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Diabetes Mellitus Among Residents of the Illawarra Health Area

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Diabetes Mellitus Among Residents of the Illawarra Health Area

Abstract
This inaugural issue of The Illawarra Population Health Profiler looks at the burden of diabetes mellitus among people resident in the Illawarra Health Area, and each of its Local Government Areas. The relative impact of the condition in the population is compared to the NSW average. Prevalence of diabetes is described as well as the burden, as measured by the levels of excess hospitalisation and self-reports of interference with regular activities. Information is also provided on levels of management. The overview is followed by the source of the data and the methods used, followed by more detailed analysis.

Keywords
illawarra, residents, area, among, health, mellitus, diabetes

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Introduction

This inaugural issue of The Illawarra Population Health Profiler looks at the burden of diabetes mellitus among people resident in the Illawarra Health Area, and each of its Local Government Areas. The relative impact of the condition in the population is compared to the NSW average. Prevalence of diabetes is described as well as the burden, as measured by the levels of excess hospitalisation and self-reports of interference with regular activities. Information is also provided on levels of management. The overview is followed by the source of the data and the methods used, followed by more detailed analysis.

Overview

Prevalence and Severity

- In 1997-1998 an estimated 4.5% of Illawarra residents (males: 4.2%, females: 4.8%) aged 16 years and over had current diabetes.

  The prevalence of diabetes was significantly higher in the Illawarra than the NSW average (for total persons, and females).

  About 5% had Type I and 95% Type II diabetes mellitus.

- About 20% of Illawarra males and 14% of Illawarra females with diabetes reported moderate to extreme interference with their daily activities.
Hospitalisations

- In 1997/98-1998/99 diabetes (as principal diagnosis) accounted for 0.40% (857) of all hospitalisations of Illawarra residents. This is likely to underestimate the impact of diabetes, as diabetes hospitalisations are mainly determined by complications, often recorded as the principal diagnosis rather than diabetes.

- The diabetes hospitalisation rate among Illawarra residents was significantly higher than the NSW average among both males (15% higher) and females (20% higher). This equates, on an annual basis, to 429 excess hospitalisations.

This ‘excess’ was accounted for by the relatively high rate of diabetes hospitalisations among Shoalhaven residents.

- On the other hand, hospitalisation rates for lower extremity amputation – considered a consequence of diabetes complications and preventable through appropriate management – were considerably lower than the NSW average among Shoalhaven residents (significantly so for Shoalhaven males).

- Diabetes hospitalisation rates among Illawarra residents decreased steadily in the early 1990s, then increased steeply to a peak in 1996/97, and have been declining since.

These trends are similar in direction to, but much more pronounced than that observed in, NSW as a whole, suggesting that local changes (e.g. admission practices) have had a major influence.

Management

- In 1997-1998, about 41% of Illawarra residents with current diabetes or high blood sugar were taking tablets and 14% took insulin.

In addition, 81% reported that they followed a diet, 26% were trying to control their weight, and 32% were doing exercise.

- More than 1 in 2 Illawarra residents with current diabetes or high blood sugar reported never having had a consultation with a podiatrist, 1 in 5 with a diabetes educator, and 1 in 5 with a dietitian.

In addition, more than 1 in 2 Illawarra residents with current diabetes reported no foot checks in the previous year, about 1 in 2 reported no eye checks in the previous year, and 1 in 4 reported no eye specialist consultation in the previous 2 years.

Relative to NSW, the Illawarra appears to compare favourably in terms of accessing diabetes educators and dietitians, but unfavourably in terms of accessing podiatrists, and having regular foot and eye checks.

Methods

Data for this profile were obtained from:

- NSW Health’s NSW Inpatients Statistics Collection and NSW Health Surveys; and

The hospital separation and population 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.1

Standardised Separation Ratios (SSR) have been used to compare the study population (e.g. residents of the whole Illawarra Health Area or Kiama Local Government Area), with the total NSW population. The SSRs have been calculated for the two-year period 1997/98 and 1998/99.
A SSR of 1.0 indicates that the 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 rate for the study population double (or 100% higher than), and a SSR of 0.5 indicates a rate half (or 50% lower than), that of the NSW population. Arrows in the tables indicate whether any differences between the study and NSW populations are statistically significant at the 5% level.

'Excess hospitalisations' represent the number of hospital separations which occurred above (+) (or below (-)) the numbers expected based on the NSW average. Age-specific rates for both males and females are shown to demonstrate which age/sex groups are at highest risk.

In addition, directly age-standardised hospitalisation rates, by sex and Local Government Area, 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 Local Government Area (LGA).

Directly age-standardised rates also allow a comparison over time, so trends in diabetes-related hospitalisations over the last decade are shown. Comparable trend data which have been published for NSW residents are also shown. 2

In addition responses about diabetes among Illawarra residents aged 16 years and over who responded to the 1997 and 1998 NSW Health Surveys 1 are summarised in this report. The NSW Health Surveys in 1997 and 1998 included a module of questions which explored the prevalence, severity and management of diabetes. Prevalence estimates are based on responses from 2,060 Illawarra residents (1,026 in 1997 and 1,034 in 1998), including 104 respondents with current diabetes (51 in 1997 and 53 in 1998) or 115 respondents with current diabetes or high blood sugar (59 in 1997 and 56 in 1998 ). These estimates are compared with those for NSW residents (based on 35,025 respondents). Again, any differences between the Illawarra and NSW populations are reported as statistically significant at the 5% level.

Some Data Limitations

Readers should note that hospital separation data do not give an accurate picture of the real community burden of diabetes and diabetes-related illness. Diabetes hospitalisations are mainly determined by complications, which are often recorded as the principal diagnosis rather than diabetes. These complications include: cardiovascular disease; diabetic retinopathy (leading to visual impairment and blindness); diabetic nephropathy (leading to renal impairment and failure); diabetic neuropathy (leading to impotence, leg and foot ulcers, lower limb amputations).

Mortality data for diabetes among Illawarra residents have not been included in this report because of the limitations in the available data. Prior to 1997 diabetes was substantially underreported as a cause of death in Australia. This was because only the underlying cause of death, and not the contributing conditions, was recorded by the ABS. While both underlying and contributing causes have been recorded since 1997, it has been estimated that between 27% and 44% of death certificates for people with diabetes do not list diabetes as a cause of death.

The population-based survey data from the NSW Health Survey fill some of the information gaps for diabetes, in terms of providing information about disease prevalence and management. In addition readers are referred to the Profiler's Issue 2: Cardiovascular Disease Mortality, Morbidity and Risk Factors among Residents of the Illawarra Health Area, which reports survey data related to risk factors for the development of diabetes (Type II) in the general adult population, e.g. in terms of physical activity and nutrition.

However the NSW Health Survey data have their own limitations, including that they are based
on self-report, and are limited to adults aged 16 years and over.

Importantly, many of the survey estimates are based on relatively small numbers of respondents. For example, while some indicators reported for those with current diabetes (i.e. based on responses from about 100 Illawarra residents) appear to differ considerably from the NSW estimates, small numbers may mean that there is insufficient power to detect a statistically significant difference (if an underlying difference really does exist). Clearly, the numbers of respondents in each LGA are too small to give meaningful LGA-based estimates, so these have not been reported.

**Prevalence and Severity**

- In 1997-1998 4.2% of Illawarra males and 4.8% of Illawarra females aged 16 years and over reported that they currently suffer from **diabetes** (as diagnosed by a doctor or at a hospital). A further 0.7% of Illawarra males and 0.5% of Illawarra females reported **high or borderline blood glucose levels** (Figure 1).

- Of those Illawarra residents with current diabetes, about 5% (males: 5.4%, females: 4.2%) had **Type I diabetes** (often referred to as juvenile-onset diabetes or insulin-dependent diabetes mellitus) (Figure 2).

- The other 95% (males: 94.6%, females: 95.8%) had **Type II diabetes** (often referred to as maturity-onset diabetes or non-insulin dependent diabetes mellitus) (Figure 2).

(The using data from the **NSW Health Survey**, Type I diabetes was defined as taking insulin, and either under 35 years at diagnosis, or 35 years and over at diagnosis and started taking insulin within 2 years of diagnosis). Type II diabetes was defined as all others with current diabetes (except those only with diabetes during pregnancy). Clearly some respondents classified as having Type II diabetes may actually have Type I diabetes).

- Most people with diabetes mellitus are diagnosed after about the age of 40 years (and with Type II diabetes). In 1997-1998 the peak age group for diagnosis of Illawarra males with diabetes was 50-59 years (30.2%), followed closely by the 60-69 years age group (28.3%). In the Illawarra females appear to be diagnosed earlier, on average, than males; the peak age group for diagnosis among Illawarra females was 40-49 years (27.9%), followed closely by the 50-59 years age group (26.7%) (Figure 3).

- In 1997-1998 20.2% of Illawarra males and 14.1% of Illawarra females with current diabetes reported that their diabetes led to **moderate to extreme interference** in their daily activities (Figure 4).

**Hospitalisations**

- In 1997/98-1998/99 **diabetes** (as the principal diagnosis) accounted for 0.40% of all hospitalisations (857 of 215,326) and 33.6% of hospitalisations for endocrine/nutritional/metabolic/immunity disorders (ICD9 codes 240-280) (857 of 2,547). Diabetes accounted for a slightly higher proportion of hospitalisations among Illawarra males (0.44%, 452 of 102,558) than females (0.36%, 405 of 112,768) (Table 1).

- The diabetes hospitalisation rate increased steeply with age from about 40-50 years (i.e. associated with a steep increase in prevalence and complications of Type II diabetes). Diabetes hospitalisation rates for age groups up to and including 35-44 years were generally less than 100 per 100,000, then increased steeply to a peak of about 500 per 100,000 in the age group 75 years and over (Figure 6).

- In contrast to current diabetes prevalence, Illawarra males had a higher diabetes hospitalisation rate than Illawarra females (although the difference was insignificant). Male rates were higher in all age groups after the age of about 40 years (Figures 5-6).
Comparisons with NSW

- Compared to the NSW averages, in 1997-1998 Illawarra residents were significantly more likely than NSW residents to report current diabetes (4.5% versus 3.6%). This is mainly accounted for by the significantly higher prevalence of current diabetes reported among Illawarra than NSW females (4.8% versus 3.2%) (Figure 1).

- Interestingly, compared to the NSW averages, significantly higher proportions of Illawarra residents with current diabetes had Type II diabetes (95.5% versus 84.4%). Conversely, significantly lower proportions of Illawarra residents with current diabetes had Type I diabetes (4.8% versus 15.6%) (Figure 2).

- Taking into account both the prevalence of current diabetes and proportions estimated to be due to Type I and Type II diabetes, it appears that while the prevalence of Type II diabetes among Illawarra residents is high relative to the NSW average (4.3% versus 3.0%), the prevalence of Type I diabetes may be relatively low (0.22% versus 0.56% in 1997-1998). (However, it is not possible to draw conclusions from these survey data, because of the small numbers involved etc.)

- NSW as a whole also appears to have a slightly different pattern of age of diagnosis of diabetes than the Illawarra. Illawarra residents tending to be diagnosed less commonly both in the younger age groups (aged less than 40 years, particularly for males) and the older age groups (aged 60 years and over, particularly for females).\(^1\) (This is consistent with the observations described above about the relative prevalence of Type I and II diabetes among Illawarra and NSW residents).

Specifically, in NSW age at diagnosis was similar for males and females (wrt being apparently younger for Illawarra females than males). In NSW the peak age group for diagnosis was older than in the Illawarra, in the age group 60-69 years for both males and females. In addition NSW residents with diabetes were more likely than Illawarra residents to have been diagnosed in the younger age groups, these differences being significant for males aged less than 20 years (Illawarra: 1.2%, NSW: 6.1%), total persons aged less than 20 years (Illawarra: 1.4%, NSW: 5.9%), and males aged 20-39 years (Illawarra: 3.5%, 15.5%).\(^1\)

- Slightly higher proportions of Illawarra residents with current diabetes reported moderate to extreme interference with their daily activities (males: 20.2%, females: 14.1%), than their NSW counterparts (males: 13.7%, females: 12.2%); however these differences were not significant (Figure 4).\(^1\)

- In 1997/98-1998/99 Illawarra residents were significantly more likely than NSW residents to be hospitalised with diabetes mellitus (as principal diagnosis). Compared to NSW residents, diabetes hospitalisation rates among Illawarra males were 15% higher, and among Illawarra females were 20% higher, both significant differences (Table 1).

- In 1997/98-1998/99 hospitalisation rates for lower extremity amputation among Illawarra males and females with diabetes were not significantly different to the NSW averages (although the rate among Illawarra females was 18% higher than the NSW average) (Table 1).

(The increased risk of lower extremity amputation among people with diabetes is due to the complications of neuropathy, peripheral vascular disease and infection. About 30-50% of diabetes-related amputations can be prevented by improved glucose control, and appropriate foot-care education and treatment.\(^2\))

Excess Hospitalisations

- The relatively high diabetes hospitalisation rates among Illawarra residents in 1997/98-1998/99 equate, on an annual basis, to 429 excess hospitalisations (226 for males
and 203 for females) (i.e. ‘excess’ to the numbers expected based on the NSW averages) (Table 1).

**Trends**

- During the last decade diabetes hospitalisation rates among Illawarra residents decreased steadily in the early 1990s (from about 140 per 100,000 in 1989/90 to 100 per 100,000 in 1994/95), then increased steeply to a peak in 1996/97 (at about 150 per 100,000), and have been declining since (Figure 7).

  These trends are similar in direction to, but much more pronounced than that observed in, NSW as a whole, which had a relatively slow decline in the early 1990s, then slight increase since (at least until 1996/97) (Figure 7).\(^2\)

  The slight increase in NSW in recent years is thought to reflect an increasing awareness of diabetes as a significant cause of ill-health, improved case-finding and recording of diabetes in hospital data and/or a real increase in diabetes prevalence.\(^2\)

  The much more pronounced trends in the Illawarra, particularly the 1996/97 peak, suggests local administrative and/or clinical changes (e.g. admission practices) have had a major influence.

- Over the last decade hospitalisation rates for lower extremity amputation among Illawarra residents with diabetes have fluctuated annually, without showing a clear trend. In NSW a slow increase from 1989/90 to 1996/97, then decline in 1997/98, is evident (Figure 8).

**Local Government Areas**

- During 1997/98 and 1998/99 diabetes hospitalisation rates were significantly higher than the NSW averages for Shoalhaven males (73% higher), Shoalhaven females (61%), and, to a lesser extent, Shellharbour females (31% higher). With these exceptions, diabetes hospitalisation rates among males and females in each of the LGAs were average (or even slightly below average) for NSW (Table 1).

  Diabetes hospitalisation rates among Shoalhaven males and females were the highest of the LGAs. In fact the Shoalhaven rates were significantly higher than the rates in each of the other LGAs, except Shellharbour for females (Figure 5).

  It appears that the ‘excess’ diabetes hospitalisations among residents of the Illawarra Health Area in 1997/98-1998/99 noted above, are entirely accounted for by the excess among Shoalhaven residents (Table 1).

- In 1997/98-1998/99 hospitalisation rates for lower extremity amputation among males resident in the Shoalhaven LGA were significantly lower than the NSW average (52% lower, based on 7 hospitalisations). Similarly, rates were lower among Shoalhaven females than the NSW average (66% lower, based on 2 hospitalisations); however the difference for females did not reach statistical significance (Table 1).

  With the exception of the Shoalhaven (males), lower extremity amputations among people with diabetes resident in each of the LGAs were not significantly different to the NSW averages (Table 1).

  Given that the hospitalisation rate for lower extremity amputation is considered an indicator of sub-optimal diabetes management, it appears that diabetes management (or at least those aspects related to the need for amputations) among Shoalhaven residents is, on average, superior to diabetes management among people resident in the rest of NSW (and the Illawarra).

**Management**

- Of Illawarra residents with current diabetes or high blood sugar, 81.2% reported that they followed a diet, 26.4% were trying to
control their **weight**, and 31.6% were doing **exercise**, as a means of controlling their diabetes or high blood sugar (Figure 9).

In addition, 41.4% were taking **tablets** and 14.2% took **insulin** (Figure 9).

About 5.6% reported that they took no actions to manage their diabetes or high blood sugar (Figure 9).

The main differences between Illawarra males and females were that more Illawarra males reported taking insulin (males: 18.6%; females: 10.2%), while more females reported following a diet (males: 77.3%, females: 84.8%) and/or trying to control their weight (males: 17.7%), females: 34.3) (Figure 9).

These actions to manage diabetes were broadly similar between Illawarra and NSW residents (Figure 9). While it appears that Illawarra residents are less likely than NSW residents to take insulin (particularly females) and more likely to take tablets, these differences were not significant. (This pattern of medication use, however, may help explain the relatively low estimated prevalence of Type I diabetes and high estimated prevalence of Type II diabetes among Illawarra respondents).

Similarly, Illawarra females appear to be more likely than NSW females to follow a diet and/or try to control their weight; these differences, however, were not significant (Figure 9).

- In 1997-1998, of those Illawarra residents with current diabetes, more than 1 or 2 reported never having had a consultation with a **podiatrist** (61.7%), 1 in 5 with a **diabetes educator** (20.6%) and 1 in 5 with a **dietitian** (20.1%) (Figure 10).

Relative to NSW, the Illawarra appears to compare favourably in terms of accessing diabetes educators, (never consulted – Illawarra: 20.6%, NSW 31.7%), the difference being significant for females (Illawarra: 13.9%, NSW 29.6%). The Illawarra also appears to compare favourably in terms of accessing dietitians (never consulted – Illawarra: 20.1%, NSW: 27.1%), however these differences were not significant (Figure 10).

Conversely the Illawarra may compare unfavourably in terms of accessing podiatrists (never consulted – Illawarra: 61.7%, NSW 56.8%), although these differences between Illawarra and NSW residents with diabetes were relatively minor (Figure 10).

- In addition, more than 1 in 2 Illawarra residents with current diabetes reported no **foot checks** in the previous year (62.2%), about 1 in 2 reported no **eye checks** in the previous year (48.9%), and 1 in 4 reported no **eye specialist** consultation in the previous 2 years (23.2%) (Figure 10).

The Illawarra appears to compare unfavourably with NSW in terms of both foot checks (no check – Illawarra: 62.2%, NSW: 51.6%) and eye checks in the previous year (no check – Illawarra: 48.9%, NSW: 41.3%), however these differences were not significant (Figure 10).

- Similarly high proportions of Illawarra and NSW residents reported that they do not have a **diabetes management card** (Illawarra: 85.8%, NSW: 84.8%) (Figure 10).
### TABLE 1:
**Hospital Separations for Diabetes by Local Government Area**

<table>
<thead>
<tr>
<th>Local Government Area</th>
<th>MALES</th>
<th>FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Standardised separation ratio</td>
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<tr>
<td><strong>DIABETES</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wollongong</td>
<td>203</td>
<td>0.97</td>
</tr>
<tr>
<td>Shellharbour</td>
<td>48</td>
<td>0.87</td>
</tr>
<tr>
<td>Kiama</td>
<td>16</td>
<td>0.69</td>
</tr>
<tr>
<td>Shoalhaven</td>
<td>185</td>
<td>1.73↑</td>
</tr>
<tr>
<td>Total Illawarra</td>
<td>452</td>
<td>1.15↑</td>
</tr>
<tr>
<td><strong>LOWER EXTREMITY AMPUTATION WITH DIABETES</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wollongong</td>
<td>34</td>
<td>1.40</td>
</tr>
<tr>
<td>Shellharbour</td>
<td>7</td>
<td>1.20</td>
</tr>
<tr>
<td>Kiama</td>
<td>1</td>
<td>0.33</td>
</tr>
<tr>
<td>Shoalhaven</td>
<td>7</td>
<td>0.48</td>
</tr>
<tr>
<td>Total Illawarra</td>
<td>49</td>
<td>1.01</td>
</tr>
</tbody>
</table>


**Notes:**

1. Diabetes = ICD9 Code 250, as Principal Diagnosis and Lower Extremity Amputation = ICD9 Procedure Code 84.1 in First Procedure Field, with Diabetes ICD9 Code 250 in First Five Diagnosis Fields

2. The SSR is the ratio of the actual (or ‘observed’) number of Illawarra Health Area (or LGA) resident separations to the ‘expected’ number of Illawarra Health Area (or LGA) 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 (or LGA).
FIGURE 1:
Current Diabetes Prevalence, by Sex, Persons Aged 16 Years and Over, Illawarra Health Area and NSW, 1997 and 1998, (NSW Health Survey)"
FIGURE 3:
Age at Diagnosis of Diabetes, Illawarra Residents Aged 16 Years and Over with Current Diabetes, by Age and Sex, 1997 and 1998, (NSW Health Survey)¹

![Graph showing age at diagnosis of diabetes by age group and sex.]

<table>
<thead>
<tr>
<th>Age group</th>
<th>&lt;20 yrs</th>
<th>20-39 yrs</th>
<th>40-49 yrs</th>
<th>50-59 yrs</th>
<th>60-69 yrs</th>
<th>70+ yrs</th>
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<td>30.2</td>
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<td>13</td>
<td>27.9</td>
<td>26.7</td>
<td>16.4</td>
<td>14.4</td>
</tr>
</tbody>
</table>

FIGURE 4:
Diabetes Severity, Persons Aged 16 Years and Over with Current Diabetes, Illawarra Health Area and NSW, 1997 and 1998, (NSW Health Survey)¹

![Bar chart showing diabetes severity by gender and location.]

- Illaw males: 20.2%
- NSW males: 13.7%
- Illaw females: 14.1%
- NSW females: 12.2%
FIGURE 5:
Directly Age-Standardised Diabetes Hospital Separation Rates Among Residents of Illawarra Health Area, and each Local Government Areas, by Sex, 1997/98-1998/99

![Graph showing directly age-standardised diabetes hospital separation rates among residents of Illawarra Health Area, and each local government area, by sex, 1997/98-1998/99.](image)

FIGURE 6:
Age-Specific Hospitalisation Rates for Diabetes Among Residents of the Illawarra Health Area, by Sex, 1997-1998

![Graph showing age-specific hospitalisation rates for diabetes among residents of the Illawarra Health Area, by sex, 1997-1998.](image)
FIGURE 7:
Trends in Directly Age-Standardised Hospital Separation Rates for Diabetes among Residents of the Illawarra Health Area and NSW, all Ages, by Sex, 1989/90-1998/99

![Graph showing trends in diabetes hospital separation rates for Illawarra and NSW, by sex and age groups.](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>Illaw M</th>
<th>Illaw F</th>
<th>NSW M</th>
<th>NSW F</th>
</tr>
</thead>
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<td>135.1</td>
<td>144.4</td>
<td>106.2</td>
<td>108.0</td>
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<tr>
<td>1990/91</td>
<td>113.6</td>
<td>127.4</td>
<td>105.5</td>
<td>96.6</td>
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<tr>
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<td>95.2</td>
<td>99.6</td>
<td>95.7</td>
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<td>1992/93</td>
<td>93.9</td>
<td>104.9</td>
<td>99.6</td>
<td>95.7</td>
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<td>1998/99</td>
<td>117.6</td>
<td>94.2</td>
<td>87.6</td>
<td>87.6</td>
</tr>
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FIGURE 8:
Trends in Directly Age-Standardised Hospital Separation Rates for Lower Extremity Amputation (Where Diabetes Recorded as Diagnosis) Among Residents of the Illawarra Health Area and NSW, all Ages, by Sex, 1989/90-1998/99

![Graph showing trends in lower extremity amputation hospital separation rates for Illawarra and NSW, by sex and age groups.](image)

<table>
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<tr>
<th>Year</th>
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<th>Illaw F</th>
<th>NSW M</th>
<th>NSW F</th>
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<td>1998/99</td>
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<td>4.8</td>
<td>11.8</td>
<td>4.4</td>
</tr>
</tbody>
</table>
FIGURE 9:
Actions Taken to Manage Diabetes, Persons Aged 16 Years and Over with Current Diabetes or High Blood Sugar, by Sex, Illawarra Health Area and NSW, 1997 and 1998 (NSW Health Survey)\(^1\)

FIGURE 10:
Diabetes Management, Persons Aged 16+ Years with Current Diabetes, by Sex, Illawarra Health Area and NSW, 1997 and 1998, (NSW Health Survey)\(^1\)
References


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