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Tobacco, Alcohol and Illicit Drugs: Use and Impact Among Residents of the Illawarra Health Area

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Abstract

This issue of The Illawarra Population Health Profiler focuses on the use and impact of tobacco, alcohol and other drug use among residents of the Illawarra Health Area. Data are reported for the Illawarra Health Area, and each of its Local Government Areas (LGAs), and are also compared to the NSW averages.

Keywords

drugs:, impact, health, illawarra, among, alcohol, area, residents, tobacco, illicit

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Division of Population Health & Planning Illawarra Health

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TOBACCO, ALCOHOL AND ILLICIT DRUGS Use and Impact Among Residents of the Illawarra Health Area

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This issue of *The Illawarra Population Health Profiler* focuses on the use and impact of tobacco, alcohol and other drug use among residents of the Illawarra Health Area. Data are reported for the Illawarra Health Area, and each of its Local Government Areas (LGAs), and are also compared to the NSW averages.

1. OVERVIEW

Morbidity and Mortality

Tobacco, alcohol and illicit drugs are responsible for about one in four deaths among Illawarra males and one in eight among females. The vast majority of these 'drug' deaths are due to tobacco (84%), with a further 13% due to alcohol. Less than 3% are due to illicit drugs

An estimated one in 15 hospitalisations among Illawarra males and one in 33 among females are attributable to drugs. Again, the majority is due to tobacco (66%), with a further 28% due to alcohol, and 5% due to illicit drugs.

While illicit drugs are responsible for far fewer deaths and hospitalisations than tobacco, and to a lesser extent alcohol, their impact is felt disproportionately among young people.

A 'snap-shot' of drug-related hospital morbidity and mortality, as well as risk behaviours, among Illawarra males and females is shown in Table 1.

Table 1. Summary of Indicators of Drug-Related Risk Behaviours (2002), Hospital Morbidity (1999/2000-2001/2002) and Mortality (1992-2001), Illawarra Health (IH) Residents

	MALES			FEMALES		
	IH Estimate	IH vs NSW	Recent Trend	IH Estimate	IH vs NSW	Recent Trend
Tobacco						
Smoking prevalence (%)	27.1	Similar	Decreasing	17.5	Similar	Decreasing
Hospitalisations per 100,000	1,228.5	Higher	Increasing	556.5	Higher	Increasing
Deaths per 100,000	163.3	Similar	Decreasing	48.5	Similar	Decreasing
Alcohol						
Risk drinking prevalence (%)	44.7	Similar	Decreasing	30.8	Similar	Decreasing
Hospitalisations per 100,000	575.2	Similar	Increasing	307.7	Similar	Increasing
Deaths per 100,000	23.8	Similar	Decreasing	9.0	Similar	Decreasing
Illicit drugs						
Hospitalisations per 100,000	101.4	Lower	Decreasing	87.2	Lower	Decreasing
Deaths per 100,000	7.1	Similar	Decreasing	1.6	Similar	Decreasing

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Health Survey*; *NSW Inpatients Statistics Collection*, *ABS Death Registrations & Estimated Resident Populations*, accessed from NSW Health's HOIST.

Notes: 1. Illicit drug estimates for hospitalisations for 1997/98-1999/2000 and deaths for 1989-1998.

2. Rates were directly age-standardised using the Australian population as at 30 June 1991.

3. Alcohol risk drinking behaviour defined as one or more of: more than 14 standard drinks weekly for females or 28 for males; at least one heavy drinking day in last 12 months (more than 4 drinks for females or 6 for males); or alcohol consumption every day.

Causes

The three main causes of drug-attributable deaths among Illawarra residents are:

- tobacco (1992-2001): lung cancer (31% of all tobacco-attributable deaths), ischaemic heart disease (IHD, 23%), and chronic obstructive pulmonary disease (COPD, 22%);
- alcohol (1992-2001): liver cirrhosis (26%), stroke (23%), and road injury (11%); and
- illicit drugs (1989-1998): opiate dependence (64%), accidental opiate poisoning (20%), and suicide (14%).

The three main causes of drug-attributable hospitalisations among Illawarra residents are:

- tobacco (1999/2000-2001/02): COPD (26% of all tobacco-attributable hospitalisations), IHD (25%), and lung cancer (7.5%);

- alcohol (1999/2000-2001/02): falls injury (23%), assault (11%), and road injury (8.3%); and
- illicit drugs (1997/98-1999/2000): drug psychoses (38%), attempted suicide (11%), opiate dependence (8.3%).

Trends and NSW comparisons

Drug hospitalisation and mortality rates among Illawarra residents have been similar to the NSW averages in recent years, with a few exceptions:

- Illicit drug hospitalisation (but not mortality) rates have been lower than the NSW rates.
- Tobacco-attributable hospitalisation rates among Illawarra residents were lower than the NSW rates in the early 1990s but have been higher in most years since 1993/94.

- While tobacco-attributable mortality rates among Illawarra males have been higher than the NSW rates in most years since 1989, encouragingly, 2001 data suggest that the gap between Illawarra and NSW residents may have closed.

Since the late 1980s drug-attributable hospitalisation rates have increased in the Illawarra (particularly for illicit drugs, and to a lesser extent alcohol), while mortality rates have decreased (particularly for tobacco). The main exception is illicit drug (mainly opiate) attributable mortality rates, which increased steeply to a peak in 1999, and have since declined.

These Illawarra trends are similar to NSW trends. However, notably, it appears that the rate of increase in tobacco and alcohol-attributable hospitalisations among Illawarra residents has been slightly greater than for NSW as a whole.

Gender variation

In recent years, tobacco and alcohol hospitalisation and mortality rates have generally been about 2-3 times higher among Illawarra males than females. This ratio has been decreasing in recent years as tobacco-related mortality rates have declined at a faster rate among males, and alcohol-related hospitalisation rates have increased at a faster rate among females.

In contrast, for illicit drugs, hospitalisation rates among Illawarra males and females have been similar, while mortality rates have been about five times higher among males.

Geographic variation

Of the four Illawarra Local Government Areas (LGAs), Shellharbour has the highest rate of: hospitalisation due to tobacco (males and females), alcohol (males and females), and illicit drugs (males only); and of death attributable to tobacco (males and females).

Shoalhaven LGA has the highest rates of: death due to alcohol (males and females), and of hospitalisation due to illicit drugs (females only).

Within the Wollongong LGA, the Warrawong sub-area, in particular, has a high level of morbidity and mortality due to tobacco, alcohol and illicit drugs.

Risk Factors

Tobacco

In 1996 the median age when Illawarra students first tried tobacco was 12 years. The median age when Illawarra students began to smoke every day was 13 years. By Year 10 (average age 16.0 years), 16% of Illawarra boys and 23% of girls were regular (at least weekly) smokers.

Based on 2002 *NSW Health Survey* data, the prevalence of smoking (daily or occasional) among Illawarra adults (aged 16 years and over) was 22% (males 27%, females 18%), which was average for NSW (21%).

In addition, an estimated 30% of Illawarra males and 25% of Illawarra females are ex-smokers; these 'ex-smoker' prevalence rates are higher than for NSW, the excess being significant for females.

Available data (from 1989/90 to 2002) show a decreasing trend in smoking among Illawarra males and females, consistent with NSW trends.

The ex-smoker prevalence data suggest that while Illawarra smoking rates are typical for NSW now (and during the 1990s), smoking prevalence was probably higher than the NSW average in previous years. This would help explain the recent trends in tobacco-attributable morbidity and mortality rates among Illawarra residents described above.

Geographic variation in smoking prevalence mirrors that for tobacco-attributable morbidity and mortality. The Shoalhaven and Shellharbour LGAs have the highest smoking

prevalence (at least among women during pregnancy). Within the Wollongong LGA, smoking is most common in the Warrarong, followed by the Dapto and Corrimal, sub areas.

The trend in smoking prevalence in each of the Illawarra LGAs and sub-areas is consistent with the overall decreasing Illawarra (and NSW) trend. The exception is the Warrarong sub-area, which appears to have a slight upward trend.

Alcohol

The 1996 *Illawarra Youth Health Survey* showed that by Year 10 nearly 60% of boys and girls had ever been drunk.

About one in three Year 10 students, one in five Year 8 students, and one in ten Year 6 students, had been binge drinking (at least five drinks in a row) in the previous 2 weeks.

The 2002 *NSW Health Survey* (adults aged 16 years and over) showed that while regular alcohol consumption is most common among middle-aged people, 'risk drinking' behaviour is commonest among young adults, and generally declines with age. (Risk drinking is defined, as at least one of the following: more than 14 standard drinks weekly for females or 28 for males; at least one heavy drinking day in last 12 months (more than 4 drinks for females or 6 for males); or alcohol consumption daily.)

Nearly 2 in 3 Illawarra young adults (aged 16-24 years, male or female) appear to have risk drinking behaviour.

Overall, about 38% of Illawarra adults aged 16 years and over (males 45%, females 31%), have risk drinking behaviour, which is slightly but not significantly higher than the NSW average (35%).

The available data show a clear picture of variation in prevalence of risk behaviours, morbidity and mortality, across geographic areas within the Illawarra, i.e. health inequalities, which reflect varying levels of socioeconomic advantage. The available trend data for risk behaviours, albeit limited, also suggest variation in *trends* across geographic areas, which should be seen as a warning of *increasing* health inequalities, which may not be fully realised, at least within the health system, for decades.

2. METHODS

Data for this profile were obtained from a number of sources, in particular:

- NSW Health's *NSW Health Surveys*^{1,2} and Illawarra Health's *Illawarra Youth Health Survey*³
- *NSW Inpatients Statistics Collection*, and *NSW Midwives Data Collection* (accessed and analysed through NSW Health's *Health Outcomes and Information Statistical Toolkit* (HOIST), using the Statistical Analysis System (SAS, Version 6.12 & 8.02); and
- Australian Bureau of Statistics' *Death Registrations* (from the Registry of Births, Deaths and Marriages) and *Estimated Resident Populations* (using HOIST and SAS).

Given the lack of data collected about illicit drug use at the Area level within NSW, information from a number of national/ NSW surveys have been drawn upon to provide an indication of the level of illicit drug use among Illawarra residents.

Risk factors

Information about tobacco and alcohol use among Illawarra adolescents were obtained from 1,939 students who responded to the **1996 Illawarra Youth Health Survey** (IYHS).³ These students attended 11 primary schools (Year 6: mean age 12.1 years) and six high schools (Years 8 and 10: mean ages 14.0 and 16.0 years, respectively) randomly selected throughout the Illawarra.

Prevalence estimates for various risk behaviours were compared between student sub-groups defined according to gender, school Years, and whether or not English was the only language spoken at home. Illawarra estimates were also compared with NSW averages, obtained from a concurrent NSW-wide survey which used similar methods including questionnaire (based on the World Health Organization's *Health Behaviours in School Children* Questionnaire).⁴

Information about tobacco and alcohol use among Illawarra residents aged 16 years and over were obtained from responses to **1997, 1998, and 2002 NSW Health Surveys**.^{1,2} Prevalence estimates are based on responses from 1,026 Illawarra residents in 1997, 1,034 in 1998, and 773 in 2002.

These estimates have been compared with those for NSW residents. Any differences between the Illawarra and NSW populations are reported as statistically significant at the 5% level.

In addition, for some indicators, age-specific prevalence rates, for Illawarra males and females, have been reported. Trends for risk factors are also reported, where comparable risk factor data are available for both Illawarra and NSW residents.

The **NSW Midwives Data Collection for 1996-2002** provided data about smoking prevalence (among women during pregnancy) at the Illawarra, LGA, and small area (based on postcodes) levels. The relevance of these data to the general Illawarra population hinges on the assumption (implicit in their presentation in this report) that geographic variation, and trends, in smoking prevalence rates among

pregnant women reflect those in the general population.

The sub-areas used for the small area analysis in this report were within the Wollongong LGA, and were defined according to postcodes, from north to south, as shown in Table 2.

Table 2: Geographic Sub-Area Definitions

SUB-AREA	POSTCODES
Thirroul	2508, 2515, 2516, 2517
Corrimal	2518, 2519
Wollongong	2500
Warrawong	2502, 2505, 2506
Unanderra	2525, 2526
Dapto	2530

Given the lack of data collected about illicit drug use at the Area level within NSW, information from a number of national/ state surveys were accessed for this report:

- **National Drug Strategy Household Survey 2001:**⁵ This was the seventh in a series of comprehensive national surveys of Australians aged 14 years and over. Almost 27,000 people were surveyed using interviews and self-completed questionnaires. Results for the 7,254 NSW residents are reported here.
- **Australian Secondary Schools Alcohol and other Drugs Survey 1999:**⁶ This was the 6th in a series of national surveys of Australian school students aged 12-17 years, the 1996 survey being the first time that illicit drug use was included. In 1999, 25,486 students were surveyed using self-completed questionnaires.
- **University Drug and Alcohol Survey 2001:**⁷ This was the first study of drug and alcohol use among university students in NSW. The study population was aged 18-24 years and undergraduate, attending five NSW universities (2 regional, 3 metropolitan). For this survey 1,667 students completed questionnaires.

Finally, the numbers of Illawarra males and females (adults, young people) undertaking the main risk behaviours have been estimated,

using: population prevalence estimates of the behaviour, multiplied by the estimated numbers of people in that population (using ABS population estimates).

Some Data Limitations

An inherent limitation of many surveys, including the *NSW Health Surveys* and *Illawarra Youth Health Survey*, is that the data are based on self-report (rather than objective measurements). In addition, some of the reported survey estimates are based on small numbers of respondents, particularly when estimates for sub-groups are reported separately (eg age/sex-specific prevalence). Small numbers mean imprecise estimates; they may also mean that there is insufficient power to detect a statistically significant difference (if an underlying difference really does exist).

Risk factor data from previous years are limited, so few trend data are available. The available risk factor data prior to 1995,^{12,13} were obtained using different methods to each other and the post-1995 *NSW Health Surveys*, which means we should make only tentative conclusions about trends reaching back prior to 1995.

Unfortunately numbers of respondents to the *NSW Health Survey* at the Area level are also too small to give meaningful estimates for sociodemographic sub-groups resident within individual Areas, for example, defined by LGA of residence, indigenous status, and country of birth. Therefore, for example, alcohol indicators have not been reported at the LGA level. Readers are referred to the on-line and published reports of the *NSW Health Surveys* for estimates related to other sociodemographic sub-groups at the NSW level.^{1,8,11}

The *NSW Health Surveys* were limited to adults aged 16 years and over. While partially filling a gap in information related to adolescent health, the methodology used for the 1996 *Illawarra Youth Health Survey* also does not allow for reporting by sociodemographic sub-groups (except as defined by school Year, gender and language spoken at home (English or Non-English Speaking Background)).³ Illawarra youth health data were not collected prior to 1996,

nor have been collected since, hence no trend data are currently available for Illawarra youth. Importantly, no local population-based data are available about the prevalence of illicit drug use in the Illawarra. Therefore, only Australia/NSW-wide information has been presented. The assumption in presenting these data is that, in terms of illicit drug use, the Illawarra is not very different from the rest of NSW/ Australia.

While filling a gap related to drug and alcohol use among university students, a known high risk group, the results of the *University Drug and Alcohol Survey 2001* should be treated with some caution because of the low response rate (22%).⁷

Morbidity and Mortality

Based on methods developed by English and Holman et al,⁹ numbers and rates of drug-attributable deaths and hospitalisations for Illawarra residents were estimated by applying **aetiologic fractions** (AF) to death and hospital separation data.

AF represent the probability that a particular cause of death or illness was caused by tobacco or alcohol etc. The AF were estimated from available national risk factor prevalence data and from meta-analysis of published scientific literature on the adverse (or protective) health effects of these substances.⁹

The AF were obtained from electronic files provided by the Australian Institute of Health and Welfare via NSW Health. Some of the 1995 AF were revised in 1998 to take into account more recent information.^{9,10} While the analyses for this report are based on the 1995 AF, the revised 1998 AF for falls injury attributable to alcohol (which take into account varying risk with age), were used for this report, to provide a much more realistic (lower) estimate for alcohol-attributable falls hospitalisations.

Numbers and **directly age-standardised rates** for deaths and hospital separations attributable to tobacco, alcohol and illicit drugs have been reported. These direct standardisations used the 1991 Australian population as the standard.

Numbers and rates were estimated by sex and LGA, and, for some estimates, sub-areas within the Wollongong LGA. Where these estimates are presented graphically, 95% Confidence Intervals (CI) around the estimates are shown. If the CI overlap, the difference between the populations being compared (eg Wollongong and Kiama LGAs) is considered significant at the 5% level.

Directly age-standardised rates also allow a comparison over time, so **trends** since 1989 are shown. Trend data for NSW residents have also been presented.⁸

Numbers and proportions are shown for **specific causes** of drug-attributable deaths and hospitalisations (eg discharge diagnosis of liver cirrhosis for alcohol-attributable deaths etc). The top three specific causes **by age group** have also been reported.

The analyses were based on disease codes from the International Classification of Diseases 9th Revision Clinical Modification (**ICD-9-CM**) up to and including 1998 for deaths, and 1999/2000 for hospitalisations, and **ICD-10** thereafter.

Some Data Limitations

Firstly, deaths (and even hospitalisations) due to alcohol and other drug use represent only the tip of the iceberg, by being limited to the most severe end of the spectrum of consequences of substance use.

Secondly, the drug-attributable deaths and hospitalisation data should be considered to provide only 'ball-park' estimates due to the uncertainties involved in estimating and then applying the underlying AF. (It should be noted that the 'confidence intervals' reported here do not take into account these uncertainties.) Even the prevalence estimates used in the AF were national prevalence estimates, not NSW or Illawarra estimates.

While the risk estimates used for the AF were the best available, based on systematic review of the published literature, they are still subject to the availability and validity of the underlying data etc. Most of the analyses in this report are

based on AF developed in 1995, which were then revised in 1998, and will undoubtedly be revised again as new information becomes available, and is then systematically reviewed. By and large the estimates provided in this report should be considered 'conservative' (ie probably underestimates), given that the application of the 1998 AF to NSW data generally increased the estimates based on 1995 AF.⁸ The only exception here is illicit drug-attributable hospitalisation rates, which, using 1998 AF, increased NSW estimates by about 10% among males and 20% among females.⁸

Finally, given the complexities involved in translating between ICD-9-CM and ICD-10 for specific illicit drug-related codes, for consistency, most of the analyses for illicit drugs reported here have been confined to years when ICD-9-CM coding was available.

Thirdly, trends in opiate deaths (which account for the vast majority of illicit drug deaths) have been presented to the end of 2001, ie based on analyses using both ICD-9-CM and ICD-10 codes. These data show a declining trend in opiate deaths (hence illicit drug deaths) since 1999. Therefore, in this report, comparisons of the impact of illicit drugs (based on ICD-9CM coding only) versus tobacco and alcohol (using three more years of data) overestimate the relative contribution of illicit drugs.

Finally, the available data do not directly translate into information about specific drug and alcohol care needs, eg in terms of how many people will require primary care, outpatient or inpatient care, detoxification, rehabilitation etc.

Nevertheless, this report is intended to inform priority setting both within specialist drug and alcohol services, and other health services. The available morbidity and mortality data provide important information about risk factors for, and the burden of, disease attributable to drugs and alcohol. The behavioural risk factor data also provide valuable information, about the extent and distribution of drug problems, eg in terms of how many people and which population groups are exhibiting risk behaviours and hence may benefit from some level of intervention.

3. TOBACCO

- Tobacco use (including passive smoking) is responsible for the greatest burden of premature death and disability of all behavioural risk factors.¹⁴

In 1996 tobacco was responsible for an estimated 9.6% of the total disease burden in Australia (as measured in disability-adjusted life years (DALYS)).¹⁴

Behavioural risk factors

Adults

- In 2002 an estimated **22%** of Illawarra residents (males: 27%, females: 18%) were **current smokers** (daily or occasional). These prevalence rates were **average** for NSW (persons: 21%, males: 24%, females: 19%), albeit slightly higher for men and slightly lower for women (Figure 1).²

An estimated **34,900 Illawarra males** and **23,600 Illawarra females** aged 16 years and over are current smokers. The estimated numbers of Illawarra residents in each age group are shown in Table 3.

In 2002 smoking rates were **highest** among **young adults**, peaking in the age group 35-44 years for Illawarra males (at 45%) and 25-34 years for females (27%), and declining to less than 10% among people aged 75 years and over (Figure 2). (In contrast smoking prevalence among NSW residents peaked in younger age groups, 25-34 years for males and 16-24 years for females).²

Smoking prevalence was higher among males than females in all age groups, except in the middle years (44-54 and 55-64 years age groups) when prevalence was similar among males and females (Figure 2).

- It appears that about 30% of Illawarra males and 25% of Illawarra females are **ex-**

smokers (Figure 3). These ex-smoker prevalence rates (based on 1997-1998 data) were higher than the NSW averages, being significantly **higher** for **Illawarra females** (Figure 3).

- Smoking cessation has immediate health benefits.¹¹ Of current smokers in the Illawarra in 1998, 58% of males and 45% of females reported that they had **no intention to quit within the next 6 months**. While this proportion of Illawarra females was average for NSW, the proportion of **Illawarra males** was considerably (although not significantly) higher than the NSW average (58% versus 47%). In fact the Illawarra had the **highest** proportion of male smokers with no intention to quit within the next 6 months of all NSW Health Areas (Figure 4).¹

- Given the small numbers of respondents to the *NSW Health Survey* at the LGA (and smaller area) level, these data are not useful for looking at smoking prevalence on a geographic basis within the Illawarra. However, to give some indication of geographic variation in smoking prevalence, data from the *NSW Midwives Data Collection* for 1996-2002 were analysed to provide information about the prevalence of smoking (at least among women during pregnancy) at the LGA and small area (based on postcodes) level.

Implicit in the presentation of these data in this report, is the assumption that these data have broader relevance, ie that geographic variation, and trends, in smoking prevalence among pregnant women reflect that in the general population.

- In 1996-2002 the prevalence of (any) **smoking during pregnancy** among Illawarra females was **23%** (7,121 of 30,499 women giving birth). Smoking prevalence was **highest** among women resident in the **Shoalhaven LGA** (29%), followed by **Shellharbour LGA** (26%), then Wollongong LGA (23%). Smoking prevalence was lowest among women in the Kiama LGA (14%) (Figures 5 & 6).

- Within the Wollongong LGA, the prevalence of smoking during pregnancy was highest in the **Warrawong sub-area**, where a third of the women were smokers. In addition, about a quarter of women were smokers in the Dapto and Corrimal sub-areas (Figure 5).

Trends

- Over the last decade current smoking rates among Illawarra **adults** have apparently **declined** considerably among Illawarra females (from 32% in 1989/90 when the Illawarra was found to have the highest female smoking rate of all NSW Health Areas, to 18% in 2002).^{1,2,12,13} The overall decline among Illawarra males has been less apparent (from 31% in 1989/90 to 27% in 2002) (Figure 1).
- Similarly, between 1996 and 2002 the prevalence of smoking during **pregnancy** among Illawarra females **declined** from 26% to 22%, a similar decline occurring in each of the Illawarra LGAs (Figure 6).
- Trends in prevalence of smoking during pregnancy in each of the Wollongong sub-areas in 1996 to 2000 appear to be consistent with this overall declining trend. The only exception is the Warrawong sub-area, which appears to have had a slight upward trend. Smoking prevalence among pregnant women in the Warrawong sub-area increased from 33% in 1996 to 36% in 2002 (Figure 7).

Young People

- Most people who become long-term smokers start while they are secondary school students. If people start smoking early, they are more likely to become heavy smokers and find it more difficult to quit.¹¹
- The median age when Illawarra students **first tried** tobacco was **12 years**. The median age when students began to **smoke every day** was **13 years**.³

- In 1996 almost **half** (49%) of Illawarra students (Years 6, 8 and 10) reported having **ever smoked**. In Year 6 boys were more likely than girls to have ever smoked, however this was reversed in high school. Rates for both boys and girls increased with age - by Year 10 about two in three students had smoked tobacco (69% of girls and 64% of boys) (Figure 8).
- Of those students who had ever smoked tobacco, 61% had never smoked again, and 16% smoked less than weekly (11% just a puff or two occasionally, 4.8% less than 1 cigarette a week). About one in four students who had tried tobacco, smoked weekly or more (4.9% 1-4 cigarettes, 3.6% 5-9 cigarettes, 3.2% 10-19 cigarettes, 11% 20 or more cigarettes).
- In Year 6 boys were more likely than girls to smoke regularly (at least weekly), however this was reversed in high school. Regular smoking increased with age for boys and girls, particularly girls. By **Year 10** (average age 16.0 years), **16% of boys** and **23% of girls** were regular smokers.
- It is estimated that about **1,200 Illawarra males** and **1,300 females** aged 12-16 years are **regular smokers** (Table 4).
- Students of a **Non-English Speaking Background** (NESB) were 1.2 times more likely than ESB students to be regular smokers.³
- When asked 'In five years time do you think you will smoke?' 6.6% of students reported yes, with a further 22% reporting that they didn't know. More Year 6 and 8 boys than girls reported that they would smoke in five years time, however this was reversed in Year 10 (Figure 9).
- Ever trying smoking was more common among the older Illawarra students, particularly girls, than their NSW peers (girls in Years 8 and 10, boys in Year 10). Similarly, Year 10 Illawarra girls were more likely than their NSW peers to be regular smokers. With this exception, the proportions of Illawarra students in each

school Year who were regular smokers were similar to, or lower than, for other NSW students.³

- In NSW as a whole, during the 1980s there was a decline in current smoking among 12-16 year old boys and girls, followed by an increase between 1989 and 1992, and a slight decline between 1996 and 1999.¹¹

Environmental risk factors

- Children are particularly susceptible to the adverse effects of passive smoking – parental smoking causes lower respiratory tract infections, middle ear disease, asthma and SIDS, and exacerbates asthma symptoms.¹¹
- In 1997-1998 an estimated **72%** of Illawarra **adults** lived in **smoke-free households** (Figure 4).
- In addition, 75% of employed Illawarra adults reported smoking was banned indoors at work. Females were more likely to report that smoking was banned indoors at their workplace than males (85% versus 69%). These proportions were average for NSW (Figure 4).¹
- In 1996 **40%** of Illawarra school **students** (Years 6, 8 and 10) reported that other **people smoke inside their home** (27% daily, 4.9% at least weekly, 7.3% less than once a week).³
- It is illegal to sell cigarettes to people under the age of 18 years. In the *Illawarra Youth Health Survey* students were asked to nominate from a list of potential suppliers where they usually get their cigarettes. The main source reported was friends (19%). Parents and brothers/ sisters were each the usual source for about 4% of students.³

The most common retail source was the **corner store** (4.1%), followed by **cigarette machines** (2.3%) and **take away/ milk bar** (2.0%). Less than 2% of students nominated other types of retail outlets -

petrol stations, supermarkets, bottle shops and clubs/ pubs - as their usual source of cigarettes.³

The ease with which students could obtain cigarettes was also examined. More than a third (35%) reported that obtaining cigarettes from cigarette machines would be 'easy' or 'very easy'. The next easiest potential suppliers were corner stores (22%), petrol stations (21%), and take away/ milk bar (17%).³

Hospital morbidity

- Over the three year period 1999/2000 to 2001/02, an estimated 10,913 hospitalisations among Illawarra residents were **attributable to tobacco**, ie an average of **3,638 per year** (Tables 5 & 6).

This represented **3.1%** of **total hospitalisations** (346,750), and **66%** of estimated **hospitalisations attributable to drugs** (16,439) (Figures 10 & 11). ('Drugs' are defined in this report as tobacco, alcohol and illicit drugs, according to ICD definitions used to assign etiologic fractions).

- Of these 10,913 tobacco-attributable hospitalisations, 7,421 (68%) were among Illawarra males, and 3,492 (32%) among females (Tables 5 & 6).

More than half (5,711, 52%) was among people aged 65 years and over (Table 6). Because of the time lag between exposure to tobacco smoke and the onset of many diseases, many of these hospitalisations represent the result of smoking at a much earlier age.¹⁰

Age-standardised rates of hospitalisation due to tobacco among males have been about twice the rates for females over the last decade (Figure 12).

- Between 1989/90 and 2001/02, hospitalisations attributable to tobacco increased among both Illawarra males (from 1,051 to 1,205 per 100,000), and females

(442 to 562 per 100,000). The increase appears to have been slightly higher among Illawarra residents than the NSW average (Figure 12).

- While tobacco-attributable hospitalisation rates among Illawarra residents were lower than the NSW rates in the early 1990s, the **Illawarra rates are now higher**.

This may reflect the higher rates of smoking among Illawarra residents (vs NSW) in previous years (as indicated by the relatively high ex-smoker rates (Figure 4)).

It is worth noting that while tobacco-attributable hospitalisation rates actually peaked in 1998/99 among Illawarra males, and NSW males and females, the rate among Illawarra females appears to be continuing to increase slowly but steadily (Figure 12).

- The main causes of hospitalisation attributable to tobacco in 1999/2000-2001/02 were:

- **Chronic Obstructive Pulmonary Disease** (COPD, 2,834, or 26% of all tobacco-attributable hospitalisations), and
- **Ischaemic Heart Disease** (IHD, accounting for 2,712, 25%),

which together accounted for half (51%) of all tobacco-attributable hospitalisations (Tables 6 & 7, Figure 13).

- All other individual causes accounted for less than 10% of tobacco-attributable hospitalisations each, the most common being:
 - lung cancer (7.5%),
 - cardiac dysrhythmia (7.1%),
 - stroke (6.3%), and
 - atherosclerosis (5.9%) (Table 7, Figure 13).

The main causes of tobacco-attributable hospitalisation vary by age, as shown in Table 6, which lists the top three causes by age group:

- For infants and their mothers (in fact for all tobacco-attributable hospitalisations among those aged less than 35 years), poor perinatal/ obstetric outcomes were the most common causes (low birthweight, spontaneous abortion, premature rupture of membranes, and antepartum haemorrhage).
- Fire injuries attributable to smoking were also an important avoidable cause of hospitalisation among infants and young children.
- IHD was the commonest tobacco-attributable cause between 35-44 years to 55-64 years, and then second commonest cause thereafter.
- COPD was the commonest cause among those aged 65 years and over (and second commonest cause in the age group 45-64 years).
- Lung cancer ranked in the top five causes of tobacco-attributable hospitalisation in all age groups from 45-54 years.

IHD accounted for a considerably larger proportion of tobacco-attributable hospitalisations among males than females (29% vs 17%) (Table 7).

- Of the four Local Government Areas, **Shellharbour LGA** had the **highest** rates of hospitalisation attributable to tobacco among both males and females, followed by **Shoalhaven LGA** (Figure 14).

- Within the Wollongong LGA, hospitalisation rates attributable to tobacco were highest among residents of the Warrawong and Dapto sub-areas.

Mortality

- In the decade 1992-2001, 3,929 deaths among Illawarra residents were attributable to tobacco, an average of **393 deaths per**

year. This represented **16% of total deaths** (24,649) and **84% of deaths attributable to drugs** (4,666) (Tables 5 & 8, Figures 15-16).

- Of these 3,929 tobacco-attributable deaths, 2,870 (73%) were among Illawarra males, and 1,059 (27%) among females (Tables 5 & 8).

The vast majority were among people aged 65 years and over (2,858, 73%). As for hospitalisations, because of the time lag between exposure to tobacco smoke and the onset of many diseases, many of these deaths, particularly from cancer and COAD, represent the result of smoking at a much earlier age.¹¹

- Between 1989 and 2001 death rates due to tobacco **decreased steadily** among both males (from 220 to 132 per 100,000), and females (59 to 39 per 100,000). While the gap between males and females has narrowed slightly, the rate among males in recent years has still been more than three times higher than for females (Figure 17).
- Age-standardised rates for tobacco-attributable deaths among **Illawarra** residents have been **higher** in most years than the NSW averages over the last decade, particularly for males (Figure 17). As for tobacco-attributable hospitalisations, this may reflect the higher rates of smoking among Illawarra residents (vs NSW) in previous years (as indicated by the relatively high ex-smoker rates).

Encouragingly, the most recent year's data (for 2001) suggest that the gap between the Illawarra and NSW tobacco-attributable mortality rates, among both males and females, may have closed (Figure 17).

- The main causes of death attributable to tobacco during this period were:
 - **lung cancer** (accounting for 1,211 deaths, or 31% of all tobacco-attributable deaths),
 - **IHD** (919, 23%), and
 - **COPD** (853, 22%) (Table 8, Figure 18).

All other individual causes accounted for less than 10% of tobacco-attributable deaths each, the most common being:

- stroke (7.2%)
- atherosclerosis (4.2%)
- specific cancers (oesophagus: 2.0%; bladder: 1.3%, pancreas: 1.2%, larynx: 1.1%) (Table 8, Figure 18).

The main causes of tobacco-attributable deaths vary by age, as shown in Table 9, which lists the top three causes by age group:

- For infants, SIDS and poor perinatal outcomes were the most common causes.
- IHD was the commonest tobacco-attributable cause between 25-34 years and 55-64 years, and then third commonest cause thereafter.
- Lung cancer ranked in the top three commonest causes of tobacco-attributable death from 25-34 years, and was the commonest cause in the age group 65-74 years.
- COPD was the commonest cause among those aged 75 years and over, and ranked in the top three causes from 55 years.
- Stroke also ranked in the top three causes among young and middle-aged adults (25-34 to 45-54 years).

- As for tobacco-attributable hospitalisations, of the four LGAs, **Shellharbour LGA** had the **highest** rates of death attributable to tobacco among both males and females. Kiama LGA had the lowest rates (Figure 19).

Not surprisingly, the geographic variation in (current) smoking prevalence appears to be reflected in the variation in tobacco-attributable mortality and hospitalisation rates (Figures 5-7, 14 & 19).

4. ALCOHOL

- In 1996 alcohol was responsible for 4.9% of the total disease burden (as measured in DALYs), mainly through alcohol dependence, road trauma, liver cirrhosis and stroke.¹⁴ About a third of the total years of life lost due to alcohol are due to road trauma and liver cirrhosis.⁸

(It has also been estimated that, in 1996, 2.8% of the total disease burden was averted by alcohol, mainly due to its protective effect against cardiovascular disease from middle age. While the harmful effects of alcohol are distributed quite evenly across age groups, almost all the benefits are seen in ages over 45 years, particularly older people.^{10,15})

ALCOHOL GUIDELINES

In 1989 the National Health and Medical Research Council (NHMRC) first published alcohol consumption guidelines. These were revised and republished in 1992, and again in 2001.¹⁵

While the earlier documents focussed on levels of drinking to reduce aggregate consumption, the new guidelines, reflecting considerable advances in medical, epidemiological and sociological evidence, emphasise:

- patterns and settings of consumption
- various contexts in which people choose to drink
- the relative risks posed for the drinker.

Guidelines for the whole population recommend:

- up to 6 standard drinks on any day for males, and four for females
- up to 28 standard drinks per week for males, and 14 for females
- at least one alcohol-free day per week.

Additional guidelines for young people include: keeping drinking to a minimum; adult supervision where alcohol available; avoiding intoxication; and a gradual supervised introduction to alcohol.

Episodic, heavy drinking is of critical concern, particularly among young people.

'Risk drinking behaviour' in this report is defined, in accordance with the NHMRC's 2001 guidelines, as **at least one of the following**: more than 14 standard drinks weekly for females or 28 for males; at least one heavy drinking day in last 12 months (more than 4 drinks for females or 6 for males); or alcohol consumption every day.

Behavioural risk factors

Adults

- In 2002 an estimated 37.6% of Illawarra residents aged 16 years and over had 'any risk drinking behaviour', which was slightly, but not significantly higher than the NSW average (34.5%). As for NSW as a whole, risk drinking behaviour was more common among Illawarra males (44.7%) than females (30.8%) (Figure 20).
- Of those Illawarra residents who drink alcohol (regular or occasional drinkers, about 65% of males and 43% females in 1997-1998), an estimated:
 - 22% are daily drinkers (25% males, 17% females);
 - 6% usually drink more than the weekly guidelines amount (6% males, 5% females); and
 - 37% have had at least one heavy drinking day in the last 12 months (43% males, 30% females) (Figure 21).

In 2002 an estimated **57,300 Illawarra males** and **41,200 Illawarra females** aged 16 years and over had **risk drinking behaviours**.² The estimated numbers of Illawarra residents in each age group are shown in Table 3.

- While regular alcohol consumption is most common among males and females aged in the middle years, risk drinking behaviour is commonest among young people, and generally declines with age (Figure 22).

Nearly **2 in 3 Illawarra young adults** (male or female) appear to have **risk drinking behaviours** (Figure 22).

Young People

- In the 1996 *Illawarra Youth Health Survey* students (Years 6, 8 and 10) were asked if they had ever had even part of an alcoholic drink and how much. Overall, 84% of

students had tried alcohol: 34% had had a few sips, 16% had had fewer than 10 alcoholic drinks, and 34% reported having had more than 10 alcoholic drinks in their life (Figure 23).

- **Forty per cent** of students reported that they had **ever been drunk**: 13% once, 11% 2-3 times, 5.7% 4-10 times, and 11% more than 10 times. In addition, **25%** reported that they had consumed five or more drinks in a row (ie **'binged'** as defined here) in the previous 2 weeks: 9.6% once, 7.0% twice, 3.9% 3-6 times, 1.1% 7-9 times, and 3.2% on 10 or more occasions (Figure 24).
- Not surprisingly the prevalence of drinking alcohol, and drinking alcohol hazardously, increases with age among Illawarra youth. By **Year 10** (average age 16.0 years) nearly **60% of boys and girls** reported having **drunk 10 or more alcoholic drinks** in their life, and about the same proportion reported they had **ever been drunk** (Figures 23 & 24).

In addition, about **one in three Year 10** students, one in five Year 8 students, and one in ten Year 6 students, reported **binge drinking** (at least five drinks in a row) in the previous 2 weeks (Figure 24).

- Girls in Years 8 and 10 were more likely than boys to have tried alcohol, but the reverse was true in Year 6. Binge drinking appears to be slightly more common among boys than girls, but the differences are minor (Figure 24).
- The most commonly consumed alcoholic drinks among Illawarra adolescents were beer and wine/ coolers (Table 10).
- **NESB** students were 1.3 times more likely than **ESB** students to have been binge drinking in the previous 2 weeks.³
- In a similar pattern to tobacco use, ever being drunk was more common among the older Illawarra students, particularly girls, than their NSW peers (girls in Years 8 and 10, boys in Year 10).³

- In NSW as a whole, during the 1980s there was a decline in (recent) alcohol consumption among secondary school students aged 12-17 years; however since 1992 these rates have increased among both boys and girls.¹¹

Environmental risk factors

- In the 1996 *Illawarra Youth Health Survey*, sources of alcohol were examined by asking students to nominate where they usually obtained their alcohol from a prompted list of potential suppliers. The most frequently reported sources were: home (24%), followed by friends (16%). The pub or bottle shop was the least commonly reported source (4.7%). About 10% said they obtained/ bought alcohol from other people.³

(The home is likely to be a more controlled environment if obtained with parental/caregiver permission (consistent with the 2001 NHMRC guidelines, which specifically recommend adult supervision for young people).¹⁵

- Selling alcohol to people under age is illegal. In an attempt to assess the effectiveness of this legislation, students were asked to report whether they had ever been refused service to buy alcohol because they were under age. Of the sample, 85% had never tried, 7.8% reported that they had never been refused service, 5.8% had been refused service once or twice, and 1.8% reported that they had been refused service to buy alcohol frequently.³
- Students were then asked to report the likelihood they felt someone like themselves would be refused service if they tried to buy alcohol. Over half (55%) reported it would be very likely that they would be refused and a further 25% reported it likely. Ten per cent reported it would be fairly unlikely and 11% reported that it would be very unlikely for someone like themselves to be refused service if they tried to buy alcohol.³

Hospital morbidity

- Over the three year period 1999/2000 to 2001/2002, an estimated 4,660 hospitalisations among Illawarra residents were attributable to alcohol, ie an average of **1,553 per year**. This represented 1.3% of all hospitalisations, and 28% of hospitalisations attributable to drugs (Tables 5 & 11, Figures 10 & 11).
- Of these 4,660 alcohol-attributable hospitalisations, 3,041 (65%) were among Illawarra males, and 1,619 (35%) among females (Tables 5 & 11).
- About a quarter (1,097, 24%) were among people aged 65 years and over, while 45% (2,077) were among young adults (15-44 years)(Table 12).
- Age-standardised rates of hospitalisation due to alcohol among Illawarra males have been about double rates among females in recent years, similar to the pattern for NSW as a whole (Figure 25).
- Between 1989/90 and 2001/02, hospitalisations attributable to alcohol **increased steadily** among both Illawarra males (from 397 to 608 per 100,000), and females (152 to 310 per 100,000). As for NSW as a whole, the rate of increase has been much higher among females than males.¹²
- The **increases** among both Illawarra males and females have been **greater than** for NSW residents, particularly among Illawarra males (Figure 25).
- In the late 1980s and early 1990s, rates of hospitalisation attributable to alcohol among Illawarra males and females were considerably lower than their NSW counterparts. However by the late 1990s, these gaps had narrowed, such that **Illawarra** and **NSW** rates are now **similar** (Figure 25).

- The main causes of hospitalisation attributable to alcohol in 1999/2000-2001/02 were:
 - **falls injury** (accounting for 1,094, or 23% of all alcohol-attributable hospitalisations), and
 - **assault** (523, 11%)(Table 11, Figure 265).

All other individual causes accounted for less than 10% of alcohol-attributable hospitalisations each, the most common being:

- road injury (8.3%),
- alcohol abuse (7.7%),
- stroke (7.7%),
- alcohol dependence (6.7%),
- attempted suicide (6.0%), and
- alcoholic liver cirrhosis (5.4%) (Figure 26, Table 11).

The main causes of alcohol-attributable hospitalisation vary by age, as shown in Table 12, which lists the top three causes by age group:

- Intentional (eg child abuse, assault) and unintentional injuries (eg falls, road injury) were common causes among those aged less than about 40 years.
- Assault was a common cause in all age groups, ranking second in the age groups from 15-24 years to 25-34 years, and even in the top three causes from 65 years.
- From about 40 years, medical conditions were common causes, eg cirrhosis and stroke.
- Alcohol abuse was a common cause among adolescents and young adults, ranking in the top four commonest causes from 5-14 years to 35-44 years, consistent with information related to binge drinking among youth and young adults.
- Common causes of alcohol-attributable hospitalisation among the middle-aged

were alcohol dependence and alcoholic psychosis.

- Of the four LGAs, **Shellharbour LGA** had the **highest** rates of hospitalisation attributable to alcohol among both males and females, followed by **Wollongong LGA** for males and **Shoalhaven LGA** for females. Kiama LGA had the lowest rates of hospitalisation attributable to alcohol among both males and females (Figure 27).
- Within the Wollongong LGA, hospitalisation rates attributable to alcohol were highest among residents of the Warrawong sub-area, followed by the Wollongong sub-area.

Mortality

- In the decade 1992-2001, 601 deaths among Illawarra residents were attributable to alcohol, ie an average of **60 per year**. This represented 2.3% of all deaths, and 13% of deaths attributable to drugs (Tables 5 & 13, Figures 15 & 16).
- Of these 601 alcohol-attributable deaths, 421 (70%) were among Illawarra males, and 180 (30%) among females (Tables 5 & 13).
- About 40% (245) were among people aged 65 years and over, with further 32% (192) among middle aged people (45-64 years)(Table 14).
- While a relatively small proportion of alcohol-attributable deaths were among children and young people (eg 7.8% of 5-24 year olds), alcohol-attributable deaths were responsible for a significant proportion of total deaths in this age group (47 of 359, 13%) (Table 14).
- Over the last decade alcohol-attributable death rates **decreased steadily** among males (from 28 per 100,000 in 1989, to 21 per 100,000 in 2000), then increased again in 2001 (to 26 per 100,000). For most of the period (but not 2001), Illawarra males rates were below NSW rates.

Alcohol-attributable death rates among Illawarra females also decreased steadily (from 13 in 1989, to 5.9 100,000 in 2001), the rates and trend being **similar** to the **NSW** average.

The rate among males has generally been 2-3 times the female rate (Figure 28).

- The main causes of death attributable to alcohol during this period were:
 - **alcoholic liver cirrhosis** (accounting for 154 deaths, or 26% of all alcohol-attributable deaths),
 - **stroke** (140, 23%),
 - **road injury** (64, 11%), and
 - **suicide** (45, 7.5%) (Figure 29, Table 13).
- Alcoholic liver cirrhosis, road injury and suicide were relatively minor causes among females (Table 13).
- The main causes of alcohol-attributable mortality vary by age, as shown in Table 14, which lists the top three causes by age group:
 - Road injury was the commonest cause among the young, up to about 35-40 years.
 - Other intentional (eg suicide, assault) and unintentional injuries (eg drowning) were also common causes among those aged less than about 40 years.
 - Alcoholic liver cirrhosis was the commonest cause among the middle-aged, and ranked in the top three causes from 65 years.
 - Stroke was the commonest cause among the elderly (from 65 years), and second commonest cause among the middle aged (45-64 years).
- Of the four LGAs, **Shoalhaven LGA** had the highest rates of death attributable to alcohol (Figure 30).

5. ILLICIT DRUGS

Behavioural risk factors

Adults

- In 2001 an estimated **16%** of NSW adults (14 years and over) had recently used (any) illicit drugs. ('Recent' is defined here as within past 12 months. 'Illicit' in this report includes 'for non-medical purposes').
- About **12%** had recently used **cannabis** (males: 15%, females: 8.9%)
- Excluding cannabis, only 3.4% had recently used any illicit drugs (males: 3.3%, females: 3.5%) (Figure 31).⁵
- The most common (recently used) illicit drugs (excluding cannabis) were **amphetamines** and **ecstasy/ designer** drugs (both 3.4%), followed by painkillers/analgesics (2.5%), then cocaine (1.8%), and tranquillisers/ sleeping pills (0.9%) (Figure 31).⁵

Less than 1% had used heroin, inhalants, barbiturates, steroids, and methadone (ie for non-medical purposes).⁵

- Only 0.3% had injected illicit drugs (Figure 31).
- Of the estimated 18,000 injecting drug users in NSW, about 72% have recently injected amphetamines, 37% heroin, and 25% methadone.⁵
- Recent cannabis use was commonest in the youngest age group (14-24 years: 26%; 25-39 years: 18%; 40+ years: 4.3%).⁵
- In contrast, use of other illicit drugs was highest in the age group 25-29 years (14-24 years: 4.0%; 25-39 years: 4.2%; 40+ years: 2.8%).⁵

Young people

- In 1999 an estimated **25%** of 12-17 year old Australian **secondary school students** had recently used **cannabis** (males: 27%, females: 23%). Cannabis use increases with age; while 7.1% of 12 year olds had used cannabis in the last 12 months, this increased to **40%** among **17 year olds**. About 14% of 12-17 year olds had used cannabis in the previous month (males: 15%, females: 12%) (Figures 32 & 33).⁶
- Therefore, the use of cannabis appears to be widespread among secondary school students, particularly boys, and particularly among older students.⁶
- Excluding cannabis, **inhalants** were the most commonly used drugs, with about **19%** of 12-17 year olds using them in the previous year, and 11% in the last month. In contrast to the pattern of use of all other illicit drugs, inhalant use decreased with increasing age, with 26% of 12 year olds reporting use in last 12 months, decreasing to 8.1% of 17 year olds (Figures 32 & 33).⁶
- The levels and patterns of use of **amphetamines, hallucinogens, ecstasy, cocaine** and **opiates** among secondary school students were similar. For these illicit drugs, like cannabis, recent use generally increased with age, and was higher among males than females. However, unlike cannabis, the pattern suggested mainly **low level experimental use** among secondary school students.⁶ Less than 6% of 12-17 year old students had used each of these illicit drugs in the past 12 months:
 - amphetamines: 5.5% (age 17: 9.6%),
 - hallucinogens: 4.9% (age 17: 8.7%),
 - ecstasy: 3.1% (age 17: 4.9%),
 - cocaine: 2.6% (age 17: 3.4%), and
 - opiates: 2.6% (age 17: 3.4%) (Figures 32 and 33).
- In 1999 an estimated 2.0% of 12-17 year old Australians had recently used **steroids** without a doctor's prescription in an attempt to improve sporting ability, increase muscle size or improve appearance. Both

use in the last year and last month were stable at about 1-2% across all ages (about 2% for males and 1% for females). These results suggest that while level of steroid use among adolescents is **very low**, their use among steroid users is fairly **regular**, particularly among boys⁶ (Figures 32 & 33).

- Preliminary data from the 2001 *University Drug and Alcohol Survey*⁷ suggest that use among 18-24 year old **university students** appears to be more common (and frequent) than among 12-17 year old secondary school students, and the general population (14 years and over), at least for some substances, such as cannabis, designer drugs (like ecstasy), amphetamines, cocaine and hallucinogens. However, some illicit drugs appear to be more commonly used among secondary than tertiary students, such as inhalants (much more commonly), opiates, and steroids^{6,7} (Figures 32-35).

Hospital morbidity

- Over the three year period 1997/98 to 1999/2000, 866 hospitalisations among Illawarra residents were attributable to illicit drugs, ie an average of **289 per year**. This represents less than a third of 1% of all hospitalisations, and only about 5% of hospitalisations attributable to drugs (ie including tobacco, alcohol and illicit drugs) (Table 5, Figures 10 & 11).
- Of these 866 illicit drug-attributable hospitalisations, the vast **majority** (674, 78%) were among people aged **15-44 years**, and 474 were (55%) among males (Tables 15 & 16).
- Consistent with the pattern for NSW, age-standardised rates of hospitalisation due to illicit drugs have generally been higher among Illawarra males than females (particularly in the mid 1990s). However the difference in rates between Illawarra males and females in the most recent years is relatively minor (Figure 36).
- Between 1989/90 and 1999/2000, hospitalisations due to illicit drugs increased

considerably among both Illawarra males (from 31 to 107 per 100,000), and females (32 to 88 per 100,000, similar to NSW-wide trends (Figures 36 & 37).

- Age-standardised hospitalisation rates for illicit drugs among Illawarra males and females have generally been **lower** than the **NSW averages**, particularly in recent years (about 20% lower, and particularly among males) (Figure 36).
- The main causes of hospitalisation attributable to illicit drugs in 1997/98 to 1999/2000 were:
 - **drug psychoses** (accounting for 330 hospitalisations, or 38% of all illicit drug-attributable hospitalisations),
 - **attempted suicide** (98, 11%),
 - **opiate dependence** (72, 8.3%), and
 - **opiate poisoning** (71, 8.2%) (Figure 38, Table 16).
- The main causes of illicit drug-attributable hospitalisations varied by age, as shown in Table 15, which lists the top three causes by age group:
 - Drug psychoses were the commonest cause in all age groups from 15-24 years (except 45-64 years for whom drug psychoses ranked second).
 - Poor perinatal outcomes (newborn drug toxicity and low birthweight) accounted for all illicit drug-attributable hospitalisations among infants and children.
 - Attempted suicide ranked second among adolescents and young adults (15-24 and 25-34 years).
 - Hepatitis nonA-nonB (ie generally hepatitis C) ranked in the top two causes among older adults (from 35-44 years to 65-74 years).
 - Opiate poisoning or opiate dependence ranked third in most age groups (at least between 15-24 and 55-64 years).

Opiate poisoning was a minor cause of hospitalisation among females relative to males, while the reverse was true for attempted suicide (Table 16).

- Of the four LGAs, **Wollongong LGA** had the highest rates of hospitalisation attributable to illicit drugs for **males**, and **Shoalhaven LGA** for **females** (Figure 39).

(In fact, unusually, in the Shoalhaven LGA, illicit drug hospitalisation rates were considerable higher among females than males).

- Within the Wollongong LGA, hospitalisation rates attributable to illicit drugs were highest among males and females resident in the Warrawong sub-area, followed by the Corrimal and Wollongong sub-areas.

Mortality

- In the decade 1989-1998, 132 deaths among Illawarra residents were attributable to illicit drugs, an average of **13 per year**. This represents less than 1% of all deaths less than 3% of deaths attributable to drug (Tables 5 & 17, Figures 15 & 16).
- Of these 132 illicit drug-attributable deaths, 108 (82%) were among Illawarra males, and 24 (18%) among females (Tables 5 & 17).
- In recent years the overall illicit drug mortality rate has been about five times higher among males than females (Figure 40).
- Males were much more likely to die from illicit drugs than females in all age groups, the differences being relatively minor in the younger age groups.
- The vast majority of illicit-drug-attributable deaths (**83%**, 110) were **opiate** deaths (Table 17, Figure 41).

Three quarters of these opiate deaths (83, 75%) were among people aged 25-44 years, with a further 18% (20) aged 15-24 years (Figures 42& 43).

- The main causes of death attributable to illicit drugs were:
 - **opiate dependence** (accounting for 84 deaths, or 64% of all illicit drug-attributable deaths),
 - **accidental opiate poisoning** (26, 20%), and
 - **suicide** (18, 14%) (Figure 41, Table 17).

Accidental opiate poisoning, and to a lesser extent suicide, were relatively minor causes among females (Table 17).

- Between 1989 and 1998 death rates due to illicit drugs **increased steeply** among males (from 3.6 to 12.2 per 100,000, based on 5 and 19 cases respectively), and to a lesser extent, females (1.5 to 2.2 per 100,000, based on 2 and 3 cases respectively) (Figure 40).
- Not surprisingly, this upward trend in illicit drug mortality rates closely reflects the trend in deaths due to opiates, which have varied between 3 (in 1991) and 25 (in 1998 and 1999) per year (Figure 43).
- It appears that opiate-related deaths **peaked in 1999** in the Illawarra (and NSW)¹¹, and have **since declined**.
- Age-standardised mortality rates among Illawarra males and females have been **similar** to the **NSW averages** (albeit with annual fluctuations) over the last decade (Figure 40).

**TABLE 3:
Estimated Numbers of Illawarra Adults with Selected Risk Behaviours,
Aged 16 Years and Over, 2002**

	Males	Females
Tobacco: daily or occasional smoking		
16-24	6,800	3,900
25-34	8,400	6,200
35-44	11,400	5,900
45-54	4,500	4,700
55-64	2,000	2,000
65-74	1,200	700
75+	500	200
Total	34,900	23,600
Alcohol: risk drinking behaviour		
16-24	12,100	11,600
25-34	11,800	7,900
35-44	9,700	9,800
45-54	9,500	5,400
55-64	7,100	2,600
65-74	4,900	2,300
75+	2,100	1,500
Total	57,300	41,200

Source *NSW Health Survey 2002*.

Notes: 1. Estimated counts rounded to nearest 100.

2. Alcohol risk drinking behaviour defined as one or more of: more than 14 standard drinks weekly for females or 28 for males; at least one heavy drinking day in last 12 months (more than 4 drinks for females or 6 for males); or alcohol consumption every day.

**TABLE 4:
Estimated Numbers of Illawarra Youth with Selected Risk Behaviours,
Aged 12-16 Years**

	Males	Females
Tobacco: regular (at least weekly) smoking	1,200	1,300
Alcohol: risk (binge) drinking behaviour	2,800	2,500

Source: Counts calculated using data from the *Illawarra Youth Health Survey 1996* (where children in Years 6, 8 and 10 averaged 12, 14 and 16 years respectively) and results for 13 and 15 year olds were extrapolated between) and ABS estimated resident populations at 30 June (1 year age groupings), accessed from NSW Health's *HOIST*.

Notes: 1. Estimated counts rounded to nearest 100.

2. Alcohol binge drinking behaviour defined as at least 5 drinks in a row in previous 2 weeks.

TABLE 5:
Deaths (1992-2001) and Hospitalisations (1999/2000-2001/02)
Attributable to Alcohol and Other Drugs,
Illawarra Health Area residents

	MALES			FEMALES		
	Number	% of total deaths or hospitalisations	Rate per 100,000	Number	% of total deaths or hospitalisations	Rate per 100,000
Deaths (10 years)						
Tobacco	2,870	21.0	163.3	1,059	9.6	48.5
Alcohol	421	3.1	23.8	180	1.6	9.0
Illicit drugs	108	0.8	7.1	24	0.2	1.6
Total 'drug'	3,401	24.9		1,263	11.5	
Hospitalisations (3 years)						
Tobacco	7,421	4.5	1,228.5	3,492	1.9	556.5
Alcohol	3,041	1.9	575.2	1,619	0.9	307.7
Illicit drugs	474	0.3	101.4	392	0.2	87.2
Total 'drug'	10,936	6.7		5,503	3.0	

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Inpatients Statistics Collection*, *ABS Death Registrations*, *ABS Estimated Resident Populations*, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit (HOIST)*.

Notes: 1. Rates were directly age-standardised using the Australian population as at 30 June 1991.

2. The time periods used for the illicit drug estimates were 1989-1998 for deaths and 1997/98-1999/2000 for hospitalisations.

TABLE 6:
Major Causes of Tobacco-attributable Hospitalisations among
Residents of the Illawarra Health Area, by Age Group,
1999/2000-2001/02

Age group	#1	#2	#3	Total - tobacco-attributable	Total - all causes
0-4 years	Low birthweight (276)	Fire injury (1)	Prem rupture of membranes (PROM) (1)	279	26,742
5-14 years	Fire injury (3)	-	-	3	12,207
15-24 years	Crohns disease (27)	Antepartum haemorrhage (APH) (25)	PROM (22)	178	22,876
25-34 years	APH (62)	PROM (58)	Spontaneous abortion (45)	361	34,834
35-44 years	Ischaemic heart disease (IHD) (168)	Cardiac dysrhythmia (63)	Stroke (44)	530	34,534
45-54 years	IHD (611)	Chronic obstructive pulmonary disease (COPD) (124)	Cardiac dysrhythmia (113)	1,246	37,808
55-64 years	IHD (1,079)	COPD (446)	Cardiac dysrhythmia (258)	2,606	48,424
65-74 years	COPD (974)	IHD (542)	Lung cancer (312)	2,875	65,711
75 years and older	COPD (1,249)	IHD (292)	Lung cancer (250)	2,836	63,614
TOTAL (all ages)	COPD (2,834)	IHD (2,712)	Lung cancer (815)	10,913	346,750

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Inpatients Statistics Collection* for 1999/2000 – 2001/02 (HOIST).

TABLE 7:
Causes of Hospitalisation Attributable to Tobacco,
Illawarra Health Area Residents, 1999/2000-2001/02
(Per Cent of Tobacco-attributable Hospitalisations)

CAUSES – ICD9CODE	MALES N=7,421	FEMALES N=3,492	PERSONS N=10,913
Oropharynx cancer 141, 143-146,148-149	<1	<1	<1
Oesophagus cancer 150	1.1	<1	<1
Stomach cancer 151	<1	<1	<1
Anal cancer 154.2, 154.3	<1	<1	<1
Pancreas cancer 157	<1	<1	<1
Larynx cancer 161	<1	<1	<1
Lung cancer 162	8.5	5.2	7.5
Endometrium cancer 179, 182	-	-	-
Cervix cancer 180, 233.1	-	1.9	<1
Vulva cancer 184.4	-	<1	<1
Penile cancer 187.1-187.4	<1	-	<1
Bladder cancer 188	3.4	1.4	2.7
Renal parenchyma cancer 189.0	<1	<1	<1
Renal pelvis cancer 189.1	<1	<1	<1
Respiratory carcinoma-in-situ 231	<1	<1	<1
Tobacco abuse 305.1	0	<1	<1
Parkinsons disease 332	-	-	-
Ischaemic heart disease 410-414	28.6	17.0	24.9
Pulmonary circulatory disease 415.0, 416-417	0.1	0.1	0.1
Cardiac dysrhythmia 427	7.0	7.1	7.1
Heart failure 428-429	1.9	1.4	1.8
Stroke 430-438	6.1	6.9	6.3
Atherosclerosis 440-448	6.3	5.0	5.9
Pneumonia 480-487	4.0	3.7	3.9
Chronic Obstructive Pulmonary Disease (COPD) 490-494,496	24.6	28.9	26.0
Peptic ulcer 531-534	2.7	2.9	2.8
Crohns disease 555	<1	2.5	1.2
Ulcerative colitis 556	<1	<1	<1
Ectopic pregnancy 633, 761.4	-	1.0	<1
Spontaneous abortion 634, 761.8	-	2.5	<1
Antepartum haemorrhage 640, 641, 762.0, 762.1	-	3.1	1.0
Hypertension in pregnancy 642, 760.0	-	-	-
Low birthweight 656.5, 764, 765	1.8	6.0	3.2
Premature rupture of membranes 658.1-658.2, 761.1	-	2.8	<1
Fire injury E890-E899	<1	<1	<1
Total (Tobacco-attributable)	100.0	100.0	100.0

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Inpatients Statistics Collection* for 1999/2000–2001/02 (HOIST).

Notes: 1. Any negative percentages have been replaced by '-'. Less than one per cent has been replaced by '<1'.

2. Rates were directly age-standardised using the Australian population as at 30 June 1991.

TABLE 8:
Causes of Death Attributable to Tobacco,
Illawarra Health Area Residents, 1992-2001
(Per Cent of Tobacco-attributable Deaths)

	MALES N=2,870	FEMALES N=1,059	PERSONS 3,929
Oropharynx cancer 141, 143-146,148-149	1.5	<1	1.3
Oesophagus cancer 150	2.1	1.5	2.0
Stomach cancer 151	<1	<1	<1
Anal cancer 154.2, 154.3	<1	0	<1
Pancreas cancer 157	1.1	1.6	1.2
Larynx cancer 161	1.4	<1	1.1
Lung cancer 162	31.7	28.3	30.8
Endometrium cancer 179, 182	-	-	-
Cervix cancer 180, 233.1	-	<1	<1
Vulva cancer 184.4	-	<1	<1
Penile cancer 187.1-187.4	0.0	-	0.0
Bladder cancer 188	1.5	<1	1.3
Renal parenchyma cancer 189.0	1.1	1.1	1.1
Renal pelvis cancer 189.1	<1	0	<1
Tobacco abuse 305.1	<1	<1	<1
Parkinsons disease 332	-	-	-
Ischaemic heart disease 410-414	24.4	20.7	23.4
Pulmonary circulatory disease 415.0, 416-417	<1	1.0	<1
Cardiac dysrhythmia 427	<1	<1	<1
Heart failure 428-429	1.0	1.6	1.1
Stroke 430-438	6.3	9.4	7.2
Atherosclerosis 440-448	4.4	3.6	4.2
Pneumonia 480-487	1.0	1.1	1.0
Chronic Obstructive Pulmonary Disease (COPD) 490-494,496	20.5	25.1	21.7
Peptic ulcer 531-534	<1	<1	<1
Crohns disease 555	0	<1	<1
Ulcerative colitis 556	0	<1	<1
Ectopic pregnancy 633, 761.4	0	0	0
Antepartum haemorrhage 640, 641, 762.0, 762.1	-	<1	<1
Hypertension in pregnancy 642, 760.0	-	-	-
Low birthweight 656.5, 764, 765	-	<1	<1
Premature rupture of membranes 658.1-658.2, 761.1	-	<1	<1
Sudden Infant Death Syndrome (SIDS) 798.0	<1	<1	<1
Fire injury E890-E899	<1	<1	<1
Total (tobacco-attributable)	100.0	100.0	100.0

Source: Australian Institute of Health and Welfare (aetiologic fractions), ABS *Death Registrations* for 1992 – 2001 (HOIST).

Notes: 1. Any negative percentages have been replaced by '-'. Less than one per cent has been replaced by '<1'.

2. Rates were directly age-standardised using the Australian population as at 30 June 1991.

**TABLE 9:
Major Causes of Tobacco-attributable Deaths Among Residents of the
Illawarra Health Area, by Age Group, 1992-2001**

Age group	#1	#2	#3	Total - tobacco-attributable	Total – all causes
0-4 years	Sudden Infant Death Syndrome (10)	Low birthweight (3)	Antepartum haemorrhage (2)	14	275
5-14 years	Fire injury (<1)	-	-	<1	85
15-24 years	Stroke (<1)	COPD (<1)	-	4	274
25-34 years	IHD (10)	Stroke (3)	Lung cancer (2)	18	454
35-44 years	IHD (36)	Lung cancer (10)	Stroke (7)	70	666
45-54 years	IHD (99)	Lung cancer (86)	Stroke (15)	250	1,190
55-64 years	IHD (252)	Lung cancer (225)	COPD (79)	714	2,676
65-74 years	Lung cancer (514)	COPD (264)	IHD (226)	1,264	6,137
75 years and older	COPD (493)	Lung cancer (374)	IHD (295)	1,594	12,892
TOTAL (all ages)	Lung cancer (1,211)	IHD (919)	COPD (853)	3,929	24,649

Source: Australian Institute of Health and Welfare (aetiologic fractions), ABS *Death Registrations* for 1992 – 2001 (HOIST).

**TABLE 10:
Frequency of Drinking Alcoholic Beverages, by Beverage Type,
Illawarra Youth Health Survey, 1996**

	Daily	Weekly	Monthly	Less than monthly	Never
Beer	3.0	9.8	16.5	37.2	33.6
Wine/ cooler	3.1	5.7	14.0	38.8	38.4
Spirits	2.7	5.8	12.2	23.3	56.0
Cider	3.1	2.1	6.1	17.2	71.4
Other	3.8	4.3	9.3	19.2	63.3

**TABLE 11:
Causes of Hospitalisation Attributable to Alcohol,
Illawarra Health Area Residents, 1999/2000-2001/02
(Per Cent of Alcohol-attributable Hospitalisations)**

	MALES	FEMALES	PERSONS
	N=3,041	1,619	N=4,660
Oropharynx cancer 141, 143-146, 148, 149	<1	<1	<1
Oesophagus cancer 150	<1	<1	<1
Liver cancer 155	<1	<1	<1
Laryngeal cancer 161	<1	<1	<1
Female breast cancer 174	-	1.5	<1
Alcohol psychosis 291	5.9	1.8	4.5
Alcohol dependence 303	5.7	8.6	6.7
Alcohol abuse 305.0	7.5	8.2	7.7
Epilepsy 345	2.2	3.5	2.6
Alcoholic polyneuropathy 357.5	<1	<1	<1
Hypertension 401-405	<1	<1	<1
Alcoholic cardiomyopathy 425.5	<1	<1	<1
SV arrhythmias 427.0, 427.2, 427.3	2.5	3.2	2.7
Stroke 430-438	6.0	10.9	7.7
Oesophageal varicies 456.0-456.2	<1	<1	<1
Gastrointestinal haemorrhage 530.7	<1	<1	<1
Alcoholic gastritis 535.3	1.6	1.2	1.5
Alcoholic liver cirrhosis 571.5-571.9	6.5	3.2	5.4
Pancreatitis 577.0, 577.1	3.9	2.7	3.5
Psoriasis 696.1	0	0	0
Ethanol toxicity 980.0	<1	<1	<1
Methanol toxicity 980.1	<1	0	<1
Road injury E810-E819	9.9	5.3	8.3
Alcoholic beverage poisoning E8600	<1	1.1	<1
Fall injury E880-E888	24.8	21.1	23.5
Fire injury E890-E899	1.0	<1	1.0
Drowning E910	<1	<1	<1
Aspiration E911	<1	<1	<1
Occup/ machine injury E919, E920	2.0	1.7	1.9
Suicide E950-E959	3.8	10.0	6.0
Assault E960, E965, E968, E969	11.0	11.6	11.2
Child abuse E967	<1	<1	<1
Total (alcohol-attributable)	100.0	100.0	100.0

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Inpatients Statistics Collection* for 1999/2000 – 2001/02, *ABS Estimated Resident Populations* for 31 December each year (HOIST).

Notes: 1. Any negative percentages have been replaced by '-'. Less than one per cent has been replaced by '<1'.
2. Rates were directly age-standardised using the Australian population as at 30 June 1991.

**TABLE 12:
Major Causes of Alcohol-attributable Hospitalisations among
Residents of the Illawarra Health Area, by Age Group,
1999/2000-2001/02**

Age group	#1	#2	#3	Total - alcohol- attributable	Total – all causes
0-4 years	Assault (14)	Road injury (13)	Child abuse (1)	28	26,742
5-14 years	Road injury (43)	Assault (34)	Alcohol abuse (17)	97	12,207
15-24 years	Fall injury (189)	Assault (114)	Road injury (113)	663	22,876
25-34 years	Fall injury (151)	Assault (89)	Road injury (87)	649	34,834
35-44 years	Fall injury (149)	Alcohol dependence (104)	Alcohol abuse (66)	765	34,534
45-54 years	Fall injury (128)	Alcohol dependence (111)	Alcoholic psychosis (86)	745	37,808
55-64 years	Fall injury (155)	Cirrhosis (81)	Stroke (78)	615	48,424
65-74 years	Stroke (150)	Fall injury (108)	Assault (51)	533	65,711
75 years and older	Fall injury (214)	Assault (81)	Stroke (63)	564	63,614
TOTAL (all ages)	Fall injury (1,094)	Assault (523)	Road injury (387)	4,660	346,750

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Inpatients Statistics Collection* for 1999/2000 – 2001/02 (HOIST).

TABLE 13:
Causes of Death Attributable to Alcohol,
Illawarra Health Area Residents, 1992-2001
(Per Cent of Alcohol-attributable Deaths)

CAUSES – ICD9CODE	MALES	FEMALES	PERSONS
	N=421	N=180	N=601
Oropharynx cancer 141, 143-146, 148, 149	2.6	<1	2.0
Oesophagus cancer 150	2.4	1.1	2.0
Liver cancer 155	2.2	1.6	2.0
Laryngeal cancer 161	1.9	<1	1.5
Female breast cancer 174		5.7	1.7
Alcohol psychosis 291	1.0	<1	<1
Alcohol dependence 303	2.6	3.3	2.8
Alcohol abuse 305.0	<1	<1	0.3
Epilepsy 345	1.0	1.1	1.0
Hypertension 401-405	<1	1.7	1.1
Alcoholic cardiomyopathy 425.5	5.2	<1	3.8
SV arrhythmias 427.0, 427.2, 427.3	<1	<1	<1
Stroke 430-438	15.4	41.9	23.4
Oesophageal varicies 456.0-456.2	<1	1.0	<1
Gastro-oesophageal haemorrhage	<1	<1	<1
Alcoholic liver cirrhosis 571.5-571.9	28.7	18.3	25.6
Pancreatitis 577.0, 577.1	<1	<1	<1
Road injury E810-E819	12.9	5.3	10.6
Alcoholic beverage poisoning E8600	<1	0.0	<1
Fall injury E880-E888	2.8	1.7	2.4
Fire injury E890-E899	1.4	1.0	1.2
Drowning E910	3.6	2.9	3.4
Aspiration E911	<1	1.1	<1
Occ/ mach injury E919, E920	<1	0.0	<1
Suicide E950-E959	9.4	3.1	7.5
Assault E960, E965, E968, E969	3.5	4.4	3.8
Total (alcohol-attributable)	100.0	100.0	100.0

Source: Australian Institute of Health and Welfare (aetiologic fractions), ABS *Death Registrations* for 1992 – 2001 (HOIST).

Notes: 1. Any negative percentages have been replaced by '-'. Less than one per cent has been replaced by '<1'.

2. Rates were directly age-standardised using the Australian population as at 30 June 1991.

**TABLE 14:
Major Causes of Alcohol-attributable Deaths Among Residents of the
Illawarra Health Area, by Age Group, 1992-2001**

Age group	#1	#2	#3	Total - alcohol- attributable	Total – all causes
0-4 years	Road injury (2)	Assault (1)	-	3	275
5-14 years	Road injury (2)	Assault (1)	Alcohol abuse (1)	5	85
15-24 years	Road injury (22)	Suicide (8)	Assault (4)	42	274
25-34 years	Road injury (17)	Suicide (12)	Drowning (5)	47	454
35-44 years	Cirrhosis (16)	Suicide (10)	Road injury (8)	66	666
45-54 years	Cirrhosis (32)	Stroke (7)	Suicide (7)	76	1,190
55-64 years	Cirrhosis (52)	Stroke (20)	Cardiomyopathy (5)	116	2,676
65-74 years	Stroke (59)	Cirrhosis (44)	Cardiomyopathy (9)	154	6,137
75 years and older	Stroke (51)	Fall injury (7)	Cirrhosis (6)	91	12,892
TOTAL (all ages)	Cirrhosis (154)	Stroke (140)	Road injury (64)	601	24,649

Source: Australian Institute of Health and Welfare (aetiologic fractions), *ABS Death Registrations* for 1992 – 2001 (HOIST).

**TABLE 15:
Major Causes of Illicit Drug-attributable Hospitalisations among
Residents of the Illawarra Health Area, by Age Group,
1997/98-1999/2000**

Age group	#1	#2	#3	Total – illicit drug-attributable	Total – all causes
0-4 years	Newborn drug toxicity (60)	Low birthweight (20)	-	80	26,699
5-14 years				0	11,773
15-24 years	Drug psychoses (172)	Attempted suicide (33)	Opiate dependence (29)	171	14,600
25-34 years	Drug psychoses (95)	Attempted suicide (45)	Opiate poisoning (25)	307	37,271
35-44 years	Drug psychoses (41)	Hepatitis nonAnonB (34)	Opiate poisoning (21)	196	35,902
45-54 years	Hepatitis nonAnonB (11)	Drug psychoses (9)	Opiate dependence (6)	72	36,370
55-64 years	Drug psychoses (5)	Hepatitis nonAnonB (4)	Opiate dependence (2)	23	45,993
65-74 years	Drug psychoses (3)	Hepatitis nonAnonB (3)	Hepatitis B (<1)	7	58,955
75 years and older	Drug psychoses (5)	Hepatitis B (<1)	-	9	50,861
TOTAL (all ages)	Drug psychoses (330)	Attempted suicide (98)	Opiate dependence (72)	866	327,244

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Inpatients Statistics Collection* for 1997/98 – 1998/99 (HOIST).

TABLE 16:
Causes of Hospitalisation Attributable to Illicit Drugs,
Illawarra Health Area Residents, 1997/98-1999/2000
(Per Cent of Illicit Drug-attributable Hospitalisations)

CAUSES (ICD9CODE)	MALES N=474	FEMALES N=392	PERSONS N=866
Cannabis dependence 304.3	2.7	<1	1.7
Cannabis abuse 305.2	1.9	1.3	1.6
Opiate dependence 304.0,304.7	8.0	8.7	8.3
Opiate abuse 305.5	2.3	2.3	2.3
Opiate poisoning 965.00-965.02	12.2	3.3	8.2
Accidental opiate poisoning E8500-E8501	<1	<1	<1
Suicide E950-E959	9.6	13.4	11.3
Amphetamine dependence 304.4	<1	<1	<1
Amphetamine abuse 305.7	1.3	1.0	1.3
Cocaine abuse 305.6	<1	0	<1
Antepartum haemorrhage 640, 641	-	4.1	1.8
Low birthweight 764, 765, 656.5	2.1	3.9	2.9
Psychostimulant poisoning 969.7	3.2	2.8	3.0
Hallucinogen abuse 305.3	<1	0	<1
Hallucinogen poisoning 969.6	<1	<1	<1
Other psych drug poison 969.8, 969.9	<1	<1	<1
Accidental hallucinogen poisoning E8541	0	<1	<1
Hepatitis B 70.2, 70.3	1.2	<1	<1
Hepatitis nonAnonB 70.4, 70.5	8.9	6.4	7.8
AIDS 279.1, 42-44	<1	<1	<1
Infective endocarditis 421	<1	<1	<1
Drug psychoses 292	35.0	41.9	38.1
Maternal drug dependence 648.3	-	1.8	<1
Newborn drug toxicity 760.7, 779.5	7.4	6.4	6.9
Total (illicit drug-attributable)	100.0	100.0	100.0

Source: Australian Institute of Health and Welfare (aetiologic fractions), *NSW Inpatients Statistics Collection* for 1997/98 – 1999/2000, *ABS Estimated Resident Populations* for 31 December each financial year (HOIST).

Notes: 1. Less than one per cent has been replaced by '<1'.

2. Rates were directly age-standardised using the Australian population as at 30 June 1991.

TABLE 17:
Causes of Death Attributable to Illicit Drugs,
Illawarra Health Area Residents, 1989-1998
(Per Cent of Illicit Drug-attributable Deaths)

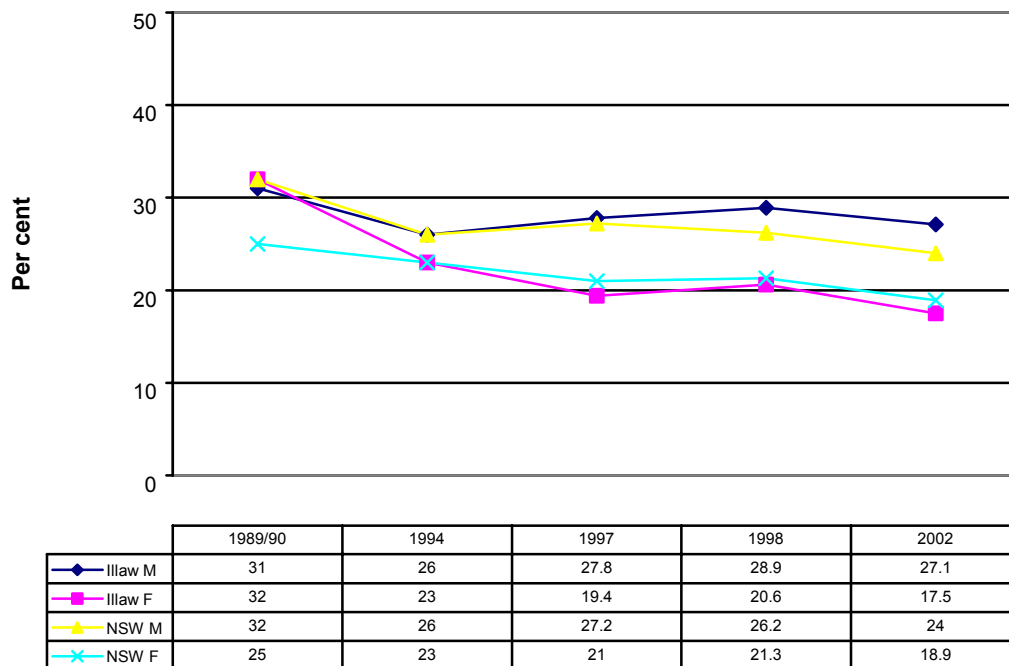
CAUSES (ICD9CODE)	MALES N = 108	FEMALES N = 24	PERSONS N = 132
Cannabis abuse 305.2	<1	0	<1
Opiate dependence 304.0,304.7	61.0	75.3	63.6
Accidental opiate poisoning E8500-E8501	21.3	12.6	19.7
Suicide E950-E959	14.2	11.3	13.7
Amphetamine dependence 304.4	<1	0	<1
Low birthweight 764, 765, 656.5	<1	1.0	<1
AIDS 279.1, 42-44	<1	0	<1
Infective endocarditis 421	<1	0	<1
Newborn drug toxicity 760.7, 779.5	<1	0	<1
Total (illicit drug-attributable)	100.0	100.0	100.0

Source: Australian Institute of Health and Welfare (aetiologic fractions), *ABS Death Registrations* for 1989 – 1998.

Notes: 1. Less than one per cent has been replaced by '<1'.

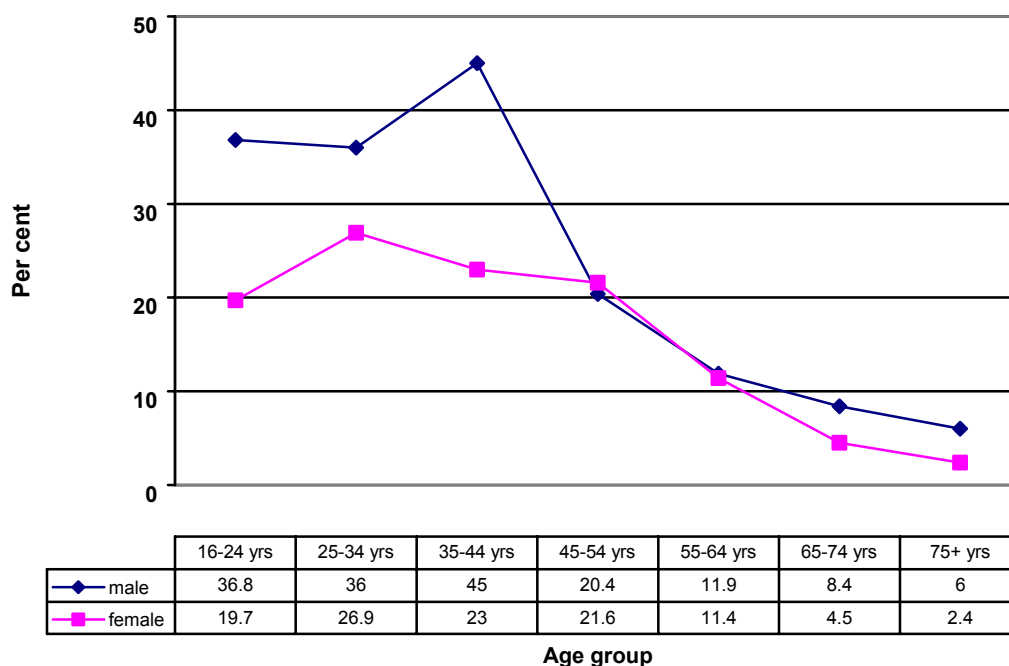
2. Rates were directly age-standardised using the Australian population as at 30 June 1991.

**FIGURE 1:
Trends in Prevalence of Current Smoking among Residents of the Illawarra Health Area and NSW, 16 Years and Older, by Sex, 1989-2002**



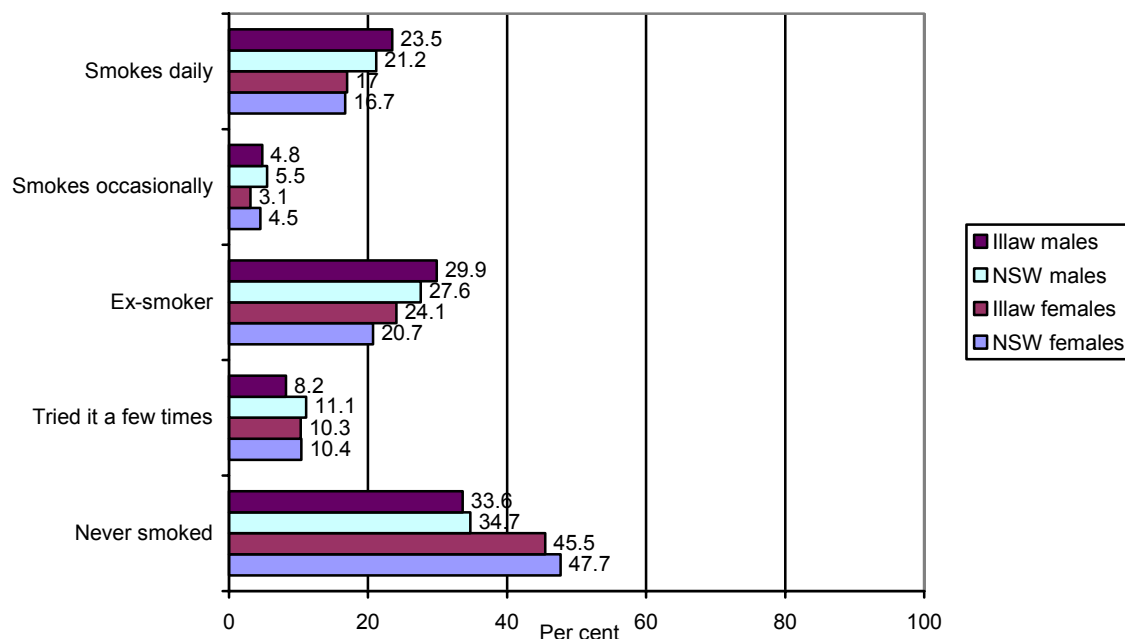
Source: NSW Health's *NSW Health Survey 1997, 1998, & 2002*, *NSW Health Promotion Survey 1994*; *ABS National Health Survey 1989/90*.

**FIGURE 2:
Current Smoking (Daily or Occasional), Illawarra Health Area Residents Aged 16 Years and Older, by Age and Sex, 2002**

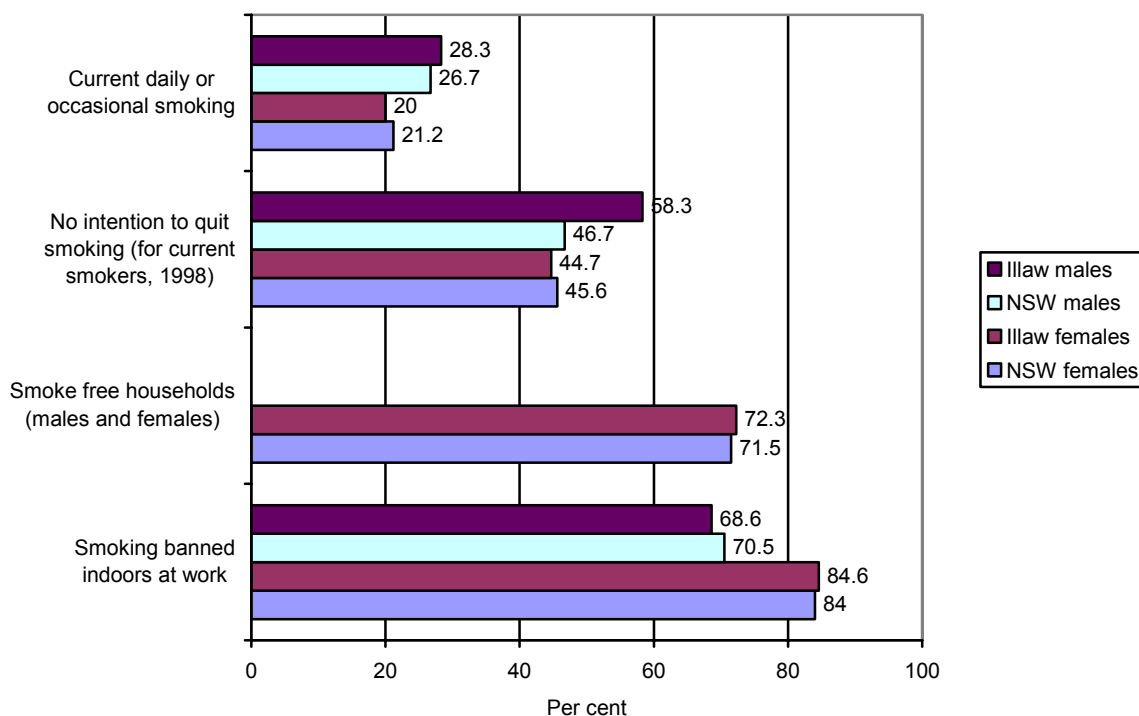


Source: NSW Health's *NSW Health Survey 2002*.

**FIGURE 3:
Current Smoking Status, By Sex, Persons Aged 16 Years and Older,
Illawarra Health Area and NSW, 1997-1998**



**FIGURE 4:
Smoking Risk Factors, By Sex, Persons Aged 16 Years and Older,
Illawarra Health Area and NSW, 1997-1998**



Source: NSW Health's *NSW Health Survey 1997 & 1998*.

FIGURE 5:
Prevalence of Smoking in Pregnancy Among Residents of the Illawarra Health Area, Each of its Local Government Areas (LGA), and Sub-Areas Within the Wollongong LGA, 1996-2002

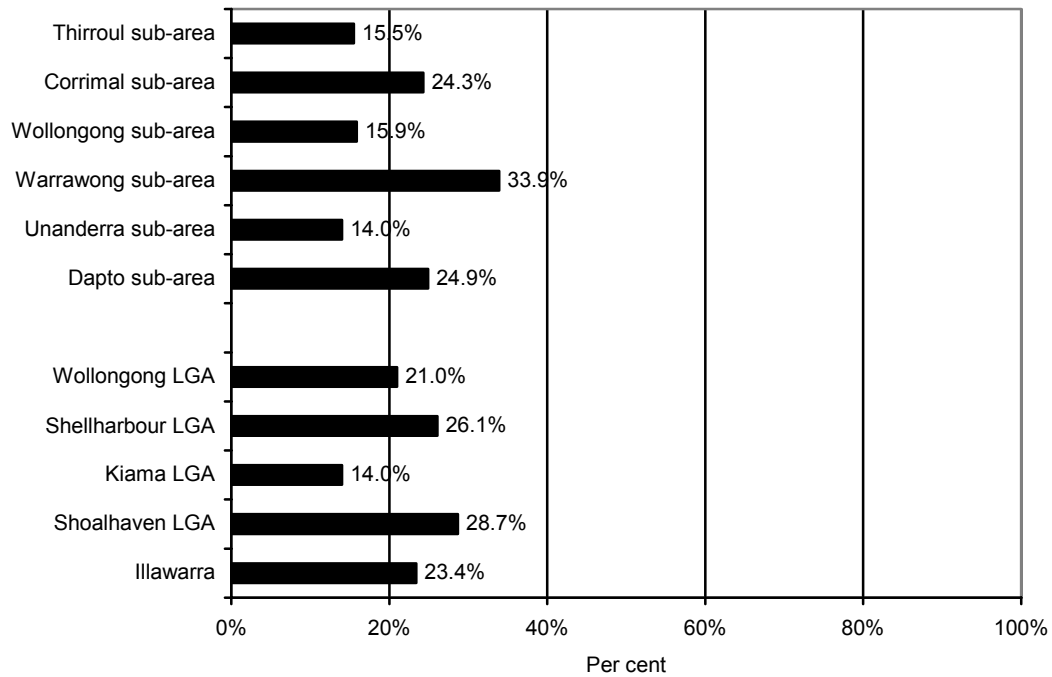
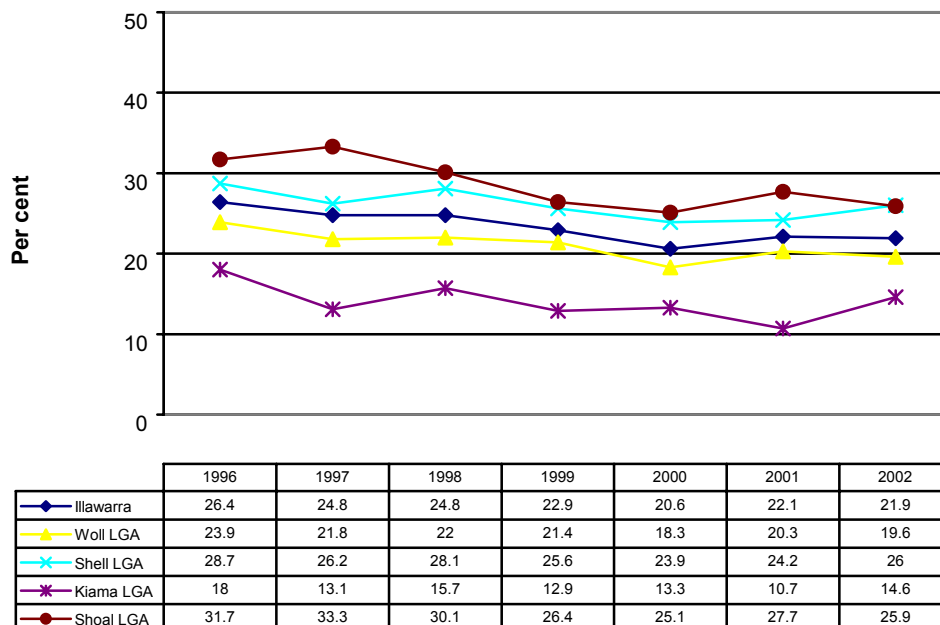


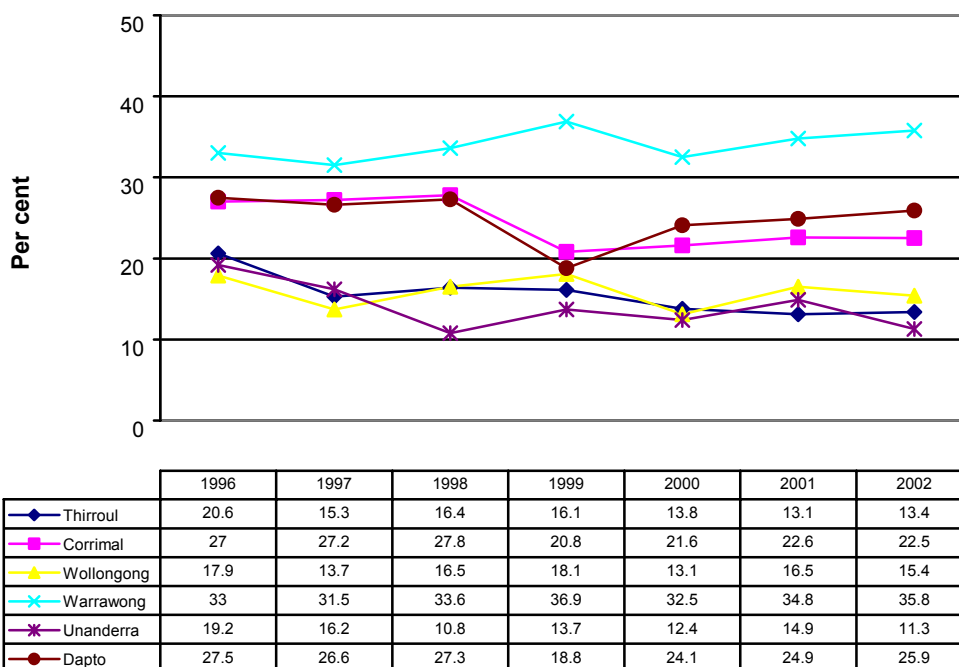
FIGURE 6:
Trends in Prevalence of Smoking in Pregnancy Among Residents of the Illawarra Health Area, and its Local Government Areas, 1996-2002



Source: NSW Health's *NSW Midwives Data Collection* 1996-2002.

Notes: Sub-area definitions (postcodes): Thirroul: 2508, 2515, 2516, 2517; Corrimal: 2518, 2519; Wollongong: 2500; Warrawong: 2502, 2505, 2506; Unanderra: 2525, 2526; Dapto: 2530.

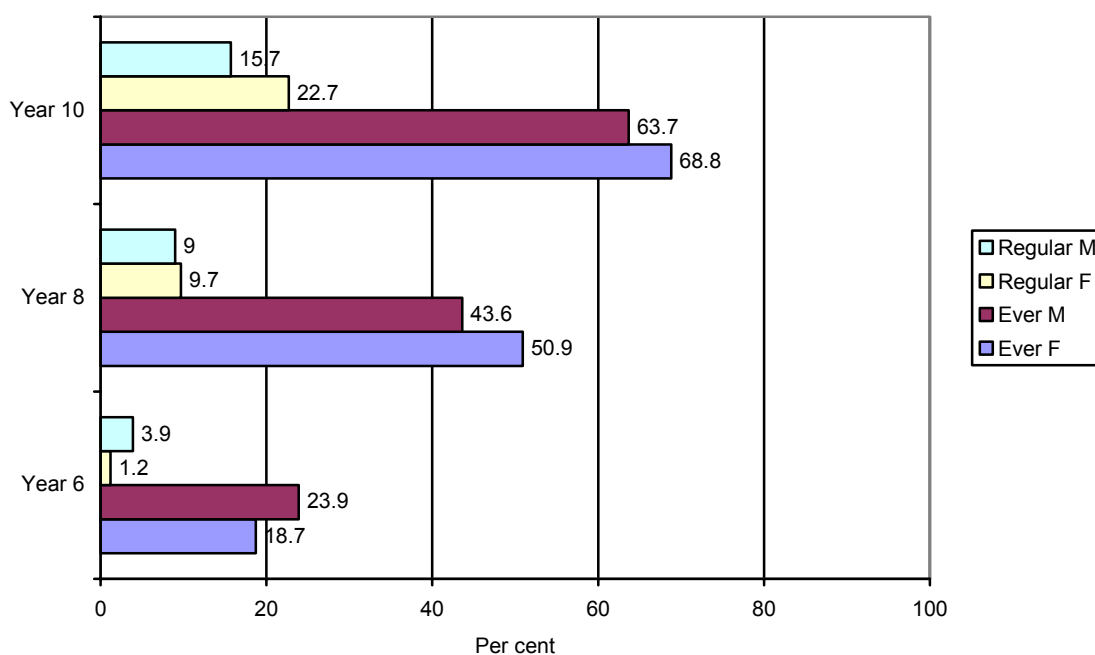
**FIGURE 7:
Trends in Prevalence of Smoking in Pregnancy Among Residents of the Illawarra Health Area, and Sub-Areas Within the Wollongong Local Government Area, 1996-2002**



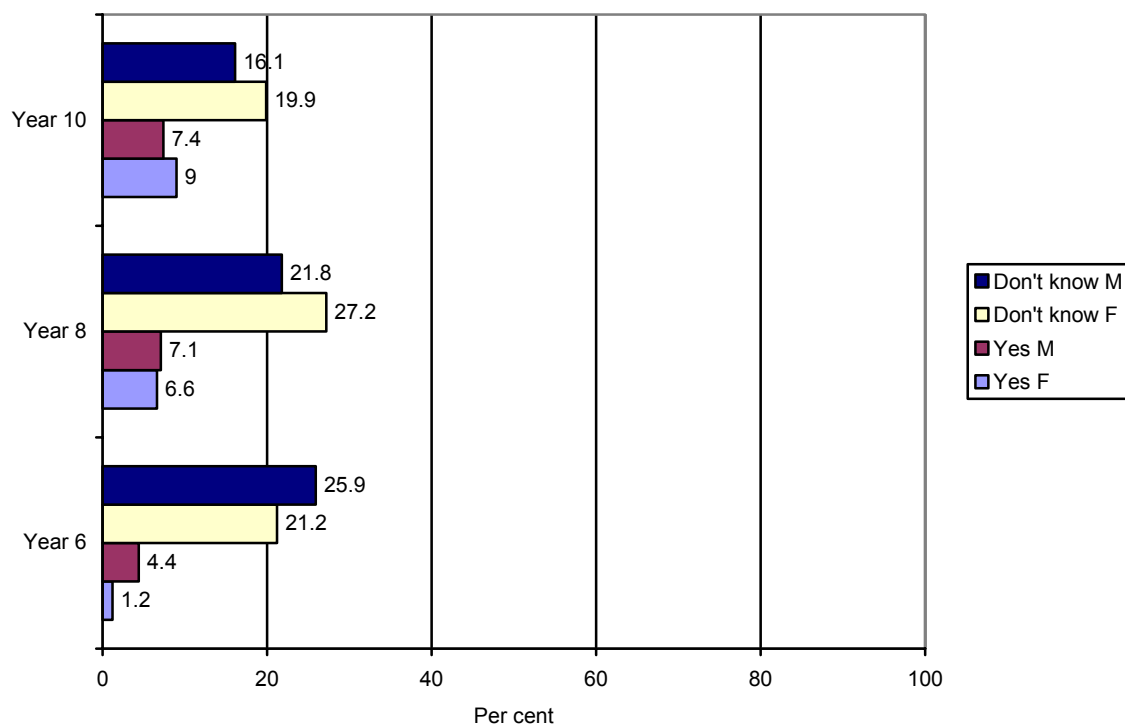
Source: NSW Health's *NSW Midwives Data Collection* 1996-2002.

Notes: Sub-area definitions (postcodes): Thirroul: 2508, 2515, 2516, 2517; Corrimal: 2518, 2519; Wollongong: 2500; Warrawong: 2502, 2505, 2506; Unanderra: 2525, 2526; Dapto: 2530.

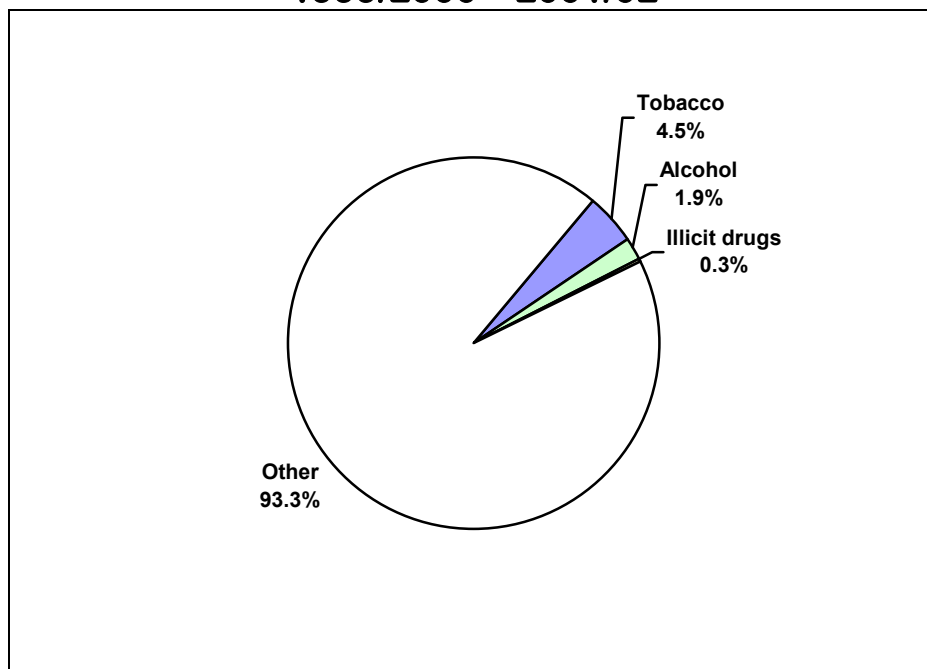
**FIGURE 8:
Ever and Regular Smoking (at Least Weekly), by Sex and School Year, Illawarra Youth Health Survey, 1996**



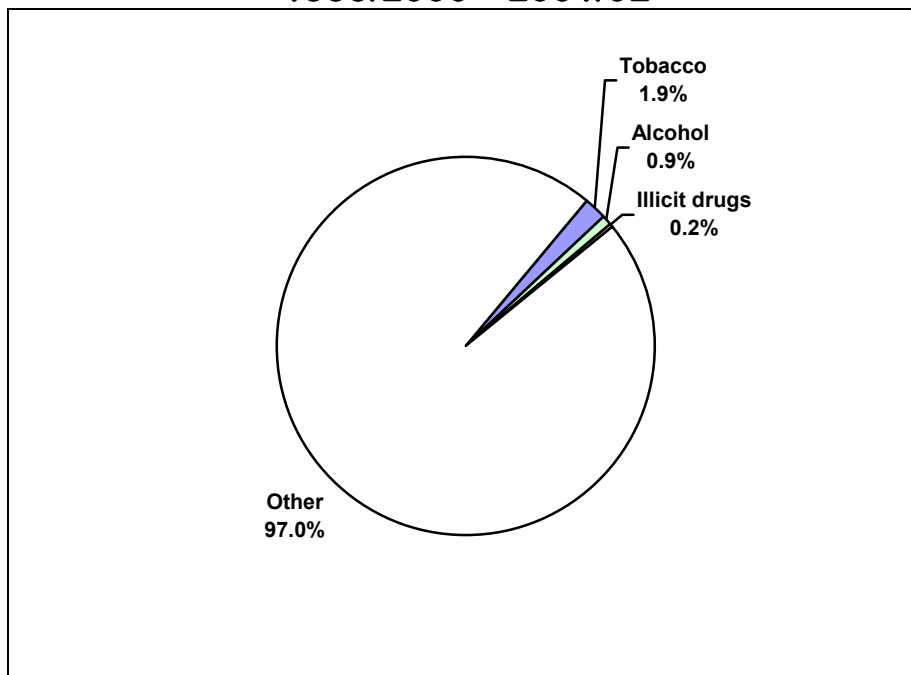
**FIGURE 9:
Intention to Smoke in Five Years, by Sex and School Year,
Illawarra Youth Health Survey, 1996**



**FIGURE 10:
Hospitalisations Due to Tobacco, Alcohol and Illicit Drugs among Male Residents of the Illawarra Health Area, 1999/2000 – 2001/02**



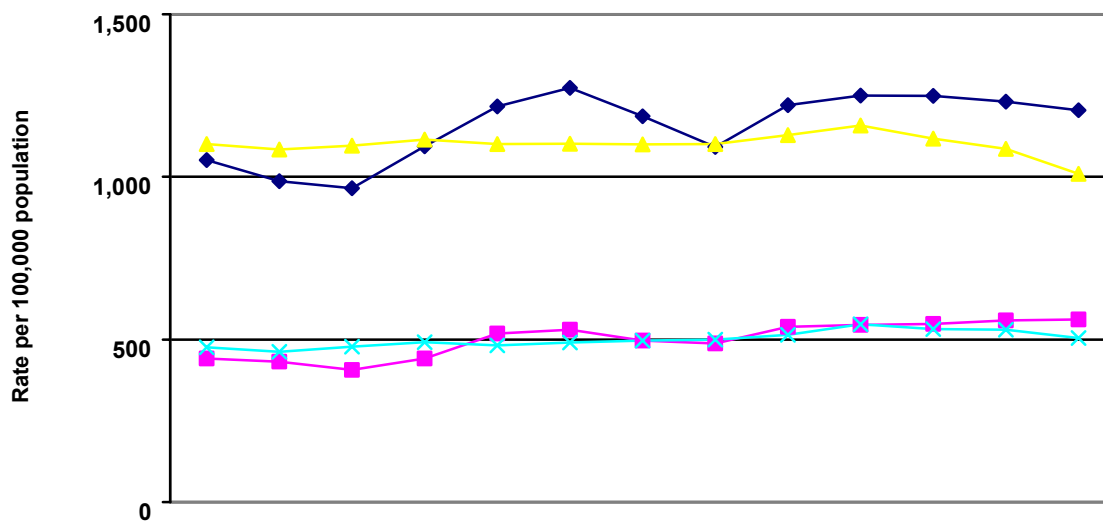
**FIGURE 11:
Hospitalisations Due to Tobacco, Alcohol and Illicit Drugs among Female Residents of the Illawarra Health Area, 1999/2000 – 2001/02**



Source: *NSW Inpatients Statistics Collection (HOIST)*.

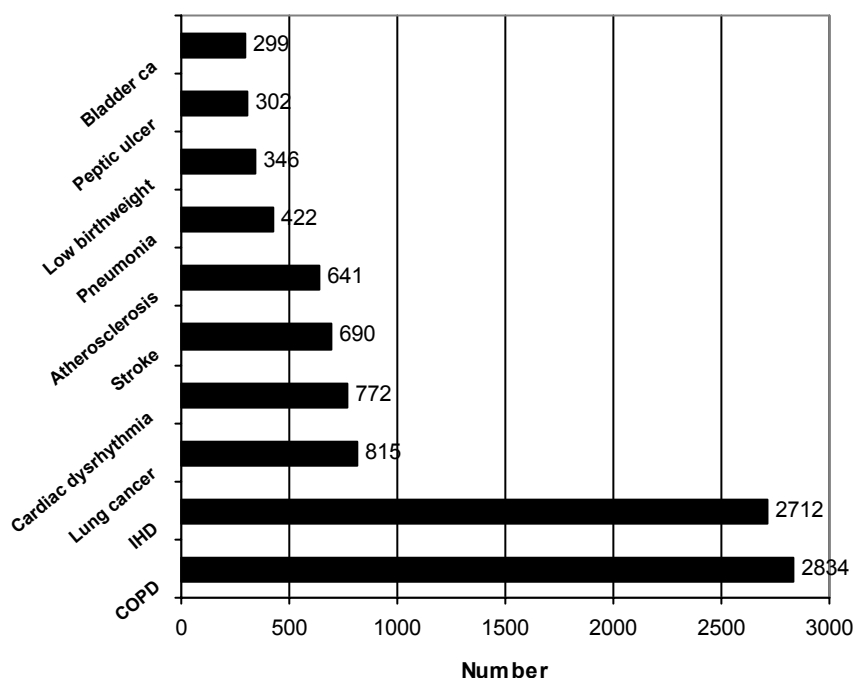
Notes: The time period used for the illicit drug estimates was 1997/98-1999/2000.

FIGURE 12:
Trends in Directly Age-Standardised Rates for Hospitalisations Attributable to Tobacco among Residents of the Illawarra Health Area and NSW, all Ages, by Sex, 1989/90-2001/02



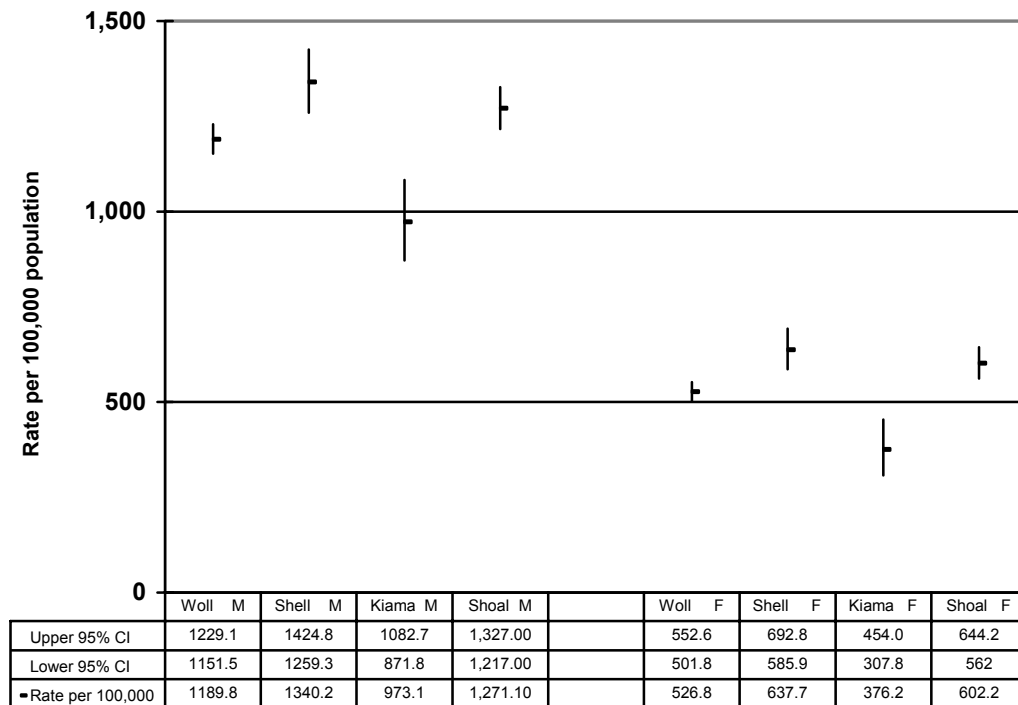
	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
◆ Illaw M	1,051.1	986.4	965.2	1093.8	1216.5	1273.5	1186.3	1091.8	1220.3	1249.7	1249.1	1231.2	1205.4
■ Illaw F	442.1	431.4	406	441.6	518.5	530.4	496.7	487.6	539	544.5	547.9	558.9	561.9
▲ NSW M	1,100.2	1083.7	1095.6	1114.3	1100.2	1102	1100	1100.2	1127.8	1157.6	1117.3	1085.5	1009.6
× NSW F	475.9	461.9	477.8	492	481.7	490.4	496.6	499.8	514.1	547.2	531.8	530.5	504.1

FIGURE 13:
Top 10 Causes of Tobacco-attributable Hospitalisations, Illawarra Health Area Residents, 1999/2000-2001/02



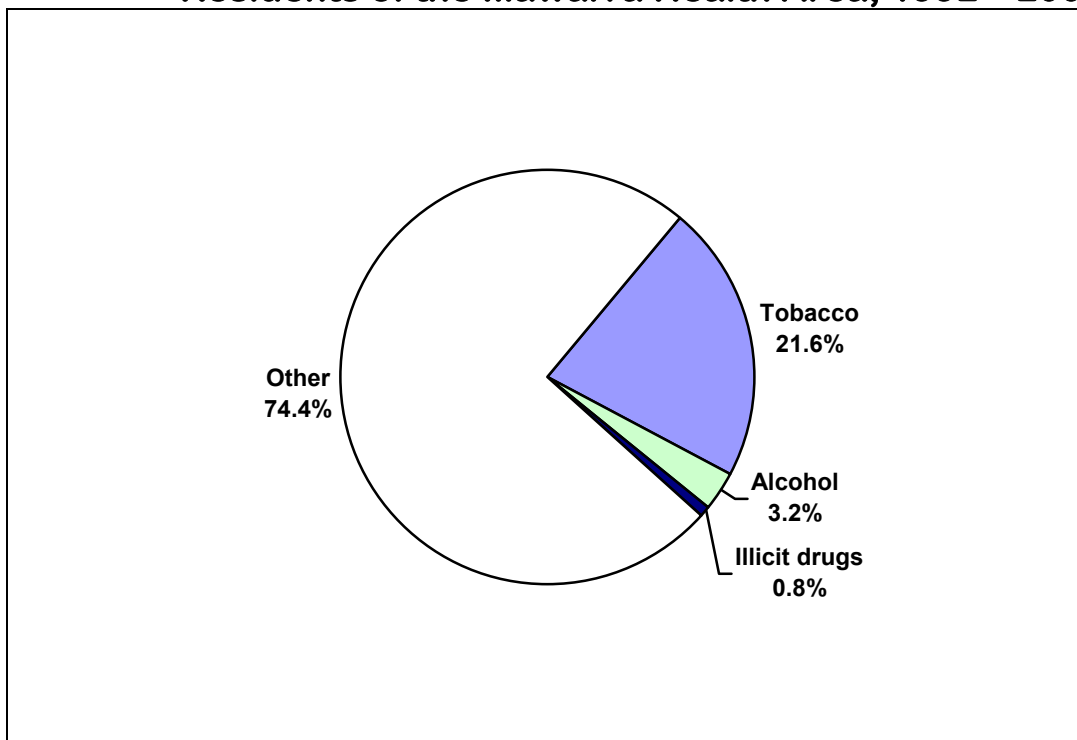
Source: *NSW Inpatients Statistics Collection, ABS Estimated Resident Populations (HOIST)*.
 Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

FIGURE 14:
Directly Age-Standardised Rates for Hospitalisations Attributable to Tobacco among Residents of Illawarra Health Area, by Local Government Area and Sex, all Ages, 1999/00-2001/02

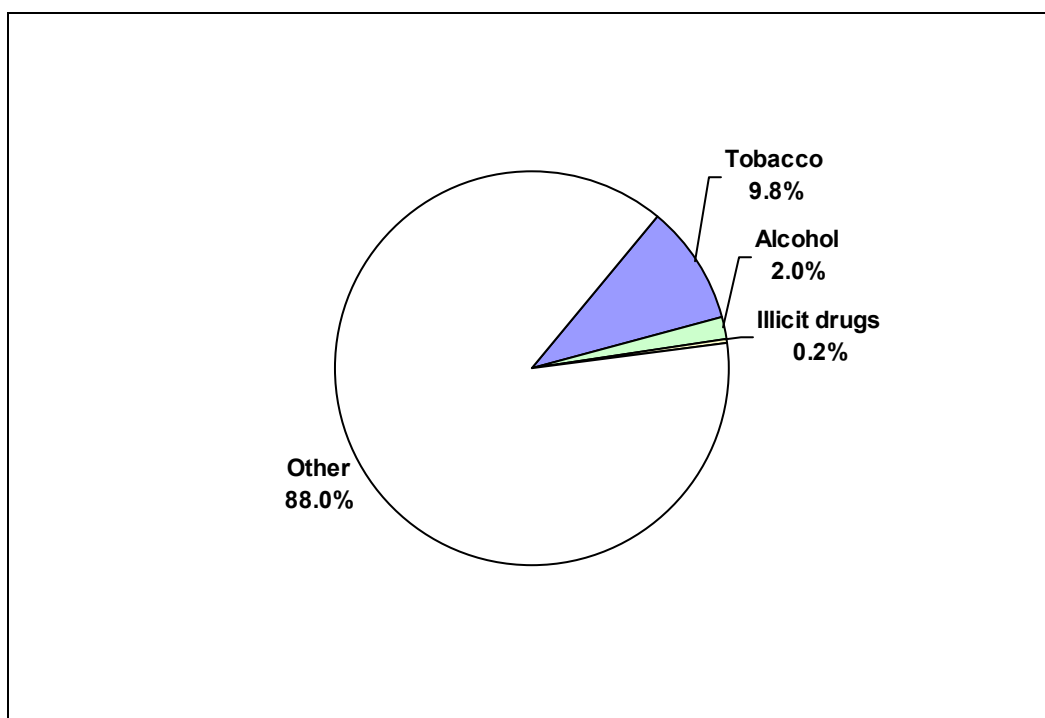


Source: *NSW Inpatients Statistics Collection, ABS Estimated Resident Populations (HOIST)*.
 Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

**FIGURE 15:
Deaths Due to Tobacco, Alcohol and Illicit Drugs among Male
Residents of the Illawarra Health Area, 1992 – 2001^a**



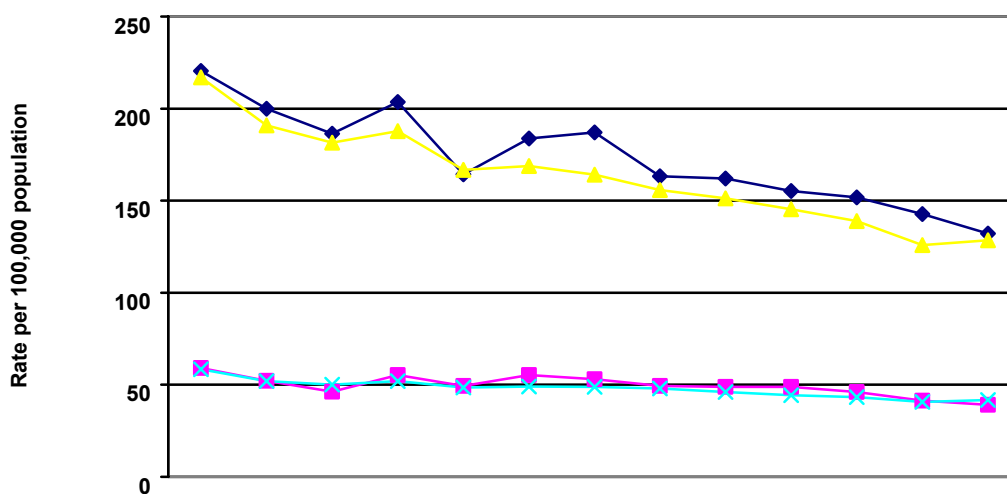
**FIGURE 16:
Deaths Due to Tobacco, Alcohol and Illicit Drugs among Female
Residents of the Illawarra Health Area, 1992 – 2001**



Source: ABS *Death Registrations* (HOIST).

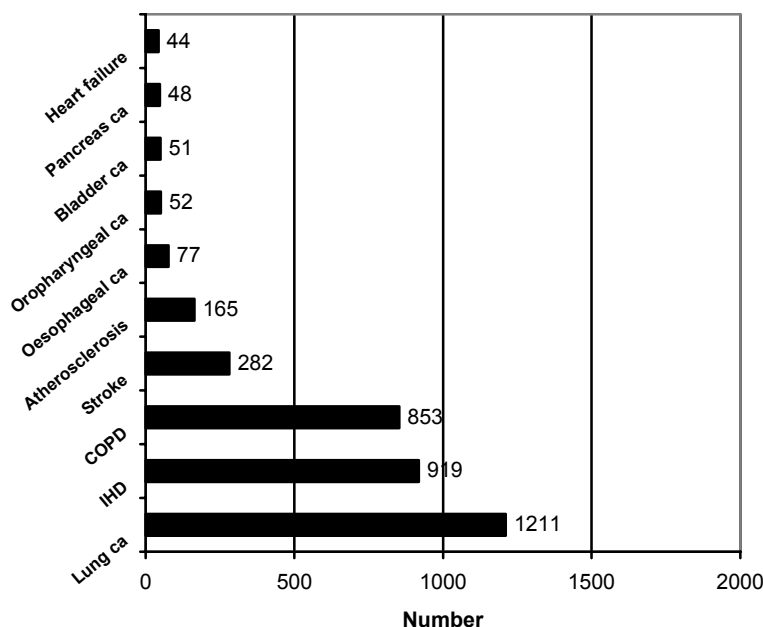
Notes: The time period used for the illicit drug estimates was 1989-1998.

FIGURE 17:
Trends in Directly Age-Standardised Rates for Deaths Attributable to Tobacco among Residents of the Illawarra Health Area and NSW, all Ages, by Sex, 1989-2001



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
◆ Illaw M	220.4	199.9	186.4	203.5	164.3	183.8	187.1	163.2	162.1	155.2	151.8	142.8	132.2
■ Illaw F	59.1	52.1	46.2	55.2	49.4	55.3	53	49.4	48.8	48.8	46.1	41.3	39.2
▲ NSW M	216.9	190.9	181.5	187.8	166.7	168.8	164.2	155.7	151.3	145.3	138.9	125.8	128.5
× NSW F	58.5	51.9	50.1	52	48.5	49.1	48.8	47.9	46	44.3	43.3	40.6	41.8

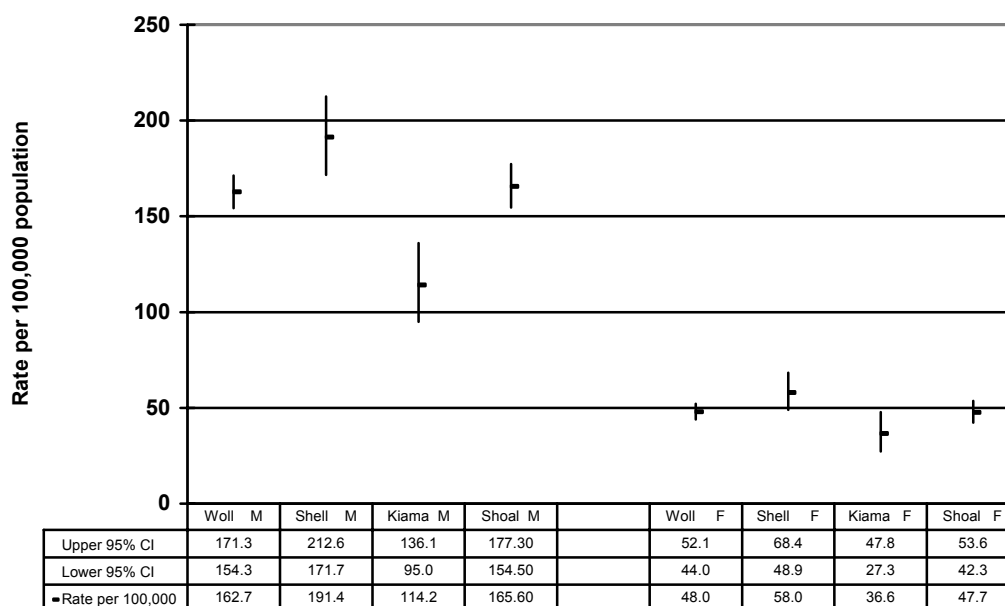
FIGURE 18:
Top 10 Causes of Tobacco-attributable Deaths, Illawarra Health Area Residents, 1992-2001



Source: ABS Death Registrations & Estimated Resident Populations (HOIST).

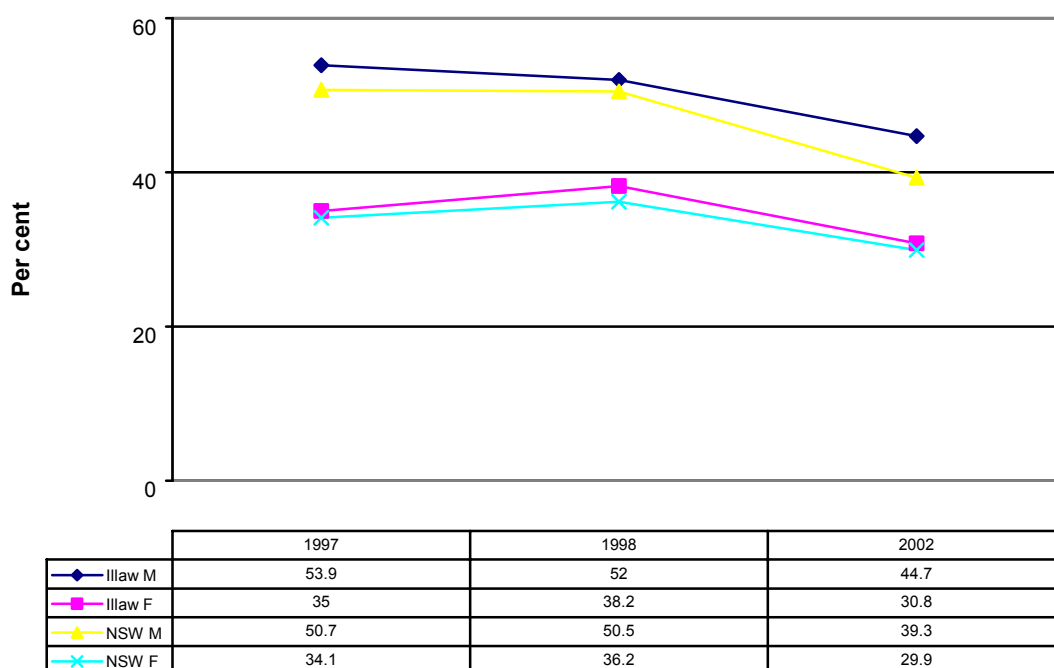
Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

FIGURE 19:
Directly Age-Standardised Rates for Deaths Attributable to Tobacco Among Residents of the Illawarra Health Area, by Local Government Area and Sex, all Ages, 1992-2001



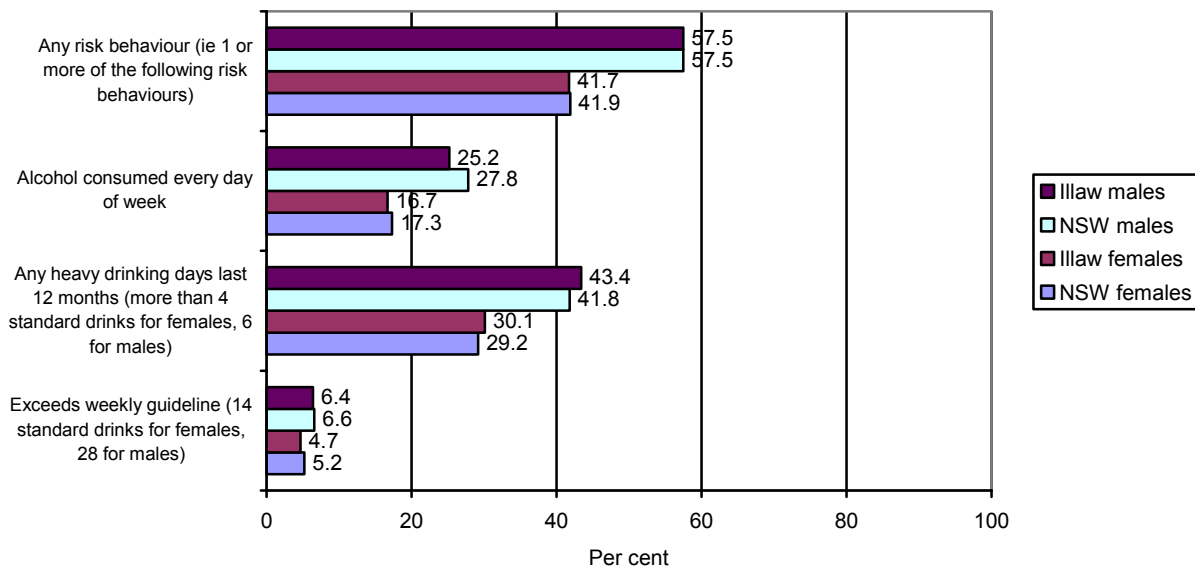
Source: ABS Death Registrations & Estimated Resident Populations (HOIST).
 Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

FIGURE 20:
Trends in Risk Drinking Behaviour among Residents of the Illawarra Health Area and NSW, 16 Years and Older, by Sex, 1997-2002



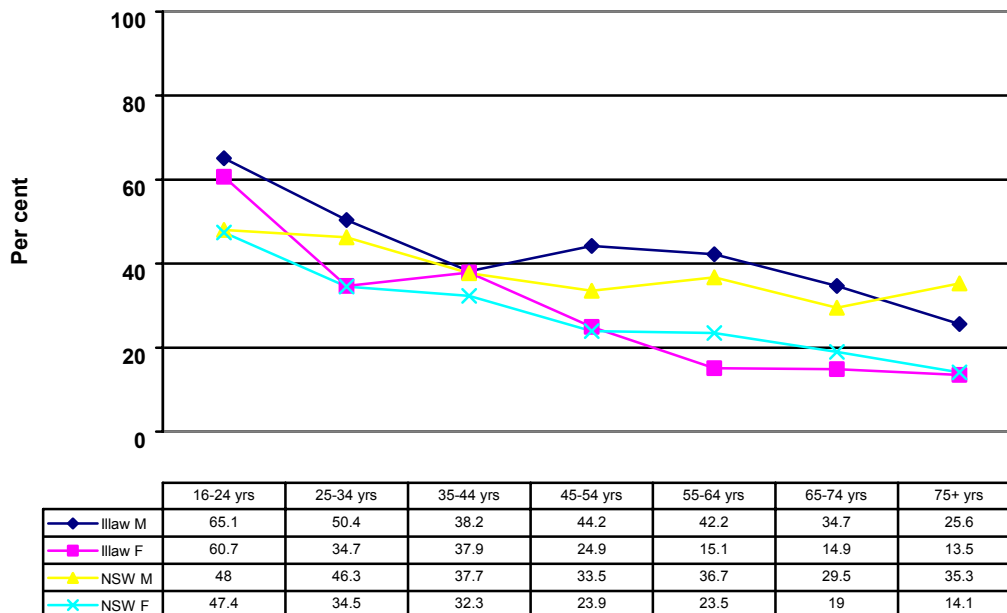
Source: NSW Health Surveys 1997, 1998, & 2002.
 Note:
 Notes: Risk drinking behaviour is defined as one or more of: more than 14 standard drinks weekly for females or 28 for males; at least one heavy drinking day in last 12 months (more than 4 drinks for females or 6 for males); or alcohol consumption every day.

FIGURE 21:
Alcohol Use, By Sex, Current Drinkers Aged 16 Years and Older, Illawarra Health Area and NSW, 1997 and 1998



Source: NSW Health Surveys 1997 & 1998.

FIGURE 22:
Any Risk Drinking Behaviour, Illawarra Health Area Residents Aged 16 Years and Older, by Age and Sex, 2002



Source: NSW Health Survey 2002.

Notes: Risk drinking behaviour is defined as one or more of: more than 14 standard drinks weekly for females or 28 for males; at least one heavy drinking day in last 12 months (more than 4 drinks for females or 6 for males); or alcohol consumption every day.

FIGURE 23:
Ever Drunk Alcohol (At Least 10 Drinks and/ or Tasted), by Sex and School Year, Illawarra Youth Health Survey, 1996

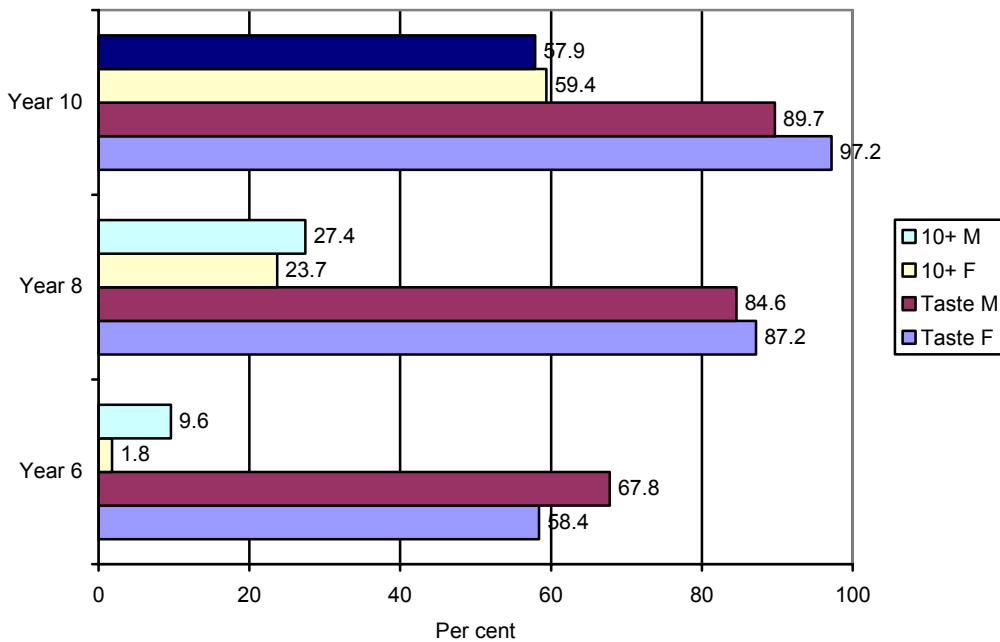


FIGURE 24:
Binge Drinking (At Least 5 drinks in a Row in Last 2 weeks and/ or Ever Drunk), by Sex and School Year, Illawarra Youth Health Survey, 1996

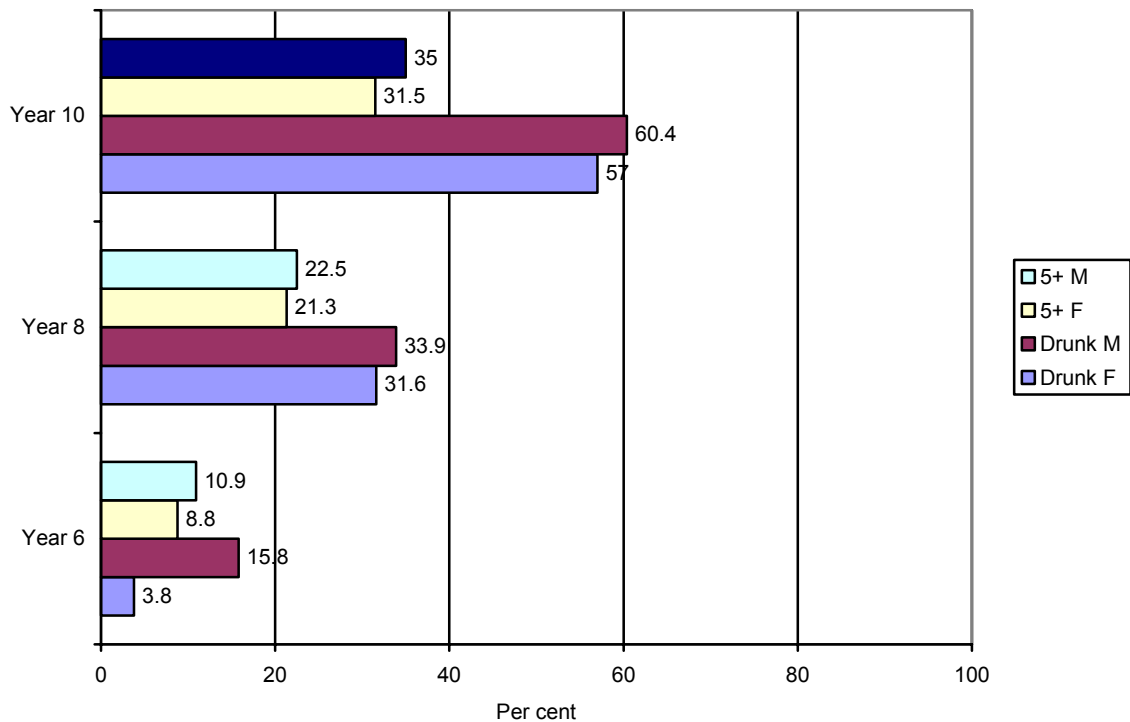
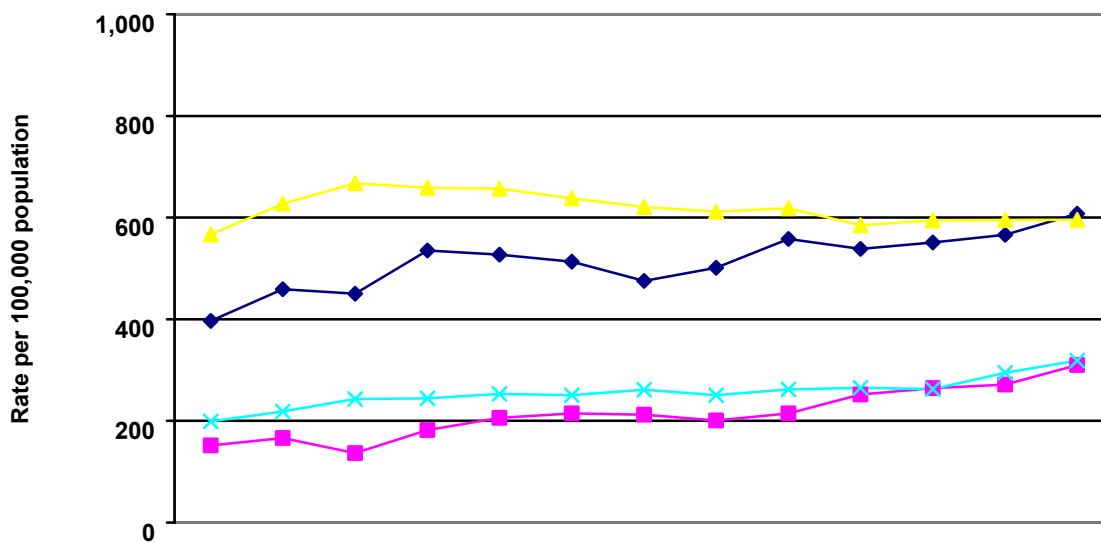
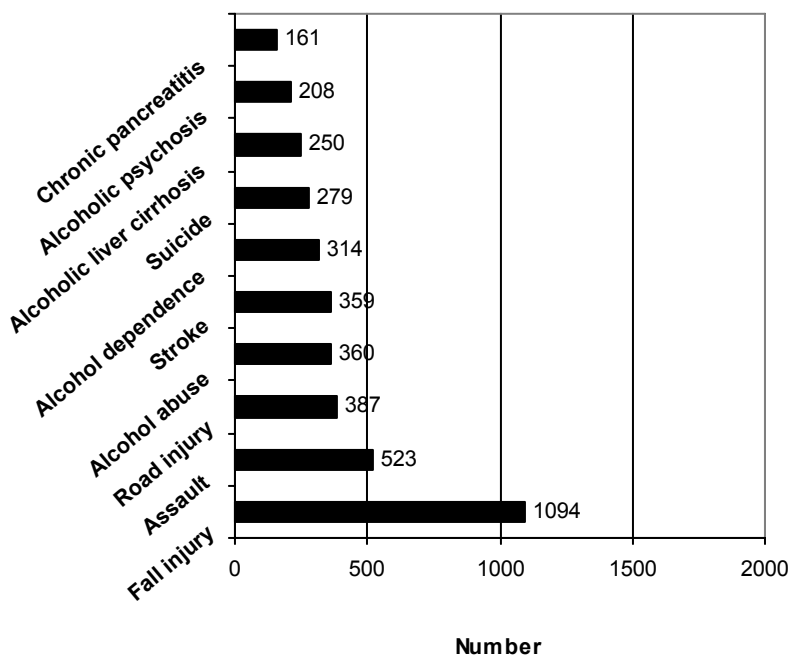


FIGURE 25:
Trends in Directly Age-Standardised Rates for Hospitalisations Attributable to Alcohol Among Residents of the Illawarra Health Area and NSW, All Ages, by Sex, 1989/90-2001/02



	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
Illaw M	397.0	459.2	450.1	535.2	527.2	513.5	475.3	501.5	557.9	538.5	551	566	607.5
Illaw F	151.6	166.1	136.5	181.8	205.9	214.6	212.5	200.9	215	252.2	264.5	271.1	309.6
NSW M	566.9	627	667.6	658.8	657.1	638.2	621	611.3	618.2	584.8	594.2	594.8	596
NSW F	199.2	218.4	242.8	244.1	253	250.6	261.3	250.5	261.7	264.9	262.8	294.5	318.4

FIGURE 26:
Top 10 Causes of Alcohol-attributable Hospitalisations, Illawarra Health Area Residents, 1999/2000-2001/02



Source: *NSW Inpatients Statistics Collection, ABS Estimated Resident Populations (HOIST)*.
 Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

FIGURE 27:
Directly Age-Standardised Rates for Hospitalisations Attributable to Alcohol among Residents of Illawarra Health Area, by Local Government Area and Sex, all Ages, 1999/2000-2001/02

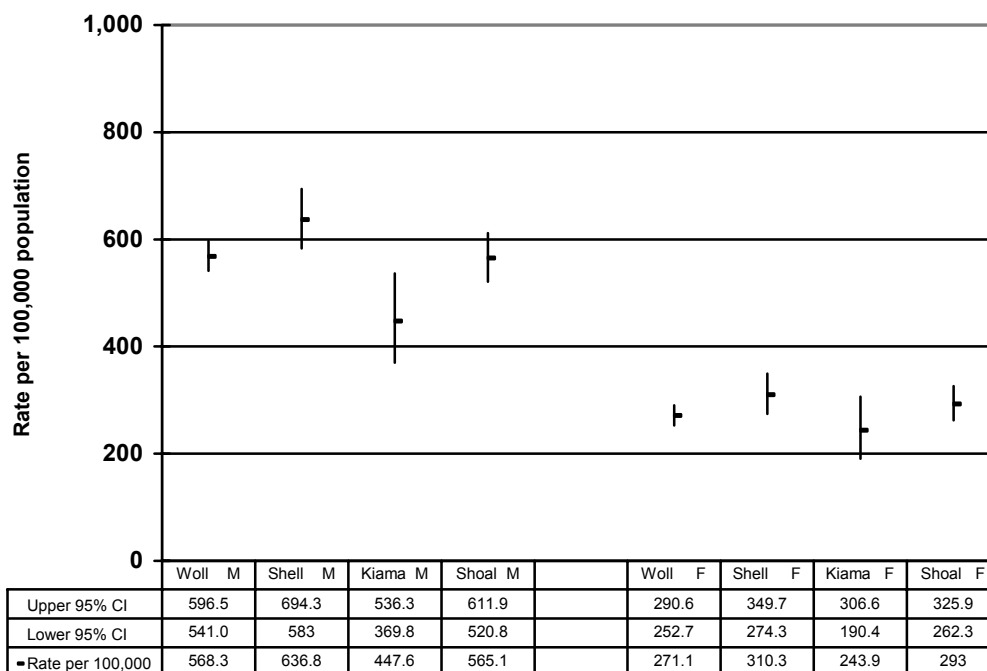
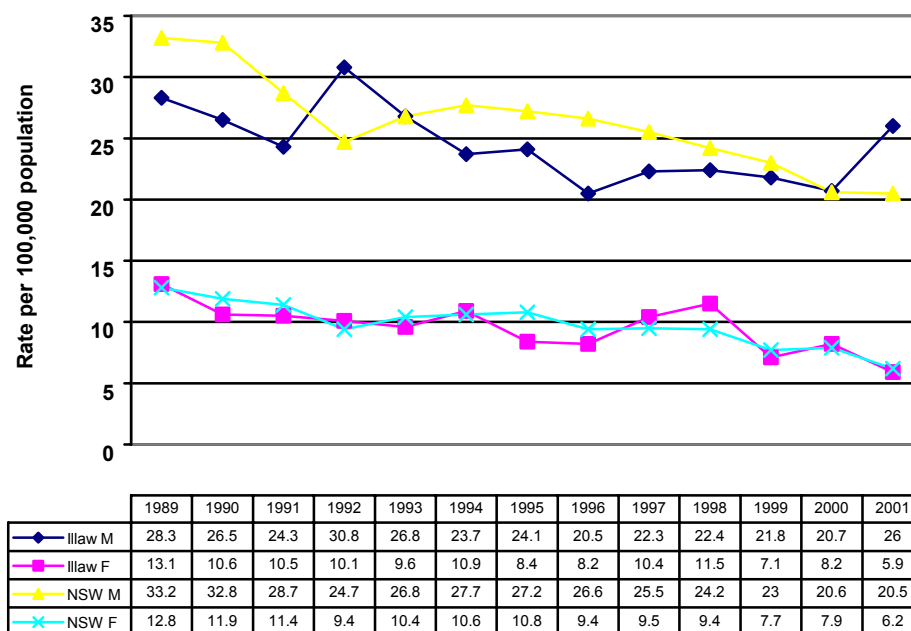
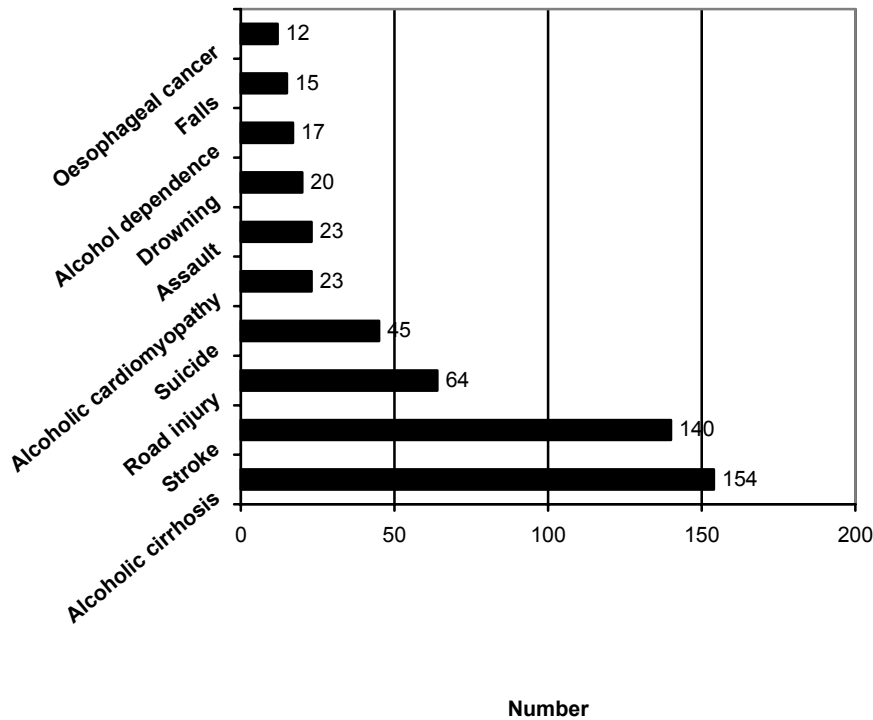


FIGURE 28:
Trends in Directly Age-Standardised Rates for Deaths Attributable to Alcohol among Residents of the Illawarra Health Area and NSW, all Ages, by Sex, 1989-2001

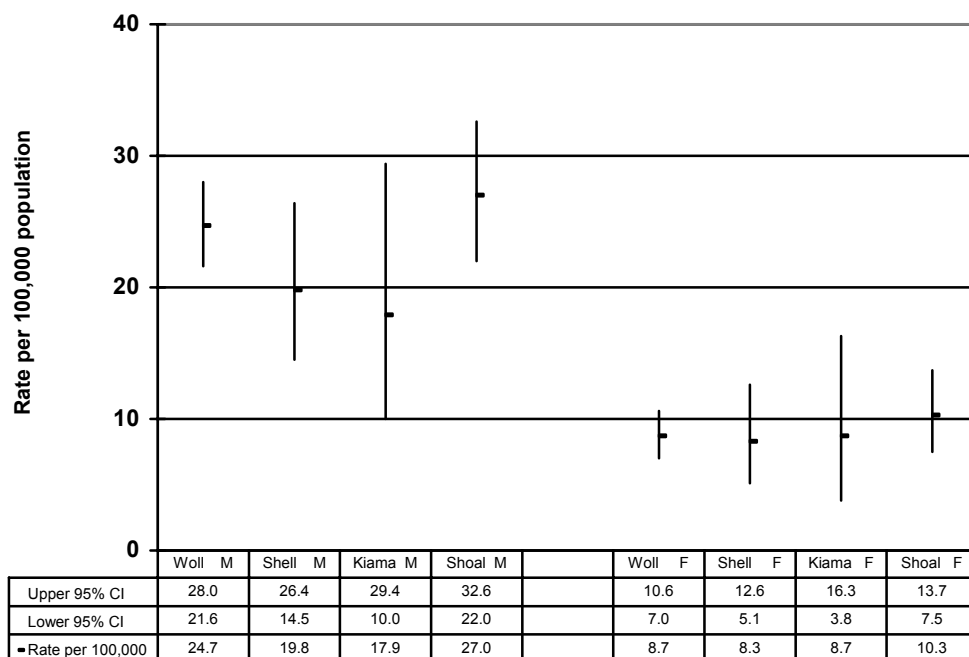


Source: *NSW Inpatients Statistics Collection, ABS Death Registrations & Estimated Resident Populations (HOIST)*.
 Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

**FIGURE 29:
Top 10 Causes of Alcohol-attributable Deaths,
Illawarra Health Area Residents, 1992 -2001**

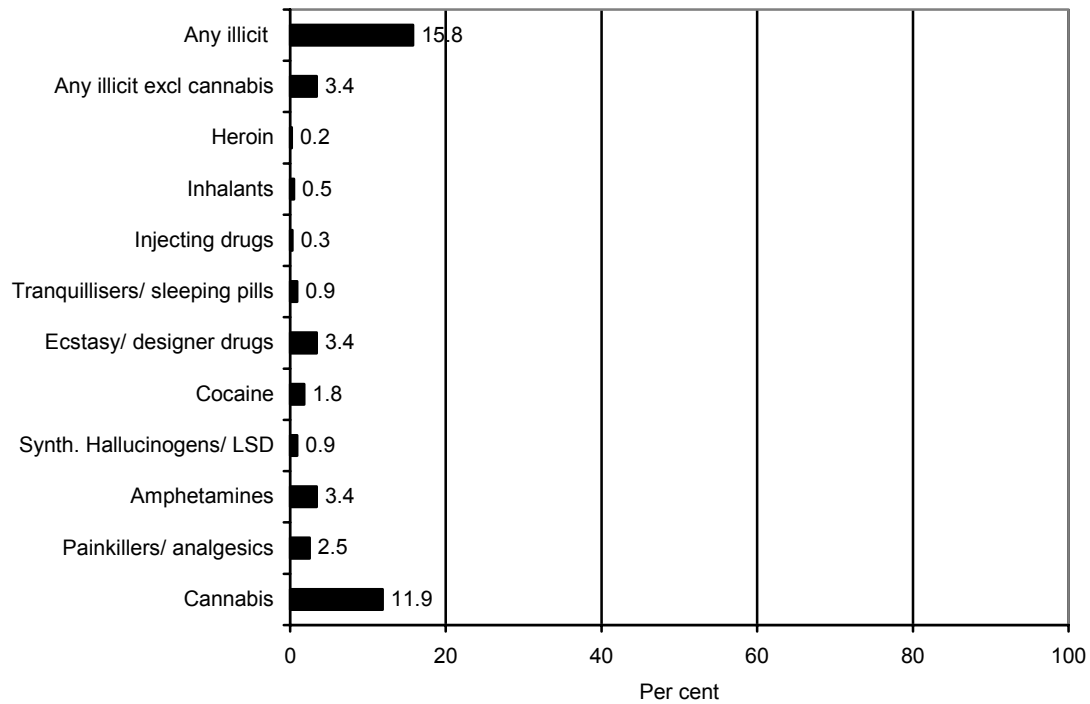


**FIGURE 30:
Directly Age-Standardised Rates for Deaths Attributable to Alcohol Among
Residents of the Illawarra Health Area, by Local Government Area and Sex,
all Ages, 1992-2001**



Source: ABS Death Registrations & Estimated Resident Populations (HOIST).
Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

**FIGURE 31:
Used Illicit Drugs in Past 12 Months, by Sex, National Drug Strategy Household Survey, NSW Residents, Aged 14 Years and Over, 2001**



**FIGURE 32:
Used Illicit Drugs in Past 12 months, by Sex, Australian Secondary Students Alcohol and Other Drugs Survey, Aged 12-17 Years, 1999**

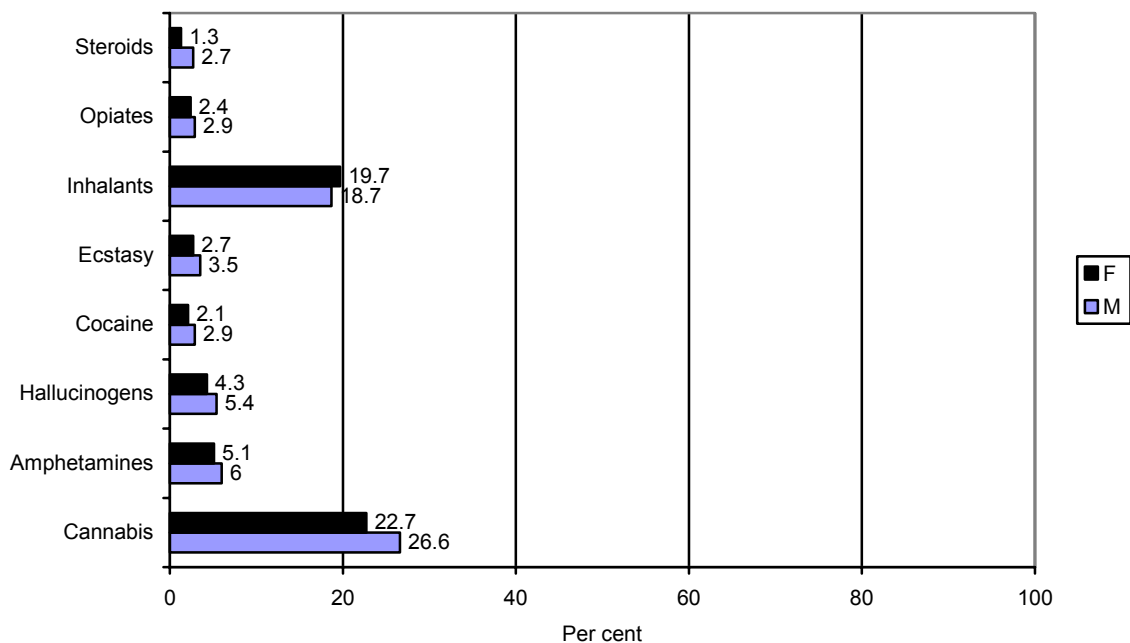


FIGURE 33:
Used Illicit Drugs in Past 30 days, by Sex, Australian Secondary Students Alcohol and Other Drugs Survey, Aged 12-17 Years, 1999

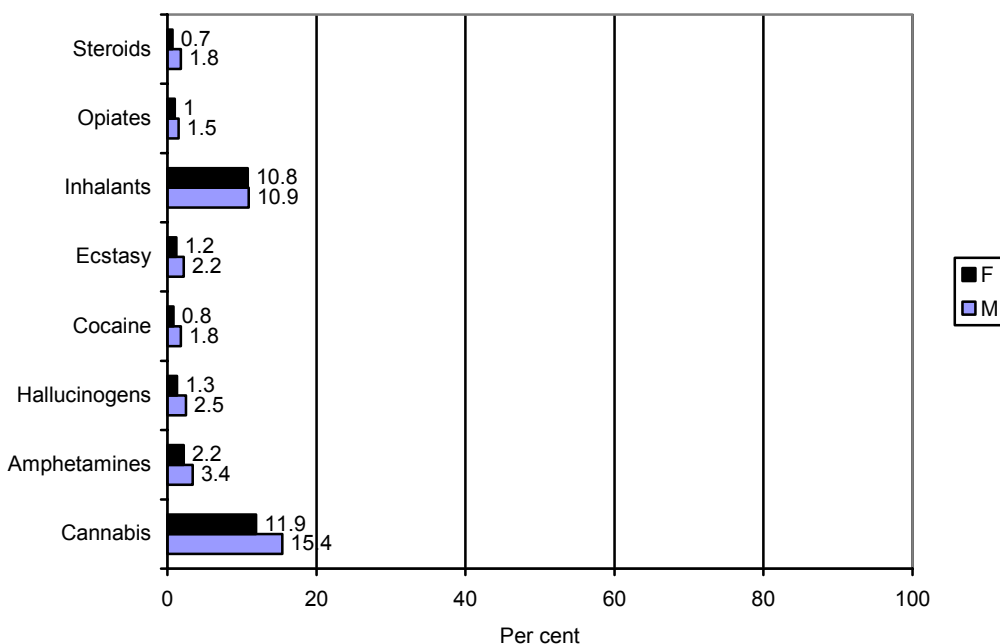
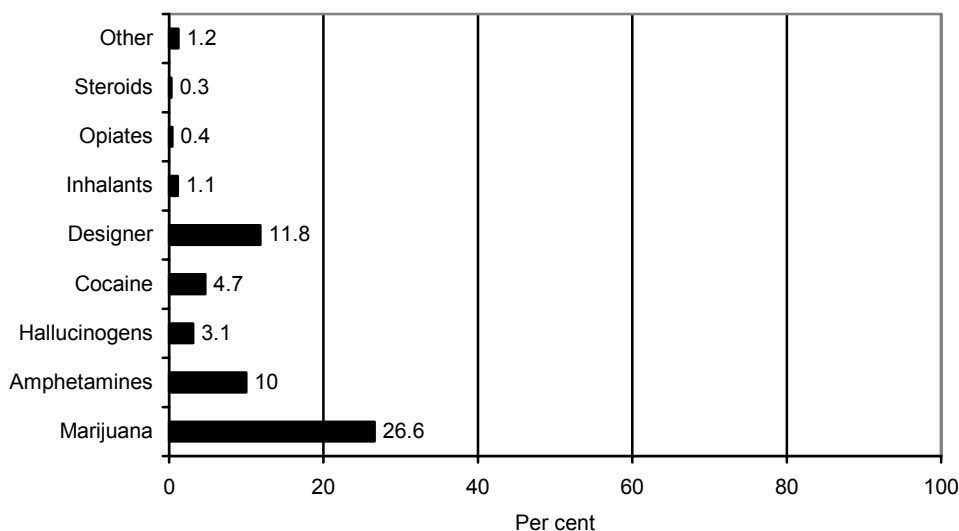


FIGURE 34:
Used Illicit Drugs in Past 12 Months, NSW Health University Drug and Alcohol Survey, Aged 18-24 Years, 2001



**FIGURE 35:
Illicit Drug Use in Past 30 Days and At Least 3 Times Weekly,
NSW Health University Drug and Alcohol Survey,
Aged 18-24 Years, 2001**

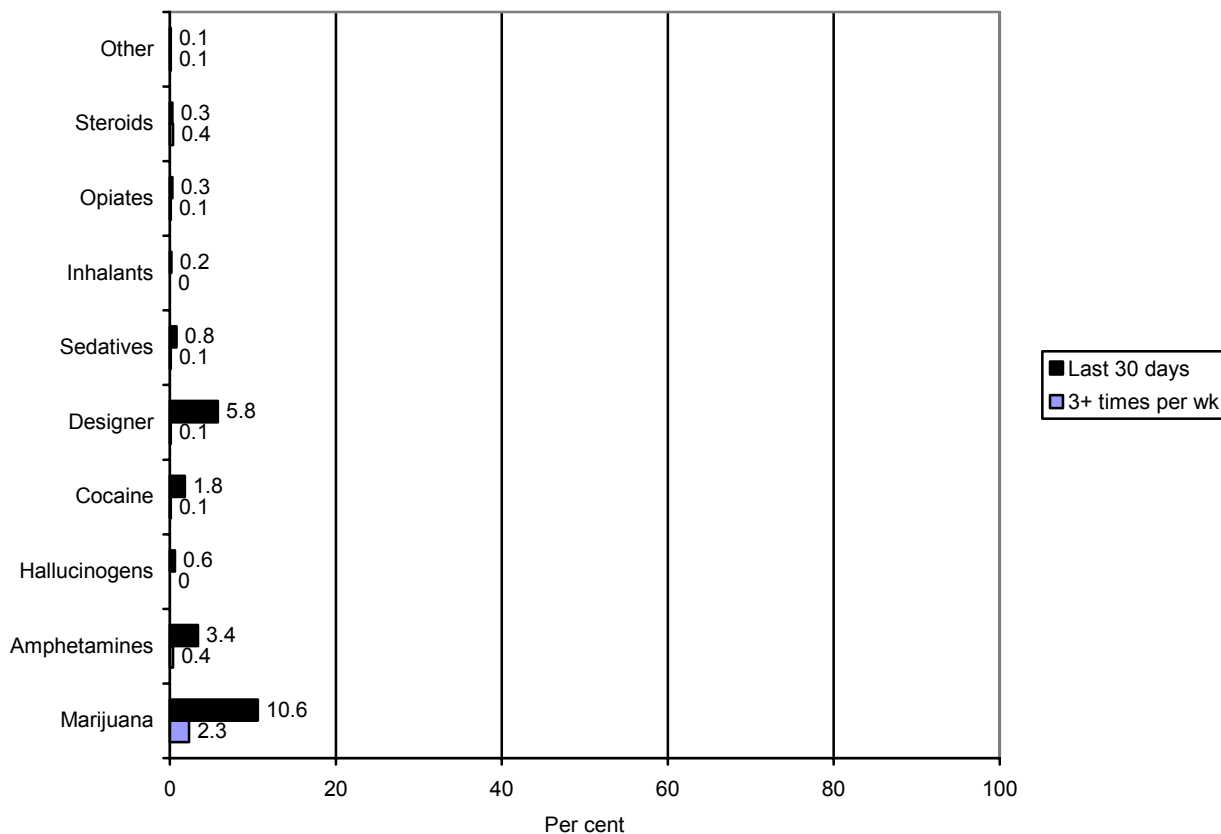
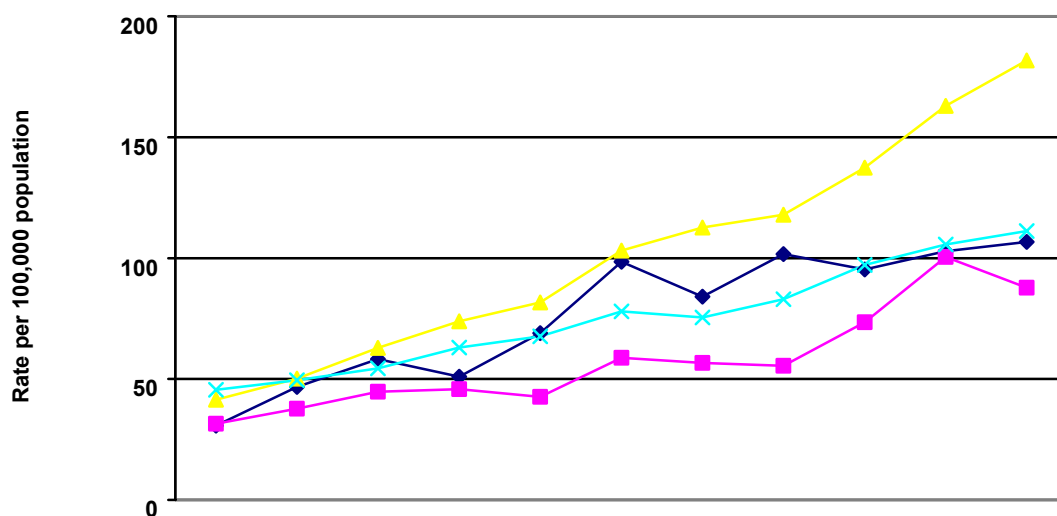
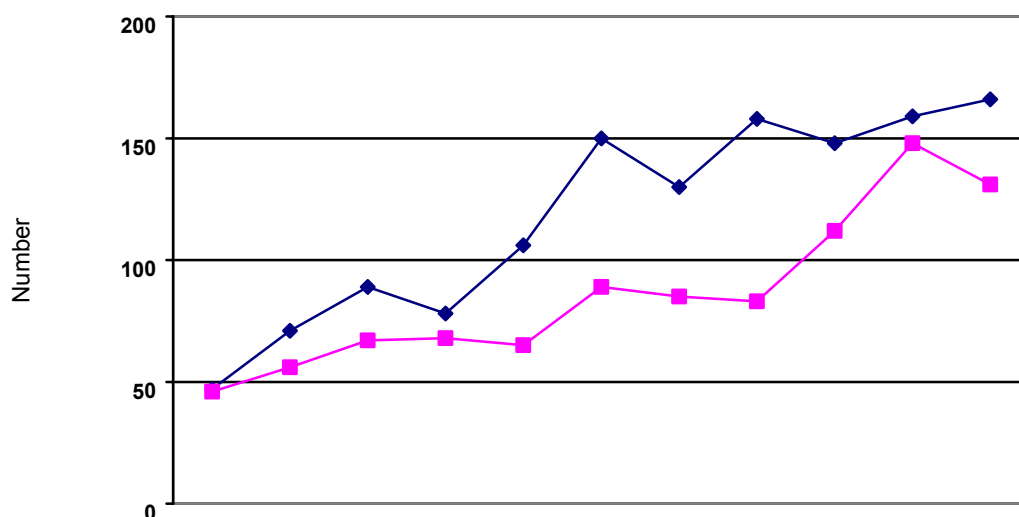


FIGURE 36:
Trends in Directly Age-standardised Rates for Hospitalisations Attributable to Illicit Drugs Among Residents of the Illawarra Health Area and NSW, all Ages, by Sex, 1989/90-1999/2000



	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
◆ Illaw M	30.7	46.7	58.3	50.9	68.9	98.5	84	101.7	95.3	102.9	106.7
■ Illaw F	31.5	37.7	44.8	45.8	42.6	58.8	56.6	55.4	73.5	100.4	87.8
▲ NSW M	41.4	50.2	62.9	73.9	81.7	103.1	112.7	118	137.4	162.9	181.8
× NSW F	45.5	49.5	54.4	63	67.6	77.9	75.5	83	97.2	105.6	111.2

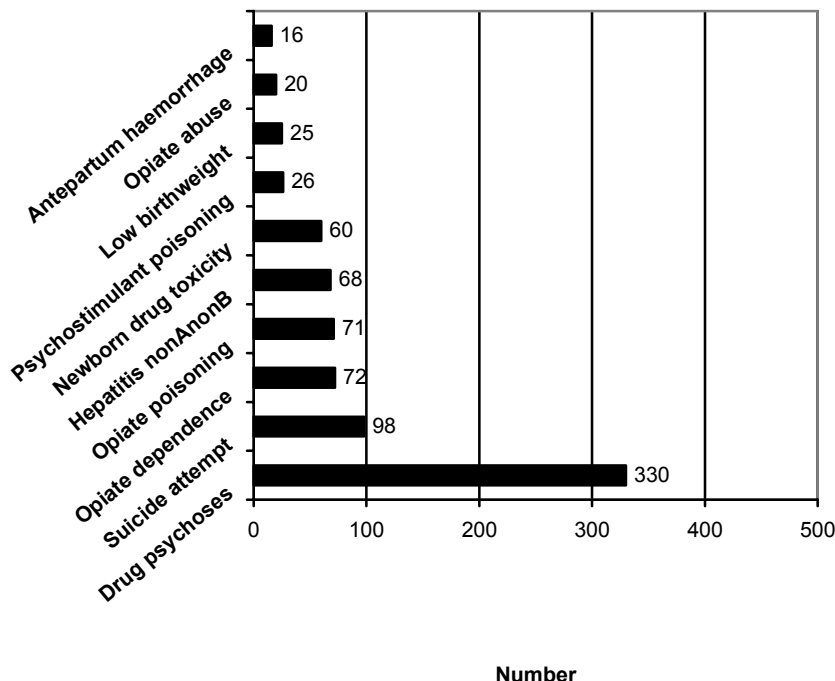
FIGURE 37:
Trend in Numbers of Hospitalisations Attributable to Illicit Drugs Among Residents of the Illawarra Health Area, 1989-1998



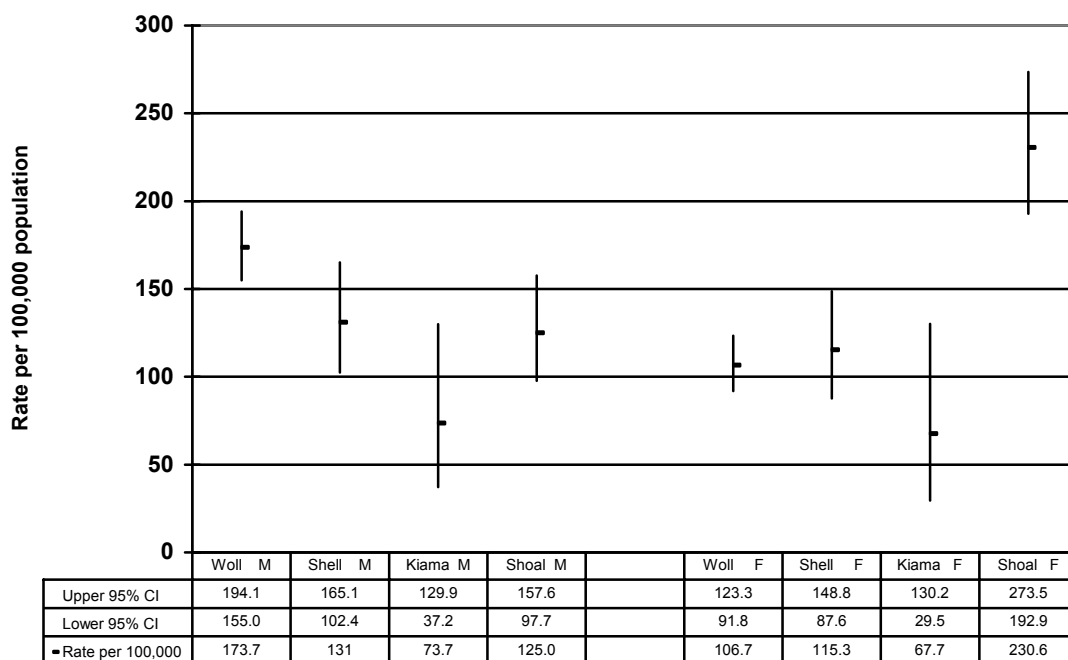
	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
◆ Males	47	71	89	78	106	150	130	158	148	159	166
■ Females	46	56	67	68	65	89	85	83	112	148	131

Source: NSW Inpatients Statistics Collection, ABS Estimated Resident Populations (HOIST).
 Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

**FIGURE 38:
Top 10 Causes of Illicit Drug-attributable Hospitalisations, Illawarra Health Area Residents, 1997/98 –1999/2000**



**FIGURE 39:
Directly Age-Standardised Rates for Hospitalisations Attributable to Illicit Drugs Among Residents of the Illawarra Health Area, and Local Government Areas, all Ages, by Sex, 1997/98-1999/2000**



Source: NSW Inpatients Statistics Collection, ABS Estimated Resident Populations (HOIST).

Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

FIGURE 40:
Trends in Directly Age-Standardised Rates for Deaths Attributable to Illicit Drugs among Residents of the Illawarra Health Area and NSW, all Ages, by Sex, 1989-1998

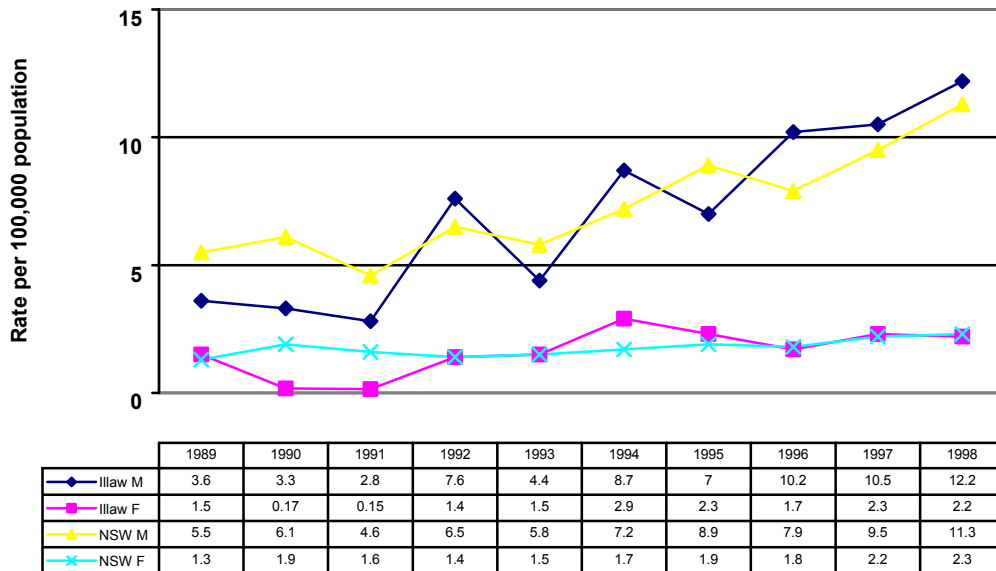
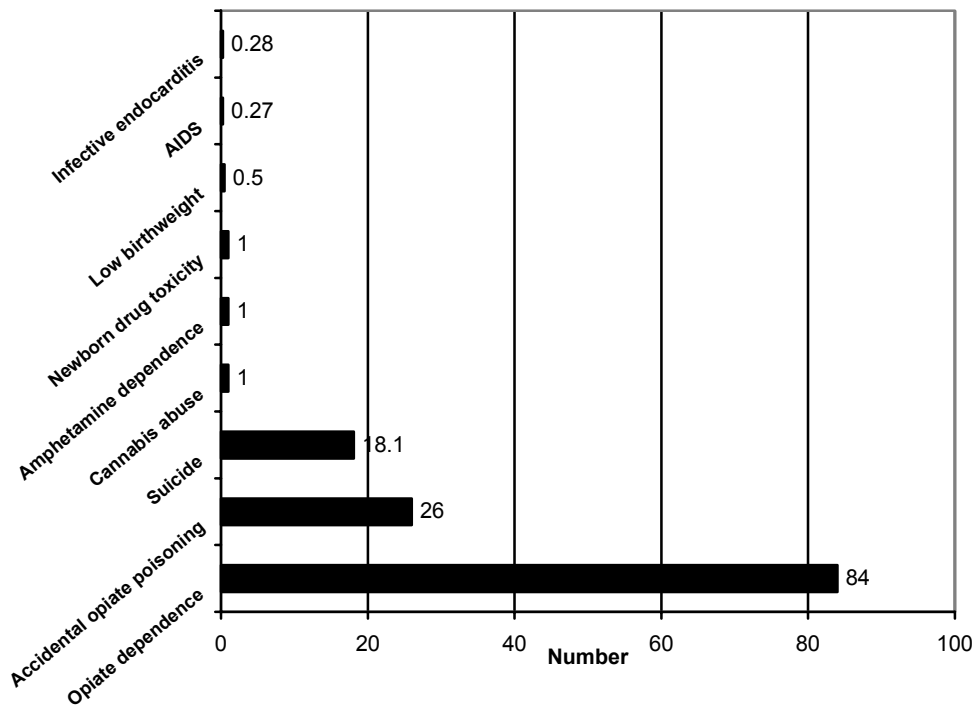


FIGURE 41:
Causes of Illicit Drug-attributable Deaths, Illawarra Health Area Residents, 1989 -1998



Source: ABS *Death Registrations, Estimated Resident Populations (HOIST)*.
 Notes: Rates were directly age-standardised using the Australian population as at 30 June 1991.

FIGURE 42:
Opiate deaths Among Illawarra Health Area Residents,
by Age and Sex, 1989 -1998

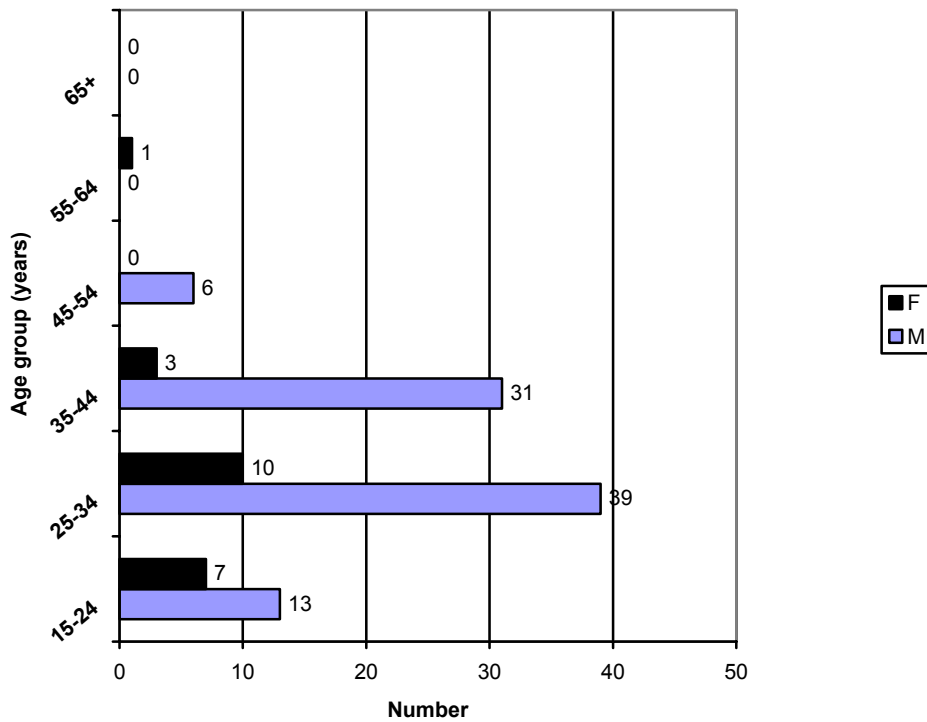
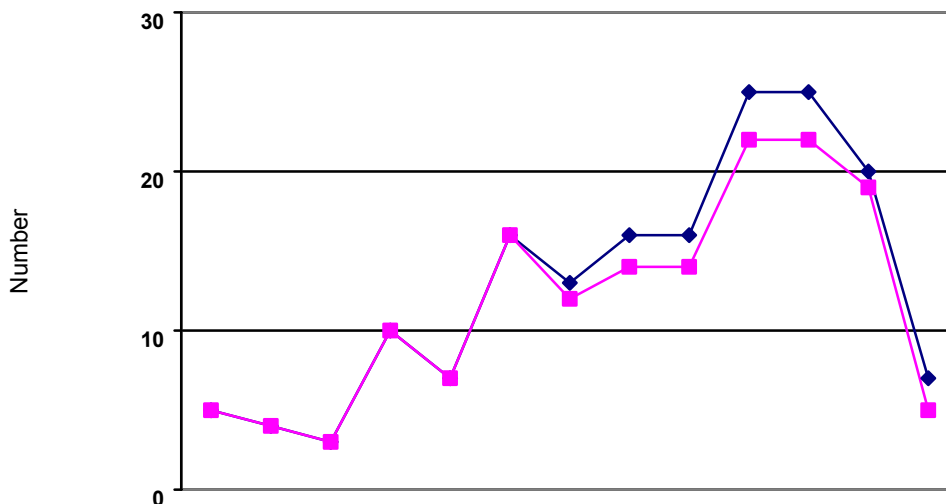


FIGURE 43:
Trend in Numbers of Deaths Attributable to Opiates Among Residents of the
Illawarra Health Area, all ages, 15-44 years, 1989-2001



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
◆ all ages	5	4	3	10	7	16	13	16	16	25	25	20	7
■ 15-44 yrs	5	4	3	10	7	16	12	14	14	22	22	19	5

Source: ABS Death Registrations, Estimated Resident Populations (HOIST).

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