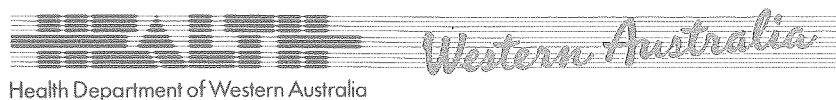


DEATHS CAUSED BY ALCOHOL USE IN WESTERN AUSTRALIA: 1981 - 1990

Greg Swensen

*WA Drug Data Collection Unit
Health Services Statistics and Epidemiology Branch
Health Department of Western Australia*

November 1992



The WA Drug Data Collection Unit is an initiative of the National Campaign Against Drug Abuse

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SUMMARY

This report provides data on the number of deaths that were estimated to have been directly and indirectly alcohol-caused in Western Australia for the period 1981 to 1990. The data used in this report were calculated by multiplication of the number of cases of sex and age and cause-specific deaths for the 10 year period by aetiologic fractions.

In this report a more conservative estimate of alcohol-caused mortality was adopted by taking into account the protective effect of alcohol on ischaemic heart disease (IHD) (on males and females aged 15-59 years). By this methodology the gross total of 5,036 deaths was adjusted for the 745 deaths estimated to have been prevented by alcohol so that a net total of 4,291 deaths were estimated to have been caused by alcohol in Western Australia in the 10 year period. The net total of 4,291 deaths consisted of 1,548 (36.1%) deaths due to external causes and 2,743 (63.9%) deaths due to diseases caused by alcohol.

A greater proportion of the 4,291 deaths estimated to have been caused by alcohol involved males than females, with 2,638 (61.5%) deaths compared to 1,653 (38.5%) deaths, respectively. There was a marked difference between the age-specific patterns of alcohol-caused deaths of males and females. There was a skewed distribution of female deaths, with the highest number of deaths (300 or 18.2%) recorded in the 85 years and over age group, with just over three quarters, 76.8%, of female mortality due to diseases caused by alcohol. There was a bi-modal distribution in males, with 207 (7.8%) deaths recorded in the 20-24 years age group and 334 (12.6%) deaths recorded in the 60-64 years age group, with just over half, 55.8%, of male mortality due to diseases caused by alcohol.

The explanation for the different pattern of alcohol-caused mortality of males and females was due to differences in the frequency of death due to external causes. In males the number of deaths due to external causes in every age group was higher than in females, with the exception of the 85 years and over age group; overall, external causes of death accounted for much of the alcohol-caused mortality of males under the age of 60 years.

Amongst both females and males motor vehicle accidents and suicide together accounted for about two thirds of the total number of deaths due to external causes. Motor vehicle accidents caused by alcohol were responsible for a total 161 deaths (42.0% of those due to external causes in females) and a total of 506 deaths (43.5% of those due to external causes in males) in the 10 year period. In females external causes of death were responsible for the majority of the alcohol-caused mortality up to 40 years of age, after then, with increasing age there was an increasing proportion of mortality due to alcohol-caused disease.

The study found that a marked increase in the frequency of deaths of males in the 60 years and over age group was attributable to the exclusion of the protective effect of alcohol on IHD, because a protective effect has only been demonstrated for the age range 15-59 years.

The study undertook three different regional comparisons of alcohol-caused mortality - between the 26 metropolitan local government areas (LGAs), between the three Metropolitan Health Regions (MHRs), and between the nine Statistical Divisions (SDs) of the State.

The 3,010 deaths in the metropolitan area were disproportionately distributed, after taking into account the size of the resident population of the three Metropolitan Health Regions, as 1,200 (39.9%) deaths occurred in the East MHR, 954 (31.7%) deaths occurred in the North MHR and 856 (28.4%) deaths occurred in the South MHR. In two MHRs, the North MHR and South MHR respectively reported rates 93.8% and 97.3% of the average metropolitan rate and the East MHR, reported a rate 7.5% higher, than the metropolitan average.

There were marked differences in the age standardised rates of alcohol-caused mortality between the nine Statistical Divisions in Western Australia for the 10 year period. The Lower Great Southern, Metropolitan and South West SDs were below the State average standardised rate of 244 per 100,000 person years; the Upper Great Southern, Midlands and Pilbara SDs had rates that were up to about 20% higher than the State average; the rates for the Central and South Eastern SDs had were between 40% and about 60% higher than the State average; and the rate for the Kimberley SD was 167% higher than the State average.

It was found that in the metropolitan area, where 3,010 (70.1%) of all alcohol-caused deaths occurred, two of the 26 LGAs, Stirling (521 deaths) and Perth (459 deaths), were estimated to have accounted for 32.6% of all the alcohol caused mortality. In the metropolitan area there were 15 LGAs that were below the average metropolitan standardised rate of 226 per 100,000 person-years (Armadale, Bassendean, Bayswater, Canning, Cockburn, Cottesloe, Gosnells, Kalamunda, Melville, Mundaring, Peppermint Grove, Rockingham, Serpentine-Jarrahdale, Stirling and Wanneroo); there were four LGAs (Mosman Park, Nedlands, South Perth and Subiaco), that had rates that ranged up to about 15% higher than the average metropolitan rate, and the six remaining LGAs (Claremont, East Fremantle, Fremantle, Kwinana, Perth and Swan) had rates that were more than one third higher than the metropolitan average.

It is likely that in a number of the areas a combination of demographic variables, such as socio-economic status, a younger population age structure and Aboriginality, may explain some of the variations in mortality found in the study. The marked differences in patterns of alcohol-caused mortality by gender and age found in this study suggest underlying patterns of alcohol consumption that should be confirmed by additional survey data.

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1. INTRODUCTION

The aim of this report is to provide information on the number of deaths caused by or prevented by alcohol in Western Australia for the period 1981 to 1990 so that planners, policy makers, groups of health professionals, students and the community may become more informed about the cost of alcohol use in this State. The report quantifies the number of deaths directly and indirectly caused by alcohol in the metropolitan area by local government areas and metropolitan health regions, and by the nine statistical divisions of the State defined by the Australian Bureau of Statistics.

The methodology for the quantification of the number of deaths caused by alcohol in this study has been outlined by Holman and Armstrong (1990).² This approach is an indirect method and requires the application of sets of probability measures of the likelihood of mortality from each of the set of 43 conditions caused and prevented by alcohol use. The number of deaths for each of the 43 conditions for males and females were calculated by multiplying the number of sex and cause-specific deaths in the period 1981-1990 for each 5 year age group by the corresponding set of separate aetiological fractions and summed (or subtracted for negative aetiological fractions), to estimate the total number of deaths caused or prevented by alcohol.

The distinguishing characteristic of the indirect method is that individual cases of mortality caused and prevented by alcohol are not identified. The two sets of fractions developed by Holman and Armstrong³ were used in this study to estimate the number of deaths caused and prevented by alcohol for males and females for the period 1981-1990: Appendices 1 and 2. The two sets of fractions contain a list of all conditions for which there was scientific evidence of protective or harmful effect from alcohol use, including the corresponding ICD-9 code and short title for the set of conditions.⁴

Alcohol use is considered to provide a protective effect in the age range 15-59 for both males and females for four conditions: ischaemic heart disease, cardiac dysrhythmias, heart failure and cholelithiasis. In their study Holman and Armstrong did not believe sufficient information existed to be able to support a protective effect of alcohol use for ischaemic heart disease (IHD) on the mortality of persons aged 60 or more. The estimate of the number of deaths caused or prevented by alcohol would be substantially changed if a protective effect of alcohol was applicable to the population aged 60 and over, as the majority of deaths ascribed to IHD occur in the elderly.

In response to recent debate about their study, including the protective effect of alcohol on IHD, Holman and Armstrong re-analysed their 1986 data. They concluded that an "assumption that the protective effect of alcohol on ischaemic heart disease extends beyond 60 years of age results in the estimation of a net saving of 1,901 lives as opposed to the net excess of 5,360 deaths ... However, the loss of person-years of life caused by alcohol is much less affected by the changed assumption, being reduced from an estimated loss of 66,304 person-years to a loss of 58,618 person-years."⁵

Apart from perinatal conditions and selected injuries it was assumed that alcohol did not cause mortality in persons aged less than 15 years. Differences in fractions between age groups and between the two sexes are due to variations in the pooled estimates of relative risk for specific conditions that were combined with measures of prevalence of alcohol use in Australia in the computation of the sets of fractions in Holman and Armstrong's study.

The number of alcohol deaths were calculated for each of the nine Statistical Divisions (SDs) of Western Australia, each of the 26 Local Government Areas (LGAs) of the Perth metropolitan area, and for each of the three Metropolitan Health Regions (MHRs) and aggregated into the 12 mutually exclusive broad categories of conditions in Table 1 that were either caused or by prevented by alcohol.

There are close similarities between the boundaries of the eight health regions (ie seven country health regions and the combined area of the three metropolitan health regions) of the Health Department of WA and the nine SDs of the Australian Bureau of Statistics, as latter consist of sets of LGAs: Appendix 3.

- (a) The Metropolitan, South West and Kimberley SDs have the same respective boundaries as the Metropolitan, South West and Kimberley Health Regions.

- (b) The Midlands SD covers the same area as the Central Health Region, except that it contains only 30.41% of the Yilgarn LGA.
- (c) The Central SD covers the same area as the Mid-West and Gascoyne Health Region, with the addition of 18.51% of the Ashburton LGA.
- (d) The Pilbara SD covers the same area as the Pilbara Health Region, except that it contains only 81.49% of the Ashburton LGA.
- (e) the area covered by the Lower Great Southern SD has been incorporated into the Great Southern Health Region.
- (f) the area covered by the Upper Great Southern SD has been incorporated into the Great Southern Health Region, except that the Corrigin LGA has been incorporated into the Central Health Region.
- (g) the South Eastern SD covers the same area as the Goldfields Health Region, except that it contains 69.59% of the Yilgarn LGA.

TABLE 1
BROAD CATEGORIES OF CONDITIONS AND ICD-9 CODES FOR ALCOHOL MORTALITY

| CONDITION | ICD-9 CODES |
|---------------------------|-------------------------------------------------------------------------------------------------|
| DISEASES | |
| Deaths Caused | |
| Stroke | 430-438 |
| Alcoholic liver cirrhosis | 571.0-571.3 |
| Breast cancer | 174, 175 |
| Colon cancer | 153 |
| Oesophageal cancer | 150 |
| Other cancers | 140, 141, 143-149, 154, 155, 157, 161 |
| Alcoholism | 291, 303, 305 |
| Other diseases | 265.2, 357.5, 401-405, 425.5, 456.0-456.2, 530.7, 535.3, 577.0, 577.1 764, 765 |
| Deaths Prevented | 410-414, 426-429, 574 |
| EXTERNAL CAUSES | |
| Suicide | E950-E959 |
| Road injuries | E810-E819 |
| Other Injuries | E860.0-E860.2, E880-E888, E890-E899, E910, E911, E919, E920, E960, E965, E966, E967, E968, E969 |

2. RESULTS AND DISCUSSION

There are two alternative estimates of alcohol-caused mortality in the 10 year period 1981-1990. The first, which excludes the potential protective effect of alcohol on ischaemic heart disease, cardiac dysrhythmias, heart failure and cholelithiasis, estimated there were 5,036 deaths in Western Australia caused by alcohol. The second, incorporated an adjustment for the 745 deaths prevented by alcohol and estimated a net of 4,291 deaths caused by alcohol

The estimate of 4,291 deaths, the number of **net** deaths caused by alcohol, will be used in this report as the valid measure of total mortality caused by alcohol in Western Australia over the 10 year period. The use of the estimate of 5,036 deaths, the number of **gross** alcohol deaths, tends to overestimate the magnitude of harm caused by alcohol, without an allowance for the protective effect of alcohol on the incidence of IHD.

The total of 4,291 deaths caused by alcohol were 4.9% of the total of 88,318 deaths from **all** causes that occurred over this period in Western Australia.

The number of deaths **prevented** by alcohol use has been included in Tables 2 and 3, and Tables 11 - 48 for completeness.

2.1 Deaths Due To Diseases Caused and Prevented By Alcohol

In Table 2 the breakdown of the 3,488 cases caused by alcohol-related diseases, without adjustment for the number of deaths prevented, shows that 1,387 (39.8%) cases were due to cancer, 1,061 (30.4%) cases were due to stroke, 618 (17.7%) cases were due to alcoholic liver disease, 162 (4.6%) cases were due to alcoholism, and 260 (7.5%) cases were due to other diseases: Figure 1.

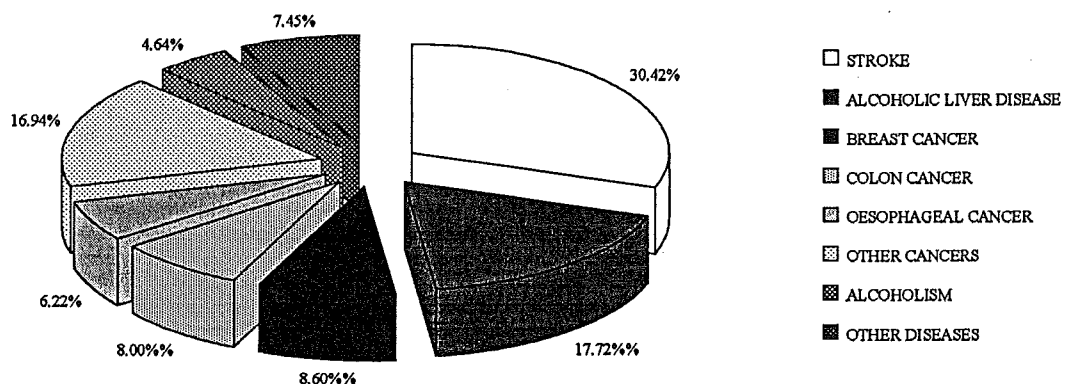
The 1,387 cases due to cancer consisted of 300 cases due to breast cancer, 279 cases due to colon cancer, 217 cases due to oesophageal cancer, 141 cases due to pharyngeal cancer, 140 cases due to pancreatic cancer, 103 cases due to oral cancer, 83 cases due to laryngeal cancer, 82 cases due to hepatic cancer, 40 cases due to rectal cancer, and 3 cases due to lip cancer.

The 260 cases grouped in the category of *other diseases* consisted of 113 cases due to alcoholic cardiomyopathy, 76 cases due to hypertension, 47 cases due to acute pancreatitis, 11 cases due to chronic pancreatitis, 6 cases due to low birthweight, 4 cases due to oesophageal varices, 1 case due to pellagra, 1 case due to gastro-oesophageal haemorrhage and 1 case due to alcoholic gastritis.

TABLE 2
NUMBER OF DEATHS CAUSED AND PREVENTED BY ALCOHOL
BY CAUSE OF DEATH, WESTERN AUSTRALIA, 1981-1990

| CAUSE OF ALCOHOL MORTALITY | NUMBER OF TOTAL DEATHS |
|--------------------------------------|---------------------------|
| Disease | |
| STROKE | 1061 |
| ALCOHOLIC LIVER DISEASE | 618 |
| BREAST CANCER | 300 |
| COLON CANCER | 279 |
| OESOPHAGEAL CANCER | 217 |
| OTHER CANCERS | 591 |
| ALCOHOLISM | 162 |
| OTHER DISEASES | 260 |
| Gross Total Caused By Disease | 3488 |
| Deaths Prevented | (745) |
| Net Total Caused By Disease | 2743 |
| External Causes | |
| SUICIDE | 403 |
| ROAD INJURIES | 667 |
| OTHER INJURIES | 478 |
| Total External Causes | 1548 |
| NET DEATHS | 4291 |

FIGURE 1
GROSS TOTAL OF DEATHS DUE TO DISEASES CAUSED BY ALCOHOL
WESTERN AUSTRALIA, 1981-1990



2.2 Deaths Due To External Causes

Table 2 shows that 1,548 (36.1%) cases were due to external causes (ie accidents and suicide) and 2,743 (63.9%) cases were due to disease.

The 1,548 deaths due to external causes consisted of 667 (43.1%) cases due to road injuries, 403 (26.0%) cases due to suicide and 478 (30.9%) cases due to other injuries. The 478 cases grouped in the category of *other injuries* consisted of 154 cases due to fall injuries, 110 cases due to assault, 101 cases due to aspiration, 43 cases due to drowning, 33 cases due to fire injuries, 24 cases due to alcohol poisoning, 12 cases due to machine injuries and 1 case attributed to child abuse.

2.3 Number of Deaths Caused and Prevented By Statistical Division

Table 3 shows that 3,010 cases, nearly three-quarters of the total number of deaths caused by alcohol, were estimated to have occurred in the Perth SD, ie the metropolitan area. The second most frequent number of deaths were in the South West SD, where 365 (8.5%) deaths were attributed to alcohol, followed by the Central SD, where 188 (4.4%) alcohol-related deaths occurred.

TABLE 3
NUMBER OF DEATHS CAUSED AND PREVENTED BY ALCOHOL
BY STATISTICAL DIVISIONS, WESTERN AUSTRALIA, 1981-1990

| STATISTICAL DIVISION | DEATHS CAUSED | DEATHS PREVENTED | TOTAL DEATHS |
|----------------------|---------------|------------------|--------------|
| CENTRAL | 231 | (43) | 188 |
| KIMBERLEY | 136 | (17) | 119 |
| LOWER GREAT SOUTHERN | 151 | (22) | 129 |
| METROPOLITAN | 3514 | (504) | 3010 |
| MIDLANDS | 181 | (26) | 155 |
| PILBARA | 117 | (29) | 88 |
| SOUTH WEST | 426 | (61) | 365 |
| SOUTH EAST | 205 | (33) | 172 |
| UPPER GREAT SOUTHERN | 75 | (10) | 65 |
| TOTAL | 5036 | (745) | 4291 |

2.4 Statistical Divisions By Gender

Table 4 indicates that, overall, there was a ratio of 1.6:1 in the number of deaths of males compared to the number of deaths of females. This table also shows that while the ratio of male:female deaths was similar across all nine Statistical Divisions of the State, a higher proportion of female mortality occurred in the metropolitan SD, where 75.0% of female deaths occurred, compared to males, where 67.0% of mortality was estimated to have occurred.

TABLE 4
NET NUMBER OF DEATHS CAUSED BY ALCOHOL
BY STATISTICAL DIVISION BY GENDER
WESTERN AUSTRALIA, 1981-1990

| STATISTICAL DIVISION | MALES | | FEMALES | | ALL | |
|----------------------|-------|-------|---------|-------|------|-------|
| | N | % | N | % | N | % |
| CENTRAL | 135 | 5.1 | 53 | 3.2 | 188 | 4.4 |
| KIMBERLEY | 81 | 3.1 | 38 | 2.3 | 119 | 2.8 |
| LOWER GREAT SOUTHERN | 89 | 3.4 | 40 | 2.4 | 129 | 3.0 |
| METROPOLITAN | 1769 | 67.0 | 1241 | 75.0 | 3010 | 70.1 |
| MIDLANDS | 111 | 4.2 | 44 | 2.7 | 155 | 3.6 |
| PILBARA | 63 | 2.4 | 25 | 1.6 | 88 | 2.1 |
| SOUTH WEST | 222 | 8.4 | 143 | 8.6 | 365 | 8.5 |
| SOUTH EAST | 123 | 4.7 | 49 | 3.0 | 172 | 4.0 |
| UPPER GREAT SOUTHERN | 45 | 1.7 | 20 | 1.2 | 65 | 1.5 |
| TOTAL | 2638 | 100.0 | 1653 | 100.0 | 4291 | 100.0 |

2.5 Metropolitan Local Government Areas

Table 5 shows that in the metropolitan area, where 70.1% of alcohol-caused deaths occurred, total deaths in two of the 26 LGAs, Stirling (521 deaths) and Perth (459 deaths), were estimated to have accounted for 32.6% of all the alcohol-caused mortality.

TABLE 5
NET NUMBER OF DEATHS CAUSED BY ALCOHOL
BY METROPOLITAN LOCAL GOVERNMENT AREAS
WESTERN AUSTRALIA, 1981-1990

| METRO LGA | TOTAL DEATHS | |
|------------------|--------------|-------|
| | N | % |
| ARMADALE | 90 | 3.0 |
| BASSENDAN | 38 | 1.3 |
| BAYSWATER | 108 | 3.6 |
| BELMONT | 90 | 3.0 |
| CANNING | 136 | 4.5 |
| CLAREMONT | 55 | 1.8 |
| COCKBURN | 78 | 2.6 |
| COTTESLOE | 30 | 1.0 |
| EAST FREMANTLE | 44 | 1.4 |
| FREMANTLE | 128 | 4.3 |
| GOSNELLS | 85 | 2.8 |
| KALAMUNDA | 82 | 2.7 |
| KWINANA | 44 | 1.5 |
| MELVILLE | 199 | 6.6 |
| MOSMAN PARK | 34 | 1.1 |
| MUNDARING | 57 | 1.9 |
| NEDLANDS | 120 | 4.0 |
| PEPPERMINT GROVE | 4 | 0.1 |
| PERTH | 459 | 15.3 |
| ROCKINGHAM | 83 | 2.8 |
| SERPENTINE | 11 | 0.3 |
| SOUTH PERTH | 169 | 5.6 |
| STIRLING | 521 | 17.3 |
| SUBIACO | 71 | 2.4 |
| SWAN | 123 | 4.1 |
| WANNEROO | 151 | 5.0 |
| TOTAL | 3010 | 100.0 |

2.6 Metropolitan Health Regions

It has been estimated in 1986 there was a resident population of 1,050,350 persons in the area covered by the three Metropolitan Health Regions, of which 34.1% lived in the East Metropolitan Health Region, 32.6% lived in the North Metropolitan Health Region and 33.3% lived in the South Metropolitan Health Region.

Table 6 indicates that the 3,010 deaths in the metropolitan area were disproportionately distributed between the three MHRs as 1,200 (39.9%) deaths occurred in the East MHR, 954 (31.7%) deaths occurred in the North MHR and 856 (28.4%) deaths occurred in the South MHR.

It is unclear without additional information about the regional prevalence of alcohol use, as to why there was a disproportionately lower number of deaths in the South MHR nor why there was a disproportionately higher number of deaths in the East MHR.

TABLE 6
NET NUMBER OF DEATHS CAUSED BY ALCOHOL
BY METROPOLITAN HEALTH REGIONS
WESTERN AUSTRALIA, 1981-1990

| METROPOLITAN HEALTH REGION | TOTAL DEATHS | |
|----------------------------|--------------|-------|
| | N | % |
| EAST | 1200 | 39.9 |
| NORTH | 954 | 31.7 |
| SOUTH | 856 | 28.4 |
| TOTAL | 3010 | 100.0 |

2.7 Age and Gender Specific Patterns of Mortality

The marked difference between the age-specific patterns of alcohol-caused deaths in males and females is shown in Table 7 and Figure 2. There was a skewed distribution of female deaths, with the highest number of deaths, 300 (18.2%) cases, recorded by the 85 year and over age group (Figure 3). Just over three quarters, 76.8%, of female mortality was due to diseases caused by alcohol. There was a bi-modal distribution of male deaths, with 207 (7.8%) cases recorded by the 20-24 age group and 334 (12.6%) cases recorded by 60-64 age group (Figure 4). Just over half, 55.8%, of male mortality was due to diseases caused by alcohol.

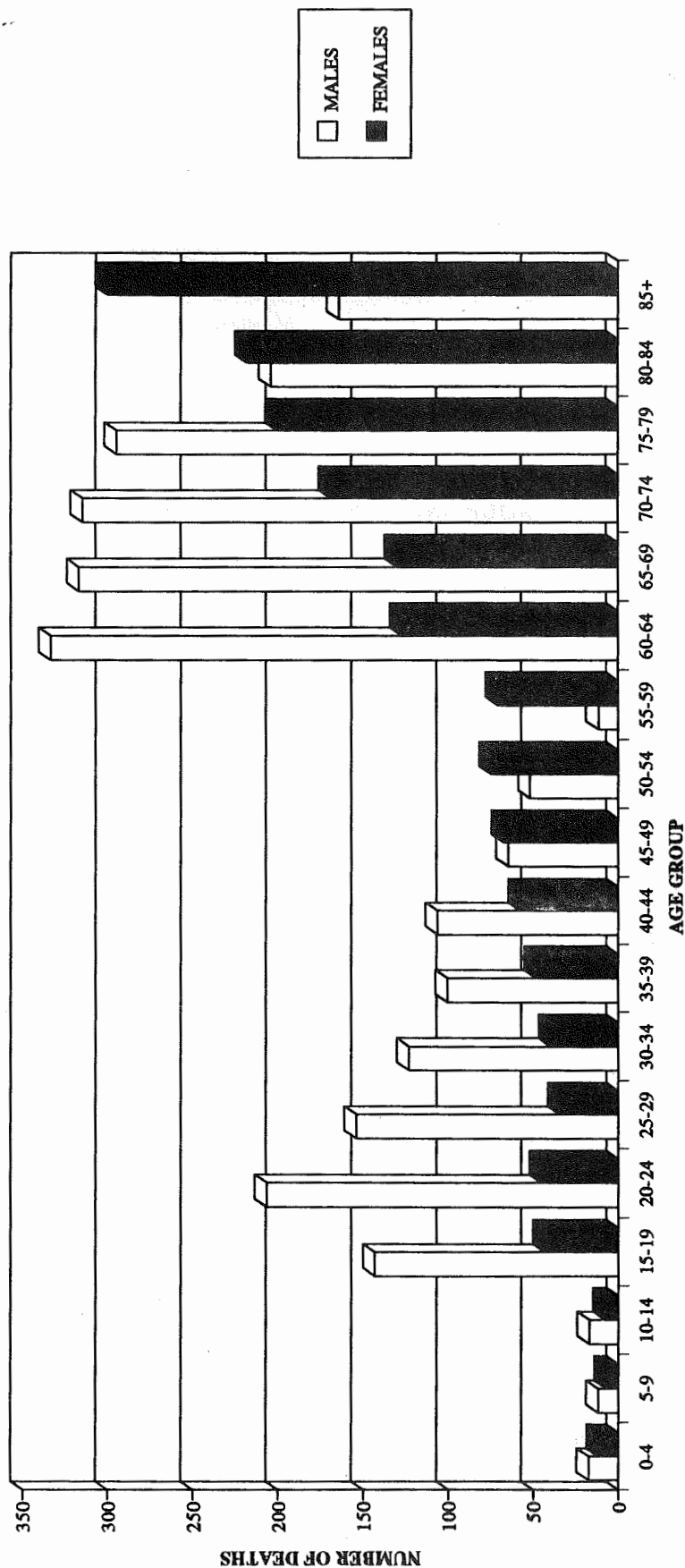
The explanation for the different pattern of alcohol-caused mortality of males and females is due to differences in the frequency of causes of death due to external causes and disease (Tables 8 and 9). The number of deaths due to external causes in every age group was higher for males than for females, with the exception of the 85 and over age group, when there were 35 female deaths compared to 29 male deaths. Amongst both females and males motor vehicle accidents and suicide together accounted for about two thirds of the total number of deaths due to external causes. Motor vehicle accidents caused by alcohol were responsible for a total 161 (42.0%) cases of the deaths due to external causes of females and a total of 506 (43.5%) cases of the deaths due to external causes of males in the 10 year period.

Table 8 shows that in females external causes of death were responsible for the majority of the alcohol-caused mortality up to 40 years of age, after then, with increasing age there was an increasing proportion of mortality due to alcohol-caused disease. In Table 9 it can be seen that external causes of death accounted for much of the alcohol-caused mortality of males under the age of 60. The marked increase in the frequency of deaths of males in the 60 and over age group is due to the exclusion of the protective effect of alcohol on IHD, as a protective effect has only been accepted for the age range 15-59 years. In reality, it is most unlikely that the protective effect of alcohol on ischaemic heart disease would suddenly cease to exist at a particular age. To the extent that the protective effect may be weakened, or non-existent, at older ages, the transition from protective effect to no effect is likely to be gradual. In this regard the discontinuity in age-specific deaths from alcohol at age 60 years in Figure 4 is almost certainly an artefact of the method of analysis.

TABLE 7
NET NUMBER OF DEATHS CAUSED BY ALCOHOL
BY AGE GROUP AND GENDER, WESTERN AUSTRALIA, 1981-1990

| AGE GROUP | FEMALES | | MALES | | TOTAL | |
|-----------|---------|-------|-------|-------|-------|-------|
| | N | % | N | % | N | % |
| 0-4 | 12 | 0.7 | 17 | 0.7 | 29 | 0.7 |
| 5-9 | 7 | 0.4 | 12 | 0.5 | 19 | 0.4 |
| 10-14 | 8 | 0.5 | 17 | 0.7 | 25 | 0.6 |
| 15-19 | 43 | 2.6 | 143 | 5.4 | 186 | 4.3 |
| 20-24 | 45 | 2.7 | 207 | 7.8 | 252 | 5.9 |
| 25-29 | 34 | 2.1 | 154 | 5.8 | 188 | 4.4 |
| 30-34 | 40 | 2.4 | 123 | 4.7 | 163 | 3.8 |
| 35-39 | 48 | 2.9 | 101 | 3.8 | 149 | 3.5 |
| 40-44 | 58 | 3.5 | 106 | 4.0 | 164 | 3.8 |
| 45-49 | 68 | 4.1 | 65 | 2.4 | 133 | 3.1 |
| 50-54 | 75 | 4.5 | 52 | 2.0 | 127 | 3.0 |
| 55-59 | 71 | 4.3 | 12 | 0.5 | 83 | 1.9 |
| 60-64 | 127 | 7.7 | 334 | 12.6 | 461 | 10.7 |
| 65-69 | 130 | 7.9 | 317 | 12.0 | 447 | 10.4 |
| 70-74 | 169 | 10.2 | 315 | 11.9 | 484 | 11.3 |
| 75-79 | 200 | 12.1 | 295 | 11.2 | 495 | 11.6 |
| 80-84 | 218 | 13.2 | 204 | 7.8 | 422 | 9.8 |
| 85+ | 300 | 18.2 | 164 | 6.2 | 464 | 10.8 |
| TOTAL | 1653 | 100.0 | 2638 | 100.0 | 4291 | 100.0 |

FIGURE 2
NET NUMBER OF DEATHS CAUSED BY ALCOHOL
BY AGE GROUP AND GENDER, WESTERN AUSTRALIA, 1981-1990



Note: The Large Increase In The Number of Male Deaths From 55-59 To 60-64 Age Groups Due To The Increase In The Number of Cases of Ischaemic Heart Disease Not Prevented By Alcohol Use

TABLE 8
NET NUMBER OF DEATHS OF FEMALES CAUSED BY ALCOHOL
BY AGE GROUP AND MAJOR CAUSES, WESTERN AUSTRALIA, 1981-1990

| AGE GROUP | DISEASE | | EXTERNAL CAUSES | | TOTAL | |
|-----------|---------|-------|-----------------|-------|-------|-------|
| | N | % | N | % | N | % |
| 0-4 | 3 | 0.2 | 9 | 2.4 | 12 | 0.7 |
| 5-9 | - | | 7 | 1.8 | 7 | 0.4 |
| 10-14 | - | | 8 | 2.0 | 8 | 0.5 |
| 15-19 | - | | 43 | 11.2 | 43 | 2.6 |
| 20-24 | 3 | 0.2 | 42 | 11.0 | 45 | 2.7 |
| 25-29 | 4 | 0.4 | 30 | 7.7 | 34 | 2.1 |
| 30-34 | 16 | 1.2 | 24 | 6.3 | 40 | 2.4 |
| 35-39 | 24 | 1.9 | 24 | 6.4 | 48 | 2.9 |
| 40-44 | 37 | 2.9 | 21 | 5.6 | 58 | 3.5 |
| 45-49 | 45 | 3.5 | 23 | 6.0 | 68 | 4.1 |
| 50-54 | 61 | 4.8 | 14 | 3.6 | 75 | 4.5 |
| 55-59 | 57 | 4.5 | 14 | 3.7 | 71 | 4.3 |
| 60-64 | 110 | 8.7 | 17 | 4.4 | 127 | 7.7 |
| 65-69 | 118 | 9.3 | 12 | 3.2 | 130 | 7.9 |
| 70-74 | 150 | 11.8 | 19 | 5.0 | 169 | 10.2 |
| 75-79 | 179 | 14.1 | 21 | 5.4 | 200 | 12.1 |
| 80-84 | 198 | 15.6 | 20 | 5.2 | 218 | 13.2 |
| 85+ | 265 | 20.9 | 35 | 9.1 | 300 | 18.2 |
| TOTAL | 1270 | 100.0 | 383 | 100.0 | 1653 | 100.0 |

TABLE 9
NET NUMBER OF DEATHS OF MALES CAUSED BY ALCOHOL
BY AGE GROUP AND MAJOR CAUSES, WESTERN AUSTRALIA, 1981-1990

| AGE GROUP | DISEASE | | EXTERNAL CAUSES | | TOTAL | |
|-----------|---------|-------|-----------------|-------|-------|-------|
| | N | % | N | % | N | % |
| 0-4 | 3 | 0.3 | 14 | 1.2 | 17 | 0.7 |
| 5-9 | - | | 12 | 1.0 | 12 | 0.5 |
| 10-14 | - | | 17 | 1.5 | 17 | 0.7 |
| 15-19 | - | | 143 | 12.3 | 143 | 5.4 |
| 20-24 | 6 | 0.4 | 201 | 17.3 | 207 | 7.8 |
| 25-29 | 10 | 0.7 | 144 | 12.4 | 154 | 5.8 |
| 30-34 | 19 | 1.3 | 104 | 8.9 | 123 | 4.7 |
| 35-39 | 15 | 1.0 | 86 | 7.4 | 101 | 3.8 |
| 40-44 | 32 | 2.2 | 74 | 6.4 | 106 | 4.0 |
| 45-49 | 5 | 0.3 | 60 | 5.1 | 65 | 2.4 |
| 50-54 | 1 | 0.1 | 51 | 4.4 | 52 | 2.0 |
| 55-59 | (-42) | | 54 | 4.7 | 12 | 0.5 |
| 60-64 | 292 | 19.8 | 42 | 3.6 | 334 | 12.6 |
| 65-69 | 286 | 19.4 | 31 | 2.6 | 317 | 12.0 |
| 70-74 | 278 | 18.9 | 37 | 3.1 | 315 | 11.9 |
| 75-79 | 258 | 17.5 | 37 | 3.2 | 295 | 11.2 |
| 80-84 | 176 | 12.0 | 28 | 2.4 | 204 | 7.8 |
| 85+ | 135 | 9.1 | 29 | 2.5 | 164 | 6.2 |
| TOTAL | 1473 | 100.0 | 1164 | 100.0 | 2638 | 100.0 |

FIGURE 3
NET NUMBER OF DEATHS OF FEMALES CAUSED BY ALCOHOL
BY AGE GROUP AND MAJOR CAUSE, WESTERN AUSTRALIA, 1981-1990

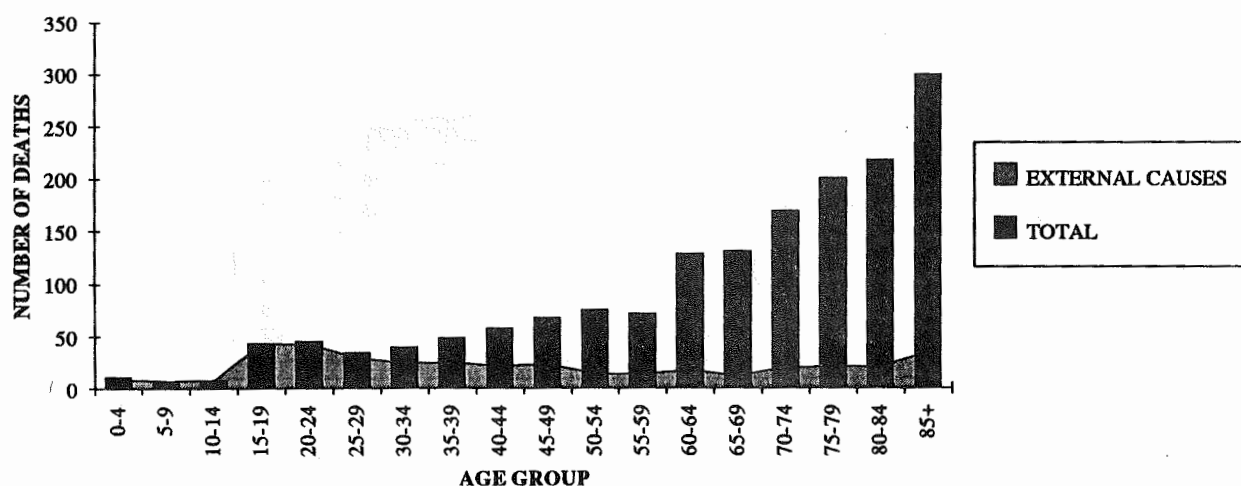
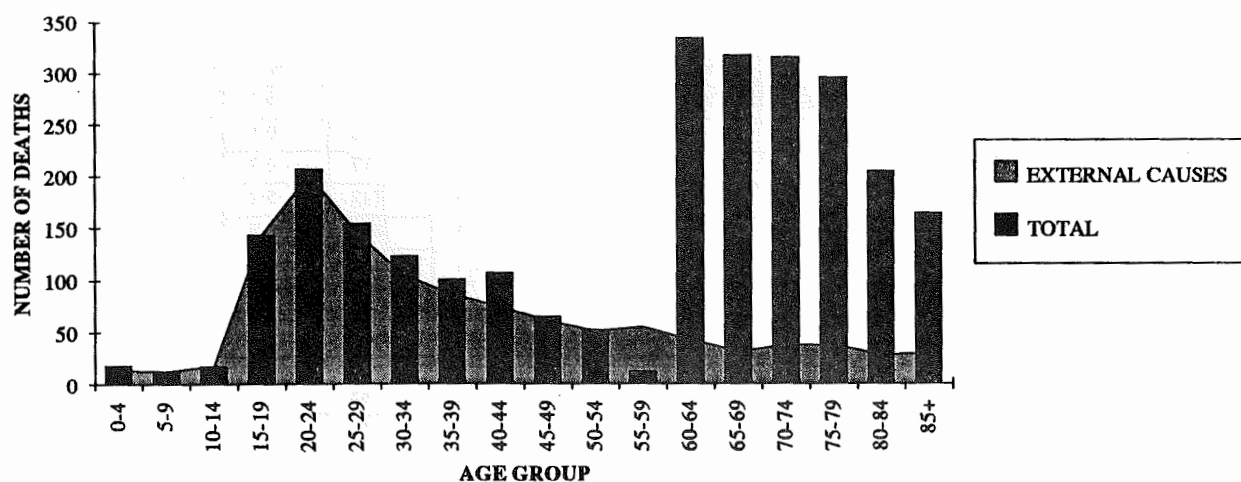


FIGURE 4
NET NUMBER OF DEATHS OF MALES CAUSED BY ALCOHOL
BY AGE GROUP AND MAJOR CAUSE, WESTERN AUSTRALIA, 1981-1990



2.8 Regional Patterns of Mortality

Statistical Divisions

There were marked differences in the age standardised rates of alcohol caused mortality between the nine SDs in Western Australia for the 10 year period: Table 10.

Three SDs, Lower Great Southern, Metropolitan and South West, had rates below the State average of 244 per 100,000 person years.

There were three SDs that had rates that ranged up to about 20% higher than the State average: the Upper Great Southern (9.3% higher), Midlands (20.3% higher) and Pilbara (21.2% higher). The rates for the Central and South Eastern SDs were respectively 40.6% and 58.6% higher than the State average, with the rate for the Kimberley (651 per 100,000 person years) being 167% higher than the State average.

Metropolitan Local Government Areas

In the metropolitan area there were 15 LGAs who had below the average metropolitan standardised rate of alcohol caused mortality: Armadale, Bassendean, Bayswater, Canning, Cockburn, Cottesloe, Gosnells, Kalamunda, Melville, Mundaring, Peppermint Grove, Rockingham, Serpentine-Jarrahdale, Stirling and Wanneroo.

There were four LGAs that had rates that ranged up to about 15% higher than the average metropolitan rate: Mosman Park (14.7%), Nedlands (16.2%), South Perth (13.8%) and Subiaco (11.9%).

The remaining six LGAs had rates that were about one third or more higher than the metropolitan average: Claremont (48.0%), East Fremantle (76.0%), Fremantle (54.4%), Kwinana (38.0%), Perth (37.7%) and Swan (30.6%).

Metropolitan Health Regions

In two metropolitan health regions, the North MHR and South MHR respectively reported rates 94.0% and 97.5% of the average metropolitan rate. Only one area, the East MHR, reported a rate higher, 7.7%, than the metropolitan average.

TABLE 10
AGE STANDARDISED RATES OF ALCOHOL CAUSED MORTALITY, WESTERN AUSTRALIA, 1981-1990
BY STATISTICAL LOCAL AREAS, METROPOLITAN LGAs AND METROPOLITAN HEALTH REGIONS

| AREA | AGE STANDARDISED RATE | STANDARD ERROR | STANDARDISED RATE RATIO |
|-----------------------------|-----------------------|----------------|-------------------------|
| STATISTICAL DIVISION | | | |
| CENTRAL | 343 | 25.2 | 140.6% |
| KIMBERLEY | 651 | 61.8 | 266.5% |
| LOWER GREAT SOUTHERN | 230 | 20.8 | 94.2% |
| METROPOLITAN | 226 | 4.2 | 92.5% |
| MIDLANDS | 294 | 23.9 | 120.3% |
| PILBARA | 296 | 41.9 | 121.2% |
| SOUTH WEST | 228 | 12.5 | 93.2% |
| SOUTH EAST | 387 | 30.8 | 158.6% |
| UPPER GREAT SOUTHERN | 267 | 33.8 | 109.3% |
| AVERAGE STATE | 244 | 3.8 | 100.0% |
| METRO LGAs | | | |
| ARMADALE | 225 | 24.3 | 99.8% |
| BASSENDAN | 218 | 36.1 | 96.6% |
| BAYSWATER | 205 | 20.1 | 90.8% |
| BELMONT | 233 | 25.3 | 103.2% |
| CANNING | 203 | 17.6 | 90.0% |
| CLAREMONT | 334 | 53.6 | 148.0% |
| COCKBURN | 216 | 24.9 | 95.6% |
| COTTESLOE | 224 | 47.0 | 99.2% |
| EAST FREMANTLE | 397 | 70.8 | 176.0% |
| FREMANTLE | 349 | 33.0 | 154.4% |
| GOSNELLS | 158 | 17.9 | 69.8% |
| KALAMUNDA | 200 | 22.4 | 88.5% |
| KWINANA | 312 | 48.1 | 138.0% |
| MELVILLE | 195 | 14.4 | 86.5% |
| MOSMAN PARK | 259 | 48.0 | 114.7% |
| MUNDARING | 221 | 30.0 | 98.0% |
| NEDLANDS | 262 | 29.8 | 116.2% |
| PEPPERMINT GROVE | 159 | 81.7 | 70.6% |
| PERTH | 311 | 16.9 | 137.7% |
| ROCKINGHAM | 201 | 22.8 | 89.2% |
| SERPENTINE | 182 | 56.8 | 80.4% |
| SOUTH PERTH | 257 | 24.0 | 113.8% |
| STIRLING | 206 | 9.5 | 91.2% |
| SUBIACO | 253 | 35.5 | 111.9% |
| SWAN | 295 | 27.1 | 130.6% |
| WANNEROO | 160 | 14.3 | 70.8% |
| AVERAGE METRO AREA | 226 | 4.2 | 100.0% |
| METRO HEALTH REGIONS | | | |
| EAST | 243 | 7.4 | 107.7% |
| NORTH | 212 | 7.2 | 94.0% |
| SOUTH | 220 | 7.6 | 97.5% |

GLOSSARY

Age Standardised Rate:

This is a statistical epidemiological technique whereby populations with differing age structures can be compared with one another. A standard age structure is used to give equal weighting for each age group in the populations being compared.

Rates

A rate is a ratio whose essential characteristic is that time (per minute, hour, year, etc.) is an element of the denominator and in which there is a distinct relationship between numerator and denominator.

Standard Error

A statistical term which is the standard deviation of an estimate. It is a measure of the likely range of values for an estimated rate.

Standardised Rate Ratio

This is the ratio of the age standardised rate for the region to the age standardised rate for the whole State expressed as a percentage.

TABLES 11 - 36
LOCAL GOVERNMENT AREAS

TABLE 11

LOCAL GOVERNMENT AREA:

ARMADALE

SLA CODE*:

210

SIZE (sq km):

559

1986 CENSUS POPULATION

MALES:

20,958

FEMALES:

21,298

TOTAL POPULATION:

42,256

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 20 |
| Alcoholic liver cirrhosis | 13 |
| Breast cancer | 7 |
| Colon cancer | 6 |
| Oesophageal cancer | 5 |
| Other cancers | 11 |
| Alcoholism | 2 |
| Other diseases | 3 |
| Deaths Prevented | (16) |
| External Causes of Death | |
| Suicide | 11 |
| Road injuries | 22 |
| Other injuries | 7 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 90 |

During this period, in Armadale, there were a total of 1,820 deaths.

On average, in Armadale, out of every 1,000 deaths in the period 1981-1990, 49 were caused by alcohol.

* SLA Code = Australian Bureau of Statistics Statistical Local Area Code

TABLE 12

| | |
|-------------------------------|------------------|
| LOCAL GOVERNMENT AREA: | BASSENDAN |
| | 350 |
| SLA CODE: | |
| SIZE (sq km): | 10 |
| 1986 CENSUS POPULATION | |
| MALES: | 6,574 |
| FEMALES: | 6,515 |
| TOTAL POPULATION: | 13,089 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 9 |
| Alcoholic liver cirrhosis | 6 |
| Breast cancer | 3 |
| Colon cancer | 4 |
| Oesophageal cancer | 2 |
| Other cancers | 6 |
| Alcoholism | 2 |
| Other diseases | 3 |
| Deaths Prevented | (12) |
| External Causes of Death | |
| Suicide | 4 |
| Road injuries | 7 |
| Other injuries | 4 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 38 |

During this period, in Bassendean, there were a total of 975 deaths.

On average, in Bassendean, out of every 1,000 deaths in the period 1981-1990, 39 were caused by alcohol.

TABLE 13

LOCAL GOVERNMENT AREA: BAYSWATER

SLA CODE: 420
SIZE (sq km): 28

1986 CENSUS POPULATION

MALES: 20,934
FEMALES: 21,097
TOTAL POPULATION: 42,031

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 24 |
| Alcoholic liver cirrhosis | 20 |
| Breast cancer | 10 |
| Colon cancer | 7 |
| Oesophageal cancer | 3 |
| Other cancers | 20 |
| Alcoholism | 1 |
| Other diseases | 9 |
| Deaths Prevented | (19) |
| External Causes of Death | |
| Suicide | 12 |
| Road injuries | 13 |
| Other injuries | 8 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 108 |

During this period, in Bayswater, there were a total of 2,378 deaths.

On average, in Bayswater, out of every 1,000 deaths in the period 1981-1990, 45 were caused by alcohol.

TABLE 14

| | |
|-------------------------------|----------------|
| LOCAL GOVERNMENT AREA: | BELMONT |
| SLA CODE: | 490 |
| SIZE (sq km): | 40 |
| 1986 CENSUS POPULATION | |
| MALES: | 14,243 |
| FEMALES: | 14,222 |
| TOTAL POPULATION: | 28,465 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 19 |
| Alcoholic liver cirrhosis | 19 |
| Breast cancer | 5 |
| Colon cancer | 6 |
| Oesophageal cancer | 6 |
| Other cancers | 20 |
| Alcoholism | 6 |
| Other diseases | 5 |
| Deaths Prevented | (25) |
| External Causes of Death | |
| Suicide | 9 |
| Road injuries | 14 |
| Other injuries | 6 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 90 |

During this period, in Belmont, there were a total of 2,019 deaths.

On average, in Belmont, out of every 1,000 deaths in the period 1981-1990, 45 were caused by alcohol.

TABLE 15

LOCAL GOVERNMENT AREA:

CANNING

SLA CODE:

1330

SIZE (sq km):

65

1986 CENSUS POPULATION

MALES:

30,571

FEMALES:

31,385

TOTAL POPULATION:

61,956

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 34 |
| Alcoholic liver cirrhosis | 22 |
| Breast cancer | 12 |
| Colon cancer | 14 |
| Oesophageal cancer | 6 |
| Other cancers | 21 |
| Alcoholism | 5 |
| Other diseases | 6 |
| Deaths Prevented | (28) |
| External Causes of Death | |
| Suicide | 14 |
| Road injuries | 16 |
| Other injuries | 13 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 136 |

During this period, in Canning, there were a total of 2,989 deaths.

On average, in Canning, out of every 1,000 deaths in the period 1981-1990, 46 were caused by alcohol.

TABLE 16

LOCAL GOVERNMENT AREA: CLAREMONT

SLA CODE: 1750
SIZE (sq km): 5

1986 CENSUS POPULATION

MALES: 3,824
FEMALES: 4,277
TOTAL POPULATION: 8,101

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 16 |
| Alcoholic liver cirrhosis | 6 |
| Breast cancer | 5 |
| Colon cancer | 4 |
| Oesophageal cancer | 3 |
| Other cancers | 8 |
| Alcoholism | 2 |
| Other diseases | 1 |
| Deaths Prevented | (2) |
| External Causes of Death | |
| Suicide | 3 |
| Road injuries | 3 |
| Other injuries | 6 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 55 |

During this period, in Claremont, there were a total of 988 deaths.

On average, in Claremont, out of every 1,000 deaths in the period 1981-1990, 56 were caused by alcohol.

TABLE 17

LOCAL GOVERNMENT AREA: COCKBURN

SLA CODE: 1820
SIZE (sq km): 167

1986 CENSUS POPULATION

MALES: 20,277
FEMALES: 20,139
TOTAL POPULATION: 40,416

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 17 |
| Alcoholic liver cirrhosis | 17 |
| Breast cancer | 6 |
| Colon cancer | 5 |
| Oesophageal cancer | 3 |
| Other cancers | 16 |
| Alcoholism | 4 |
| Other diseases | 4 |
| Deaths Prevented | (22) |
| External Causes of Death | |
| Suicide | 9 |
| Road injuries | 14 |
| Other injuries | 5 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 78 |

During this period, in Cockburn, there were a total of 1,627 deaths.

On average, in Cockburn, out of every 1,000 deaths in the period 1981-1990, 48 were caused by alcohol.

TABLE 18

LOCAL GOVERNMENT AREA: COTTESLOE

SLA CODE: 2170
 SIZE (sq km): 4

1986 CENSUS POPULATION

MALES: 3,213
 FEMALES: 3,621
 TOTAL POPULATION: 6,834

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 8 |
| Alcoholic liver cirrhosis | 3 |
| Breast cancer | 3 |
| Colon cancer | 3 |
| Oesophageal cancer | 1 |
| Other cancers | 2 |
| Alcoholism | - |
| Other diseases | 3 |
| Deaths Prevented | (3) |
| External Causes of Death | |
| Suicide | 3 |
| Road injuries | 3 |
| Other injuries | 3 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 30 |

During this period, in Cottesloe, there were a total of 636 deaths.

On average, in Cottesloe, out of every 1,000 deaths in the period 1981-1990, 47 were caused by alcohol.

TABLE 19

LOCAL GOVERNMENT AREA: EAST FREMANTLE

SLA CODE: 3150
 SIZE (sq km): 3

1986 CENSUS POPULATION

MALES: 2,746
 FEMALES: 3,008
 TOTAL POPULATION: 5,754

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 15 |
| Alcoholic liver cirrhosis | 9 |
| Breast cancer | 2 |
| Colon cancer | 2 |
| Oesophageal cancer | 2 |
| Other cancers | 3 |
| Alcoholism | 1 |
| Other diseases | 2 |
| Deaths Prevented | (3) |
| External Causes of Death | |
| Suicide | 3 |
| Road injuries | 3 |
| Other injuries | 4 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 44 |

During this period, in East Fremantle, there were a total of 769 deaths.

On average, in East Fremantle, out of every 1,000 deaths in the period 1981-1990, 57 were caused by alcohol.

TABLE 20

LOCAL GOVERNMENT AREA: FREMANTLE

SLA CODE: 3430
SIZE (sq km): 19

1986 CENSUS POPULATION

MALES: 11,399
FEMALES: 11,174
TOTAL POPULATION: 22,573

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 38 |
| Alcoholic liver cirrhosis | 26 |
| Breast cancer | 7 |
| Colon cancer | 8 |
| Oesophageal cancer | 4 |
| Other cancers | 16 |
| Alcoholism | 7 |
| Other diseases | 9 |
| Deaths Prevented | (21) |
| External Causes of Death | |
| Suicide | 8 |
| Road injuries | 11 |
| Other injuries | 15 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 128 |

During this period, in Fremantle, there were a total of 2,409 deaths.

On average, in Fremantle, out of every 1,000 deaths in the period 1981-1990, 53 were caused by alcohol.

TABLE 21

| | |
|-------------------------------|-----------------|
| LOCAL GOVERNMENT AREA: | GOSNELLS |
| SLA CODE: | 3780 |
| SIZE (sq km): | 127 |
| 1986 CENSUS POPULATION | |
| MALES: | 31,215 |
| FEMALES: | 30,444 |
| TOTAL POPULATION: | 61,659 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 16 |
| Alcoholic liver cirrhosis | 9 |
| Breast cancer | 8 |
| Colon cancer | 6 |
| Oesophageal cancer | 2 |
| Other cancers | 14 |
| Alcoholism | - |
| Other diseases | 7 |
| Deaths Prevented | (27) |
| External Causes of Death | |
| Suicide | 16 |
| Road injuries | 20 |
| Other injuries | 14 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 85 |

During this period, in Gosnells, there were a total of 2,041 deaths.

On average, in Gosnells, out of every 1,000 deaths in the period 1981-1990, 42 were caused by alcohol.

TABLE 22

LOCAL GOVERNMENT AREA: KALAMUNDA

SLA CODE: 4200
 SIZE (sq km): 323

1986 CENSUS POPULATION

MALES: 20,895
 FEMALES: 21,000
 TOTAL POPULATION: 41,895

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 18 |
| Alcoholic liver cirrhosis | 5 |
| Breast cancer | 9 |
| Colon cancer | 6 |
| Oesophageal cancer | 5 |
| Other cancers | 11 |
| Alcoholism | 2 |
| Other diseases | 5 |
| Deaths Prevented | (14) |
| External Causes of Death | |
| Suicide | 9 |
| Road injuries | 18 |
| Other injuries | 8 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 82 |

During this period, in Kalamunda, there were a total of 1,771 deaths.

On average, in Kalamunda, out of every 1,000 deaths in the period 1981-1990, 46 were caused by alcohol.

TABLE 23

| | |
|-------------------------------|----------------|
| LOCAL GOVERNMENT AREA: | KWINANA |
| SLA CODE: | 4830 |
| SIZE (sq km): | 120 |
| 1986 CENSUS POPULATION | |
| MALES: | 7,158 |
| FEMALES: | 7,184 |
| TOTAL POPULATION: | 14,342 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 8 |
| Alcoholic liver cirrhosis | 12 |
| Breast cancer | 3 |
| Colon cancer | 2 |
| Oesophageal cancer | 2 |
| Other cancers | 4 |
| Alcoholism | 1 |
| Other diseases | 1 |
| Deaths Prevented | (8) |
| External Causes of Death | |
| Suicide | 6 |
| Road injuries | 9 |
| Other injuries | 4 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 44 |

During this period, in Kwinana, there were a total of 729 deaths.

On average, in Kwinana, out of every 1,000 deaths in the period 1981-1990, 60 were caused by alcohol.

TABLE 24

LOCAL GOVERNMENT AREA: MELVILLE

SLA CODE: 5320
SIZE (sq km): 53

1986 CENSUS POPULATION

MALES: 33,263
FEMALES: 35,628
TOTAL POPULATION: 68,891

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 56 |
| Alcoholic liver cirrhosis | 29 |
| Breast cancer | 20 |
| Colon cancer | 18 |
| Oesophageal cancer | 11 |
| Other cancers | 38 |
| Alcoholism | 3 |
| Other diseases | 8 |
| Deaths Prevented | (35) |
| External Causes of Death | |
| Suicide | 17 |
| Road injuries | 20 |
| Other injuries | 13 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 199 |

During this period, in Melville, there were a total of 4,562 deaths.

On average, in Melville, out of every 1,000 deaths in the period 1981-1990, 44 were caused by alcohol.

TABLE 25

LOCAL GOVERNMENT AREA: MOSMAN PARK

SLA CODE: 5740
SIZE (sq km): 4

1986 CENSUS POPULATION

MALES: 3,313
FEMALES: 3,721
TOTAL POPULATION: 7,034

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 10 |
| Alcoholic liver cirrhosis | 1 |
| Breast cancer | 2 |
| Colon cancer | 4 |
| Oesophageal cancer | 0 |
| Other cancers | 3 |
| Alcoholism | 3 |
| Other diseases | 3 |
| Deaths Prevented | (3) |
| External Causes of Death | |
| Suicide | 3 |
| Road injuries | 3 |
| Other injuries | 5 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 34 |

During this period, in Mosman Park, there were a total of 770 deaths.

On average, in Mosman Park, out of every 1,000 deaths in the period 1981-1990, 44 were caused by alcohol.

TABLE 26

LOCAL GOVERNMENT AREA: MUNDARING

SLA CODE: 6090
SIZE (sq km): 643

1986 CENSUS POPULATION

MALES: 12,593
FEMALES: 12,551
TOTAL POPULATION: 25,144

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 11 |
| Alcoholic liver cirrhosis | 11 |
| Breast cancer | 5 |
| Colon cancer | 4 |
| Oesophageal cancer | 5 |
| Other cancers | 8 |
| Alcoholism | 1 |
| Other diseases | 2 |
| Deaths Prevented | (11) |
| External Causes of Death | |
| Suicide | 7 |
| Road injuries | 9 |
| Other injuries | 4 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 57 |

During this period, in Mundaring, there were a total of 1,160 deaths.

On average, in Mundaring, out of every 1,000 deaths in the period 1981-1990, 49 were caused by alcohol.

TABLE 27

| | |
|-------------------------------|-----------------|
| LOCAL GOVERNMENT AREA: | NEDLANDS |
| SLA CODE: | 6580 |
| SIZE (sq km): | 20 |
| 1986 CENSUS POPULATION | |
| MALES: | 8,871 |
| FEMALES: | 9,705 |
| TOTAL POPULATION: | 18,576 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 39 |
| Alcoholic liver cirrhosis | 7 |
| Breast cancer | 9 |
| Colon cancer | 10 |
| Oesophageal cancer | 7 |
| Other cancers | 17 |
| Alcoholism | 5 |
| Other diseases | 7 |
| Deaths Prevented | (12) |
| External Causes of Death | |
| Suicide | 8 |
| Road injuries | 6 |
| Other injuries | 17 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 120 |

During this period, in Nedlands, there were a total of 2,724 deaths.

On average, in Nedlands, out of every 1,000 deaths in the period 1981-1990, 44 were caused by alcohol.

TABLE 28

LOCAL GOVERNMENT AREA: PEPPERMINT GROVE

SLA CODE: 6930
SIZE (sq km): 1

1986 CENSUS POPULATION

MALES: 628
FEMALES: 819
TOTAL POPULATION: 1,447

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | - |
| Alcoholic liver cirrhosis | 1 |
| Breast cancer | - |
| Colon cancer | - |
| Oesophageal cancer | - |
| Other cancers | - |
| Alcoholism | - |
| Other diseases | - |
| Deaths Prevented | (1) |
| External Causes of Death | |
| Suicide | 0 |
| Road injuries | 1 |
| Other injuries | 0 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 4 |

During this period, in Peppermint Grove, there were a total of 79 deaths.

On average, in Peppermint Grove, out of every 1,000 deaths in the period 1981-1990, 51 were caused by alcohol.

TABLE 29

| | |
|-------------------------------|---------------|
| LOCAL GOVERNMENT AREA: | PERTH |
| SLA CODE: | 7070 |
| SIZE (sq km): | 63 |
| 1986 CENSUS POPULATION | |
| MALES: | 38,638 |
| FEMALES: | 39,147 |
| TOTAL POPULATION: | 77,785 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 137 |
| Alcoholic liver cirrhosis | 65 |
| Breast cancer | 25 |
| Colon cancer | 22 |
| Oesophageal cancer | 21 |
| Other cancers | 60 |
| Alcoholism | 18 |
| Other diseases | 30 |
| Deaths Prevented | (52) |
| External Causes of Death | |
| Suicide | 41 |
| Road injuries | 38 |
| Other injuries | 54 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 459 |

During this period, in Perth, there were a total of 9,755 deaths.

On average, in Perth, out of every 1,000 deaths in the period 1981-1990, 47 were caused by alcohol.

TABLE 30

LOCAL GOVERNMENT AREA:

ROCKINGHAM

| | |
|----------------------|-------------|
| SLA CODE: | 7490 |
| SIZE (sq km): | 257 |

1986 CENSUS POPULATION

| | |
|-------------------|--------|
| MALES: | 15,886 |
| FEMALES: | 15,834 |
| TOTAL POPULATION: | 31,720 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 21 |
| Alcoholic liver cirrhosis | 11 |
| Breast cancer | 7 |
| Colon cancer | 9 |
| Oesophageal cancer | 7 |
| Other cancers | 11 |
| Alcoholism | - |
| Other diseases | 4 |
| Deaths Prevented | (15) |
| External Causes of Death | |
| Suicide | 7 |
| Road injuries | 15 |
| Other injuries | 5 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 83 |

During this period, in Rockingham, there were a total of 1,933 deaths.

On average, in Rockingham, out of every 1,000 deaths in the period 1981-1990, 43 were caused by alcohol.

TABLE 31

LOCAL GOVERNMENT AREA: SERPENTINE-JARRAHDALE

| | |
|----------------------|-------------|
| SLA CODE: | 7700 |
| SIZE (sq km): | 900 |

1986 CENSUS POPULATION

| | |
|--------------------------|--------------|
| MALES: | 3,337 |
| FEMALES: | 3,021 |
| TOTAL POPULATION: | 6,358 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 1 |
| Alcoholic liver cirrhosis | 1 |
| Breast cancer | 1 |
| Colon cancer | 1 |
| Oesophageal cancer | - |
| Other cancers | 1 |
| Alcoholism | - |
| Other diseases | 1 |
| Deaths Prevented | (2) |
| External Causes of Death | |
| Suicide | 1 |
| Road injuries | 4 |
| Other injuries | 1 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 11 |

During this period, in Serpentine-Jarrahdale, there were a total of 243 deaths.

On average, in Serpentine-Jarrahdale, out of every 1,000 deaths in the period 1981-1990, 45 were caused by alcohol.

TABLE 32

LOCAL GOVERNMENT AREA: SOUTH PERTH

SLA CODE: 7840
 SIZE (sq km): 20

1986 CENSUS POPULATION

MALES: 15,272
 FEMALES: 17,487
 TOTAL POPULATION: 32,759

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 61 |
| Alcoholic liver cirrhosis | 15 |
| Breast cancer | 12 |
| Colon cancer | 13 |
| Oesophageal cancer | 7 |
| Other cancers | 21 |
| Alcoholism | 1 |
| South Perth | 5 |
| Deaths Prevented | (15) |
| External Causes of Death | |
| Suicide | 11 |
| Road injuries | 14 |
| Other injuries | 24 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 169 |

During this period, in South Perth, there were a total of 3,799 deaths.

On average, in South Perth, out of every 1,000 deaths in the period 1981-1990, 44 were caused by alcohol.

TABLE 33

LOCAL GOVERNMENT AREA:

STIRLING

SLA CODE:

7910

SIZE (sq km):

110

1986 CENSUS POPULATION

MALES:

81,495

FEMALES:

86,047

TOTAL POPULATION:

167,542

DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990

| CAUSE OF DEATH | NUMBER OF DEATHS |
|---------------------------------------|------------------|
| Deaths Caused By Disease | |
| Stroke | 143 |
| Alcoholic liver cirrhosis | 67 |
| Breast cancer | 44 |
| Colon cancer | 42 |
| Oesophageal cancer | 30 |
| Other cancers | 82 |
| Alcoholism | 19 |
| Other diseases | 28 |
| Deaths Prevented | (92) |
| External Causes of Death | |
| Suicide | 52 |
| Road injuries | 55 |
| Other injuries | 50 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 521 |

During this period, in Stirling, there were a total of 11,909 deaths.

On average, in Stirling, out of every 1,000 deaths in the period 1981-1990, 44 were caused by alcohol.

TABLE 34

| | |
|-------------------------------|----------------|
| LOCAL GOVERNMENT AREA: | SUBIACO |
| SLA CODE: | 7980 |
| SIZE (sq km): | 7 |
| 1986 CENSUS POPULATION | |
| MALES: | 6,831 |
| FEMALES: | 7,836 |
| TOTAL POPULATION: | 14,667 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 25 |
| Alcoholic liver cirrhosis | 11 |
| Breast cancer | 6 |
| Colon cancer | 3 |
| Oesophageal cancer | 4 |
| Other cancers | 6 |
| Alcoholism | 1 |
| Other diseases | 4 |
| Deaths Prevented | (8) |
| External Causes of Death | |
| Suicide | 5 |
| Road injuries | 6 |
| Other injuries | 6 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 71 |

During this period, in Subiaco, there were a total of 1,737 deaths.

On average, in Subiaco, out of every 1,000 deaths in the period 1981-1990, 41 were caused by alcohol.

TABLE 35

| | |
|-------------------------------|---------------|
| LOCAL GOVERNMENT AREA: | SWAN |
| SLA CODE: | 8050 |
| SIZE (sq km): | 1038 |
| 1986 CENSUS POPULATION | |
| MALES: | 19,180 |
| FEMALES: | 18,723 |
| TOTAL POPULATION: | 37,903 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 28 |
| Alcoholic liver cirrhosis | 27 |
| Breast cancer | 7 |
| Colon cancer | 7 |
| Oesophageal cancer | 5 |
| Other cancers | 14 |
| Alcoholism | 7 |
| Other diseases | 7 |
| Deaths Prevented | (23) |
| External Causes of Death | |
| Suicide | 11 |
| Road injuries | 20 |
| Other injuries | 12 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 123 |

During this period, in Swan, there were a total of 2,356 deaths.

On average, in Swan, out of every 1,000 deaths in the period 1981-1990, 52 were caused by alcohol.

TABLE 36

LOCAL GOVERNMENT AREA: WANNEROO

SLA CODE: 8750
 SIZE (sq km): 796

1986 CENSUS POPULATION

MALES: 64,393
 FEMALES: 64,584
 TOTAL POPULATION: 128,977

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 26 |
| Alcoholic liver cirrhosis | 10 |
| Breast cancer | 13 |
| Colon cancer | 11 |
| Oesophageal cancer | 6 |
| Other cancers | 26 |
| Alcoholism | 5 |
| Other diseases | 7 |
| Deaths Prevented | (37) |
| External Causes of Death | |
| Suicide | 26 |
| Road injuries | 38 |
| Other injuries | 19 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 151 |

During this period, in Wanneroo, there were a total of 3,247 deaths.

On average, in Wanneroo, out of every 1,000 deaths in the period 1981-1990, 46 were caused by alcohol.

STATISTICAL DIVISIONS

TABLES 37-45

TABLE 37

STATISTICAL DIVISION: METROPOLITAN

SIZE (sq km): 5,382

1986 CENSUS POPULATION

MALES: 497,707

FEMALES: 510,467

TOTAL POPULATION: 1,008,174

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 800 |
| Alcoholic liver cirrhosis | 423 |
| Breast cancer | 234 |
| Colon cancer | 219 |
| Oesophageal cancer | 150 |
| Other cancers | 440 |
| Alcoholism | 96 |
| Other diseases | 165 |
| Deaths Prevented | (504) |
| External Causes of Death | |
| Suicide | 296 |
| Road injuries | 382 |
| Other injuries | 308 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 3,010 |

During this period, in the Metropolitan Statistical Division, there were a total of 65,425 deaths.

On average, in the Metropolitan Statistical Division, out of every 1,000 deaths in the period 1981-1990, 46 were caused by alcohol.

TABLE 38**STATISTICAL DIVISION: SOUTH WEST****SIZE (sq km): 26,281****1986 CENSUS POPULATION****MALES: 57,719****FEMALES: 56,291****TOTAL POPULATION: 114,010****DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990**

| CAUSE OF DEATH | NUMBER OF DEATHS |
|---------------------------------------|-------------------------|
| Deaths Caused By Disease | |
| Stroke | 102 |
| Alcoholic liver cirrhosis | 34 |
| Breast cancer | 26 |
| Colon cancer | 27 |
| Oesophageal cancer | 23 |
| Other cancers | 48 |
| Alcoholism | 14 |
| Other diseases | 24 |
| Deaths Prevented | (61) |
| External Causes of Death | |
| Suicide | 29 |
| Road injuries | 68 |
| Other injuries | 31 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 365 |

During this period, in the South West Statistical Division, there were a total of 7,939 deaths.

On average, in the South West Statistical Division, out of every 1,000 deaths in the period 1981-1990, 46 were caused by alcohol.

TABLE 39

STATISTICAL DIVISION: LOWER GREAT SOUTHERN

SIZE (sq km): 39,041

1986 CENSUS POPULATION

MALES: 22,136

FEMALES: 21,348

TOTAL POPULATION: 43,484

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 34 |
| Alcoholic liver cirrhosis | 17 |
| Breast cancer | 6 |
| Colon cancer | 8 |
| Oesophageal cancer | 10 |
| Other cancers | 16 |
| Alcoholism | 4 |
| Other diseases | 10 |
| Deaths Prevented | (22) |
| External Causes of Death | |
| Suicide | 10 |
| Road injuries | 20 |
| Other injuries | 16 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 129 |

During this period, in the Lower Great Southern Statistical Division, there were a total of 2,874 deaths.

On average, in the Lower Great Southern Statistical Division, out of every 1,000 deaths in the period 1981-1990, 45 were caused by alcohol.

TABLE 40

STATISTICAL DIVISION: UPPER GREAT SOUTHERN

SIZE (sq km): 46,257

1986 CENSUS POPULATION

MALES: 11,360

FEMALES: 10,358

TOTAL POPULATION: 21,718

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 15 |
| Alcoholic liver cirrhosis | 9 |
| Breast cancer | 5 |
| Colon cancer | 3 |
| Oesophageal cancer | 3 |
| Other cancers | 7 |
| Alcoholism | 1 |
| Other diseases | 3 |
| Deaths Prevented | (10) |
| External Causes of Death | |
| Suicide | 6 |
| Road injuries | 17 |
| Other injuries | 7 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 65 |

During this period, in the Upper Great Southern Statistical Division, there were a total of 1,352 deaths.

On average, in the Upper Great Southern Statistical Division, out of every 1,000 deaths in the period 1981-1990, 48 were caused by alcohol.

TABLE 41

| | |
|-------------------------------|-----------------|
| STATISTICAL DIVISION: | MIDLANDS |
| SIZE (sq km): | 110,389 |
| 1986 CENSUS POPULATION | |
| MALES: | 24,843 |
| FEMALES: | 22,410 |
| TOTAL POPULATION: | 47,253 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 30 |
| Alcoholic liver cirrhosis | 27 |
| Breast cancer | 9 |
| Colon cancer | 7 |
| Oesophageal cancer | 11 |
| Other cancers | 21 |
| Alcoholism | 5 |
| Other diseases | 11 |
| Deaths Prevented | (26) |
| External Causes of Death | |
| Suicide | 11 |
| Road injuries | 38 |
| Other injuries | 10 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 155 |

During this period, in the Midlands Statistical Division, there were a total of 2,626 deaths.

On average, in the Midlands Statistical Division, out of every 1,000 deaths in the period 1981-1990, 59 were caused by alcohol.

TABLE 42**STATISTICAL DIVISION: SOUTH EASTERN****SIZE (sq km): 612,516****1986 CENSUS POPULATION****MALES: 24,443****FEMALES: 20,685****TOTAL POPULATION: 45,128****DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990**

| CAUSE OF DEATH | NUMBER OF DEATHS |
|---------------------------------------|-------------------------|
| Deaths Caused By Disease | |
| Stroke | 29 |
| Alcoholic liver cirrhosis | 36 |
| Breast cancer | 8 |
| Colon cancer | 4 |
| Oesophageal cancer | 9 |
| Other cancers | 16 |
| Alcoholism | 12 |
| Other diseases | 8 |
| Deaths Prevented | (33) |
| External Causes of Death | |
| Suicide | 18 |
| Road injuries | 40 |
| Other injuries | 26 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 172 |

During this period, in the South Eastern Statistical Division, there were a total of 2,702 deaths.

On average, in the South Eastern Statistical Division, out of every 1,000 deaths in the period 1981-1990, 64 were caused by alcohol.

TABLE 43

| | |
|-------------------------------|----------------|
| STATISTICAL DIVISION: | CENTRAL |
| SIZE (sq km): | 758,374 |
| 1986 CENSUS POPULATION | |
| MALES: | 28,386 |
| FEMALES: | 25,532 |
| TOTAL POPULATION: | 53,918 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 33 |
| Alcoholic liver cirrhosis | 40 |
| Breast cancer | 8 |
| Colon cancer | 8 |
| Oesophageal cancer | 7 |
| Other cancers | 26 |
| Alcoholism | 9 |
| Other diseases | 17 |
| Deaths Prevented | (43) |
| External Causes of Death | |
| Suicide | 17 |
| Road injuries | 42 |
| Other injuries | 25 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 188 |

During this period, in the Central Statistical Division, there were a total of 2,973 deaths.

On average, in the Central Statistical Division, out of every 1,000 deaths in the period 1981-1990, 63 were caused by alcohol.

TABLE 44

| | |
|-------------------------------|----------------|
| STATISTICAL DIVISION: | PILBARA |
| SIZE (sq km): | 510,336 |
| 1986 CENSUS POPULATION | |
| MALES: | 25,757 |
| FEMALES: | 20,371 |
| TOTAL POPULATION: | 46,128 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 6 |
| Alcoholic liver cirrhosis | 16 |
| Breast cancer | 3 |
| Colon cancer | 1 |
| Oesophageal cancer | 1 |
| Other cancers | 8 |
| Alcoholism | 7 |
| Other diseases | 9 |
| Deaths Prevented | (29) |
| External Causes of Death | |
| Suicide | 10 |
| Road injuries | 34 |
| Other injuries | 24 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 88 |

During this period, in the Pilbara Statistical Division, there were a total of 1,097 deaths.

On average, in the Pilbara Statistical Division, out of every 1,000 deaths in the period 1981-1990, 80 were caused by alcohol.

TABLE 45

STATISTICAL DIVISION: KIMBERLEY

SIZE (sq km): 418,800

1986 CENSUS POPULATION

MALES: 11,480

FEMALES: 9,764

TOTAL POPULATION: 21,244

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|------------------------------------------------------|------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 11 |
| Alcoholic liver cirrhosis | 16 |
| Breast cancer | 2 |
| Colon cancer | 1 |
| Oesophageal cancer | 4 |
| Other cancers | 9 |
| Alcoholism | 14 |
| Other diseases | 14 |
| Deaths Prevented | (17) |
| External Causes of Death | |
| Suicide | 6 |
| Road injuries | 26 |
| Other injuries | 32 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 119 |

During this period, in the Kimberley Statistical Division, there were a total of 1,330 deaths.

On average, in the Kimberley Statistical Division, out of every 1,000 deaths in the period 1981-1990, 89 caused by alcohol.

METROPOLITAN HEALTH REGIONS

TABLES 46 - 48

TABLE 46

NORTH METROPOLITAN HEALTH REGION

1986 CENSUS POPULATION

| | |
|--------------------------|----------------|
| MALES: | 168,653 |
| FEMALES: | 174,073 |
| TOTAL POPULATION: | 342,726 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 266 |
| Alcoholic liver cirrhosis | 105 |
| Breast cancer | 79 |
| Colon cancer | 71 |
| Oesophageal cancer | 50 |
| Other cancers | 139 |
| Alcoholism | 34 |
| Other diseases | 54 |
| Deaths Prevented | (146) |
| External Causes of Death | |
| Suicide | 98 |
| Road injuries | 110 |
| Other injuries | 103 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 962 |

During this period, in the North Metropolitan Health Region, there were a total of 20,905 deaths.

On average, in the North Metropolitan Health Region, out of every 1,000 deaths in the period 1981-1990, 46 were caused by alcohol.

TABLE 47**EAST METROPOLITAN HEALTH REGION****1986 CENSUS POPULATION**

| | |
|--------------------------|----------------|
| MALES: | 177,801 |
| FEMALES: | 180,380 |
| TOTAL POPULATION: | 358,181 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 327 |
| Alcoholic liver cirrhosis | 179 |
| Breast cancer | 86 |
| Colon cancer | 80 |
| Oesophageal cancer | 61 |
| Other cancers | 175 |
| Alcoholism | 40 |
| Other diseases | 68 |
| Deaths Prevented | (193) |
| External Causes of Death | |
| Suicide | 113 |
| Road injuries | 146 |
| Other injuries | 130 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 1,211 |

During this period, in the East Metropolitan Health Region, there were a total of 25,580 deaths.

On average, in the East Metropolitan Health Region, out of every 1,000 deaths in the period 1981-1990, 47 were caused by alcohol.

TABLE 48

SOUTH METROPOLITAN HEALTH REGION

1986 CENSUS POPULATION

| | |
|--------------------------|----------------|
| MALES: | 174,263 |
| FEMALES: | 175,180 |
| TOTAL POPULATION: | 349,443 |

| DEATHS CAUSED AND PREVENTED BY ALCOHOL USE 1981-1990 | |
|-------------------------------------------------------------|-------------------------|
| CAUSE OF DEATH | NUMBER OF DEATHS |
| Deaths Caused By Disease | |
| Stroke | 214 |
| Alcoholic liver cirrhosis | 142 |
| Breast cancer | 70 |
| Colon cancer | 69 |
| Oesophageal cancer | 42 |
| Other cancers | 130 |
| Alcoholism | 22 |
| Other diseases | 45 |
| Deaths Prevented | (169) |
| External Causes of Death | |
| Suicide | 88 |
| Road injuries | 130 |
| Other injuries | 81 |
| TOTAL DEATHS CAUSED BY ALCOHOL | 864 |

During this period, in the South Metropolitan Health Region, there were a total of 18,063 deaths.

On average, in the South Metropolitan Health Region, out of every 1,000 deaths in the period 1981-1990, 48 were caused by alcohol.

APPENDIX 1: ESTIMATED AGE-SPECIFIC AETIOLOGICAL FRACTIONS OF CONDITIONS IN AUSTRALIAN FEMALES CAUSED OR PREVENTED BY ALCOHOL

| ICD-9 CODE | 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+ |
|--------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------------|
| E810-E819 | | | | | | | | | | | | | | | | | | |
| E860.0 | 0.3 | 0.3 | 0.3 | 0.36 | 0.36 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 ROAD INJURIES |
| E860.1,E860.2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 ALCOHOLIC POISONING |
| E880-E888 | | | | | | | | | | | | | | | | | | |
| E890-E899 | | | | | | | | | | | | | | | | | | |
| E910 | | | | | | | | | | | | | | | | | | |
| E911 | | | | | | | | | | | | | | | | | | |
| E919-E920 | | | | | | | | | | | | | | | | | | |
| E950-E959 | | | | | | | | | | | | | | | | | | |
| E960,E965,E966,E968,E969 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 MACHINE INJURIES |
| E967 | 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 | 0.15 SUICIDE |
| 140 | | | | | | | | | | | | | | | | | | |
| 141,143-145 | | | | | | | | | | | | | | | | | | |
| 146-149 | | | | | | | | | | | | | | | | | | |
| 150 | | | | | | | | | | | | | | | | | | |
| 153 | | | | | | | | | | | | | | | | | | |
| 154 | | | | | | | | | | | | | | | | | | |
| 155 | | | | | | | | | | | | | | | | | | |
| 157 | | | | | | | | | | | | | | | | | | |
| 161 | | | | | | | | | | | | | | | | | | |
| 174-175 | | | | | | | | | | | | | | | | | | |
| 265.2 | | | | | | | | | | | | | | | | | | |
| 291 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 ALCOHOLIC PSYCHOSIS |
| 303 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 ALCOHOL DEPENDENCE |
| 305 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 ALCOHOL ABUSE |
| 401-405 | | | | | | | | | | | | | | | | | | |
| 410-414 | | | | | | | | | | | | | | | | | | |
| 425.5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 ISCHAEMIC HEART DISEASE |
| 426-427 | | | | | | | | | | | | | | | | | | |
| 428-429 | | | | | | | | | | | | | | | | | | |
| 430-438 | | | | | | | | | | | | | | | | | | |
| 456.0-456.2 | | | | | | | | | | | | | | | | | | |
| 530.7 | | | | | | | | | | | | | | | | | | |
| 535.3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 CARDIAC DYSRHYTHMIAS |
| 571.0-571.3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 HEART FAILURE |
| 571.5-571.9 | | | | | | | | | | | | | | | | | | |
| 574 | | | | | | | | | | | | | | | | | | |
| 577 | | | | | | | | | | | | | | | | | | |
| 577.1 | | | | | | | | | | | | | | | | | | |
| 764-765 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 LOW BIRTHWEIGHT |

APPENDIX 2: ESTIMATED AGE-SPECIFIC AETIOLOGICAL FRACTIONS OF CONDITIONS IN AUSTRALIAN MALES CAUSED OR PREVENTED BY ALCOHOL

| | 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+ |
|--------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------------|
| E810-E819 | 0.3 | 0.3 | 0.3 | 0.36 | 0.36 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | ROAD INJURIES |
| E860.0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ALCOHOLIC POISONING |
| E860.1,E860.2 | | | | | | | | | | | | | | | | | | ETHANOL POISONING |
| E880-E888 | | | | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | FALL INJURIES |
| E890-E899 | | | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | FIRE INJURIES |
| E910 | | | 0.26 | 0.26 | 0.26 | 0.26 | 0.256 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | DROWNING |
| E911 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ASPIRATION |
| E919-E920 | | | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | MACHINE INJURIES |
| E950-E959 | | | 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 | SUICIDE |
| E960,E965,E966,E968,E969 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | ASSAULT |
| E967 | 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 | CHILD ABUSE |
| 140 | | | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | LIP CANCER |
| 141,143-145 | | | 0.56 | 0.56 | 0.56 | 0.57 | 0.57 | 0.57 | 0.55 | 0.55 | 0.54 | 0.55 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | ORAL CANCER |
| 146-149 | | | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.65 | 0.65 | 0.64 | 0.65 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 | PHARYNGEAL CANCER |
| 150 | | | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.5 | 0.49 | 0.49 | 0.49 | 0.48 | 0.48 | 0.48 | 0.48 | 0.48 | OESOPHAGEAL CANCER |
| 153 | | | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | COLON CANCER |
| 154 | | | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | RECTAL CANCER |
| 155 | | | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.35 | 0.35 | 0.34 | 0.35 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | HEPATIC CANCER |
| 157 | | | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 | 0.16 | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | PANCREATIC CANCER |
| 161 | | | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.56 | 0.55 | 0.55 | 0.55 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | LARYNGEAL CANCER |
| 174-175 | | | 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 | BREAST CANCER |
| 265.2 | | | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | PELLAGRA |
| 291 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ALCOHOLIC PSYCHOSIS |
| 303 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ALCOHOL DEPENDENCE |
| 305 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ALCOHOL ABUSE |
| 401-405 | | | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.21 | 0.21 | 0.21 | 0.21 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | HYPERTENSION |
| 410-414 | | | -0.29 | -0.29 | -0.29 | -0.29 | -0.29 | -0.29 | -0.27 | -0.27 | -0.26 | -0.27 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | ISCHAEMIC HEART DISEASE |
| 425.5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ALCOHOLIC CARDIOMYOPATHY |
| 426-427 | | | -0.29 | -0.29 | -0.29 | -0.29 | -0.29 | -0.29 | -0.27 | -0.27 | -0.26 | -0.27 | | | | | | CARDIAC DYSRHYTHMIAS |
| 428-429 | | | -0.03 | -0.11 | 0.02 | -0.16 | -0.24 | -0.22 | -0.23 | -0.23 | -0.21 | -0.23 | | | | | | HEART FAILURE |
| 430-438 | | | 0.15 | 0.15 | 0.15 | 0.16 | 0.16 | 0.16 | 0.15 | 0.15 | 0.14 | 0.15 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | STROKE |
| 456.0-456.2 | | | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 | OESOPHAGEAL VARICES |
| 530.7 | | | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | GASTRO - OESOPHAGEAL HAEMORRHAGE |
| 535.3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ALCOHOLIC GASTRITIS |
| 571.0-571.3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | ALCOHOLIC LIVER CIRRHOSIS |
| 571.5-571.9 | | | | | | | | | | | | | | | | | | UNSPECIFIED LIVER CIRRHOSIS |
| 574 | | | -0.34 | -0.34 | -0.34 | -0.35 | -0.35 | -0.32 | -0.32 | -0.32 | -0.31 | -0.32 | -0.3 | -0.3 | -0.3 | -0.3 | -0.3 | CHOLELITHIASIS |
| 577 | | | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | ACUTE PANCREATITIS |
| 577.1 | | | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.69 | 0.69 | 0.68 | 0.69 | 0.68 | 0.68 | 0.68 | 0.68 | 0.68 | CHRONIC PANCREATITIS |
| 764-765 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | LOW BIRTHWEIGHT |

APPENDIX 3: STATISTICAL DIVISIONS, SUB DIVISIONS AND COMPONENT LOCAL GOVERNMENT AREAS OF WESTERN AUSTRALIA

| | | | |
|--------------------------------|-----------------------------|------------------------|----------------------------|
| PERTH | | Williams (S) | Esperance (S) |
| CENTRAL METROPOLITAN | PRESTON | LAKES | Ravensthorpe (S) |
| Claremont (T) | Bunbury (C) | Corrigin (S) | GASCOYNE |
| Cottesloe (T) | Capel (S) | Kondinin (S) | Carnarvon (S) |
| Mosman Park (T) | Collie (S) | Kulin (S) | Exmouth (S) |
| Nedlands (C) | Dardanup (S) | Lake Grace (S) | Shark Bay (S) |
| Peppermint Grove (S) | Donnybrook-Balingup (S) | MIDLANDS | Upper Gascoyne (S) |
| Perth (C) - Inner | Harvey (S) | MOORE | CARNEGIE |
| Perth (C) - North | VASSE | Chittering (S) | Cue (S) |
| Perth (C) - Outer | Augusta-Margaret River (S) | Dandaragan (S) | Meekatharra (S) |
| Perth (C) - South | Busselton (S) | Gingin (S) | Mount Magnet (S) |
| Perth (C) - Wembley-Coastal | BLACKWOOD | Moora (S) | Murchison (S) |
| Subiaco (C) | Boyup Brook (S) | Victoria Plains (S) | Sandstone (S) |
| EAST METROPOLITAN | Bridgetown-Greenbushes (S) | AVON | Wiluna (S) |
| Bassendean (T) | Manjimup (S) | Beverley (S) | Yalgoo (S) |
| Bayswater (C) | Nannup (S) | Cunderdin (S) | GREENOUGH RIVER |
| Kalamunda (S) | LOWER GREAT SOUTHERN | Dalwallinu (S) | Carnamah (S) |
| Mundaring (S) | PALLINUP | Dowerin (S) | Chapman Valley (S) |
| Swan (S) | Broomehill (S) | Goomalling (S) | Coorow (S) |
| NORTH METROPOLITAN | Gnowangerup (S) | Koorda (S) | Geraldton (C) |
| Stirling (C) - Central | Jerramungup (S) | Northam (T) | Greenough (S) |
| Stirling (C) - West | Katanning (S) | Northam (S) | Irwin (S) |
| Stirling (C) - South-Eastern | Kent (S) | Quairading (S) | Mingenew (S) |
| Wanneroo (C) | Kojonup (S) | Tammin (S) | Morawa (S) |
| SOUTH-WEST METROPOLITAN | Tambellup (S) | Toodyay (S) | Mullewa (S) |
| Cockburn (C) | Woodanilling (S) | Wongan-Ballidu (S) | Northampton (S) |
| East Fremantle (T) | KING | Wyalkatchem (S) | Perenjori (S) |
| Fremantle (C) - Inner | Albany (T) | York (S) | Three Springs (S) |
| Fremantle (C) - Remainder | Albany (S) | CAMPION | PILBARA |
| Kwinana (T) | Cranbrook (S) | Bruce Rock (S) | DE GREY |
| Melville (C) | Denmark (S) | Kellerberrin (S) | East Pilbara (S) |
| Rockingham (C) | Plantagenet (S) | Merredin (S) | Port Hedland (T) |
| SOUTH-EAST METROPOLITAN | UPPER GREAT SOUTHERN | Mount Marshall (S) | FORTESCUE |
| Armadale (C) | HOTHAM | Mukinbudin (S) | Roebourne (S) |
| Belmont (C) | Boddington (S) | Narembeen (S) | Ashburton (S) |
| Canning (C) | Brookton (S) | Nungarin (S) | KIMBERLEY |
| Gosnells (C) | Cuballing (S) | Trayning (S) | ORD |
| Serpentine-Jarrahdale (S) | Dumbleyung (S) | Westonia (S) | Halls Creek (S) |
| South Perth (C) | Narrogin (T) | Yilgarn (S) | Wyndham-East Kimberley (S) |
| SOUTH-WEST | Narrogin (S) | SOUTH-EASTERN | FITZROY |
| DALE | Pingelly (S) | LEFROY | Broome (S) |
| Mandurah (C) | Wagin (S) | Coolgardie (S) | Derby-West Kimberley (S) |
| Waroona (S) | Wandering (S) | Kalgoorlie-Boulder (C) | |
| Murray (S) | West Arthur (S) | Laverton (S) | |
| | Wickepin (S) | Leonora (S) | |
| | | Menzies (S) | |
| | | JOHNSTON | |
| | | Dundas (S) | |

Statistical divisions are indicated thus: SOUTH-WEST; sub-divisions thus: BLACKWOOD; statistical local areas thus: Manjimup (S). Cities are marked (C), Towns (T) and Shires (S).

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