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Overview

In recognition of the impact that diabetes has on the Australian community, and in order to give it a higher profile in the health system, Health Ministers in July 1996 agreed to make it the fifth National Health Priority Area. The rationale for this decision by Health Ministers is that diabetes affects a significantly large number of Australians, and is disproportionately prevalent in particular population groups, especially Indigenous people. Subsequently, the Commonwealth Government has acted to implement a National Diabetes Strategy, with advice from an expert Ministerial Advisory Committee on Diabetes (MACOD).

The impact of diabetes in Australia has been recently summarised in the report, *The Rise and Rise of Diabetes* (McCarty et al. 1996). Major findings of this report include:

- In 1990, approximately 350,000 Australians had 'diagnosed' diabetes; in addition, an estimated 300,000 Australians are considered to have 'undiagnosed' diabetes, together representing 3.8% of the total population.
- The incidence of diabetes is on the rise in Australia, and is likely to remain a major threat to public health in Australia. Diabetes will possibly affect 900,000 Australians by the year 2000 and 1.15 million by the year 2010.
- Insulin-dependent diabetes mellitus (IDDM) ranks as one of the most common serious childhood diseases, and is likely to have a higher incidence than cancer, cystic fibrosis, multiple sclerosis, juvenile rheumatoid arthritis and muscular dystrophy. Australia has very high rates of IDDM compared with most countries in the world.
- More than 85% of adults with diabetes (those who develop the condition at age 25 or later) suffer from non-insulin-dependent diabetes mellitus (NIDDM). The prevalence of NIDDM is particularly high in the Indigenous population and some of the populations with non-English-speaking background.
- Indigenous Australians have one of the highest prevalence rates of NIDDM in the world. Indigenous Australians also suffer exceptionally high rates of diabetic nerve damage, blindness, kidney disease and infection.
- Risk factors for NIDDM, such as obesity and physical inactivity, are increasing in Australia. The incidence of gestational diabetes is also on the rise, particularly in some groups of non-English-speaking background.
- People with diabetes experience a reduced life-span and higher rates of eye, heart and kidney disease and stroke compared with non-diabetics. The total cost of diabetes aggregates to around \$1 billion annually (about \$2,774 per diagnosed case) in Australia.
- Cost-effective strategies to prevent NIDDM and reduce diabetic complications have been developed, but are not fully in place in Australia. Currently, there are no accepted forms of IDDM prevention.

The significant impact of diabetes on the Australian community notwithstanding, the precise nature or extent of this impact cannot be fully assessed at present due to a lack of reliable population data. Health Ministers, in identifying diabetes as the fifth National Health Priority Area, have ensured that a collaborative effort from all levels of

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government will result in the development of better national data for monitoring prevalence, incidence, risk factors and treatment/management activities.

At present, the prevalence of diabetes in Australia can only be derived from localised studies. However, McCarty et al. (1996) have developed the following age-specific profile of the prevalence of diabetes in Australia.

Estimated prevalence of diabetes (IDDM and NIDDM) in Australia, 1990

Age group (years)	Total population (1990) ^(a)	Disease prevalence ^(b)					
		Males		Females		Total	
		%	n	%	n	%	n
0–14	3,732,586	0.06	1,151	0.05	907	0.06	2,058
15–24	2,767,464	0.17	2,403	0.16	2,166	0.17	4,569
25–34	2,820,070	1.00	14,238	2.62	36,582	1.80	50,820
35–44	2,583,514	2.28	29,737	2.86	36,587	2.57	66,324
45–54	1,808,478	5.82	53,982	4.76	41,934	5.30	95,916
55–64	1,458,999	11.00	80,665	8.52	61,828	9.77	142,493
65–74	1,152,360	15.50	82,349	13.00	80,739	14.15	163,088
75 and over	752,910	17.50	48,982	15.00	70,952	15.93	119,934
All ages	17,076,381	3.67	313,507	3.88	331,696	3.78	645,203
25 and over	10,576,331	5.96	309,953	6.11	328,623	6.04	638,576

(a) Australian Bureau of Statistics population estimates.

(b) Prevalence estimates for ages 0–14 and 15–24 were obtained using 1984 Tasmanian Diabetes Registry data (King et al. 1988). All other prevalence rates were calculated using 1989–90 National Health Survey data for self-reported diabetes (Welborn et al. 1995). To adjust for individuals with 'undiagnosed' or 'unknown' diabetes, the rates obtained from the National Health Survey data were revised upward by 100%.

Source: Reproduced with permission from McCarty et al. (1996).

To ensure the development of a focused national strategy for diabetes, the availability of sound data designed to improve our understanding of the disease is necessary.

MACOD has recommended the development of a national diabetes register, covering IDDM and NIDDM treated with insulin. MACOD has also endorsed the development plans for a national survey to determine the prevalence of diabetes. Planning will include the investigation of risk factors for other NHPAs that can be estimated during such a survey. A key component of this may be augmenting the National Diabetic Services Scheme database to facilitate its use for drawing sample information for surveys and cohort studies. The database is administered by Diabetes Australia and funded through the Commonwealth Department of Health and Family Services. The use of the National Diabetic Services Scheme to date has been to avail people with diabetes of subsidised supplies for managing their condition (for example, provision of syringes and testing strips). It is estimated that the database contains information on over 90% of known insulin-treated and approximately 50% of non-insulin treated people with diabetes.

Interim indicators

The Australian Institute of Health and Welfare has developed an interim set of diabetes indicators, informed by the NHIMG health outcomes framework (see Appendix 1), for consultation with various stakeholders. A total of 23 indicators covering prevention, management and maintenance, with each aspect represented by a suitable mix of primary outcome, risk, process/quality and health status indicators, was selected. The indicators are currently under consideration by the Ministerial Advisory Committee on Diabetes (MACOD), and will form the basis for continuing discussion with States and Territories as well as the non-government sector before a definitive list is agreed to, and developmental activity begins.

Strategies, initiatives and interventions

The following section deals with a selection of the activities that are occurring at the Commonwealth, State and Territory levels, with the broad aim of reducing the impact of diabetes on the community. The information below is far from comprehensive; rather, it gives a few examples of the activities that are considered to have contributed to, or to have the potential to contribute to, changed health status. It is provided to facilitate the exchange of information about activity which is deemed to be particularly useful, and which may have potential to be adapted for use by other States/Territories.

Prevention	Management	Maintenance	Research/Information
Queensland Health Aboriginal and Torres Strait Islander Food and Nutrition Strategy		Commonwealth Diabetes Education and Management Project	
		ACT Diabetes Project	South Australian Diabetes Study
NSW health outcomes approach to diabetes prevention and care		WA Pilbara Diabetes Program 1996	Victorian Allocative Efficiency Models

Prevention

Queensland Health Aboriginal and Torres Strait Islander Food and Nutrition Strategy

Queensland Health is addressing the problem of diabetes in Indigenous communities by supporting the Aboriginal and Torres Strait Islander Food and Nutrition Strategy. This plan involves six interrelated projects:

- the establishment of a high-level intersectoral steering committee, a project coordinator position and statewide coordination mechanisms;
- fast-tracking the training of Indigenous people in nutrition through a TAFE-accredited training program and scholarships for a Masters of Community Nutrition;
- provision of training for Indigenous health care workers in diabetes prevention and management;
- a project to identify strategies to improve access to nutritious food supply in rural and remote areas of North Queensland;

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- implementation of a program similar to the Strong Women, Strong Babies, Strong Culture program; and
- the development of systems for the collection, monitoring, evaluation and dissemination of nutrition-related data in Indigenous communities.

NSW health outcomes approach to diabetes prevention and care

Recognising not only the seriousness of the problem but the potential for substantial improvement in health outcomes, the NSW Health Department began applying a health outcomes approach to the improvement of diabetes prevention and care services in October 1994.

The health outcomes-based approach for health improvement in NSW emphasises the importance of the assessment of evidence for the effectiveness of all interventions, and the central role of monitoring and surveillance in the provision of effective health services. The aim is to develop quality systems of care locally that are supported at State and national level by appropriate policy, training, development of referral networks, and dissemination of knowledge about effectiveness.

The essential features of the implementation strategy include:

- definition of basic aims and objectives;
- agreement on measurable outcomes and process indicators of quality and the appropriateness of prevention and care;
- establishment of evidence-based criteria for best practice in prevention and treatment, including development and evaluation of guidelines, minimum standards and models of care based on this evidence; and
- monitoring the impact of change and progress toward achieving desired goals.

Early in the course of the health outcomes project, it was agreed that the program should aim to improve the health of people with diabetes by ensuring that everyone with diabetes has access to:

- education for self-care and monitoring;
- ongoing routine clinical care to promote good metabolic control; and
- regular monitoring for signs of complications, and appropriate treatment of complications.

In collaboration with experts and consumers, principles of care and guidelines for diabetes care have been developed to encourage effective clinical practice in relation to education, metabolic control and screening and the treatment of complications.

To promote integration of diabetes services and programs, a number of integrated care pilot projects have been jointly funded by the NSW and Commonwealth Health Departments.

The next stage is to:

- develop a Diabetes Health Priorities and Strategies Plan, to consolidate activity so far and indicate future directions;
- finalise a plan for, and commence dissemination and implementation of, the principles of care and guidelines for diabetes; and
- complete and report on developments in relation to the integrated care pilot projects including effectiveness, cost and evaluation of the guidelines and information system.

Maintenance

Commonwealth Diabetes Education and Management Project

The aims of this project (IDDM and NIDDM) are to:

- improve patients' self-care and diabetes control by improving access to diabetes education;
- improve general practitioners' management of diabetes;
- develop a computerised patient register and recall system; and
- enhance integration of care providers, including GPs, specialists and allied health professionals.

GPs participating in the program register their patients with the Register/Recall System. At each subsequent visit, a patient-held record is used to record clinical data, and a copy is sent to the register. If no information is received on a patient for six months, the GP is sent a recall notice. Data in the register are audited at regular intervals, and participating GPs are provided with feedback on their process of care; for example, the percentage of patients that have had lipids tested in the last 12 months.

GPs participating in the project are able to refer their patients for diabetes education assessment. This is normally carried out at the GP's surgery, thus facilitating communication between the GP and allied health professional. Following assessment, the patient may be referred to a group education program conducted in collaboration with the Area Health Service and Diabetes Australia.

The processing of auditing register data allows for the evaluation of performance in terms of the care GPs provide and evaluation of the results of care, that is, patient health outcomes. Audit results are sent back to the participating GPs and used to initiate changes in practice. The project was commenced at the beginning of 1995. Forty-four GPs are currently participating in the project, with 370 patient registrations received so far. Evaluation at the end of two years will reveal whether or not there has been an improvement in patient health.

ACT Diabetes Project

A diabetes project (IDDM and NIDDM) that commenced in 1995 is being undertaken by the ACT Division of General Practice, with funding from the Commonwealth Department of Health and Family Services. The project aims to: strengthen the role of GPs in the care of people with diabetes using a primary health care approach; identify diabetes knowledge and risk factors in the local area to develop a broader network of support by improving coordination among the range of services; and develop best practice protocols for health gains across the public health continuum. A central database of diabetics will be established to assist in developing a more accurate profile of diabetes incidence and treatment in the ACT.

In July 1996, the Epidemiology Unit of the Department released the report entitled *The Epidemiology of Diabetes Mellitus in the ACT* (Gilbert & Gordon 1996). The ACT Health Outcomes Reference Group is considering the establishment of a diabetes task force.

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Pilbara Diabetes Program 1996

The Pilbara Diabetes Program proposal was initiated by health service providers in the Pilbara in 1995, and is coordinated by the Pilbara Public Health Unit. It is an attempt to facilitate communication between the community and health service providers, to produce clear and effective clinical guidelines for the community, and to provide education and resources for all staff involved in diabetes management.

A steering committee of regional representatives was set up, and met in August 1995 to draft proposals for diabetes management. Community consultation took place in August and September through a process of interviews and surveys. The recommendations from this consultation process were discussed by the steering committee and became the basis for a proposal.

In January, the proposal was distributed widely throughout the Pilbara for comment and expressions of interest. The overall response was very positive, and most felt that there was a great need to provide equitable and easily accessible services to diabetics as well as a coordinated approach to diabetes management by health service providers.

A coordinator for the program was appointed in January 1996 by the Pilbara Public Health Unit, and the Diabetes Steering Committee membership was formulated in accordance with the guidelines of the proposal and with the aim of achieving wide community and regional representation.

Research/Information

South Australian Diabetes Study

The South Australian Diabetes Study was undertaken, with funding from NHMRC, to determine the risk factors, complications and service utilisation of people with NIDDM. Nearly 200 diabetics, randomly selected from the South Australian population through a population survey, were interviewed on a range of issues. The interview assessed the patient's knowledge of diabetes, its complications and control, the patient's knowledge and treatment for associated risk factors and their perceived importance, the patient's usage of health services, and their self-care and their perception of the care provided by their GP. Their quality of life as determined by the SF-36 were assessed. The patients also underwent a series of medical tests and the patient's doctor was interviewed to determine the level and appropriateness of care the patient received. The patient's case notes were also audited.

Data from this study are now being analysed, but initial results indicate a high rate of complications, with many diabetics having more than one complication. The percentage of diabetics with risk factors was also high, especially the factor of being overweight or obese.

Allocative efficiency models

The Public Health Branch of the Victorian Department of Human Services is coordinating a six-stage research program in relation to diabetes, to identify ways to efficiently allocate health resources. The six areas cover: primary prevention; the cost-effectiveness of screening for NIDDM and for diabetic retinopathy; service delivery—evaluation of a shared care management approach; and treatment and preventive options for neuropathy (diabetic nerve damage). A summary document will identify

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the range of possible health interventions and ascertain which interventions are most likely to produce desirable health outcomes.

The project outcomes will provide a more efficient base for improving health outcomes in relation to diabetes, and will illustrate the way health outcomes in other areas can be improved.

One particular focus of this project is a computer model to examine the costs and benefits of screening and treatment for diabetic retinopathy. It is expected that application of the model will demonstrate that screening will deliver significant cost benefits, and this will be important in advancing widespread screening of the diabetic population.

