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Injury & Poisoning: Morbidity Among Residents of the Illawarra Health Area

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Abstract

This issue of The Illawarra Population Health Profiler looks at the causes of hospitalisation due to injury and poisonings in 1997/98 and 1998/99 among people resident in the Illawarra Health Area, and each of its Local Government Areas (LGAs). In addition population-based 1997 survey data relating to injuries among Illawarra adults aged 16 years and over are reported. The report examines un-intentional injury including falls and road injuries as well as intentional injuries such as self-harm.

Keywords

injury, among, area, morbidity, poisoning:, health, illawarra, &, residents

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The Illawarra Population Health Profiler

Division of Population Health & Planning Illawarra Area Health Service

Issue 3, October 2001

INJURY & POISONING

Morbidity Among Residents of the Illawarra Health Area

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This issue of *The Illawarra Population Health Profiler* looks at the causes of **hospitalisation** due to injury and poisonings in 1997/98 and 1998/99 among people resident in the Illawarra Health Area, and each of its Local Government Areas (LGAs). In addition population-based 1997 **survey** data relating to injuries among Illawarra adults aged 16 years and over are reported. The report examines un-intentional injury including falls and road injuries as well as intentional injuries such as self-harm.

Purpose and Context

To obtain a more complete picture about injury occurrence in the Area, it is recommended that this *Profiler* issue be read in conjunction with *Issue 4: Injury and Poisoning – Mortality among Residents of the Illawarra Health Area*. In addition, readers are referred to the report of the 1996 *Illawarra Youth Health Survey* (IYHS), available from the Division of Population Health and Planning, which includes detailed information about injury occurrence, risk factors, causes and circumstances among young people resident in the Illawarra Health Area.¹

It is hoped that these Issues of the *Profiler* (and the IYHS report) – which together provide a fairly comprehensive review of available injury surveillance information – be used by people working within the Illawarra Area Health Service (IAHS), as well as those outside the public health system with an interest in injury prevention. This may include others working within the health system (such as general practitioners), in Local Government, other State Government Departments and Authorities (such as the Departments of Sport and Recreation

and Education, Roads and Traffic Authority), and/ or individuals and groups within the broader community.

Importantly, it is hoped that this information is used to help assess injury prevention needs and priorities, motivate local intersectoral action, and, as far as possible given the limitations of the data, monitor progress being made. For example, injury surveillance profiles could help inform the Kiama Safe Communities Pilot Program, local suicide prevention initiatives, the development of a regional Injury Prevention Strategic Plan through the IAHS's Injury Advisory Group, planning and evaluation by Community Health Services, Local Government, Healthy Cities Illawarra etc.

Methods

Data for this profile were obtained from NSW Health's *NSW Inpatients Statistics Collection*, and the Australian Bureau of Statistics' *Estimated Resident Populations*. These data were accessed and analysed through NSW Health's *Health Outcomes and Information Statistical Toolkit* (HOIST), using the Statistical Analysis System (SAS, Version 6.12).

The survey data were accessed from NSW Health's on-line *NSW Health Survey* report.² Estimates related to injury occurrence in the previous 12 months and risk factors (smoke alarms) are based on responses from 1,026 Illawarra residents (and 17,531 NSW residents) aged 16 years and over in 1997.

For the purposes of this report, injury and poisoning hospital separations coded as medical misadventures, adverse effects of medications, and acute hospital transfers and statistical discharges, have been excluded. Definitions of injury causes based on the International Classification of Diseases (Version 9) are shown in the Appendix.

Standardised Separation Ratios (SSR) and '**Excess Separations**' for the two-year period 1997/98 to 1998/99 have been used to compare the study population (e.g. residents of the whole Illawarra Health Area or Wollongong Local Government Area (LGA) or sub-areas

within Wollongong LGA), with the total NSW population. A SSR of 1.0 indicates that the separation rate for the study population equals the NSW rate, after taking into account differences in age structures of the populations (by indirect age-standardisation). A SSR of 2.0 indicates a separation rate for the study population double (or 100% higher than), and a SSR of 0.5 indicates a separation rate half (or 50% lower than), that of the NSW population. 'Excess separations' represent the number of hospital separations which occurred above (+) (or below (-)) the numbers expected based on the NSW average.

Arrows in the tables (and/ or comments in the text) indicate whether any differences in rates between the study and NSW populations are statistically significant. The 5% level of significance has been used for all comparisons.

For major causes of hospitalisation, **age-specific rates** for both males and females are shown to demonstrate which age/ sex groups are at highest risk. The **top five ranking injury causes by age group** among residents of the Illawarra Health Area, and each of its LGAs, are also presented. The *NSW Health Survey* has also provided data to estimate age-specific rates of injury (all causes) for which medical care was sought in the previous 12 months.

In addition, for major causes of hospitalisation, **directly age-standardised rates** by sex and LGA are reported. These direct standardisations used the 1991 Australian population as the standard. In contrast to the (indirectly age-standardised) SSRs, directly age-standardised rates can be directly compared between each other, e.g. males with females, Kiama with Wollongong LGA. Directly age-standardised rates also allow a comparison over time, so **trends** over the last decade (1989/90-1998/99) are also shown for the major causes. Where comparable trend data have been published for NSW, these are also shown.³

Some Data Limitations

It should, however, be noted that injury-related hospital separations (and, even more so, deaths) represent only the tip of the injury iceberg, by

being limited to injuries at the more severe end of the spectrum. While the *NSW Health Survey* has provided data on the occurrence of all injuries for which medical care was sought in the previous 12 months, i.e. including injuries below 'the tip of the iceberg', this survey does not record causes of injury, and has limited information about risk factors for injury. The *1996 Illawarra Youth Health Survey* has filled this gap to some extent, but only for young people.¹ A more comprehensive picture of the injury problem locally, for example, could be obtained by also looking at injury causes in Emergency Department (ED) presentation data; however, unfortunately, the ED data collected in this Area do not currently include information about injury causes.

In addition, it should be noted that injury hospitalisation rates reflect a number of factors, including the underlying incidence of injury in the community, injury severity, hospital administrative practices, diagnostic coding practices, and access. For example, an increase in injury hospitalisation rates over time may reflect changes in admission practices and/ or improved access, rather than an underlying increase in injury occurrence.

Overview

- In 1997 an estimated 30% of Illawarra males and 21% of Illawarra females aged 16 years and over had at least one **injury for which medical care was sought** in the previous 12 months. Younger people were at highest risk - among 16-24 year olds, more than half of males and quarter of females had such an injury. About 38% of Illawarra residents (males: 47%, females: 26%) sought care in an Emergency Department for their injury, and 9% were hospitalised.
- In 1997/98-1998/99, 12,627 **hospital separations** for injury and poisonings were recorded among Illawarra residents, accounting for 5.9% of all hospitalisations.

Males accounted for 62% of injury hospitalisations, and people aged 65 years and over accounted for 20%. The highest risk age group was 75 years and over for

males and females; risk of injury hospitalisation also peaked among 15-24 year olds for males.

Major Causes

- In 1997/98-1998/99 the main causes of injury hospitalisation among Illawarra residents were (in order): falls, road injury, self-harm, interpersonal violence, and sports injury.
- For **males** the main causes were (in order): falls, road injury, interpersonal violence, and self-harm, followed by machinery-in-operation, and sports injury. For **females** the main causes were (in order): falls, road injury, self-harm, unintentional poisoning by drugs and interpersonal violence.
- Additional common causes among **children** were fire/burns/scalds, and unintentional poisonings (0-4 years), and motor vehicle non-traffic accidents (5-14 years).
- **Falls** were the commonest cause of injury hospitalisation among Illawarra residents in all age groups, with the exception of 15-24 year olds. People aged 65 years and over, and in particular 75 years and over, are at highest risk. Over the last decade falls hospitalisation rates have shown a gradual upward trend, most apparent among those aged 65 years and over, consistent with NSW-wide trends.
- **Road injury** was the commonest cause of injury hospitalisation in the age group 15-24 years, and second commonest cause in the age groups 5-14, 45-64, 65-74 years, and 75 years and over. The highest risk age group for road injury was 15-24 years, with males being at nearly double the risk for females. Road injury hospitalisation rates among Illawarra males (particularly aged 15-24 years) have followed a slight upward trend recently, contrary to the NSW-wide trend.
- **Self-harm** was the second commonest cause of injury hospitalisation among 25-44

year olds, third commonest among 45-64 year olds, and fourth commonest among 15-24 year olds. With the exception of the peak age group 25-34 years, females were at higher risk than males at all ages less than 55 years. Self-harm hospitalisation rates have shown an upward trend recently, consistent with the NSW-wide trend.

- **Interpersonal violence** ranked in the top five causes of injury hospitalisation in all age groups up to 65 years. The highest risk age group was 25-34 years, followed closely by the 15-24 years age group. Males were at considerably higher risk than females in all age groups prior to 75 years.
- **Sports injury** ranked in the top five causes of injury hospitalisations in the age groups 5-14, 15-24, and 25-44 years. **Machinery-in-operation** ranked in the top four causes among those aged 45-64 and 65-74 years.

Comparisons with NSW

- In 1997, the proportions of Illawarra and NSW residents who had an **injury for which they sought medical attention** in the previous 12 months were **similar**. However, Illawarra residents (particularly males) were significantly **more likely to attend an ED** for their injury than the average NSW resident (38% versus 25%).²
- In 1997/98-1998/99 the **total** injury hospitalisation rate for Illawarra residents was **average** for males, and significantly **lower** (13%) than the NSW average for females.
- Hospitalisation rates among Illawarra males were significantly **higher** than the NSW average for **sports injury** and **self-harm**. Hospitalisation rates among Illawarra residents were significantly lower than the NSW average for falls (males and females), interpersonal violence (females), unintentional poisoning by drugs etc (males and females), fire/ burns/ scalds (males and females), and motor vehicle non-traffic accidents (females).

In 1997 Illawarra residents aged 16 years and over were significantly more likely than NSW residents to report having **smoke alarms** installed in their house.²

- Injury causes which accounted for the highest number of 'excess' hospitalisations (among Illawarra males) were (in order): **sports injury, self-harm, road injury, motor vehicle non-traffic accidents, and machinery-in-operation**.

Local Government Areas

- Hospitalisation rates for the following specific causes were significantly higher than the NSW averages:
 - road injury among Shellharbour males and Kiama females;
 - self-harm among Shellharbour and Shoalhaven males;
 - sports injury among Wollongong, Kiama and Shoalhaven males; and
 - motor vehicle non-traffic accidents among Shoalhaven males.
- Other causes of particular importance in individual LGAs include:
 - falls in the elderly among Kiama females;
 - machinery-in-operation among Shellharbour, and to a lesser extent Kiama, males; and
 - motor vehicle non-traffic accidents among Kiama males.

Illawarra Health Area

- In 1997/98-1998/99, 12,627 hospital separations for injury and poisonings were recorded among residents of the Illawarra Health Area, accounting for 5.9% of all 215,326 separations during this period (Table 1).
- Of the 12,627 injury hospitalisations, 62% (7,814) were among males, and 20% (2,534) among people aged 65 years and over.
- The hospital separation rate (directly age-standardised) for injury among Illawarra

males was 1.81 times (i.e. 81% higher than) the rate for Illawarra females (2,370 versus 1,308 per 100,000) (Figure 1).

- For males, injury hospitalisation rates peaked in the age groups 15-24 years (3,461 per 100,000) and 75 years and over (3,054 per 100,000). Whereas for females, rates were similar for all age groups prior to 65 years of age (about 1,000 per 100,000), with rates peaking in the age group 75 years and over (5,035 per 100,000) (Figure 2).
- From responses to the *NSW Health Survey*,² it is estimated that in 1997 30.1% of Illawarra males and 20.7% of Illawarra females aged 16 years and over had at least one injury for which medical care was sought in the previous 12 months. Males were nearly three times more likely to report two or more injuries (12.7% versus 4.4%).

Younger respondents were most likely to report such injuries - in the age group 16-24 years, more than half of males (53.7%) and more than a quarter of females (27.9%) reported injury. The proportion of respondents reporting an injury generally declined with age, then increased slightly among males from about 65 years. Males were more likely than females to report injuries in all age groups except 55-64 years (Figure 3).

Source of Health Care

- In 1997 an estimated that 46.7% of Illawarra males and 25.6% of Illawarra females who sustained an injury requiring medical attention, sought care in an Emergency Department. About 9.9% of Illawarra males and 8.0% of Illawarra females sustaining such an injury were hospitalised.²

Care was most commonly sought, however, particularly by females, from a GP/ Medical Centre (males: 64.6%; females: 77.4%). In addition about 20% sought care from a physiotherapist (males: 23.4%, females: 18.0%) (Figure 4).

Major Causes By Sex

- In 1997/98-1998/99 the most common causes of injury-related hospitalisations among Illawarra **males** were (in order):
 - falls (1,951, 25%),
 - road injury (875, 11%),
 - interpersonal violence (461, 6%), and
 - self-harm (383, 5%) (Table 1).
- The most common causes of injury-related hospitalisations among Illawarra **females** were (in order):
 - falls (2,149, 45%),
 - road injury (459, 10%),
 - self-harm (407, 8%), and
 - unintentional poisoning by drugs etc (143, 3%) (Table 1).
- Hospital separation rates (per 100,000) were higher among Illawarra males than females for most causes, including:
 - falls (all ages): - males: 574.1 , females: 516.6
 - road injury:- males: 269.3, females: 136.9
 - interpersonal violence:- males: 146.6, females: 45.2
 - sports injury:- males: 88.0, females: 13.7
 - machinery-in-operation:- males: 83.3, females: 4.1
 - fire, burns and scalds:- males: 32.4, females: 18.2

but excluding:

- falls (65 years and over):- males: 1,293.1, females: 2,196.8
- self-harm:- males: 120.4, females: 129.2
- unintentional poisoning by drugs etc:- males: 40.4, females: 42.6 (Figures 6 -21).

Comparisons with NSW

- In 1997 the proportions of Illawarra males and females who reported sustaining an **injury for which medical care was sought** in the previous 12 months (30.1% and 20.7%) were **similar** to the proportions for NSW males and females (31.4% and 19.9%).²

This pattern of source of care for injury among Illawarra residents was similar to that found for NSW residents as a whole. The main exception is that a significantly higher proportion of Illawarra residents (38.0% versus 25.3%) (and males in particular, 46.7% versus 27.2%) reported that they sought care for their injuries at an **Emergency Department**. In addition, a significantly lower proportion of Illawarra than NSW males reported that they had sought care at a sports clinic (1.8% versus 5.0%) (Figure 4).

- In 1997/98-1998/99 the total injury **hospitalisation** rate among Illawarra **males** was **average** for NSW. However, for Illawarra **females**, the rate was 13% **lower** than the NSW average, a significant difference (Table 1).
- Hospital separation rates among Illawarra **males** were significantly **higher** than the NSW average for **sports injury** and **self-harm**, and significantly lower than the NSW average for falls, unintentional poisoning by drugs etc, and fire/ burns/ scalds (Table 1).
- Hospital separation rates among Illawarra females were significantly lower than the NSW average for falls, interpersonal violence, unintentional poisoning by drugs etc, fire/ burns/ scalds, and motor vehicle non-traffic accidents (Table 1).
- With the above exceptions, hospital separation rates among Illawarra males and females were not significantly different from the NSW averages for any of the major specific causes (Table 3).
- (In addition, it is worth noting that during this same period 1997/98-1998/99 only four Illawarra residents were hospitalised for injuries related to agricultural machinery (ICD9 E code 919.0, which was not included in the definition of 'machinery-in-operation' used in the main analysis). Rates among Illawarra residents were significantly lower than the NSW average for both males (based on 4 hospitalisations), and females (based on 0 hospitalisations).)

- Notably, in 1997 Illawarra residents aged 16 years and over were significantly more likely than NSW residents to report having **smoke alarms** installed in their house (69.3% versus 61.1%).²

Excess Hospitalisations

- Injury causes which accounted for the highest number of excess hospitalisations among Illawarra **males** (i.e. above that expected based on rates in the total NSW population) were:
 - **sports injury** (86 excess hospitalisations);
 - **self-harm** (47);
 - **road injury** (34);
 - **motor vehicle non-traffic accidents** (27); and
 - **machinery-in-operation** (27) (Table 1).

Major Causes By Age Group

- **Falls** were the commonest cause of injury-related hospitalisation in all age groups, with the exception of 15-24 year olds. Falls accounted for the majority of injury hospitalisations among those aged 65 years and over; in the 75 years and older age group falls accounted for 78% of injury hospitalisations (1,254) (Table 2).

The highest risk age group for falls injuries was 75 years and over for both males (2,047 per 100,000) and females (4,174 per 100,000). Males were at higher risk of hospitalisation due to falls at all ages younger than 65 years; whereas females were at higher risk above 65 years of age, and particularly above 75 years (Figure 14).

- **Road injury** ranked in the top four causes of injury-related hospitalisations in all age groups. It was the commonest cause among 15-24 year olds, accounting for 18% (384) in this age group. Road injury was the second commonest cause among 5-14 year olds and those aged 45 years and over (Table 2).

The highest risk age group for road injury was 15-24 years for males (5,917 per 100,000) and females (2,219 per 100,000). Males were at higher risk than females in all age groups prior to 75 years (Figure 15).

- **Self-harm** ranked in the top four causes in all age groups from 15-24 years. It was the second commonest cause in the 25-44 years age group and third commonest cause among people aged 45-64 years (Table 2).

The highest risk age group for self-harm was 25-34 years for both males (275.4 per 100,000) and females (241.5 per 100,000). With the exception of this peak age group, females were at higher risk than males at all ages less than 55 years (Figure 16).

- **Interpersonal violence** ranked in the top five causes of injury-related hospitalisation in all age groups up to 65 years. It was the second commonest cause among infants aged less than 1 year, and third commonest cause among 15-24 year olds (Table 2).

The highest risk age group for interpersonal violence was 25-34 years for both males (307.2 per 100,000) and females (81.9 per 100,000), followed closely by the 15-24 years age group. Males were at higher risk than females in all age groups prior to 75 years (Figure 17).

- **Sports injury** ranked in the top five causes in the age groups 5-14, 15-24, and 25-44 years (Table 2).

The highest risk age group for sports injury was 15-24 years for males (205.5 per 100,000) and 5-14 years for females (37.0 per 100,000). Males were at higher risk than females in all age groups prior to 75 years (Figure 18).

- **Machinery-in-operation** ranked in the top four causes of injury hospitalisations for people aged 45-64 years and 65-74 years (Table 2).

The highest risk age group for injury hospitalisations caused by machinery-in-operation was 15-24 years for males (122.5

per 100,000) and 45-54 years for females (12.0 per 100,000). Males were at much higher risk than females; in all age groups between 15-24 years and 55-64 years, rates were higher than 100 per 100,000 for males and lower than 15 per 100,000 for females (Figure 19).

- **Fire/ burns/ scalds** was the second commonest cause in the age group 1-4 years, accounting for 15% (75) of injury hospitalisations in this age group (Table 2).

Children aged less than 5 years were at much higher risk than people in all other age groups, rates being 173.7 and 156.8 per 100,000 among males and females in this age group, respectively. Males were only at slightly risk higher than females in all age groups (Figure 20).

- **Unintentional poisoning** ranked in the top five causes among young children – poisoning with drugs etc among 1-4 year olds and poisoning with other substances among infants aged less than 1 year (Table 2).

Children aged less than 5 years were at higher risk of hospitalisation for poisoning with drugs etc than people in all other age groups, rates being 107.3 and 122.0 per 100,000 among males and females in this age group, respectively. There were secondary peaks among males aged 25-34 years (59.3 per 100,000) and females aged 35-44 years (58.7 per 100,000) and 75 years and over (71.1 per 100,000) (Figure 21).

- **Motor vehicle non-traffic accidents** ranked in the top five causes among 5-14 years olds, and people aged 75 years and older (Table 2).

Trends

- Between 1989/90 and 1998/99, the directly age-standardised total injury hospitalisation rate among Illawarra males increased 57% from 1,524.4 per 100,000 in 1989/90 to 2,390.2 per 100,000 in 1998/99. For females over this same period, the rate increased 58% from 862.4 to 1,360.2 per

100,000. Since 1995/96, however, rates have been fairly stable for both males and females (Figure 5).

The overall upward trend in the Illawarra has been apparently steeper than the gradual upward trend for NSW as a whole (Figure 5). The increase in total injury hospitalisation rates in NSW over the last decade are accounted for by an increase in rate of same-day admissions, while injury hospitalisation rates for more than one day have remained stable.³ This suggests that the increase in injury hospitalisation rates over the last decade is more a reflection of changes in hospital administrative practices, than an underlying increase in injury occurrence.

- **Falls injury** hospitalisation rates among both Illawarra males and females have shown a gradual upward trend over the last decade, increasing by about 50% in the 65 years and over age group (and about 30% in the all ages group). The increase in the Illawarra appears to be slightly higher than that for NSW as a whole (Figures 22-23).³
- **Road injury** hospitalisation rates among Illawarra males have followed a slight upward trend over the last decade, contrary to the NSW-wide trend.³ This has been most apparent among males aged 15-24 years, but is not apparent for females (Figures 24-25).
- **Self-harm** hospitalisation rates among both Illawarra males and females (all ages, 15-24 years) have shown an overall upward trend, more than doubling, over the last decade, despite a clear decline in 1995/96-1996/97. The overall upward trend is consistent with the NSW-trend (Figures 26-27).³

Wollongong Local Government Area

- Among Wollongong LGA residents in 6,724 injury hospitalisations were recorded, in 1997/98-1998/99, accounting for 5.9%

of all 113, 986 separations during this period (Table 3).

- Of the 6,724 injury hospitalisations, 62% (4,166) were among males, and 19% (1,253) among people aged 65 years and over. The (directly age-standardised) hospital separation rate for injury and poisoning among Wollongong males was 1.77 times (i.e. 77% higher than) the rate for Wollongong females (2,277 versus 1,286 per 100,000) (Figure 1).

Major Causes By Sex

- The most common causes of injury hospitalisations among Wollongong **males** were: falls (1,059, 25%), road injury (454, 11%), interpersonal violence (270, 6%), followed by self-harm (208, 5%) (Table 3).
- The most common causes of injury hospitalisations among Wollongong **females** were: falls (1,152, 45%), road injury (237, 9%), self-harm (219, 9%), followed by interpersonal violence (83, 3%) (Table 3).

Comparisons with NSW

- The total injury hospital separation rate among Wollongong **males** was 5% **lower**, and among Wollongong **females** was 15% **lower**, than the NSW average, both significant differences (Table 3).
- Hospital separation rates among Wollongong **males** were significantly **higher** than the NSW average for **sports** injury, and significantly lower than the NSW average for unintentional poisoning (by both drugs etc and 'other'), and fire/ burns/ scalds (Table 3).
- Hospital separation rates among Wollongong females were significantly lower than the NSW average for road injury, unintentional poisoning by drugs etc, and motor vehicle (MV) non-traffic injury.
- With the above exceptions, hospital separation rates among Wollongong males

and females were not significantly different from the NSW averages for any specific cause (Table 3).

Excess Hospitalisations

- Injury causes which accounted for the highest number of excess hospitalisations among Wollongong **males** (i.e. above that expected based on rates in the total NSW population) were: **sports injury** (48 excess hospitalisations); and **self-harm** (16).

Comparisons with Other LGAs

- Total injury hospitalisation rates for both Wollongong males and females were the lowest of the Illawarra LGAs (although the differences between LGAs for females were minor). The total injury hospitalisation rate among Wollongong males was significantly lower than the rate for Shoalhaven males (Figure 1).
- **Falls** hospitalisation rates among Wollongong males and females aged 65 years and over were lower than for other LGA residents. The rate for Wollongong females in this age group was significantly lower than the Kiama rate (Figure 5). (However this pattern was not evident in all age groups combined (Figure 6).)
- **Road injury** hospitalisation rates among Wollongong males and females (all age groups combined) were lower than for other LGA residents. The rate for Wollongong females was significantly lower than the Kiama rate (Figure 6). (However this pattern was not evident just in the 15-24 years age group (Figure 9).)
- Hospitalisation rates among Wollongong males and females were not significantly different from the other LGAs for self-harm, interpersonal violence, nor sports injury (Figures 10-13).

Sub-Areas within Wollongong LGA

- **Total injury** hospitalisation rates (all ages) among Wollongong LGA **males** were

significantly **higher** than the NSW average in the **Warrawong** sub-area (13% higher), and significantly lower in the Unanderra (12% lower) and Wollongong (9% lower) sub-areas .

For females, total injury hospitalisation rates (all ages) were significantly lower than the NSW average in the Corrimal (11% lower), Unanderra (31% lower) and Wollongong (17% lower) sub-areas (Table 4).

- **Falls injury** hospitalisation rates (65 years and over) among Wollongong LGA males were significantly lower than the NSW average in the Thirroul (40% lower) and Warrawong (46% lower) sub-areas. However rates were not significantly different to the NSW average in any of the sub-areas for males in the all ages group.

For females, falls injury hospitalisation rates (65 years and over) were significantly lower than the NSW average in the Thirroul (25% lower), Unanderra (45% lower), Warrawong (20% lower), and Wollongong (17% lower) sub-areas. In the female all ages group, rates were significantly lower than the NSW average just in the Thirroul (13% lower) and Unanderra (36% lower) sub-areas (Table 6).

- **Road injury** hospitalisation rates (all ages) were significantly **higher** than the NSW average among **Thirroul** sub-area males (31% higher), and significantly lower than the NSW average among Corrimal (32% lower) and Unanderra (40% lower) sub-area females (Table 6).
- **Self-harm** hospitalisation rates (all ages) among Wollongong LGA **males** were significantly **higher** than the NSW average in the **Warrawong** (83% higher) and **Wollongong** (45% higher) sub-areas, and significantly lower in the Unanderra sub-area (46% lower).

For **females**, self-harm injury hospitalisation rates (all ages) were significantly **higher** than the NSW average in the **Warrawong** sub-area (40% higher),

and significantly lower than the NSW average in the Thirroul sub-area (30% lower) (Table 6).

- **Interpersonal violence** hospitalisation rates (all ages) among Wollongong LGA **males** were significantly **higher** than the NSW average in the **Warrawong** sub-area (41% higher), and significantly lower in the Unanderra sub-area (38% lower).

For females, the interpersonal violence hospitalisation rate (all ages) was significantly lower than the NSW average in the Unanderra sub-area (63% lower) (Table 6).

- **Sports injury** hospitalisation rates (all ages) among Wollongong LGA **males** were significantly **higher** than the NSW average in the **Dapto** (55% higher), **Unanderra** (48% higher) and **Wollongong** (38% higher) sub-areas. For females, sports injury hospitalisation rates (all ages) were not significantly different to the NSW averages in any sub-areas (Table 6).

Major Causes By Age Group

- **Falls** were the most common cause of injury-related hospitalisation in all age groups, with the exception of 15-24 year olds. Falls accounted for the majority of injury-related hospitalisations among those aged 65 years and over; in the 75 years and older age group falls accounted for 78% (635) (Table 5).
- **Road injury** ranked in the top four causes of injury-related hospitalisation in all age groups. It was the commonest cause among 15-24 year olds, accounting for 18% (218) in this age group. Road injury was the second commonest cause among 5-14 year olds and those aged 45 years and over (Table 5).
- **Self-harm** ranked in the top five causes in all age groups from 15-24 years. It was the second commonest cause in the 25-44 year age group and third commonest cause among people aged 45-74 years (Table 5).

- **Interpersonal violence** ranked in the top five causes of injury hospitalisation in all age groups up to 75 years. It was the second commonest cause among infants aged less than 1 year, and third commonest cause among 15-24 year olds (Table 5).
- **Sports injury** ranked in the top five causes in the age groups 5-14, 15-24, and 25-44 years (Table 5).
- **Fire/burns/scalds** was the second commonest cause in the age group 1-4 years, accounting for 14% (39) of injury hospitalisations in this age group. It was also the third commonest cause among people aged 75 years and over (Table 5).
- **Machinery-in-operation** was the fourth commonest cause among 45-64 year olds, accounting for 4% (51) of injury hospitalisations in this age group (Table 5).

Shellharbour Local Government Area

- In 1997/98-1998/99, 2,023 hospital separations for injury and poisoning were recorded among residents of the Shellharbour LGA, accounting for 5.7% of all 35,243 separations during this period (Table 7).
- Of the 2,023 injury hospitalisations, 64% (1,303) were among males, and 13% (267) among people aged 65 years and over. The (directly age-standardised) hospital separation rate for injury and poisoning among Shellharbour males was 1.82 times (i.e. 82% higher than) the rate for Shellharbour females (2,389 versus 1,311 per 100,000) (Figure 1).

Major Causes By Sex

- The most common causes of injury hospitalisations among Shellharbour **males** were: falls (283, 22%), road injury (171, 13%), interpersonal violence (83, 6%), followed by self-harm (73, 6%) (Table 7).

- The most common causes of injury hospitalisations among Shellharbour **females** were: falls (279, 39%), road injury (75, 10%), self-harm (74, 10%), followed by interpersonal violence (24, 3%) (Table 7).

Comparisons with NSW

- The total injury hospital separation rate among Shellharbour **males** was **average** for NSW. The rate among Shellharbour **females** was **12% lower** than the NSW average, a significant difference (Table 7).
- Hospital separation rates among Shellharbour **males** were significantly **higher** than the NSW averages for **road injury** and **self-harm**, and significantly lower than the NSW averages for unintentional poisoning by drugs etc, and fire/ burns/ scalds (Table 7).
- Hospital separation rates among Shellharbour females were significantly lower than the NSW average for unintentional poisoning by drugs etc, fire/ burns/ scalds, and machinery-in-operation (Table 7).
- With the above exceptions, hospital separation rates among Shellharbour males and females were not significantly different from the NSW averages for any specific causes (Table 7).

Excess Hospitalisations

- Injury causes which accounted for the highest number of excess hospitalisations among Shellharbour **males** (i.e. above that expected based on rates in the total NSW population) were: **road injury** (29 excess hospitalisations); **self-harm** (16); and **machinery-in-operation** (14).

Comparisons with Other LGAs

- Total injury hospitalisation rates for both Shellharbour males and females were not significantly different to rates for the other LGAs within the Illawarra Health Area (Figure 1).

- Similarly, hospitalisation rates among males and females resident in the Shellharbour LGA were not significantly different from the other LGAs for falls (all ages, 65 years and over), road injury (all ages, 15-24 years), self-harm (all ages, 15-24 years), interpersonal violence, nor sports injury (Figures 6-13).

Major Causes By Age Group

- **Falls** were the commonest cause of injury-related hospitalisation in all age groups, with the exception of 15-24 year olds. Falls accounted for the majority of injury hospitalisations among those aged 65 years and over; in the 75 years and older age group falls accounted for 81% (121) (Table 8).
- **Road injury** ranked in the top three causes of injury hospitalisation in all age groups. It was the commonest cause among 15-24 year olds, accounting for 19% (65) in this age group. Road injury was the second commonest cause in the age groups 5-14 years and 45 years and over (Table 8).
- **Self-harm** ranked in the top four causes in all age groups from 15-24 years. It was the second commonest cause in the 25-44 years age group, and third commonest cause among people aged 15-24, 45-64, and 75 years and over (Table 8).
- **Interpersonal violence** ranked in the top five causes of injury-related hospitalisation in all age groups up to 75 years (Table 8).
- **Machinery-in-operation** ranked in the top five causes among people aged 25-44, 45-64, and 65-74 years (Table 8).
- **Sports injury** ranked in the top five causes in the age groups 5-14, and 15-24 years (Table 8).

Kiama Local Government Area

- In 1997/98-1998/99, 739 hospital separations for injury and poisoning were recorded among residents of the Kiama LGA, accounting for 6.2% of all 11,984 separations during this period.
- Of the 739 injury hospitalisations, 59% (435) were among males, and 30% (221) among people aged 65 years and over. The (directly age-standardised) hospital separation rate for injury and poisoning among Kiama males was 1.94 times (i.e. 94% higher than) the rate for Kiama females (2,538 versus 1,310 per 100,000) (Figure 1).

Major Causes By Sex

- The most common causes of injury hospitalisations among Kiama **males** were: falls (123, 28%), and road injury (43, 10%), followed by sports injury (19, 4%), machinery-in-operation and motor vehicle non-traffic injury (18 each, 4%) (Table 9).
- The most common causes of injury hospitalisations among Kiama **females** were: falls (167, 55%), road injury (41, 13%), followed by self-harm (16, 5%) (Table 9).

Comparisons with NSW

- The total injury hospital separation rates among Kiama males and females were **average** for NSW).
- Hospital separation rates among Kiama **males** were significantly **higher** than the NSW average for **sports injury**, and significantly lower than the NSW average for unintentional poisoning (excluding drugs etc), and fire/ burns/ scalds (Table 9).
- Hospital separation rates among Kiama **females** were significantly **higher** than the NSW average for **road injury**, and significantly lower than the NSW average for interpersonal violence, unintentional

poisoning by drugs etc, and fire/ burns/ scalds (Table 9).

Excess Hospitalisations

- Injury causes which accounted for the highest number of excess hospitalisations among Kiama **males** (i.e. above that expected based on rates in the total NSW population) were: **sports injury** (10 excess hospitalisations); **motor vehicle non-traffic accident** (7); and **machinery-in-operation** (5).
- For Kiama **females**, **road injury** accounted for 14 excess hospitalisations.

Comparisons with Other LGAs

- Total injury hospitalisation rates for both Kiama males and females were not significantly different to rates for residents of the other LGAs within the Illawarra Health Area (Figure 1).
- **Falls** injury hospitalisation rates for Kiama males (all ages combined) and females (all ages combined, 65 years and over) were higher than for residents of the other LGAs (Figures 4-5). The rate for Kiama females aged 65 years and over was significantly higher than the rate for Wollongong females (Figure 7).
- **Road injury** hospitalisation rates among Kiama females (all ages combined) were the highest of the LGAs, being significantly higher than for females in both the Wollongong and Shoalhaven LGAs (Figure 6). This pattern was not apparent just in the age group 15-24 years, nor among males (Figures 8-9).
- **Self-harm** hospitalisation rates for Kiama males (all ages combined, 15-24 years) and females (all ages combined) were the lowest of the Illawarra LGAs. However these differences were not statistically significant (Figures 10-11).
- **Interpersonal violence** hospitalisation rates for Kiama males and females were the

lowest of the Illawarra LGAs (being 0 among Kiama females) (Figure 12).

- **Sports injury** hospitalisation rates among Kiama males and females were the highest of the Illawarra LGAs. However these differences were not statistically significant (Figure 13).

Major Causes By Age Group

- **Falls** were the most common cause of injury-related hospitalisation in all age groups, with the exception of 15-24 year olds. Falls accounted for the majority of injury hospitalisations among those aged 65 years and over; in the 75 years and older age group falls accounted for 79% (123) (Table 10).
- **Road injury** was the commonest cause of injury hospitalisation among 15-24 year olds, and second commonest cause in all other age groups (Table 10).
- **Self-harm** ranked in the top five causes among 15-24 year olds (5th) and 25-44 year olds (3rd) (Table 10).
- **Sports injury** ranked in the top four causes in the age groups 5-14, 15-24, and 25-44 years (Table 10).
- **Interpersonal violence** ranked in the top five causes in all age groups up to 65 years. It was the second commonest cause among infants aged less than 1 year, and third commonest cause among 15-24 year olds (Table 10).
- **Machinery-in-operation** ranked in the top five causes for people aged 25-44, 45-64, 65-74 years (Table 10).
- **Motor vehicle non-traffic accidents** ranked in the top four causes for people aged 5-14 years and 45 years and over (Table 10).

Shoalhaven Local Government Area

- In 1997/98-1998/99, 3,141 hospital separations for injury and poisonings were recorded among residents of the Shoalhaven LGA, accounting for 5.8% of all 54,113 separations during this period.
- Of the 3,141 injury hospitalisations, 61% (1,910) were among males, and 25% (793) among people aged 65 years and over. The (directly age-standardised) hospital separation rate for injury and poisoning among Shoalhaven males was 1.93 times (i.e. 93% higher than) the rate for Shoalhaven females (2,640 versus 1,368 per 100,000) (Figure 3).

Major Causes By Sex

- The most common causes of injury hospitalisations among Shoalhaven **males** were: falls (486, 25%), road injury (207, 11%), followed by self-harm (93, 5%) and interpersonal violence (91, 5%) (Table 11).
- The most common causes of injury hospitalisations among Shoalhaven **females** were: falls (551, 45%), road injury (106, 9%), self-harm (98, 8%), and unintentional poisoning by drugs (43, 3%) (Table 11).

Comparisons with NSW

- The total injury hospital separation rate among Shoalhaven **males** was **average** for NSW. For Shoalhaven **females**, the injury hospitalisation rate was 11% **lower** than the NSW average, a significant difference.
- Hospital separation rates among Shoalhaven **males** were significantly **higher** than the NSW average for **motor vehicle non-traffic injury, self-harm, and sports injury**, and significantly lower than the NSW average for falls (Table 11).
- Hospitalisation rates among Shoalhaven females were not significantly higher than the NSW average for any specific cause. They were significantly lower than the NSW average for falls (Table 11).

Excess Hospitalisations

- Injury causes which accounted for the highest number of excess hospitalisations among Shoalhaven **males** (i.e. above that expected based on rates in the total NSW population) were **motor vehicle non-traffic injury** (30 excess hospitalisations); **sports injury** (22); **road injury** (21); and **self-harm** (17).

Comparisons with Other LGAs

- Total injury hospitalisation rates for Shoalhaven males and females were higher than for residents in the other LGAs (although the differences between LGAs for females were minor). The rate among Shoalhaven males was significantly higher than the rate for Wollongong males (Figure 1).
- **Road injury** hospitalisation rates among Shoalhaven males (all age groups combined, 15-24 years) were higher than for residents in the other LGAs (although these differences were not statistically significant). This pattern was not apparent for Shoalhaven females (Figures 8-9).
- **Self-harm** hospitalisation rates among Shoalhaven males (all ages, 15-24 years) and females (all ages only) were higher than for residents of the other LGAs (although these differences were not statistically significant) (Figures 10-11).
- **Interpersonal violence** hospitalisation rates among Shoalhaven males and females (all ages combined) were higher than for residents in the other LGAs (although these differences were not statistically significant) (Figure 12).
- **Sports injury** hospitalisation rates among Shoalhaven males and females were the 2nd highest of the Illawarra LGAs (following Kiama) (although these differences were not statistically significant) (Figure 13).

Major Causes By Age Group

- **Falls** were the commonest cause of injury-related hospitalisation in all age groups, with the exception of 15-24 year olds and 25-44 year olds, for whom falls ranked second. Falls accounted for the majority of injury hospitalisations among those aged 65 years and over; in the 75 years and older age group falls accounted for 77% (375) (Table 12).
- **Road injury** ranked in the top four causes of injury hospitalisation in all age groups (except infants less than 1 year). It was the commonest cause among 15-24 year olds, accounting for 18% (81) in this age group. Road injury was the second commonest cause among 5-14 year olds and those aged 45 years and over (Table 12).
- **Self-harm** ranked in the top five causes in all age groups from 15-24 years. It was the commonest cause of injury hospitalisation in the 25-44 years age group, accounting for 13% (110) in this age group (Table 12).
- **Interpersonal violence** ranked in the top four causes in the age groups less than 1 year, 15-24 years and 25-44 years (Table 12).
- **Motor vehicle non-traffic accidents** ranked in the top five causes in the age groups 1-4, 5-14, 45-64, 65-74 years, and 75 years and older (Table 12).
- **Sports injury** ranked in the top five causes in the age groups 5-14, 15-24, and 25-44 years (Table 12).

TABLE 1:
External (Injury) Causes of Hospitalisation among Residents of the Illawarra Health Area, 1997/98 – 1998/99

Cause	MALES				FEMALES			
	Number	Standardised separation ratio		Excess separations	Number	Standardised separation ratio		Excess separations
Falls	1,951	0.93	↓	-139	2,149	0.87	↓	-317
Road injury	875	1.04		+34	459	0.91		-42
Self-harm/ suicide	383	1.14	↑	+47	407	0.97		-14
Interpersonal violence	461	0.92		-40	141	0.84	↓	-27
Sports injury	277	1.45	↑	+86	44	1.28		+10
Machinery-in-operation	279	1.08		+21	15	0.69		-7
Motor vehicle non-traffic	233	1.13		+27	38	0.69	↓	-17
Unintentional poisoning – drugs, medicine, biologicals	131	0.66	↓	-69	143	0.70	↓	-65
Fire, burns, scalds	106	0.73	↓	-40	60	0.70	↓	-26
Unintentional poisoning – other	46	0.77		-14	36	0.86		-16
Drowning, submersion	19	1.03		+1	5	0.59		-4
Fire-arms	6	0.54		-5	3	3.34		+2
Other injuries	3,047	1.00		-3	1,313	0.81	↓	-218
TOTAL	7,814	0.99		-95	4,813	0.87	↓	-731

Source: *NSW Inpatients Statistics Collection* for 1997/98 – 1998/99, and Australian Bureau of Statistics' *Estimated Resident Populations* for 30 June 1998, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes:

1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869, E880-929, E950-999).
2. The SSR is the ratio of the actual (or 'observed') number of Illawarra Health Area resident separations to the 'expected' number of Illawarra Health Area resident separations. The 'expected' number of separations is calculated by multiplying the age-specific separation rates in the NSW population by the population numbers resident in the Illawarra Health Area.

TABLE 2: Major External (Injury) Causes of Hospitalisation (Rank and Frequency) among Residents of the Illawarra Health Area, by Age Group, 1997/98 – 1998/99

Age group	#1	#2	#3	#4	#5	Total injury
Less than 1 year	Falls (21)	Interpersonal violence (9)	Fire, burns, scalds (3)	Road injury (3)	Unintentional poison. – other (2)	64
1-4 years	Falls (187)	Fire, burns, scalds (75)	Unintentional poison. – drugs (54)	Road injury (28)	Interpersonal violence (6)	516
5-14 years	Falls (617)	Road injury (232)	Sports (75)	MV non-traffic (45)	Interpersonal violence (20)	1,524
15-24 years	Road injury (384)	Falls (322)	Interpersonal violence (183)	Self-harm (182)	Sports (107)	2,150
25-44 years	Falls (560)	Self-harm (425)	Road injury (366)	Interpersonal violence (287)	Sports (127)	3,684
45-64 years	Falls (630)	Road injury (200)	Self-harm (137)	Machinery-in-operation (92)	Interpersonal violence (78)	2,155
65-74 years	Falls (509)	Road injury (76)	Machinery-in-operation (22)	Self-harm (18)	Unintentional poison. – drugs (17)	931
75 years and older	Falls (1,254)	Road injury (45)	Unintentional poison. – drugs (20)	Self-harm (15)	Fires, burns, scalds MV non-traffic (13 each)	1,603
TOTAL	Falls (4,100)	Road injury (1,334)	Self-harm (790)	Interpersonal violence (602)	Sports (321)	12,627

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes:

1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869,E880-929,E950-999).

TABLE 3: External (Injury) Causes of Hospitalisation among Residents of the Wollongong Local Government Area (LGA), 1997/98 – 1998/99

Cause	MALES			FEMALES		
	Number	Standardised separation ratio	Excess separations	Number	Standardised separation ratio	Excess separations
Falls	1,059	0.95	-56	1,152	0.87	-175
Road injury	454	0.97	-15	237	0.86	↓ -39
Self-harm/ suicide	208	1.08	+16	219	0.92	-18
Interpersonal violence	270	0.93	-19	83	0.88	-11
Sports injury	155	1.44	↑ +48	24	1.30	+5
Machinery-in-operation	143	0.99	-1	9	0.77	-3
Motor vehicle non-traffic	111	0.96	-4	19	0.63	↓ -11
Unintentional poisoning – drugs, medicine, biologicals	72	0.64	↓ -40	77	0.67	↓ -38
Fire, burns, scalds	52	0.66	↓ -27	35	0.77	-11
Unintentional poisoning – other	18	0.55	↓ -15	17	0.74	-6
Drowning, submersion	9	0.89	-3	2	0.44	-3
Fire-arms	2	0.31	-4	0	0.00	-1
Other injuries	1,613	0.95	-80	684	0.82	↓ -146
TOTAL	4,166	0.95	↓ -200	2,558	0.85	↓ -455

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, and Australian Bureau of Statistics' Estimated Resident Populations for 30 June 1999, accessed from NSW Health's Health Outcomes Information and Statistical Toolkit. 30 June 1996 populations for sub-areas were compiled from Census postcode populations provided by the Australian Bureau of Statistics.

Notes:

- All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869,E880-929,E950-999).
- The SSR is the ratio of the actual (or 'observed') number of Wollongong resident separations to the 'expected' number of Wollongong resident separations. The 'expected' number of separations is calculated by multiplying the age-specific separation rates in the NSW population by the population numbers resident in Wollongong. 'Excess separations' is the difference between the observed and expected number of separations.

TABLE 4: Total External (Injury) Causes of Hospitalisation among Residents of Sub-Areas within the Wollongong Local Government Area, 1997/98 – 1998/99

Sub-area (postcodes)	MALES			FEMALES		
	Number	Standardised separation ratio	Excess separations	Number	Standardised separation ratio	Excess separations
Thirroul (2508,2515,2516,2517)	784	1.03	+24	511	0.92	-43
Corrimal (2518,2519)	792	0.97	-21	513	0.89	↓ -65
Wollongong (2500)	732	0.91	↓ -76	483	0.83	↓ -99
Warrawong (2502,2505,2506)	697	1.13	↑ +82	403	0.97	-12
Unanderra (2525,2526)	526	0.88	↓ -72	270	0.69	↓ -121
Dapto (2530)	567	0.99	-6	343	0.96	-15

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, and Australian Bureau of Statistics' Estimated Resident Populations for 30 June 1996, accessed from NSW Health's Health Outcomes Information and Statistical Toolkit (HOIST).

Notes:

- All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869,E880-929,E950-999).
- The SSR is the ratio of the actual (or 'observed') number of Wollongong LGA sub-area resident separations to the 'expected' number of Wollongong LGA sub-area resident separations. The 'expected' number of separations is calculated by multiplying the age-specific separation rates in the NSW population by the population numbers resident in the sub-areas. 'Excess separations' is the difference between the observed and expected number of separations..
- Observed numbers in this table are slightly less than in Table 3 for Wollongong LGA residents, as records where postcodes were incompatible with the Wollongong LGA coding have been excluded. In addition, the SSR and 'excess separations' should be considered estimates as 30 June 1996 populations were used (rather than populations pertaining to the mid-point of the time period of interest, i.e. 30 June 1998)).

TABLE 5:
Major External (Injury) Causes of Hospitalisation (Rank and Frequency)
among Residents of the Wollongong Local Government Area (LGA), by
Age Group, 1997/98 – 1998/99

Age group	#1	#2	#3	#4	#5	Total injury
Less than 1 year	Falls (11)	Interpersonal violence (5)	Unintentional poison. – other (2)	Road injury (1)	-	36
1-4 years	Falls (108)	Fire, burns, scalds (39)	Unintentional poison. – drugs (29)	Road injury (9)	Interpersonal violence, Drowning & submersion (2 each)	269
5-14 years	Falls (325)	Road injury (98)	Sports (36)	MV non-traffic (16)	Interpersonal violence (10)	767
15-24 years	Road injury (218)	Falls (196)	Interpersonal violence (106)	Self-harm (103)	Sports (62)	1,227
25-44 years	Falls (327)	Self-harm (226)	Road injury (201)	Interpersonal violence (173)	Sports (74)	1,994
45-64 years	Falls (357)	Road injury (105)	Self-harm (76)	Machinery-in- operation (51)	Interpersonal violence (45)	1,178
65-74 years	Falls (252)	Road injury (37)	Self-harm (10)	Unintentional poison. – drugs (10)	Interpersonal violence (9)	439
75 years and older	Falls (635)	Road injury (22)	Unintentional poison. – drugs Fires, burns, scalds (9 each)		Self-harm (7)	814
TOTAL	Falls (2,211)	Road injury (691)	Self-harm (427)	Interpersonal violence (353)	Sports (179)	6,724

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes:

1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869, E880-929, E950-999).

TABLE 6: Major External (Injury) Causes of Hospitalisation among Residents of Sub-Areas Within the Wollongong Local Government Area (LGA), 1997/98 – 1998/99

Sub-area (postcodes)	MALES			FEMALES		
	Number	Standardised separation ratio	Excess separations	Number	Standardised separation ratio	Excess separations
FALLS, all ages						
Thirroul (2508,2515,2516,2517)	198	0.99	-2	218	0.87	↓ -32
Corrimal (2518,2519)	228	1.05	+11	257	0.98	-5
Wollongong (2500)	188	0.95	-11	246	0.90	-28
Warrawong (2502,2505,2506)	163	1.01	+1	170	0.94	-10
Unanderra (2525,2526)	136	0.91	-13	100	0.64	↓ -57
Dapto (2530)	132	0.96	-6	150	1.10	+14
FALLS, 65+ yrs						
Thirroul (2508,2515,2516,2517)	37	0.60	↓ -25	119	0.75	↓ -40
Corrimal (2518,2519)	61	0.79	-16	164	0.98	-3
Wollongong (2500)	57	0.81	-14	161	0.83	↓ -33
Warrawong (2502,2505,2506)	29	0.54	↓ -24	85	0.80	↓ -21
Unanderra (2525,2526)	32	0.90	-4	46	0.55	↓ -37
Dapto (2530)	19	0.72	-7	66	1.02	+1
ROAD INJURY						
Thirroul (2508,2515,2516,2517)	105	1.31	↑ +25	61	1.25	+12
Corrimal (2518,2519)	84	0.97	-2	35	0.68	↓ -17
Wollongong (2500)	78	0.89	-10	36	0.71	-15
Warrawong (2502,2505,2506)	77	1.18	+12	45	1.17	+6
Unanderra (2525,2526)	51	0.78	-14	23	0.60	↓ -15
Dapto (2530)	54	0.85	-9	33	0.90	-4
SELF-HARM						
Thirroul (2508,2515,2516,2517)	24	0.74	-9	29	0.70	↓ -13
Corrimal (2518,2519)	34	0.98	-1	33	0.77	-10
Wollongong (2500)	55	1.45	↑ +17	55	1.06	+3
Warrawong (2502,2505,2506)	48	1.83	↑ +12	45	1.40	↑ +13
Unanderra (2525,2526)	14	0.54	↓ -12	30	0.89	-4
Dapto (2530)	27	1.08	+2	27	0.84	-5
INTERPERSONAL VIOLENCE						
Thirroul (2508,2515,2516,2517)	39	0.81	-9	15	0.89	-2
Corrimal (2518,2519)	63	1.21	+11	17	0.99	0
Wollongong (2500)	52	0.89	-7	15	0.86	-2
Warrawong (2502,2505,2506)	55	1.41	↑ +16	19	1.48	+6
Unanderra (2525,2526)	24	0.62	↓ -15	5	0.37	↓ -8
Dapto (2530)	34	0.90	-4	10	0.78	-3
SPORTS INJURY						
Thirroul (2508,2515,2516,2517)	48	1.15	+6	17	1.10	+2
Corrimal (2518,2519)	52	1.18	+8	22	1.37	+6
Wollongong (2500)	62	1.38	↑ +17	15	0.96	-1
Warrawong (2502,2505,2506)	33	0.99	0	12	1.01	0
Unanderra (2525,2526)	50	1.48	↑ +14	16	1.36	+4
Dapto (2530)	51	1.55	↑ +18	16	1.44	+5

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, and Australian Bureau of Statistics' *Estimated Resident Populations* for 30 June 1996, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit* (HOIST). 30 June 1996 populations for sub-areas were compiled from Census postcode populations provided by the Australian Bureau of Statistics.

Notes: 1. External cause hospitalisations excluding acute hospital transfers and statistical discharges. 2. The SSR is the ratio of the actual (or 'observed') number of Wollongong LGA sub-area resident separations to the 'expected' number of Wollongong LGA sub-area resident separations. The 'expected' number of separations is calculated by multiplying the age-specific separation rates in the NSW population by the population numbers resident in the sub-areas. 'Excess separations' is the difference between the observed and expected number of separations.

3. Observed numbers in this table are slightly less than in Table 3 for Wollongong LGA residents, as records where postcodes were incompatible with the Wollongong LGA coding have been excluded. In addition, the SSR and 'excess separations' should be considered estimates as 30 June 1996 populations were used (rather than populations pertaining to the mid-point of the time period of interest, i.e. 30 June 1998).

TABLE 7:
External (Injury) Causes of Hospitalisation among Residents of the Shellharbour Local Government Area (LGA), 1997/98 – 1998/99

Cause	MALES			FEMALES		
	Number	Standardised separation ratio	Excess separations	Number	Standardised separation ratio	Excess separations
Falls	283	0.90		279	0.89	-35
Road injury	171	1.21	↑	75	0.91	-7
Self-harm/ suicide	73	1.28	↑	74	1.03	+2
Interpersonal violence	83	0.96		24	0.83	-5
Sports injury	41	1.21		4	0.66	-2
Machinery-in-operation	56	1.32		0	0.00	↓
Motor vehicle non-traffic	29	0.83		5	0.57	-4
Unintentional poisoning – drugs, medicine, biologicals	16	0.47	↓	19	0.55	↓
Fire, burns, scalds	11	0.43	↓	6	0.40	↓
Unintentional poisoning – other	13	1.31		4	0.57	-3
Drowning, submersion	2	0.63		0	0.00	-2
Fire-arms	4	2.08		1	6.39	+1
Other injuries	521	1.03		229	0.95	-12
TOTAL	1,303	1.01		720	0.88	↓

Source: *NSW Inpatients Statistics Collection* for 1997/98 – 1998/99, and Australian Bureau of Statistics' *Estimated Resident Populations* for 30 June 1998, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes: 1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869,E880-929,E950-999).

2. The SSR is the ratio of the actual (or 'observed') number of Shellharbour resident separations to the 'expected' number of Shellharbour resident separations. The 'expected' number of separations is calculated by multiplying the age-specific separation rates in the NSW population by the population numbers resident in Shellharbour. 'Excess separations' is the difference between the observed and expected number of separations.

3. The ordering of causes has been determined by the ranking for the total Illawarra Health Area population (males and females combined).

TABLE 8:
Major External (Injury) Causes of Hospitalisation (Rank and Frequency) among Residents of the Shellharbour LGA, by Age Group, 1997/98 – 1998/99

Age group	#1	#2	#3	#4	#5	Total injury
Less than 1 year	Falls (5)	Interpersonal violence Fire, burns, scalds (1 each)	Road injury		-	10
1-4 years	Falls (34)	Unintentional poison. – drugs (12)	Road injury (9)	Fire, burns, scalds (5)	Interpersonal violence, Unintentional pois. – other (3 each)	97
5-14 years	Falls (121)	Road injury (57)	Sports (15)	MV non-traffic (11)	Interpersonal violence (6)	287
15-24 years	Road injury (65)	Falls (39)	Self-harm (37)	Interpersonal violence (33)	Sports (15)	339
25-44 years	Falls (108)	Self-harm (74)	Road injury (67)	Interpersonal violence (48)	Machinery-in-operation (24)	678
45-64 years	Falls (76)	Road injury (32)	Self-harm (25)	Interpersonal violence (14)	Machinery-in-operation (13)	345
65-74 years	Falls (67)	Road injury (11)	Machinery-in-operation (4)	Self-harm (3)	Unintentional poison. – drugs, Interpers. violence (2 each)	118
75 years and older	Falls (121)	Road injury (4)	Self-harm (3)	Unintent. poison. – drugs (2)	Fire, burns, scalds (1)	149
TOTAL	Falls (562)	Road injury (246)	Self-harm (147)	Interpersonal violence (107)	Machinery-in-operation (56)	2,023

Source: *NSW Inpatients Statistics Collection* for 1997/98 – 1998/99, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes: 1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869,E880-929,E950-999).

TABLE 9:
External (Injury) Causes of Hospitalisation among Residents of the Kiama Local Government Area (LGA), 1997/98 – 1998/99

Cause	MALES			FEMALES		
	Number	Standardised separation ratio	Excess separations	Number	Standardised separation ratio	Excess separations
Falls	123	1.00	0	167	1.01	+2
Road injury	43	0.97	-1	41	1.49	↑ +14
Self-harm/ suicide	9	0.54	-7	16	0.75	-5
Interpersonal violence	17	0.70	-7	0	0.00	↓ -9
Sports injury	19	1.91	↑ +10	3	1.58	+1
Machinery-in-operation	18	1.38	+5	1	0.85	0
Motor vehicle non-traffic	18	1.68	+7	1	0.32	-2
Unintentional poisoning – drugs, medicine, biologicals	4	0.39	-6	4	0.37	↓ -7
Fire, burns, scalds	2	0.25	↓ -6	0	0.00	↓ -5
Unintentional poisoning – other	0	0.00	↓ -3	1	0.45	-1
Drowning, submersion	1	1.02	0	1	2.26	+1
Fire-arms	0	0.00	-1	2	43.77	↑ +2
Other injuries	181	1.13	+20	67	0.77	↓ -20
TOTAL	435	1.02	+9	304	0.91	-31

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, and Australian Bureau of Statistics' *Estimated Resident Populations* for 30 June 1998, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes: 1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869,E880-929,E950-999). 2. The SSR is the ratio of the actual (or 'observed') number of Kiama resident separations to the 'expected' number of Kiama resident separations. The 'expected' number of separations is calculated by multiplying the age-specific separation rates in the NSW population by the population numbers resident in Kiama. 'Excess separations' is the difference between the observed and expected number of separations. 3. The ordering of causes has been determined by the ranking for the total Illawarra Health Area population (males and females combined).

TABLE 10:
Major External (Injury) Causes of Hospitalisation (Rank and Frequency) among Residents of the Kiama LGA, by Age Group, 1997/98 – 1998/99

Age group	#1	#2	#3	#4	#5	Total injury
Less than 1 year	Falls (1)	-	-	-	-	3
1-4 years	Falls (11)	Road injury (4)	Fire, burns, scalds (1)	-	-	19
5-14 years	Falls (38)	Road injury (15)	Sports (2)	MV non-traffic (5)	Fire, burns, scalds Interpers. Violence Self-harm Firearm-related (1 each)	89
15-24 years	Road injury (20)	Falls (19)	Interpersonal violence (10)	Sports (9)	Self-harm (8)	127
25-44 years	Falls (37)	Road injury (22)	Self-harm (15)	Sports (9)	Machinery-in-operation (8)	162
45-64 years	Falls (36)	Road injury (16)	Machinery-in-operation (6)	Interpersonal violence MV non-traffic (2 each)	-	118
65-74 years	Falls (35)	Road injury (4)	Drowning & submersion (2)	Interpersonal violence Machinery-in-operation MV non-traffic (1 each)	-	65
75 years and older	Falls (123)	Road injury (3)	Unintentional poison. – drugs (4)	MV non-traffic (2)	-	156
TOTAL	Falls (290)	Road injury (84)	Self-harm (25)	Sports (22)	Machinery-in-op. MV non-traffic (19 each)	739

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes: 1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869,E880-929,E950-999).

TABLE 11: External (Injury) Causes of Hospitalisation among Residents of the Shoalhaven Local Government Area (LGA), 1997/98 – 1998/99

Cause	MALES				FEMALES			
	Number	Standardised separation ratio	Excess separations	Number	Standardised separation ratio	Excess separations		
Falls	486	0.90	↓ -52	551	0.83	↓ -110		
Road injury	207	1.11	+21	106	0.91	-11		
Self-harm/ suicide	93	1.33	↑ +17	98	1.09	+8		
Interpersonal violence	91	0.90	-10	34	0.93	-3		
Sports injury	62	1.54	↑ +22	13	1.66	+5		
Machinery-in-operation	62	1.07	+4	5	0.98	0		
Motor vehicle non-traffic	75	1.68	↑ +30	13	0.98	0		
Unintentional poisoning – drugs, medicine, biologicals	39	0.89	-5	43	0.92	-4		
Fire, burns, scalds	41	1.21	+7	19	0.92	-2		
Unintentional poisoning – other	15	1.08	+1	14	1.42	+4		
Drowning, submersion	7	1.65	+3	2	0.99	0		
Fire-arms	0	0.00	-2	0	0.00	0		
Other injuries	732	1.06	+44	333	0.89	↓ -40		
TOTAL	1,910	1.05	+85	1,231	0.89	↓ -152		

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, and Australian Bureau of Statistics' *Estimated Resident Populations* for 30 June 1998, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes: 1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869, E880-929, E950-999).

2. The SSR is the ratio of the actual (or 'observed') number of Shoalhaven resident separations to the 'expected' number of Shoalhaven resident separations. The 'expected' number of separations is calculated by multiplying the age-specific separation rates in the NSW population by the population numbers resident in the Shoalhaven. 'Excess separations' is the difference between the observed and expected number of separations.

3. The ordering of causes has been determined by the ranking for the total Illawarra Health Area population (males and females combined).

TABLE 12: Major External (Injury) Causes of Hospitalisation (Rank and Frequency) among Residents of the Shoalhaven LGA, by Age Group, 1997/98 – 1998/99

Age group	#1	#2	#3	#4	#5	Total injury
Less than 1 year	Falls (4)	Interpersonal violence (3)	Fire, burns, scalds (2)	Drowning & submersion (1 each)	MV non-traffic (2)	15
1-4 years	Falls (34)	Fire, burns, scalds (30)	Unintentional poison. – drugs (13)	Road injury (6)	MV non-traffic (2)	131
5-14 years	Falls (133)	Road injury (62)	Sports (22)	MV non-traffic (13)	Fire, burns, scalds (10)	381
15-24 years	Road injury (81)	Falls (68)	Interpersonal violence (34 each)	Sports (21)		457
25-44 years	Self-harm (110)	Falls (107)	Road injury (76)	Interpersonal violence (63)	Sports (31)	850
45-64 years	Falls (161)	Road injury (47)	Self-harm (35)	Machinery-in-operation (22)	MV non-traffic (21)	514
65-74 years	Falls (155)	Road injury (24)	Machinery-in-operation (9)	MV non-traffic (6)	Self-harm (5 each)	309
75 years and older	Falls (375)	Road injury (16)	Self-harm (5 each)	Unintentional poison. – other (5 each)	Unintentional poison. – drugs (5 each)	484
TOTAL	Falls (1,037)	Road injury (313)	Self-harm (191)	Interpersonal violence (125)	MV non-traffic (88)	3,141

Source: NSW Inpatients Statistics Collection for 1997/98 – 1998/99, accessed from NSW Health's *Health Outcomes Information and Statistical Toolkit*.

Notes: 1. All external cause hospitalisations excluding acute hospital transfers and statistical discharges, and hospitalisations due to medical misadventures and adverse effects of drugs etc (i.e. including E800-869, E880-929, E950-999).

FIGURE 1: Directly Age-Standardised Hospital Separation Rates for Injury and Poisonings among Residents of the Illawarra Health Area and each of its Local Government Areas, by Sex, 1997/98-1998/99

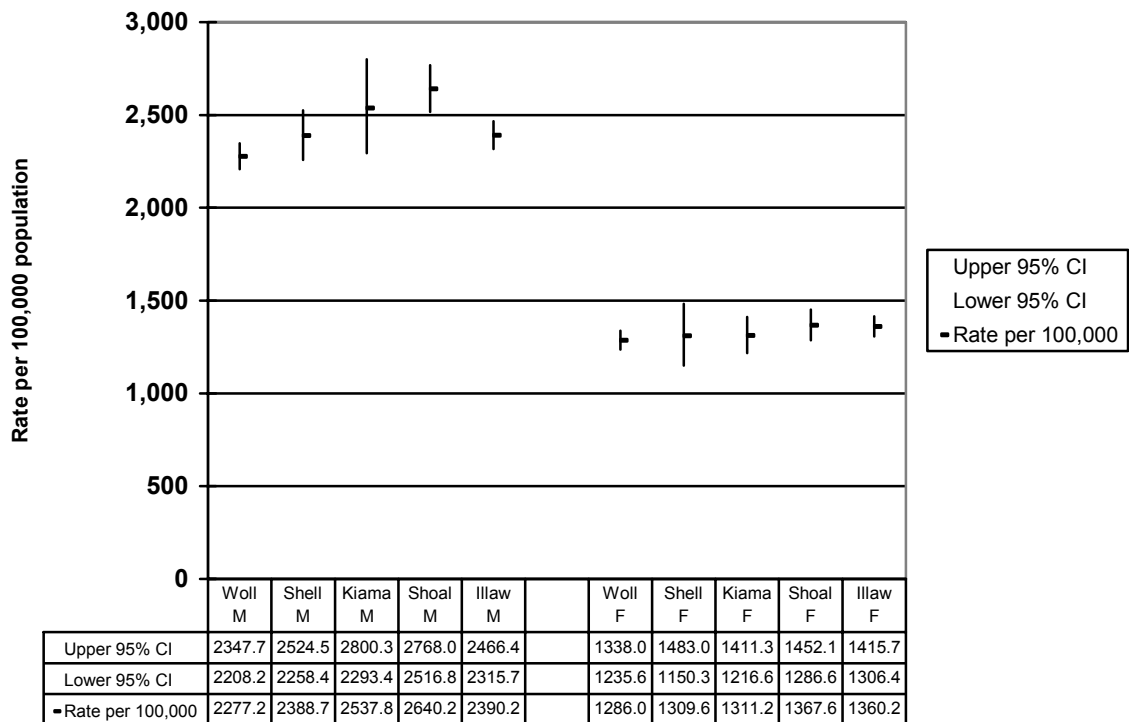


FIGURE 2: Age-Specific Hospital Separation Rates for Injury and Poisonings among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

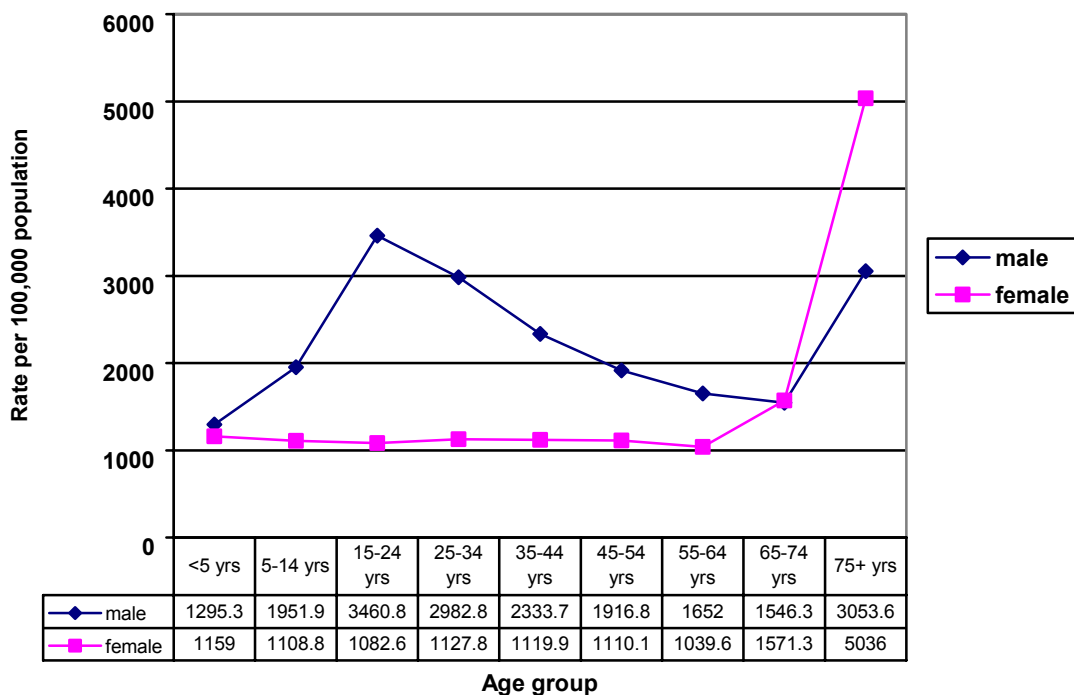


FIGURE 3: Injury for which Medical Care was Sought in Previous 12 Months, Illawarra Residents aged 16 Years and Older, by Age and Sex, 1997¹

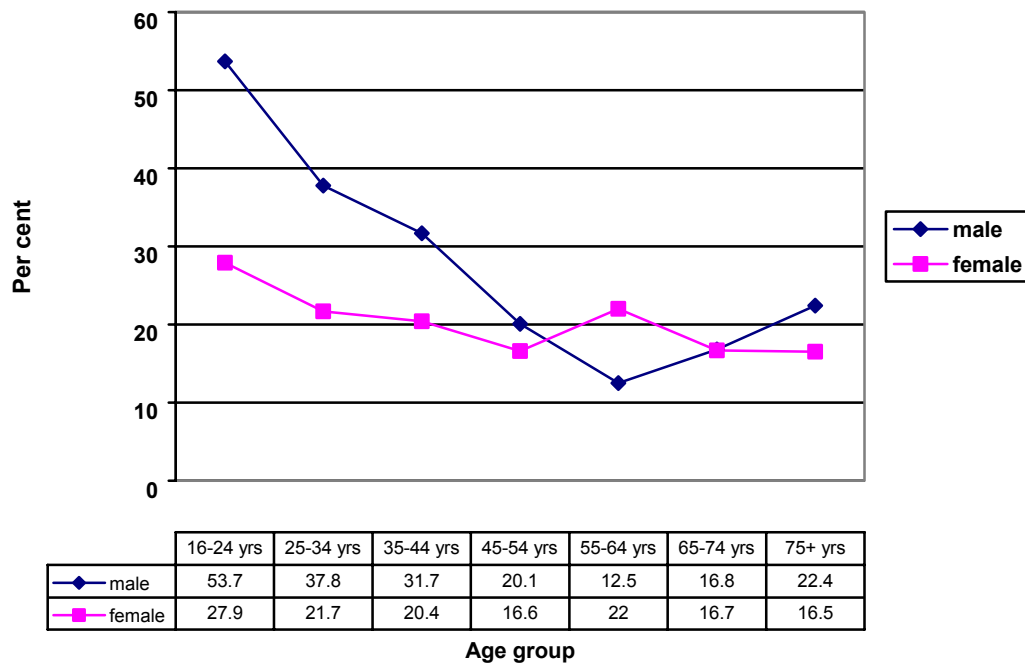


FIGURE 4: Source of Health Care for Injury, Persons Age 16 Years and Older Injured in Previous 12 Months, by Sex, Illawarra Health Area and NSW, 1997¹

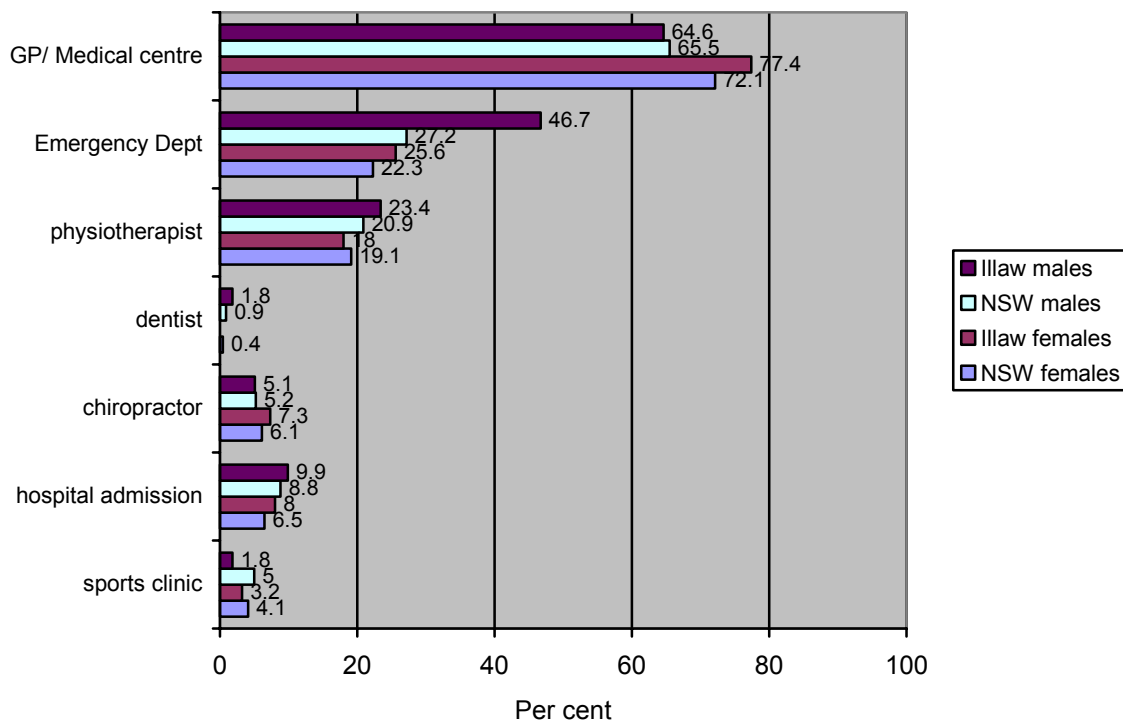


FIGURE 5:
Trends in Directly Age-Standardised Hospital Separation Rates for Injury and Poisonings among Residents of the Illawarra Health Area and NSW², By Sex, 1989/90-1998/99

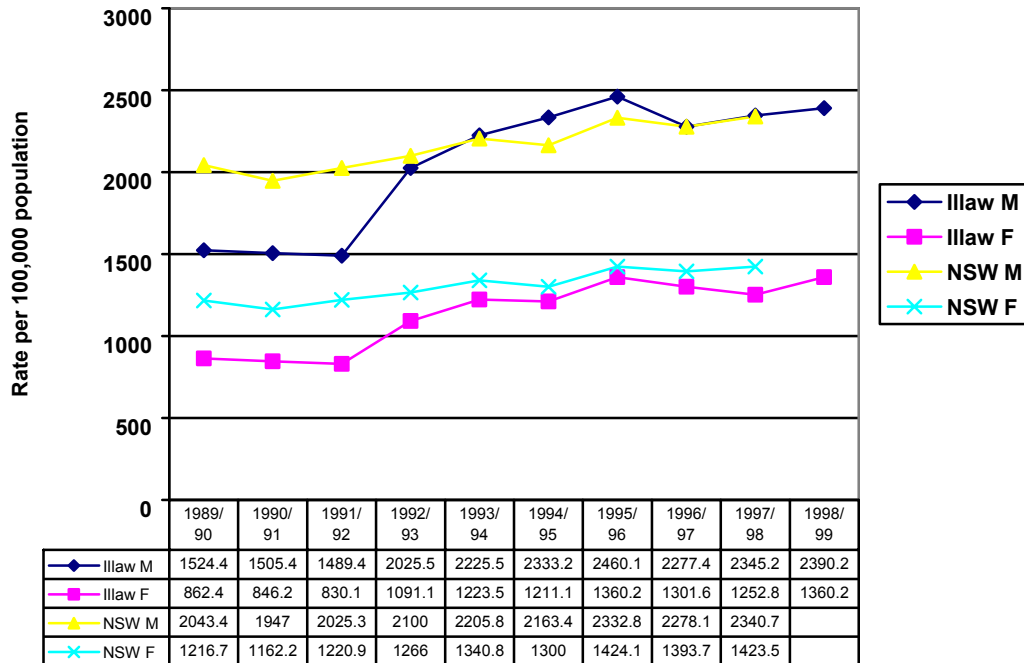


FIGURE 6:
Directly Age-Standardised Hospital Separation Rates for Falls among Residents of Illawarra Health Area and each of its Local Government Areas, all Ages, by Sex, 1997/98-1998/99

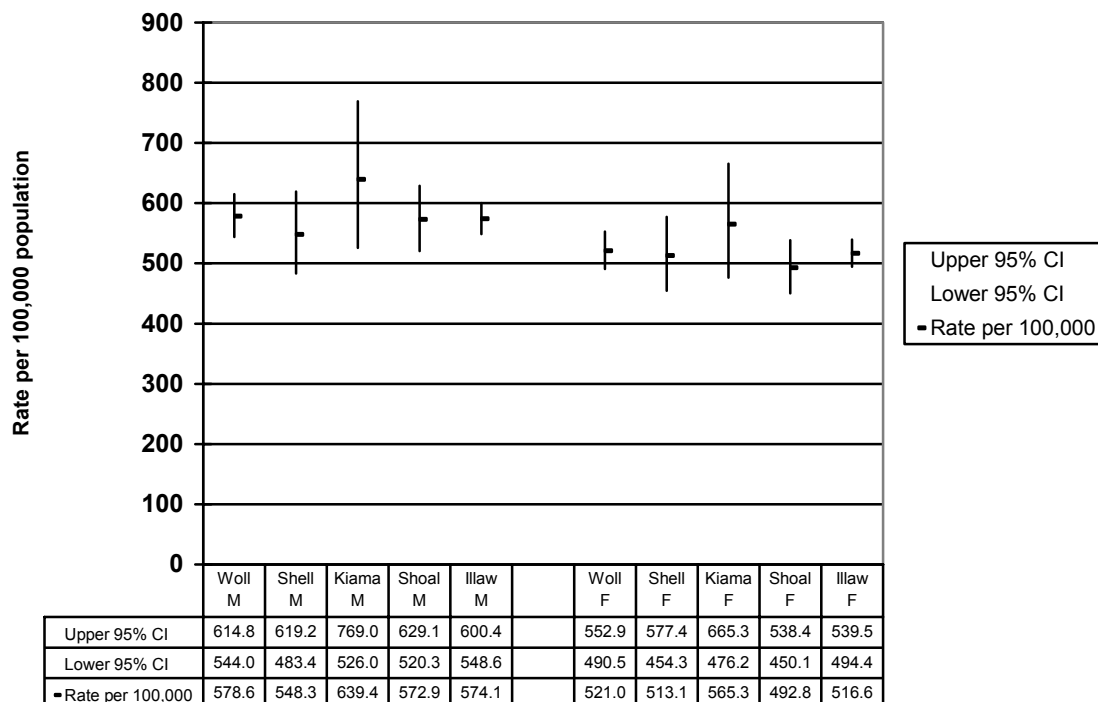


FIGURE 7: Directly Age-Standardised Hospital Separation Rates for Falls among Residents of Illawarra Health Area and each of its Local Government Areas, 65 Years and Older, by Sex, 1997/98-1998/99

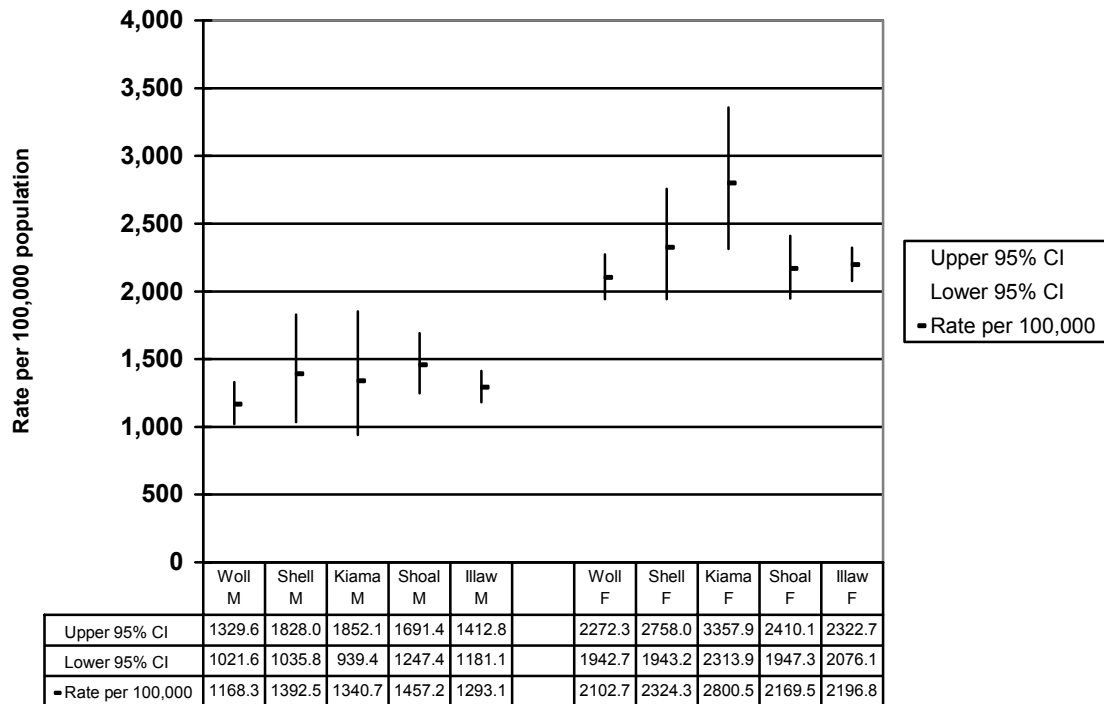


FIGURE 8: Directly Age-Standardised Hospital Separation Rates for Road Injury among Residents of Illawarra Health Area and Each of its Local Government Areas, all Ages, by Sex, 1997/98-1998/99

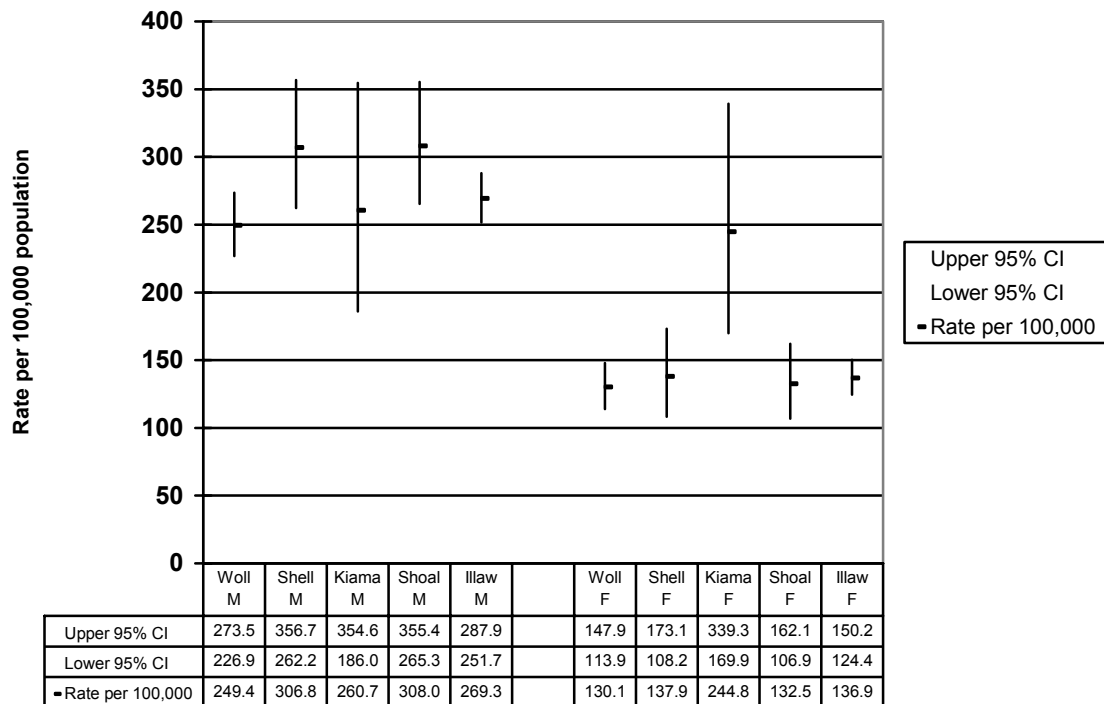


FIGURE 9: Directly Age-Standardised Hospital Separation Rates for Road Injury among Residents of Illawarra Health Area and each of its Local Government Areas, 15-24 Years, by Sex, 1997/98-1998/99

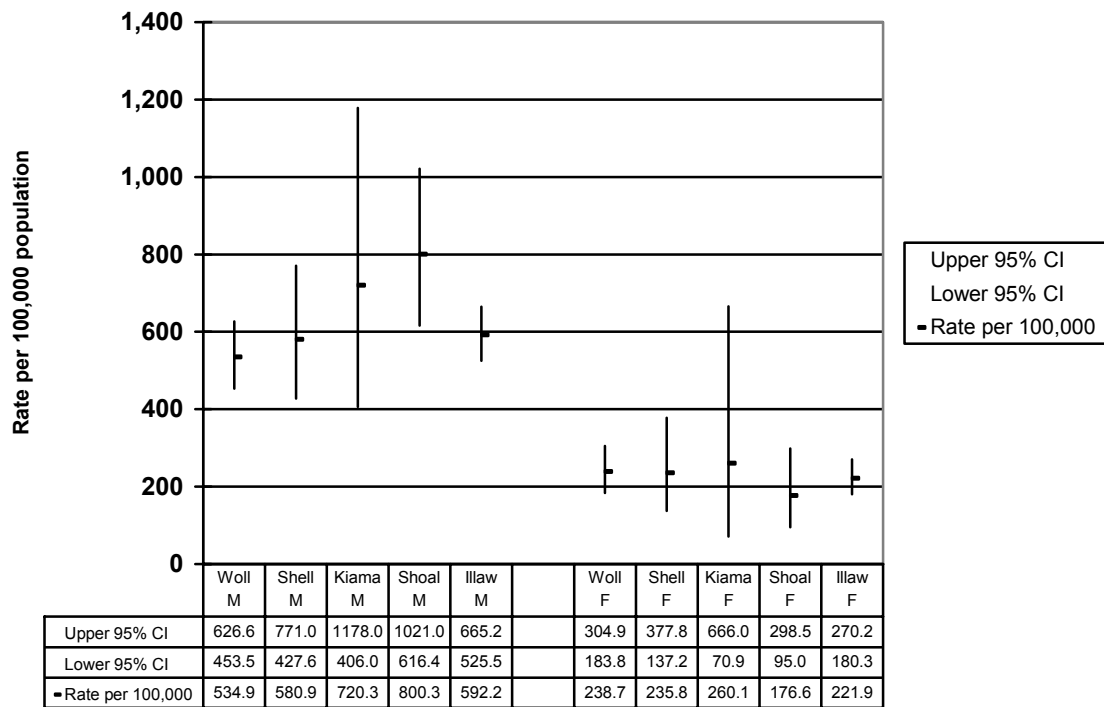


FIGURE 10: Directly Age-Standardised Hospital Separation Rates for Self-Harm Among Residents of the Illawarra Health Area and Each of its Local Government Areas, All Ages, By Sex, 1997/98-1998/99

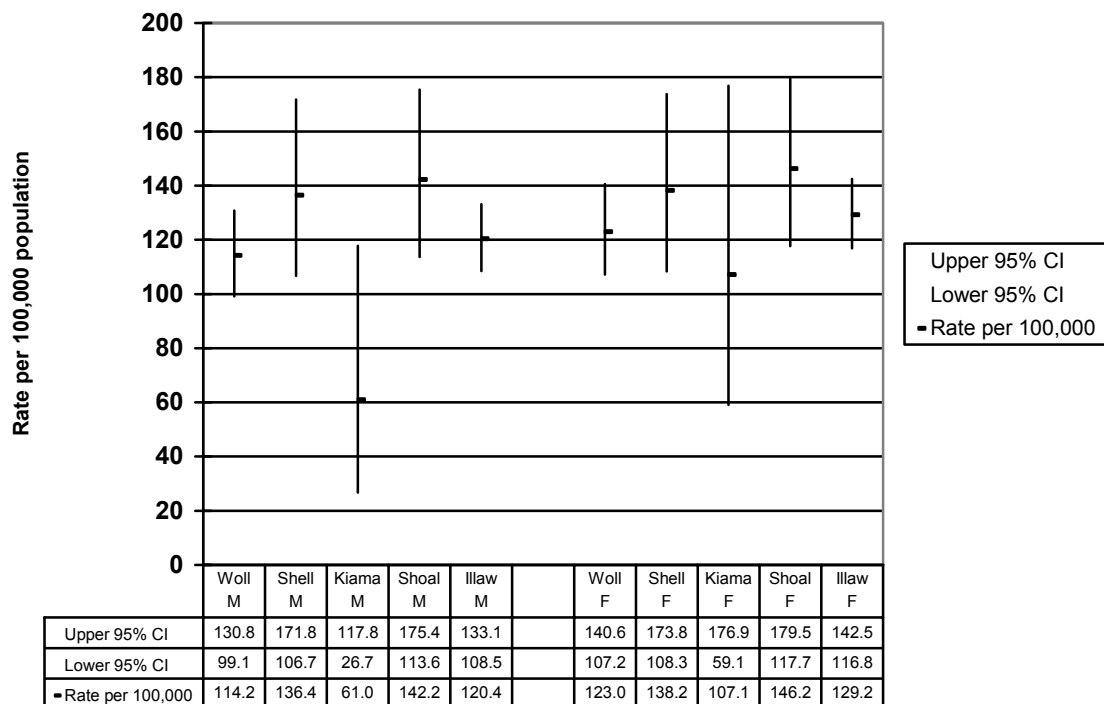


FIGURE 11: Directly Age-Standardised Hospital Separation Rates for Self-Harm among Residents of the Illawarra Health Area and each of its Local Government Areas, 15-24 Years, by Sex, 1997/98-1998/99

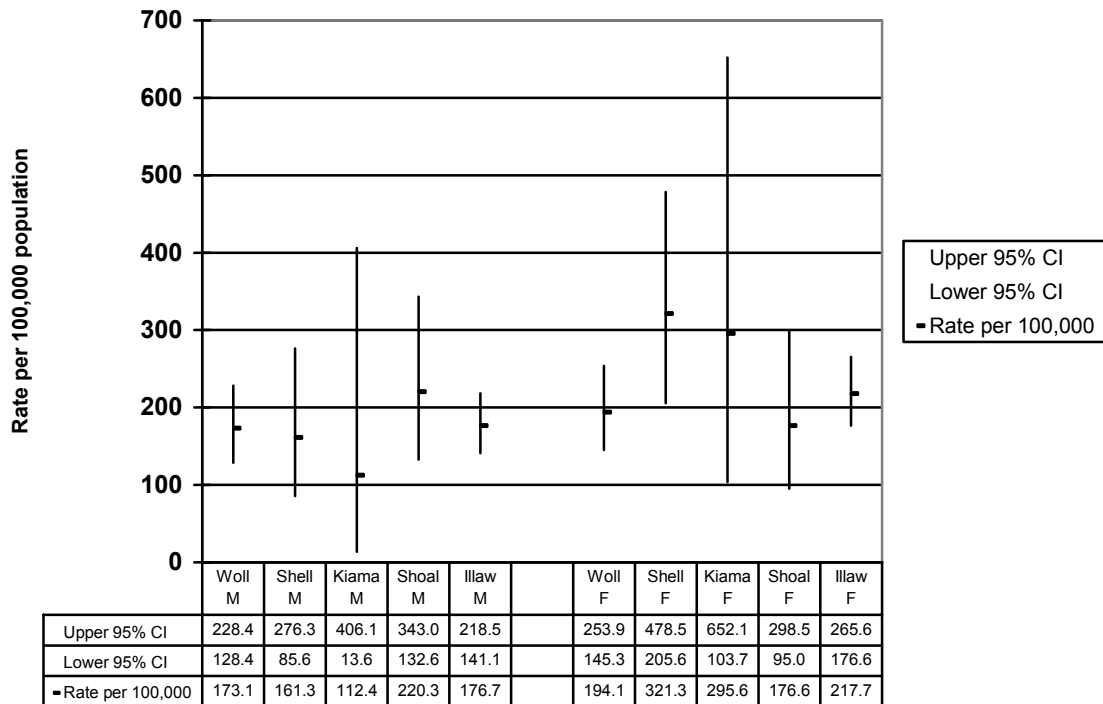


FIGURE 12: Directly Age-Standardised Hospital Separation Rates for Interpersonal Violence among Residents of Illawarra Health Area and Each of its Local Government Areas, all Ages, by Sex, 1997/98-1998/99

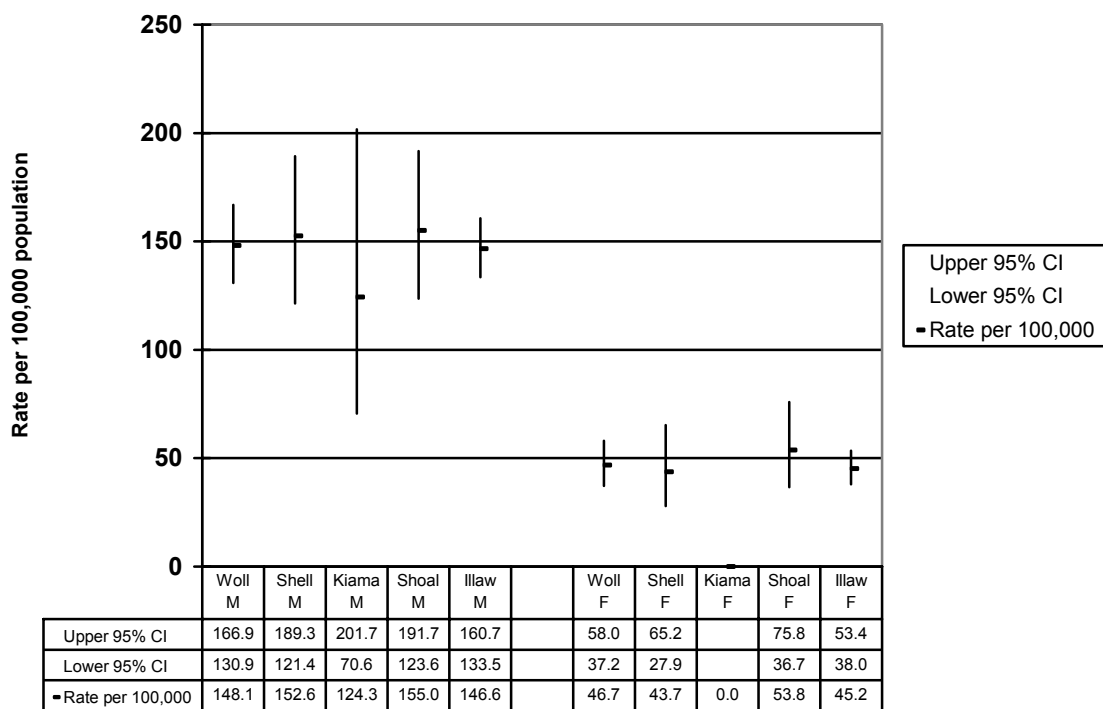


FIGURE 13:
Directly Age-Standardised Hospital Separation Rates for Sports Injury Among Residents of Illawarra Health Area and each of its Local Government Areas, all Ages, by Sex, 1997/98-1998/99

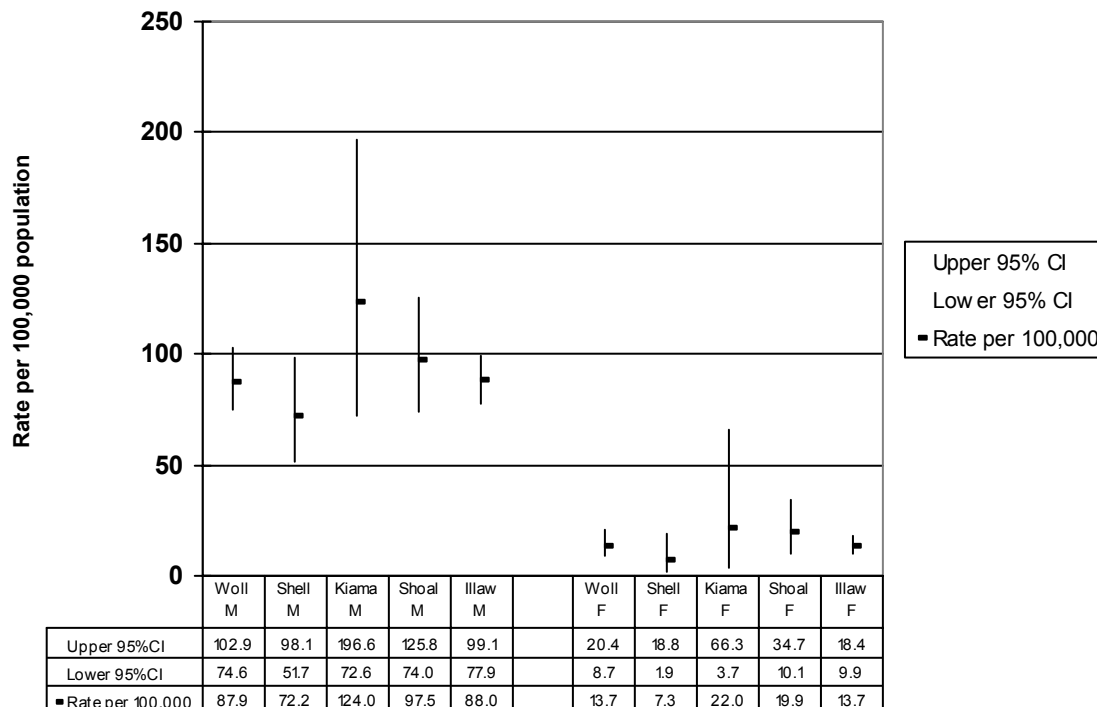


FIGURE 14:
Age-Specific Hospital Separation Rates for Falls among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

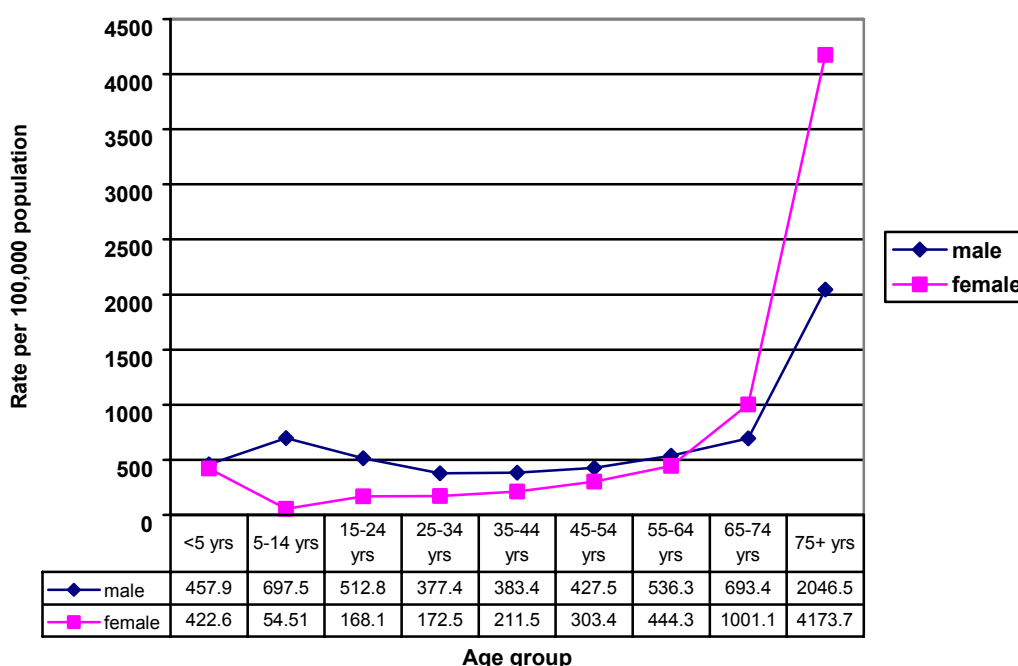


FIGURE 15:
Age-Specific Hospital Separation Rates for Road Injury among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

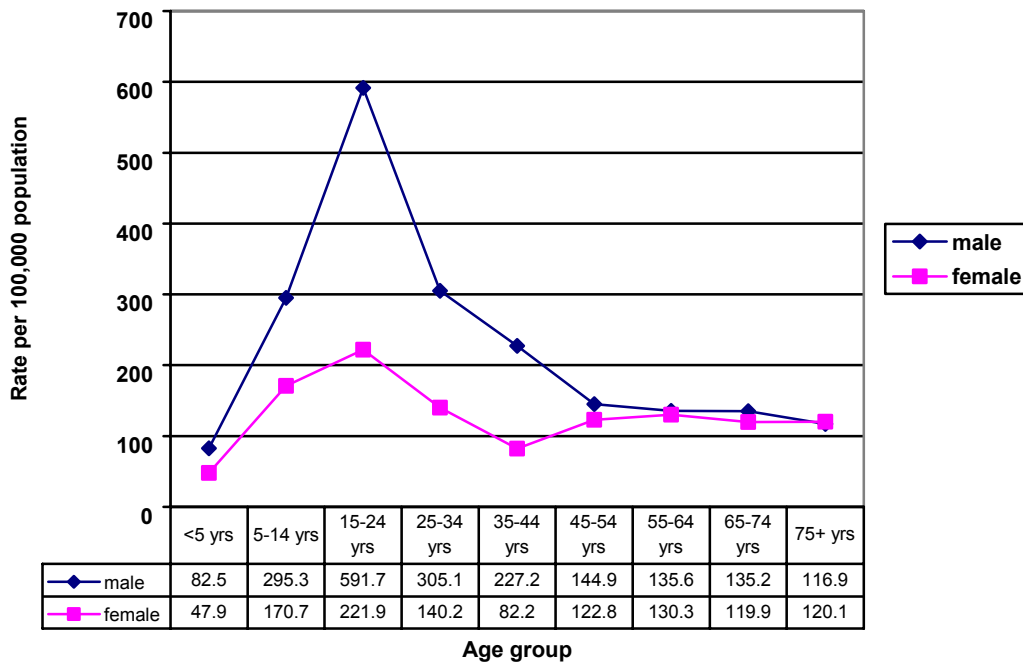


FIGURE 16:
Age-Specific Hospital Separation Rates for Self-Harm among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

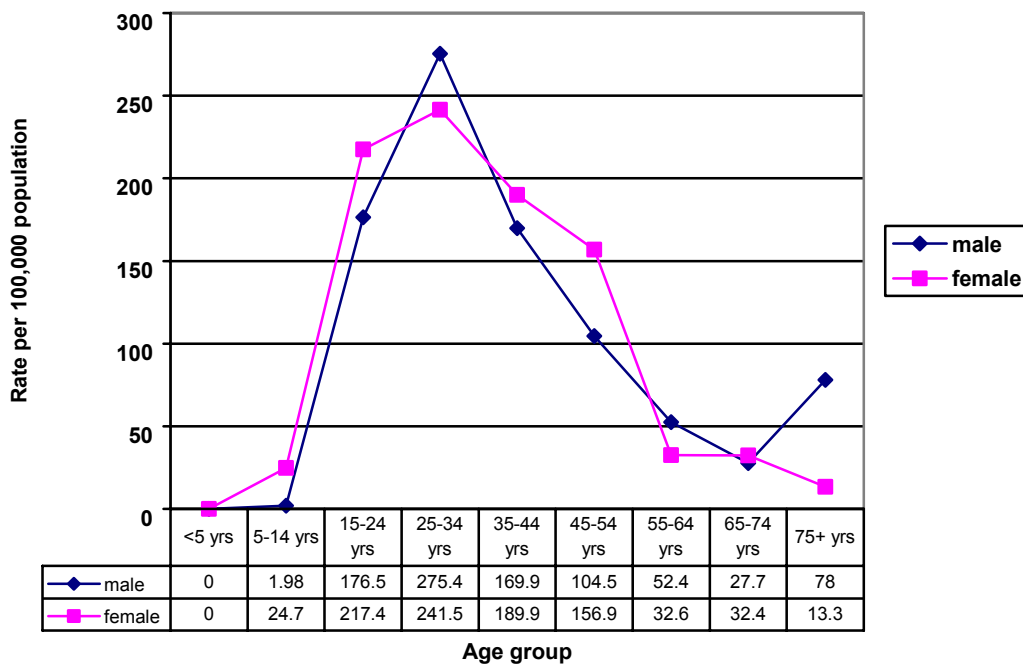


FIGURE 17:
Age-Specific Hospital Separation Rates for Interpersonal Violence among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

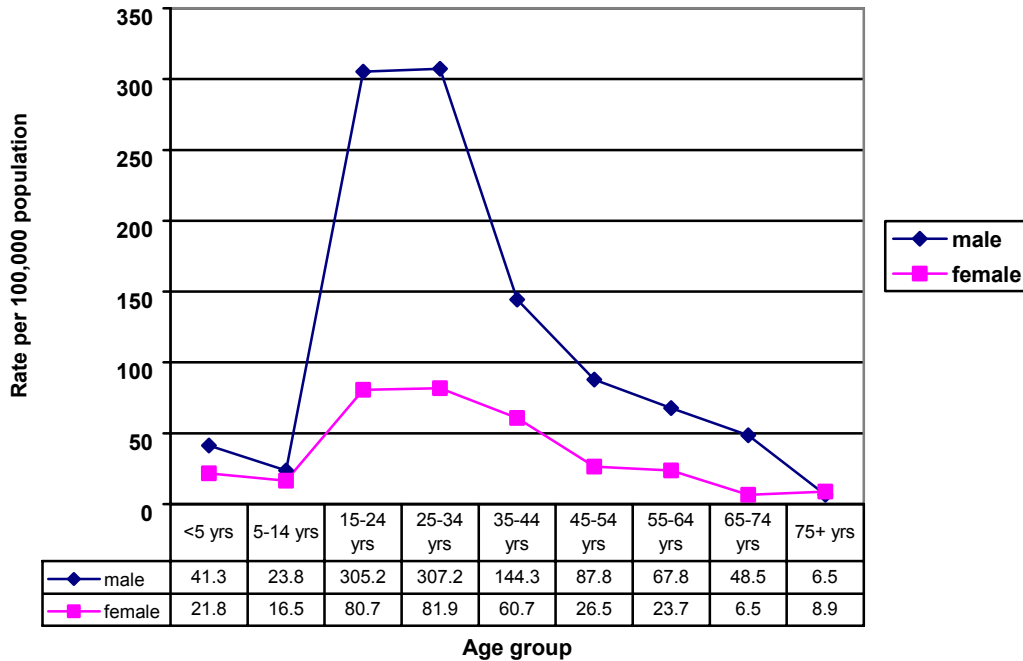


FIGURE 18:
Age-Specific Hospital Separation Rates for Sports Injury among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

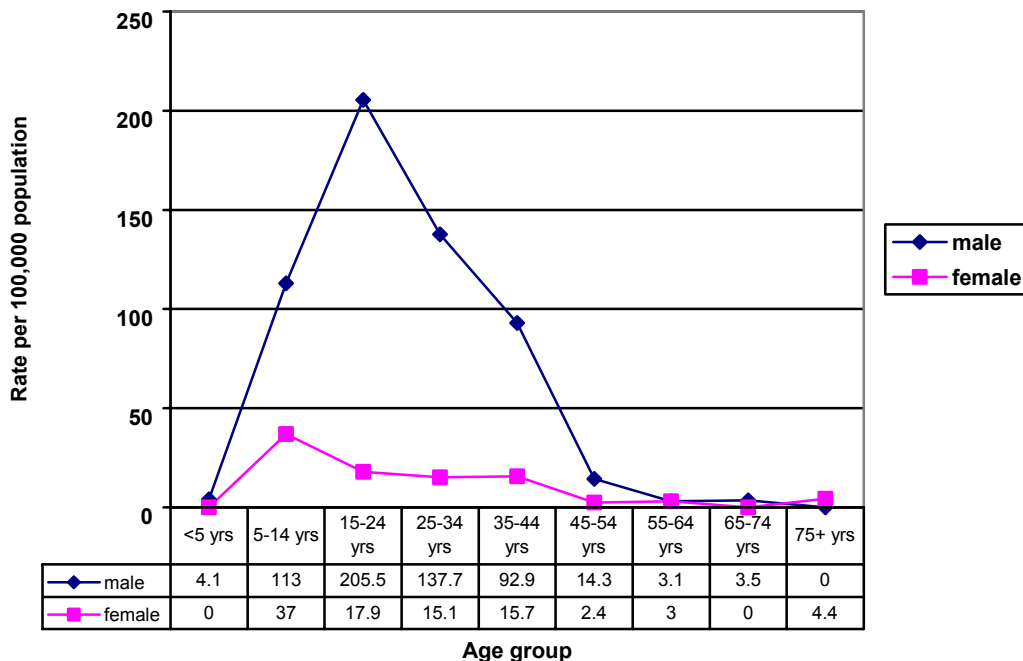


FIGURE 19:
Age-Specific Hospital Separation Rates for Machinery-In-Operation
among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

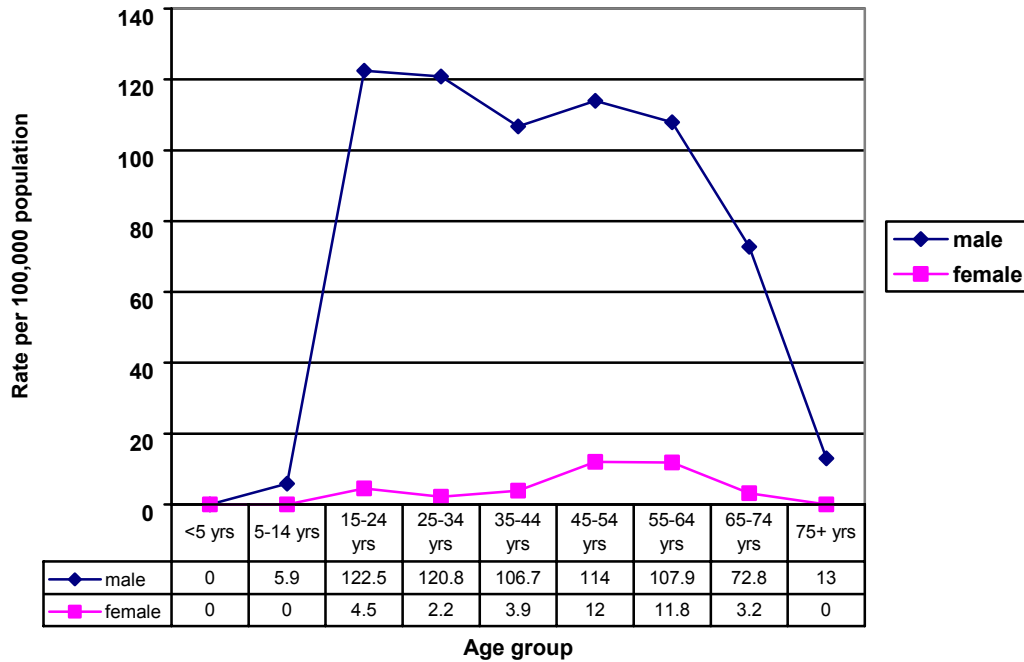


FIGURE 20:
Age-Specific Hospital Separation Rates for Fire, Burns and Scalds
among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

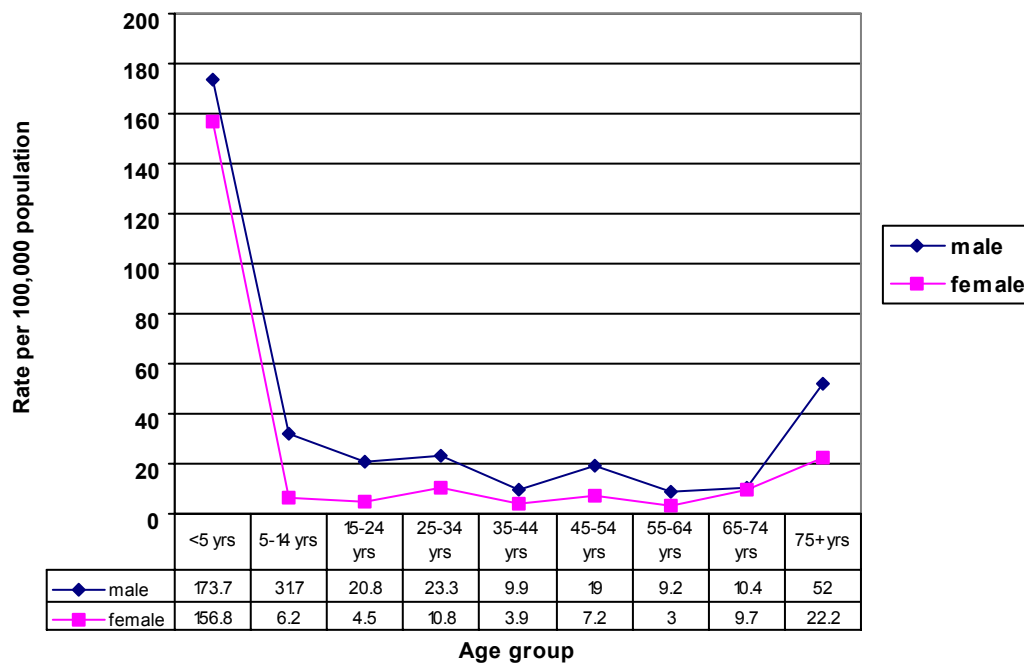


FIGURE 21: Age-Specific Hospital Separation Rates for Unintentional Poisoning by Drugs etc among Residents of the Illawarra Health Area, by Sex, 1997/98-1998/99

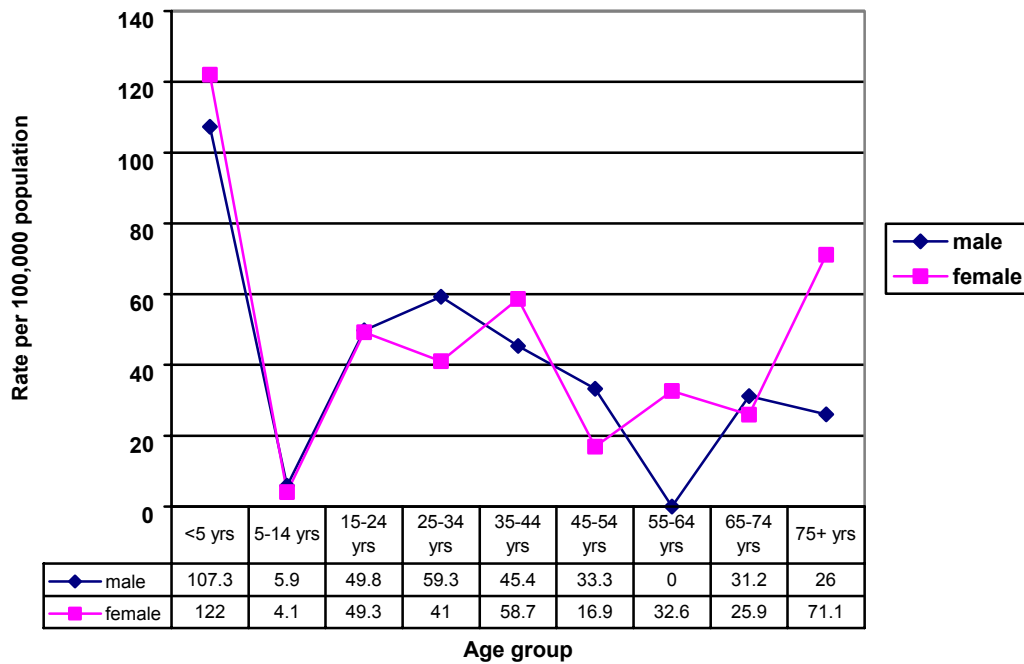


FIGURE 22: Trends in Directly Age-Standardised Hospital Separation Rates for Falls among Residents of the Illawarra Health Area and NSW², all Ages, by Sex, 1989/90-1998/99

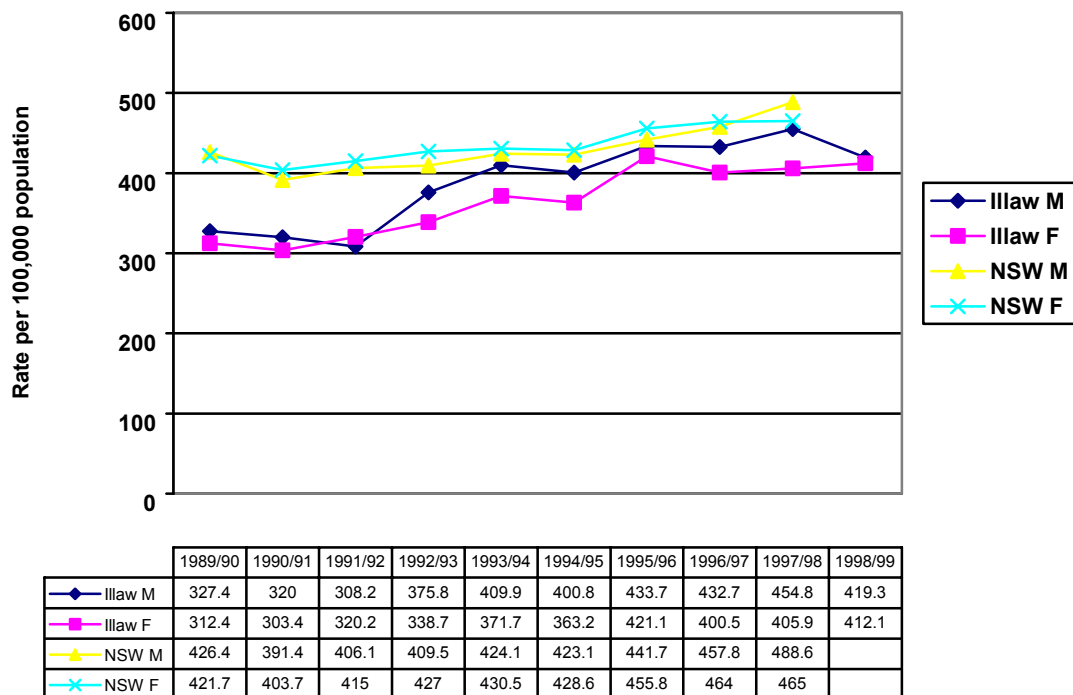


FIGURE 23: Trends in Directly Age-Standardised Hospital Separation Rates for Falls among Residents of the Illawarra Health Area and NSW², 65 Years and Older, by Sex, 1989/90-1998/99

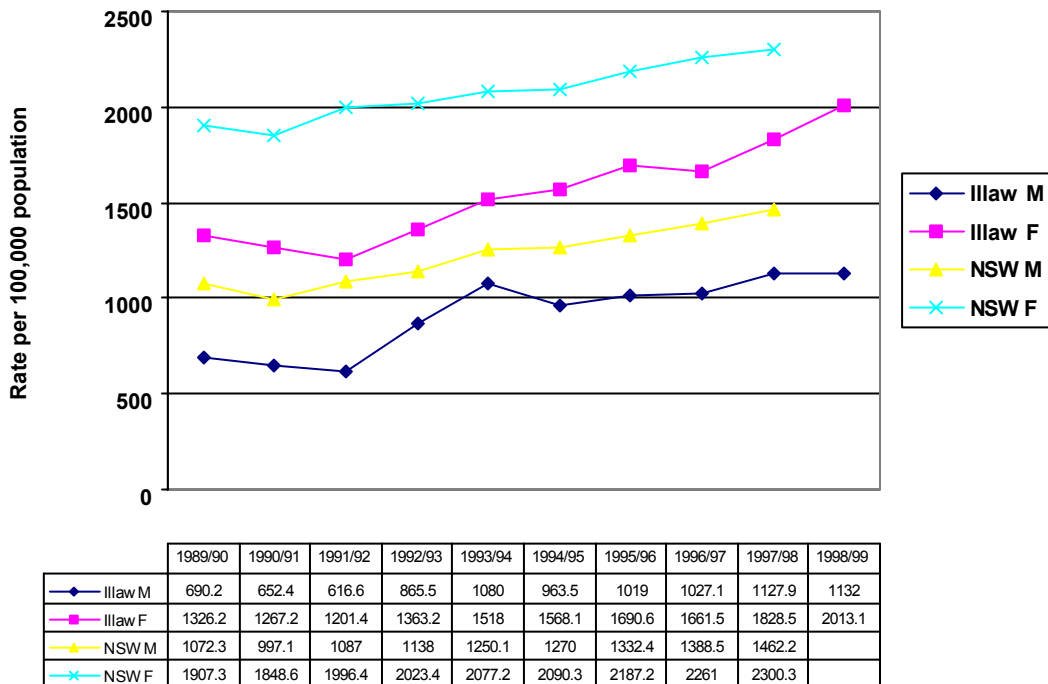


FIGURE 24: Trends in Directly Age-Standardised Hospital Separation Rates for Road Injury among Residents of the Illawarra Health Area and NSW², all Ages, by Sex, 1989/90-1998/99

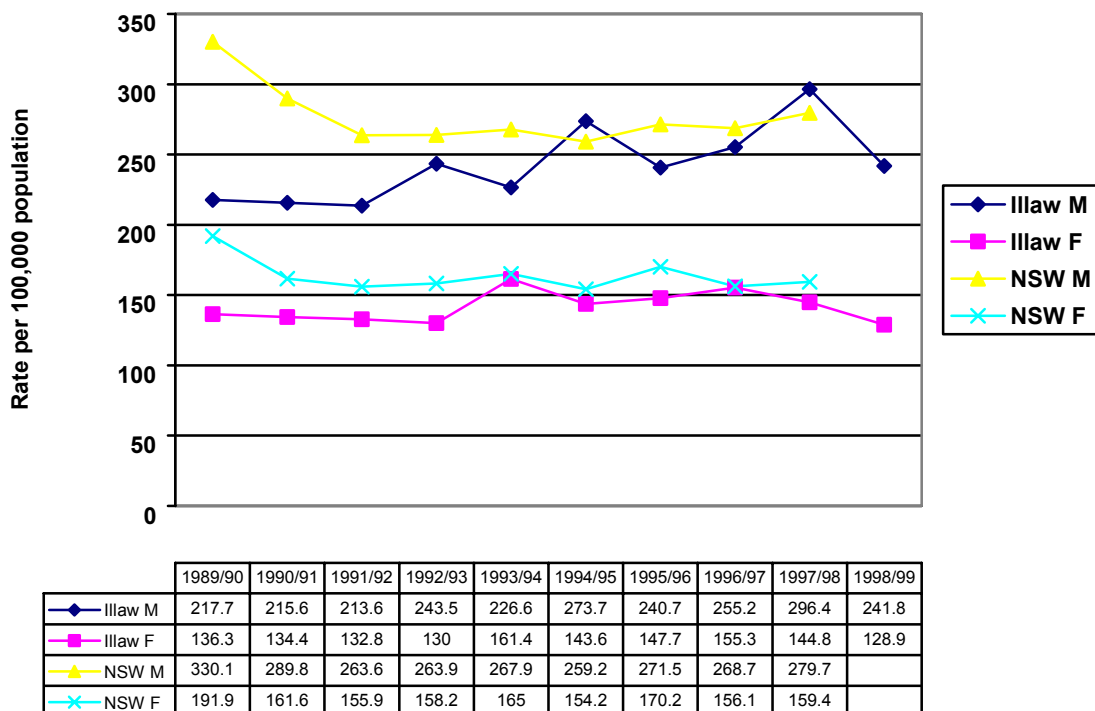


FIGURE 25:
Trends in Directly Age-Standardised Hospital Separation Rates for Road Injury among Residents of the Illawarra Health Area and NSW², 15-24 Years, by Sex, 1989/90-1998/99



FIGURE 26:
Trends in Directly Age-Standardised Hospital Separation Rates for Self-Harm among Residents of the Illawarra Health Area and NSW², all Ages, by Sex, 1989/90-1998/99

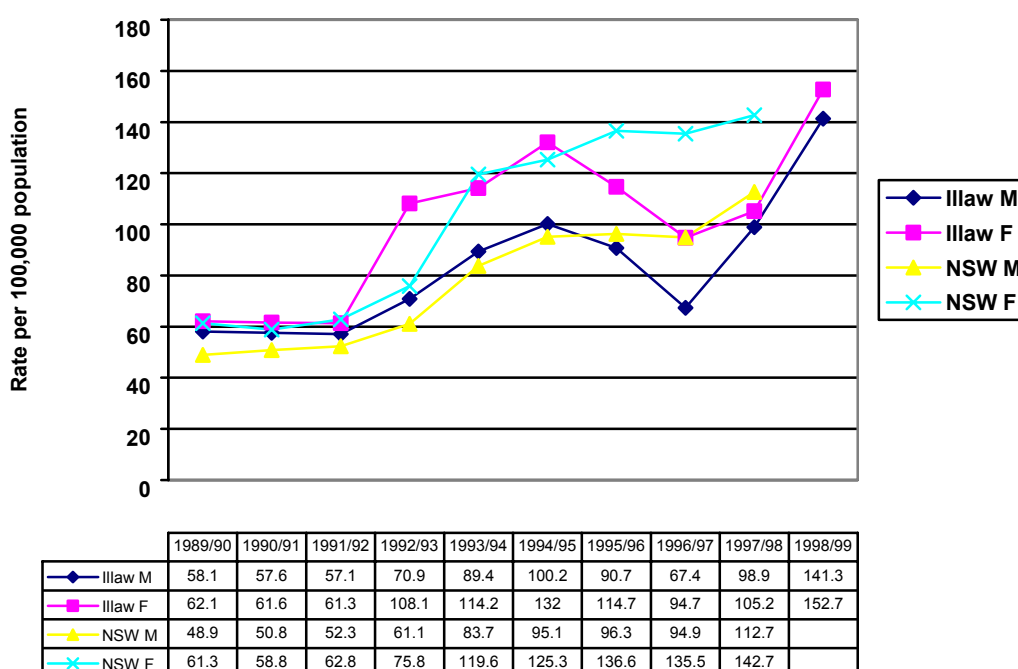
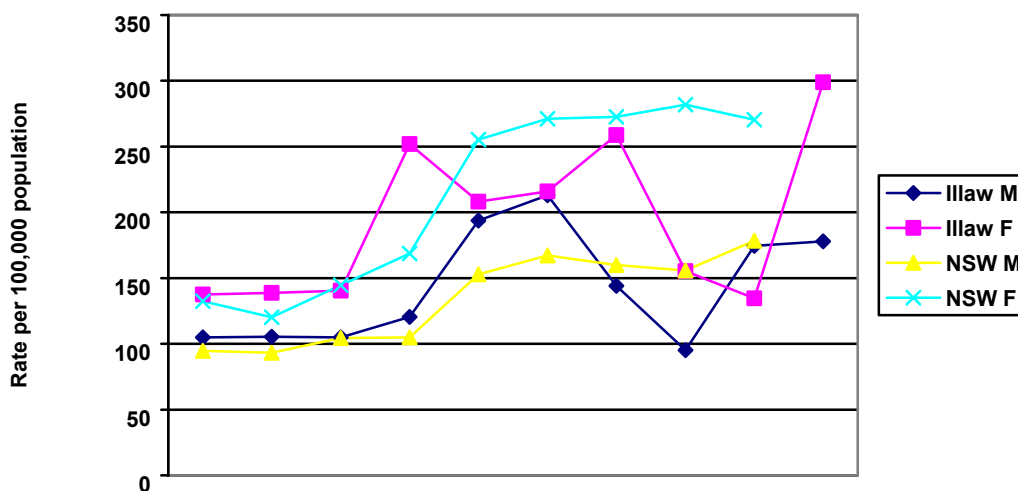


FIGURE 27: Trends in Directly Age-Standardised Hospital Separation Rates for Self-Harm among Residents of the Illawarra Health Area and NSW², 15-24 Years, by Sex, 1989/90-1998/99



	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99
◆ Illaw M	104.8	105.3	104.8	120.4	193.8	212.9	144.1	95.2	174.6	177.9
■ Illaw F	137.5	138.7	140.4	251.9	208	215.9	258.7	155.3	134.5	298.8
▲ NSW M	94.8	93.1	104.4	105	152.8	167.2	160	155.8	178.3	
× NSW F	132.3	120.2	144.5	168.6	255.4	271.2	272.5	281.9	270.3	

APPENDIX

International Classification Of Disease (ICD) External Codes (E Codes) Used To Define Causes

CAUSE	ICD9 E CODE DIAGNOSIS	COMMENTS
Falls	E880-885.9, E886.1-888	Excludes falls in sports E886.0 Exception: Falls trends, as shown in Figures 15 and 16, have included falls in sports, i.e. E880-888, and excluded same day admissions, to allow comparability with NSW data reported in NSW Health's <i>Report of the Chief Health Officer 2000</i> ¹ .
Road injury	E810-819, E826-829	
Self-harm/ attempted suicide	E950-959	
Interpersonal violence	E960-964, E965.5-969	Excludes assault by fire-arms E965.0-965.4
Sports injury	E886.0, E917.0, E927	Includes falls in sports E886.0
Machinery-in-operation	E836, E919.1-919.9, E920.0-920.2	
Motor vehicle non-traffic accidents	E820-825	
Unintentional poisoning – drugs, medicines, biologicals	E850-859	
Fire, burns, scalds	E890-899, E924.0, E924.8, E924.9	
Unintentional poisoning – other	E860-869	
Drowning, submersion	E830, E832, E910, E984	
Fire-arms	E922, E965.0-965.4, E970, E985.0-985.4	Includes assault (interpersonal violence) by fire-arms E965.0-965.4
Other	All other E codes	But excludes medical misadventures (E870-879) and adverse effects of drugs etc (E930-949)

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