

ACKNOWLEDGEMENTS

The Asthma Data working group of the NSW Department of Health included: Adrian Bauman (Chairman), Nicola Atkin (Secretary), Deborah Baker, Lindsay Cane, Bin Jalaludin, Margot Lemcke, Peter Lewis, Guy Marks, and Margaret Williamson.

REFERENCES

1. Inman W, Adelstein A. Rise and fall of asthma mortality in England and Wales in relation to use of pressurised aerosols. *Lancet* 1969 ; ii: 279–84.
2. Pearce N, Grainger J, Atkinson M, Crane J, Burgess C, Culling C, et al. Case-control study of prescribed fenoterol and death from asthma in New Zealand, 1977–81. *Thorax* 1990; 45: 170–5.
3. Public Health Division. Report on the 1997 and 1998 NSW Health Surveys. Sydney: NSW Department of Health, 2000; www.health.nsw.gov.au/public-health/nswhs/hsindex.htm.
4. National Asthma Campaign. *Asthma Management Handbook*. 4th edition. Melbourne: National Asthma Campaign Ltd, 1998.
5. Marks G, Jalaludin B, Williamson M, Atkin N, Bauman A. Use of ‘preventer’ medications and written asthma management plans among adults with asthma in New South Wales. *Med J Aust* 2000; 173: 407–10. ☒

PREVALENCE AND MANAGEMENT OF DIABETES IN NSW: IS CARE ADHERING TO THE CLINICAL GUIDELINES?

Margaret Williamson

*Department of Public Health and Community Medicine
University of Sydney (Westmead)*

Julianne Quaine

*Public Health Unit
Southern Area Health Service*

Diabetes is among the most costly of health conditions both for the person with diabetes and its complications and for the health service providing care.¹ There is now good evidence that optimal standards of care for people

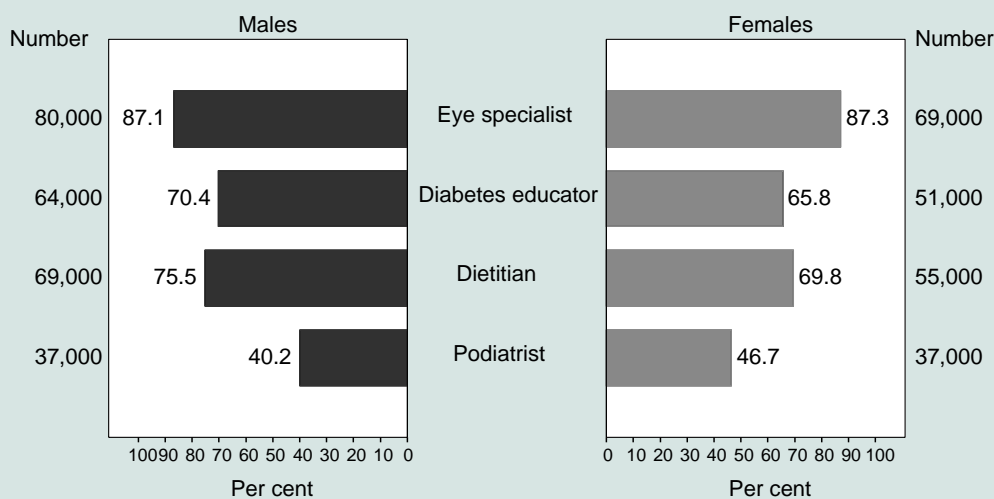
with diabetes will ultimately reduce the burden of the disease on individuals and the community.²

In 1996, the NSW Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus (the Guidelines) were developed by an expert group of clinical and public health professionals, and consumer representatives.³ The Guidelines were aimed at improving the primary care of diabetes and reducing its complications. Since 1997, these Guidelines have been disseminated through primary care and professional

TABLE 1

PRINCIPLES OF CARE AND CLINICAL MANAGEMENT GUIDELINES AND THE KEY INDICATORS FOR MEASURING CONFORMITY TO BEST PRACTICE DIABETES MANAGEMENT.

Principles of Care and Clinical Management Guidelines	Corresponding Indicator(s)
It is a fundamental right of people with diabetes to have access to general education about diabetes, its effects and self management skills	Proportion of people with diabetes who have ever seen a diabetes educator.
It is a fundamental right of people with diabetes to have access to dietary assessment and education	Proportion of people with diabetes who have ever seen a dietitian.
It is a fundamental right of people with diabetes to have access to regular clinical screening and ongoing care .	Proportion of people with diabetes who have ever seen an eye specialist. Proportion of people with diabetes who have ever seen a podiatrist.
Ensure a comprehensive ophthalmological examination is carried out every 1-2 years	Proportion of people who have had the back of their eyes checked for diabetes-related eye problems at least once in the last 12 months.
Measure blood pressure every visit	Proportion of people who had their blood pressure measured in the last 3 months.
Examine feet at every visit or every six months	Proportion of people who had their feet checked for signs of ulcers, infections and abnormalities by a health professional at least twice in the last 12 months.
Measure cholesterol every 1-2 years or 3-6 months if abnormal or on treatment	Proportion of people who had their cholesterol measured in the last year.

FIGURE 1**EVER CONSULTED HEALTH PROFESSIONAL FOR DIABETES BY SEX, PERSONS AGED 16 YEARS AND OVER WITH CURRENT DIABETES, NSW 1997 AND 1998**

Note: Estimates based on 1,426 respondents with current diabetes (721 in 1997; 705 in 1998). 4 (0.3%) not stated for ever consulting a health professional for diabetes.

Source: NSW Health Surveys 1997 and 1998 (HOIST). Epidemiology and Surveillance Branch, NSW Department of Health.

organisations, specialist diabetes services and the NSW Branch of Diabetes Australia.

The Guidelines set out the principles of care for all people with diabetes. They include seven clinical management guidelines for key areas of diabetes care: blood glucose control, diabetic eye disease, body mass index (BMI), blood pressure, diabetic foot care, lipids, and diabetic nephropathy; and also a series of process and outcome indicators to monitor adherence to the guidelines and improvements in the health of people with diabetes.

In 1997, no timely sources of information were available to monitor compliance with the Guidelines across NSW. To help to address this information gap, a module of diabetes questions was included in the 1997 and 1998 NSW Health Surveys. This paper presents the combined results from the two surveys for self-reported prevalence of diabetes and aspects of diabetes care, and an assessment of how closely the diabetes care reported complied with the Guidelines.

METHODS

A module of diabetes questions was prepared as part of the question development process for the NSW Health Survey Program.^{4,5} The first section of this module consisted of questions to identify respondents who had been diagnosed with diabetes or high blood sugar. For people reporting doctor-diagnosed diabetes or high blood sugar, there were additional questions seeking information about their type of management (insulin or tablets, physical activity, and diet) and their access to specialist

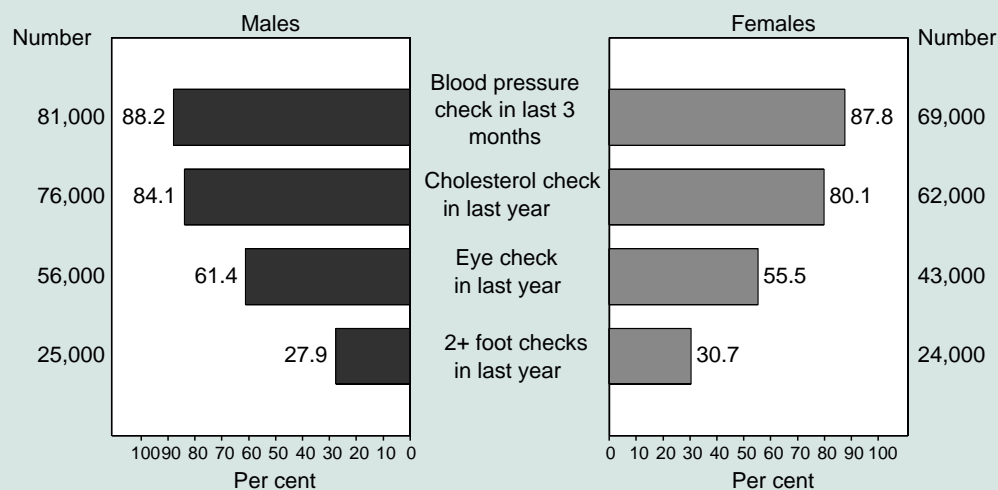
diabetes services (podiatrists, diabetes educators, dietitians, and eye specialists). There were also questions on the frequency of screening for certain risk factors for—or signs of—complications, including elevated cholesterol levels and blood pressure, diabetic eye disease, and diabetic foot problems. Table 1 outlines the key indicators examined and the associated principle of care or clinical guideline.

RESULTS

Of the 35,000 respondents in the 1997 and 1998 NSW Health Surveys, 1,426 (721 in 1997 and 705 in 1998) reported having diabetes. The prevalence of current diabetes was estimated to be significantly higher for males at 3.9 per cent compared to females at 3.2 per cent. From the survey data, it was estimated there were almost 171,000 people aged 16 years and over in NSW with diabetes.

The following results refer only to people with doctor-diagnosed diabetes. Almost 90 per cent of people with diabetes reported that they had seen an eye specialist. Around two-thirds of respondents reported having consulted a dietitian at least once, and a similar proportion reported having consulted a diabetes educator at least once (Figure 1). Just over 40 per cent reported having ever seen a podiatrist.

Figure 2 presents results for compliance with four guidelines. Most people with diabetes (88 per cent percent of both males and females) reported that they had their blood pressure checked in the last three months. A similarly large proportion reported having had their cholesterol checked in the last 12 months (84 per cent of

FIGURE 2**COMPLICATIONS SCREENING BY SEX, PERSONS AGED 16 YEARS AND OVER WITH CURRENT DIABETES, NSW 1997 AND 1998**

Note: Estimates based on 1,426 respondents who have current diabetes (721 in 1997; 705 in 1998). 67 (4.7%) not stated for at least one type of complications screening.

Source: NSW Health Surveys 1997 and 1998 (HOIST). Epidemiology and Surveillance Branch, NSW Department of Health.

males and 80 per cent of females). Only 30 per cent of people with diabetes reported having two or more foot examinations in the last 12 months, while over half (61 per cent of males and 56 per cent of females) reported having had at least one eye examination in this period.

DISCUSSION

The questions about diabetes used in the 1997 and 1998 NSW Health Surveys were well received by respondents and the results are consistent with other similar surveys,^{6,7} indicating that their inclusion is a useful method for monitoring practice.

The majority of people with diabetes reported having seen a specialist diabetes care provider, and that monitoring of their blood pressure and cholesterol were performed at a frequency consistent with the Guidelines. However, reported adherence to the Guidelines for foot and eye examinations was poor—similar to overseas reports—even though eye and foot complications have serious implications for people with diabetes.^{6,7}

CONCLUSION

Overall, the results of the 1997 NSW Health Survey indicate that many people with diabetes are not receiving care that complies with the Guidelines. There is a compelling need to identify and implement more effective ways to provide appropriate care. Improving referral and access to diabetes educators and dietitians for education and advice about the day-to-day management of diabetes is an important area for action, as is improving access to podiatrists.

The NSW Health Survey has proved to be a useful tool to monitor progress towards providing every person with diabetes with appropriate care for the management of their condition and the prevention of future complications. Ongoing monitoring of diabetes care through the NSW Health Survey Program should continue, and could be extended to address the management of other chronic diseases.

REFERENCES

1. Liddle J. *Evidence for the NSW Health Department Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus. Part 1.* Sydney: NSW Department of Health, 1995.
2. Mathers C, Penm R. *Health System Costs of Cardiovascular Disease and Diabetes in Australia, 1993–94.* Canberra: Australian Institute of Health and Welfare, 1999. Catalogue no. HWE 11.
3. NSW Department of Health. *Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus.* Sydney: NSW Department of Health, 1996.
4. Epidemiology and Surveillance Branch. *NSW Health Surveys 1997 and 1998: Survey Questionnaire.* Sydney: NSW Department of Health, 2000.
5. Williamson M, Baker D, Jorm L. *The NSW Health Survey Program: Overview and methods 1996–2000.* Sydney: NSW Department of Health, 2001.
6. Ahluwalia HK, Miller CE, Pickard SP et al. Prevalence and correlates of preventive care among adults with diabetes in Kansas. *Diabetes Care* 2000; 23(4):484–489.
7. Beckles GLA, Engelau M, Narayan V et al. Population-based assessment of the level of care among adults with diabetes in the US. *Diabetes Care* 1998; 21(9): 1432–1438. ☒