4 Current activity in Australia in prevention, early detection and management

This chapter outlines the range of diabetes services in Australia, and the roles and responsibilities of a number of government and non-government organisations. It also describes some key initiatives in prevention, early detection and management of diabetes, at the national and State/Territory level.

4.1 Diabetes services across the continuum of care

Australia's health services are funded and delivered by both the Commonwealth Government and State and Territory Governments as well as the private sector. Broadly, the Commonwealth has a national coordinating and financing role, while the States and Territories are largely responsible for the delivery of public sector health services and the regulation of health workers in the public and private sectors. The private sector's role includes financing through health insurance and the delivery of services in private hospitals by private practitioners.

Decision making and coordination of relationships between the Commonwealth Government, State and Territory Governments and the private sector are essential for effective planning and delivery of diabetes prevention and care services. These relationships, in turn, sit within a wider context of interactions between the funders and providers of diabetes-related services.

Diabetes services in Australia exist across the continuum of care, in a variety of settings, and are delivered by a range of organisations and providers with varying roles and responsibilities. The dominant model for interdisciplinary diabetes care involves ambulatory (outpatient) services, usually delivered by hospital-based specialist centres and/or GPs. The dominant model for interdisciplinary diabetes care involves ambulatory (outpatient) services, usually delivered by hospital-based specialist centres and/or GPs, with allied health professionals working in partnership with clinicians to provide acute and long-term care.

Government

There are a number of national structures and instruments that play an important role in the development of health policy. Although they may not specifically address diabetes, they have the potential to advance the objectives of this health priority area. These include AHMAC, the NHMRC, the Office of Aboriginal and Torres Strait Islander Health (OATSIH), the Health Insurance Commission and the AIHW, as well as the overarching arrangements embodied in the Australian Health Care Agreements 1998–2003 and the NPHP.

More specifically, the Ministerial Advisory Committee on Diabetes (MACOD) was established to provide the Commonwealth Minister with independent advice on various aspects of diabetes in Australia. In addition, members of the newly established Commonwealth–State Diabetes Forum have the potential to play an important role in national public health strategy development in diabetes. By

ensuring that all stakeholders are informed of service developments and that actions are coordinated and collaborative, appropriate links can be forged with other primary prevention activities. In addition, partnerships can be built between public health and clinical services and opportunities to implement reforms to promote better health for people with diabetes can be identified.

Governments also fund specific diabetes services such as Diabetes Centres and the National Diabetic Services Scheme:

- Diabetes Centres are discrete units comprising an interdisciplinary team of health professionals dedicated to the provision of clinical and educational services for diabetes. They are found in most major metropolitan teaching hospitals, usually have close liaison with local GPs and community health staff, and are increasingly referred to as Diabetes Ambulatory Care Centres. Services provided by Diabetes Centres are conducted on an outpatient basis and include individual and group patient education, outpatient insulin stabilisation, complication screening, foot assessment and treatment clinics, and health professional training.
- The National Diabetic Services Scheme provides blood and urine testing reagents, insulin and other drugs, and insulin syringes and needles at subsidised prices to people with diabetes. It is funded by the Commonwealth and the supplies are distributed by Diabetes Australia.

Non-government organisations

There are a number of organisations that work with government to reduce the burden of diabetes. These include the RACGP, the Australian Medical Association, Divisions of General Practice, universities, private allied health and specialist medical providers, and Indigenous and ethnic organisations, as well as a number of national and State diabetes organisations and diabetes services as outlined below.

Diabetes Australia is a not-for-profit, non-government organisation. It is a federation of 12 diabetes organisations including State and Territory associations, a professional medical, scientific and educational arm comprising the Australian Diabetes Society and the Australian Diabetes Educators Association, and a research arm comprising the Diabetes Australia Research Trust, the Kellion Foundation and the Diabetes Research Foundation of Western Australia. State and Territory associations offer a range of services including the supply of products, education and health care materials and support groups.

The *Australian Diabetes Society* is the professional organisation for specialist medical practitioners and researchers involved in diabetes care. It constitutes the medical and scientific section of Diabetes Australia.

The *Australian Diabetes Educators Association* is the professional organisation for diabetes educators. Its role is to provide its members with professional support, accredit diabetes specialist nurses and allied health workers, set professional standards and standards for patient care and advise Diabetes Australia on non-medical aspects of diabetes care and education for people with diabetes.

The *Australian Paediatric Endocrine Group* is the professional organisation for medical practitioners, primarily paediatric diabetologists and paediatricians and non-medical health professionals involved in the clinical care of children and adolescents with diabetes and endocrine disorders.

The *Australasian Diabetes in Pregnancy Society* advances clinical and scientific knowledge of diabetes in pregnancy and its effect on babies by supporting clinical research, providing a forum for researchers to discuss and organise research, disseminating scientific knowledge and providing comment on relevant issues.

The *Juvenile Diabetes Foundation Australia* is a not-for-profit, non-government organisation specialising in the needs of children and adolescents with diabetes, particularly Type 1 diabetes. The major functions of the Foundation are advocacy for the rights and needs of people with Type 1 diabetes and raising funds to support research. It also provides support and advice to people and families with Type 1 diabetes both centrally and through a network of local chapters.

The *National Association of Diabetes Centres* is a peak organisation representing specialist multidisciplinary Diabetes Centres throughout Australia. It has been jointly established by the Australian Diabetes Educators Association and the Australian Diabetes Society. The NADC aims to unite, represent and promote the role of specialist Diabetes Centres and to facilitate improved standards of diabetes care through networking, collaboration and information provision. It is a forum for conducting national programs for data collection, health professional training and other strategies aimed at improving the quality of care for people with diabetes.

General practice

The role of the GP is critical in the prevention and care of diabetes. As 80–85 per cent of the population visit a GP each year (ABS 1997a), GPs are optimally placed to screen those at risk, provide follow-up care and advice to people with or at high risk of diabetes, and link patients with other service providers in the local area.

The *Royal Australian College of General Practitioners* has produced resource documents for GPs on prevention and management (see Tables 4.1 and 4.3). The RACGP has recently developed a curriculum guide for continuing medical education in diabetes for GPs, based on currently available guidelines.

Divisions of General Practice are key structures for improving the quality of general practice and integration between general practice and other health services. There are four Support and Evaluation Resource Units (SERUs) to facilitate the programs and activities of the Divisions throughout Australia. The development of the *National Divisions Diabetes Program* (see page 73) provides an opportunity to harness current support in general practice and facilitate the provision of evidence-based care. The program draws together and builds upon the experience of more than 100 diabetes programs conducted in Divisions. It aims to:

- provide a framework for Divisional diabetes programs that is consistent with national initiatives and is evidence based;
- facilitate effective linkages between Divisions conducting diabetes programs, between Divisions and local diabetes service providers including non-government services, and between Divisions and health planners at a State/Territory level; and
- facilitate comprehensive evaluation of diabetes programs.

Current activity in prevention, early detection and management

Aboriginal Community Controlled Organisations

The role of Aboriginal Community Controlled Organisations (ACCOs) is critical to the care of Aboriginal people. The Commonwealth funds 130 Aboriginal community controlled health and health-related services throughout Australia, most of which are members of the National Aboriginal Community Controlled Health Organisation (NACCHO). These services have been developed by Aboriginal people to provide comprehensive and culturally appropriate primary health care to their communities. ACCOs have expertise in health care delivery to Indigenous people, are aware of community needs and barriers to care, and are well positioned to give advice and collaborate on health issues faced by their people.

Intersectoral links

There is a wider inter-governmental context within which these organisations provide diabetes-specific services. For instance, the policies and practices of departments of education, sport and recreation, and local government will have an impact on the effectiveness of these services. Establishing and maintaining intersectoral links with these other sectors is necessary for diabetes-specific services to be effective.

Key points — Diabetes services

- At the organisational level, effective coordination of relationships between the Commonwealth Government and State/Territory Governments and non-government organisations will assist service delivery and will also be integral to the implementation of this report and the National Diabetes Strategy.
- At the service level, coordination between providers is important, as people with diabetes may need access to a wide range of health professionals and services at different stages in the management of their illness.
- The involvement of agencies outside the health sector is also necessary, as the organisations that work with government to reduce the burden of diabetes provide diabetes-specific services within a wider organisational framework.

4.2 Current activity at national and State/Territory levels

For this report, the Commonwealth, States and Territories provided input on current activity focused on six areas relevant to diabetes — guidelines, service collaboration, client focus, provider focus, information systems, and research and development.[4] The results were collated and used to identify current activity in relation to prevention, early detection and improved management of diabetes, in the general population (this chapter) and among specific population groups (Chapter 5).

4 Data collection initially focused on five areas identified as fundamental to he effective managment of chronic illness (Wagner et al 1996). The consultation undertaken for this report resulted in research and development being added as an additional area.

It should be noted that this is neither a systematic review nor a comprehensive record of initiatives in diabetes. It is a summary that gives an indication of some of the key initiatives being undertaken across the nation.

At the Commonwealth level, the main focus is on developing the National Diabetes Strategy, with the aim of improving the coordination of activity and long-term strategic planning. At the State and Territory Health Department level, activity in diabetes prevention, early detection and management is being reviewed and planned through the:

- New South Wales Diabetes Taskforce;
- Victorian Diabetes Taskforce;
- Queensland Expert Advisory Group on Diabetes;
- South Australian Diabetes Health Priority Area Advisory Group;
- Western Australian Diabetes Strategy and Diabetes Services Taskforce;
- Tasmanian Diabetes Policy and Planning Support Project;
- Northern Territory Preventative Chronic Disease Strategy; and
- Australian Capital Territory Primary Health Care Integrated Diabetes Management Services.

Guidelines

In an era of evidence-based medicine, guidelines are becoming one of the critical links between the best available evidence and good quality clinical and public health practice for medical practitioners and nursing and allied health professionals. To be most effective, guidelines should involve key organisations and individuals in their development, and have specific mechanisms for dissemination and implementation. Their uptake should be evaluated, and their content reviewed and updated regularly. The NHMRC document *A Guide to the Development, Implementation and Evaluation of Clinical Practice Guidelines* (NHMRC 1998) addresses issues relating to the implementation and evaluation of guidelines. Existing guidelines are listed in Tables 4.1, 4.2 and 4.3, and guidelines being proposed or under development are described in the text.

Prevention and early detection

Guideline development in Australia has focused on clinical practice, and there are few guidelines outlining evidence-based best practice in prevention.

Current activity in prevention, early detection and management

Table 4.1: Guidelines on prevention

Organisation	Guideline	Comment
NHMRC (1997b)	*Guidelines for Preventive Interventions in Primary Health Care: Cardiovascular Disease and Cancer*	Examines evidence for modification of risk factors for cardiovascular disease and cancer, a number of which are common to diabetes.
RACGP (1998a)	*Guidelines for Preventive Activities in General Practice* (also known as the Red Book)	Recommends monitoring many diabetes risk factors.
RACGP (1998b)	*Putting Prevention into Practice* (also known as the Green Book)	Provides steps for implementing preventive activities.

The Commonwealth has provided funding for the production of guidelines on Type 2 diabetes for endorsement by the NHMRC. These will be early detection and management guidelines, with additional emphasis on lifestyle counselling.

Table 4.2: Guidelines on early detection

Organisation	Guideline	Comment
Australian Diabetes Screening Study (Welborn et al 1997)	*Australian Diabetes Screening Study*	Protocol for GP involvement in early detection of diabetes.
NSW Health Department (1996a)	*Screening for Type 2 Diabetes: a Decision Analysis Approach*	Part of guidelines series (see Table 4.3).
Northern Territory Coordinated Care Trial	*Early Detection Guidelines* (to be published following completion of the trial)	Covers all Indigenous people over 16 years of age (annual screen), all people with impaired glucose tolerance or women with a history of gestational diabetes (annual screen).

The Commonwealth-funded national guidelines on Type 2 diabetes referred to above will include advice on testing and early detection. Version 2 of the National Divisions Diabetes Program, to be disseminated in 1999, will include the national guidelines. General Practice Divisions Services is also undertaking a project to trial a protocol for screening in GP surgeries.

The New South Wales Health Department intends to develop guidelines on early detection of diabetes. A project to develop a model for assessing the cost-effectiveness of screening is under way at the University of Sydney.

Management

There is a range of national and State/Territory guidelines on management of diabetes. It should be noted that guidelines are only one component of evidence-based management. In the United States, guideline development is now focused on formulating decision paths, as advocated by the International Diabetes Centre. These are in use in 150 centres in the United States and at least 12 countries worldwide.

Table 4.3: Guidelines on management

Organisation	Guideline	Comment
National		
NHMRC (1997a)	*Clinical Practice Guidelines: Management of Diabetic Retinopathy*	Currently being disseminated by Diabetes Australia.
Australian Diabetes Society (Mogyorosi & Ziyadeh 1996; Gilbert et al 1995; Best et al 1995; Yue et al 1993; Jerums et al 1994; Couper et al 1995)	Position statements cover various aspects of diabetes including hypertension, dyslipidaemia and microalbuminuria.	
Australian Podiatry Council & Diabetes Australia (1997)	*National Podiatric Guidelines for Diabetes*	Include the role of other health service providers in providing podiatry services, could form the basis for national guidelines.
Australian Diabetes Educators Association (ADEA) (1994)	*National Guidelines for Safe Practice for Diabetes Nurse Educators*	
ADEA (1991)	*Standards of Practice for Diabetes Educators*	
ADEA (1996)	*National Core Competencies for Diabetes Educators*	
State/Territory		
NSW Health Department (1996b-h)	Portfolio of guidelines for diabetes care, including: *Principles of Care and Guidelines for the Clinical Management of Diabetes Mellitus in Adults* *Evidence for the Guidelines for the Clinical Management of Diabetes Mellitus — Part 1* *A Guide to Diabetes Education for Health Professionals* *Principles of Lifestyle and Nutritional Management of Diabetes* *Management of Diabetes Mellitus* (consumer card and poster) *Principles of Care and Consensus Guidelines for the Management of Diabetes Mellitus in Children and Adolescents* *Lower Limb Ulcers in Diabetes*	Being considered for adoption by Victoria, South Australia and Queensland.
Victorian Diabetes Taskforce (1998)	*Clinical Practice Guidelines for the Management of People with Diabetes*	Currently being disseminated to medical and allied health professionals in Victoria.
RACGP (1998c) in association with Diabetes Australia	*Diabetes Management in General Practice*	Key reference document for GPs. Different editions of this document have included the New South Wales Guidelines for the Management of Diabetes.

Current activity in prevention, early detection and management

The national guidelines on Type 2 diabetes under development referred to above will also focus on management. The NHMRC is also developing guidelines on the management of patients with diabetes undergoing surgical or diagnostic procedures during a single day admission to a hospital or day surgery centre. Other priority areas for the development of guidelines include prevention and management of foot disease, cardiovascular complications and end-stage renal disease.

The Integration SERU has included reference to existing Australian clinical guidelines in the National Diabetes Divisions Program Core Module 'Clinical management and patient recall'. The modules have been disseminated to Divisions of General Practice and other stakeholders.

Service collaboration

Service collaboration aims to:

- facilitate effective relationships between diabetes service providers (for instance between primary prevention service planning and delivery and clinicians involved in the care of people with diabetes);
- develop partnerships between organisations and sectors to streamline services and reduce duplication and fragmentation;
- examine the linkages between population-wide strategies, local community-based programs, interventions for high-risk groups and interventions conducted in clinical settings, and examine the roles of health professionals, community health services, GPs and non-government organisations in these activities;
- ensure that services reflect the needs of people with diabetes, who often require longer times with health service providers, as well as a range of services and long-term follow-up; and
- consider cultural issues in intersectoral collaborations and in the planning and delivery of diabetes prevention and care services.

This section discusses current national and jurisdictional activity which aims to improve service delivery to the general population and to people with diabetes.

Prevention and early detection

National activity

Two national developments should have a significant impact on diabetes prevention within the wider context of public health.

In 1996, Health Ministers agreed to establish the NPHP, which is a new working arrangement between the Commonwealth, States and Territories to plan and coordinate national public health activities, provide a more systematic and strategic approach for addressing public health priorities and provide a vehicle to assess and implement new directions and major health initiatives. The NPHP deals mainly with activities that aim to improve the health of whole populations.

The NPHP work program focuses on a number of major public health infrastructure issues including:

- a more consistent framework for public health legislation;
- a consistent and coordinated national public health information collection;
- improved public health practice, including benchmarking and quality assurance systems;
- systems for better planning and resource allocation of public health activities;
- a strategy for investment in public health research and development;
- appropriate development of the public health workforce; and
- assessment of systems for coordination and monitoring across national public health strategies/programs.

In September 1998, the Commonwealth started work on a National Primary Prevention Strategy, which will build on the following existing initiatives:

- *Acting on Australia's Weight: a Strategic Plan for Prevention of Overweight and Obesity* (NHMRC 1997c). The NHMRC developed this report in recognition of the importance of overweight and obesity as a significant risk factor for many serious health conditions, such as diabetes and cardiovascular disease. The plan focuses on the need to make changes to the environments in which people live and work to make it easier for all Australians to be physically active and consume a healthy diet. An implementation strategy is currently being developed.
- Australia's *Food and Nutrition Policy* (DHHCS 1994). This policy aims to improve health and reduce the preventable burden of diet-related early death, illness and disability among Australians. The policy was developed through a partnership of governments, industry and the community. Its fundamental aim is to make healthy choices easier for all Australians by increasing the availability and affordability of nutritious foods and improving understanding of 'good nutrition' in the community.
- *Developing an Active Australia: A Framework for Action for Physical Activity and Health* (DHFS 1998). This resource, which promotes physical activity and health among Australians as part of a nationwide Active Australia initiative, was launched in June 1998. The framework recognises the need to develop evidence-based population-wide strategies and public policies to promote high levels of involvement in regular physical activity, in recognition of compelling evidence of links between physical activity and health outcomes. The framework also identifies intersectoral collaboration as essential for the efficient development of supportive infrastructure, environments and attitudes to encourage people to become and remain physically active.

General practice activity

The Public Health and Health Promotion SERU of the Divisions of General Practice is developing a framework for changing behaviours relevant to physical inactivity, smoking and dietary habits in the general practice setting.

Current activity in prevention, early detection and management

State and Territory activity

As with the national primary prevention strategy described above, the prevention of diabetes is being progressed through broader lifestyle or risk factor approaches which will have an impact on diabetes as well as cardiovascular disease and some cancers. The risk factor approaches are being partnered by strategies that focus on the settings in which people live and work and that provide a foundation for addressing risk conditions (eg health-promoting schools, municipal public health plans). Central to these approaches, and supported by jurisdictions, is implementation of national initiatives such as Acting on Australia's Weight, Active Australia, the National Public Health Nutrition Strategy, the National Drug Strategy and the planned National Tobacco and Environmental Health Strategies, within a settings framework.

For example, a Physical Activity Task Force was established in New South Wales in 1993 to trial the Active Australia Participation Framework. The Task Force comprises all levels of government, the fitness industry, sporting groups, education, and health and recreation sectors. Trialing the framework during 1997 involved media and marketing, training of GPs and strategies targeting specific population groups, particularly older people and children. Initial indications are that the public have responded well to the message 'Take exercise regularly, not seriously'.

In Queensland, prevention is being advanced through the establishment of integrated outcome teams within public health services (eg cardiovascular disease/diabetes/nutrition/physical activity) and through a joint venture approach with other service providers. This involves identifying and agreeing on the roles of various service providers in addressing core risk factors. The establishment of network forums for service providers will facilitate communication and provide an avenue for further discussion on role delineation.

South Australia is addressing prevention issues through its Active Australia Strategic Plan and Food and Health Policy, both to be released in 1999. The former draws upon the results of the 1998 South Australian Physical Activity Survey and is likely to include education and information programs, development of supportive environments, service improvement and policy development. The Food and Health Policy advocates a range of nutrition strategies that will benefit people with or at risk of developing diabetes, including priority populations such as Indigenous people, infants, children and young people, and older Australians.

The Kimberley Aboriginal Medical Services Council in Western Australia has developed an evidence-based approach to integrated primary prevention strategies through a systematic review (Couzos & Murray, in press). Periodic health examination of the Aboriginal population, through establishment of recall frequencies and assessment of potential performance indicators for providers to evaluate preventive care delivery, is recommended.

The Northern Territory Coordinated Care Trial focuses on reducing risk factors and improving role delineation among service providers. In addition, the Northern Territory is developing a Chronic Disease Strategy, with the aim of reducing the prevalence and impact of the major chronic diseases (diabetes, hypertension, renal disease, coronary heart disease and chronic airways disease) in the Territory within 10 years. It will do this by:

- using a unified approach to the major chronic diseases, with a balance of prevention, early detection and best-practice clinical management;

- establishing a framework for the control of the common chronic diseases; and
- addressing the key risk factors underlying these diseases (overweight, physical inactivity, alcohol misuse, tobacco smoking).

To date, this has occurred through active community involvement, intersectoral action, a 'whole of life' approach, strengthening and re-orienting public health services and conducting health economic analysis of cost-effective policy options.

Other innovative prevention and early detection strategies include the following.

- In Victoria, a Food and Nutrition Policy is being implemented along with a State-wide Active for Life Physical Activity Strategy, which aims to develop quality environments, infrastructure, opportunities and services for participation in sport and recreation and incidental physical activity. An additional initiative is VicHealth's use of sports and arts settings for health promotion. This has resulted in a cost-effective and innovative approach to primary prevention using specific health messages and promoting healthy environments through policy and program development. Partnerships have been developed with Diabetes Australia, promoting generic health messages relevant to diabetes prevention.
- The sponsorship of sport and recreation organisations and the arts in South Australia, has continued to promote diabetes awareness through the 'Maybe it's Diabetes' campaign. The Smart Choice program aims to increase the availability of healthy food choices at sport, recreation and arts venues.
- The Health Department of Western Australia has been running various healthy nutrition campaigns for more than a decade. The Food Cents campaign aims to promote good nutrition by demonstrating how easy and inexpensive it is to eat healthy foods. The campaign includes supermarket visits and uses trained lay members of a community. The campaign also targets low-income families through the Healthway-sponsored Foodbank.
- Another key program in Western Australia is the Healthy Choices Awards which target eating establishments and food providers and aim to facilitate access to healthy food choices for people eating away from home. The main focus is on fostering local ownership and community empowerment, in response to current limitations on access to health services, and models such as Strong Women, Strong Babies, Strong Culture will be used.
- Tasmania has been conducting an 'Eat Well Tasmania' campaign through the Tasmanian Nutrition Promotion Taskforce for the past three years. The Taskforce is an intersectoral coalition with representation from primary producers, manufacturers, retailers, health professionals and consumers. The campaign aims to raise the profile of, and foster an intersectoral approach to promotion of good nutrition throughout Tasmania.
- In the Australian Capital Territory, early detection of Type 2 diabetes is promoted through a program aimed at supporting and encouraging best practice among GPs through accredited diabetes training courses, diabetes mini-clinics held in GP surgeries, posters, pamphlets and newsletters.

Management

Collaborative models of care

There is a growing move towards models of care in service delivery, in which increased collaboration between services and new approaches to funding promote seamless long-term care of people with diabetes.

Pilot programs based on collaboration between current diabetes services are in progress in New South Wales, in the Integrated Care Pilots jointly funded by the Commonwealth Department of Health and Family Services and the New South Wales Health Department, and in the Commonwealth/State funded Coordinated Care Trials, particularly in South Australia and the Northern Territory.

Integrated Care Pilots. In these projects, the focus is on better patient outcomes through improved coordination between service providers. The Diabetes Integrated Care Pilot Projects in New South Wales were conducted in Western Sydney (Diabetes West) and two rural areas (Mid North Coast and Far West) and were based on the hypothesis that the provision of well organised care, based on agreed guidelines for best practice, incorporating patient education and early detection of complications, will reduce the impact of diabetes and its complications. A detailed evaluation plan was developed and should be used as a framework for further development.

The following interventions were introduced in each of the three pilot project locations at the beginning of the project:

- allocation of funding which allowed a minimum standard of care to be accessed locally by people with diabetes;
- dissemination of clinical management guidelines for diabetes;
- training of GPs and other service providers in accordance with the clinical management guidelines for diabetes;
- introduction of Diab-Net, a diabetes-specific database for collecting patient clinical and other data and Diab-Code, a disease staging criteria for diabetes; and
- formalised communication established between Aboriginal Medical Services, Divisions of General Practice and Diabetes Centres in each pilot project location, including collaboration between these services for local planning and policy development.

The expected benefits of the diabetes integrated care pilot projects are established models of integrated diabetes care, which can be generalised to other geographical areas and other services; the identification of indicators of quality of care and outcomes for State-wide monitoring; the identification of efficiencies associated with integrated diabetes care; and the implementation of best-practice guidelines for service providers in New South Wales (defined by the *Principles of Diabetes Care and Guidelines for the Clinical Management of Diabetes Mellitus in Adults*; NSW Health Department 1996b).

Coordinated Care Trials. Improved collaboration between service providers is a focus of the Coordinated Care Trials. Structural changes to funding arrangements are also involved. The trials are exploring innovative ways of providing health care

to people with continuing complex health and community care needs. After an extensive design and tracking phase, nine trials are now underway and are due to be completed by the end of 1999.

The purpose of the trials is to test a range of models, to establish whether cross-program fund pooling, combined with a care coordination/case management approach, will lead to improved health outcomes for selected client groups.

An important component of the trials will be new arrangements between the Commonwealth and the States and Territories to pool funds in such a way that, with the intervention of a care coordinator, care plans and services can be built around the needs of individual patients. Using pooled funds, and without the constraints of specific program barriers and eligibility and operating rules, the patient, the GP and the care coordinator, (who will in many cases be the GP), can decide on and obtain the most effective and appropriate mix of services. The aim is to create flexible services responsive to individual need, rather than the present segmented funding program arrangements.

Health outcome measures will be collected for all participants, and each trial will be evaluated in detail at the local level. Data from all trials will be synthesised into a national evaluation of the concept, that will determine how effective fund pooling and care coordination can be in improving individual health outcomes within existing resources. The trials will also explore the potential for using fund pooling as a lever for changing the way in which services are selected and delivered.

National Divisions Diabetes Program

As discussed in Section 4.1, the National Divisions Diabetes Program is a coordinated national approach to diabetes care in Australian general practice. The program consists of modules on planning, evaluation, and core and optional activities. These modules are designed to facilitate the implementation and evaluation of 'best-practice' diabetes care through GPs and Divisions of General Practice, working in collaboration with diabetes care providers and organisations.

The National Divisions Diabetes Program has grown out of the work undertaken by the Divisions and the Integration SERU, in response to the need to standardise and coordinate Division activity in diabetes service delivery and evaluation. The program is designed to provide a 'guide' for Divisions to facilitate systematic change in the care of patients at the general practice level. Version 1 of the National Divisions Diabetes Program identifies joint management of diabetes as a core module of the Program. Such a module would support and facilitate the increasing trend at Divisional level towards greater collaboration with State-funded community-based organisations and hospitals. There is some evidence of formal structures being established to support this collaboration. However, most collaboration appears to come from community-based interaction. Appropriate community and consumer representation on relevant Divisional programs needs to be progressed through the partnership platform recommended in the General Practice Strategy Review (see page 79).

State/Territory reviews of service delivery

A key focus of State/Territory reviews of diabetes service delivery is greater collaboration between diabetes service providers, including GPs and Divisions of General Practice.

Table 4.4: Preferred models of service delivery

Type 1 diabetes

Over the past decade, management of newly diagnosed Type 1 diabetes has changed significantly from a hospital-based model to ambulatory care. In urban areas, care of children and adolescents with Type 1 diabetes is largely conducted by paediatric diabetologists, paediatricians and diabetologists.

In rural and remote areas, shared or collaborative care with specialist involvement is the most common model of care. In these areas, paediatricians and (particularly in the Northern Territory) GPs are the main carers of young people with Type 1 diabetes. (Service delivery to young people with Type 1 diabetes is discussed further in Section 5.2.)

Type 2 diabetes

A range of shared or multidisciplinary models of care are being implemented in all States and Territories. The multi-disciplinary approach preferred by Queensland, Western Australia and the Northern Territory may reflect the geographically widespread population. In rural and remote areas, few medical practitioners are available and care involves nurse practitioners, Aboriginal health workers, resident or visiting practitioners and allied health professionals. A broader range of approaches is being used in New South Wales, the Australian Capital Territory and Victoria.

Gestational diabetes

Some jurisdictions manage gestational diabetes in a primary health care environment with tertiary-centred care accessed when required, while others have specialist-driven models in place. There is no systematically implemented model for gestational diabetes across the nation. (Service delivery to women with gestational diabetes and diabetes in pregnancy are discussed in Section 5.1.)

Evidence base/rationale

The main evidence base for shared or multidisciplinary care is the association between team approaches and enhanced outcomes (eg DCCT, UKPDS). Stakeholders' rationale for the increasing involvement of GPs in managing the care of people with diabetes focuses on GPs being more acceptable to patients and able to provide continuity of care for the whole range of medical problems, not just diabetes or its complications (Griffin 1998). Specialist involvement is recommended for children, who have more specific and complex needs.

While shared or integrated models of care are the preferred models for the management of diabetes, attempts to implement these models are hampered by geographical constraints and workforce limitations.

State-based networks have been established in most States and Territories by the now defunct Divisional Field Support Services and continued by the newly established State Based Organisations. The purpose of these networks is to provide support and share resources and information on projects across health departments (hospital and community providers, policy makers), non-government organisations and Divisions of General Practice.

To facilitate the increasing move towards collaborative models of care for the management of people with diabetes, service provider organisations are involved for the first time in many cases in the planning of State-wide services. Although there are generally strong relationships between non-government organisations (eg Diabetes Australia) and health departments in all jurisdictions, there is little coordinated involvement of private allied health professionals in planning and service delivery. The involvement of service provider organisations aims to increase retention of allied health professionals and subsequent access to these services.

The following projects are currently underway or planned:

- In 1994, New South Wales began the Diabetes Health Outcomes Project, which seeks to improve the continuing care of people with diabetes. The Project has developed a broad framework for approaching health outcome based service planning, collaborated with experts and consumers to develop and implement the series of Principles of Care and Guidelines for Diabetes Care (see Table 4.3), and operated the Integrated Care Pilots (see page 72).

- The New South Wales Health Department is intending to investigate benchmarks for levels and types of services required by metropolitan and rural areas. It has also conducted a Nurse Practitioner Project, which explored and piloted an extended role for nurses in clinical service delivery. Results of this project are currently under consideration.
- An analysis of diabetes-related activity commissioned in Victoria reports the current state of play. This will support and inform the planning of Victorian diabetes services.
- A State-wide audit of diabetes services in Queensland, conducted by Diabetes Australia (Queensland), is establishing benchmark service levels for allied health professionals with a view to establishing minimum service standards. The contribution of allied health professionals to reducing inpatient episodes is being considered in this process.
- The South Australian Department of Human Services has implemented two parallel approaches to coordinating diabetes care. These are the Commonwealth–State funded Coordinated Care Trials (see page 72), and the State funded Diabetes Outreach Services. The Diabetes Outreach Services program focuses on better access to quality care for rural people with diabetes in order to improve population health outcomes. This involves multilevel, intersectoral coordination of service delivery for rural South Australia (Alexander 1998). This model is currently being reviewed by the Department for its application to metropolitan diabetes services.
- Western Australia has funded integrated care pilot projects in the inner city and three rural locations. The aim of these projects is to improve collaboration between service providers and to establish comprehensive diabetes care services. Key strategies include building of partnerships and integrating diabetes services across public and private health sectors and across clinical specialties, providing effective management guidelines and ensuring people with diabetes have access to a range of quality diabetes services.
- The Australian Capital Territory Government has recently adopted an integrated diabetes management plan for the Australian Capital Territory region following an extensive review of diabetes services. The integrated diabetes care system will be implemented during 1999 with the establishment of an overarching Australian Capital Territory Diabetes Council. The Council will advise the Department of Health and Community Care on issues for people with diabetes and their carers. The model specifies provider role delineations and systems of communication. The framework uses the complexity of individual care needs and the location of care delivery to distinguish between levels of care.

Many jurisdictions have identified a need for collaborative diabetes services to be provided *within hospitals*. Currently, most people with diabetes who are admitted to hospital with another condition (eg a cardiac event) are not identified to the hospital diabetes team. This may be due in part to a lack of coordination between various hospital departments. This issue is being addressed by separate projects in hospitals in South Australia, targeting patients admitted with cardiac conditions, and in Queensland and New South Wales by the development of clinical pathways for the management of people with diabetes admitted with another condition.

Client focus

At the population health level, client focus involves raising awareness about diabetes and its risk factors, to help people reduce their risk of developing diabetes and to encourage people with diabetes to effectively manage their condition. Raising awareness must occur as part of a wider approach that includes strategies to address the underlying factors that contribute to risk.

At the service delivery level, client focus means making the patient a treatment partner. Patient education should not consist of one way provision of information. Patient-centred approaches focus on increasing knowledge but also on securing behaviour change by ensuring that change is a priority for patients and that change is within their means. Methods used in patient-centred approaches include collaborative problem definition, goal setting, self-management training, and active follow-up initiated by the service providers.

Prevention and early detection — raising awareness

Non-government organisations including the State and Territory agencies of Diabetes Australia conduct local public awareness campaigns on diabetes and its risk factors.

As part of CADS, the Commonwealth has funded Diabetes Australia to develop and implement a National Community Awareness of Diabetes Campaign. This strategy will seek to inform the general population about the impact of diabetes and its risk factors and encourage those at risk to seek screening.

Data on awareness of diabetes, its impact and risk factors are available from the baseline survey for CADS (Woolcott Pty Ltd 1998[5]) and a Queensland Health State-wide health survey. In both surveys, about 60 per cent of people claimed to have some information about diabetes. The most commonly cited risk factors for diabetes were being overweight (35 per cent nationally, 22 per cent in Queensland), having a family history of diabetes (25 per cent nationally, 42 per cent in Queensland), and including too much sugar in the diet (17 per cent nationally, 30 per cent in Queensland). The latter is obviously a common misconception of risk. Knowledge of the complications of diabetes was not high, with only about 25–33 per cent of people citing blindness as a complication, about 25 per cent of people citing amputations, and only 10 per cent of people citing heart problems or kidney disease (Woolcott Pty Ltd 1998). These data need to be considered in the development of awareness programs.

An important aspect of enabling people to adopt healthier lifestyles is the provision of strategies that are specific to gender, socio-economic status and cultural background. The need for gender analysis to be applied to policy development is currently under consideration at the national level, and there are proposals to include gender analysis in the work program of the NHPC.

Patient-centred approaches to management

At the State and Territory level, there is evidence of a growing movement towards informing patients of their rights and empowering clients to demand evidence-based care. In New South Wales, consumer guidelines for diabetes were published in 1996 (New South Wales Health Department 1996f). Evaluation of the impact of

5 Market research conducted under the direction of Diabetes Australia with funding from the then Commonwealth Department of Health and Family Services.

their dissemination is underway by the NADC. South Australia has developed an innovative model of regional networks in which service providers educate people with diabetes about evidence-based services and encourage them to demand these services from providers. The Northern Territory Preventative Chronic Disease Strategy includes active community involvement in the development of policies and strategies.

In addition, non-government organisations such as the Australian Kidney Foundation, Diabetes Australia, National Heart Foundation (NHF), Juvenile Diabetes Foundation of Australia, and Lions and Rotary Clubs have an important role in providing information to people with diabetes and assisting them in better management of their disease.

There is little coordination in these efforts, or in issues such as access to better food supplies and to medicines. Similarly, except in specialist diabetes centres, there is little evidence of innovative approaches that focus on clients as treatment partners with whom goal setting is undertaken for diabetes management. The major focus has clearly been on providing basic education to those most at need. Lack of resources to provide education, let alone conduct more innovative patient-centred approaches to education, has been cited as a key issue by all health service providers.

Examples of patient-centred approaches include the ‘demand management’ approach being used in the South Australian Coordinated Care Trial and the use of motivational interviewing in a project being undertaken by the Brisbane Inner South Division of General Practice.

In most jurisdictions, hospital specialists are starting to use the admission of people with diabetes, even if admitted for other conditions, as an opportunity for education and intervention.

The National Divisions Diabetes Program has included patient education, provided by either GPs or allied health professionals, in the core modules *Basic patient education provided by general practitioners* and *General practitioner and patient access to multidisciplinary care*. The program also strongly recommends that GPs provide patients with information on consumer organisations and services.

Provider focus

A provider focus involves establishing systems that allow ready access to necessary expertise. This involves establishing formal decision-support systems that provide professionals who design or conduct health promotion programs with specified channels of access to expert public health advice.

Both primary health care planning and service delivery can be enhanced by the establishment of formal decision-support systems where specialists (eg researchers, clinicians) provide expert advice to population health planners and health promotion officers on evidence-based prevention strategies.

Continuing education of health professionals through guidelines and specific training courses is also an essential component of a provider focus.

Current activity in prevention, early detection and management

Prevention

A number of jurisdictions have noted the need for greater involvement of GPs in primary prevention activities. This has been advanced in Queensland and Tasmania through joint development of a nutrition education manual for GPs. In South Australia, GPs are being educated in the prescription of physical activity for patients who are not active. At a national level, the RACGP guidelines (see Table 4.3) are valuable resource documents for GPs.

The network forums being established in Queensland will facilitate dissemination of guidelines on evidence-based primary prevention to service providers and their implementation.

The Northern Territory Coordinated Care Trial has developed care plans for patients. These can be used by service providers as sources of information on evidence-based practice for the prevention of risk factors.

Early detection

The CADS campaign will involve the development of education kits for GPs on early detection, to ensure that GPs have the skills to screen and refer people who present for screening as a result of the campaign. Consultation with GPs will be essential to the effectiveness of the campaign. A GP Working Party has been formed as part of CADS, with representation from all States and Territories, the NDDP and RACGP. Existing networks through the NDDP, State-based organisations of Divisions and the RACGP will be used to disseminate campaign materials to GPs.

Non-government organisations including the State and Territory agencies of Diabetes Australia conduct local awareness programs for service providers on the need for early detection.

Management

The establishment of the NADC, which also has State-based branches, provides an avenue for sharing information on the management of diabetes among health professionals. Other professional associations that share and increase provider expertise are the Australian Diabetes Educators Association, the State-based Diabetes Specialist Interest Groups of the Dietitians Association of Australia, the Australian Diabetes Society and the National Diabetes Network of the Australian Podiatry Council.

A significant role of non-government organisations such as Diabetes Australia is in providing information to service providers (eg dissemination of guidelines) and conducting training courses.

An assessment of current GP involvement in diabetes management has been made by the Integration SERU, which surveyed Divisions of General Practice in August 1998 about their activity in diabetes and the extent and type of diabetes data collection they were undertaking. Of the 123 divisions surveyed, 65 (53 per cent) were undertaking a diabetes program, 24 (19 per cent) planned to start a diabetes program in the next six months, and 34 (28 per cent) had no immediate plans to undertake a diabetes program.

General Practice Strategy Review and practice incentives

The report of the General Practice Strategy Review Group (1998) recommends a broad ranging program of activities to ensure general practice reaches its full potential to serve the community and consolidate its place at the centre of the health care system.

The Commonwealth Practice Incentives Program is likely to include remuneration for GP collection and transfer of data (basic data collection about the practice with a higher level of payment for a divisional database). This would provide an incentive for computerisation and encourage practices to focus on population health (General Practice Strategy Review recommendation 126). This has positive implications as a nationally accepted minimum dataset already exists and many Divisions are facilitating GP collection of diabetes data for quality assurance and recall purposes.

The Review's vision for GPs in the 21st century is to have partnerships with patients and carers that promote maximum independence, self care and self responsibility for health. It is also envisaged that GPs will be able to develop initiatives in primary health care and create opportunities for better patient care as a result of the shift of resources from hospitals to communities.

National Divisions Diabetes Program

A major focus of Division activity in diabetes has been the provision of GP education which is based on clinical management guidelines and conducted in collaboration with local and regional diabetes service providers. Version 1 of the National Divisions Diabetes Program, disseminated in July 1998, focuses on what Divisions can do for their GPs, such as providing education on accepted 'best practice', establishing clinical record and information systems, and facilitating joint management and access to multidisciplinary care. More work still needs to be done on the factors that enable GP implementation of best practice, for example, identifying the barriers to implementing clinical management guidelines, detecting diabetes in high-risk patients, and identifying appropriate incentives.

Decision-support systems

The need for decision-support systems is being investigated in the jurisdiction-wide reviews of diabetes prevention and care currently underway. Currently, decision-support systems exist within service provider groups (eg GPs, hospital endocrinology departments) and along organisational lines (eg hospital-based allied health staff can access the expertise of hospital-based diabetologists).

However, there is little evidence of decision-support systems that operate across organisations. Generally, community-based professionals (including GPs and allied health professionals) do not seek decision-support expertise from hospital-based specialists outside of a small number of well established diabetes Divisional projects. The identification of joint management as one of the core modules in the National Divisions Diabetes Program may facilitate this cross-organisational decision support.

An example of a State-wide decision-support system is the South Australian Coordinated Care Trial. This trial was designed in recognition of the importance of decision-support systems (McDonald 1998) and each project in the trial has a care mentor who provides clinical leadership.

Current activity in prevention, early detection and management

Continuing education

At the Commonwealth level, the Department of Health and Aged Care (HEALTH) has commissioned a review of general practice training. The need for re-orientation of medical undergraduate and postgraduate training towards the management of chronic illness is an issue of concern in a number of jurisdictions.

Several tertiary institutions offer postgraduate courses for health professionals in the care and management of diabetes.

The RACGP has recently developed a curriculum guide for GP continuing medical education in diabetes, which is based on currently available Australian guidelines. The guide has been distributed as a draft for comment to Divisions of General Practice and other stakeholders. A final version will be disseminated in 1999. A curriculum for a national GP Eye Skills Workshop is being developed by the RACGP and the Royal Australian College of Opthalmologists, to assist GPs in developing common eye skills and visual screening. The Workshops will be implemented through Divisions of General Practice in each State/Territory.

The education of allied health professionals involved in the management of diabetes is occurring at a local level in New South Wales, Victoria and Tasmania. However, this education is dependent on continuing funding and there is no sustainable continuing education program on diabetes management for allied health professionals outside professional association activities.

The following State-based continuing education programs are underway.

- The NSW Health Department has published and is disseminating *A Guide to Diabetes Education for Health Professionals* (NSW Health Department 1996d), and nutrition guidelines on the optimal management of diabetes are currently being disseminated (NSW Health Department 1996e). The New South Wales clinical management guidelines for diabetes (NSW Health Department 1996b) have also been provided to medical software manufacturers to facilitate the incorporation of the guidelines in decision-support technology systems.
- In South Australia, the Department of Human Services has funded its Diabetes Outreach Services to deliver continuing professional education services to rural GPs, nurses and allied health professionals since 1989. This program is being reviewed with plans to extend the program to the metropolitan areas as part of the State's Diabetes Strategic Plan.
- The Cairns Diabetes Centre in Queensland is using the National Diabetes Outcomes Quality Review Initiative (NDOQRIN) minimum dataset to educate hospital staff about early detection of complications. Negotiation is underway for the forms to be provided to GPs.
- The Northern Territory's Chronic Disease Network will facilitate information exchange among professionals dealing with chronic illness (eg NHF, Diabetes Australia, Territory Health Services). Victoria has established a similar network.

- The National Diabetes Footcare Network has two foot care projects funded by the Commonwealth through the Ministerial Advisory Committee on Diabetes. Royal Prince Alfred Hospital in Sydney has a program for health professionals on the management of diabetic foot problems, in particular ulcers and other acute problems. A high-risk foot service has been established at Liverpool Hospital and a training program in the management of ulcers and other complications has been started. A number of diabetes services have joined the program and some have attended the training sessions.
- In partnership with the Australian Podiatry Council, the NADC has established the National Diabetes Footcare Project, a training program in foot examination and care, in particular the identification of the high-risk foot, for non-diabetes specialist health professionals. This program is supported by a training package which is currently being piloted in a number of locations. It is envisaged that the project will be implemented throughout Australia from mid 1999.
- A national pilot implementing the measurement of diabetes nursing practice by peer review against standard performance indicators is being conducted in South Australia, funded by a National Diabetes Australia Research Trust Grant. Results with be available in June 1999, and it is envisaged that the Australian Diabetes Educators' Association will consider including the performance indicators and peer review process in its National Accreditation Criteria.

Information systems

Quality information is required for the prevention, early detection and management of diabetes. Information is required at several levels:

- at the policy level to inform program design and management of resources;
- at the clinical service level to facilitate evidence-based treatment; and
- at the service management level to evaluate the overall efficiency and effectiveness of services provided.

As the statistical information presented in the Overview and in the appendixes indicates, there is a range of diabetes-related data gathering activity in Australia, most of which relates to diabetes mortality, hospitalisation and self-reported disease prevalence. Recently, some information has also been collected on the clinical and risk factor profiles of people with diabetes. However, a mapping of these activities to the NHIMG Health Outcomes Framework (described in Chapter 2) shows that there are wide gaps in the information required for targeted surveillance of diabetes in Australia.

Major data sources and data collection activities

Nationally, public health monitoring of diabetes uses data from routine administrative collections, regular and ad hoc population surveys, disease registers and developmental activities (Table 4.5). Structures and procedures for handling ethical, confidentiality and privacy issues are also an integral part of the data environment. For further details on these activities, see Appendix 2.

Table 4.5: Diabetes-related current and planned national or quasi-national data development activities

Administrative data sources	Registers
• National Mortality Database	• National Death Index
• National Hospital Morbidity Database	• Australia and New Zealand Dialysis and Transplantation Registry
• Pharmaceutical Benefits Scheme Database	• National Insulin-Treated Diabetes Register
• Medical Benefits Scheme Database	**Developmental activities**
• Department of Veterans' Affairs Medical Benefits Database	• Indicators for diabetes monitoring
• National Perinatal Data Collections	• Record linkage
• Census data	• Data definitions and standards
• Population projections	• National Biomedical Risk Factor Prevalence Survey
• Population estimates	• National Public Health Information Development Plan
• National Diabetic Services Scheme	• Burden of disease including costs
Population clinical-based surveys	• National Aboriginal and Torres Strait Islander Health Information Plan
• National Health Survey	• National Diabetes Monitoring System
• National Nutrition Survey	• NDOQRIN
• Disability, Ageing and Carers Surveys	• Diab-Net and Diab-Code (developed through NSW Integrated Care Pilot)
• National Aboriginal and Torres Strait Islander Surveys	
• NHF Risk Factor Prevalence Surveys	
• Bettering the Evaluation And Care of Health	
• National Association of Diabetes Centres project	
• Integration SERU Survey	
• National Diabetes Prevalence pilot study	

Data gaps and deficiencies

Despite this range of data-related activities, there are no reliable national estimates of the incidence and prevalence of diabetes, its risk factors and its complications in Australia. In the absence of relevant information, evaluation of the effectiveness of diabetes prevention, early detection and management does not occur. In addition, there is no national strategy for the dissemination of information to consumers and stakeholders.

Several different factors have contributed to this situation:

- There is no nationally applicable framework within which diabetes-related information is collected, collated, managed, analysed and disseminated.
- Different collections cover varying aspects of the disease. Incomparability of the information collected by various agencies does not allow a clear assessment of the impact of diabetes in the community.
- Diabetes does not figure prominently in health statistics as a cause of mortality, morbidity and disability. This is mainly because it tends to be seen as a risk factor contributing to other diagnoses rather than being identified as a cause of events.
- Diabetes continues to be an evolving diagnosis. WHO and American Diabetes Association (ADA) classifications have lately tended to bring some stability and consensus on criteria for the diagnosis of diabetes.

- The diagnosis of diabetes involves the collection of a blood sample, using the oral glucose tolerance test or fasting blood glucose. Agencies conducting population surveys are however reluctant to include the collection of a blood sample, because blood collection and analysis costs are often prohibitive, and the collection of a blood sample may have an impact upon other aspects of the survey, in particular the response rate.
- Most of the available information on diabetes prevalence is self reported; however, this type of information has several limitations. As well as being under-reported, diabetes remains undiagnosed in a large proportion of people with Type 2 diabetes.
- The system does not have the capacity to measure the extent and impact of health-promoting lifestyles that are increasingly a focus of diabetes prevention and management.

In addition to the above-mentioned gaps and deficiencies, existing health information systems are not integrated sufficiently to permit a person-based, disease focus approach.

Priorities for diabetes data development

The following priorities in data development need to be addressed:

- data that are not currently collected nationally, or cannot be aggregated to generate a national picture; and
- the process for handling existing national data to enable extraction of information suitable for diabetes monitoring and surveillance.

The first priority relates mostly to information content, and includes:

- data on disease incidence and prevalence — there is an urgent need for a national risk factor prevalence survey which includes taking blood samples from participants, and which collects information relevant to all NHPAs;
- population-based and clinic-based data on diabetes risk factors and complications;
- information on patient compliance to prescribed treatment and management in socio-economic context; and
- extension of the National Diabetes Register to cover all cases of diabetes.

Priorities in relation to the management and handling of information include:

- value-added analysis and effective dissemination;
- improved recording of diabetes on hospital discharge and death certificates;
- standardised data elements and indicators;
- better information on diabetes comorbidity;
- integrated care through linking records;
- sentinel surveillance networks; and
- improved methodologies for making small area estimates from the national data.

Several of the above priorities can be addressed through the development of an information development plan, and a national monitoring and surveillance system. Currently, the AIHW is developing a National Diabetes Monitoring System to collect and analyse data, disseminate data to public health programs, and regularly evaluate the effectiveness of the disseminated data.

Research and development

Health care is a knowledge-based industry that needs to invest in research and development to continue to improve the quality of preventive efforts, care and ultimately health outcomes. Research has increased our understanding of diabetes, its risk factors and effective treatments to control the disease and delay the onset of complications. Research needs to be continued to ensure progress is made towards a cure, as well as further improving prevention and management interventions. This should occur across the spectrum of research efforts, including epidemiology, behavioural, health system, biomedical and clinical.

Medical research

The main source of funding for medical research in Australia is the NHMRC. Funding of research into diabetes and other NHPAs by NHMRC is given below.

Table 4.6: NHMRC funding for research in NHPAs — actual expenditure and percentage of total expenditure

	Injury		Mental health		Cardiovascular		Cancer		Diabetes		Total
Year	$m	%	$m	%	$m	%	$m	%	$m	%	$m
1995	2.00	1.5	17.89	13.6	24.86	19.0	13.74	10.5	3.06	2.3	131.15
1996	2.37	1.5	10.69	14.3	26.73	18.4	16.13	11.1	3.07	2.1	145.20
1997	2.35	1.6	22.95	15.2	29.70	19.7	17.57	11.7	3.61	2.4	150.75
1998	4.08	2.6	25.40	16.4	30.10	19.4	21.60	13.9	4.20	2.7	154.70

Note: These figures are based on NHMRC and RADGAC funding and also include pro-rata expenditure estimates of relevant research done in NHMRC-funded research institutes where appropriate.

Source: Office of NHMRC.

Apart from the NHMRC, the main sources for diabetes research support are the Juvenile Diabetes Foundation Australia, Diabetes Australia (through the Diabetes Australia Research Trust, the Western Australian Research Fund and the Kellion Foundation) and various pharmaceutical companies.

The Juvenile Diabetes Foundation Australia supports research to find a cure for diabetes, advance therapy and prevent complications. Grants are provided on the cause of Type 1 diabetes and diabetes-related complications, prevention of diabetes through identifying a cure, optimising glucose levels, and avoidance and reversal of complications. In 1998–99, 27 grants were awarded by the Foundation totalling over $4 million.

The Menzies Centre in Hobart is funded through the support of the University of Tasmania, State and Federal Governments and the Menzies Foundation, with additional funding provided by other government bodies, research grants and commercial contractual agreements. The Menzies Centre collaborates with the International Diabetes Institute on the Diabetes Register in Tasmania.

Two innovative diabetes research projects with direct clinical applications are screening for diabetic retinopathy using non-mydriatic retinal photography and the Melbourne Visual Impairment Project. In the former, a community-based screening service was offered to people with known diabetes over a four to five week period in selected townships in the Latrobe and Goulburn Valleys, resulting in the testing of 1,177 people, an estimated 40 per cent of the known diabetes population. This study demonstrated the usefulness of a screening program with non-mydriatic retinal photography as an adjunct to current eye care services for the early detection of diabetic retinopathy. This study was conducted by the University of Melbourne Ophthalmology Department and the Royal Victorian Eye and Ear Hospital.

The Melbourne Visual Impairment Project was a population-based study of eye disease in a representative sample of Melbourne residents, 40 years or older, which investigated the use of eye care services by people with and without diabetes. The conclusions from this study were that nearly half of the people with diabetes in Melbourne were not receiving adequate screening or follow-up for diabetic retinopathy.

States and Territories have identified a number of priorities for diabetes research. These include:

- research to enable monitoring of the true prevalence of diabetes;
- a better understanding of the interaction of diabetes risk factors to guide strategy development; and
- effective education and support strategies (eg patient-centred approaches).

Basic and applied medical research into the causes and prevention of diabetes have also been noted as important by jurisdictions.

Research into prevention and early detection

Many primary prevention strategies are currently consensus based. Increasing the effectiveness of these strategies and ensuring value for money within competitive funding scenarios will require evidence that can only be gathered through an increased or refocused investment in research and development. Research for primary prevention needs to be focused on formative research and program evaluation to enhance capacity to generate and demonstrate evidence-based strategies. For instance, research could focus on models of effective collaboration across service providers and sectors. Strategy dissemination will further enhance the effectiveness of primary prevention. These issues are being addressed by the various working parties of the NPHP.

Research is needed on the design of early detection programs, including diagnostic criteria, target groups, screening schedule and follow-up requirements which will result in the cost-effective early detection of diabetes. A cost-effectiveness analysis of early detection has been funded by the Victorian Health Department.

Current activity in prevention, early detection and management

Key points — Current activity in prevention

- Guideline development in Australia has focused on clinical practice, and there are few guidelines outlining evidence-based best practice in primary prevention.
- The National Public Health Partnership and National Primary Prevention Strategy should have a significant impact on diabetes prevention within the wider context of public health.
- In States and Territories, lifestyle or risk factor approaches are being partnered by strategies which focus on the environmental settings in which people live and work, and national initiatives are being implemented within a settings framework.
- Awareness of diabetes in the community needs to be raised. The National Community Awareness of Diabetes Campaign will seek to inform the general population about the impact of diabetes and its risk factors and encourage healthier lifestyles in the general population.
- There should be greater involvement of GPs and other health professionals in primary prevention activities.

Key points — Current activity in early detection

- The need to raise public awareness of the importance of early detection of diabetes and its complications should be taken into account in the development and implementation of the National Community Awareness of Diabetes Campaign.
- In order to improve rates of detection among health professionals, guidelines on screening and detection should be implemented, as well as education programs to ensure that GPs are equipped to diagnose and refer people attending for diabetes screening and follow-up as a result of awareness-raising campaigns.

Key points — Current activity in management

- There is a range of national and State/Territory guidelines on management of diabetes, and more are being developed. To be most effective, guidelines should involve key organisations and individuals in their development, and have specific mechanisms for dissemination and implementation. Their uptake should be evaluated, and their content reviewed and updated regularly.
- The National Divisions Diabetes Program is a coordinated national approach to diabetes care in Australian general practice, designed to facilitate the implementation and evaluation of best-practice diabetes care through GPs and Divisions of General Practice, working in collaboration with diabetes care providers and organisations.
- There is a growing move towards models of care in which increased collaboration between services and new approaches to funding promote seamless long-term care of people with diabetes. Two examples of such models are the Integrated Care Pilots in New South Wales and the Coordinated Care Trials in a number of jurisdictions.
- All States and Territories are currently reviewing diabetes service delivery. These reviews involve diabetes service providers, including GPs and allied health professionals. A number of States are also establishing benchmarks and prioritisation criteria for allied health services, and minimum standards for services.
- There is a need for collaborative diabetes services to be provided within hospitals. Currently, many people with diabetes who are admitted to hospital with another condition are not identified to the hospital diabetes team.
- At the State and Territory level, there is a growing movement towards informing patients of their rights and empowering clients to demand evidence-based care. The lack of resources to provide education, let alone conduct more innovative patient-centred approaches to education, is seen as a key issue by health service providers.
- Sharing of information, changing funding to increase sustainability of programs, investigation of decision-support systems across organisations and sustainable and effective continuing education are seen as important mechanisms to increase health professionals' participation in diabetes programs.

Current activity in prevention, early detection and management

Key points — Current activity in information systems

- There is a range of diabetes-related data gathering activities in Australia, most of which relate to diabetes mortality, hospitalisation and self-reported disease prevalence. However, there are wide gaps in knowledge, and information on diabetes is required at several levels:

  — at the policy level to inform program design and management of resources;

  — at the clinical service level to facilitate evidence-based treatment; and

  — at the service management level to evaluate the overall efficiency and effectiveness of services provided.

Key points — Current activity in research and development

- Research has increased our understanding of diabetes, its risk factors and effective treatments to control the disease and delay the onset of complications. Research needs to be continued to ensure progress is made towards a cure, as well as further improving prevention and management interventions.