

Diabetes

Introduction

The attached paper is adapted from the initial background paper on Diabetes presented to the Capital and Coast District Health Board Community and Public Health Advisory Committee at its meeting held on 23rd April 2002.

The purpose of the paper was to provide information on diabetes services provided in Capital and Coast district and work in progress towards establishing a plan to manage the predicted increase in people with diabetes.

The recommendations included are those agreed to by the Board at its subsequent meeting on the 1st May 2002.

Background

Diabetes is a complex chronic disease associated with higher than normal blood glucose. Diabetes can lead to a range of serious complications which include cardiovascular disease (heart attack and stroke), eye disease (retinopathy, blindness, and cataract), foot disease (chronic ulceration, infection, amputation, and neuropathy), renal disease (renal failure potentially leading to dialysis and transplantation), and death.

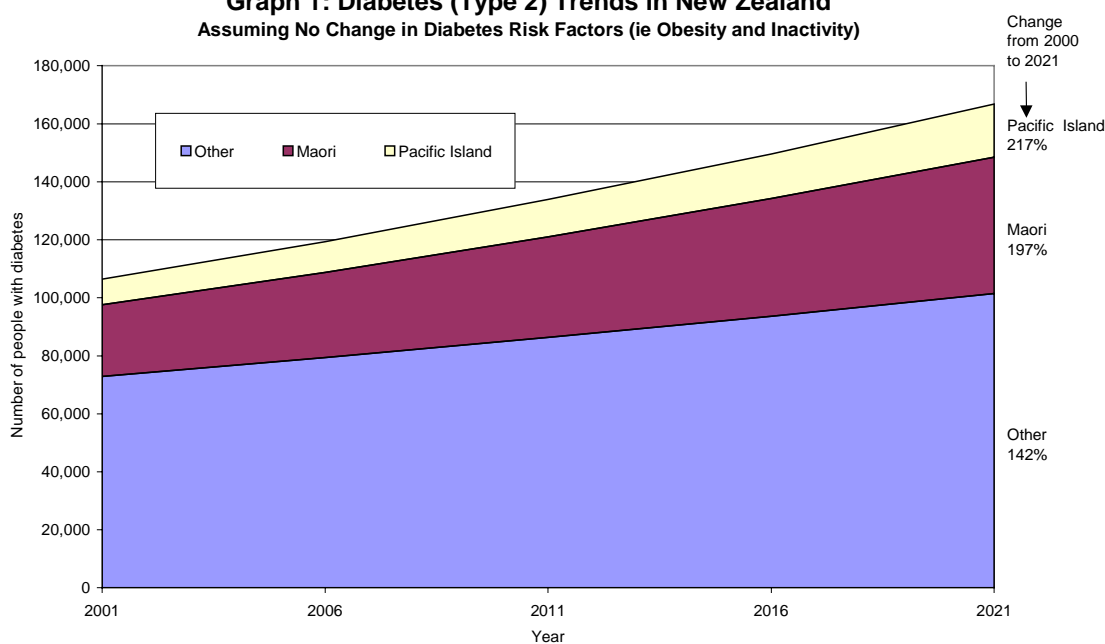
There are two main types of diabetes mellitus – type 1 and type 2. Type 1 diabetes has an abrupt onset and can occur at any age but is usually diagnosed in children and young adults aged less than 30 years. It is an auto-immune disease in which the insulin producing cells in the pancreas are destroyed. Risk factors for type 1 diabetes are not clearly understood. Treatment is usually by insulin injections.

Type 2 diabetes usually occurs in those over 40 years of age, and the incidence increases with increasing age. Type 2 diabetes is caused by reduced insulin secretion and/or resistance to the action of insulin by the body tissues. Groups at high risk of developing type 2 diabetes include Māori, Pacific, Asian and people with a family history of diabetes. The most important predictor of risk for type 2 diabetes is obesity. Treatment includes lifestyle changes, specifically healthy eating and regular physical exercise. Oral medication may be required initially and insulin at a later stage.

The number of people with diabetes is expected to increase over the next 20 years by 97% among Māori, by 117% in Pacific Island people, and 47% in New Zealanders of European background (graph 1). These predictions are due to demographic changes and do not take into account any increases due to poor diet, obesity, physical inactivity and smoking rates.

Applying these projections to the C&CDHB population confirms that diabetes will have a significant impact on future health services in C&CDHB. It is important to ensure that these increases are minimised or prevented, and that healthcare funding is flexible enough to respond to any increase in need.

Graph 1: Diabetes (Type 2) Trends in New Zealand
Assuming No Change in Diabetes Risk Factors (ie Obesity and Inactivity)



(HFA, Diabetes 2000, p10)

The overall prevalence of diagnosed diabetes in New Zealand adults is estimated to be 3-4% (NDWG Annual Report 2000-2001). Of all people with diabetes, 85 – 90% have type 2 diabetes, and up to half of these people are thought to be undiagnosed.

The predicted population of people with diabetes in the Capital and Coast district is (Ministry of Health model 2001):

Ethnicity	2001 predicted number	2021 predicted number
Māori	1,521	2,996
Pacific	593	1,289
All others	4,679	6,644
TOTAL	6,793	10,927

Within the District to date, based on data from the diabetes register there are 3071 people (45%) who have been identified with diabetes. It is known that individual general practices will have identified additional people with diabetes who are not yet registered with the regional diabetes co-ordination service.

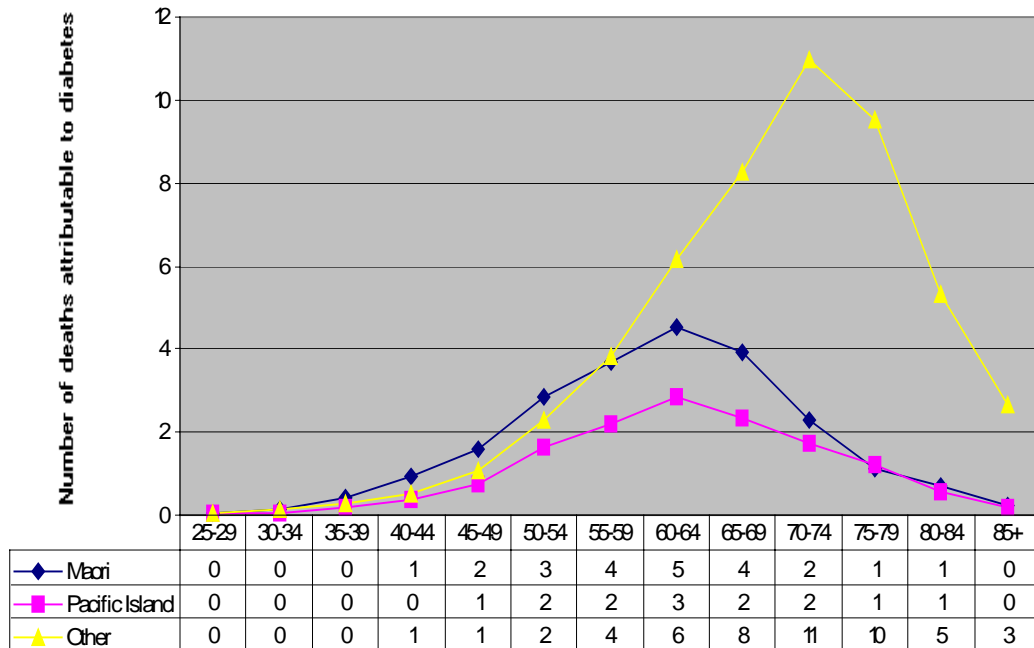
Ethnicity	No. registered with diabetes at 1 April 02	% of predicted population registered with diabetes
Māori	235	15.4
Pacific	261	44.0
All others (includes unknown)	2575	55.0
TOTAL	3071	45.2

Currently, the best available information nationally about the severity or burden of disease in New Zealand is in hospitalisation and mortality data.

Graph 2 illustrates mortality attributable to diabetes in C&CDHB in 2000.

The expected increasing demand for services by people with complication of diabetes has the

Diabetes-Attributable Mortality



potential to place an enormous financial and resource burden on the available health services. Progressive improvement in the detail of diabetes management (blood sugar, lipid, blood pressure control) is now recognised as delaying and even preventing development of the major complications of diabetes. Lifestyle changes have been shown to at least delay and possibly prevent development of diabetes in people at risk.

GOVERNMENT STRATEGY

The New Zealand Health Strategy (Ministry of Health, 2000) identifies and groups the priority areas the government wants the health sector to pay particular attention to in the short to medium term. These groups include objectives for population health and reducing inequalities in health status and service priority areas.

There are thirteen population health objectives chosen for implementation in the short to medium term. Several of these objectives relate directly to diabetes including:

- Reducing the incidence and impact of diabetes
- Reducing obesity
- Increasing the level of physical activity
- Reducing smoking
- Improving nutrition

Reducing inequalities in health status requires ensuring accessible and appropriate services for all New Zealanders, including Māori and Pacific people and people from lower income groups.

Diabetes is one of eight priority health gain areas for Māori. The incidence of diabetes for Māori is 2 to 3 times higher than for European New Zealanders. In addition people living in the more deprived areas have higher rates of diagnosed diabetes regardless of ethnicity.

Diabetes is identified in the Pacific health action plan as a key area of focus. Pacific people with diabetes have higher hospital admission rates than both Māori and other New Zealanders (Health Funding Authority, 2000).

Pacific people also report barriers to accessing health care, such as cost of treatment and prescriptions, transport and a lack of choice about culturally competent services. (Ministry of Health 2001) These factors have an impact on early diagnosis of diabetes and engagement with health services, screening and prevention programmes.

Development of a national strategy for diabetes

The Ministry of Health in 1997 set out its strategic direction for diabetes management in *Strategies for the Prevention and Control of Diabetes*.

This was followed the Health Funding Authority *Diabetes 2000* implementation plan which has been adopted as the key strategy to reduce the impact and incidence of diabetes.

Additional national resources include:

- The National Diabetes Working Group established in 1999 under the New Zealand Guidelines Group. The group oversee the development of a disease management approach to diabetes, from primary prevention through to tertiary treatment in New Zealand. The work of the national group is intended to complement that of the local diabetes teams by advising the Ministry of Health on issues around information gathering, outcome indicators and the development of best practice guidelines.
- *Diabetes Toolkit* released by the Ministry of Health in 2001

ANNUAL PLAN/STRATEGIC PLAN

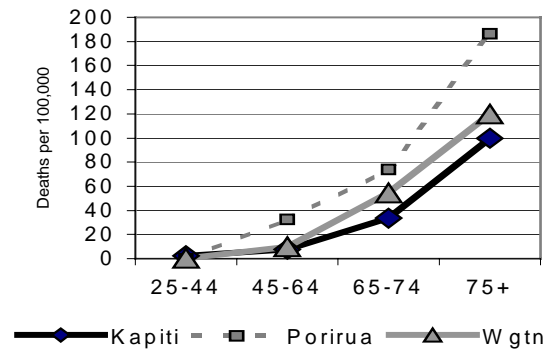
The District Strategic Plan identifies acknowledging and reducing disparities as a key objective to achieve the vision "Together, improve the health of the District."

C&CDHB health needs assessment ranked diabetes as one of the highest priority areas requiring attention. The evidence supports the expected rapid growth in people with diabetes particularly in Māori and Pacific populations

Heart disease and diabetes are the main causes of early death and Māori and Pacific people with these illnesses die, on average, twenty years younger than other groups.

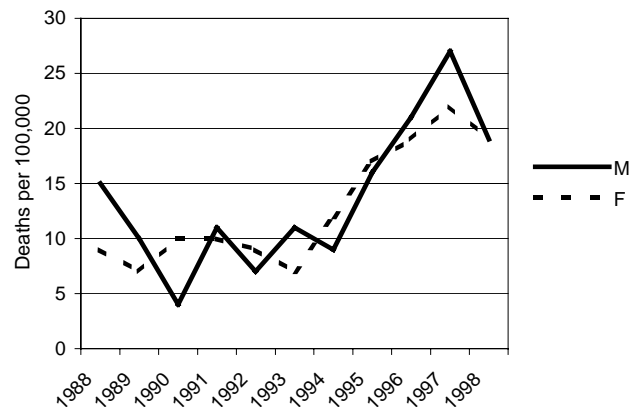
The chart shows that the pattern of mortality is very different in each of Capital & Coast's three localities. Diabetes affects relatively more people in Porirua, and at an earlier age.

Diabetes Mortality by age and domicile, 1988 - 1999



Deaths directly attributed to diabetes are increasing rapidly accounting for 2 – 4% of deaths across the District. Diabetes is the third-most common cause of death for people aged 45 - 65 in Porirua City

Diabetes Mortality in Capital & Coast District, 1988- 1999



TREATY IMPLICATIONS

There are no direct Treaty implications as the focus proposed is to directly influence and improve health outcomes for Māori in a condition where Māori are over-represented. The principles of protection, involvement and participation are integral.

PACIFIC ISLAND IMPLICATIONS

The incidence of diabetes mellitus among Pacific people is disproportionately high relative to the size of the Pacific population in the C&DHB region. While diabetes is uncommon among those who have maintained their traditional ways of life in the Pacific, the prevalence among groups who have adopted an urban western lifestyle and, in particular, migrated and are living in New Zealand is extremely high (South Pacific Commission 1984).

REPORT DETAIL

To date, the implementation of diabetes services has been led nationally. C&CDHB are developing a plan for diabetes which will integrate national strategy with identified local needs and issues. Any plan to resource services for people with diabetes must consider:

- the number of people with diabetes

- the impact of diabetes in these people to the extent that it influences present or future healthcare needs
- the needs of Māori people with diabetes and their whānau
- the needs of Pacific people and their family
- people from other ethnic backgrounds (for example people from Asia and India) that also have a high prevalence of diabetes - and special needs.

Considerable work has already been undertaken within the Wellington area to develop diabetes services and resolve issues in service delivery and co-ordination as they arise. The Wellington Diabetes Team is well established and has been active since 1998.

C&CDHB convened a meeting of stakeholders in December to discuss issues in diabetes services in the Capital and Coast district. The meeting identified the key issues as:

- a) Capacity of services to meet the current and projected demand
- b) Co-ordination between services to ensure ease of access and efficient use of services
- c) Ensuring the capability and capacity of the current and future workforce

These issues are not new or unique to C&CDHB, however to develop a plan for diabetes an understanding is needed of the current status and mix of services provided for people with diabetes and the best means of addressing these issues in our communities. The opportunity exists to work closely with each of our local communities to ensure their specific needs and particularly those people at risk of developing diabetes including Māori, Pacific and low income people are met.

The following section briefly summarises the current status of each of the three identified issues and identifies some actions to address the issues as they are currently understood.

1. SERVICES

Services within C&CDHB have been implemented in accordance with the strategic direction proposed in *Diabetes 2000*.

An extensive range of providers including Māori, Pacific and mainstream provide diabetes services in the C&CDHB.

The national framework for diabetes focuses on four areas:

- Primary prevention including health promotion addressing social determinants of health promoting nutrition and increasing physical activity
- Identification of people with diabetes and enrolment into a structured programme of diabetes care
- Monitoring of the health of people through free annual checks through the *Get checked* programme (Appendix A outlines the objectives of the free annual check)
- Treatment planning across the continuum of care including retinal screening, podiatry, diabetes education and management, nutrition and dietary advice. Secondary and tertiary services include endocrine and services to manage complications of diabetes such as renal, cardiovascular, vascular and ophthalmology

A key issue for service development is to ensure there will be sufficient capacity to meet the projected growth in demand for services across the continuum of care.

Proposed actions:

1. Monitor closely the uptake of services in demand driven areas to ensure sufficient capacity and resources are available eg. podiatry, retinal screening, annual checks

2. Develop a services plan to meet the projected growth in demand for services across the continuum of care. Include an exploration of the feasibility of configuring secondary services into an integrated diabetes service.

2. WORKFORCE

Caring for people with diabetes involves multi-disciplinary teams working across the continuum of care. For the multi-disciplinary team to be effective and efficient there needs to be a clear understanding of the roles of each practitioner in the team, care provided by the appropriate practitioner and consistency in the quality of services and level of expertise of practitioners.

To assist in clarifying roles an integrated services plan was developed in 1999 in conjunction with the Wellington Diabetes Team. The plan specifies service specifications and referral protocols between services in the District but has not yet been implemented.

Responsibility for the ongoing recall, monitoring and co-ordination of care for people with diabetes takes place in the primary sector through nurses and general practitioners. Anecdotally it has been reported there is a wide range of expertise between practice nurses and general practitioners in the district. Hence, to ensure consistency in the range and level of expertise across the primary care sector, support for practitioners and timely access to expert advice is required. Difficulties in accessing expert advice in a timely manner have been reported to lead to inappropriate referrals to secondary services at times and delays in referral back to primary care.

A programme of workforce development has been provided by the Wellington Regional Diabetes Trust during 2000 – 2001 for current practitioners. This has targeted nurses in primary and secondary care including practice nurses, Māori disease state management nurses, Pacific nurses, diabetes nurse educators and general practitioners.

There are some specific resource allocation issues inherent in the current workforce. For example, C&C hospital employ a Pacific diabetes nurse educator to provide secondary care in community settings. It is understood that, not surprisingly, there are considerable demands from the Pacific community leading her to extend her role to include primary care with Pacific people in Porirua.

Ensuring there is an appropriate, capable workforce able to work effectively with Māori and Pacific people is vital and is likely to lead to the development of new roles.

Proposed actions:

1. Audit of referrals to secondary care to ensure they are appropriate and work with general practitioners identified as referring inappropriately.
2. Arrange access to expert advice for general practitioners eg via fax or email with hospital clinicians and access to diabetes nurse educators
3. Develop and validate workload models to predict the number of expert diabetes nurses eg diabetes nurse educators and Māori disease state management nurses required. Ensure sufficient diabetes nurse educators are available to work with general practitioners and practice nurses to a level of 1.5 hours per person with diabetes annually. It is proposed, subject to funding, to increase the number of expert diabetes nurses in the district following validation of the workload models. Particular attention needs to be paid to the workforce mix to ensure appropriate numbers of Māori and Pacific nurses.
4. As innovative models of care emerge, particularly for Māori and Pacific people with diabetes new roles may need to be developed.
5. Consider the appointment of an expert practitioner to provide clinical leadership, advice and case discussion, ongoing mentoring and supervision for primary care practitioners and enhance liaison between primary and secondary sectors
6. Work with the Wellington Regional Diabetes Trust to review the current workforce development programme to ensure it addresses the District needs. This is expected

to lead to a simplification of the current programme and a more intensive focus on the skills required for the annual review to ensure consistency in practice.

3. CO-ORDINATION

Co-ordination occurs at all levels of service provision, however as yet the specific issues associated with co-ordination are unclear.

There are currently three formal mechanisms for co-ordination within the district. These are focussed on co-ordination between service providers rather than co-ordination of care for people with diabetes. Ensuring the provision of flexible, co-ordinated care focussed on the needs of people with diabetes and their whānau is identified as essential for Māori and Pacific people.

a. Local Diabetes team

Local diabetes teams constitute local stakeholders to oversee the planning, implementation and integration of diabetes services in the district. Membership of the team should include diabetes providers, diabetes consumer organisations, Māori and Pacific communities and DHB representation. The core Wellington team has been very active since its inception in 1998. Membership of the team needs to be regularly reviewed to confirm all stakeholders are represented.

The role of the team is to collect and analyse information and develop recommendations for service improvements.

b. Regional diabetes co-ordination service

C&CDHB in conjunction with Wairarapa and Hutt DHBs contract the Wellington Regional Diabetes Trust to provide a regional diabetes co-ordination service. Discussion is underway on the fit of this service within the DHB environment.

c. Porirua Healthcare Cluster

C&CDHB, Porirua health partnership, Ngati Toa and Porirua City Council are leading the formation of a healthcare cluster to provide collaborative leadership, enhance communication, co-operation and access to information, spark innovation and interaction between sectors such as health, housing, education and business within Porirua.

A key focus of the cluster for the next financial year is to develop a project for diabetes services and activities.

Proposed actions:

1. Review mechanism for managing coordination of diabetes services in the district. These may be effectively managed through stakeholder groups in each locality.
2. Work with the Wellington Diabetes Team as a reference group to provide a forum for discussion of diabetes services.
3. Review the role of the regional diabetes co-ordination service.
4. Work with the Porirua Healthcare Cluster on diabetes services and activities.

CHALLENGES

In discussion with providers, practitioners and consumers and on consideration of the unique characteristics of the District a number of specific challenges to managing diabetes services are identified which require us to develop innovative approaches that will meet the specific needs of our communities, especially those at risk.

1. Develop innovative models of care in conjunction with communities which will effectively meet the needs of Māori and Pacific people. The focus needs to be on the person and their whānau who is the recipient of care. For example, a model of care which puts the person with diabetes and their family/whānau at the centre and wraps services around them rather than developing a service driven model.

Pro-active case management involving the development of a programme derived from whānau identified priorities is an example of a model which could be piloted and evaluated.

2. Identification of the population with diabetes. Evidence from the diabetes register indicates to date there are 15.45 % of Māori and 44 % of Pacific people registered with diabetes and hence accessing the free annual check. This measure is not completely accurate as some practices are known to have comprehensive diabetes management systems in place but low levels of registration of people with diabetes.

Work is being undertaken to predict the number of people with diabetes in each practice and compare this to the number of people currently registered with diabetes. This will enable targeting of general practices to increase provision of free annual checks and identification of people with diabetes through targeted and opportunistic screening.

3. Integration of lifestyle changes with cultural values and family support systems.
4. Increasing the capacity of the diabetes workforce to meet the predicted demand in the community for flexible, accessible, culturally appropriate health services. In addition ensuring there is sufficient capacity to meet the requirements for managing the complications of diabetes in areas such as renal, cardiovascular, vascular and ophthalmology within secondary and tertiary services.
5. Removing the barriers to accessing primary care services is an issue for those at risk low income groups. As it is a chronic condition, people with diabetes require ongoing monitoring and treatment in primary care settings.
6. Congruence with other disease state management programmes eg cardiovascular to ensure a consistent approach and efficient use of resources.
7. Current international evidence supports screening targeted at high risk populations. Screening programmes should screen for cardiovascular disease and diabetes together and must reliably refer people who screen positively for diagnosis and treatment.

Opportunistic screening in primary care has the potential to provide an effective system for earlier detection of diabetes.

8. Develop an economic model to understand the cost of providing diabetes services across the range of services.

RISKS (i.e. financial, human resources, legal, compliance, risk of not proceeding)

a. Financial

PriceWaterhouse Coopers (2001) study presented some evidence to suggest the onset of diabetes can be delayed. If public health measures are successfully identified and implemented lifestyle risk factors eg obesity, lack of physical activity may be able to modify health outcome and the consequences on demand for health services.

b. Risk of not proceeding

Diabetes has the potential to overwhelm existing health services if a comprehensive service and workforce plan to manage the predicted growth in number of people with diabetes is not developed and implemented. This plan needs to take cognisance of the specific needs of Māori and Pacific people in order to improve access and effectiveness of services.

IMPLICATIONS

Proposals for diabetes services need to be in accordance with other initiatives, particularly in Porirua:

- Development of Primary Health Organisations
- Public health activities in health promotion and prevention
- Improving access to primary care in Porirua project

- Porirua Healthcare Cluster diabetes project
- Porirua Healthlinks diabetes research project
- Future disease state management initiatives eg for cardiovascular disease
- Ministry of Health / Health Research Council research project on developing evidence in a New Zealand community setting for diabetes primary prevention and screening initiatives.

CONCLUSION/RECOMMENDATION

The recommendations included below are those that were agreed by C&CDHB at its meeting on May 1st 2002.

It is recommended that the Director of Planning and Funding be asked to:

1. **Develop** indicators for monitoring the management of diabetes that can be included in the District Annual Plan for consideration at the next meeting of CAPHAC.
2. **Develop** evaluation criteria and an evaluation plan related to the management of diabetes in the District
3. **Advise** on the potential to run pilot projects related to primary prevention to inform the C&C DHB response to diabetes.
4. **Agree** that the Director of Planning and Funding will explore the feasibility of appointing a clinical co-ordinator for diabetes and report to CAPHAC in June 2002.
5. **Endorse** the main features of the current project plan namely: close monitoring of demand driven services, projecting growth in demand across the continuum of care, exploring the feasibility of including secondary services in an integrated service, auditing the pattern of referrals to secondary services, arranging access to expert advice for general practitioners, developing and validating workload models, developing models and clinical leadership, and exploring options for co-ordinating diabetes services in the District
6. **Endorse** the proposals to work with the Wellington Diabetes Team, Wellington Regional Diabetes Trust and Porirua Healthcare Cluster on the diabetes project.
7. **Ask** the Director, Planning and Funding to place the Committee paper on the C&CDHB website.

APPENDIX A: FREE ANNUAL CHECK

The objectives of the free annual check are to:

- systematically screen for the risk factors and complications of diabetes to promote early detection and intervention. Note the free annual check is to check that the screening has occurred in the previous year, and does not require all tests or examinations are repeated at the time of the annual check
- agree on an updated treatment plan for each person with diabetes. The treatment plan (or equivalent) should be provided in writing and verbally for the person with diabetes, and any other providers of diabetes support (eg, whanau)
- update the information in the diabetes register used as a basis for clinical audit and planning improvements to diabetes services in the area
- prescribe treatment and refer for specialist or other care if appropriate.

The free annual check must include:

- a review of symptoms and concerns of the person with diabetes or their whanau
- an examination for risk factors and complications, which must include a foot examination and advice about basic foot care (for clinical guidelines see 'Additional information and resources for diabetes primary care')
- a fasting blood test for cholesterol, HDL and triglycerides
- a blood test for HBA1c
- a urine test for early nephropathy, as clinically indicated
- prescription for medications, glucose test strips or glucose monitors (as required)
- information for the person with diabetes and their consent for the use of information by the primary care organisation. Specific consent must be obtained from the patient if the primary care organisation proposes to forward identifiable contact or clinical information from the primary care organisation to other diabetes service providers
- forwarding of the minimum information from the practice to the primary care organisation for analysis and reporting
- the development and agreement of a treatment plan that includes feedback to the person with diabetes and their whanau, an agreed self-management plan (including any changes to medication) and plans for referral to specialist services.

APPENDIX B: REFERENCES

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