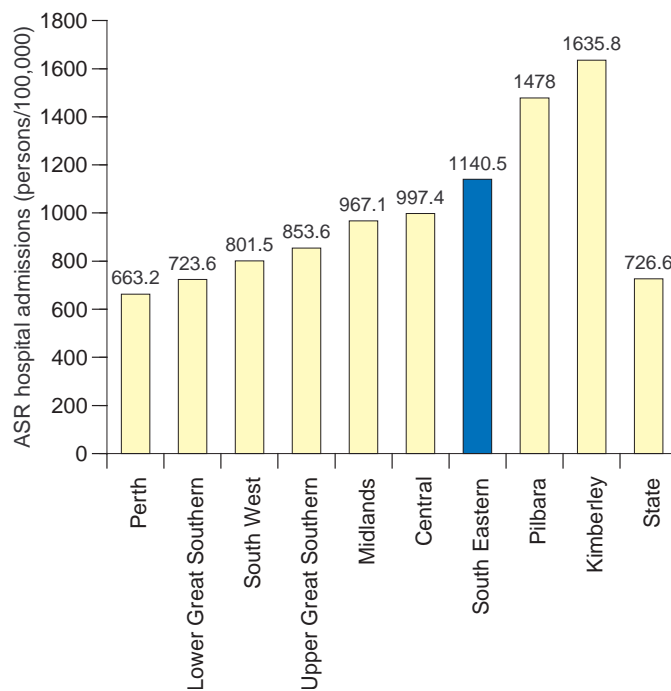
- The average number of tobacco caused deaths in the Midlands Statistical Division was 45 people per year.
- The number of tobacco caused deaths per head of population was not significantly lower in the Midlands Statistical Division (91 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the Midlands Statistical Division was not significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the Midlands Statistical Division was \$1,580,627¹ per year, equivalent to \$31 per head of population.
- The average number of tobacco caused hospital admissions in the Midlands Statistical Division was 477 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly higher in the Midlands Statistical Division (939 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the Midlands Statistical Division was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

South Eastern Statistical Division



South Eastern Statistical Division

Estimated resident population in 1995: 54,140
Projected population size in 2001: 56,949

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	137	92	10.3	10.2
Mouth & throat cancer	22	26	10.7	3.0
Other cancers	19	41	10.0	4.4
Heart disease	154	369	5.2	20.7
Stroke	35	53	14.7	8.4
Atherosclerosis	21	56	9.9	6.0
Chronic bronchitis	115	223	10.6	25.4
Complications of pregnancy/infancy	16	131	6.6	9.3
Other conditions	17	246	4.7	12.6
Total	536	1,237	7.5	100.0

Deaths (1984-1995)

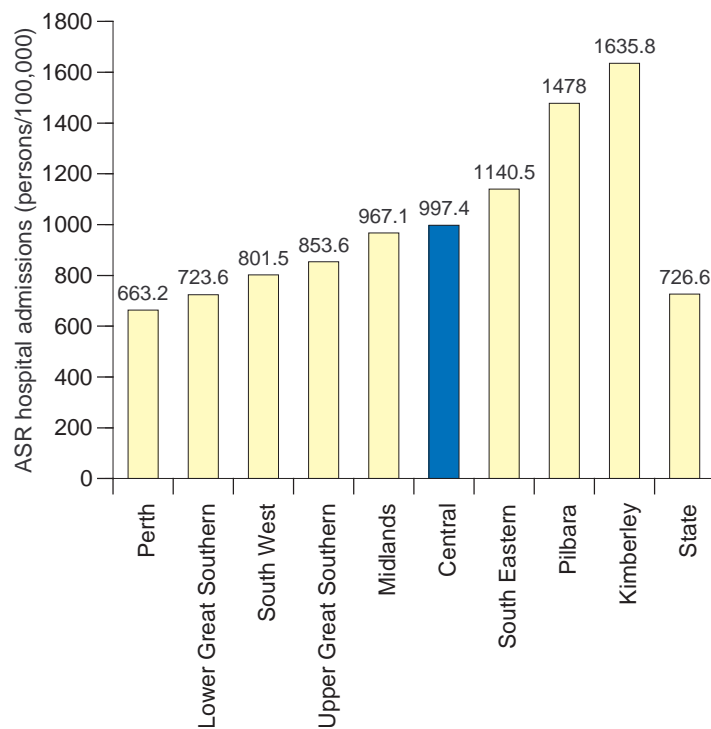
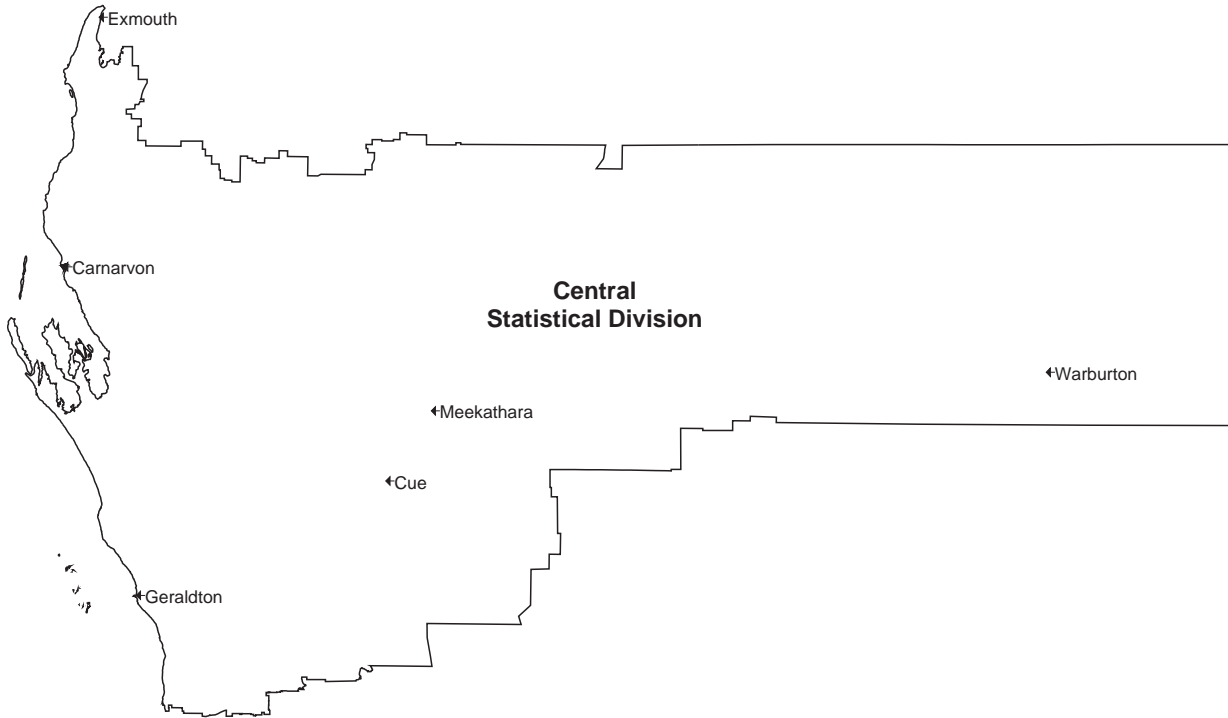
- The average number of tobacco caused deaths in the South Eastern Statistical Division was 44 people per year.
- The number of tobacco caused deaths per head of population was not significantly lower in the South Eastern Statistical Division (89 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the South Eastern Statistical Division was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the South Eastern Statistical Division was \$1,358,720 per year, equivalent to \$26 per head of population.
- The average number of tobacco caused hospital admissions in the South Eastern Statistical Division was 412 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly higher in the South Eastern Statistical Division (779 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the South Eastern Statistical Division was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Central Statistical Division



Central Statistical Division

Estimated resident population in 1995: 61,809
Projected population size in 2001: 67,242

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	165	80	12.1	9.4
Mouth & throat cancer	36	34	9.9	3.3
Other cancers	24	89	4.8	4.1
Heart disease	172	438	4.9	20.6
Stroke	47	74	10.9	7.8
Atherosclerosis	25	81	8.6	6.7
Chronic bronchitis	143	335	8.1	26.4
Complications of pregnancy/infancy	12	132	7.5	9.6
Other conditions	15	237	5.3	12.1
Total	639	1,500	6.9	100.0

Deaths (1984-1995)

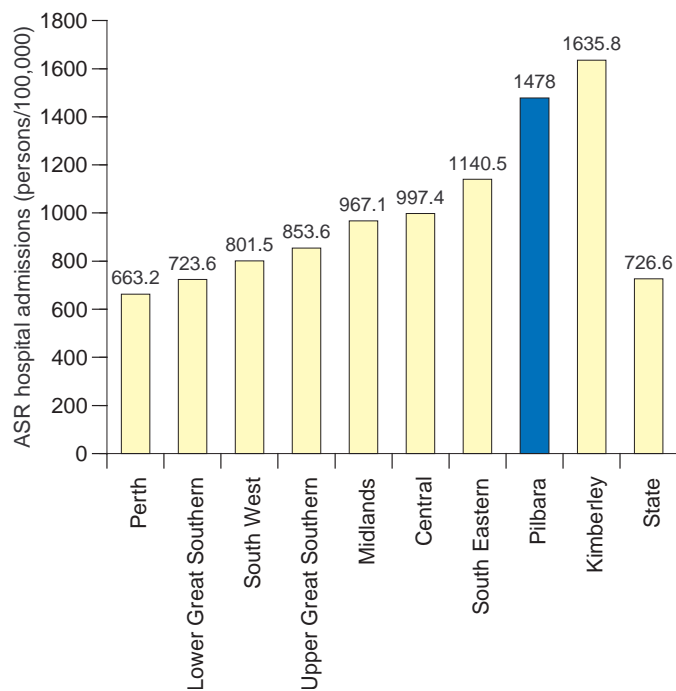
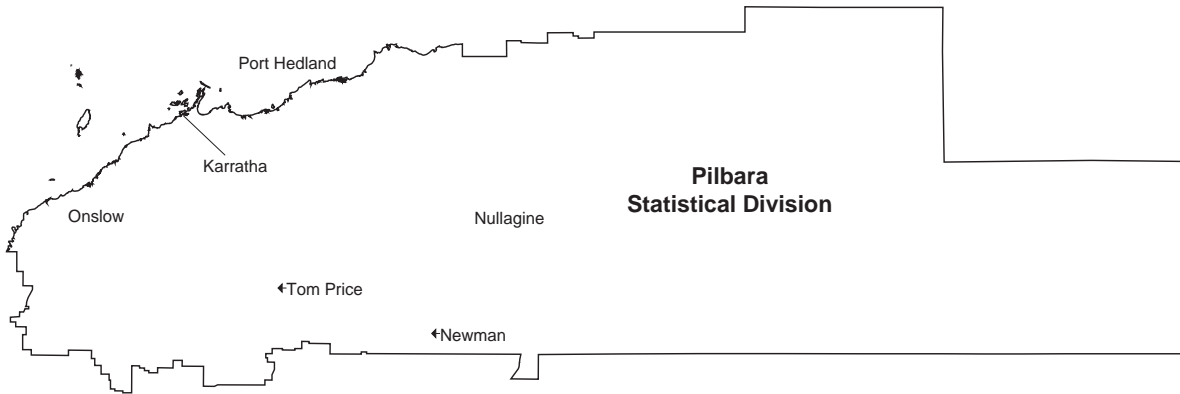
- The average number of tobacco caused deaths in the Central Statistical Division was 53 people per year
- The number of tobacco caused deaths per head of population was not significantly lower in the Central Statistical Division (91 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the Central Statistical Division was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the Central Statistical Division was \$1,515,067¹ per year, equivalent to \$25 per head of population.
- The average number of tobacco caused hospital admissions in the Central Statistical Division was 500 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly higher in the Central Statistical Division (818 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the Central Statistical Division was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Pilbara Statistical Division



Pilbara Statistical Division

Estimated resident population in 1995: 42,946
Projected population size in 2001: 45,642

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	47	44	10.3	10.2
Mouth & throat cancer	13	30	8.0	5.4
Other cancers	6	21	6.0	2.9
Heart disease	65	247	4.2	23.6
Stroke	17	36	11.9	9.7
Atherosclerosis	4	15	8.4	2.8
Chronic bronchitis	26	131	4.2	12.3
Complications of pregnancy/infancy	8	101	7.8	17.8
Other conditions	7	139	4.9	15.3
Total	193	764	5.8	100.0

Deaths (1984-1995)

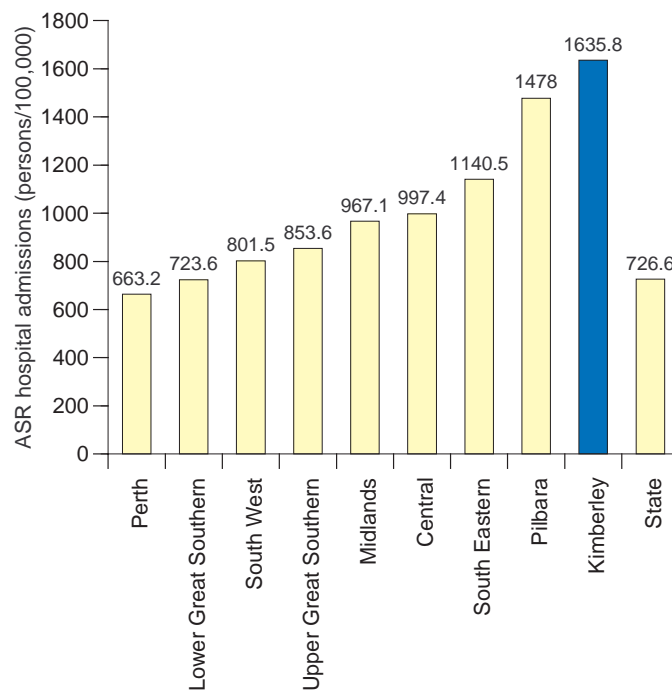
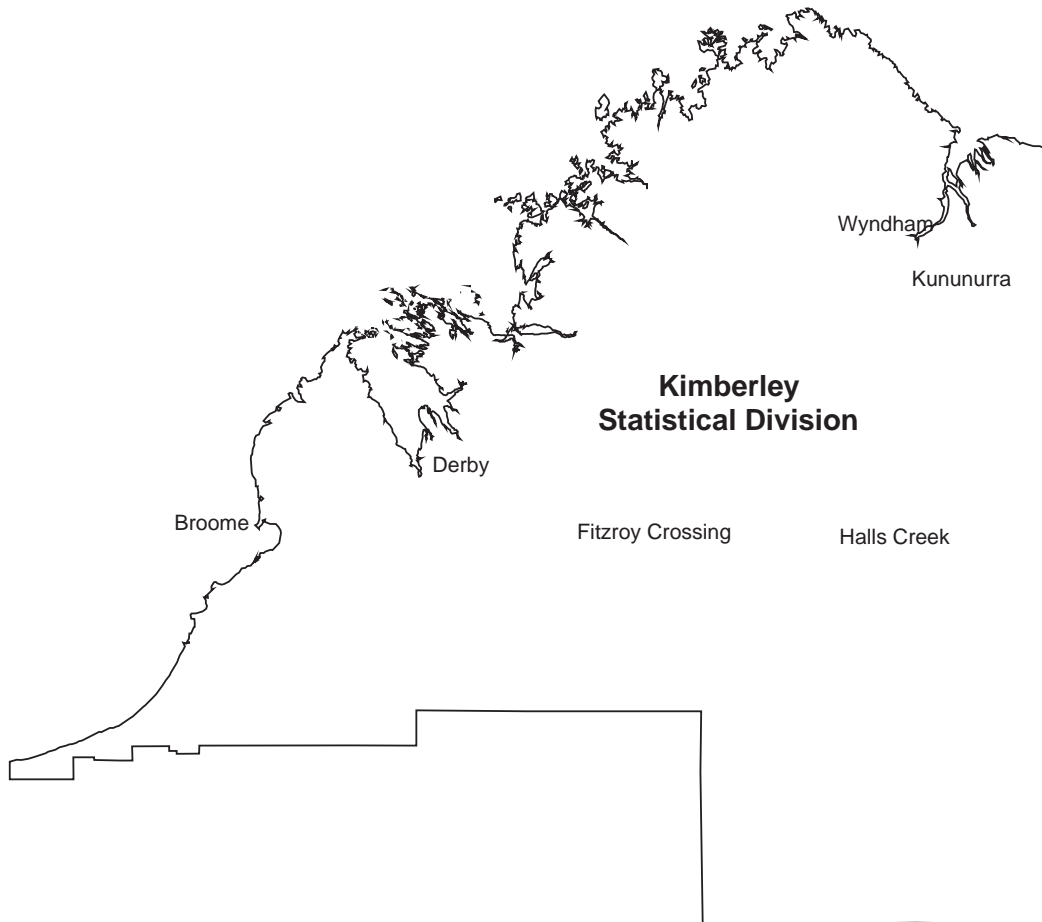
- The average number of tobacco caused deaths in the Pilbara Statistical Division was 16 people per year
- The number of tobacco caused deaths per head of population was significantly lower in the Pilbara Statistical Division (34 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the Pilbara Statistical Division was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the Pilbara Statistical Division was \$651,053¹ per year, equivalent to \$15 per head of population.
- The average number of tobacco caused hospital admissions in the Pilbara Statistical Division was 254 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly lower in the Pilbara Statistical Division (588 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the Pilbara Statistical Division was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Kimberley Statistical Division



Kimberley Statistical Division

Estimated resident population in 1995: 24,960
Projected population size in 2001: 28,518

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	31	11	6.7	1.7
Mouth & throat cancer	14	18	6.8	2.8
Other cancers	6	10	5.7	1.3
Heart disease	71	204	5.8	26.8
Stroke	23	39	11.2	9.8
Atherosclerosis	3	12	10.8	2.9
Chronic bronchitis	35	165	5.3	19.8
Complications of pregnancy/infancy	11	89	8.0	15.9
Other conditions	15	139	6.1	19.1
Total	209	687	6.5	100.0

Deaths (1984-1995)

- The average number of tobacco caused deaths in the Kimberley Statistical Division was 17 people per year.
- The number of tobacco caused deaths per head of population was significantly lower in the Kimberley Statistical Division (77 per 100,000) compared to the State (93 per 100,000).
- The observed number of tobacco caused deaths in the Kimberley Statistical Division was significantly higher than the number expected, based on the State rate.

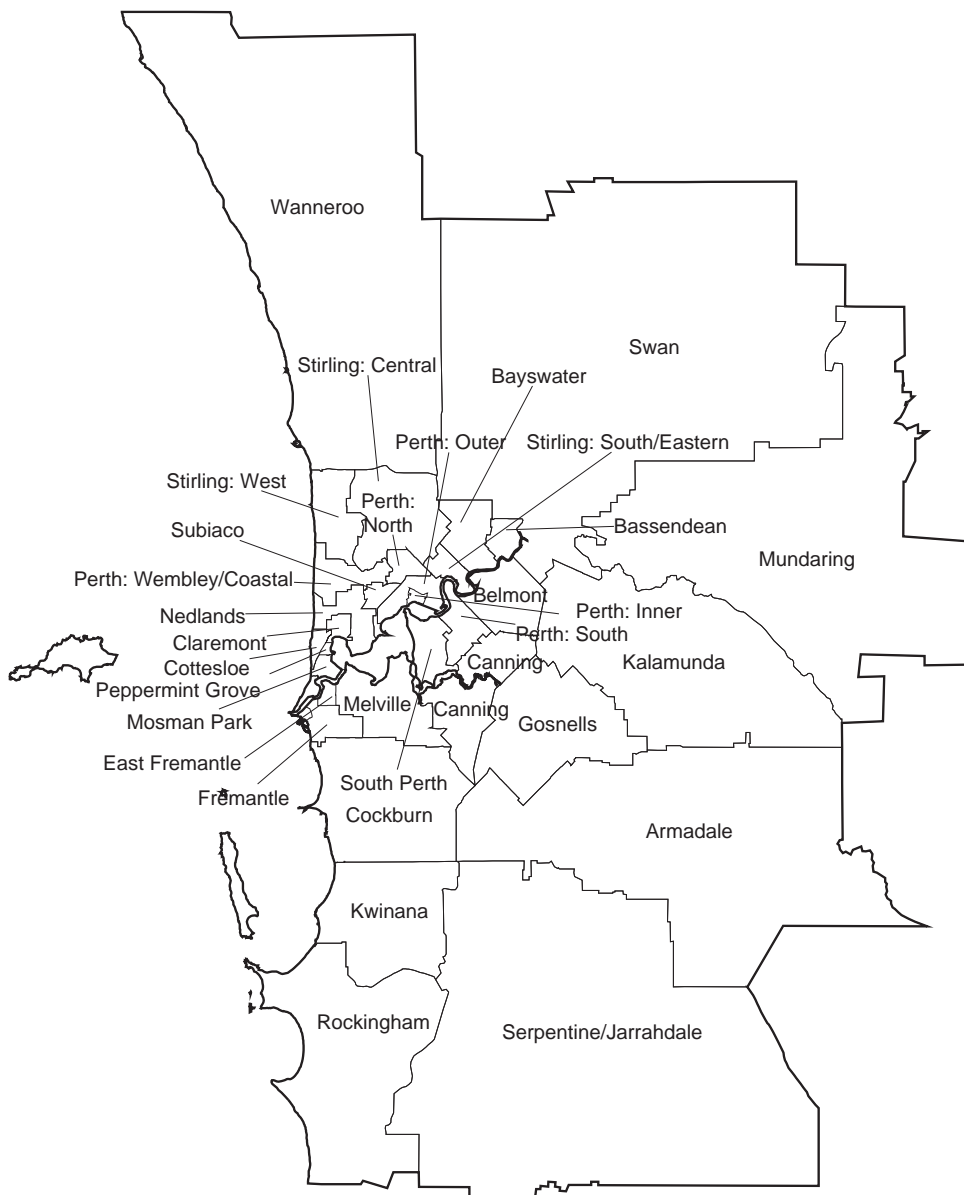
Hospitalisation (1993-1995)

- The average cost of tobacco caused hospitalisation in the Kimberley Statistical Division was \$653,400 per year, equivalent to \$27 per head of population.
- The average number of tobacco caused hospital admissions in the Kimberley Statistical Division was 229 admissions per year.
- The number of tobacco caused hospital admissions per head of population was significantly higher in the Kimberley Statistical Division (945 per 100,000) compared to the State (690 per 100,000).
- The observed number of tobacco caused hospital admissions in the Kimberley Statistical Division was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Appendix 2

Summary sheets of the impact of tobacco smoking on health by metropolitan local government areas



Note: Perth South LGA now known as Victoria Park LGA; Perth Wembley Coastal LGA now known as Cambridge LGA; Perth Inner and Perth Outer combined as Perth LGA; Perth North LGA now known as Vincent LGA

Armadale LGA

Estimated resident population in 1995: 51,731
Projected population size in 2001: 56,993

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	178	104	9.2	9.7
Mouth & throat cancer	27	23	6.7	1.6
Other cancers	29	80	4.2	3.4
Heart disease	159	480	5.0	24.1
Stroke	44	69	12.6	8.7
Atherosclerosis	32	103	8.3	8.6
Chronic bronchitis	118	219	12.3	27.2
Complications of pregnancy/infancy	10	96	9.4	9.1
Other conditions	14	146	5.3	7.7
Total	611	1,320	7.5	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Armadale LGA was 50 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Armadale LGA (107 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Armadale LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Armadale LGA was \$1,455,373¹ per year, equivalent to \$28 per head of population.
- The average number of smoking caused hospital admissions in the Armadale LGA was 440 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Armadale LGA (859 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Armadale LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Bassendean LGA

Estimated resident population in 1995: 13,992
Projected population size in 2001: 13,665

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	75	27	13.2	12.2
Mouth & throat cancer	9	12	7.3	3.0
Other cancers	14	26	5.2	4.6
Heart disease	82	139	5.4	25.7
Stroke	17	17	10.2	6.0
Atherosclerosis	11	33	7.1	8.0
Chronic bronchitis	59	66	8.7	19.7
Complications of pregnancy/infancy	4	35	11.5	13.7
Other conditions	6	43	4.8	7.1
Total	277	398	7.3	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Bassendean LGA was 23 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Bassendean LGA (168 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Bassendean LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Bassendean LGA was \$428,120¹ per year, equivalent to \$31 per head of population.
- The average number of smoking caused hospital admissions in the Bassendean LGA was 132 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Bassendean LGA (954 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Bassendean LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Bayswater LGA

Estimated resident population in 1995: 46,132
Projected population size in 2001: 45,719

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	208	142	8.3	11.9
Mouth & throat cancer	21	30	9.3	2.8
Other cancers	37	81	4.7	3.8
Heart disease	178	486	5.4	26.4
Stroke	43	79	13.4	10.6
Atherosclerosis	28	142	7.0	10.0
Chronic bronchitis	97	198	10.8	21.5
Complications of pregnancy/infancy	7	68	9.5	6.5
Other conditions	6	150	4.3	6.5
Total	625	1,376	7.2	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Bayswater LGA was 52 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Bayswater LGA (115 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Bayswater LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Bayswater LGA was \$1,460,360¹ per year, equivalent to \$32 per head of population.
- The average number of smoking caused hospital admissions in the Bayswater LGA was 458 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Bayswater LGA (994 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Bayswater LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Belmont LGA

Estimated resident population in 1995: 27,024
Projected population size in 2001: 26,521

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	157	72	8.5	10.2
Mouth & throat cancer	21	31	7.3	3.8
Other cancers	20	48	4.8	3.9
Heart disease	126	281	5.7	26.9
Stroke	26	36	14.1	8.5
Atherosclerosis	18	69	7.7	9.0
Chronic bronchitis	98	140	10.2	24.1
Complications of pregnancy/infancy	6	42	7.5	5.3
Other conditions	7	80	6.1	8.2
Total	479	799	7.4	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Belmont LGA was 39 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Belmont LGA (143 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Belmont LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Belmont LGA was \$871,933¹ per year, equivalent to \$32 per head of population.
- The average number of smoking caused hospital admissions in the Belmont LGA was 266 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Belmont LGA (989 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Belmont LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Cambridge LGA

Estimated resident population in 1995: 23,964
Projected population size in 2001: 24,801

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	72	31	9.5	8.3
Mouth & throat cancer	8	15	5.7	2.4
Other cancers	12	37	5.9	6.1
Heart disease	77	169	5.7	27.0
Stroke	23	31	16.0	14.0
Atherosclerosis	16	42	7.6	9.0
Chronic bronchitis	43	56	13.1	20.6
Complications of pregnancy/infancy	2	22	10.4	6.4
Other conditions	5	59	3.6	6.1
Total	258	462	7.7	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Cambridge LGA was 21 people per year.
- The number of smoking caused deaths per head of population was not significantly higher in the Cambridge LGA (104 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Cambridge LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Cambridge LGA was \$520,373¹ per year, equivalent to \$24 per head of population.
- The average number of smoking caused hospital admissions in the Cambridge LGA was 154 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly higher in the Cambridge LGA (703 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Cambridge LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Note: Formerly known as the Perth Wembley Coastal SLA.

Canning LGA

Estimated resident population in 1995: 71,022
Projected population size in 2001: 74,207

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	212	100	8.5	8.5
Mouth & throat cancer	27	33	6.8	2.2
Other cancers	41	81	4.6	3.7
Heart disease	221	634	4.6	28.7
Stroke	67	81	15.9	12.8
Atherosclerosis	37	103	8.2	8.4
Chronic bronchitis	158	197	9.9	19.2
Complications of pregnancy/infancy	9	104	9.2	9.5
Other conditions	23	164	4.3	7.0
Total	795	1,497	6.7	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Canning LGA was 66 people per year.
- The number of smoking caused deaths per head of population was not significantly higher in the Canning LGA (98 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Canning LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Canning LGA was \$1,480,453¹ per year, equivalent to \$21 per head of population.
- The average number of smoking caused hospital admissions in the Canning LGA was 499 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly higher in the Canning LGA (708 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Canning LGA was not significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Claremont LGA

Estimated resident population in 1995: 9,444
Projected population size in 2001: 9,413

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	49	19	9.7	9.2
Mouth & throat cancer	11	10	11.2	5.6
Other cancers	9	24	4.3	5.1
Heart disease	57	96	6.3	30.3
Stroke	19	22	13.0	14.2
Atherosclerosis	9	26	10.6	13.7
Chronic bronchitis	43	33	8.0	13.2
Complications of pregnancy/infancy	0	9	9.1	4.1
Other conditions	5	27	3.4	4.6
Total	202	266	7.5	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Claremont LGA was 16 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Claremont LGA (188 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Claremont LGA was not significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Claremont LGA was \$293,920¹ per year, equivalent to \$31 per head of population.
- The average number of smoking caused hospital admissions in the Claremont LGA was 88 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Claremont LGA (950 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Claremont LGA was not significantly different to the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Cockburn LGA

Estimated resident population in 1995: 57,352
Projected population size in 2001: 65,896

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	185	98	7.7	9.4
Mouth & throat cancer	26	36	5.9	2.6
Other cancers	29	83	4.2	4.3
Heart disease	173	590	4.3	31.2
Stroke	50	69	13.2	11.3
Atherosclerosis	23	102	6.8	8.6
Chronic bronchitis	116	153	8.4	15.9
Complications of pregnancy/infancy	8	99	8.8	10.9
Other conditions	9	139	3.4	5.9
Total	619	1,369	5.9	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Cockburn LGA was 51 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Cockburn LGA (106 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Cockburn LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Cockburn LGA was \$1,182,720¹ per year, equivalent to \$21 per head of population.
- The average number of smoking caused hospital admissions in the Cockburn LGA was 456 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Cockburn LGA (823 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Cockburn LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Cottesloe/Peppermint Grove LGA

Estimated resident population in 1995: 9,011
Projected population size in 2001: 8,923

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	17	7	4.6	2.8
Mouth & throat cancer	3	3	18.0	4.8
Other cancers	4	15	6.0	8.0
Heart disease	30	43	5.3	20.5
Stroke	8	11	15.8	15.5
Atherosclerosis	6	13	10.8	12.5
Chronic bronchitis	29	28	9.4	23.4
Complications of pregnancy/infancy	0	10	9.1	8.1
Other conditions	1	17	2.9	4.4
Total	98	147	7.6	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Cottesloe/Peppermint Grove LGA was 8 people per year.
- The number of smoking caused deaths per head of population was not significantly lower in the Cottesloe/Peppermint Grove LGA (92 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Cottesloe/Peppermint Grove LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Cottesloe/Peppermint Grove LGA was \$164,853¹ per year, equivalent to \$18 per head of population.
- The average number of smoking caused hospital admissions in the Cottesloe/Peppermint Grove LGA was 49 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Cottesloe/Peppermint Grove LGA (542 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Cottesloe/Peppermint Grove LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Note: Cottesloe/Peppermint Grove LGA combines the Peppermint Grove LGA and Cottesloe LGA.

East Fremantle LGA

Estimated resident population in 1995: 6,403
Projected population size in 2001: 6,182

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	25	8	9.6	10.0
Mouth & throat cancer	3	3	5.3	2.1
Other cancers	5	14	3.4	6.2
Heart disease	32	52	4.6	30.7
Stroke	12	9	10.4	12.2
Atherosclerosis	8	12	4.3	6.6
Chronic bronchitis	22	19	8.1	19.8
Complications of pregnancy/infancy	0	5	9.8	6.3
Other conditions	4	12	3.9	6.1
Total	111	134	5.8	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the East Fremantle LGA was 9 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the East Fremantle LGA (149 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the East Fremantle LGA was not significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the East Fremantle LGA was \$113,227¹ per year, equivalent to \$18 per head of population.
- The average number of smoking caused hospital admissions in the East Fremantle LGA was 44 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly higher in the East Fremantle LGA (696 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the East Fremantle LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Fremantle LGA

Estimated resident population in 1995: 24,464
Projected population size in 2001: 24,779

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	70	27	10.1	9.2
Mouth & throat cancer	17	21	8.6	6.1
Other cancers	13	23	3.5	2.7
Heart disease	72	154	4.6	23.5
Stroke	21	21	17.0	12.0
Atherosclerosis	11	27	11.2	10.1
Chronic bronchitis	57	66	9.6	21.2
Complications of pregnancy/infancy	2	24	12.1	9.7
Other conditions	10	45	3.7	5.5
Total	273	408	7.3	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Fremantle LGA was 22 people per year.
- The number of smoking caused deaths per head of population was not significantly higher in the Fremantle LGA (97 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Fremantle LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Fremantle LGA was \$438,240¹ per year, equivalent to \$18 per head of population.
- The average number of smoking caused hospital admissions in the Fremantle LGA was 136 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Fremantle LGA (564 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Fremantle LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Gosnells LGA

Estimated resident population in 1995: 74,404
Projected population size in 2001: 80,950

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	210	102	8.0	8.3
Mouth & throat cancer	24	29	9.9	2.9
Other cancers	31	79	4.7	3.7
Heart disease	186	537	4.7	25.3
Stroke	43	79	13.0	10.4
Atherosclerosis	25	111	8.3	9.3
Chronic bronchitis	112	216	10.2	22.2
Complications of pregnancy/infancy	16	107	10.6	11.5
Other conditions	12	138	4.5	6.2
Total	659	1,398	7.1	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Gosnells LGA was 54 people per year.
- The number of smoking caused deaths per head of population was significantly lower in the Gosnells LGA (80 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Gosnells LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Gosnells LGA was \$1,446,867¹ per year, equivalent to \$20 per head of population.
- The average number of smoking caused hospital admissions in the Gosnells LGA was 466 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Gosnells LGA (634 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Gosnells LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Kalamunda LGA

Estimated resident population in 1995: 48,251
Projected population size in 2001: 54,477

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	49	28	8.7	10.6
Mouth & throat cancer	6	8	6.5	2.2
Other cancers	10	18	3.4	2.6
Heart disease	40	128	4.6	25.5
Stroke	9	17	12.3	9.0
Atherosclerosis	7	29	7.2	9.0
Chronic bronchitis	36	43	9.5	17.6
Complications of pregnancy/infancy	2	34	8.9	13.0
Other conditions	3	51	4.7	10.3
Total	162	356	6.5	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Kalamunda LGA was 13 people per year.
- The number of smoking caused deaths per head of population was significantly lower in the Kalamunda LGA (29 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Kalamunda LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Kalamunda LGA was \$339,093¹ per year, equivalent to \$7 per head of population.
- The average number of smoking caused hospital admissions in the Kalamunda LGA was 118 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Kalamunda LGA (246 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Kalamunda LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Kwinana LGA

Estimated resident population in 1995: 19,926
Projected population size in 2001: 25,477

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	65	27	5.1	5.0
Mouth & throat cancer	5	5	14.2	2.6
Other cancers	7	27	4.4	4.3
Heart disease	51	203	4.1	30.1
Stroke	13	26	10.2	9.6
Atherosclerosis	4	30	9.7	10.6
Chronic bronchitis	33	70	6.3	16.0
Complications of pregnancy/infancy	5	46	9.5	15.9
Other conditions	4	36	4.5	5.9
Total	187	470	5.9	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Kwinana LGA was 15 people per year.
- The number of smoking caused deaths per head of population was not significantly lower in the Kwinana LGA (93 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Kwinana LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Kwinana LGA was \$404,947¹ per year, equivalent to \$21 per head of population.
- The average number of smoking caused hospital admissions in the Kwinana LGA was 156 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Kwinana LGA (807 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Kwinana LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Melville LGA

Estimated resident population in 1995: 92,163
Projected population size in 2001: 92,222

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	193	107	7.2	8.4
Mouth & throat cancer	30	31	7.0	2.4
Other cancers	37	115	4.2	5.3
Heart disease	213	561	4.7	28.5
Stroke	61	84	12.0	11.0
Atherosclerosis	44	118	6.9	8.8
Chronic bronchitis	148	187	10.6	21.6
Complications of pregnancy/infancy	3	56	11.1	6.8
Other conditions	21	139	4.8	7.2
Total	750	1,398	6.6	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Melville LGA was 62 people per year.
- The number of smoking caused deaths per head of population was significantly lower in the Melville LGA (75 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Melville LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Melville LGA was \$1,345,667¹ per year, equivalent to \$15 per head of population.
- The average number of smoking caused hospital admissions in the Melville LGA was 466 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Melville LGA (506 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Melville LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Mosman Park LGA

Estimated resident population in 1995: 7,730
Projected population size in 2001: 7,810

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	35	12	9.9	8.4
Mouth & throat cancer	3	3	22.3	4.7
Other cancers	4	12	2.8	2.4
Heart disease	30	61	5.1	22.0
Stroke	11	13	15.4	14.1
Atherosclerosis	6	25	7.6	13.3
Chronic bronchitis	19	27	11.6	22.1
Complications of pregnancy/infancy	1	11	9.1	7.1
Other conditions	5	21	4.0	5.9
Total	114	185	7.7	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Mosman Park LGA was 9 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Mosman Park LGA (126 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Mosman Park LGA was not significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Mosman Park LGA was \$207,827¹ per year, equivalent to \$27 per head of population.
- The average number of smoking caused hospital admissions in the Mosman Park LGA was 61 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly higher in the Mosman Park LGA (799 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Mosman Park LGA was not significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Mundaring LGA

Estimated resident population in 1995: 32,576
Projected population size in 2001: 35,847

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	28	21	8.7	13.3
Mouth & throat cancer	5	4	5.5	1.6
Other cancers	3	15	5.1	5.5
Heart disease	29	60	5.3	22.9
Stroke	5	14	9.7	9.9
Atherosclerosis	5	17	9.5	11.8
Chronic bronchitis	15	29	8.4	17.7
Complications of pregnancy/infancy	1	16	6.9	8.1
Other conditions	2	23	5.5	9.2
Total	93	199	6.9	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Mundaring LGA was 7 people per year.
- The number of smoking caused deaths per head of population was significantly lower in the Mundaring LGA (27 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Mundaring LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Mundaring LGA was \$201,813¹ per year, equivalent to \$6 per head of population.
- The average number of smoking caused hospital admissions in the Mundaring LGA was 66 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Mundaring LGA (207 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Mundaring LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Nedlands LGA

Estimated resident population in 1995: 20,818
Projected population size in 2001: 21,061

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	74	19	11.1	8.0
Mouth & throat cancer	9	8	4.5	1.4
Other cancers	16	25	5.3	5.1
Heart disease	83	112	5.6	23.8
Stroke	32	21	21.1	16.8
Atherosclerosis	22	42	8.2	13.2
Chronic bronchitis	97	34	13.5	17.4
Complications of pregnancy/infancy	1	14	8.3	4.4
Other conditions	3	38	6.9	10.0
Total	337	313	8.4	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Nedlands LGA was 28 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Nedlands LGA (140 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Nedlands LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Nedlands LGA was \$385,880¹ per year, equivalent to \$19 per head of population.
- The average number of smoking caused hospital admissions in the Nedlands LGA was 104 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Nedlands LGA (504 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Nedlands LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Perth LGA

Estimated resident population in 1995: 5,207
Projected population size in 2001: 5,291

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	73	34	10.2	11.7
Mouth & throat cancer	15	7	12.9	3.0
Other cancers	6	14	9.3	4.4
Heart disease	70	135	6.8	30.8
Stroke	19	15	20.3	10.2
Atherosclerosis	11	28	10.3	9.7
Chronic bronchitis	57	38	15.1	19.2
Complications of pregnancy/infancy	1	13	8.6	3.8
Other conditions	9	40	5.4	7.2
Total	261	324	9.2	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Perth LGA was 21 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Perth LGA (171 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Perth LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Perth LGA was \$436,627¹ per year, equivalent to \$44 per head of population.
- The average number of smoking caused hospital admissions in the Perth LGA was 108 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Perth LGA (1083 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Perth LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Note: Perth LGA combines the Perth Inner and Perth Outer SLAs.

Rockingham LGA

Estimated resident population in 1995: 57,536
Projected population size in 2001: 72,255

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	169	102	7.2	9.0
Mouth & throat cancer	23	35	7.8	3.4
Other cancers	27	99	3.5	4.2
Heart disease	125	537	4.3	28.2
Stroke	32	61	10.1	7.6
Atherosclerosis	23	86	6.2	6.6
Chronic bronchitis	96	228	8.9	25.0
Complications of pregnancy/infancy	7	89	8.3	9.1
Other conditions	8	116	4.8	6.9
Total	510	1,353	6.0	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Rockingham LGA was 42 people per year.
- The number of smoking caused deaths per head of population was not significantly higher in the Rockingham LGA (101 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Rockingham LGA was not significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Rockingham LGA was \$1,188,147¹ per year, equivalent to \$22 per head of population.
- The average number of smoking caused hospital admissions in the Rockingham LGA was 451 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Rockingham LGA (832 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Rockingham LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Serpentine-Jarrahdale LGA

Estimated resident population in 1995: 9,668
Projected population size in 2001: 12,630

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	16	6	6.2	6.6
Mouth & throat cancer	2	3	7.3	3.9
Other cancers	3	3	4.3	2.3
Heart disease	16	38	4.3	29.1
Stroke	2	7	7.9	9.9
Atherosclerosis	1	6	5.3	5.7
Chronic bronchitis	6	8	8.3	11.8
Complications of pregnancy/infancy	0	10	8.3	14.9
Other conditions	1	11	7.9	15.6
Total	47	92	6.1	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Serpentine-Jarrahdale LGA was 3 people per year.
- The number of smoking caused deaths per head of population was significantly lower in the Serpentine-Jarrahdale LGA (51 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Serpentine-Jarrahdale LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Serpentine-Jarrahdale LGA was \$81,693¹ per year, equivalent to \$9 per head of population.
- The average number of smoking caused hospital admissions in the Serpentine-Jarrahdale LGA was 30 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Serpentine-Jarrahdale LGA (332 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Serpentine-Jarrahdale LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

South Perth LGA

Estimated resident population in 1995: 35,382
Projected population size in 2001: 35,238

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	182	64	11.4	10.7
Mouth & throat cancer	26	17	9.4	2.3
Other cancers	26	52	5.4	4.1
Heart disease	152	232	6.6	22.2
Stroke	54	38	17.3	9.6
Atherosclerosis	36	75	8.4	9.2
Chronic bronchitis	152	163	14.1	33.7
Complications of pregnancy/infancy	3	37	8.6	4.7
Other conditions	11	82	2.9	3.5
Total	642	760	9.0	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the South Perth LGA was 53 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the South Perth LGA (154 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the South Perth LGA was not significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the South Perth LGA was \$1,002,760¹ per year, equivalent to \$28 per head of population.
- The average number of smoking caused hospital admissions in the South Perth LGA was 253 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly higher in the South Perth LGA (719 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the South Perth LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Stirling-Central LGA

Estimated resident population in 1995: 103,809
Projected population size in 2001: 102,714

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	269	148	8.3	10.3
Mouth & throat cancer	32	35	7.7	2.3
Other cancers	38	100	4.6	3.8
Heart disease	226	582	5.8	28.1
Stroke	56	93	13.9	10.7
Atherosclerosis	34	161	5.9	8.0
Chronic bronchitis	134	230	11.4	21.8
Complications of pregnancy/infancy	9	107	8.9	7.9
Other conditions	18	178	4.8	7.1
Total	816	1,634	7.3	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Stirling - Central LGA was 68 people per year.
- The number of smoking caused deaths per head of population was significantly lower in the Stirling - Central LGA (67 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Stirling - Central LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Stirling - Central LGA was \$1,758,973¹ per year, equivalent to \$17 per head of population.
- The average number of smoking caused hospital admissions in the Stirling - Central LGA was 544 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Stirling - Central LGA (526 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Stirling - Central LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Stirling-South Eastern LGA

Estimated resident population in 1995: 20,731
Projected population size in 2001: 20,471

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	164	86	10.3	12.7
Mouth & throat cancer	29	29	14.4	6.0
Other cancers	27	50	5.5	3.9
Heart disease	200	243	6.4	22.4
Stroke	64	46	16.8	11.1
Atherosclerosis	40	88	8.0	10.0
Chronic bronchitis	192	141	11.6	23.5
Complications of pregnancy/infancy	2	48	7.7	5.3
Other conditions	16	98	3.7	5.2
Total	734	829	8.4	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Stirling - South Eastern LGA was 61 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Stirling - South Eastern LGA (295 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Stirling - South Eastern LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Stirling - South Eastern LGA was \$1,026,667¹ per year, equivalent to \$50 per head of population.
- The average number of smoking caused hospital admissions in the Stirling - South Eastern LGA was 276 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly higher in the Stirling - South Eastern LGA (1342 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Stirling - South Eastern LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Stirling-West LGA

Estimated resident population in 1995: 55,105
Projected population size in 2001: 54,650

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	171	84	8.1	9.1
Mouth & throat cancer	26	24	10.4	3.3
Other cancers	26	66	4.6	4.0
Heart disease	157	346	6.2	28.5
Stroke	35	61	15.5	12.6
Atherosclerosis	23	125	5.7	9.6
Chronic bronchitis	113	136	11.5	20.9
Complications of pregnancy/infancy	3	52	8.8	6.1
Other conditions	10	108	4.0	5.8
Total	564	1,002	7.5	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Stirling - West LGA was 47 people per year.
- The number of smoking caused deaths per head of population was not significantly lower in the Stirling - West LGA (86 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Stirling - West LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Stirling - West LGA was \$1,098,973¹ per year, equivalent to \$20 per head of population.
- The average number of smoking caused hospital admissions in the Stirling - West LGA was 334 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Stirling - West LGA (608 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Stirling - West LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Subiaco LGA

Estimated resident population in 1995: 15,016
Projected population size in 2001: 15,149

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	62	23	7.9	7.6
Mouth & throat cancer	10	4	3.0	0.5
Other cancers	9	10	6.3	2.6
Heart disease	73	73	7.1	21.4
Stroke	29	19	18.5	14.7
Atherosclerosis	25	29	11.1	13.4
Chronic bronchitis	78	35	16.6	24.2
Complications of pregnancy/infancy	0	15	11.6	7.2
Other conditions	9	35	5.7	8.3
Total	295	243	9.9	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Subiaco LGA was 24 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Subiaco LGA (162 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Subiaco LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Subiaco LGA was \$352,147¹ per year, equivalent to \$23 per head of population.
- The average number of smoking caused hospital admissions in the Subiaco LGA was 81 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Subiaco LGA (539 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Subiaco LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Swan LGA

Estimated resident population in 1995: 67,310
Projected population size in 2001: 90,281

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	178	74	10.6	8.8
Mouth & throat cancer	29	18	9.3	1.9
Other cancers	21	61	4.6	3.1
Heart disease	169	461	5.3	27.1
Stroke	45	72	13.5	10.8
Atherosclerosis	29	87	5.6	5.4
Chronic bronchitis	124	230	9.3	23.7
Complications of pregnancy/infancy	9	122	8.8	11.9
Other conditions	12	159	4.2	7.4
Total	616	1,284	7.0	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Swan LGA was 51 people per year.
- The number of smoking caused deaths per head of population was not significantly higher in the Swan LGA (102 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Swan LGA was significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Swan LGA was \$1,319,707¹ per year, equivalent to \$20 per head of population.
- The average number of smoking caused hospital admissions in the Swan LGA was 428 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly lower in the Swan LGA (664 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Swan LGA was significantly higher than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Victoria Park LGA

Estimated resident population in 1995: 25,436
Projected population size in 2001: 26,289

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	110	42	10.7	9.7
Mouth & throat cancer	12	13	7.8	2.2
Other cancers	17	24	6.5	3.4
Heart disease	119	168	6.6	24.0
Stroke	31	32	13.8	9.5
Atherosclerosis	16	56	8.8	10.7
Chronic bronchitis	91	121	9.9	26.0
Complications of pregnancy/infancy	4	36	10.4	8.1
Other conditions	14	64	4.6	6.4
Total	414	556	8.3	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Victoria Park LGA was 34 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Victoria Park LGA (140 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Victoria Park LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Victoria Park LGA was \$677,893¹ per year, equivalent to \$27 per head of population.
- The average number of smoking caused hospital admissions in the Victoria Park LGA was 185 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly higher in the Victoria Park LGA (732 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Victoria Park LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Note: Formerly known as the Perth South SLA.

Vincent LGA

Estimated resident population in 1995: 25,235
Projected population size in 2001: 26,124

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	109	34	10.5	9.8
Mouth & throat cancer	16	8	10.8	2.4
Other cancers	16	30	4.0	3.3
Heart disease	103	151	6.3	26.1
Stroke	31	28	13.1	10.1
Atherosclerosis	22	36	12.2	12.1
Chronic bronchitis	71	57	11.1	17.5
Complications of pregnancy/infancy	1	34	13.2	12.4
Other conditions	6	56	4.0	6.1
Total	375	434	8.3	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Vincent LGA was 31 people per year.
- The number of smoking caused deaths per head of population was significantly higher in the Vincent LGA (149 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Vincent LGA was not significantly higher than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Vincent LGA was \$531,227¹ per year, equivalent to \$24 per head of population.
- The average number of smoking caused hospital admissions in the Vincent LGA was 144 admissions per year.
- The number of smoking caused hospital admissions per head of population was not significantly lower in the Vincent LGA (661 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Vincent LGA was significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Note: Formerly known as the Perth North SLA.

Wanneroo LGA

Estimated resident population in 1995: 205,314
Projected population size in 2001: 247,060

Tobacco related conditions	Deaths (1984-1995)	Hospitalisation (1993-1995)		
	Number of deaths	Number of admissions	Average length of stay (days)	% of tobacco caused cost
Lung cancer	351	199	8.1	8.6
Mouth & throat cancer	38	68	9.1	3.3
Other cancers	52	183	3.9	3.8
Heart disease	258	1,105	5.1	30.0
Stroke	62	170	11.1	10.1
Atherosclerosis	39	241	6.4	8.2
Chronic bronchitis	151	413	8.0	17.6
Complications of pregnancy/infancy	19	266	8.5	12.1
Other conditions	12	355	3.4	6.4
Total	982	3,000	6.3	100.0

Deaths (1984-1995)

- The average number of smoking caused deaths in the Wanneroo LGA was 81 people per year.
- The number of smoking caused deaths per head of population was significantly lower in the Wanneroo LGA (50 per 100,000) compared to the State (93 per 100,000).
- The observed number of smoking caused deaths in the Wanneroo LGA was significantly lower than the number expected, based on the State rate.

Hospitalisation (1993-1995)

- The average cost of smoking caused hospitalisation in the Wanneroo LGA was \$2,755,573¹ per year, equivalent to \$14 per head of population.
- The average number of smoking caused hospital admissions in the Wanneroo LGA was 1,000 admissions per year.
- The number of smoking caused hospital admissions per head of population was significantly lower in the Wanneroo LGA (506 per 100,000) compared to the State (690 per 100,000).
- The observed number of smoking caused hospital admissions in the Wanneroo LGA was not significantly lower than the number expected, based on the State rate.

¹ Time Series Analysis, 1994/95. Finance and Assets, Health Department of WA, 1996.

Appendix 3

Age specific aetiologic fractions for conditions caused or prevented by tobacco by sex

Estimated age-specific aetiologic fractions for conditions in Australian males caused or prevented by tobacco

ICD9 codes	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Cause of death
141,143-146,148,149				0.51	0.6	0.61	0.6	0.6	0.57	0.59	0.57	0.58	0.57	0.54	0.5	0.46	0.44	0.44	Oropharyngeal cancer
150				0.47	0.56	0.57	0.56	0.57	0.54	0.56	0.54	0.55	0.54	0.52	0.48	0.44	0.42	0.42	Oesophageal cancer
151				0.11	0.15	0.15	0.15	0.15	0.14	0.15	0.14	0.14	0.14	0.13	0.11	0.1	0.09	0.09	Stomach cancer
154,2,154.3				0.4	0.48	0.5	0.5	0.5	0.48	0.5	0.49	0.5	0.49	0.48	0.45	0.42	0.4	0.4	Anal cancer
157				0.2	0.26	0.27	0.26	0.26	0.24	0.25	0.24	0.24	0.23	0.21	0.18	0.16	0.15	0.15	Pancreatic cancer
161				0.66	0.73	0.74	0.74	0.74	0.72	0.73	0.72	0.73	0.72	0.71	0.67	0.64	0.63	0.63	Laryngeal cancer
162				0.79	0.84	0.85	0.85	0.85	0.84	0.85	0.85	0.86	0.85	0.85	0.84	0.82	0.81	0.81	Lung cancer
179,182																			Endometrial cancer
180,233.1																			Cervical cancer
184.4																			Vulvar cancer
187,1-187.4				0.21	0.27	0.29	0.3	0.31	0.3	0.31	0.31	0.33	0.33	0.33	0.31	0.3	0.29	0.29	Penile cancer
188				0.35	0.43	0.44	0.44	0.45	0.42	0.44	0.43	0.44	0.43	0.42	0.39	0.36	0.35	0.35	Bladder cancer
189.0				0.18	0.24	0.26	0.27	0.28	0.28	0.29	0.29	0.31	0.31	0.32	0.3	0.29	0.28	0.28	Renal parench. cancer
189.1				0.47	0.56	0.57	0.57	0.57	0.55	0.56	0.55	0.56	0.55	0.54	0.5	0.47	0.45	0.45	Renal pelvic cancer
231				0.79	0.84	0.85	0.85	0.85	0.84	0.85	0.85	0.86	0.85	0.85	0.84	0.82	0.81	0.81	Resp. carcinoma in-situ
305.1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Tobacco abuse
332				-0.17	-0.27	-0.32	-0.34	-0.37	-0.35	-0.39	-0.38	-0.44	-0.45	-0.48	-0.43	-0.41	-0.39	-0.39	Parkinson's disease
410-414				0.38	0.46	0.47	0.46	0.47	0.44	0.45	0.44	0.44	0.43	0.17	0.15	0.13	0.12	0.12	Ischaemic heart disease
415-417				0.74	0.8	0.82	0.82	0.82	0.82	0.83	0.82	0.83	0.83	0.83	0.82	0.81	0.8	0.8	Pulmonary circ. disease
427				0.38	0.46	0.47	0.46	0.47	0.44	0.45	0.44	0.44	0.43	0.17	0.15	0.13	0.12	0.12	Cardiac dysrhythmias
428-429				0.38	0.46	0.47	0.46	0.47	0.44	0.45	0.44	0.44	0.43	0.17	0.15	0.13	0.12	0.12	Heart failure
430-438				0.38	0.46	0.47	0.46	0.46	0.43	0.44	0.43	0.43	0.41	0.18	0.16	0.14	0.13	0.13	Stroke
440-448				0.33	0.41	0.43	0.43	0.44	0.42	0.44	0.43	0.44	0.44	0.44	0.41	0.39	0.38	0.38	Atherosclerosis
480-487				0.13	0.18	0.19	0.19	0.2	0.19	0.2	0.19	0.21	0.21	0.21	0.19	0.18	0.17	0.17	Pneumonia
490-492,496				0.74	0.8	0.82	0.82	0.82	0.82	0.83	0.82	0.83	0.83	0.83	0.82	0.81	0.8	0.8	COPD
531-534				0.27	0.35	0.39	0.4	0.42	0.41	0.43	0.43	0.45	0.46	0.47	0.46	0.45	0.44	0.44	Peptic ulcer
555				0.24	0.31	0.34	0.35	0.36	0.36	0.37	0.37	0.39	0.4	0.41	0.39	0.38	0.37	0.37	Crohn's disease
556				-0.07	-0.08	-0.03	0.02	0.04	0.09	0.09	0.11	0.15	0.18	0.23	0.24	0.26	0.26	0.26	Ulcerative colitis
633,761.4																			Ectopic pregnancy
634,761.8																			Spontaneous abortion
640,641,762.0,762.1	0.15																		Antepartum haem.
642,760.0	-0.07																		Hypertension in preg.
656.5,764,765	0.23																		Low birthweight
658.1,658.2,761.1	0.21																		Prem. rupture of membs
798.0	0.34																		SIDS
E890-E899	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	Fire injuries

Estimated age-specific aetiologic fractions for conditions in Australian females caused or prevented by tobacco

ICD9 codes	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Cause of death
141,143-146,148,149				0.56	0.58	0.57	0.55	0.52	0.49	0.51	0.48	0.47	0.44	0.4	0.39	0.33	0.17	0.17	Oropharyngeal cancer
150				0.52	0.55	0.53	0.51	0.48	0.46	0.47	0.44	0.43	0.41	0.37	0.36	0.31	0.17	0.17	Oesophageal cancer
151				0.13	0.14	0.13	0.13	0.11	0.1	0.11	0.1	0.09	0.09	0.08	0.07	0.06	0.03	0.03	Stomach cancer
154.2,154.3				0.45	0.48	0.47	0.45	0.42	0.4	0.41	0.38	0.37	0.35	0.33	0.32	0.27	0.15	0.15	Anal cancer
157				0.23	0.25	0.24	0.22	0.2	0.19	0.19	0.18	0.17	0.15	0.13	0.13	0.1	0.04	0.04	Pancreatic cancer
161				0.7	0.72	0.71	0.7	0.67	0.65	0.66	0.64	0.63	0.6	0.57	0.56	0.5	0.31	0.31	Laryngeal cancer
162				0.79	0.81	0.81	0.8	0.78	0.76	0.77	0.75	0.74	0.72	0.7	0.69	0.64	0.47	0.47	Lung cancer
179,182				0.22	0.24	0.23	0.22	0.2	0.19	0.2	-0.13	-0.13	-0.11	-0.09	-0.09	-0.07	-0.03	-0.03	Endometrial cancer
180,233.1				0.46	0.48	0.46	0.44	0.41	0.39	0.4	0.37	0.36	0.33	0.3	0.29	0.23	0.11	0.11	Cervical cancer
184.4																			Vulvar cancer
187.1-187.4																			Penile cancer
188				0.39	0.42	0.41	0.39	0.36	0.34	0.36	0.33	0.32	0.3	0.28	0.27	0.23	0.13	0.13	Bladder cancer
189.0				0.21	0.24	0.25	0.24	0.22	0.21	0.22	0.2	0.19	0.18	0.18	0.18	0.15	0.1	0.1	Renal parench. cancer
189.1				0.52	0.55	0.54	0.52	0.49	0.47	0.48	0.45	0.44	0.41	0.38	0.37	0.32	0.18	0.18	Renal pelvic cancer
231				0.79	0.81	0.81	0.8	0.78	0.76	0.77	0.75	0.74	0.72	0.7	0.69	0.64	0.47	0.47	Resp. carcinoma in-situ
305.1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Tobacco abuse
332				-0.22	-0.28	-0.29	-0.28	-0.23	-0.22	-0.24	-0.2	-0.2	-0.19	-0.18	-0.17	-0.14	-0.08	-0.08	Parkinson's disease
410-414				0.42	0.45	0.43	0.41	0.38	0.36	0.37	0.35	0.34	0.31	0.11	0.1	0.08	0.03	0.03	Ischaemic heart disease
415-417				0.78	0.8	0.8	0.79	0.77	0.76	0.77	0.74	0.74	0.72	0.71	0.7	0.66	0.52	0.52	Pulmonary circ. disease
427				0.42	0.45	0.43	0.41	0.38	0.36	0.37	0.35	0.34	0.31	0.11	0.1	0.08	0.03	0.03	Cardiac dysrhythmias
428-429				0.42	0.45	0.43	0.41	0.38	0.36	0.37	0.35	0.34	0.31	0.11	0.1	0.08	0.03	0.03	Heart failure
430-438				0.43	0.45	0.43	0.41	0.38	0.36	0.37	0.34	0.33	0.3	0.11	0.11	0.08	0.04	0.04	Stroke
440-448				0.37	0.4	0.4	0.39	0.35	0.34	0.35	0.32	0.32	0.3	0.28	0.28	0.23	0.14	0.14	Atherosclerosis
480-487				0.15	0.17	0.17	0.17	0.15	0.14	0.15	0.13	0.13	0.12	0.11	0.11	0.09	0.05	0.05	Pneumonia
490-492,496				0.78	0.8	0.8	0.79	0.77	0.76	0.77	0.74	0.74	0.72	0.71	0.7	0.66	0.52	0.52	COPD
531-534				0.32	0.36	0.37	0.36	0.33	0.32	0.34	0.31	0.31	0.3	0.3	0.29	0.25	0.17	0.17	Peptic ulcer
555				0.45	0.48	0.46	0.44	0.41	0.39	0.4	0.38	0.37	0.34	0.31	0.3	0.25	0.13	0.13	Crohn's disease
556				-0.08	-0.04	0.02	0.03	0.03	0.03	0.05	0.03	0.05	0.06	0.09	0.09	0.09	0.09	0.09	Ulcerative colitis
633,761.4				0.15	0.17	0.17	0.16	0.14	0.14	0.14	0.13	0.13	0.12	0.11	0.11	0.09	0.09	0.09	Ectopic pregnancy
634,761.8				0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	Spontaneous abortion
640,641,762.0,762.1	0.15		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	Antepartum haem.
642,760.0	-0.07		-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	Hypertension in preg.
656.5,764,765	0.23		0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	Low birthweight
658.1,658.2,761.1	0.21		0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	Prem. rupture of membs
798.0	0.34		0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	SIDS
E890-E899	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	Fire injuries