

Living Well with Diabetes

A plan for people at
high risk of or living
with diabetes

2015–2020

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Minister's foreword

More than 257,000 New Zealanders now live with diabetes. Type 2 diabetes, in particular, is a serious health challenge for our country and something our health system has been working hard to manage.

In recent years, we have been improving the quality of services for people already living with diabetes, better identifying those at risk of developing it and raising more awareness of lifestyle factors that increase a person's risk of developing the disease. We have also been helping people take action to improve their health, for instance through the successful Green Prescriptions programme, which encourages New Zealanders to live healthier, more active lives.

This five-year plan builds on the good work already under way to achieve better outcomes for people with diabetes.

My vision is for all New Zealanders with diabetes, or at high risk of developing type 2 diabetes, to live well and have access to high-quality services that meet their unique needs. To achieve this vision, we must ensure our health workforce is flexible and responsive to people's needs. We also need to build on the work we are doing to encourage families to make good lifestyle choices and live healthy active lives, through the Healthy Families NZ programme, and continue to help people with diabetes live well closer to their home. This will require primary and secondary health care providers, non-governmental and community organisations, families, whānau and people with diabetes working more closely together.

Another significant priority is maximising the benefits of technology to give people the tools to better manage their own health, including through patient portals. There has already been a significant increase in the number of patient portal users in recent years, which people are using to book appointments, request repeat prescriptions and message clinical staff directly. Other technologies are also becoming available to make self-management easier, including smart phone apps and opportunities for electronic shared care planning as well as tools for remote monitoring and consultation services.

Although the emphasis is on type 2 diabetes, this plan also addresses the important needs of children and adults with type 1 diabetes to ensure they have the support of experienced, multidisciplinary teams and receive intensive support at different stages of their lives when required.

Hon Dr Jonathan Coleman
Minister of Health

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Introduction

Diabetes is a priority long-term condition

Addressing the increasing impact of long-term conditions, including diabetes, is an important focus for the Government to support its vision that all New Zealanders live well, stay well and get well.

An estimated 257,700 New Zealanders have diabetes. In 2014, the number of people with diabetes grew by nearly 40 people per day. The high personal and social costs associated with this condition present a serious health challenge, both now and in the future.

The health sector has worked hard over recent years to identify earlier those at risk of developing diabetes and to improve the quality of services for people already living with diabetes. However, more can be done and the Government is committed to supporting a sustained and systematic approach to reducing the burden of diabetes, and the associated comorbidities, in this country.

A medium-term plan is needed

Living Well with Diabetes: A plan for people at high risk of or living with diabetes 2015–2020 (the plan) sets out a vision that:

all New Zealanders with diabetes, or at high risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services.

Achieving this vision requires the collective effort of many people and organisations, from primary through to tertiary care, as well as the wider social sector. Non-governmental organisations also have a crucial role to play, as do family, whānau and community groups in providing practical, social and emotional support.

The scale at which this plan can be implemented also depends on available funding. Most activities are already under way or planned in some form. Any new activities, or expansion on current or planned services, may require additional funding and/or a phased implementation approach.

A note on obesity

Making wider system changes for **tackling obesity**, which is closely associated with type 2 diabetes, is outside the scope of this plan.

The Government supports a number of initiatives that enable New Zealanders to live a healthy lifestyle. These include Healthy Families NZ and the Health Star Rating System, as well as a number of programmes delivered through district health boards (DHBs), local government and the education sector.

These initiatives will contribute to reducing the impact of obesity in New Zealand and help reduce the incidence of type 2 diabetes in the long term.

The case for change

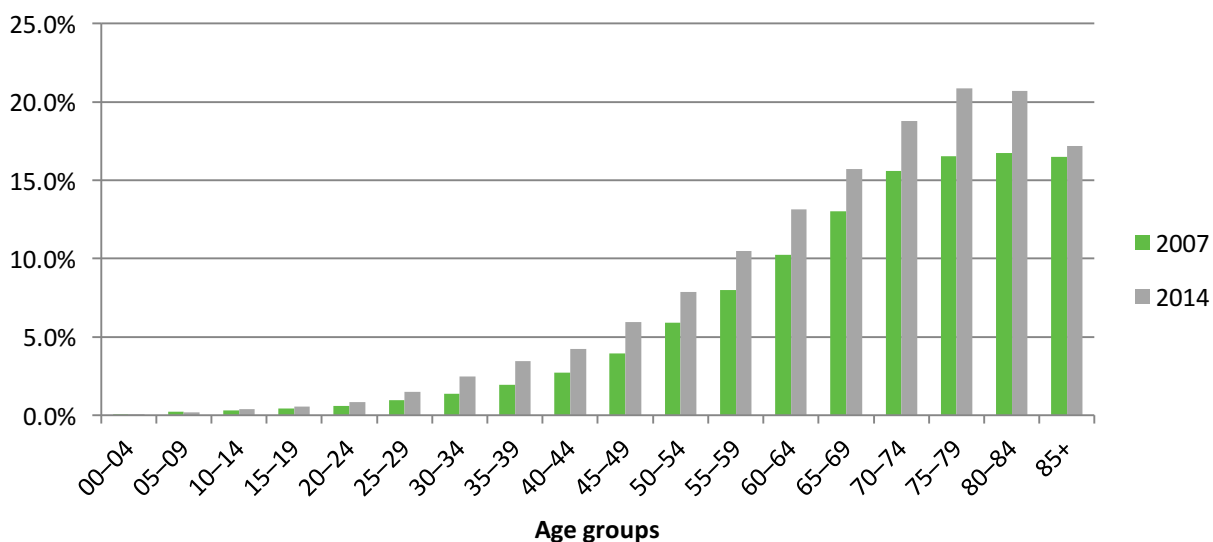
The prevalence of type 2 diabetes is rising

As in many other developed countries, diabetes is one of New Zealand's fastest-growing long-term conditions. Rising prevalence reflects a combination of factors, including rising incidence (true new cases), better detection of cases through increased screening, slower progression from uncomplicated to late-stage disease (which means mortality rates are lower) and demographic change (changing ethnic composition and population ageing).

- An estimated 257,700 people in New Zealand have diabetes as at 31 December 2014, or 6 percent of the New Zealand population (Virtual Diabetes Register).
- The prevalence of diabetes has been rising at an average of 7 percent per year for the last eight years.
- The prevalence of diabetes is increasing across all ethnic groups and age groups; the largest (relative) increases in diabetes are among adults aged 25–44 years, and at least one in six (15 percent) adults aged 65 years and over has diabetes.

The increase in diabetes is consistent with trends in obesity.

Figure 1: Prevalence of diabetes by age group, 2007 and 2014



Source: Virtual Diabetes Register, Ministry of Health.

About 90 percent of people with diabetes have type 2 diabetes (see Appendix 1 for a brief description of different types of diabetes).

While type 1 diabetes is also increasing, it is the sheer volume of people with type 2 diabetes that presents a serious health challenge for New Zealand.

The broader health and societal impact

The increasing prevalence of diabetes in New Zealand will have a major impact on the health system. This is because more people will need to access secondary and tertiary health services for treatment of the complications associated with primary health care support to help manage their disease, as well as diabetes.

Diabetes, because it is a long-term condition with the potential for severe complications, has high health costs. For example, the total direct health care costs for a person with diabetes are approximately three times those for people without diabetes.

More broadly, the long-term effects of diabetes will have a wider impact on society. This is because an increasing number of people may not be able to continue working as they did before the onset of their diabetes. The cost of this loss of productivity has been estimated as being more than direct health care costs.

Other specific challenges include:

- people are being diagnosed with diabetes earlier and living longer with their condition, which means more contact with the health system
- an ageing population, including an ageing workforce
- a constrained funding environment for the foreseeable future
- increasing health expenditure
- a growing recognition that health services must be flexible in meeting the needs of different communities
- rapid advances in technology, developments in personalised medicine and changing public expectations.

Ensuring sustainable diabetes services in the future supports an increased focus on reducing the burden of diabetes, and its associated complications, on the health system. This will require the consistent delivery of high-quality innovative care through primary and community-based services that meet the needs of different communities.

Some population groups are affected more than others

The prevalence of diabetes is higher in Māori, people of Pacific and Indian ethnicity, and people living in lower socioeconomic areas.

- In 2013, the highest rate of diabetes in New Zealand was in the Indian ethnic group (11 percent), followed by Pacific peoples (9.6 percent) (Ministry of Health 2014f).
- Type 2 diabetes is increasingly occurring in Māori and Pacific children under the age of 15 years¹ (Jefferies et al 2012).
- Māori are three times as likely to have type 2 diabetes as non-Māori, and are more likely to develop complications (Ministry of Health 2014a).
- One in three Pacific adults aged 45 years or over has diabetes (Coppell et al 2013).
- Pacific peoples develop diabetes earlier and experience more complications than New Zealand Europeans with the condition (Ministry of Health 2014a).
- Adults living in the most socioeconomically deprived areas are over three times more likely to report that they have been diagnosed with diabetes than adults living in the least deprived areas (Ministry of Health 2014f).
- People with a history of long-term mental illness have significantly higher rates of diabetes (Te Pou 2014).

To address these differences in health outcomes, the plan and implementation activities are guided by the overarching framework and aspirations in the Māori Health Strategy, *He Korowai Oranga* (Ministry of Health 2014c), as well as *‘Ala Mo‘ui: Pathways to Pacific Health and Wellbeing 2014–2018* (Ministry of Health 2014d).

An equity framework has been developed alongside *He Korowai Oranga* to drive activities to improve equity in health care. This equity framework can be applied across all the activities set out in the ‘Priority areas for action’ section.

The health system can improve equity of health outcomes

Many factors outside the direct influence of the health system contribute to differences in health outcomes between population groups. However, the health system can play an important role in improving outcomes for these populations by:

- increasing health literacy
- providing everyone with fair access to high-quality treatment
- identifying and removing inequities in all health services
- identifying and treating comorbidities
- developing a better understanding of the impact that broader social determinants have on people’s health and delivering services that recognise this impact.

¹ In a study by Jefferies et al (2012), the annual incidence of new cases of type 2 diabetes in children under the age of 15 years increased fivefold in the Auckland region from 1995 to 2007; 90 percent of the new cases were of Māori or Pacific ethnicity.

The quality and level of services that people with diabetes receive can also vary depending on where they live. The Health Quality and Safety Commission has developed an Atlas of Healthcare Variation for the quality of care provided to people with diabetes,² which shows how the provision of health care, from identification and medication through to hospital admissions for complications, varies from region to region.

The New Zealand Health Strategy will enable change

The 'Priority areas for action' section in this plan aligns with the transformational change signalled in the refresh of the New Zealand Health Strategy, that is:

that the New Zealand health and disability system is people-centred, joined up with communities and other government services and supports New Zealanders to 'live well, stay well, get well'.

The draft New Zealand Health Strategy supports an increasing focus on health services that operate in a wider community and social context with an emphasis on shifting services to provide care closer to home. It also has a focus on implementing effective approaches for achieving equity of health outcomes as well as better use of technology and information.

A roadmap of actions will sit alongside the Strategy to achieve its vision of people living well, staying well and getting well. These actions will contribute to improving outcomes for people at a high risk of developing, or who are living with, diabetes. The actions build on programmes that are already underway, for example, Healthy Families NZ, Green Prescriptions and the integrated health initiatives set out in *Care Closer to Home* (Ministry of Health 2014g).

Recent achievements

Good progress has been made in improving health outcomes for people at high risk of or living with diabetes with diabetes. Recent achievements include:

- increased funding announced in 2013 for the adult Green Prescription initiative by \$7.2 million over four years
- significant gains in identifying people with diabetes early, with 89 percent achievement of the 'More Heart and Diabetes Checks' health target at the end of June 2015
- implementation by DHBs and primary health organisations of Diabetes Care Improvement Packages
- development of *Quality Standards for Diabetes Care 2014* and a toolkit to support the implementation of those standards
- publication of the Health Quality and Safety Commission Atlas of Variation and baseline data for diabetes services.

2 www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-healthcare-variation/



Overview

A plan for people at high risk of or living with diabetes

Vision

All New Zealanders with diabetes, or at high risk of developing type 2 diabetes, are living well and have access to high-quality, people-centred health services.

Objectives

The plan's overarching objectives are to:

- reduce the personal burden of disease for people with diabetes by providing integrated services along with the tools and support people need to manage their own health
- provide consistent and sustainable services across the country that improve health outcomes and equity for all New Zealanders, including through better use of health information
- reduce the cost of diabetes on the public health system, and the broader societal impact in the longer term.

Principles

The plan outlines six priority areas for action that will contribute to achieving its overarching objectives. The principles guiding this plan are that services:

- focus on **prevention** and **early intervention**, including for mental health needs, to reduce the personal and social burden of disease
- are **reducing disparities** in health outcomes between different ethnic, socioeconomic and geographic groups
- provide **people-centred** services, including for family and whānau when appropriate
- are **sustainable** in the long term, with **consistent services** across the country
- focus on achieving effective **self-management** including responding to people's demand for **technology-enabled tools**
- are informed by **evidence** and test and evaluate promising interventions to improve our knowledge of what works for New Zealanders.

Priority areas for action 2015–2020

Activities to implement these priorities are signalled in each section. The scale at which these activities can be implemented will depend on available funding. Most activities are already under way or planned in some form. Any new activities, or expansion on current or planned services, may require additional funding and/or a phased implementation approach. Detailed work plans will be published separately.

Priority areas for action 2015–2020



1. Prevent high-risk people from developing type 2 diabetes

Identify and implement a programme of health education and awareness-raising initiatives to improve people's knowledge and understanding of diabetes.

Implement prevention and wellness programmes.

Improve identification and management of pre-diabetes.

Support action-oriented research.



4. Detect diabetes early and reduce the risk of complications

Implement risk management at population and practice levels, supported by assessment tools.

Support IT-enabled patient and clinician monitoring for early intervention.

Ensure eligible people access bariatric surgery.

Consistently implement guidelines for gestational diabetes.



2. Enable effective self-management

Support the ongoing development of self-management approaches.

Improve patient/whānau peer support networks.

Support people to self-manage their diabetes as effectively as possible.

Support ongoing workforce development.



5. Provide integrated care

Integrate practice across primary and specialist care, including outreach and navigator services and intensive support for some people with high health needs.

Coordinate care across the health, disability and social sectors for people with complex needs.



3. Improve quality of services

Implement and use the *Quality Standards for Diabetes Care 2014* to self-assess services and improve performance, with a specific focus on improving equity.

Measure progress in improving health outcomes for people with diabetes.



6. Meet the needs of children and adults with type 1 diabetes

Support access to technology that provides more effective insulin therapy and to help with self-management, for example 'apps' and insulin pumps.

Improve coding and data collection to differentiate between outcome measures for type 1 and type 2 diabetes.

Encourage community, parental and peer support networks.

Upskill the health workforce in knowledge and treatment of type 1 diabetes.

Implement *Standards of Care for Children and Adolescents with Diabetes 2014*.

System enablers

The following activities can be applied across all priority areas for action to meet the plan's objectives.

What	How
1. Workforce	Provide services that take a proactive approach to managing diabetes as a long-term condition.
2. Technology	Support development of and access to technology that improves patient outcomes. Ensure people with diabetes have access to their personal health information via patient portals to enable them to self-manage. Create opportunities for electronic shared care plans to support people with diabetes and their care coordination requirements.
3. Leadership	Ensure clinical governance and consumer participation in national, regional and local services. Reorient planning guidance and performance management to outcomes for people with diabetes.

Measures

The measures outlined below have been developed to track progress in improving health outcomes for people with diabetes.

The proposed comparison data is a two-year baseline from 2013 and 2014. The data will be analysed by ethnicity to ensure that future activities meet the needs of populations experiencing poorer outcomes.

1. Reduce the personal burden of disease for people with diabetes

- A 20 percent reduction in complications and disability experienced by people with diabetes under the age of 75 years by 2020; with a 25–30 percent reduction for high risk population groups.
- Reduce the rate of amputations per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples.
- Reduce the rate of renal replacement per 1000 people with diabetes by 20 percent from that over 2010–14 by 2019, and by 30 percent for Māori and Pacific peoples.
- A 20 percent decrease in the proportion of people with HbA1c levels >100, by 2020, with better improvement for high-risk population groups.

2. Provide consistent services across the country

- By 2020, 85 percent of people with diabetes will participate in an annual review across all population groups.
- A 10 percent reduction in the proportion of premature mortality (at < 75 years) due to diabetes by 2019, with a 20 percent decline for Māori and Pacific peoples. This to be replaced when available by life expectancy and DALY targets.
- By 2020 DHBs will have implemented quality standards for diabetes care.

3. Reduce the cost of type 2 diabetes

- Reduce prevalence by a 20 percent reduction in the rate of increase of new cases of type 2 diabetes, by 2020; with a faster rate of reduction for high-risk population groups (30 percent for Māori and Pacific).
- Reduce the rate of hospital admissions primarily due to diabetes (per 1000 people with diabetes) by 20 percent from that in 2014, and by 30 percent for Māori and Pacific peoples – by 2019.

Priority areas for action



1. Prevent high-risk people from developing type 2 diabetes

Why is this a priority?

Type 2 diabetes has a lower public profile than other important health issues in New Zealand such as heart disease and tobacco use. Yet it is important that people know what they can do to reduce their risk of developing type 2 diabetes and understand how having diabetes can reduce their quality of life.

Definition of 'high risk'

Preventing high-risk people from developing type 2 diabetes, and the health complications that come with it, will improve their overall health. Further, it will reduce pressure on the health system from the long-term impact of diabetes. Those considered at high risk are:

- people with known ischaemic heart, cerebrovascular or peripheral vascular disease
- people on long-term steroid or anti-psychotic treatment
- people who are obese
- people with a family history of early age onset of type 2 diabetes in more than one first-degree relative
- women with a past personal history of gestational diabetes mellitus
- women with polycystic ovary syndrome
- people who experience severe mental illness and/or addiction (Te Pou 2014).

In addition, obese children and young adults should be screened if there is a family history of early onset type 2 diabetes, or if they are of Māori, Pacific or Indian ethnicity.

Pre-diabetes

Pre-diabetes is not a clinical condition in its own right, but it is a high-risk factor that can contribute to both diabetes and cardiovascular disease. The prevalence of pre-diabetes is particularly high in some population groups. For example, over 40 percent of people living in the Auckland metro region who are of Māori, Pacific or Indian ethnicity have been identified with pre-diabetes at 35–39 years, and over 50 percent at 45–49 years (Chan 2015).

The clinical consensus on actual risk of progressing from pre-diabetes to diabetes is estimated as being a probability of between 30 and 70 percent (Ackermann et al 2011; Tabák et al 2012). While many people with pre-diabetes do not progress to diabetes, a higher than normal blood glucose level is associated with early forms of kidney damage and chronic kidney disease and increased risk of disease of the arteries (Tabák et al 2012).

What needs to happen?

Increasing knowledge and raising awareness

Raising awareness about diabetes, with motivational messages to encourage people to make lifestyle changes or provide social support to others, could be achieved through a range of health promotion approaches and social marketing initiatives. To identify the right mix of initiatives and their best timing, careful design, planning and evaluation, along with coordination across the health sector and with community organisations, will be needed.

Any public messages must recognise the personal and social challenges of making lifestyle changes. Some evidence indicates public awareness campaigns that use mass media can produce positive changes in health-related behaviours across large populations, when they are part of a comprehensive package of interventions (Wakefield et al 2010).

A nationally coordinated programme of health education would provide a basic consistency in the message to the public about diabetes and risk factors, while allowing that message to be tailored to suit different communities. Awareness-raising initiatives can also bolster the efforts of primary care workers who are encouraging people to make lifestyle changes.

Supporting healthy lifestyle choices

Improving our knowledge of effective wellness and prevention programmes for New Zealanders in different communities will continue to be an important focus for the next five years.

Evidence shows that a person's risk of progressing from pre-diabetes to type 2 diabetes can be roughly halved if they lose weight, change their diet, increase exercise and/or have drug treatment (Ministry of Health 2014b). However, there is a lack of evidence on cost-effective interventions that will specifically address the needs of New Zealand's diverse communities. This highlights the need to test and support new and promising interventions in New Zealand to strengthen our evidence base for high-quality services.

The Ministry of Business, Innovation and Employment has recently funded the Healthier Lives science challenge to conduct research that could lead to promising interventions for pre-diabetes and diabetes.

Findings from four prevention pilots will also be available by early 2016. Ongoing evaluations of Green Prescriptions and Healthy Families NZ will continue to strengthen our knowledge of the efficacy of such community-based programmes.

Primary care continues to have a role in helping people with pre-diabetes to make healthy lifestyle choices. Specifically, they can tailor responses to each individual, and involve family and whānau when appropriate. For most primary care providers, providing this support will require them to have strong links with community-based activities, such as sports, recreation, and fitness clubs and programmes. In addition, the health workforce needs to be upskilled in how to respond effectively to different levels of health literacy and to support positive behaviour change.

Making it happen

The Ministry of Health, DHBs, primary health care providers, non-governmental organisations and research organisations are all responsible for implementing these activities.

Aim	Activity
Identify and implement a programme of health education and awareness-raising initiatives to improve people’s knowledge and understanding of diabetes.	Provide evidence-based information, advice and support to people with diabetes, including benefits of an agreed management plan and follow-up.
Implement prevention and wellness programmes.	Continue to deliver Green Prescriptions. Implement <i>Healthy Families NZ</i> to strengthen existing health promotion efforts and encourage families to live healthy and active lives.
Improve identification and management of pre-diabetes.	Routinely evaluate screening, risk assessment, and intervention for pre-diabetes, with a specific focus on addressing equity.
Support action-oriented research.	Investigate opportunities to collaborate with researchers to drive action-oriented research for slowing or halting the progression of type 2 diabetes in New Zealand.

By 2020

More people at high risk of developing diabetes will:

- understand the impact diabetes can have on their quality of life
- know what changes they can make to reduce their risk of developing diabetes
- have been offered the opportunity to participate in appropriate wellness programmes
- be actively engaged in achieving a healthy weight and adequate physical activity.



2. Enable effective self-management

Why is this a priority?

People with diabetes are living with their condition 24 hours a day, every day of the year. There is good evidence that self-management education and support, as part of a comprehensive wellness plan, can improve clinical outcomes and quality of life (Deakin et al 2006; Cerriello et al 2012). Programmes are particularly effective when they incorporate behavioural and psychological strategies, and are age and culturally appropriate.

Ongoing support for self-management, including psychological and emotional support, is critical. Māori and Pacific peoples may have better outcomes when programmes are delivered to or include family or whānau. In one randomised clinical trial, coaching people with type 2 diabetes was effective when it involved creating an individualised vision of health, and allowed people to choose their own health goals in line with their personal values (Wolever et al 2010).

Weight loss and good nutrition are important components of self-managing blood glucose levels. People with type 2 diabetes can often control their condition through weight loss, diet and regular physical activity, without needing medication.

Maintaining good oral health is another important part of effective self-management. Recent evidence indicates gum disease is closely linked to elevated blood glucose levels (Simpson et al 2010; Teeuw et al 2010). Poorly controlled diabetes can exacerbate gum disease, which can result in receding gums, loose teeth and eventually tooth loss.³

Comorbidities

People with diabetes, particularly those with type 2 diabetes, also have a higher risk of cardiovascular disease. An essential part of the care of a person with diabetes is to carefully manage cardiovascular risk factors, including smoking, physical inactivity, hypertension, gout and dyslipidaemia (high cholesterol).

People with diabetes also have high rates of mental health problems, particularly anxiety and depression (Strategic Clinical Network, NHS 2014; Hasan et al 2015). Improvements in depression can contribute to better self-management (Ludman et al 2013). Recognising and treating mental health-related illness therefore is a critical component of a person's overall care plan.

³ The influence appears to work in both directions: gum disease causes high blood glucose levels but it is exacerbated by them as well (Mealey and Rose 2008). While evidence from longitudinal studies is not yet available to confirm this finding, there is good evidence linking poor oral health to cardiovascular disease, diabetes and other chronic disease (Petersen 2003).

What needs to happen?

Supporting self-management approaches

In supporting people to self-manage, providers must use approaches that are appropriate to people's health literacy levels, their motivation for learning and the social resources available to them (Ministry of Health 2014a). If people find it difficult to seek out and understand basic health information and services, and to navigate and access the health system, they may also struggle with self-managing their diabetes (Boren 2009).

Primary care providers can support people to self-manage by making longer appointment times, following up proactively, linking people to peer support groups and assessing and responding to people's mental health needs. This person-centred approach can enable shared decision-making, shared care planning with goal setting and coordination of multidisciplinary teams.

Health care workers also need the knowledge, skills and confidence to have motivational conversations with individuals, family and whānau to encourage them to make lifestyle change and connect them to the right services. Where affordable, effective weight-loss programmes are locally available, primary care providers need to support people into them if that is relevant to their circumstances.

The advice people with diabetes and family members receive from different services in the health system varies in both its quality and content. Consumers need an online, evidence-based source of advice on diabetes care, which is accessible to health professionals as well.

Another innovative approach to providing support, which can be effective for some people, is to run group sessions for people to learn about effective self-management, weight loss and nutrition (Steinsbekk et al 2012). Engaging expert patients to provide peer support can also be an effective strategy. Diabetes consumer groups provide important emotional support and practical advice for people.

One recent approach to supporting people with diabetes to self-manage has been to test out better ways of helping them to lose weight, adhere to medication, meet clinical targets and so on. New technologies also offer opportunities for making self-management easier for patients and practitioners, for example, using smart phone apps, shared patient portals, and tools for real-time remote monitoring and consultation services.

Making it happen

The Ministry of Health, DHBs, primary health care providers, Health Workforce New Zealand and non-governmental organisations are all responsible for implementing these activities.

Aim	Activity
Support the ongoing development of self-management approaches.	<p>Provide evidence-based information, advice and support to people with diabetes, including a range of self-management options.</p> <p>Develop behaviour change and effective weight management tools and programmes.</p> <p>Provide access to physical activity programmes and support.</p> <p>Improve access to mental health support.</p>
Improve patient/whānau peer support networks.	Support building the community workforce and engage 'expert patients'.
Support people to self-manage their diabetes as effectively as possible.	<p>Ensure people with diabetes have access to their personal health information via patient portals to enable them to self-manage.</p> <p>Encourage the use of the national telehealth service under development and explore opportunities for 24 hour diabetes-specific support.</p>
Support ongoing workforce development.	<p>Develop health professional expertise in:</p> <ul style="list-style-type: none"> • supporting self-management • shared decision-making • health literacy • diabetes-specific technology.

By 2020

- More people with diabetes are participating in the development of care plans that help them to self-manage their condition effectively.
- More people with diabetes are using tools and services that are affordable, easy to use and culturally appropriate.



3. Improve quality of services

Why is this a priority?

Across New Zealand, regions vary in the diabetes service they provide. In part, the differences reflect the different challenges regions face. For example, some find it difficult to attract an appropriate workforce or face the challenge of providing services to people living in rural and isolated communities.

Another possible reason for the varied quality of services is that the workforce, including hospital staff, may differ in their knowledge of diabetes and 'clinical inertia'.

The Ministry of Health developed the *Quality Standards for Diabetes Care 2014* (see Appendix 2) to provide guidance for clinical quality service planning and implementation of equitable and comprehensive person-centred care.

What needs to happen?

To achieve consistent, high-quality standards across the country, health providers need to routinely self-assess their services against the *Quality Standards for Diabetes Care 2014* and put in place actions to address gaps or poor performance.

An integral part of quality improvement is to reduce the disparities in health outcomes for high-risk population groups. Again, health providers can use routinely self-assessment to address this issue, focusing on the access and effectiveness of their care for these groups and adjusting services appropriately.

The Quality Standards are supported by a comprehensive toolkit (Ministry of Health 2014a) and can be used in planning, developing and delivering services to lift their quality as part of continuous improvement processes. The standards do not require a 'one size fits all' approach to care; instead, they encourage an individualised approach to each person and local region.

The implementation of the Quality Standards needs to be supported by upskilling the general health workforce so that all staff can respond to people with diabetes with appropriate support and advice.

Making it happen

The Ministry of Health, DHBs and primary health care providers are all responsible for implementing these activities.

Aim	Activity
Implement and use the <i>Quality Standards for Diabetes Care 2014</i> to self-assess services and improve performance, with a specific focus on improving equity.	Develop a self-assessment tool for the <i>Quality Standards for Diabetes Care 2014</i> .
Measure progress in improving health outcomes for people with diabetes.	Collect and analyse diabetes-related data from the Virtual Diabetes Register to track progress against outcome measures.
	Reorient planning guidance and performance management to outcomes for people with diabetes.

By 2020

- DHBs will have improved service quality and reduced variation across the country.
- Services will better meet the needs of Māori, Pacific and Indian population groups.



4. Detect diabetes early and reduce the risk of complications

Why is this a priority?

If diabetes is detected early in its development, people have time to learn to self-manage proficiently and improve their glycaemic control and other risk factors, helping them to avoid long-term complications. Early detection of diabetes has improved significantly over the last few years, with a good response from the health sector to the ‘more heart and diabetes checks’ health target. This improved detection needs to continue and become business-as-usual across the health system, particularly for communities who continue to have poorer outcomes.

Complications

It is also essential to identify as soon as possible diabetes-related complications such as gum disease, foot ulceration, kidney damage and eye disease, and to manage them, in order to reduce the later burden of diabetes and keep people well and out of hospital. Complications such as kidney failure, blindness and foot amputations can seriously impair people’s quality and length of life, as well as imposing costs on inpatient resources in secondary care. There is also evidence of poorer outcomes in both type 1 and type 2 diabetes for Māori and people of Pacific and Indian ethnicity, as well as those living in lower socioeconomic areas.

People do not usually experience symptoms of all the usual major complications (eye, kidney, nerve, feet and heart) until a late stage. However there are tests to detect early damage and reduce the risk of complications. These are outlined in the table below:

Complication	Test	When
Eyes⁴	Retinal screening	Routinely recommended every two years (dependent on risk)
Kidney	eGFR Albumin:creat ratio	Annual check (more often if abnormal)
Feet	Careful foot exam	Annual check (more often if abnormal)
Cardiovascular risk	CV risk assessment and management	As advised (2013)

⁴ The Ministry of Health is releasing an updated document outlining the provision of quality services for retinal screening.

What needs to happen?

Intervening as early as possible

DHBs and primary care providers need to routinely categorise their population or enrolled patients in terms of their degree of risk for diabetes and its complications. With this information, they can then optimise service levels and provide care as early as possible. Some people, for example, those on antipsychotic medications or with other long-term conditions, are at much higher risk of complications than others.

Regular surveillance for, and early diagnosis of, the complications of diabetes are also important. Health professionals should be providing regular and opportunistic screening for diabetes and complications as part of their business-as-usual activities. Screening can take place in a range of settings, including at home, on marae, as part of church-based activities and in hospitals.

Dental health workers have a potentially important role in screening for people at high risk of diabetes and recommending they visit their primary health provider for follow-up (Casanova et al 2015), as well as encouraging people with diabetes to practise good oral health.⁵

Hospital admissions and inpatient care

People with diabetes are admitted to hospital more often and stay longer than those without diabetes. Most of these admissions are for complications and comorbidities. However there are increasing numbers of people admitted with uncontrolled diabetes and hypoglycaemia which are preventable. These admissions could be reduced by improved care provided in the community and by providing access to specialist diabetes services as needed.

Further detail is provided in the *Quality Standards for Diabetes Care 2014*.

Optimising screening, diagnosis and management of gestational diabetes

Gestational diabetes is first detected in pregnancy and resolves following the birth of the baby. If undiagnosed or untreated, gestational diabetes can lead to significant short- and long-term consequences for the woman and/or baby (Ministry of Health 2014a). Women with gestational diabetes are about six to eight times more likely to develop type 2 diabetes later in life (Ministry of Health 2014e) and the baby is at higher risk of excessive birthweight and abnormally low blood glucose levels in the first four weeks after birth (Ministry of Health 2014a).⁶

Implementation of the *Screening, Diagnosis and Management of Gestational Diabetes in New Zealand: A clinical practice guideline* (Ministry of Health 2014f) will reduce local variation in services and provide a best practice benchmark for screening, diagnosis and management of diabetes in pregnancy. The Guideline covers early screening of women for probable undiagnosed diabetes, and screening, diagnosis and management of women with gestational diabetes. It includes recommendations for follow-up of women with gestational diabetes to detect type 2 diabetes after birth.⁷

5 International Diabetes Federation Guideline on Oral Health for People with Diabetes. URL: www.idf.org/guidelines/diabetes-and-oral-health/guideline

6 Between 3000 and 4000 women per year are diagnosed with gestational diabetes in New Zealand.

7 The Guideline covers the early detection of women with probable undiagnosed diabetes (type 1 and type 2) and the appropriate referral pathway for them; it does not deal with their subsequent treatment and management during pregnancy. The Guideline does not cover women who have type 1 or type 2 diabetes diagnosed before pregnancy.

Providing bariatric surgery

Bariatric surgery is considered an important intervention for giving some people with type 2 diabetes a long period of respite from the condition. Most people with type 2 diabetes who undergo bariatric surgery will experience improved blood glucose levels, sometimes to the extent that they no longer require medication or can reduce medication levels. DHBs need to ensure that, where people are eligible to access bariatric surgery, they get that surgery.

Making it happen

The Ministry of Health, DHBs and primary health care providers are all responsible for implementing these activities.

Aim	Activity
Implement risk management at population and practice levels, supported by assessment tools.	Continue to strengthen Diabetes Care Improvement Packages, with a focus on targeting people and service areas with greatest need. Conduct regular health checks to screen for complications.
Support IT-enabled patient and clinician monitoring for early intervention.	Provide people with access to their personal health information via patient portals to enable them to self-manage.
Consistently implement guidelines for gestational diabetes.	Continue to support the implementation of the gestational diabetes guidelines.
Ensure eligible people access bariatric surgery.	

By 2020

- More people will have fewer complications arising from their diabetes.
- More people with diabetes will be routinely screened for diabetes and its complications in appropriate settings, including all pregnant women and people who experience severe mental illness and/or addiction.



5. Provide integrated care

Why is this a priority?

Because people with diabetes differ in their needs, and multiple complications can arise from the condition, the task of providing diabetes services is complex. Care comes from a wide range of health workers across a number of health settings, including general practitioners, practice nurses, podiatrists, dieticians, pharmacists, psychologists, optometrists, oral health practitioners and specialist diabetes clinicians and teams. Good coordination across these services is essential to achieving good health outcomes.

What needs to happen?

Services are more effective if care programmes adapt to people's different needs. Some people need the support of a multidisciplinary team that is closely linked to their communities and supported by clinical specialists. Some people may need longer appointment times, intensive support, or the involvement of family and whānau. In some situations, a support person who acts as a 'navigator' can help people to negotiate the various points of contact they need to make with the health and disability system.

Primary care is well positioned to manage diabetes as a long-term condition by:

- developing co-located, multi-disciplinary primary-health-care provision through integrated family health centres
- providing the public with access to a wider range of services in their communities including, for example, specialist assessments and procedures by general practitioners with special interest in diabetes, diagnostics, minor surgery and observation beds
- providing greater choice and convenience
- empowering people to manage their conditions and supporting self-management through increased coordination of services
- facilitating more collaborative working relationships between a wide range of health professionals and other social services
- providing clinical governance and leadership
- incorporating Whānau Ora approaches where appropriate.

Specialist diabetes services are critical for complex patients and provide support to hospital, primary health care and community services. Specialist services have a multidisciplinary approach that allows appropriate skills-based support for people and other practitioners.

The benefits of integrating services across primary and secondary care and coordinating them with social services are well recognised in the health system. To achieve this approach for diabetes care, the workforce must be prepared to work as a team and develop care plans in partnership with their patients. Improvements in technology are making it easier for health teams and patients to share patient records and information. In addition, some technology is making it feasible for health workers to monitor people’s clinical targets remotely and intervene sooner rather than later.

The Ministry of Health encourages DHBs and their regions to adopt more flexible funding and contracting arrangements to better support early identification and prevention activities, collaborative and coordinated approaches, and delivery of services closer to home.

Making it happen

The Ministry of Health, DHBs and primary health care providers are all responsible for implementing these activities.

Aim	Activity
Integrate practice across primary and specialist care, including outreach and navigator services and intensive support for some people with high health needs.	Encourage the adoption of more flexible funding and contracting arrangements.
Coordinate care across the health, disability and social sectors for people with complex needs.	<p>Create opportunities for electronic shared care plans to support people with diabetes and their care coordination requirements.</p> <p>Develop and use a health investment approach with DHBs to target high-need priority populations while developing and spreading better practices.</p>

By 2020

- More people with diabetes will have access to a seamless service of primary and secondary care that is well connected to community-based and social services.
- More people with diabetes will be self-managing effectively, within a health system that is simpler and easier to understand and navigate.



6. Meet the needs of children and adults with type 1 diabetes

Why is this a priority?

About 15,000–20,000 New Zealanders have type 1 diabetes, which is about 5–8 percent of all New Zealanders with diabetes. In planning health services for people with diabetes, it is vital to recognise the specific needs of people with type 1 diabetes.

People with type 1 diabetes have often had the condition since childhood or adolescence. Their experience with the health system therefore starts at a young age and involves their family and other carers in school and social settings. Throughout their lives people with type 1 diabetes are dependent on insulin for survival.

About 2000 children and young people in New Zealand have type 1 diabetes. They need intensive support from a health care team that includes members who have specialist expertise and can provide psychological support. Parents of children with type 1 diabetes also need support as they adjust to having a child with a chronic disease. Parents need to help their child to manage glucose levels, insulin therapy and hypoglycaemia.

What needs to happen?

People with type 1 diabetes are likely to maintain a relationship with health services throughout their lives. Ideally they should have the support of an experienced, multidisciplinary team, including secondary care specialists. At different stages of their lives – for example, during pregnancy and in older age – people will need more intensive support. Older people face particular challenges for managing diabetes and may need greater support in areas such as insulin therapy, treating eye problems and caring for oral health.

Health services that support people to self-manage their condition well can reduce the personal burden of the disease. A person's team needs to include people with expertise and experience in insulin pumps and continuous glucose monitoring when required. With their reliance on insulin for survival, people with type 1 diabetes are particularly interested in having technology they can use to make their self-monitoring and management easier and more effective.

International guidelines recommend that children and young people and their adult carers should be offered 24-hour access to experienced advice (see Appendix 3). A young person with type 1 diabetes moving into adulthood needs a seamless transition into adult services.

Making it happen

The Ministry of Health, DHBs, primary health care providers and non-governmental organisations are all responsible for implementing these activities.

Aim/Activity

Support access to technology that provides more effective insulin therapy and to help with self-management, for example 'apps' and insulin pumps.

Improve coding and data collection to differentiate between outcome measures for type 1 and type 2 diabetes.

Encourage community, parental and peer support networks.

Upskill the health workforce in knowledge and treatment of type 1 diabetes.

Implement Standards of *Care for Children and Adolescents with Diabetes 2014*.

By 2020

More people with type 1 diabetes will:

- have a more seamless experience with the health system
- get timely access to expert advice and support when they need it
- receive attention from their health care team to their wider social and psychological needs when relevant
- interact with health care workers who have a better understanding of diabetes, including the differences between type 1 and type 2 diabetes
- improved access to insulin pumps and glucose monitoring.

Members of the community will also be better informed about diabetes.

System enablers

1. Workforce

Demand for services may lead to a workforce shortage

Responding to the needs of a growing number of people with diabetes will be a future challenge for the health workforce.

The increased demand for services and the demographic changes in the existing workforce requires a greater focus on recruiting and training health professionals across both primary and secondary care who have a flexible approach to skills and care provision. New roles such as community outreach will be an important part of this emerging workforce.

The care and support workforce, including kaiawhina, will also become increasingly important to respond to the needs of a greater number of older and vulnerable people with diabetes and other long-term conditions.

The workforce is moving towards greater flexibility

The workforce must adapt and provide services that take a proactive approach to managing diabetes as a long-term condition.

The health system has been adjusting to meet the increasing demand for services by focusing on different and innovative ways of service delivery and increasing the capability and capacity of the workforce. A flexible workforce requires an expansion of current scopes of practice and a focus on developing new skills.

Extending the provision of services beyond the healthcare team through the use of outreach services and existing community resources is also essential. Non-governmental and voluntary organisations are often well positioned to support diabetes prevention and management.

In addition to providing excellent clinical care, health professionals will need new skills to address the priorities in this plan. Examples include:

- responding to people's wide-ranging levels of health literacy and personal resources for managing diabetes (including their family/whānau and community)
- supporting positive behaviour change, particularly in weight loss and self-management
- early identification of complications including mental health needs
- providing psychological and emotional support to an appropriate level
- shared decision-making between patient and health professional
- using IT tools for better team work and patient support.

2. Technology

New technologies are becoming available that will make self-management easier for people with diabetes, as well as assisting health professionals to provide more tailored care remotely.

Examples of new technologies include smart phone apps, patient portals, opportunities for electronic shared care planning as well as tools for real-time remote monitoring and consultation services.

When considering the use of new technologies for people with diabetes, it is important that everyone has the opportunity to access them. Funding decisions must be cost-effective, take into account how the technology fits with regional and national IT systems and focussed on outcomes so that services are sustainable and all people with diabetes benefit.

3. Leadership

Implementing the priority areas for action outlined in this plan will require strong governance and clinical leadership from primary health organisations, district health boards, the Ministry of Health, the broader social sector as well as non-governmental organisations.

Quality services for people with diabetes must be person-centred. Involving consumers in health service design and delivery helps to ensure that providers understand how to deliver services based on people's different needs. Consumer engagement can be achieved through participation as leaders and members of decision-making boards and committees, as well as being given opportunities to provide feedback on their own health care experience.

Clinical leaders have a role in driving quality improvement across multidisciplinary teams, including secondary care specialists. Clinicians must be accountable for high-quality practice, share their learnings, and monitor and improve the effectiveness of their services they deliver.

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Appendix 1: Understanding diabetes mellitus

Type 1 diabetes

(About 5–8% of cases)

An autoimmune condition in which the immune system destroys the cells in the pancreas that produce insulin



Prevention

No known prevention or cure



Onset

Usually develops in childhood and adolescence



Lifestyle

Unrelated to lifestyle



Self-management

Requires daily, often multiple, insulin injections or a continuous delivery of insulin with a pump

Meticulous attention to blood glucose levels

Healthy lifestyle choices contribute to effective management

Type 2 diabetes

(90–95% of all cases)

A metabolic condition in which the body progressively fails to produce insulin and the body cells resist insulin action



Prevention

Genetic predisposition, but evidence indicates weight loss can prevent it



Onset

Usually develops in adulthood, but increasingly being diagnosed in children under 15 years



Lifestyle

Usually associated with poor diet and excess body weight



Self-management

Good weight control, nutrition and monitoring of blood glucose levels

As the condition progresses, people may require oral medication and insulin therapy

Complications and life expectancy – both types

Blindness and nerve damage

Heart disease, stroke, kidney disease, periodontal disease

Amputation of a foot or lower leg, dialysis, kidney transplants, loss of teeth

Reduced life expectancy

Other classes of diabetes

There are two other main clinical classes of diabetes: gestational diabetes, and specific types due to other causes such as genetic defects or cystic fibrosis. Gestational diabetes occurs when women during pregnancy develop a high blood glucose level. While the condition usually resolves after the birth of the baby, the mother is at higher risk of developing type 2 diabetes in the future and needs ongoing screening.

Appendix 2: Quality Standards for Diabetes Care 2014

For revision end-2016

These standards should be considered when planning your local service delivery. They provide guidance for clinical quality service planning and implementation of equitable and comprehensive patient-centred care – scaled to local diabetes prevalence. They should be read alongside the NZGG and other guidelines which highlight specific clinical expectations. These standards are specific to people with diabetes – those identified with pre-diabetes should be managed in accordance with the pre-diabetes advice provided by the Ministry of Health (2013).

Basic care, self-management and education

1. People with diabetes should receive high quality structured self-management education that is tailored to their individual and cultural needs. They and their families/whānau should be informed of, and provided with, support services and resources that are appropriate and locally available.
2. People with diabetes should receive personalised advice on nutrition and physical activity together with smoking cessation advice and support if required.
3. They should be offered, as a minimum, an annual assessment for the risk and presence of diabetes-related complications and for cardiovascular risk. They should participate in making their own care plans, and set agreed and documented goals/targets with their healthcare team.
4. They should be assessed for the presence of psychological problems with expert help provided if required.

Management of diabetes and cardiovascular risk (extensive guidelines available)

5. People with diabetes should agree with their health care professionals to start, review and stop medication as appropriate to manage their cardiovascular risk, blood glucose and other health issues. They should have access to glucose monitoring devices appropriate to their needs.
6. They should be offered blood pressure, blood lipid and anti-platelet therapy to lower cardiovascular risk when required in accordance with current recommendations.
7. When insulin is required it should be initiated by trained healthcare professionals within a structured programme that, whenever possible, includes education in dose titration by the person with diabetes.
8. Those who do not achieve their agreed targets should have access to appropriate expert help.

Management of diabetes complications (extensive guidelines available)

9. All people with diabetes should have access to regular retinal photography or an eye examination, with subsequent specialist treatment if necessary.
10. They should have regular checks of renal function (eGFR) and proteinuria (ACR) with appropriate management and/or referral if abnormal.
11. They should be assessed for the risk of foot ulceration and, if required, receive regular review. Those with active foot problems should be referred to and treated by a multidisciplinary foot care team within recommended timeframes.
12. Those with serious or progressive complications should have timely access to expert/specialist help.

While in hospital ...

13. People with diabetes admitted to hospital for any reason should be cared for by appropriately trained staff, and provided access to an expert diabetes team when necessary. They should be given the choice of self-monitoring and encouraged to manage their own insulin whenever clinically appropriate.
14. Those admitted as a result of uncontrolled diabetes or with diabetic ketoacidosis should receive educational support before discharge and follow-up arranged by their GP and/or a specialist diabetes team.
15. Those who have experienced severe hypoglycaemia requiring ED attendance or admission should be actively followed up and managed to reduce the risk of recurrence and readmission.

Special groups

16. Young people with diabetes should have access to an experienced multidisciplinary team including developmental expertise, youth health, health psychology and dietetics.
17. All patients with type 1 diabetes should have access to an experienced multidisciplinary team, including expertise in insulin pumps and CGMS when required.
18. Vulnerable patients, including those in residential facilities and those with mental health or cognitive problems, should have access to all aspects of care, tailored to their individual needs.
19. Those with uncommon causes of diabetes (eg, cystic fibrosis, monogenic, post-pancreatectomy) should have access to specialist expertise with experience in these conditions.
20. Pregnant women with established diabetes and those developing gestational diabetes (GDM) should have access to prompt expert advice and management, with follow-up after pregnancy. Those with diabetes of child-bearing age should be advised of optimal planning of pregnancy including the benefits of preconception glycaemic control. Those not wishing for a pregnancy should be offered appropriate contraceptive advice as required.

Appendix 3: APEG standards of care for children and adolescents with diabetes 2014⁸

Standard 1

Children and adolescents with diabetes should be provided with expert care from diagnosis by experienced team specifically trained in both paediatrics and diabetes with access to tertiary level resources. The healthcare professional team should include as a minimum: paediatric diabetologist, diabetes nurse specialist, dietitian and mental health professional (social worker and/or clinical psychologist).

Standard 2

Management of diabetes in children should be patient/family centred, with an emphasis on facilitating self-management. The focus changes from the parents for very young children to the child and adolescent depending on age and developmental stage.

Standard 3

At diagnosis an intensive education and stabilisation period should be provided and following this phase, routine care and review by the specialist diabetes team is required at three monthly intervals as a minimum.

Standard 4

Patients and families should be offered 24-hour access to experienced advice to prevent and treat intercurrent illness and acute complications of diabetes.

Standard 5

Routine care includes three monthly visits with the specialized team that includes general clinical assessment and HbA1c review, diabetes education revision, specific diabetes therapy adjustment and review, access to dietary and mental health review and complication screening.

Standard 6

All children and adolescents with diabetes should have access to modern therapies including pump therapy and continuous glucose monitoring.

Standard 7

Transition to adult care should be made at a developmentally appropriate age in consultation with the patient's medical specialist and requires close liaison between adult and paediatric services, recognising that adolescents/young adults require more time and specific clinical expertise.

- A plan should be developed for transition to adult services, with increasing responsibility being given to the adolescent (graduating to them seeing health professionals on their own). Adolescents should be offered the opportunity to participate in the planning process.
- Adolescents identified at high risk require an intense planned process to be in place.

⁸ Developed by the Australasian Paediatric Endocrine Group (APEG) Diabetes Subcommittee August 2014 and endorsed by APEG Council October 2014.