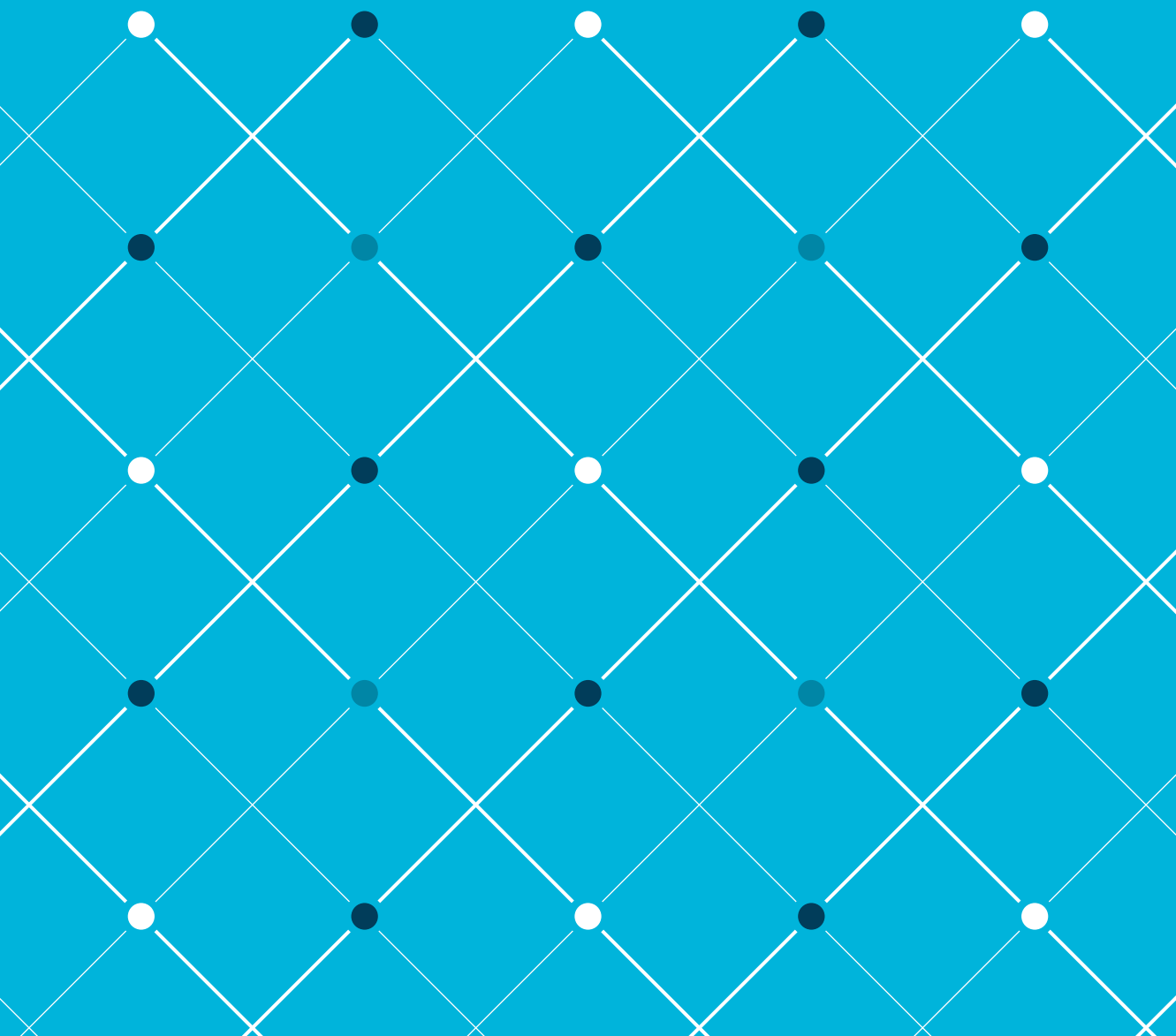




Australian Government
Department of Health

Australian National Diabetes Strategy

2016–2020



Paper-based publications

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Contents

Executive summary	1
Acknowledgements	2
Abbreviations	3
Introduction	4
The approach	6
The challenge of diabetes	8
Goal 1: Prevent people developing type 2 diabetes	10
Goal 2: Promote awareness and earlier detection of type 1 and type 2 diabetes	11
Goal 3: Reduce the occurrence of diabetes-related complications and improve quality of life among people with diabetes	12
Goal 4: Reduce the impact of pre-existing and gestational diabetes in pregnancy	15
Goal 5: Reduce the impact of diabetes among Aboriginal and Torres Strait Islander peoples	16
Goal 6: Reduce the impact of diabetes among other priority groups	18
Goal 7: Strengthen prevention and care through research, evidence and data	21
References	22





Executive summary

The Australian National Diabetes Strategy aims to outline Australia's national response to diabetes and inform how existing limited health care resources can be better coordinated and targeted across all levels of government. This Strategy identifies the most effective and appropriate interventions to reduce the impact of diabetes in the community and lead the way internationally in diabetes prevention, management and research.

Overcoming the many barriers to improving diabetes prevention and care requires a multi-sectoral response led by governments and implemented at the community level. This Strategy provides a framework for collaborative efforts by governments and other parts of the community, including people with diabetes, health care professionals, non-government organisations, researchers, families, carers, communities and industry, to reduce the incidence of, and morbidity and mortality from, diabetes and its associated complications.

This Strategy's vision is to strengthen all sectors in developing, implementing and evaluating an integrated and coordinated approach for reducing the social, human and economic impact of diabetes in Australia. To achieve this, this Strategy outlines seven high-level goals with potential areas for action and measures of progress.

The goals fall under a number of guiding principles which will help to align and focus effort. These guiding principles will need to be incorporated into the policies and programmes considered for the implementation of this Strategy.

Enabling factors which influence the ability to achieve goals include leadership and governance, workforce, information and research capacity, financing and infrastructure, and partnerships and networks.

This Strategy has been informed by the expert advice of the National Diabetes Strategy Advisory Group and consultations with key stakeholders and the community.

This Strategy was developed in consultation with jurisdictions through representations on the Australian Health Ministers' Advisory Council and the Council of Australian Governments (COAG) Health Council.

Further work is required to develop policy options to implement this Strategy, including metrics to evaluate progress towards achieving the goals. This will build on existing work to enhance current investment in diabetes action and care and focus on high-impact achievable actions underpinned by the best available evidence. Implementation will involve all levels of government, in collaboration with the health sector and relevant organisations. We encourage stakeholders to look actively for opportunities to develop new and strengthen existing partnerships to develop and support the achievement of this Strategy's goals.



Acknowledgements

Many individuals and organisations have given their time and expertise to the development of this Strategy. In particular, the Government thanks all organisations and individuals who provided feedback to the online public consultation paper in 2015, as well as those who participated in the face-to-face workshops in 2014.

The Government recognises the significant burden that diabetes places on individuals and their families. The involvement and willingness of people to share their personal experiences and knowledge is greatly appreciated and has provided a valuable resource for informing this Strategy.

National Diabetes Strategy Advisory Group

The National Diabetes Strategy Advisory Group was established in 2014 to provide advice on all aspects of the Strategy development process.

The Advisory Group, co-chaired by the Hon. Judi Moylan and Professor Paul Zimmet AO, possessed a wide range of experience and expertise in diabetes-related health care, research and population health, as well as links with key stakeholders.

The advice prepared by the Advisory Group has been fundamental in developing the Strategy to ensure its usefulness and relevance to diabetes care, prevention, management and research across the country.

The Advisory Group was assisted by experts in the field. Together they developed two key documents which informed the development of this Strategy:

- *A strategic framework for action: consultation paper for the development of the Australian National Diabetes Strategy* — released for online public consultation from 15 April – 31 May 2015. Key stakeholders were notified and all Australians were encouraged to provide their thoughts and ideas on a range of key goals and areas for national action on diabetes as identified by the National Diabetes Strategy Advisory Group.
- *A strategic framework for action: advice to Government on the development of the Australian National Diabetes Strategy 2016–2020* — prepared by the National Diabetes Strategy Advisory Group at the request of the Australian Government and presented to the Commonwealth Minister for Health during August 2015.

The material contained in this document is largely drawn from this advice.

The Government recognises and thanks the Advisory Group and experts for committing their time and specialist knowledge throughout the development of the Strategy. Their collective expertise and tireless dedication to increasing the awareness of, and action on, diabetes is admirable.

More information on the National Diabetes Strategy Advisory Group can be found at the Department of Health's website, <http://www.health.gov.au>.



Abbreviations

AusDiab

Australian Diabetes, Obesity and Lifestyle Study

CALD

Culturally and linguistically diverse

DKA

Diabetic ketoacidosis

GDM

Gestational diabetes mellitus

GP

General practitioner

HbA1c

Glycated haemoglobin

My Health Record

The Australian Government's national electronic health record, previously known as the personally controlled electronic health record or PCEHR

PHNs

Primary Health Networks



Introduction

The Australian National Diabetes Strategy (the Strategy) is an opportunity to consider current approaches to diabetes services and care; consider the role of governments at all levels, as well as other stakeholders; evaluate whether current efforts and investments align with identified needs; maximise the efficient use of existing limited health care resources; and articulate a vision for preventing, detecting and managing diabetes and for diabetes research efforts. This Strategy aims to better coordinate health resources across all levels of government and to focus these resources where they are needed most.

The Government has important roles in maintaining access to affordable, high-quality medicines, devices and services to support people with diabetes in self-management and treatment. The Australian Government provides support to people with diabetes through the National Diabetes Services Scheme, the Pharmaceutical Benefits Scheme, the Insulin Pump Programme and Medicare. This Strategy will not replace or override existing processes established by the Australian health system for assessing the safety, quality and cost-effectiveness of new medicines, devices, tests and procedures.

The health care system is subject to ongoing national reform, such as the establishment of Primary Health Networks (PHNs), implementation of the My Health Record and the post-market review of products used in the management of diabetes and subsidised under the Pharmaceutical Benefits Scheme, and evaluation of the Diabetes Care Project. The implementation of this Strategy will be informed by this work.

At a national level there is considerable focus on the prevention and management of chronic conditions. This focus is assisted by:

- the Primary Health Care Advisory Group, which will investigate options to provide better care for people with complex and chronic illness; innovative care and funding models; better recognition and treatment of mental health conditions; and greater connection between primary health care and hospital care
- the Medicare Benefits Schedule Review Taskforce, which will consider how services can be aligned with contemporary clinical evidence and improve health outcomes for patients
- the National Strategic Framework for Chronic Conditions, which is being developed in partnership with jurisdictions and stakeholders as an overarching framework to guide the prevention, management and care of a range of chronic conditions.

Further, this Strategy is also an opportunity to align with international policy, including the approach of the Global Action Plan for the Prevention and Control of Non-Communicable Diseases and the Global Monitoring Framework for Non-Communicable Diseases that were developed by the World Health Organization in 2013.



Purpose

This Strategy supersedes the National Diabetes Strategy 2000–2004. It aims to prioritise Australia’s response to diabetes and identify approaches to reducing the impact of diabetes in the community. It recognises the social and economic burden of the disease and provides action areas that:

- prevent, detect and manage diabetes
- improve diabetes services and care
- recognise the different roles and responsibilities of all levels of government and the non-government sector
- promote coordination of health resources across all levels of government
- facilitate coordinated, integrated and multidisciplinary care
- improve use of primary care services
- increase recognition of patient needs across the continuum of care.

Audience

This Strategy has been developed for policy makers at all levels of government, non-government organisations such as national peak bodies, stakeholder organisations, researchers and health professionals who advocate for and provide education, treatment and management of diabetes.

Time frame

The time frame for this Strategy is five years, from 2016 to 2020. It is anticipated that this Strategy will be reviewed after three years.

Next steps

Further work is required to operationalise each of the goals through development of an implementation plan that will consider the ways to direct funding and other resources, and further develop measures to evaluate the progress of this Strategy.

This will occur in collaboration with stakeholders across all levels of governments, the health sector and relevant organisations.



The approach

This Strategy articulates a vision supported by seven high-level goals. Each goal contains potential areas for action and measures of progress informed by the expert advice of the National Diabetes Strategy Advisory Group and consultations with key stakeholders and the community.

This Strategy includes principles to guide action within the goals and common enablers to achieve them. The enablers represent cross-cutting themes that will strengthen efforts across each of the goals.

Vision

Strengthen all sectors in developing, implementing and evaluating an integrated and coordinated approach for reducing the social, human and economic impact of diabetes in Australia.

Principles

Five key guiding principles underpin the goals. These principles are expected to guide the policies and programmes considered for the implementation of this Strategy.

1. Collaboration and cooperation to improve health outcomes

- Working in partnership across government, organisations and other sectors can maximise use of resources and technology, and encourage coordination and integration in prevention, detection and management of diabetes

2. Coordination and integration of diabetes care across services, settings, technology and sectors

- Diabetes care is multidisciplinary across providers and settings: coordination and communication are essential to ensure appropriate interventions and continuity of care

3. Facilitation of person-centred care and self-management throughout life

- Individuals are at the centre of their own health care
- People are supported to take responsibility for their own care

4. Reduction of health inequalities

- Actions will be driven by a focus on minimising the social, human and economic impact on those disproportionately affected by diabetes

5. Measurement of health behaviours and outcomes

- To enable measurement of progress and success relevant data will be collected, analysed and reported

Enablers

The enablers are factors which are embedded throughout the goals and influence the ability to achieve success:

- **Leadership and governance** — to ensure effective and appropriate oversight, attention to system design and accountability
- **Workforce** — high-quality, person-focused and integrated multidisciplinary teams spanning the health continuum will support all actions
- **Information and research capacity** — translating research into policy; innovation based on emerging evidence and new medical technologies will support improvements in care
- **Financing and infrastructure** — the right mix of financial incentives and funding arrangements can better support coordinated care and access to services
- **Partnerships and networks** — integrated and coordinated interactions between patients, health care providers and the health care system will drive improved health outcomes.



Potential measures of progress

This Strategy outlines potential ways to measure progress against each goal. The measures are expressed as high-level indicators, as it is anticipated that refinements will be made through the development of an implementation plan and associated metrics, including units of measurement and reporting responsibilities.

The table below lists the components of this Strategy.

Table 1: Components of the Australian National Diabetes Strategy, 2016–2020

Vision

Strengthen all sectors in developing, implementing and evaluating an integrated and coordinated approach for reducing the social, human and economic impact of diabetes in Australia

Principles

1. Collaboration and cooperation to improve health outcomes
2. Coordination and integration of diabetes care across services, settings, technology and sectors
3. Facilitation of person-centred care and self-management throughout their life
4. Reduction of health inequalities
5. Measurement of health behaviours and outcomes

Goals

1. Prevent people developing type 2 diabetes
2. Promote awareness and earlier detection of type 1 and type 2 diabetes
3. Reduce the occurrence of diabetes-related complications and improve quality of life among people with diabetes
4. Reduce the impact of pre-existing and gestational diabetes in pregnancy
5. Reduce the impact of diabetes among Aboriginal and Torres Strait Islander peoples
6. Reduce the impact of diabetes among other priority groups
7. Strengthen prevention and care through research, evidence and data

Enablers

Factors which influence the ability to achieve goals such as leadership and governance, workforce, information and research capacity, financing and infrastructure, and partnerships and networks



The challenge of diabetes

Diabetes mellitus is a chronic disorder that impedes the body's ability to produce and/or utilise insulin (a hormone produced by the pancreas to regulate blood sugar levels). This results in high blood sugar levels, which lead to serious complications such as stroke; diabetes-related eye disease such as diabetic retinopathy; heart disease; high blood pressure; kidney disease; vascular disease; nerve damage; and foot problems.

There are three commonly recognised forms of diabetes:

- **Type 1 diabetes** — an autoimmune condition that causes the immune system to destroy cells in the pancreas that produce insulin. It usually has onset in childhood or early adulthood but can occur at any age. There is no cure and people with type 1 diabetes require daily treatment with insulin for survival.
- **Type 2 diabetes** — the most common form of diabetes. It is largely preventable, as it is often associated with lifestyle factors. Insulin production by the pancreas becomes progressively slower and key organs in the body become resistant to the effects of insulin (which means that they are less able to utilise glucose from the blood). In the past, type 2 diabetes was typically diagnosed after 50 years of age, but diagnosis in younger adults, adolescents and even children is increasingly common.
- **Gestational diabetes mellitus (GDM)** — first occurs during pregnancy and usually disappears following the birth of the baby, although women who have had GDM are at significant risk of subsequently developing diabetes.

People with prediabetes (impaired fasting glucose and/or impaired glucose intolerance) have blood sugar levels that are higher than normal but not sufficiently high to diagnose type 2 diabetes (1).

Diabetes often occurs alongside (and shares risk factors with) other chronic conditions, including heart disease and chronic kidney disease (2). However, much of the impact of diabetes is preventable, either through improving the health of the population to prevent people from getting diabetes or by optimising how the health system supports people who have diabetes to prevent or delay the onset of complications.

The impact of diabetes in Australia

It is difficult to estimate the exact number of people with diabetes in Australia, but it is likely that more than 1.1 million Australians are living with the disease.

Type 2 diabetes accounts for approximately 85 per cent of people with diabetes. Approximately 12 per cent of Australians with diabetes are diagnosed with type 1 diabetes (3). Around 12 to 14 per cent of pregnant women will develop GDM (4).

Diabetes has a significant, and often preventable, impact on the health and wellbeing of the Australian population. In 2011, diabetes was the underlying cause of 3 per cent of all deaths and an underlying or associated cause of 10 per cent of all deaths (2). There are a significant number of diabetes-related complications, many of which are preventable. They include heart attack, stroke, amputation, blindness, kidney failure, depression and nerve disease.

Prediabetes was examined as part of the Australian Diabetes, Obesity and Lifestyle Study (AusDiab), which found that 16 per cent of adults over the age of 25 years — approximately 2.5 million people — have prediabetes (5). Between 15 and 30 per cent of people with prediabetes are likely to develop type 2 diabetes within five years (6).



It is difficult to estimate the total economic and social impact of diabetes. Health care that is directly attributable to diabetes costs approximately \$1.7 billion per year (7). In terms of indirect costs, the full cost of diabetes may be as high as \$14 billion per year. These indirect costs include reduced productivity, absence from work, early retirement and premature death and bereavement. Costs are heavily concentrated in particular sub-groups of people with diabetes. Annual direct costs for people with diabetes complications are more than twice as much as for people without complications: \$9600 compared with \$3500 (8).

Aboriginal and Torres Strait Islander peoples and other priority groups

Australia has enormous cultural and social diversity and, while diabetes is increasingly common across the country, it is particularly problematic within certain communities. As with the general population, it is difficult to estimate the exact number of Aboriginal and Torres Strait Islander peoples with diabetes, and prevalence estimates vary considerably. A review of the prevalence of diabetes among Aboriginal and Torres Strait Islander peoples found that, across the 24 studies conducted, prevalence ranged from 3.5 per cent to 33.1 per cent (9). The Australian Health Survey (National Aboriginal and Torres Strait Islander Health Measures Survey, 2012–13) found that one in five Aboriginal and Torres Strait Islander people over the age of 25 years have diabetes (10). This compares with rates of between 6 and 8 per cent of the general population in the same age group (taken from the Australian Health Survey and AusDiab, respectively) (11) (5). These data demonstrate that Aboriginal and Torres Strait Islander peoples experience a disproportionate share of the burden of diabetes as a result of these considerably higher diabetes rates.

There are several other groups for which efforts should be prioritised due to their high risk of diabetes. People from South-East Asia, North Africa and the Middle East, Oceania (excluding Australia), and southern and eastern Europe have higher rates of diabetes than other Australians. Older Australians also have higher rates of diabetes (particularly type 2 diabetes) and experience higher rates of disability associated with the disease (11). People with diabetes who live in rural and remote communities have more difficulty accessing health services to manage their diabetes.

Finally, individuals living with diabetes are at increased risk for depression and anxiety. People being treated for mental health disorders such as depression, anxiety and schizophrenia may be at higher risk of diabetes. These comorbidities compromise adherence to diabetes treatment and thus increase the risk of complications.



Goal 1: Prevent people developing type 2 diabetes

This Strategy recommends a community- and workplace-based approach for the general population and those at a high risk of developing diabetes. Those considered at high risk of developing type 2 diabetes are those with prediabetes as well as certain risk factors. The strongest evidence of effective prevention is in this group.

Health risk factors are attributes, characteristics or exposures that increase the likelihood of a person developing a disease or health disorder. These can be non-modifiable e.g. age, sex, genetics; or potentially modifiable e.g. overweight or obesity, insufficient physical activity.

It is important to emphasise that, in addressing common modifiable risk factors, diabetes prevention programmes are not one-dimensional and can have broader impacts contributing to population health, quality of life and reducing the strain on the health system.

Potential areas for action

Reduce modifiable risk factors in the general population

- Drive change to support the development of a health-promoting environment that encourages people to increase levels of physical activity, reduce sedentary behaviour and improve healthy eating
- Embed physical activity and healthy eating in everyday life (e.g. workplaces, schools and communities)
- Consider education and social media campaigns to encourage people to increase their levels of physical activity and healthy eating (e.g. a campaign to educate parents about nutrition and physical activity)

- Increase the availability of and demand for healthier food or reduce the availability of and demand for unhealthy food (including through continued implementation and targeted education on the Front-of-Pack Labelling — Health Star Rating system)
- Reduce the exposure of children and others to marketing, advertising, promotion and sponsorship of energy-dense, nutrient-poor foods and beverages (e.g. through voluntary or compulsory advertising codes of conduct)
- Strengthen, upskill and support the primary health care and public health workforce to support people in making healthy choices, especially in Aboriginal Community Controlled Health Services, where they exist
- Address maternal, family and child health, enhancing early life and growth patterns

Identify high-risk individuals and consider effective, evidence-based interventions

Potential measures of progress

- People developing or with type 2 diabetes
- Modifiable risk factors in the general population such as overweight and obesity, and levels of physical activity
- Development of local healthy community environment plans



Goal 2: Promote awareness and earlier detection of type 1 and type 2 diabetes

Type 1 diabetes

Failure to recognise the early symptoms of type 1 diabetes, such as severe fatigue and thirst, can lead to diabetic ketoacidosis (DKA). This is an acute complication which can be life-threatening and often requires hospitalisation. Around one in five people who are newly diagnosed with type 1 diabetes only learn about the diagnosis of diabetes upon presenting to hospital with DKA (12).

Type 2 diabetes

It is estimated that, for every 100 people with a diagnosis of type 2 diabetes in Australia, at least 25 people may be living with undiagnosed diabetes (11). People with undiagnosed type 2 diabetes are unaware of their condition and are therefore not accessing the necessary care. They may already have complications of their diabetes. By providing information on and increasing awareness and early detection of type 2 diabetes, people can be supported to make informed health-related decisions and actions, and this will improve health literacy (13).

Potential areas for action

Type 1 diabetes

- Increase awareness and recognition of the symptoms of type 1 diabetes and timely detection among health care providers and the community, including parents, teachers and others involved in the care of children

Type 2 diabetes

- Increase recognition and awareness of type 2 diabetes and early detection among health care providers and the community
- Promote increased use of risk screening tools and early management of diabetes with a focus on groups at high risk of developing type 2 diabetes
- Consider ways of integrating diabetes testing with assessment of other chronic conditions such as cardiovascular and kidney disease

Potential measures of progress

- People with type 1 diabetes who present with diabetic ketoacidosis upon diagnosis
- People tested for risk of type 2 diabetes



Goal 3: Reduce the occurrence of diabetes-related complications and improve quality of life among people with diabetes

Best-practice, high-quality diabetes care is best achieved when health care professionals work seamlessly and in partnership across primary health, community and specialist care services with direct consumer (the person with diabetes), carer and family involvement. Achieving this will not be easy, however, because it will require a transformation in the way care is delivered in order to make it more consumer focused, team based and proactive. Consumer engagement, awareness and self-management will be major factors in the success of this goal.

Primary Health Networks (PHNs) have been established to increase the efficiency and effectiveness of medical services, particularly for those at risk of poor health outcomes, and to improve coordination of care for patients. PHNs will work directly with general practitioners (GPs), other primary care providers, secondary care providers and hospitals to better coordinate care across the local health system so that people requiring help from multiple health care providers, such as people with diabetes, receive the right care in the right place at the right time.

Potential areas for action

Develop nationally agreed clinical guidelines, local care pathways and complications prevention programmes

- Develop a nationally endorsed set of diabetes guidelines, assessed against the clinical practice guidelines criteria agreed by the Australian Health Ministers' Advisory Council. Support should be provided for their implementation and monitoring
- Consider developing clinical care standards for diabetes care
- Explore the role of PHNs in developing locally tailored pathways of care for people with diabetes and other chronic conditions, reflecting local service configuration and population needs
- Consider complication prevention programmes in PHNs and across the health system more generally. These may be integrated programmes covering multiple complications or single complication prevention programmes
- Explore the role of the My Health Record in clinical workflows so as to better manage complex conditions and medication among the individual's health care providers

Expand consumer engagement and self-management

- Enhance access to structured self-management education programmes for people with diabetes, including the newly diagnosed and people starting insulin. Particular attention must be given to programmes for children with diabetes, adolescents transitioning into adult services, and older people and their carers
- Ensure that peer support programmes (either face-to-face, telephone or online) are accessible to all people with diabetes
- Consider education and social marketing campaigns – with a focus on people with diabetes, their carers and primary health staff – on the importance of regular diabetes-related complication monitoring



Develop and implement quality improvement processes

- Support the involvement of people with diabetes, and health care providers who care for people with diabetes, in quality improvement processes. This may include health care providers reporting data against clinical guidelines and outcomes
- Encourage uptake and use of the My Health Record among health care providers as an online and accessible management tool for conditions, treatments and medicines
- Enhance data connectivity to improve clinical care

Use information and communication technology

- Promote the uptake and meaningful use of the My Health Record by consumers and health care providers
- Support current access to flexible telemedicine consultations (e.g. medical consultations for diabetes, eye screening programmes and telephone-based lifestyle coaching) and explore the expansion of telehealth services within existing Medical Services Advisory Committee assessment processes
- Facilitate the use and application of consumer engagement and education platforms
- Harness emerging remote monitoring technologies
- Facilitate the availability of connected and consistent software programmes for diabetes management for general practitioners and allied health professionals within the primary health care system

- Facilitate and encourage use of the My Health Record among health care providers through supported software technology to access the national online health record

Measures will need to include a range of formats in order to be inclusive of people with disability

Improve affordable access to medicines and devices

- Continue to develop and design efficient pathways for assessment, evaluation and funding that enable timely access to new diabetes treatments and devices

Improve workforce capacity

- Upskill the existing generalist health workforce on diabetes
- Upskill Aboriginal and Torres Strait Islander workers and practitioners on diabetes
- Consider the adequacy of the diabetes specialist workforce (diabetologists and credentialled diabetes educators)
- Consider redistributing some aspects of diabetes care to different roles (e.g. community nurses delivering diabetes education, credentialled diabetes educators taking on expanded roles in diabetes management)
- Develop clear competencies for the diabetes workforce and other health professionals involved in diabetes care (e.g. pharmacists, dentists and podiatrists) based on national clinical guidelines in a culturally informed and language-appropriate way



Improve funding mechanisms

- Explore and consider innovative funding mechanisms for the diabetes workforce, e.g. for patients who require higher utilisation of health care services, including allied health and Aboriginal and Torres Strait Islander health services

Provide mental health care for people with diabetes

- Routinely monitor people with diabetes for mental health issues
- Perform a mental health assessment upon diagnosis of diabetes and consider regular monitoring by adding the assessment to the Annual Cycle of Care
- Promote use of mental health services by the diabetes community

Strengthen and expand transition from child to adult services

- Strengthen programmes which assist young people with diabetes in the transition from paediatric to adult care services, including access to psychological support services

Make preschool, school and child care diabetes safe environments

- Support collaborative efforts between parents, the health care team and the education environment to allow children with type 1 diabetes to participate fully and safely in the school experience

Provide high-quality hospital care

- Consider adding diabetes to the Australian Commission on Safety and Quality in Health Care clinical care standards programme. Clinical care standards can play an important role in delivering appropriate care and reducing unwarranted variation, as they identify and define the care people should expect to be offered or receive, regardless of where they are treated
- Provide education and training to hospital staff involved in the care of patients with diabetes
- Consider expanding the scope of the National Safety and Quality Health Service Standards to include a standard for diabetes for clinical handover that broadens the discharge plan from within services to ensure principles of continuity and coordination of care between clinicians and organisations

Potential measures of progress

- People with diabetes who achieve target levels of HbA1c, albuminuria, cholesterol or blood pressure
- People with diabetes undertaking regular assessment for complications
- People who have had their medication plan reviewed by a doctor or pharmacist
- People with diabetes complications
- Quality standards for diabetes in hospitals



Goal 4: Reduce the impact of pre-existing and gestational diabetes in pregnancy

Diabetes in pregnancy places women and their children at significant risk during and after the pregnancy. Foetal and infant death is four times more likely among women who have diabetes prior to pregnancy (14). It is important that steps are taken to mitigate this risk prior to pregnancy (i.e. through pre-conception care for both men and women), during pregnancy and following delivery.

While all women should be included in general preventative care, women with GDM in previous pregnancies warrant a particular focus in terms of health and lifestyle owing to a high risk of future diabetes. The provision of ongoing support and care after pregnancy is essential to help prevent the development of type 2 diabetes. Long term, half of women who had GDM will develop type 2 diabetes. In addition, their children are at increased risk of developing obesity and also type 2 diabetes (15). Identification and normalisation of maternal hyperglycaemia gives the opportunity to minimise the short-term complications and reduce the later development of diabetes and obesity and their associated complications. In addition, there is evidence to suggest that breastfeeding reduces the risk of diabetes not only in the baby but also in the mother (16).

Potential areas for action

- Provide accessible pre-pregnancy programmes to women with pre-existing diabetes and those with previous history of GDM to identify and address risk factors that may result in adverse outcomes
- Ensure that all women with known diabetes receive pre-pregnancy programmes and advice
- Ensure that all pregnant women are appropriately tested for diabetes
- Ensure that women with diabetes in pregnancy have access to a credentialled diabetes educator and expert advice on diet and physical activity
- Provide post-pregnancy programmes for all women with diabetes in pregnancy
- Ensure that women who have previously had GDM receive counselling regarding the future risk of diabetes
- Provide paediatric follow-up for at-risk children (e.g. children of mothers with GDM or obesity)
- Consider a reminder system for those registered on the National Gestational Diabetes Register for future diabetes testing

Potential measures of progress

- Pregnant women with diabetes having measurements of HbA1c in the first and third trimesters
- Reduction in perinatal and infant deaths of children of mothers with diabetes
- Mothers with GDM having postpartum diabetes testing



Goal 5: Reduce the impact of diabetes among Aboriginal and Torres Strait Islander peoples

Australia's Indigenous community has one of the highest rates of type 2 diabetes and its complications both nationally and globally. Increasingly, diabetes is being diagnosed in children, adolescents and young adults (17), with rising rates of diabetes in pregnancy establishing intergenerational patterns of premature disease (18). The prevalence and severity of diabetes-related complications among Aboriginal and Torres Strait Islander peoples is of particular concern (10).

To prevent diabetes and improve diabetes management, it is important to ensure that the communities have access to, and can benefit from, diabetes support, education and services — e.g. Aboriginal Community Controlled Health Services, where they exist, or culturally competent mainstream services — as an integral part of their primary health care services. Food security, healthier choices and lifestyle changes need to be encouraged and facilitated; and family and child health needs to be improved through pregnancy and early years programmes.

Aboriginal and Torres Strait Islander peoples may experience cultural and linguistic barriers, as well as geographic and socio-economic barriers, that limit their access to diabetes-related services and education. Actions for rural and remote Australians (see Goal 6) apply to this group. This cultural diversity, along with varying local and regional circumstances, needs to be recognised and respected and should inform the development of action that serves to reduce the burden and impact of diabetes.

Potential areas for action

The actions within the preceding goals also apply to this goal. The following additional actions, to be developed in consultation with communities, are recommended:

- Develop and implement community-wide, culturally relevant awareness programmes (including school education programmes) that communicate the seriousness of diabetes and its complications. Education should be provided in a culturally and language appropriate manner, which includes translating materials and services
- Promote pre-conception, pregnancy and early years programmes that enhance the education and health of Indigenous men and women; detect gestational and previously undiagnosed diabetes and manage it through pregnancy; and coordinate follow-up and postnatal care for mothers and babies
- Enhance the pre-conception education and health of Indigenous women, including through targeted efforts to reduce the use of alcohol, tobacco and other drugs and to promote a healthy diet
- Develop and implement community-wide interventions to increase the availability, affordability and consumption of fresh foods and reduce the consumption of sugar-sweetened beverages and high-fat, high-sugar, high-salt and highly processed foods



- Promote access to necessary specialist support through strategically located regional networks of care, optimising telehealth services and linked facilities for the treatment of the serious complications of diabetes — in particular, kidney and eye disease
- Encourage primary health care services to better identify and manage diabetes (including among adolescents and children), incorporate risk calculators and electronic decision support mechanisms and increase opportunities for Aboriginal and Torres Strait Islander patients to better self-manage their diabetes
- Consider the adequacy of the diabetes educator workforce working with and within Aboriginal and Torres Strait Islander primary care settings and support the capacity development of the workforce to improve access to essential, high-quality, evidence-based diabetes care
- Provide stimulating early years education and intervention programmes which help address developmental vulnerabilities and address the social and environmental determinants of Aboriginal and Torres Strait Islander peoples' health
- Encourage uptake and use of the My Health Record among health care providers in rural and remote locations, with online access to the individual's medical history and prescriptions

Potential measures of progress

- Aboriginal and Torres Strait Islander people with diabetes
- Aboriginal and Torres Strait Islander people with diabetes complications
- Aboriginal and Torres Strait Islander women with gestational diabetes
- Aboriginal and Torres Strait Islander people with above-target HbA1c, albuminuria, cholesterol or blood pressure
- Aboriginal and Torres Strait Islander people who receive regular testing for complications
- Rates of smoking and alcohol consumption among pregnant Aboriginal and Torres Strait Islander women with diabetes
- The cost of a healthy food basket, monitored to assess the availability and affordability of foods required for a healthy diet
- Aboriginal and Torres Strait Islander children participating in evidence-based early childhood education programmes



Goal 6: Reduce the impact of diabetes among other priority groups

Australia is socially and culturally diverse and this has important implications for this Strategy. The areas for action that have been suggested for all Australians in the preceding goals also apply to communities with a higher prevalence of diabetes. Examples include culturally and linguistically diverse communities (CALD), older Australians, rural and remote communities and mental health consumers. Each warrants particular attention and may require different policy or health system approaches.

Culturally and linguistically diverse people

People from some CALD backgrounds are at higher risk of developing type 2 diabetes (perhaps reflecting a predisposition to diabetes in their environmental or genetic backgrounds). People from these backgrounds who have diabetes may also experience cultural and linguistic barriers that limit their access to diabetes-related services and education. Actions for both the prevention of diabetes and its management need to be tailored to the specific needs of the respective CALD communities to ensure that person-centred, culturally safe care respects the many diverse languages, religious beliefs and cultural practices in those communities.

Older Australians

Diabetes (particularly type 2 diabetes) is more prevalent among older Australians (11). Furthermore, older people with diabetes experience higher rates of multi-morbidities (i.e. higher rates of diagnosis with other medical conditions alongside diabetes) and disability, as well as earlier onset of functional decline and frailty (19). Dementia may impact on a patient's ability to self-manage their diabetes.

Australians living in rural and remote areas

People with diabetes who live in rural and remote communities may experience geographical barriers that limit their access to services (20). Rural and remote communities are associated with areas of social disadvantage and include Aboriginal and Torres Strait Islander peoples and people from all ethnic and cultural backgrounds, some of whom may experience additional cultural and linguistic barriers to accessing services.



Mental health issues

People with diabetes may experience depression or anxiety and may also find themselves overwhelmed with the demands of self-management.

Attending to behavioural and mental health factors at diagnosis and as the illness progresses is crucial to preventing complications, maximising outcomes and minimising the costs of diabetes care. The transition from child to adult diabetes services can also be a time when people require extra support.

In addition, people being treated for mental health disorders such as depression, anxiety and schizophrenia may be at higher risk of diabetes due to the impact of therapies such as psychotropic medications and resulting weight gain (21).

GPs and allied health professionals can facilitate mental health assessment and monitoring as a component of holistic, ongoing patient care.

Potential areas for action

Culturally and linguistically diverse people

- Translate consumer resources on prevention and management into the appropriate languages
- Encourage the use of appropriate translation services during health care encounters
- Improve health literacy by disseminating culturally appropriate information and programmes for the management and care of diabetes

Older Australians

- Promote the implementation of relevant guidelines on managing diabetes in older people to inform care and clinical decision-making across health and aged care settings
- Ensure that staff in aged care settings are trained in managing diabetes
- Ensure appropriate care transitions between services
- Facilitate early discharge planning and communication with the diabetes care team and/or treating GP
- Support the role of carers for older people with diabetes through information, education and links to services, including culturally appropriate local support groups
- Encourage sharing of care and transition plans between health professionals and individuals through the use of the My Health Record
- Ensure consideration of care contexts, care planning and diabetes-specific risk assessments to enable proactive and preventive care approaches



Australians living in rural and remote areas

- Coordinate regional services across primary, secondary and tertiary care to facilitate access to care and the necessary support services
- Support community-based health workers through training and education
- Ensure the availability of telehealth and internet medical services and ensure equitable access to other technologies and services as appropriate
- Examine the possible benefits of utilising community pharmacies and other health professionals to provide diabetes advice and care where other primary health care access is limited
- Encourage uptake and use of the My Health Record among health care providers in rural and remote locations, providing online access to a patient's medical conditions and prescriptions through this record
- Develop partnerships and linkages between local clinicians and health professionals and major specialist diabetes centres

Mental health issues

- Perform a mental health assessment upon diagnosis of diabetes and consider regular monitoring by adding the assessment to the Annual Cycle of Care
- Routinely monitor people with diabetes for mental health issues
- Routinely monitor people with mental health illness for diabetes

Potential measures of progress

- People developing or with type 2 diabetes among priority groups
- People with diabetes among priority groups with above-target HbA1c, cholesterol, albuminuria and blood pressure
- People among priority groups who are overweight, obese or have other modifiable risk factors
- People among priority groups who receive testing for complications
- Complications in people with diabetes among priority groups
- Hospitalisations among older Australians with diabetes



Goal 7: Strengthen prevention and care through research, evidence and data

Diabetes has a significant impact on Australia's health and productivity, and research into the condition — including the basic science of the disease, its social and economic impacts and appropriate clinical responses — is an important priority. Although Australia currently has multiple diabetes research funding streams, research efforts need to be further focused on strengthening evidence-based practice for the prevention of diabetes and its complications, identifying a cure for diabetes, informing health policy decisions and potentially offering more timely access to newer and improved medications.

Potential areas for action

Develop a national research agenda

- Develop a national research agenda designed to coordinate diabetes research across multiple funding streams, with particular attention to:
 - Examining the barriers to best practice and the availability of (and access to) appropriate health services in order to develop specific strategies to address and overcome these barriers
 - Identifying the cause(s) of type 1 diabetes and how to prevent, cure and treat the condition (including research into the potential benefits of stem cell technology and islet cell transplantation)
 - Identifying the cause(s) of type 2 diabetes and ways to improve outcomes for people with the condition (including Aboriginal and Torres Strait Islander peoples, children and adolescents, and other priority groups)

- Developing the evidence base for continuous glucose monitoring and insulin pump programmes to improve diabetes care
- Translating research into improved therapies for the optimal management of diabetes
- Within the recognised legislative and privacy requirements, linking existing data sets to provide de-identified aggregate data that can be analysed to inform the knowledge base for diabetes
- Collating and disseminating research findings in a timely manner

Improve and expand data linkage and facilitate ease of access

- Provide information on how to access diabetes-relevant datasets for research purposes
- Facilitate and improve the connectivity of key data systems between different providers of health care, including through increased participation with the My Health Record
- Undertake a regular national biomedical health survey that includes diabetes and chronic conditions and an Aboriginal and Torres Strait Islander peoples component

Potential measures of progress

- Development of a national research agenda
- Regular reports from national datasets and surveys on diabetes parameters such as burden of disease and health system usage



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