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Diabetes: Reducing the Burden of Disease in Victoria

P.G. Van Buynder, K. Mills, R. Watson and S. Begg

ABSTRACT

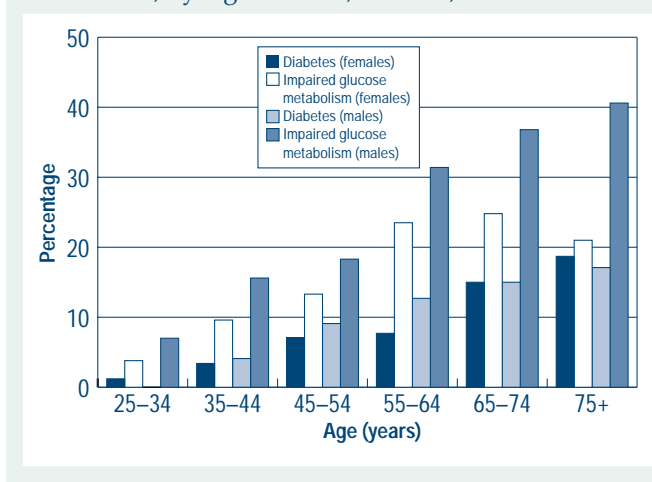
Poor diets and a sedentary lifestyle have led to increased numbers of overweight and obese individuals and an increased prevalence of diabetes. In adults over 25 years of age in Victoria, the prevalence of diabetes is now over 7 per cent. The rate rises with increasing age, reaching a high of 18 per cent in those aged over 75 years. Diabetes is directly responsible for over 3 per cent of the total disease burden in Victoria, with over half due to non-fatal complications. Diabetes is also responsible for a proportion of the burden of disease due to ischaemic heart disease, stroke and peripheral vascular disease. Type 2 diabetes is preventable and most of the complications of diabetes are preventable or can be delayed with good glycaemic control and aggressive management of blood pressure. This paper reviews proposed multidisciplinary programs to reduce the impact of diabetes.

INTRODUCTION

The alarming impact of diabetes in Victoria is well recognised. The situation is unlikely to improve soon without changes to the current nutrition and physical activity behaviour patterns. In adults over 25 years of age in Victoria, the prevalence of diabetes is now over 7

per cent. The rate rises with increasing age, reaching a high of 18 per cent in those aged over 75 years (Figure 1).¹ The prevalence of impaired glucose metabolism (excluding diabetes) is an additional 17 per cent. The number of people with diabetes is estimated to double by 2010,² largely as a result of: the increasing number of elderly; the better recognition of prevalent undiagnosed

Figure 1: Prevalence of Diabetes and Impaired Glucose Metabolism, by Age and Sex, Victoria, 2000.



diabetes; better care for and survival of people with diabetes;³ and the increased prevalence of a sedentary lifestyle and obesity.⁴

The 1999 National Physical Activity Survey collected data on the number of people deemed to achieve sufficient physical activity to derive a health benefit. It found that 14.6 per cent of respondents were sedentary and a further 40.2 per cent, while not sedentary, accumulated insufficient time spent in physical activity.

In relation to diet, the 1995 National Nutrition Survey found that over half of the males aged 12–44 years and one-third of children aged 4–11 years had not consumed fruit or fruit products on the review day. Further, over 20 per cent of these children had eaten no vegetables or vegetable products. The Australian Diabetes and Lifestyle study (Aus Diab) found the overall prevalence of overweight and obese individuals in Victoria to be 60.7 per cent, with 22.3 per cent of individuals in the obese weight range. Table 1 contains the key Victorian findings from the Aus Diab study.⁵

While the number of people with diabetes continues to increase, as does the impact on health services, information on effective illness management is improving. Programs need to address the key elements of effective diabetes care: self-care education and skills training; routine monitoring of clinical status to promote optimal diabetes control; and regular screening to facilitate the early detection and appropriate management of diabetes complications.⁶

THE EXTENT OF THE PROBLEM IN VICTORIA

Diabetes is a significant contributor to the total disease burden, the use of acute hospital beds and the use of other health care services. It contributed an estimated 3.3 per cent and 3.2 per cent to the total disease burden for males and females respectively in Victoria in 1996. This equates to about 10,500 disability-adjusted life years

(DALYs) in males and 9,500 DALYs in females. If the increased risk of ischaemic heart disease, stroke and peripheral vascular disease is included, then the burden of disease increases to 5 per cent in males and 5.6 per cent in females—a combined total of 33,000 DALYs.⁷

Diabetes complications include retinopathy, nephropathy and circulatory disorders, and are largely preventable with good glucose control⁸ and management of hypertension.⁹ Analysis of the Victorian Admitted Episodes dataset (VAED) showed 12,100 admissions for diabetes complications in 1999–2000, with an average length of stay of over eight days. Admission rates for diabetes complications are, on average, 50 per cent higher in rural than in metropolitan regions (3.5 per 1000 versus 2.2 per 1000). The rural/metropolitan differences are most marked in those aged 40–60 years old.¹⁰ Additionally, there is a 12-fold variation in admission rates for diabetes among Primary Care Partnerships.

Programs leading to a 25 per cent reduction in the number of admissions for diabetes complications would lead to a reduction of over 20,000 bed days in Victoria and a saving of around \$8.4 million of hospital expenditure.¹⁰

The Victorian Population Health Survey, conducted by the Public Health Division in 1999, indicated that 92 per cent of people with diabetes had visited a doctor in the previous three months (compared with 65.2 per cent of the general population). In relation to other health services, in the previous 12 months:

- 35 per cent had seen a podiatrist or chiroprapist.
- 38 per cent had seen a diabetes educator or nurse.
- 54 per cent had seen an ophthalmologist or optometrist.
- 29 per cent had seen a nutritionist or dietitian.
- 30 per cent had seen a specialist about their diabetes.¹¹

Based on suggested levels of service provision, the rate of use of some of these services (particularly nurses/educators and foot care specialists) is sub-optimal.

Table 1: Key Aus Diab Findings for Persons Aged over 25 Years, Victoria, 2000.

	Males (%)	Females (%)	Total (%)
Overall diabetes rate of those aged ≥ 25 years	7.3	6.9	7.1
Prevalence of impaired glucose metabolism (includes impaired glucose fasting and impaired glucose tolerance)	20.1	14.0	17.0
Prevalence of overweight (BMI ≥ 25)	69.9	51.9	60.7
Prevalence of obesity (BMI ≥ 30)	21.0	23.5	22.3
Prevalence of elevated total cholesterol (≥ 5.5 mmol/l)	52.3	55.8	54.1
Prevalence of elevated triglycerides (≥ 2.0 mmol/l)	25.7	18.1	22.0
Prevalence of hypertension	40.5	33.1	36.8
Prevalence of sufficient exercise	58.5	45.6	51.9
Prevalence of sedentary lifestyle	10.6	13.4	12.0

>Diabetes: Reducing the Burden of Disease in Victoria, continued from page 17

CURRENT DIABETES INITIATIVES

These data have important implications for health service policy development in Victoria. A comprehensive multidisciplinary team approach is critical for the management of diabetes. Two recent Cochrane reviews examined programs to deliver this care. A review of family doctor-based programs, albeit with relatively few studies and small numbers, found that unstructured care in the community is associated with poorer follow-up, greater mortality and worse glycaemic control than result from hospital care. The addition of a computerised central recall (with prompting for patients and their family doctors), however, can achieve standards of care as good or better than hospital outpatient care.¹²

The second review confirmed the benefit of prompted recall and suggested that patient-oriented interventions—such as patient education or facilitated adherence to treatment—can lead to improved patient outcomes.¹³

A number of initiatives have been commenced in Victoria to reduce the burden of disease from diabetes. Funding to address primary and secondary prevention issues has been allocated to diabetes programs in targeted geographic areas based on local data. Programs will address identified key elements of effective diabetes care, to facilitate the prevention, early detection and appropriate management of people with diabetes within the Primary Care Partnership context. Initiatives will also target particular groups at high risk of developing diabetes, including Aboriginal and Torres Strait Islander peoples and people of cultural and linguistic diversity.

Programs not only address primary prevention issues and the cost burden of living with diabetes (via funding for a needle and syringe co-payment). They also address specific aspects of disease management (such as the Public Health Division's Local Initiatives in Diabetic Retinopathy Screening program), the role of key staff such as nurse practitioners, and multidisciplinary coordination of care.

CURRENT PRIMARY PREVENTION PROGRAMS

Physical activity, healthy eating and healthy weight are key elements of a diabetes primary prevention program. The important benefits of walking as a way of being physically active are the primary message to be promoted through the program over the next period. Existing initiatives, including the Active Script program (encouraging general practitioners to write 'active scripts' for at-risk patients) and the Walk and Talk program, specifically encourage people with, or at risk of, a chronic condition to be more active. The Active Script program in particular has the capacity to directly target this group.

The Public Health Nutrition program has priority actions that include increasing vegetable and fruit consumption, improving mothers' and children's nutritional health and improving indigenous nutritional health. Each of these actions will help reduce the prevalence of risk factors in the population and, in the case of indigenous health, focus on a high-risk group for diabetes.

MULTIDISCIPLINARY PROGRAM INITIATIVES

Multidisciplinary programs include the following.

- Three pilot projects in integrated disease management will each receive approximately \$1 million over three years as part of the Primary Care Partnership strategy. These projects will use best practice models of disease management for people with, or at risk of, diabetes. The aim is to determine models that improve health and wellbeing outcomes, and reduce hospital admissions. Integrated disease management encompasses the continuum of care, from prevention through to treatment, management and maintenance. Consumer focused and underpinned by evidence based on appropriate research, it reduces the burden of disease through a holistic approach.
- Two projects on diabetes management are part of the Quality Improvement Funding and Best Practice Initiatives Funding initiative. This initiative aims to promote the multidisciplinary development and use of care plans and evidence-based medicine in the management of patients, particularly those with chronic disease. The funded programs look at overall care and foot care specifically.
- Three nurse practitioner projects focus on diabetes management.
- As part of the Winter Emergency Demand Management Strategy, persons with diabetes are eligible for free annual influenza vaccine through public hospitals

CONCLUSION

Diabetes is a major and increasing contributor to the burden of disease. A significant level of activity is being conducted to address prevention and care issues. Despite this activity, there remains a need for continued support of evidence-based and evaluated interventions to ensure appropriate use of the health dollar at appropriate points on the diabetes continuum of care. Continued research, coupled with evaluation of existing programs, will enable program development initiatives to enhance opportunities for primary and secondary prevention, thus maximising the health outcomes for people with diabetes.

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