

# Diabetes Service Plan



**July 2005**



**MIDCENTRAL DISTRICT HEALTH BOARD**

*Te Pae Hauora o Ruahine o Taranaki*

Cover photographs kindly supplied by Diabetes New Zealand (top), Diabetes Christchurch (middle),  
Diabetes Youth Manawatu (bottom)

# Contents

INTRODUCTION .....	1
1. WHY DO WE NEED A DIABETES SERVICE PLAN?.....	1
2. PURPOSE OF THE DIABETES SERVICE PLAN.....	2
3. VISION FOR THE FUTURE.....	2
4. OBJECTIVES.....	2
5. PRINCIPLES.....	3
6. OUTCOMES.....	4
THE PLANNING FRAMEWORK - STRATEGIES .....	5
1. MAORI HEALTH .....	7
2. THE PACIFIC CONCEPT OF HEALTH .....	8
3. MIDCENTRAL'S DIABETES MODEL OF CARE ACROSS THE HEALTH CONTINUUM.....	8
4. CRITICAL SUCCESS FACTORS.....	9
DEMOGRAPHIC PROFILE FOR MIDCENTRAL DISTRICT .....	12
1. GEOGRAPHY .....	12
2. POPULATION .....	12
3. DEPRIVATION.....	13
4. MAORI, PACIFIC AND ASIAN PEOPLES .....	15
5. SMOKING PREVALENCE .....	15
DIABETES BURDEN PROFILE .....	16
1. MAORI AND PACIFIC PEOPLES .....	17
2. ASIAN PEOPLES.....	19
3. THE IMPACT OF DIABETES ON FEET .....	19
4. THE IMPACT OF DIABETES ON EYES .....	20
5. IMPACT OF DIABETES ON THE KIDNEYS AND HEART.....	20
6. DIABETES IN CHILDREN AND YOUNG PEOPLE .....	21
7. IMPACT OF DIABETES ON WELLBEING.....	22
OVERVIEW OF CURRENT SERVICES AND ISSUES .....	23
1. MIDCENTRAL DISTRICT PROVIDERS.....	23
2. PRIMARY HEALTH ORGANISATIONS.....	23
3. "AOTEAROA GET CHECKED" - THE NATIONAL DIABETES SCREENING PROGRAMME.....	24
4. FEET.....	24

5.	EYES .....	25
6.	KIDNEY AND HEART.....	26
7.	CHILDREN AND YOUNG PEOPLE WITH DIABETES .....	27
8.	NUTRITION AND PHYSICAL ACTIVITY.....	28
9.	EDUCATION .....	29
	SUPPORTING LONG-TERM LIFESTYLE CHANGE.....	30
1.	DIABETES PROGRAMME AND MEMBERSHIP CARD.....	30
	THE WAY FORWARD - SUMMARY OF OBJECTIVES AND KEY ACTIONS OF THE DIABETES STRATEGY.....	31
	OBJECTIVE ONE      Reduce the Incidence of Diabetes Through Prevention and Health Promotion Strategies.....	32
	OBJECTIVE TWO      Ensure Effective Screening and Early Diagnosis to Reduce the Impact of Diabetes on Wellbeing .....	36
	OBJECTIVE THREE    Ensure Effective Support, Treatment, and Palliative Care to Enhance Quality of Life .....	38
	OBJECTIVE FOUR     Improve Diabetes Services Through a Responsive Workforce.....	45
	OBJECTIVE FIVE     Improve the Quality and Integration of Diabetes Services Through Planning, Innovation and Quality Monitoring.....	46
	INVESTMENT APPROACH .....	48
	GLOSSARY OF TERMS AND ABBREVIATIONS .....	49
	REFERENCES.....	54
	APPENDIX 1 THE NATIONAL FRAMEWORK FOR DIABETES .....	56
	APPENDIX 2 MIDCENTRAL DISTRICT PROVIDERS.....	57
	APPENDIX 3 KEY STAKEHOLDERS WHO HAVE PROVIDED COMMENT .....	60
	APPENDIX 4 SELECTED MINISTRY OF HEALTH PERFORMANCE INDICATORS .....	61

## Figures

Figure 1:	Levels of concern .....	5
Figure 2:	The Primary Health Care Strategy.....	6
Figure 3:	Te Whare Tapa Wha model of health .....	7
Figure 4:	MidCentral's diabetes model of care across the health continuum .....	8
Figure 5:	Ethnicity distribution for MidCentral District (2001).....	13
Figure 6:	MidCentral District deprivation distribution (2001) .....	14
Figure 7:	MidCentral District by deprivation (NZDEPO1) - 2001 census.....	14
Figure 8:	MidCentral District type 2 diabetes prevalence by age and ethnicity (2004) .....	17
Figure 9:	Relationships among socio-economic deprivation, obesity and non-communicable disease .....	18
Figure 10:	Ideal primary situation.....	25
Figure 11:	Percentage of people with diabetes on ACE inhibitor in MidCentral District by ethnicity 2002, 2003 .....	26
Figure 12:	Basal rate profile and physiological insulin needs .....	27
Figure 13:	Components of the diabetes programme and membership card .....	30
Figure 14:	Key actions of the Diabetes Service Plan .....	31

## Tables

Table 1:	Clinical indicator targets for MidCentral.....	4
Table 2:	Smoking prevalence (indirectly standardised) for selected regions 1998 - 2000.....	15
Table 3:	Diabetes mortality by ethnic group and sex (national population) 1997 ,17	
Table 4:	Risk coefficients for diabetes for a 1kg/m <sup>2</sup> lower body mass index (BMI) .....	18
Table 5:	Standardised discharge ratios by DHB region for lower limb amputation in people with diabetes in 2002/2003 .....	19
Table 6:	Prevalence rates of complications in people with known diabetes by ethnicity (national statistics) .....	20
Table 7:	% Reduction of the risk of diabetic heart and kidney complications shown in recent studies (2001) .....	21
Table 8:	Number of people with diabetes in MidCentral District who had annual check in 2003.....	24
Table 9:	Number of people who had their eyes screened in the last two years January - December 2003 .....	25
Table 10:	Number of people with diabetes in MidCentral District with free annual checks who had poor diabetes control in 2003 (HBA1c>=8%) .....	26
Table 11:	Diabetes Service Plan investment approach .....	48

# INTRODUCTION

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As part of the MidCentral District Health Board's Primary Health Care Strategy, MidCentral District Health Board (MidCentral) is responsible for the development and implementation of a coordinated, district wide plan for the prevention and management of diabetes.

This document is a strategic plan for the development of services over the next three years. It has been developed collaboratively with primary and secondary care providers and community stakeholders.

## 1. WHY DO WE NEED A DIABETES SERVICE PLAN?

The New Zealand Health Strategy (2000) identifies 13 population health objectives for implementation in the short to medium term. One of these 13 objectives is to reduce the incidence and impact of diabetes.

Diabetes carries a huge burden both in human and financial terms from complications including renal failure, stroke, foot ulceration, ischaemic heart disease, blindness and lower limb amputation

In 2004, 69 deaths will be attributable to diabetes in the MidCentral District

Both type 1 and 2 diabetes are increasing in incidence. Type 2 diabetes is diagnosed increasingly in children and teenagers.

In the next 20 years, the prevalence of diabetes will increase in NZ by:

- 90% in Maori (rising to approximately 47,000 people)
- 109% in Pacific peoples (approximately 18,000)
- 39% in Europeans (approximately 101,000 people)

Source: PriceWaterhouseCoopers Background: Type 2 Diabetes Epidemic pg 1  
[www.diabetes.org.nz/PWCReport/chap1.pdf](http://www.diabetes.org.nz/PWCReport/chap1.pdf)

Diabetes is a disease that is very responsive to effective management. To achieve better health outcomes, we need to move away from a system that is focused on episodic care in response to acute illness, towards a system that is proactive and emphasises health across a lifetime<sup>1</sup>.

The focus is on the journey that people take,  
and the support they need at each stage.

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<sup>1</sup> MoH (Sept 2002) [Team Health Newsletter](#) Issue 1, September 2002

## 2. PURPOSE OF THE DIABETES SERVICE PLAN

The overall purpose of MidCentral District Health Board's Diabetes Service Plan is to:

- Reduce the incidence and impact of diabetes
- Improve the health status of Maori
- Reduce inequalities in health outcomes.

## 3. VISION FOR THE FUTURE

This service plan strives to enable people with diabetes to enjoy the best possible health and independence. The vision is to:

*“Reduce the incidence of diabetes through prevention and promotion, and ensure people with diabetes, their family/whanau have the skills, confidence, support and care to stay well through their lifelong journey with diabetes.”*

The aim is to reduce the risk of complications and, in the event of ill health, to provide expert and appropriate care across the continuum.

## 4. OBJECTIVES

The objectives of the Diabetes Service Plan are to:

- reduce the incidence of diabetes through prevention and health promotion strategies
- ensure effective screening and early diagnosis to reduce diabetes impact on wellbeing
- ensure effective support, treatment and palliative care to enhance quality of life
- improve diabetes services through a responsive workforce
- improve the integration of diabetes services through planning, innovation and quality monitoring.

## 5. PRINCIPLES

The vision and objectives of this plan are based on the following underlying principles:

- In the first instance, we should be trying to prevent the incidence of diabetes through health promotion and healthy environments
- Every person is unique and requires options from which they can select the services that best suit them
- The care provided to people with diabetes needs to be organised, and it needs to be coordinated across providers and the continuum of care
- Inequalities in health outcomes need to be addressed. In particular Maori, Pacific peoples and minority group health outcomes need to be improved through targeting in a manner that accounts for client needs
- All services need to be person-centred - actively ensuring participation of service users in care. Given the importance of self care, people with diabetes and their family/whanau can be considered a part of the health workforce and require appropriate skills. This includes people:
  - ◇ making their own decisions and managing their own wellbeing
  - ◇ participating in the delivery of services to others
  - ◇ participating in the planning of services
- Service options must be consistent in terms of quality and best practice. Advice and support provided by services also needs to be consistent
- Where possible, programmes and services will be delivered in the community
- Diabetes services across the district need to be synchronised to ensure the best outcomes for the total population
- Diabetes services are accessible and affordable
- Continuous quality improvement (including auditing) is an underlying principle of all services
- The entire diabetes workforce should have access to development processes
- Wherever possible, in developing diabetes services, everyone will work together and build on existing resources to avoid duplication and to ensure the maximum benefits to our community
- Information sharing to ensure consistency and the best possible outcomes.

## 6. OUTCOMES

Diabetes clinical indicators are well established and form part of the routine quality control in MidCentral District. Table 1 sets targets for the next three years, based on Ministry of Health performance indicators. Appendix 4 provides a detailed summary of some of these indicators.

**Table 1: Clinical indicator targets for MidCentral**

	Actual % 2003	Target 05/06	Target 06/07	Target 07/08
<b>All Ethnicities</b>				
Case detection	49.7%	63%	78%	88%
Case management (HBA1c >= 8%)	31.7%	31%	28%	22%
Eye screening	81.0%	85%	85%	90%
% on ACE Inhibitor/ A2 Agents <sup>2</sup>	46.0%	58%	70%	75%
Screening for peripheral neuropathy and peripheral vascular disease <sup>3</sup>	-	100%	100%	100%
<b>Maori</b>				
Case detection	29.9%	60%	75%	85%
Case management (HBA1c >= 8 %)	50.2%	35%	30%	25%
Eye screening	69.6%	85%	85%	90%
% on ACE Inhibitor / A2 Agents	52.0%	60%	75%	80%
Screening for peripheral neuropathy and peripheral vascular disease <sup>3</sup>	-	100%	100%	100%
<b>Pacific Peoples</b>				
Case detection	47.7%	60%	75%	85%
Case management (HBA1c >= 8 %)	51.2%	35%	30%	25%
Eye screening	68.3%	85%	85%	90%
% on ACE Inhibitor / A2 Agents	41.0%	60%	75%	80%
Screening for peripheral neuropathy and peripheral vascular disease <sup>3</sup>	-	100%	100%	100%
<b>Others</b>				
Case detection	54.5%	70%	85%	95%
Case management (HBA1c >= 8 %)	28.9%	25%	23%	20%
Eye screening	82.8%	85%	85%	90%
% on ACE Inhibitor / A2 Agents	52.5%	55%	60%	65%
Screening for peripheral neuropathy and peripheral vascular disease <sup>3</sup>	-	100%	100%	100%

<sup>2</sup> The Ministry of Health clinical indicators include the % of Angiotensin Converting Enzyme (ACE) Inhibitors. This indicator has been adjusted for the service plan to include those on A2 Agents as this is an alternative drug therapy where ACE Inhibitors are contra indicated.

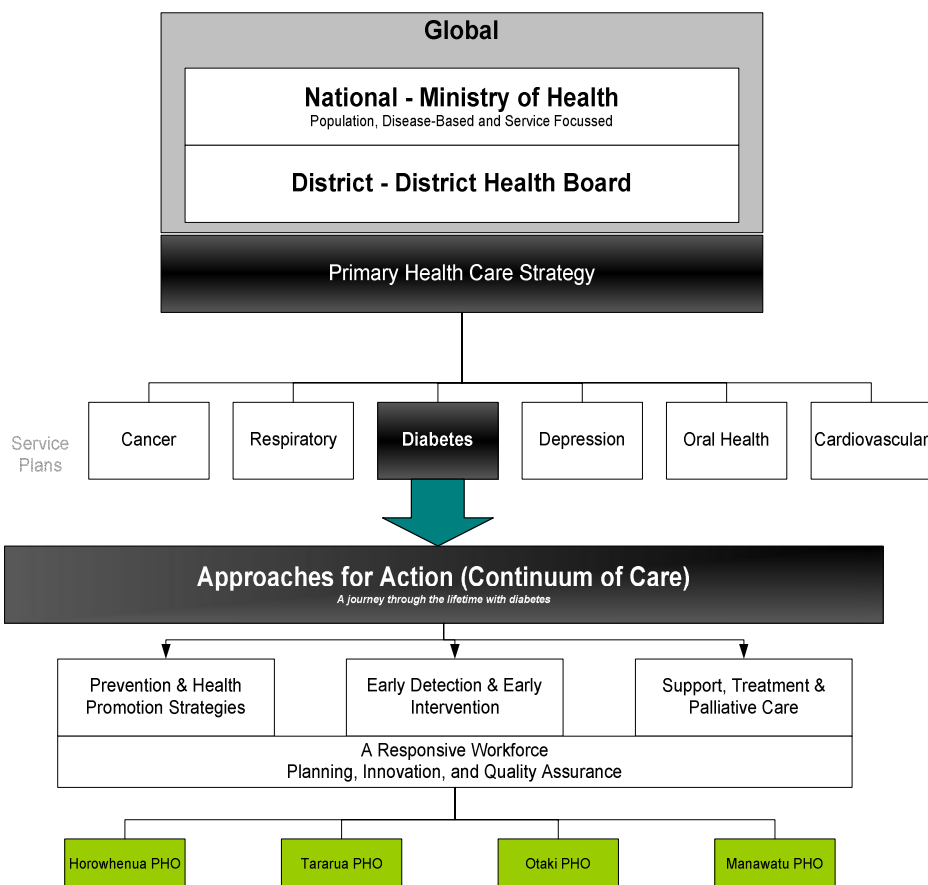
<sup>3</sup> New indicator proposed by Diabetes Service Plan Reference Group

# THE PLANNING FRAMEWORK - STRATEGIES

Diabetes has reached epidemic proportions throughout the world. The World Health Organization and the International Diabetes Federation, representing 125 countries, are concerned about the comparable trends worldwide<sup>4</sup>. Chronic conditions such as diabetes are increasing such that by the year 2020 developing countries can expect 80% of their disease burden to come from chronic problems<sup>5</sup>. Diabetes is also a growing concern both nationally and regionally in New Zealand.

The following section highlights the levels of concern (figure 1) and strategies in place to reduce the effect of diabetes upon the health and wellness of people and their family/whanau and community.

**Figure 1: Levels of concern**



In terms of diabetes, the key government strategies are the New Zealand Health Strategy (December 2000); The Primary Health Care Strategy (February 2001); The Youth Health Strategy, Plan to Action (2002); Child Health Strategy (June 1998);

<sup>4</sup> PriceWaterhouseCoopers (April 2001) Diabetes New Zealand Inc Type 2 Diabetes Managing for Better Health Outcomes

<sup>5</sup> Ministry of Health (Sept 2002) Team Health: Health and Disability News Primary Focus Aims to Improve Chronic Disease Management Issue 1, September 2002

and He Korowai Oranga – Maori Health Strategy (November 2002). The National Framework for Diabetes is set out in Appendix 1.

## Chronic Disease Management

A global health needs assessment completed during 2001 indicated that diabetes illness (morbidity) and death (mortality) rates for people living within MidCentral District's boundaries needs to be addressed adequately in primary health care<sup>6</sup>. Such issues are goals of the local Primary Health Care Strategy<sup>7</sup>. Figure 2 highlights the new approach of the strategy.

**Figure 2: The Primary Health Care Strategy**

Old	New
<ul style="list-style-type: none"><li>▪ Focus on individuals</li><li>▪ Provider focused</li><li>▪ Doctors are principal providers</li><li>▪ Fee for service</li><li>▪ Service delivery monocultural</li><li>▪ Providers tend to work alone</li></ul>	<ul style="list-style-type: none"><li>▪ Population based</li><li>▪ Community/people focused</li><li>▪ Education and prevention</li><li>▪ Needs based funding for population</li><li>▪ Cultural competence</li><li>▪ Connection to other health and non-health agencies</li><li>▪ Teamwork</li></ul>

The Primary Health Care Strategy has six objectives:

- Access – People will have ease of access to health care services throughout the district
- Community participation – The community will actively contribute to shaping primary health care services
- Coordination of services – There will be seamless follow through of services for all people
- Infrastructure development – Primary health care services are supported by planned infrastructure development
- Integration between primary and secondary care – People receive care that is not interrupted between primary and secondary care events
- Quality – People can expect the best possible quality when receiving primary health care services.

*PHOs are critical to chronic disease management – the expertise of general practice teams will enable us to manage effectively the prevention, primary treatment and ongoing care in diseases such as diabetes....*

*Diabetes will be one of the great challenges for at least the next two decades, but New Zealand now has the right foundation to build on, and PHOs will carry forward the next steps in community outreach and disease management.*

Ministry of Health Clinical Advisor, Dr John Marwick  
Ministry of Health Team Health: Health and Disability News Issue 1 September 2002

<sup>6</sup> MidCentral District Health Board (2004) *Primary Health Care Strategy* pg 35

<sup>7</sup> Adapted from TADS Training Programme presentation July 2004

# 1. MAORI HEALTH

The need to address diabetes among Maori has been emphasised in strategic health policy documents including The New Zealand Health Strategy (2000), The New Zealand Public Health and Disability Act 2000, and He Korowai Oranga (2002). It is essential that the principles of the Treaty of Waitangi are followed:

<b>Partnership</b>	Working together with iwi, hapu, whanau/family and Maori communities.
<b>Participation</b>	Involving Maori at all levels including planning, development and the delivery of health care programmes and services.
<b>Protection</b>	Striving for equal levels of health as non Maori and caring for the cultural concepts and values of Maori <sup>8</sup> .

The Maori world view places greater emphasis on the group dynamic as opposed to the individual. In keeping with this belief the Maori view of health is that personal wellbeing is based upon a balance of spiritual, whanau, mental and physical wellbeing. This is encapsulated in the Whare Tapa Wha model, a concept recognised by the World Health Organization.

Te Whare Tapa Wha likens the four dimensions of health (taha wairua, taha hinengaro, taha tinana, taha whanau) to the walls of a house (figure 3). Symmetry of these four dimensions gives strength and balance to a person in much the same way that walls contribute to a house. This concept, together with upholding the principles of the Treaty of Waitangi ie, partnership, participation and active protection, needs to be carefully considered when developing and implementing strategies to address diabetes in the Maori population.

**Figure 3: Te Whare Tapa Wha model of health**

	<b>Taha Wairua</b>	<b>Taha Hinengaro</b>	<b>Taha Tinana</b>	<b>Taha Whanau</b>
<b>Focus</b>	Spiritual	Mental	Physical	Extended
<b>Key Aspects</b>	The capacity for faith and wider communion	The capacity to communicate, to think, and to feel	The capacity for physical growth and development	The capacity to belong, to care, and to share
<b>Themes</b>	Health is related to unseen and unspoken energies	Mind and body are inseparable	Good physical health is necessary for optimal development	Individuals are part of wider social systems

Durie, M. (1994) *Whaiora: Māori Health Development*. Auckland, Oxford Press

<sup>8</sup> Ministry of Health [Addressing Maori Health](http://www.govt.nz/maori.html) www.govt.nz/maori.html

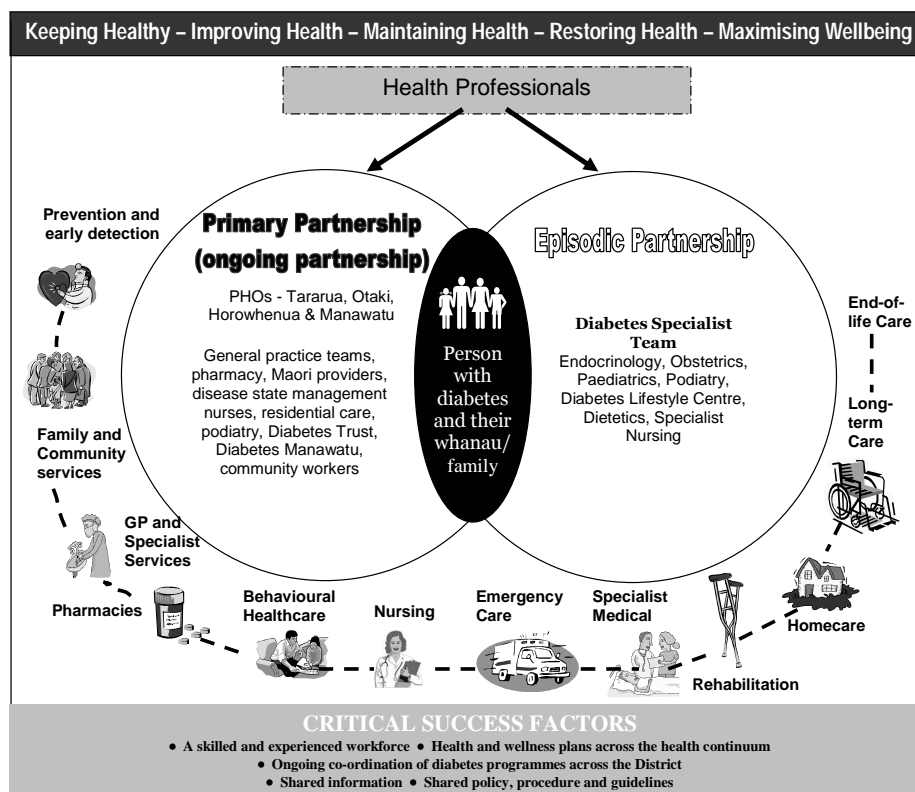
## 2. THE PACIFIC CONCEPT OF HEALTH

For Pacific peoples, health is a holistic concept which encompasses spiritual, emotional, mental, physical and social wellbeing. The emphasis is on total wellbeing of the individual within the context of the family. The family includes both the nuclear family and the extended family<sup>9</sup>.

## 3. MIDCENTRAL'S DIABETES MODEL OF CARE ACROSS THE HEALTH CONTINUUM

Following the continuum of care framework, the vision for MidCentral's diabetes services sees the person with diabetes on a collaborative journey from diagnosis to treatment across the lifespan. As figure 4 illustrates, primary and secondary health professionals will work together in a coordinated and unified way to deliver the best possible programmes across the health continuum.

**Figure 4: MidCentral's diabetes model of care across the health continuum**



<sup>9</sup> Ministry of Health (2003) *Healthy Eating - Healthy Action, Oranga Kai – Oranga Pumau: A Background* pg 61

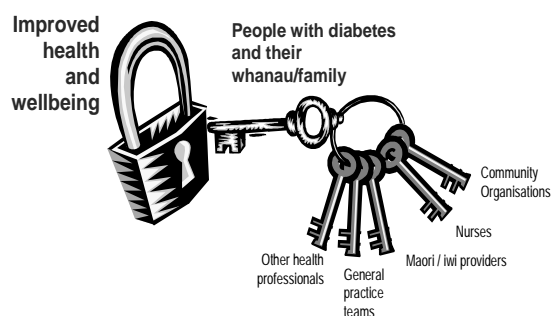
## 4. CRITICAL SUCCESS FACTORS

Achieving the vision of the diabetes service plan requires the attainment of five critical success factors.

### 1. Health and wellness plans across the continuum

People with diabetes and their family/whanau are individuals. The multiple daily self-care decisions that diabetes requires mean that being adherent to a predetermined care programme is generally not adequate over the course of a person's life with diabetes<sup>10</sup>. Individuals should be able to plan their own treatment and management requirements in conjunction with health professionals who provide them with information tailored for optimum support. People need to review their clinical status and plan the year ahead. Health and wellness plans are a comprehensive assessment of each person's health condition and needs. These health and wellness plans should be easy for the person with diabetes to understand, so they are able to set themselves targets and learn how to achieve them.

People with diabetes and their family/whanau need a range of choices. They need advice and support from health professionals who are engaged in multi-disciplinary, multi-agency approaches, including the involvement of iwi/Maori providers. Strengthening of clinical alliances improves co-ordination and collaboration across services and has the ability to reduce diabetes complications in the future<sup>11</sup>.



*"Patients are the primary decision-makers in control of the daily self-management of their diabetes.... As providers, we have to give up the illusion that we have control of our patients' diabetes self-management decisions and outcomes."*

Martha M. Funnell and Robert M. Anderson  
*Empowerment and Self-Management of Diabetes*

*"Such an approach would focus on people with diabetes and their experience through the complete clinical course of the condition, rather than viewing diabetes care as a series of discrete episodes within different parts of the health system."*

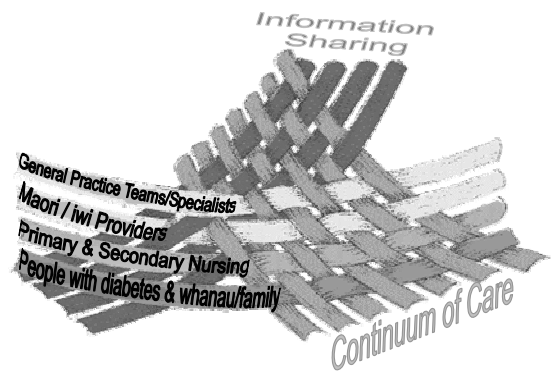
Ministry of Health (2003)  
*Diabetes Toolkit*

<sup>10</sup> Funnell, M and Anderson R *Empowerment and Self-Management of Diabetes Clinical Diabetes* Volume 22, Number 3, 2004, pg 124

<sup>11</sup> Ministry of Health (Sept 2002) Team Health: Health and Disability News *Primary Focus Aims to Improve Chronic Disease Management* Issue 1, September 2002

## 2. Shared Information

Enhancing communication and collaboration across the health care continuum is necessary to give enhanced understanding of diabetes and optimise management strategies. Sharing information helps to standardise practice and assist in the best possible health care being delivered across the continuum. The ultimate future goal would be a single clinical record.



## 3. Shared policy, procedure and guidelines

Shared policy, procedure and guidelines across the District are necessary to provide optimum care. Evidence-based best practice guidelines should be used to help health care practitioners and consumers make decisions about health care needs. Clinical workers should participate in the planning of services including the involvement of Maori health providers and they should engage in multi-disciplinary, multi-agency approaches to screening and reviews.

There is currently no diabetes competency framework for health workers and health professionals. Establishment of a competency framework will assist health professionals to promote appropriate standards of care delivery across the continuum of care. It will minimise risk by encouraging all health professionals to be aware of the standards required and to be competent in providing that care.

A positive example of coordination is the Primary Health Care Nursing Professional Framework. The nursing framework is a conceptualised, tiered approach to nursing expertise and requires teamwork at every level. Such teamwork has enabled the nursing workforce to be self training, encouraging expertise to be filtered downwards.

## 4. A skilled and experienced workforce

It is important to have a skilled and experience workforce, including appropriate resourcing numbers and expertise.

People with diabetes and their family/whanau also need regular opportunities to upskill on how best to manage diabetes and maintain their quality of life.

## 5. Ongoing coordination of diabetes programmes across the district

There is a need for continued and strengthened management of services for quality assurance and surveillance. The establishment of a Collaborative Diabetes Health

Improvement Group focused on diabetes will assist in identifying barriers to the implementation of the continuum of care model. The group will provide ongoing coordination of diabetes programmes across the District, resolve problems and deliver on quality improvement through the utilisation of consumer surveys. The Diabetes Health Improvement Group will comprise representatives of Maori providers, specialists, general practice teams, primary health organisations, members of Diabetes Trusts, and people with diabetes.

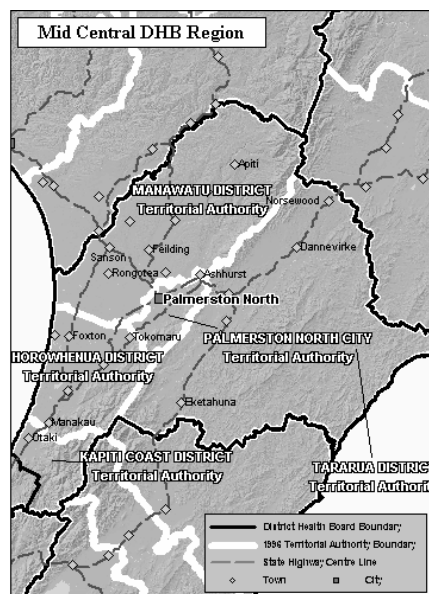
# DEMOGRAPHIC PROFILE FOR MIDCENTRAL DISTRICT

MidCentral District Health Board services a wide geographical and demographic district, through which we aim to improve, promote and protect the health of the approximately 163 000<sup>12</sup> people we serve.

## 1. GEOGRAPHY

Territorial Local Authorities (TLAs) are local council areas. In MidCentral District there are five TLAs: Manawatu, Palmerston North, Tararua, Horowhenua and part of the Kapiti Coast. In the Kapiti Coast TLA, the Census Area units (CAU)s included within MidCentral District are Otaki, Otaki Forks and Te Horo. These CAUs make up 20 % of the population of Kapiti Coast TLA.

While public transport is generally available in Palmerston North City and Feilding, public transport in the more rural areas is less available making it difficult to use public transport to access health services<sup>13</sup>. MidCentral District has a significant rural population; 28% of the population live outside a major urban or secondary urban area.



## 2. POPULATION

MidCentral District's population comprises 15.3% Maori, 2.0% Pacific peoples, 3.5% Asian peoples, and 79.3% other ethnicities including European - evenly distributed across gender: males 49% and females 51%<sup>14 15</sup>.

The following is a breakdown of population (2001 Census) by TLA.

### Horowhenua District

The Horowhenua TLA has the second largest population grouping at 20% of the MidCentral District (26 989 people), with the highest proportion of Maori at 20%, and is the most socio-economically deprived of the five TLAs.

<sup>12</sup> District Health Board 2005/2006 Population Projections (as at 30/6/2004)

<sup>13</sup> MidCentral District Health Board (2001) An Assessment of Health Needs in the MidCentral District Health Board Region

<sup>14</sup> 2001 Census

<sup>15</sup> MidCentral District Health Board (2001) An Assessment of Health Needs in the MidCentral District Health Board Region pg 8

### Kapiti Coast District - Otaki Ward

The smallest population cluster in the MidCentral District resides in the Kapiti Coast CAUs (7 761 people). This group makes up 5% of the District's population, and comprises a large aged population reflective of retirees settling on the Coast.

### Manawatu District

The Manawatu TLA makes up 18% of the District's population (26 565 people). It has low socio-economic deprivation, and has, proportionally, a lower Maori population at 13%.

### Palmerston North City

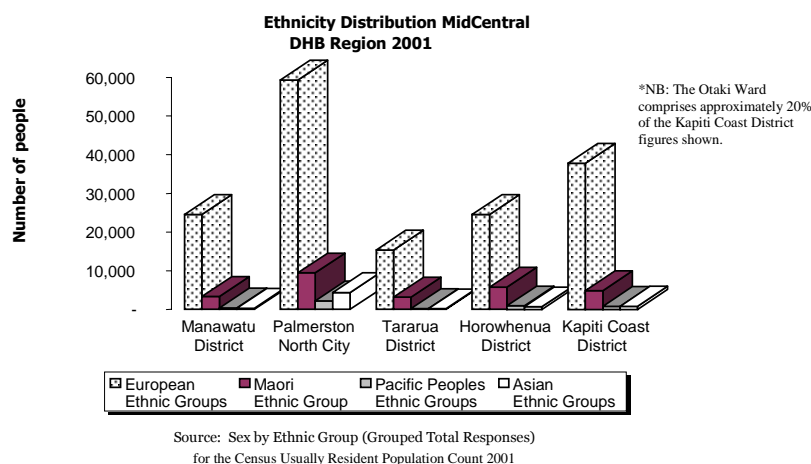
Forty-eight percent of the MidCentral District's population resides in the Palmerston North TLA (69 645 people).

### Tararua District

The Tararua TLA makes up 12% of the District's population (17 412 people), and has, proportionately, the second highest number of Maori within its population at 18%. It has a measure of high socio-economic deprivation but overall tends towards moderate to low deprivation<sup>16</sup>.

Figure 5 shows the ethnicity distribution for MidCentral District.

**Figure 5: Ethnicity distribution for MidCentral District (2001)**



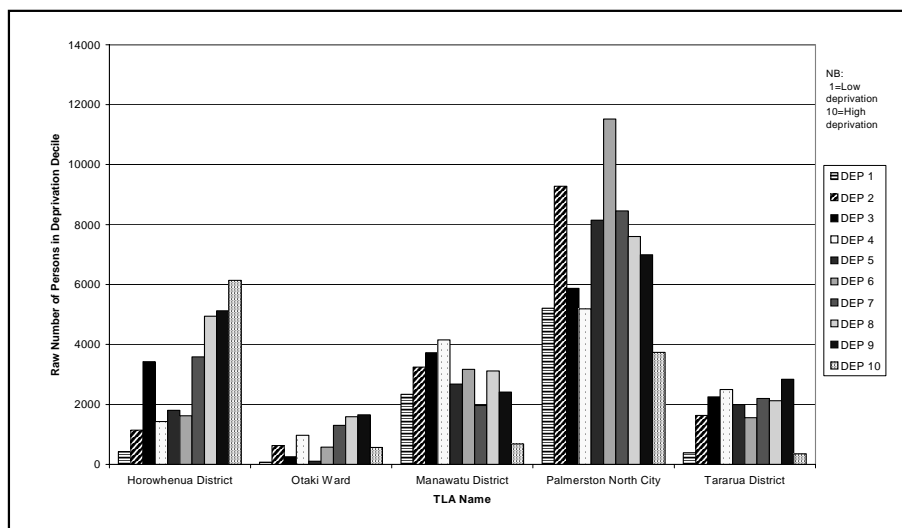
## 3. DEPRIVATION

Lower socio-economic status is associated with difficulties in accessing health (and many other services). Overall, MidCentral District presents a slightly more deprived picture when compared to the national average.

<sup>16</sup> MidCentral District Health Board (2004) Cancer Service Plan Discussion Document pg 10

Figure 6 is a breakdown of deprivation by territorial area.

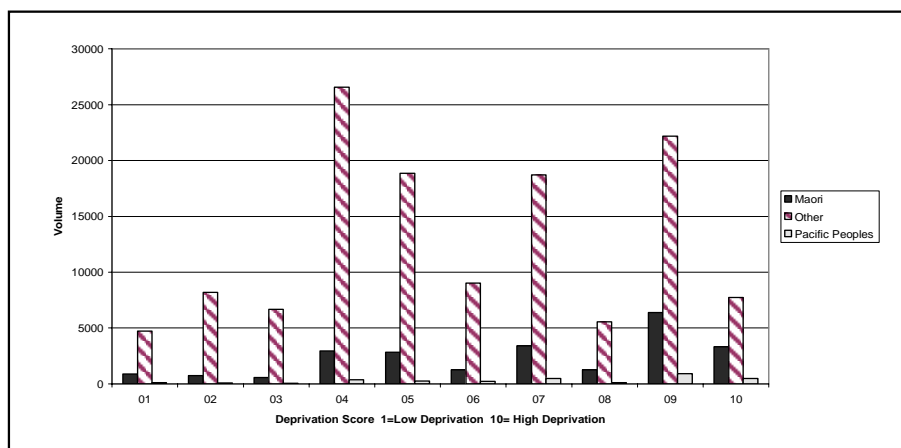
**Figure 6: MidCentral District deprivation distribution (2001)<sup>17</sup>**



Maori incomes in MidCentral District are approximately 60% of non-Maori incomes, and lower than Maori incomes nationally. The Maori unemployment rate in MidCentral District is two or three times higher than the non-Maori rate. This paints a picture of marked socio-economic disadvantage for Maori in MidCentral District<sup>18</sup>.

As figure 7 illustrates, a greater proportion of Maori and Pacific peoples in MidCentral District live in areas of higher deprivation than other ethnicities.

**Figure 7: MidCentral District by deprivation (NZDEP01) - 2001 census<sup>19</sup>**



<sup>17</sup> Technical Advisory Service (TAS) District Health Board, Territorial Authority & Ward Deprivation Profiles (2001)

<sup>18</sup> MidCentral District Health Board (2001) An Assessment of Health Needs in the MidCentral District Health Board Region pg 12

<sup>19</sup> 2001 Census Population Data by DHB

## 4. MAORI, PACIFIC AND ASIAN PEOPLES

The proportion of Maori living in MidCentral District is 15%, which is slightly higher than the total New Zealand population (14%).

MidCentral District has a small, relatively stable population of Pacific peoples (1.9% of MidCentral District's 2001 population). Although they are a relatively small portion of the population, their morbidity and mortality rates are over represented.

At 3.4%, MidCentral District's Asian population is significant. There is currently no data available on Asian health in MidCentral District. However anecdotal evidence suggests they have significant health issues.

## 5. SMOKING PREVALENCE

People with existing chronic diseases such as diabetes are at relatively higher risk of smoking-related hospitalisations and premature death. As table 2 shows, MidCentral District's smoking prevalence is slightly above the national average for both females and males.

**Table 2: Smoking prevalence (indirectly standardised) for selected regions 1998 - 2000<sup>20</sup>**

<b>Selected DHB Region</b>	<b>% Male</b>	<b>% Female</b>
Waitemata	24	22
Auckland	22	17
Waikato	29	25
Bay of Plenty	28	28
Tairāwhiti	38	39
Taranaki	32	27
Whanganui	30	32
<b>MidCentral</b>	<b>26</b>	<b>26</b>
Hawkes Bay	33	28
Wairarapa	35	32
Hutt	28	29
Capital and Coast	22	22
<b>National Average</b>	<b>25.9</b>	<b>24.9</b>

Prevalence was calculated by multiplying crude NZ gender specific rates (male 26% and female 25%) by the indirectly age standardised DHB region rate ratio. The matching of TLAs to DHB regions is approximate only.

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<sup>20</sup> Ministry of Health (2003) Tobacco Toolkit pg 7

## DIABETES BURDEN PROFILE

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There are estimated to be 4 500 people in MidCentral District with diagnosed diabetes. Poorly controlled diabetes, whether Type 1 or Type 2, can result in debilitating complications including blindness, kidney failure, heart disease, neuropathy, lower limb amputations and male impotence.

While diabetes takes a number of forms, Type 1 and Type 2 diabetes predominate.

### Type 1 Diabetes

Type 1 is an absolute deficiency in insulin secretion and has the greatest impact on an individual and their family/whanau<sup>21</sup>. It is not preventable. 10 - 15% of all people with diabetes have this type of diabetes. Approximately 450 people in MidCentral District have Type 1 diabetes<sup>22</sup>.

### Type 2 Diabetes

85 - 90% of all people with diabetes have Type 2 diabetes. Type 2 diabetes generally remains asymptomatic for several years. For this reason it is estimated that half the people with diabetes in New Zealand have not been diagnosed and therefore remain untreated. Type 2 diabetes results from insulin resistance, usually accompanied by a deficiency in insulin secretion<sup>23</sup>.

In MidCentral District, 4 250 people have been diagnosed with Type 2 diabetes. However it is estimated that approximately 8 500 have Type 2 diabetes. Figure 8 shows the prevalence of diabetes in MidCentral District by ethnicity.

Type 2 diabetes typically develops in middle or older ages but it is increasingly seen in overweight children<sup>24</sup>.

Type 2 diabetes is strongly correlated with obesity, physical inactivity and a family history of the disease; it also has a strong genetic association. Although there are many different risk factors associated with this form of diabetes, obesity seems to be the most prominent<sup>25</sup>. The chances of getting Type 2 diabetes can be reduced by up to 50% by making simple lifestyle changes, for example staying physically active and maintaining a healthy body weight and up to 75% by controlling obesity. Ninety percent of people diagnosed with Type 2 diabetes are obese<sup>26</sup>.

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<sup>21</sup> Ministry of Health (2003) Diabetes Toolkit

<sup>22</sup> Ministry of Health (2001) Implementing the New Zealand Health Strategy 2001

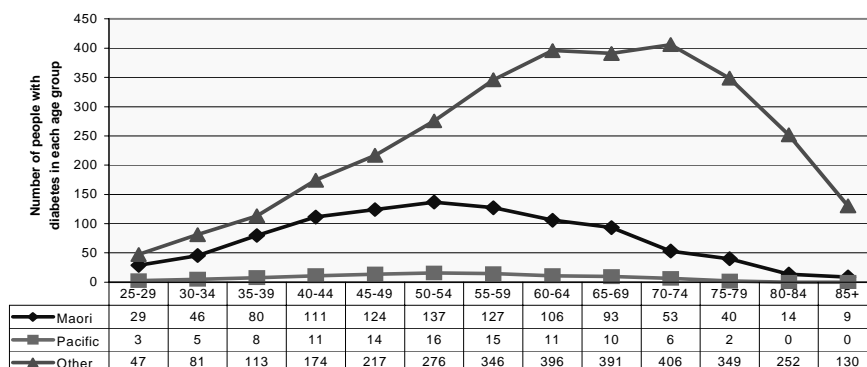
<sup>23</sup> Mag, Nicole (April 2004) Exercise and Type 2 Diabetes Mellitus: Implications for the Young Trinity Student Medical Journal, Volume 5, pg 6

<sup>24</sup> Ministry of Health (2003) Diabetes Toolkit pg 3

<sup>25</sup> Nicole (April 2004) Exercise and Type 2 Diabetes Mellitus: Implications for the Young Trinity Student Medical Journal, Volume 5, pg 7

<sup>26</sup> Ministry of Health (2004) Obesity Toolkit

**Figure 8: MidCentral District type 2 diabetes prevalence by age and ethnicity (2004)**



## 1. MAORI AND PACIFIC PEOPLES

The burden of diabetes in New Zealand is unequally distributed between ethnic groups, with an increased burden in Maori and Pacific peoples.

As a population group, Maori have, on average, the poorest health status of any group in New Zealand<sup>27</sup>. The incidence rates for Maori and Pacific peoples are more than three times higher than the European rates, with Maori and Pacific peoples more than five times more likely to die from diabetes<sup>28</sup>. Table 3 shows the diabetes mortality rates for Maori and non-Maori by sex, highlighting the significant burden of diabetes on Maori.

**Table 3: Diabetes mortality by ethnic group and sex (national population)**

1997<sup>29</sup> 30

Sex	Ethnicity	Deaths (Count)	Years of Life lost (count)	Deaths (Rate)*	Years of Life Lost (rate)*
Males	Non-Maori	554	6,385	48.3	583
	Maori	238	3,501	331.3	4,324
Females	Non-Maori	428	5,243	31.4	422
	Maori	274	4,252	348.1	4,975

Pacific peoples in New Zealand are estimated to have more than a 25% lifetime risk of developing diabetes, and lose on average 12 years of life as a result<sup>31</sup>.

<sup>27</sup> Ministry of Health [Addressing Maori Health](http://www.moh.govt.nz/maori.html) www.moh.govt.nz/maori.html

<sup>28</sup> MidCentral District Health Board (2001) [An Assessment of Health Needs in the MidCentral District Health Board Region](#) Pg 19

<sup>29</sup> Rate per 100 000, age standardised to WHO world population

<sup>30</sup> Ministry of Health (August 2003) [Nutrition and the Burden of Disease: New Zealand 1997-2011](#) pg 17

<sup>31</sup> Ministry of Health (2002) [Modelling Diabetes: A Summary](#)

Maori obesity rates are higher than those for the general population - 27 % of adult Maori men and 28% of Maori women are obese. A further 30% of all Maori adults are overweight.

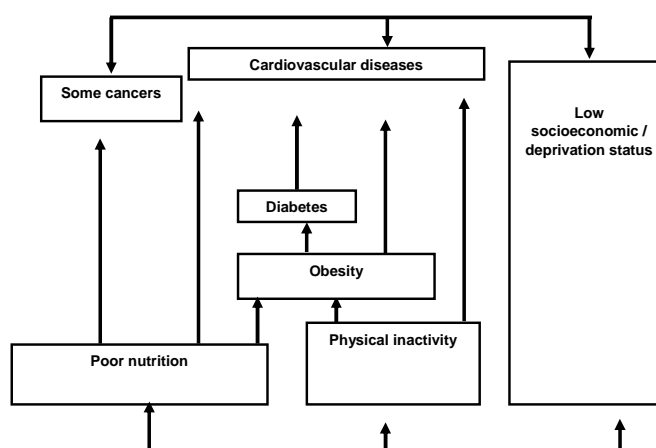
Table 4 shows the risk coefficients for diabetes for a 1kg/m<sup>2</sup> lower body mass index (BMI). A 1kg/m<sup>2</sup> lower body mass index (BMI) is associated with a risk reduction for Type 2 diabetes of 32% in younger adults, dropping to a 17% lower risk in adults aged 75 years and over. These risk coefficients are much higher than those for any other BMI-disease association, highlighting the importance weight reduction has on reducing the burden of diabetes.

**Table 4: Risk coefficients for diabetes for a 1kg/m<sup>2</sup> lower body mass index (BMI)<sup>32</sup>**

Age group (years)	Males		Females	
	Risk coefficient	Risk reduction (%)	Risk coefficient	Risk reduction (%)
25-34	0.74	26	0.68	32
35-44	0.74	26	0.68	32
45-54	0.81	19	0.75	25
55-64	0.83	17	0.79	21
65-74	0.82	18	0.83	17
75+	0.79	21	0.83	17

Figure 9 illustrates the relationship between socio-economic deprivation and disease.

**Figure 9: Relationships among socio-economic deprivation, obesity and non-communicable disease<sup>33</sup>**



In 20 years the number of Maori and Pacific peoples with diabetes will nearly double, even if lifestyle risk factors do not deteriorate<sup>34</sup>.

<sup>32</sup> Ministry of Health (August 2003) *Nutrition and the Burden of Disease: New Zealand 1997-2011* pg 119

<sup>33</sup> Ministry of Health (2004) *Obesity Toolkit*

<sup>34</sup> Health Funding Authority (2000) *Diabetes 2000* pg 3

## 2. ASIAN PEOPLES

Although there is very little data concerning Asian peoples and diabetes in New Zealand, studies from overseas have outlined a significant burden of disease in Asian peoples living outside of Asia.

Most Asian peoples have traditionally been fairly small and slender, but changes in diet and less physical activity may be contributing to increased numbers of overweight and obese people in these populations.

A Ministry of Health Report on Asian health needs in the Auckland region (February 2003) identified that language and cultural barriers are the biggest obstacles to better utilisation of health services. Asian people, particularly new migrants, face language and economic barriers to improved health status. Miscommunication can impact on the quality of health care services in terms of costs, incorrect assessments or interventions, and inefficiencies.

## 3. THE IMPACT OF DIABETES ON FEET

Foot complications for people with diabetes impact upon quality of life by causing pain and reduced mobility. About 15% of people with diabetes will have foot ulcers at some time in their life - 40% will be a result of neuropathy, 24% peripheral blood vessel disease, and 36% of mixed causes. Ulcers and infection can potentially lead to lower limb (LL) amputation<sup>35</sup>. In 2002/03 there were 23 LL amputations (one in Maori) in MidCentral District. As table 5 shows, MidCentral is slightly above the national average for LL amputations.

**Table 5: Standardised discharge ratios by DHB region for lower limb amputation in people with diabetes in 2002/2003<sup>36</sup>**

Standardised Discharge Ratio			
DHB Region	Total	DHB Region	Total
Northland	1.39	MidCentral	1.08
Waitemata	0.80	Whanganui	1.15
Auckland	0.72	Capital and Coast	0.81
Counties Manakau	1.04	Hutt	0.82
Waikato	1.76	Wairarapa	1.71
Lakes	0.43	Nelson Marlborough	1.27
Bay of Plenty	0.54	West Coast	-
Tairāwhiti	0.97	Canterbury	1.00
Taranaki	0.96	South Canterbury	1.49
Hawkes Bay	0.71	Otago	1.15
<b>New Zealand</b>	<b>1.00</b>	Southland	0.83

**Notes:**

- 1 Data source: NMDS public hospital data, maintained by the NZ Health Information Service (NZHIS).
- 2 Time period covered - 12 months to 30 June 2003 (Provisional data).
- 3 Discharges are for people from each DHB region of domicile.
- 4 Standardised discharge ratio is the ratio of observed to expected discharge rates. Expected rates are calculated on the age structure of the population with diabetes in each DHB region.
- 5 All diabetic populations are based on medium series population projections for 2002/03 (assuming medium levels of mortality, fertility and migration), and are based on the 2001 census, and projected 2003 type I and type II prevalence rates for diabetes by age and ethnicity.
- 6 "-" implies that the number of discharges are less than five.

Using survival information for the three-year period 1996-99 only 51% of people would be expected to survive three years after a lower limb amputation.

<sup>35</sup> Ministry of Health (2003) Diabetes Toolkit

<sup>36</sup> Ibid pg 29

## 4. THE IMPACT OF DIABETES ON EYES

Diabetes is the most common cause of avoidable loss of vision in people of working age in developed countries. International studies suggest that about 70 people in New Zealand become legally blind every year as a result of diabetes<sup>37</sup>. The most significant effects of diabetes on vision are its effects on the retina and the retinal blood vessels, causing a condition known as diabetic retinopathy. Diabetic retinopathy is present at diagnosis for a significant proportion of people with Type 2 diabetes. In people with Type 1 diabetes, diabetic retinopathy generally develops some years after diagnosis of diabetes<sup>38</sup>. After 10 years with diabetes all people will have some degree of retinopathy and about 40% - 50% will develop complications which can affect on vision<sup>39</sup>.

The impact of diabetes on the eyes is much more widespread in Maori and Pacific peoples as is shown in table 6.

**Table 6: Prevalence rates of complications in people with known diabetes by ethnicity (national statistics)<sup>40</sup>**

	MAORI (%)	PACIFIC PEOPLES (%)	EUROPEAN (%)
Smoking rates (pop'n)	45.5	27.7	23.2
Blindness	7	8	2
Heart attack	11	6	11
Renal failure	4-8 x increased risk for Maori and PI with type 2		
Diabetic foot disease	42.0	29.0	37.0

Diabetic retinopathy can be detected reliably by screening programmes. New Zealand best practice guidelines for diabetes management recommend retinal screening every two years.

## 5. IMPACT OF DIABETES ON THE KIDNEYS AND HEART

Diabetes is now the most common cause of kidney failure in New Zealand<sup>41</sup>. Approximately 40% of people with Type 1 and 5 - 10% of people with Type 2 diabetes will eventually develop progressive kidney failure<sup>42</sup>. The prevalence of microalbuminuria, overt diabetic nephropathy and end-stage renal failure is higher among Maori and Pacific peoples compared with New Zealand Europeans.

<sup>37</sup> Ministry of Health (2003) *Diabetes Toolkit* pg 28

<sup>38</sup> Ibid

<sup>39</sup> [http://www.everybody.co.nz/docsd\\_h/diabret.htm](http://www.everybody.co.nz/docsd_h/diabret.htm) - New Zealand Health Information

<sup>40</sup> Statistics were obtained from Simmons, D, *The Epidemiology of Diabetes and its Complications in New Zealand 1996*, *Diabetic Medicine*, 3, 371-375 (with the exception of smoking rates which were obtained from *The 1996/97 New Zealand Health Survey – Taking the Pulse 1999*, Ministry of Health).

<sup>41</sup> [http://www.everybody.co.nz/docsd\\_h/diabret.htm](http://www.everybody.co.nz/docsd_h/diabret.htm) - New Zealand Health information

<sup>42</sup> Kidney Disease and Diabetes [www.everybody.co.nz/docsd\\_h/diakid.htm](http://www.everybody.co.nz/docsd_h/diakid.htm)

Controlling high blood pressure is very important for people with diabetes, to reduce the risk of developing both cardiovascular (CVD) and renal complications. Even if nephropathy has started to develop, controlling blood pressure can substantially slow its progression<sup>43</sup>.

Cardiovascular disease is the leading cause of death in people with diabetes. The presence of diabetes increases the risks of coronary artery disease two to threefold in men, and four to fivefold in women when compared to people without diabetes<sup>44</sup>.

Several possible interventions may contribute to better management of risk factors and consequently reduce the actual number of CVD events among people with diabetes over the next five years. ACE inhibitors are an important tool for reducing the incidence of cardiovascular disease and renal failure.

Table 7 highlights the reduction of the risk of diabetic heart and kidney complications possible through improved blood glucose and blood pressure control.

**Table 7: Percentage reduction of the risk of diabetic heart and kidney complications shown in recent studies (2001)<sup>45</sup>**

Strategy	Type 1 diabetes	Type 2 diabetes
<b>Improved blood glucose control (HbA1c)</b>		
- nephropathy	34%-57% reduction	70% reduction
- cardiovascular & peripheral vascular disease		54% reduction
- myocardial infarction		16% reduction
- all diabetes related complications		12% reduction
<b>Improved blood pressure control</b>		
Microvascular disease		37% reduction
Cardiovascular disease		51% reduction
Heart failure		56% reduction
Stroke		44% reduction
All diabetes related complications		24% reduction
Diabetes related deaths		32% reduction

Each 1% reduction in HbA1c is associated with a 21% (95% CI, 15 - 27%) reduction in the risk of diabetes related death and a 14% reduction in the risk of myocardial infarction over 10 years<sup>46</sup>.

## 6. DIABETES IN CHILDREN AND YOUNG PEOPLE

In 2004 there were 121 children/young people (0-25 years of age) throughout MidCentral District under the care of diabetes services. Of those, 73 were under the age of 18 - 98% of these had Type 1 diabetes. It is well recognised that Type 1 diabetes is unique in that the services, treatment and needs are vastly different from those required for the management of Type 2 diabetes. Care of this group requires integration of diabetes care and clinical management with the complicated physical

<sup>43</sup> PriceWaterhouseCoopers (2001) Diabetes NZ Inc Type 2 Diabetes Managing for Better Health Outcomes pg 40

<sup>44</sup> Ministry Of Health (2003) Diabetes Toolkit

<sup>45</sup> PriceWaterHouseCoopers (2001) Diabetes NZ Inc Managing for Better Health Outcomes pg 42

<sup>46</sup> Evidenced Best Practice Guidelines (2004) Management of Type 2 Diabetes pg 39

and emotional growth needs of children, adolescents and their families.

Historically, Type 2 diabetes was uncommon before middle age, but it is now being diagnosed with increasing frequency in young adults and even adolescents, especially among Maori and Pacific ethnic groups<sup>47</sup>. In children, as in adults, Type 2 diabetes is more highly associated with obesity than with any other clinical condition. In 2000, the American Diabetes Association (ADA) stated that “obesity is a hallmark of Type 2 diabetes with up to 85% of affected children being overweight or obese”<sup>48</sup>.

While 98% of children in MidCentral District currently have Type 1 diabetes, worldwide the overall rate for new Type 2 diabetes cases in children is increasing. Evidence suggests that Type 2 diabetes may account for nearly half of all newly reported diabetes cases in paediatric populations between the ages of 10 and 19<sup>49</sup>.

In the management of diabetes, it is important to recognise that there are different needs and various developmental stages associated with young people compared to children. What works for young people aged 12 and 13 years may be inappropriate for those aged 16, let alone those over 20<sup>50</sup>.

*“Until the mid-1980s Type 2 diabetes was considered as a disease of the middle-aged and elderly, developed after years of poor diet and lack of exercise. These same causes have led to a rise in the disease in children and adolescents as young as five.”*

International Diabetes Federation (25 June 2004)  
Diabetes and Obesity Epidemic in Children: International Call to Action

## 7. IMPACT OF DIABETES ON WELLBEING

Like all chronic and progressive problems, diabetes has social, psychological, emotional, and spiritual aspects which require attention. Psychological support with the aim of facilitating and supporting self-management is extremely important for people with diabetes.

Coming to terms with a diagnosis of diabetes and its ongoing requirements can lead to many different feelings, such as grief over the loss of wellness, shame and guilt about causing or deserving diabetes, resentment at dependence on medical assistance and the expense that goes with it, and anger that there is no cure.<sup>51</sup>

Psychological support can assist people to come to terms with their diagnosis much more quickly, which in turn will enable them to cope better with their condition.

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<sup>47</sup> Ministry of Health (Aug 2003) Nutrition and Burden of Disease NZ 1997 - 2011 ISBN: 0-478-25677-9

<sup>48</sup> Mag, Nicole (April 2004) Exercise and Type 2 Diabetes Mellitus: Implications for the Young Trinity Student Medical Journal, Volume 5, pg 6

<sup>49</sup> Ibid

<sup>50</sup> Ministry of Health (Sept 2002) Youth Health - A Guide to Action pg 9

<sup>51</sup> Diabetes Spectrum Volume 13 Number 4, 2000, Page 201 Diabetes Through the Life Span: Psychological Ramifications for Patients and Professionals

# **OVERVIEW OF CURRENT SERVICES AND ISSUES**

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## **1. MIDCENTRAL DISTRICT PROVIDERS**

In MidCentral District there are a number of providers caring for people with diabetes and their family/whanau:

- General practice teams
- Other nursing workforce – primary nursing, secondary nursing, district nursing
- Secondary care – Palmerston North Hospital, Horowhenua Hospital, Clevely Health Centre, and Dannevirke Community Hospital
- Diabetes Lifestyle Centre
- Health promotion services
- Maori health providers
- Diabetes societies
- Podiatrists
- Pharmacists
- Medlab.

More detail on providers is set out in Appendix 2.

## **2. PRIMARY HEALTH ORGANISATIONS**

Funded by District Health Boards, Primary Health Organisations (PHOs) work with their communities to provide primary health care services at a local level for their enrolled populations. PHOs will improve coordination between primary and secondary care and develop closer links between communities and primary health care providers such as general practitioners (GPs), practice nurses and Maori health providers.

GPs have shown a very positive movement towards PHOs. Currently there are four established PHOs in MidCentral District:

- Tararua PHO - Established 1 July 2003, it has an estimated enrolled population of 15 500
- Otaki PHO - Established on 1 April 2004, it has an estimated enrolled population of 5 500
- Horowhenua PHO - Established on 1 July 2004, it has an estimated enrolled population of 23 000

- Manawatu PHO – Established on 1 January 2005, it has an estimated enrolled population of 94 000.

### 3. "AOTEAROA GET CHECKED" - THE NATIONAL DIABETES SCREENING PROGRAMME

Funded by MidCentral and run by the Manawatu/Horowhenua/Tararua Diabetes Trust, the “Get Checked” programme gives people with diabetes access to free yearly health checks. This yearly check provides the opportunity to ensure all important checks have been completed for the year and to plan for the year ahead. The check is delivered at primary care level by general practice teams and/or primary care nurses operating in a community setting with access to primary care notes.



Data collected from the “Get Checked” programme are potentially useful in the provision of care and planning of diabetes services. Privacy is vigorously protected but currently the information on the diabetes programme database is not easily accessible to key diabetes workers such as the Diabetes Lifestyle Centre, general practice teams, Independent Practice Associations, Primary Health Organisations, community pharmacies and Maori health providers.

Table 8 shows that while 49.7% of people with diabetes had an annual check in 2003 the proportion of Maori checked was substantially lower than other ethnic groups at 30.0%.

**Table 8: Number of people with diabetes in MidCentral District who had annual check in 2003<sup>52</sup>**

	People	% of expected
Maori	248	30
Pacific peoples	43	50.1
All others	1 876	54.4
Total	2 167	49.7

### 4. FEET

Community podiatry services are limited. The majority of people with diabetes have their foot care needs attended to by only one podiatrist based in Palmerston North. This podiatrist is thus responsible for the majority of MidCentral District.

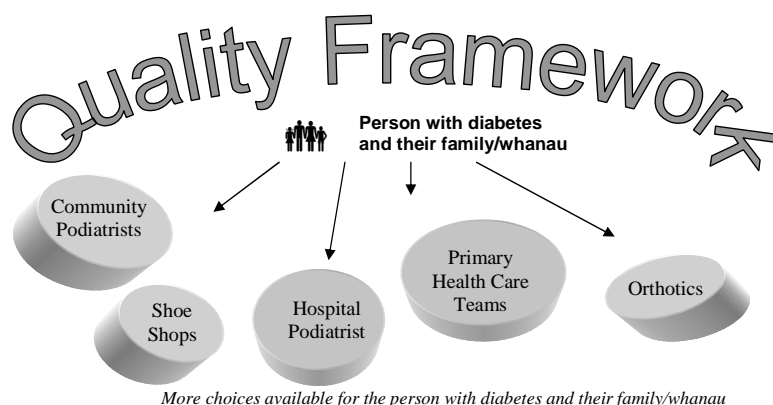
Currently people with diabetes and foot problems or wounds are seen in separate clinics in the Palmerston North Hospital with limited communication and

<sup>52</sup> Ministry of Health (2004) Diabetes Model 2004 MC

coordination between health professionals in care planning and care delivery. Referrals are made as necessary but there may be time delays between referral and intervention. Community podiatry services are not readily available and there is a fee for service.

To improve access, people with diabetes should be offered choices within a quality controlled framework (figure 10).

**Figure 10: Ideal primary situation**



## 5. EYES

Eye screening services for people with diabetes are very well utilised. This service is currently hospital based and receives good feedback from consumers. In 2003, 87.2% of people with diabetes were screened in the Manawatu district and 83.5% in Palmerston North city. Access issues are reflected in the lower turn out rates for Horowhenua and Tararua districts (75.8% and 78.7% respectively). Travelling to Palmerston North for screening requires the organisation of a driver and a considerable amount of time and is thus a major deterrent for people outside of the Manawatu<sup>53</sup>. People who do not access care are unlikely to benefit from improvements in the quality of care. Table 9 shows the number of people with diabetes in MidCentral District who had their eyes screened in the last two years January - December 2003.

**Table 9: Number of people who had their eyes screened in the last two years January - December 2003<sup>54</sup>**

	People	% of expected
Maori	173	70
Pacific peoples	28	65
All others	1 554	83
<b>Total</b>	<b>1 755</b>	<b>81</b>

<sup>53</sup> Manawatu, Horowhenua And Tararua Diabetes Trust (2003) *Diabetes Locality Team Annual Report* pg 12

<sup>54</sup> Ibid

The national guidelines for screening specify two yearly eye screening for most people with diabetes; MidCentral is screening annually but is not reaching enough people. While people with deteriorating vision may require more frequent screening, for the majority of people with diabetes, screening at the recommended intervals is important to capture 100% of the diabetes population.

## 6. KIDNEY AND HEART

Secondary and tertiary services such as cardiology and renal are beyond the scope of the initiatives listed in this service plan. However, coordination and collaboration among all providers is important for the optimal treatment of people with diabetes.

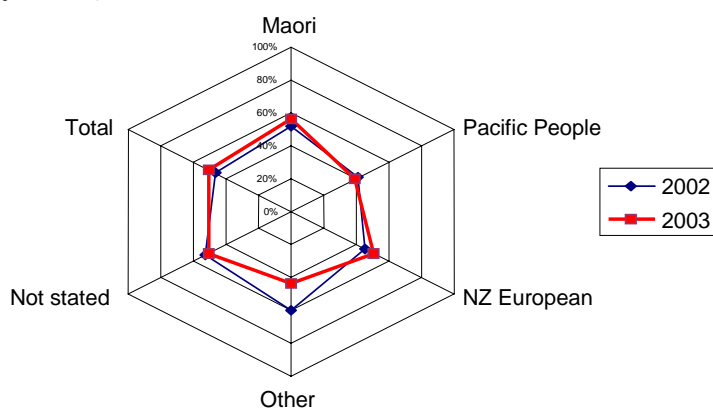
Unchecked or poorly managed diabetes has a significant impact on the demand for secondary services. Table 10 shows that in 2003, 29% of people in MidCentral District had poor control of their diabetes (an HBA1c greater than or equal to 8%). Poor case management is higher in Maori and Pacific peoples at 44% and 58% respectively.

**Table 10: Number of people with diabetes in MidCentral District with free annual checks who had poor diabetes control in 2003 (HBA1c >= 8%)<sup>55</sup>**

	People	% of expected
Maori	72	44
Pacific peoples	14	58
All others	355	27
<b>Total</b>	<b>441</b>	<b>29</b>

ACE inhibitors are used to reduce the risk of cardiovascular disease and renal failure. ACE inhibitors should be, and are, more commonly prescribed in Maori and people with diabetes. Figure 11 shows the percentage of people with diabetes receiving ACE inhibitor treatment by ethnicity.

**Figure 11: Percentage of people with diabetes on ACE inhibitor in MidCentral District by ethnicity 2002, 2003<sup>56</sup>**



<sup>55</sup> Ministry of Health (2004) *Diabetes Model 2004 MC*

<sup>56</sup> Manawatu, Horowhenua And Tararua Diabetes Trust (2003) *Diabetes Locality Team Annual Report* pg 27

## 7. CHILDREN AND YOUNG PEOPLE WITH DIABETES

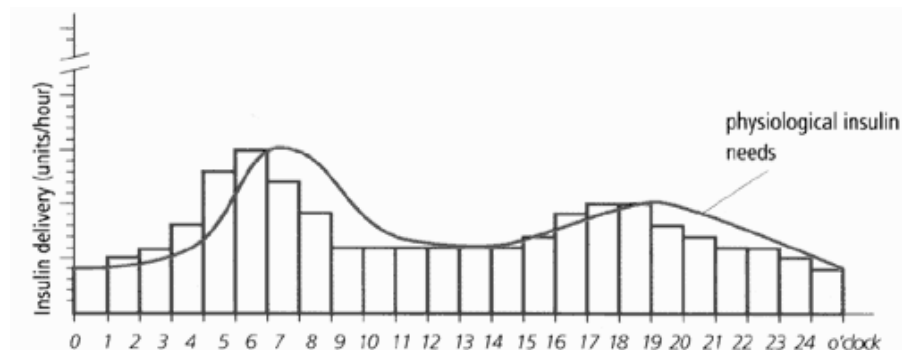
Currently, children under 13 years are seen three monthly at MidCentral Health's paediatric diabetes clinics held at the Diabetes Lifestyle Centre in Palmerston North, and at Horowhenua Hospital in Levin. Children and young people attending a paediatric clinic are seen by a paediatrician, a diabetes nurse specialist and a dietitian. There is no children's clinic in Dannevirke specifically for diabetes. Young people between 13 and 20 are seen six monthly in the "young adult clinic" (a transition clinic, held at the Diabetes Lifestyle Centre) by a diabetes specialist physician or paediatrician, a diabetes nurse specialist and a dietitian. Those aged 20 to 25 are seen annually, or more frequently if necessary, in the adult diabetes clinic in the Ambulatory Care Centre, Palmerston North Hospital.

### Insulin Pumps

The literature clearly demonstrates significant benefits from using Continuous Supply of Insulin Infusion (CSII) therapy in children and young adults, specifically in improved HbA1C levels, lower admission rates and fewer hypoglycemic episodes.

As figure 12 illustrates, CSII pump therapy delivers precise doses of normal fast-acting insulin, as and when required, mimicking the normal insulin secretion of the pancreas.

**Figure 12: Basal rate profile and physiological insulin needs<sup>57</sup>**



Pump therapy is currently not funded at all by MidCentral and it is very expensive, extremely time intensive and requires additional specialist time.

While the costs related to CSII therapy are high, this is offset by a significant improvement in glycaemic control in the majority of people with diabetes with the consequent reduction in admissions in the short term and complication rates in the long term.

<sup>57</sup> Disetronic Medical Systems brochure

## Diabetes Youth Camps

Youth camps are extremely important to those who are living with diabetes, giving them the chance to meet and relate to others who are the “same” as them, to share tales and know that they are not "alone". These events go a long way towards assisting self management. These activities teach not only those who have diabetes but also those around them that they have to control the diabetes, not let the diabetes control them.

These camps are organised voluntarily but the hours required of a youth coordinator are beyond the normal expectations of a volunteer.

## 8. NUTRITION AND PHYSICAL ACTIVITY

### Green Prescription Programme

The SPARC initiative involves general practice teams giving a "Green Prescription" to patients whose health could benefit from increased physical activity. The patient is then eligible for support and advice from their regional sport trust for up to four months. The Green Prescription has been used by more than 50% of general practitioners in New Zealand<sup>58</sup>.

A May 2003 Green Prescription national patient survey found that 77% of patients reported a change in their health, with 60% feeling better and 54% losing weight. In addition, 62% had made changes to their food and drink intake since receiving a Green Prescription, with 40% consuming fewer fats<sup>59</sup>.

*“Many people suffer severe, disabling and expensive complications from diabetes but the real tragedy is that for many people more physical activity and healthier eating can prevent Type 2 diabetes from developing in the first place.”*

Dr Matheson (8 March 2002,  
Media release MoH website)

Cram, Karehana and Pitama (1999) found that sedentary Maori are motivated to be physically active if participants in organised activities:

- can incorporate beneficial physical activity into their lifestyle
- are involved with whanau and hapu in activities organised for Maori by Maori.

Specialist dietary services are currently available at Palmerston North Hospital on a very limited basis. Dietary advice is also offered by a variety of providers including the Diabetes Lifestyle Centre, general practice teams, pharmacists, and Maori providers; there is, however, a lack of resources. Many people with diabetes continue to follow inappropriate diets, are not encouraged to exercise, and are not how to manage their blood glucose in the normal range<sup>60</sup>.

<sup>58</sup> Elley et al (April 2003) Effectiveness of Counselling Patients on Physical Activity in Randomised Controlled Trial British Medical Journal April 12 2003; 326(7393): 793

<sup>59</sup> Ministry of Health (Dec 2003) Implementing the New Zealand Health Strategy 2003

<sup>60</sup> PriceWaterhouseCoopers (April 2001) Diabetes New Zealand Inc Type 2 Diabetes Managing for Better Health Outcomes

## 9. EDUCATION

Although there are extremely good education courses and information available for people with diabetes, they are episodic and sporadic. Education needs to occur from the day of diagnosis and be offered throughout the continuum of care. Preventative education should begin even sooner, through promotion in schools.

Refresher courses need to be made more readily available. Core education sets need to be used and adapted to suit different cultural needs. Examples include targeting Maori with marae or community based education programmes, or Pacific peoples through their churches. New Zealand research has shown that Maori and Pacific peoples with diabetes are less likely than other ethnic groups to have received diabetes education at diagnosis<sup>61</sup>.

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<sup>61</sup> Paddison, Charlotte (2004) Diabetes Education Among Maori in MidCentral: A Discussion Document

# SUPPORTING LONG-TERM LIFESTYLE CHANGE

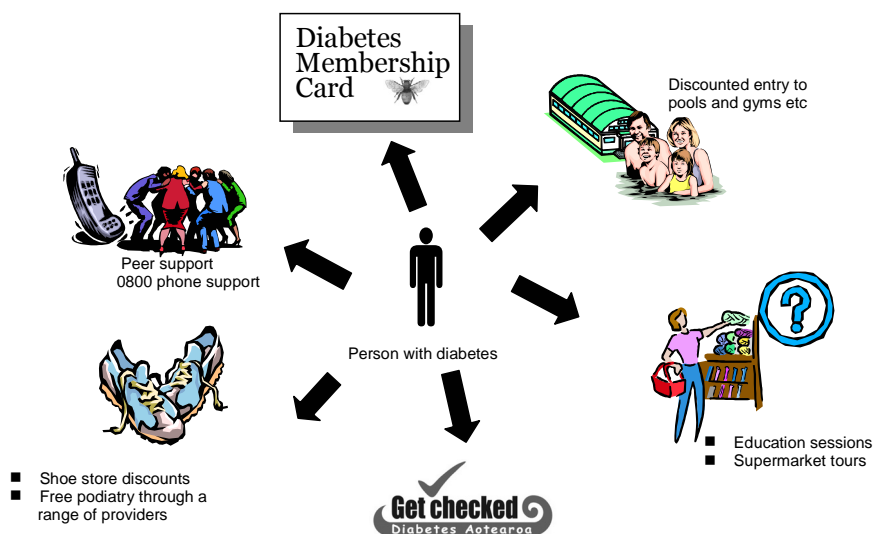
## 1. DIABETES PROGRAMME AND MEMBERSHIP CARD

A chief component of this service plan is the introduction of a unique diabetes programme and membership card for people with diabetes (figure 13). The objective is for the person with diabetes and their family/whanau to feel empowered and feel a sense of belonging. The diabetes membership card will offer the card holder access to care and incentives (such as reduced cost footwear, discount vouchers, and free testing strips) through the Diabetes Programme.

The main components of the diabetes programme and membership card are:

- Empowering people to make long term lifestyle changes
- Ongoing personal follow up and support through an 0800 telephone number
- Nutrition and weight management
- Improving regular screening rates such as the annual “get checked” programme
- Decreasing the barriers to accessing high quality care for Maori and Pacific peoples
- Providing discounted/free health services. Such as stix on demand from a pharmacy on presentation of their card, and nail clipping from private approved podiatrists
- Education through diabetes and associated pamphlets (ie pamphlets for shoe shops, on nutrition, on gyms and municipal swimming pools etc).

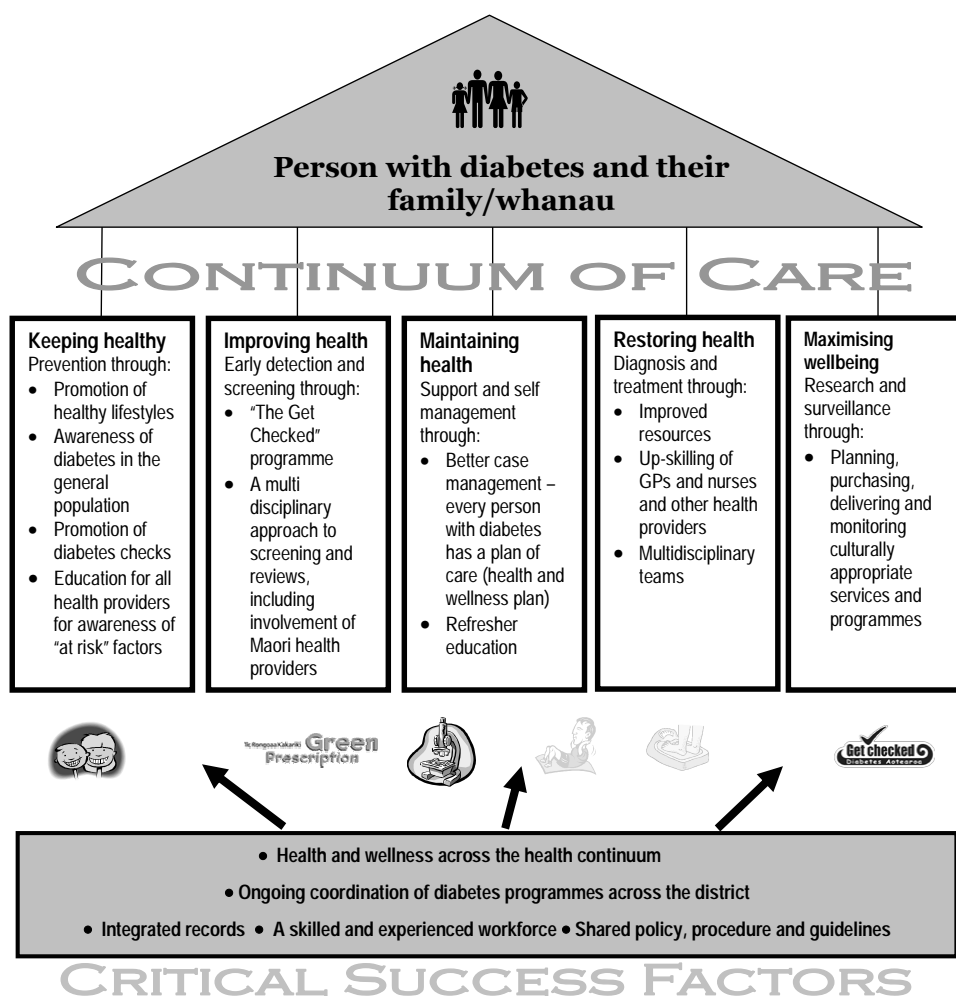
**Figure 13: Components of the diabetes programme and membership card**



# THE WAY FORWARD - SUMMARY OF OBJECTIVES AND KEY ACTIONS OF THE DIABETES STRATEGY

The critical success factors and the continuum of care form a fundamental partnership in the development of this service plan as illustrated in figure 14.

**Figure 14: Key actions of the Diabetes Service Plan**



Through the unification of the above principles and ideas, this diabetes service plan will ensure that people receive optimal specialised programmes across the health continuum, throughout their lifelong journey with diabetes.

The following section outlines the key actions that will be taken to achieve the objectives of reducing the impact and incidence of diabetes and reducing inequalities.

## PREVENTION AND HEALTH PROMOTION

### OBJECTIVE ONE: REDUCE THE INCIDENCE OF DIABETES THROUGH PREVENTION AND HEALTH PROMOTION STRATEGIES

The major determinants of health are factors external to the individual. They include economic, social, cultural and environmental structures of society.

#### **Prevention**

Prevention means eliminating or minimising exposure to the cause of disease, and maximising protective factors such as healthy lifestyle choices. Prevention activities include:

- Primary prevention strategies
- Effective public health strategies
- Community action
- Personal skill development
- Support
- Treaty-based health promotion practices.

#### **Health Promotion**

Health promotion is a combination of educational, organisational, economic and political actions designed with community participation to enable individuals, groups and whole communities to increase control over and improve their health through attitudinal, behavioural, social and environmental changes. While health promotion recognises that personal lifestyle factors have an important impact on the health of the individual, it places emphasis on changing the environment to enable optimum conditions for health and for behaviour change.

Health promotion is more than health education. Health education focuses on health information and behaviour change and is just one strategy of health promotion. Health promotion strategies include policy, community action and environmental changes.

Health promotion in New Zealand is underpinned by Te Tiriti o Waitangi (the Treaty) and the Ottawa Charter. The Treaty provides a set of principles including partnership, participation and protection. The Ottawa Charter has five key strategies for action which relate very well to the Treaty principles:

- Building healthy public policy - Making Maori health a priority
- Creating support environments - Recognition of Maori concepts of health

- Strengthening community action - Opportunities for Maori to take responsibility for their own health care
- Developing personal skills - Empowerment for Maori through training and education
- Reorientating the health services - Health services for Maori by Maori.

More emphasis on prevention is required to reduce the number of people in MidCentral District who develop Type 2 diabetes.

The actions everyone takes today, especially eating healthily and being active, will make a difference to the extent of the epidemic over the next decade. The following initiatives will help prevent diabetes in MidCentral District.

### *HEALTH PROMOTION*

#### Initiative 1

In collaboration with the education sector, support schools and school communities to understand and educate children and adolescents about the importance of healthy living.

#### Initiative 2

Promote healthy living to the general population, with emphasis on Maori, Pacific peoples and other high-risk groups. Healthy living covers smoking cessation, diet and physical activity.

#### Initiative 3

Work with territorial local authorities, maraes, non-government organisations and the community to provide a healthy environment and healthy public policy. This includes promotion of healthy food choices and promotion of physical exercise.

#### Initiative 4

Support intersectoral health promotion campaigns and initiatives such as Push Play, National Diabetes Week and 5-Plus a Day.

#### Initiative 5

Target family/whanau of people with diabetes with preventative strategies.

### *EDUCATION*

#### Initiative 6

Increase the community's understanding of diabetes: diabetes in general, MidCentral's Diabetes Programme and membership card, knowledge of the management of diabetes, and the Get Checked programme, for example.

Initiative 7

Encourage all health professionals (particularly Primary Health Organisations and Well Child providers) to identify diabetes risk factors in their clients and refer for follow-up where appropriate. Work with Well Child providers, paediatric services and others to develop appropriate referral services for the families/carers of children significantly overweight, or at risk of becoming overweight.

Initiative 8

Use resources such as health promotion/health education, and clinical programmes for nutrition, exercise and smoking cessation for working with individuals identified by health professionals as at risk of developing diabetes.

*FOR MAORI AND PACIFIC PEOPLES*

Initiative 9

Provide Maori with a range of health promotion programmes and activities such as healthy marae programmes, Kohanga (pre-school), Kura (school), and Wananga (university) based services.

Such education should:

- incorporate Maori knowledge (matauranga Maori) and follow appropriate cultural processes (tikanga)
- be based on Maori health frameworks and models (eg, Whare tapa wha/Te Pae Mahutonga) and guided by Maori principles (such as tapu/noa, aroha, and family/whanaungatanga)
- be delivered through closer co-ordination with Maori health providers and local kaumatua/iwi.

Initiative 10

Provide Pacific peoples with a range of health promotion programmes and activities.

Such education should:

- incorporate Pacific knowledge and follow appropriate cultural processes
- be based on Pacific health frameworks and models guided by Pacific principles
- be delivered through closer co-ordination with Pacific health providers and local elders.

*FOR ASIAN PEOPLES*

Initiative 11

Develop culturally appropriate or sensitive programmes in nutrition, physical activity, healthy lifestyle programmes and other health promotion programmes for key Asian populations.

## SCREENING AND EARLY DIAGNOSIS

**OBJECTIVE TWO: ENSURE EFFECTIVE SCREENING AND EARLY DIAGNOSIS TO REDUCE THE IMPACT OF DIABETES ON WELLBEING**

Time is of the essence; the earlier the diagnosis the more effective the intervention. By taking a stronger population approach to primary health care, MidCentral should be able to intervene earlier and reverse or reduce the severity of the disease. The aim is to involve the whole system/community resources, identify people at risk, and provide choices.

Screening has two components:

- Primary screening of the general population for early recognition and diagnosis
- Secondary screening to ensure effective management of people with established diabetes and people with impaired glucose tolerance to prevent complications.

“Get Checked” is an integral management programme for people who have been diagnosed with diabetes. Secondary screening is a two step process:

- Screening at risk people for diabetes and enrolling them in a diabetes programme
- Annually checking the clinical indicators of people enrolled on the programme.

Those who are identified with risk factors require lifestyle interventions. If, at screening, people are diagnosed with diabetes they need to receive appropriate clinical care for the management of their condition. Increasing screening levels to meet targets for people with diabetes will be gradual over the next three years.

### *PRIMARY SCREENING*

#### Initiative 12

Promote opportunistic screening of at risk people in primary health settings through the provision of resources, education and awareness campaigns.

#### Initiative 13

Provide a range of community screening options for “at risk” populations.

Initiative 14

Work with Primary Health Organisations (PHOs) and stakeholders to develop systematic screening for diabetes and cardiovascular risk in areas where the proportion of the local enrolled population is high. Encourage PHOs to focus on ensuring people with diagnosed diabetes are offered each year the opportunity for a free annual check.

Initiative 15

Promote screening for people with impaired glucose tolerance and provide a follow-up programme to assist these people to reduce their risk factors for developing diabetes.

*SECONDARY SCREENING*

Initiative 16

Promote completion of annual reviews by providing resources, information and incentives for completion rates.

*FOR MAORI AND PACIFIC PEOPLES*

Initiative 17

Provide supplementary resources to support general practice screening of Maori and Pacific peoples.

## SUPPORT, TREATMENT AND PALLIATIVE CARE

OBJECTIVE THREE: ENSURE EFFECTIVE SUPPORT, TREATMENT, AND PALLIATIVE CARE TO ENHANCE QUALITY OF LIFE

### **Support and the Encouragement of Self Management**

Lifestyle interventions are an important aspect of the management of diabetes. Dietary intervention, weight management, physical activity and smoking cessation are critical parts of diabetes health care because they are important for good glycaemic control and the prevention of both microvascular and macrovascular complications. People with diabetes and their family/whanau need to be given choices that suit them, but the choices should not compromise on quality.

There are many people with diabetes who are prepared to make choices and take responsibility for their own care. For these people an important objective for this plan is a programme that provides choices.

People with diabetes already choose their primary health care team. Get Checked is important as it ensures that at least once a year people with diabetes check that the important things have been done, and plan the year ahead. The intention of this objective is to make it easier for these people to achieve this plan. This objective proposes to extend choices more widely. There are other people and organisations able to provide advice and support such as: community podiatrists, shoe shops, dietitians and food shops.

To help people make choices, a MidCentral District diabetes programme and membership card is proposed for a wide range of providers that wish to partner with MidCentral and offer consistent advice within a quality framework.

### **Treatment and Care**

Diabetes is associated with serious macrovascular complications (ischaemic heart disease and ischaemic stroke), as well as microvascular complications often leading to blindness (diabetic retinopathy), kidney disease (diabetic nephropathy), and foot amputation (diabetic neuropathy). According to Larry Ellingson, chairperson of the American Diabetes Association (ADA) "We're beginning to talk about diabetes not as a single disease at all but as a metabolic syndrome. It's a cardiovascular disorder, a kidney disorder, and more, with potentially devastating effects on almost every organ<sup>62</sup>."

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<sup>62</sup> Sipkoff, M (2004) *Treating the Co-morbidities of Diabetes: The Pharmacist's Role*  
<http://www.drugtopics.com/drugtopics/article/articleDetail.jsp?id=129076>

To improve health outcomes and enhance quality of life, it is imperative that managing diabetes and its complications will depend to at least some degree on the successful management of co-morbid states, ensuring effective primary, secondary and tertiary care. People with diabetes will need to access appropriate assessment and episodic treatment from primary and secondary providers and appropriate prescribing remains a critical component of overall treatment.

The Ministry of Health is currently undertaking a national stocktake of carer support services. The Collaborative Diabetes Health Improvement Group will monitor developments to ensure equity of access to these services for people within MidCentral District and to ensure timely implementation of any new initiatives arising from this national review.

## **Palliative Care**

For those whose needs are palliative, effective treatment and care means care tailored to meet those needs.

Palliative care is the active total care of patients whose disease is not responsive to curative treatment. Palliative care embraces the physical, social, emotional and spiritual elements of wellbeing - tinana, whanau, hinengaro and wairua - and embraces a person's quality of life while they are dying<sup>63</sup>.

The goal of palliative care is the achievement of the best possible quality of life for patients and their families. Palliative care:

- Affirms life and regards dying as a normal process
- Neither hastens nor postpones death
- Provides relief from pain and other distressing symptoms
- Integrates the psychological and spiritual aspects of patient care
- Offers a support system to help patients live as actively as possible until death
- Offers a support system to help the family cope during the patient's illness and in their own bereavement<sup>64</sup>.

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<sup>63</sup> Ministry of Health (2001) *New Zealand Palliative Care Strategy* pg vii

<sup>64</sup> World Health Organization (1990)

*SUPPORT AND SELF MANAGEMENT - DIABETES PROGRAMME  
AND MEMBERSHIP CARD*

Initiative 18

Develop a diabetes programme and membership card to provide support and encourage people to actively manage diabetes through a range of services directly available to them. This will be established as a collaborative effort with consumer input and support from appropriate health and other community providers who wish to take part. The diabetes programme and card will provide:

- Facilitation of peer support programmes
- Access to swimming pools and gyms at a reduced cost
- Access to footwear at a reduced cost and free podiatry services from a number of providers
- Access to refresher courses and supermarket tours
- Smoking cessation support
- A card-based voucher system for people who have completed a plan with their doctor or nurse for each year (ie, enrolled in Get Checked)
- An 0800 free call support line to provide peer support and information about the range of services available locally for people with diabetes (non-inclusive of clinical advice).

*SUPPORT AND SELF MANAGEMENT – EDUCATION*

Initiative 19

Provide a comprehensive range of education resources for people with diabetes which:

- Offers newly diagnosed people with diabetes lifestyle/self management education
- Provides refresher courses focusing on diet, self management and lifestyle change
- Offers an “expert patient” programme to encourage better self management
- Offers intensive courses for people with specific needs such as high HBA1c levels and newly diagnosed persons with incipient nephropathy.

Initiative 20

Ensure all courses are of a consistent quality standard with consistent messages.

Initiative 21

Ensure education programmes are offered through a range of providers and include access to specialist nutrition advice, with options targeting at risk groups.

*SUPPORT AND SELF MANAGEMENT - RESOURCES FOR PERSONAL MANAGEMENT*

Initiative 22

Provide exercise resources for people with diabetes including:

- Enhancement of the Green Prescription programme.
- Local physical exercise programmes through Primary Health Organisations.

Initiative 23

Subsidise lancet/needle disposal containers available from pharmacies and other outlets.

Initiative 24

Every person with diabetes will have a plan of care (health and wellness plan) which they will retain. The format of the plan is to be standard across MidCentral District.

Initiative 25

Make insulin pens available through primary health settings (where health professionals are able to provide instruction on use).

Initiative 26

Make blood monitoring machines available locally through primary health settings.

Initiative 27

Explore the feasibility of trialling a home based care service to assist people with diabetes to manage in their own homes during times when they are unwell.

*TREATMENT AND CARE - GENERAL*

Initiative 28

Provide specialist resource teams to work with people with high needs across the continuum of care, integrating ease of access through primary health care settings wherever possible. This includes:

- nurse practitioners
- clinical psychologists
- social workers
- specialist diabetes nurses
- dietitians.

Initiative 29

Promote existing treatment guidelines at general practice level.

Initiative 30

Provide community resources, especially clinical coordination for complex cases through a range of agencies including Maori health providers.

*TREATMENT AND CARE – FOOT CARE*

Initiative 31

Develop a foot care programme which coordinates education, specialist health professionals and other resources needed to provide a comprehensive service with a range of choices.

Initiative 32

Improve podiatry through increased service levels. Services are to be available from a range of providers and delivered across MidCentral District for ease of access. Such podiatry providers will work under a quality framework and be monitored by a clinical podiatry specialist in diabetes.

Initiative 33

Establish a multidisciplinary specialist foot care team such as a combined clinic with Nurse Practitioner Wound Care, Podiatrist and Nurse Practitioner Diabetes in attendance to allow intensive treatment and rapid access.

*TREATMENT AND CARE – COORDINATION*

Initiative 34

All primary and secondary resources need to be coordinated across the continuum of care. To ensure clarity, direction and a better working environment, there will be:

- Shared policy, procedure and guidelines based on evidenced best practice
- Improved communication and collaboration across the healthcare continuum through freely accessible data
- Strengthened clinical alliances to improve early referral to appropriate services.

*TREATMENT AND CARE – EYES*

Initiative 35

Improve access to eye screening through the use of locally delivered services in Tararua and Horowhenua districts.

## *TREATMENT AND CARE – RENAL*

### Initiative 36

Reduce the increase in renal failure and dialysis by increasing the uptake of medicines (including ACE inhibitors and other options) in accordance with recommended guidelines. MidCentral will negotiate with primary health organisations to effect this.

## *TREATMENT AND CARE – FOR MAORI AND PACIFIC PEOPLES*

### Initiative 37

Offer marae/community based programmes to improve physical activity and weight management. Programmes will also include smoking cessation education. Offer Maori clients the opportunity of involving Maori providers and Disease State Management nurses in their care.

### Initiative 38

Establish the diabetes programme and membership card with the participation of Maori and Pacific peoples in the setting up and running of activities sensitive to the needs of Maori and Pacific peoples.

### Initiative 39

Reducing the development of renal failure and dialysis is a priority for Maori and Pacific peoples, and this is likely to require improved access to specialists using agreed referral guidelines.

### Initiative 40

Improve access to a range of coordinated primary and secondary health services. Continue to provide Maori clients with the opportunity to access health care through Maori health providers.

## *TREATMENT AND CARE – FOR CHILDREN AND YOUNG PEOPLE*

### Initiative 41

Appoint a youth coordinator to promote healthy family/whanau relationships by participating with families in a range of social activities (eg camps) and family counselling.

### Initiative 42

Provide access to psychological support for individuals, family/whanau and groups.

### Initiative 43

Appoint a diabetes nurse specialist dedicated to children and young people with diabetes to bring MidCentral in line with other diabetes services around New Zealand.

Initiative 44

Provide funding for up to 10 children and young people to trial pump therapy by December 2005. If successful, extend this to 20 children and young people by December 2006.

Initiative 45

Ensure adequate resources are specifically targeted to the clinical management and psycho-social care provided for both children and young people.

*TREATMENT AND CARE – PALLIATIVE CARE*

Initiative 46

Support the use of the “Liverpool Care of the Dying Pathway” for patients with end-stage cardiovascular disease.

## RESPONSIVE WORKFORCE

OBJECTIVE FOUR: IMPROVE DIABETES SERVICES THROUGH A RESPONSIVE WORKFORCE

### *WORKFORCE*

Initiative 47

Ensure training frameworks are culturally based.

Initiative 48

Promote upskilling of diabetes management for all health professionals involved in the continuum of care.

## PLANNING, INNOVATION AND QUALITY MONITORING

OBJECTIVE FIVE: IMPROVE THE QUALITY AND INTEGRATION OF DIABETES SERVICES THROUGH PLANNING, INNOVATION AND QUALITY MONITORING

### *GENERAL*

#### Initiative 49

Build on existing structures to establish a Collaborative Diabetes Health Improvement Group focused on diabetes that will provide oversight, coordination and monitoring for diabetes services across MidCentral District. The group will:

- Ensure associated performance indicators are developed and monitored
- Commission an annual survey of people with diabetes to provide feedback on service delivery as an input into service planning
- Recommend appropriate research projects
- Foster innovation to meet targets for health improvement
- Include cross sector representation (including consumers and Maori)
- Advise MidCentral on diabetes and the management of diabetes across the District
- Develop best practice guidelines and promulgate through MidCentral District
- Establish a quality framework for other components of care, for example, education.

#### Initiative 50

Consolidate and strengthen local diabetes management groups under primary health organisations for the effective coordination of services at the local level.

#### Initiative 51

Develop a broader health promotion strategy for MidCentral District to coordinate and focus actions across health areas and ensure the best use of the resources available.

### *INNOVATION*

#### Initiative 52

Provide funding for pilot projects and other innovations in areas such as systematic screening.

Initiative 53

Introduce innovative ways of handling information. For example, web-based applications for sharing programmes such as Get Checked, clinical protocols, guidelines, coordination and monitoring.

Initiative 54

Monitor and evaluate the efficacy of new initiatives introduced through the service plan.

*FOR MAORI AND PACIFIC PEOPLES*

Initiative 55

Involve local iwi and other agencies in the Collaborative Diabetes Health Improvement Group to ensure health promotion and coordination of services and initiatives are appropriate for the MidCentral District.

Initiative 56

Continue to work with local iwi/Maori providers and Maori and Pacific communities in planning, purchasing, delivering and monitoring culturally appropriate services for Maori and Pacific peoples who have diabetes and their family/whanau.

## **INVESTMENT APPROACH**

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To support the plan over the next three years, the Funding Division has developed a high level framework that is based upon the continuum of care model. The Division is currently working on the detailed costings.

The framework is represented in table 11 below.

**Table 11: Diabetes Service Plan investment approach**

<b>Continuum of Care</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Prevention and health promotion	195 000	390 000	390 000
Screening and early diagnosis	150 000	300 000	300 000
Support, treatment and palliative care	1 210 000	2 420 000	2 420 000
Responsive workforce	40 000	80 000	80 000
Planning, innovation and quality monitoring	145 000	290 000	290 000
<b>TOTAL</b>	<b>1 740 000</b>	<b>3 480 000</b>	<b>3 480 000</b>

## **GLOSSARY OF TERMS AND ABBREVIATIONS<sup>65</sup>**

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**ACE Inhibitor:** An oral medicine that lowers blood pressure; ACE stands for angiotensin converting enzyme. For people with diabetes, especially those who have protein (albumin) in the urine, it also helps slow down kidney damage.

**Blood glucose:** The main sugar that the body makes, mostly from carbohydrates, as well as from the other two elements of food – proteins and fats. Glucose is the major source of energy for living cells and is carried to each cell through the bloodstream.

**BMI:** Body mass index. It is a measure of body weight that also takes account of a person's height. Expressed as weight (in kg) divided by the square of height (in metres). Desirable: 20–25, overweight >25, obese >30.

**Cardiovascular disease (CVD):** Any abnormal condition of the heart or blood vessels. Cardiovascular disease includes coronary heart disease, stroke, congestive heart failure, peripheral vascular disease, congenital heart disease, endocarditis, and many other conditions.

**Cholesterol:** A waxy, fat-like substance used by the body to build cell walls. It is either produced in the liver or absorbed from the animal fats we eat. Cholesterol is carried in the bloodstream by particles called lipoproteins. Although there are several kinds, the ones to be most concerned about are low-density lipoprotein (LDL) and high-density lipoprotein (HDL). A high level of cholesterol in the blood - hypercholesterolemia - is a major risk factor for coronary heart disease, which leads to a heart attack.

**Chronic:** Continuing over a certain period of time; long-term.

**Comorbidity:** The presence of multiple disorders in one individual. These simultaneous conditions may be independent of each other, or they may be correlated. Comorbidities often influence the risk of complications for surgery as well as overall prognosis.

**Continuum of care:** A comprehensive system of care that includes each of the following elements: disease prevention, health promotion, screening, early intervention, self management, acute care, rehabilitation, and (if necessary) palliative care services. By providing continuity of care, the continuum focuses on prevention and early intervention for those who have been identified as high risk and provides easy transition from service to service as needs change.

**DHB:** District Health Board.

**Diabetes:** See Diabetes mellitus.

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<sup>65</sup> Unless otherwise indicated, all definitions sourced from: Ministry of Health (2003) [Diabetes Toolkit](#) pg 33-35

**Diabetes mellitus:** A disease involving a disturbance of metabolism, the underlying cause of which being the defective production or action of the hormone insulin. There are several manifestations of the disease, the most common being Type 1 and Type 2 (see below).

**Diagnosis:** The process of identifying the nature of a disorder.

**Dietitian:** An expert in nutrition who helps people with special health needs plan the kinds and amounts of foods to eat.

**Early Intervention:** A process used to recognise warning signs for health problems and to take early action against factors that put individuals at risk. Early intervention can help people get better in less time and can prevent problems from becoming worse.

**Focussed Health Nurses<sup>66</sup>:** Focussed Health Nurses demonstrate specialist knowledge and skills in the provision of clinical assessment, therapeutic interventions, evidence-based treatment regimens and referral to other health professionals to assist individuals who have a specific chronic disease process which has life-altering implications to achieve optimal health.

Focussed Health Nurses provide health services across the lifespan, working with individuals and their families in a variety of community and institutional settings. They utilise specialist nursing knowledge, assessment skills, and judgement in the planning and provision of competent care, management, advice, advocacy and treatment.

Focussed Health Nurses' practice has an holistic educative focus and may be preventative, curative, rehabilitative, or palliative, depending on the needs of the client and family and the setting in which care is given. Care is provided in the context of facilitating self-care practices to foster self-determination and autonomy for the individual and their family/whanau.

**Glucose:** A sugar in our blood and a source of energy for our bodies.

**Health promotion:** A combination of educational, organisational, economic and political actions designed with consumer participation, to enable individuals groups and whole communities to increase control over and to improve their health through attitudinal, behavioural social and environmental changes. While health promotion recognises that personal lifestyle factors have an important impact on the health of the individual, it places emphasis on changing the environment to enable optimum conditions for health and for behaviour change.

**HbA1c:** A blood test used to measure glycosylated haemoglobin levels which indicate glycaemic control.

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<sup>66</sup> Written by Helen Snell (Nurse Practitioner, MidCentral Health) as part of her Nurse Practitioner portfolio

**High density lipoprotein (HDL):** Cholesterol is carried in the bloodstream by lipoproteins. HDL recovers cholesterol from cells, vessel walls and other lipoproteins and thus tends to prevent or reverse the build-up of plaque in the arteries - that is why HDL cholesterol is considered 'good' or 'protective'.

**Insulin:** A hormone that helps the body use glucose (sugar) for energy. The beta cells in the pancreas make the insulin. When the body cannot make enough insulin on its own, a person with diabetes can inject insulin made from other sources.

**Intersectoral:** Between sectors.

**Lipid:** A term for some forms of fat.

**Lipoprotein:** A particle composed of protein and lipids that transports the lipids in the bloodstream and lymph system. Lipoproteins are of varying size and density and contain different amounts of lipids and proteins.

**Low density lipids (LDL):** Carry most of the cholesterol from the liver to the cells. If there is an excess of cholesterol or it cannot be properly delivered to the cells, LDL cholesterol tends to accumulate in the vessel walls. Together with other substances it can form plaque, a thick, hard deposit that can clog those arteries. This condition is known as atherosclerosis. For this reason LDL cholesterol is often called 'bad' cholesterol. Lower levels of LDL cholesterol reflect a lower risk of heart disease.

**Liverpool Care Pathway for the Dying Patient (2004):** Is an internationally recognised, interdisciplinary document which provides an evidence-based framework for end of life care. The framework has been developed to transfer the hospice model of care into other care settings. The Care Pathway philosophy reflects the endeavours of clinicians to bring together research, evidence, professional judgement and common sense to provide the very best care for their patients<sup>67</sup>.

**Macrovascular complications:** Diabetes complications from large blood vessel disease. Includes coronary heart disease, stroke, peripheral vascular disease, hypertension.

**Maori:** Indigenous people of New Zealand.

**Microvascular complications:** Diabetes complications from small blood vessel disease; includes retinopathy (damage to eye), nephropathy (damage to kidneys), neuropathy (damage to nerves).

**Morbidity:** Illness.

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<sup>67</sup> Thurston & Ranford (February 2005) *Care of the Dying a Pathway to Excellence Connect - The Newsletter of Counties Manukau District Health Board* page 5

**Mortality:** Death.

**Neuropathy:** Disease of the nervous system. Many people who have had diabetes for a while have nerve damage. The most common form is peripheral neuropathy, which mainly affects the feet and legs. Nerve damage in the feet and legs causes diabetic gangrene.

**Obesity:** When people have 20% (or more) extra body fat for their age, height, sex and bone structure, fat works against the action of insulin. BMI > 30 (see BMI).

**Objective:** The end result a programme seeks to achieve.

**Ophthalmologist:** A doctor who sees and treats people with eye problems or diseases.

**Ottawa Charter:** The Ottawa Charter was presented at the first International Conference on Health Promotion (Ottawa 21 November 1986) to achieve Health for All by the year 2000 and beyond. It outlined the ultimate ideal and vision of how the goal of health should be obtained through actions at various levels: global, national, community and individual.

**Overweight:** Body weight that is above the recommended level, due to increased body fat. BMI= 25.0 – 29.9.

**Pacific peoples:** The population of Pacific Island ethnic origin (eg, Tongan, Niuean, Fijian, Samoan, Cook Islands Maori and Tokelauan), incorporating people born in New Zealand as well as overseas.

**Palliative care:** The active total care of patients whose disease is not responsive to curative treatment. Palliative care seeks to improve patients' quality of life by relieving physical, emotional, and spiritual pain for patients and their caregivers.

**Pancreas:** An organ in the body that makes insulin so that the body can use glucose for energy. The pancreas also makes enzymes that help the body digest food.

**Podiatrist:** A health professional who treats and takes care of people's feet.

**Prevalence:** The number of instances of a given disease or other condition in a population at a designated time. Prevalence includes both new (incidence) and existing instances of a disease.

**Prevention:** Eliminating or minimising exposure to the cause of disease, and maximising protective factors such as healthy lifestyle choices.

**Primary Health Care Nursing Professional Development Framework:** A framework that strengthens the Primary Health Care nursing network to enable nurses to improve community health and wellness. The objectives are to enable clinical nursing leadership in the Primary Health Care nursing network; influence

MidCentral's strategic direction and primary health care nursing workforce development; build capacity of primary health care nursing; foster an evidence based approach to practice; and utilise information technology to strengthen nursing networks<sup>68</sup>.

**Protective factors:** Factors that make it less likely that individuals will develop a problem or disorder. Protective factors may encompass biological, psychological or social factors in the individual, family and environment.

**Retinopathy:** A disease of the small blood vessels in the retina of the eye.

**Risk factor:** An aspect of personal behaviour or lifestyle, an environmental exposure, or an inborn or intended characteristic that is associated with an increased risk of a person developing a disease.

**Standardised discharge rate:** Is the ratio of observed to expected discharge rates, multiplied by the overall national rate for all cases.

**Support group:** A group of people who share a similar problem or concern. The people in the group help one another by sharing experiences, knowledge, and information.

**Symptom:** Any indication of disease noticed or felt by a patient; in contrast, a sign of an illness is an objective observation.

**Target:** An intermediate result towards the objective that a programme seeks to achieve.

**Treaty of Waitangi:** The founding document of New Zealand.

**Type 1 diabetes:** Otherwise known as insulin-dependent diabetes mellitus (IDDM), Type 1 diabetes is found most often in childhood, with secondary peaks in early and late adulthood. It is characterised by rapid onset of clinical symptoms and requires prompt medical treatment and regular use of insulin for survival. It is also termed juvenile-onset diabetes.

**Type 2 diabetes:** Otherwise known as non-insulin-dependent diabetes mellitus (NIDDM), Type 2 diabetes is found primarily in adults and which accounts for most cases of diabetes. It is characterised by a gradual onset of symptoms. It is also termed mature-onset or adult diabetes.

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<sup>68</sup> Primary Health Care (PHC) Nursing Development Team  
[http://www.moh.govt.nz/moh.nsf/o/9C4E3EDFC50542F2CC256EF5000909FD/\\$File/WharikiNursingPHOWrkshp.pdf](http://www.moh.govt.nz/moh.nsf/o/9C4E3EDFC50542F2CC256EF5000909FD/$File/WharikiNursingPHOWrkshp.pdf)

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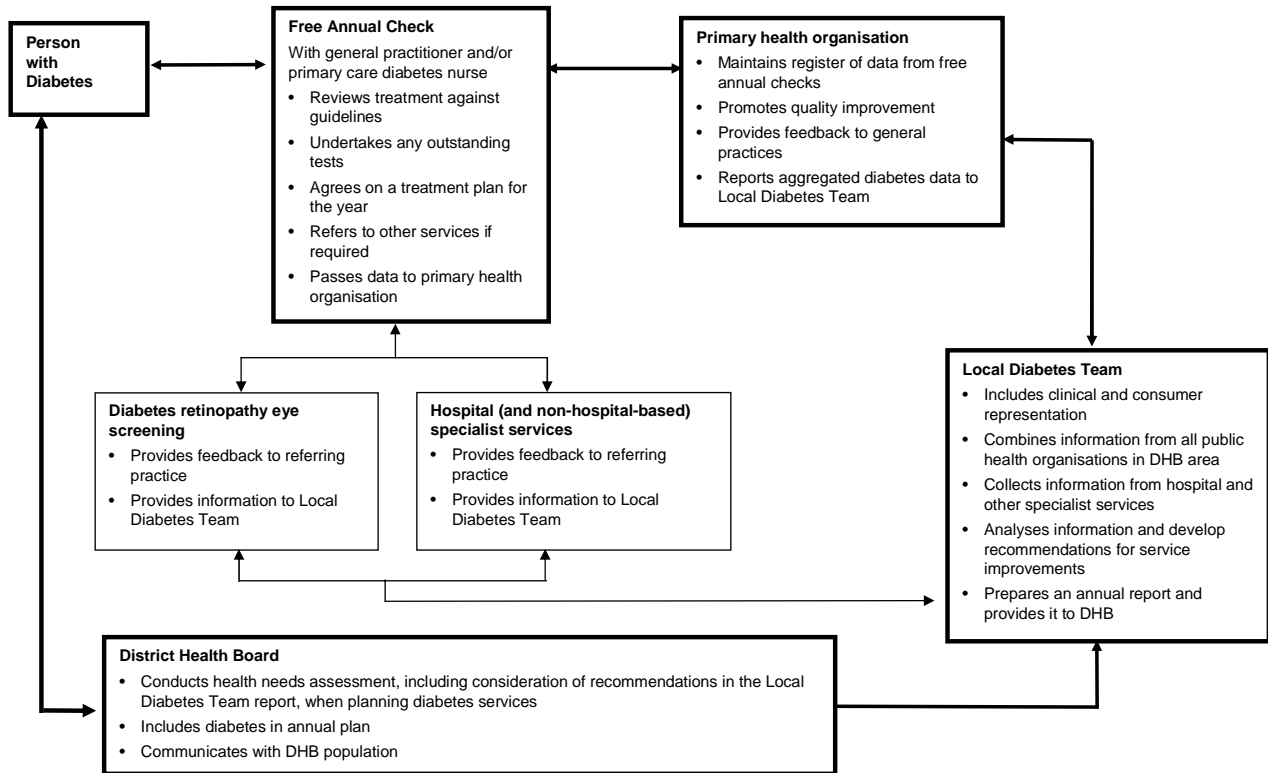
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# Appendix 1 - The National Framework for Diabetes



Source: Ministry of Health (2003) Diabetes Toolkit pg 18

## Appendix 2 - MidCentral District Providers

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### General Practice

General practitioners (GPs) are generally the first point of contact for medical treatment. General practice teams have primary responsibility for the care of the people in their community.

There are approximately 110 GPs in MidCentral District. The GP to patient ratio in rural MidCentral District is very low highlighting the difficulty in attracting qualified health professionals to work in rural areas.

There are three independent practice associations (IPAs) in MidCentral District – The Doctors IPA (The Doctors), the Manawatu IPA (MIPA) and Tararua IPA (TIPA).

### Nursing Workforce

The nursing workforce in MidCentral District totals approximately 1 955 (this includes nurses working in both primary and secondary health care) of which approximately 157 (8%) are Maori. The ratio of nurses per 10 000 population is 122, compared to the national ratio of 106.

### Pharmacy

The practice of pharmacy includes the custody, preparation and dispensing of medicines and pharmaceutical products, the provision of advice on health and wellbeing, including health screening, and the selection and provision of non-prescription medicine therapies and therapeutic aids. The pharmacist acts as a medicines manager, ensuring safe, quality use of medicines and optimising health outcomes by contributing to the selection, prescribing, monitoring and evaluation of medicine therapy. The pharmacist researches information and provides evidence-based advice and recommendations on medicines and medicine-related health problems to patients, their carers and other healthcare professionals. The pharmacist is an integral part of the healthcare team<sup>69</sup>.

### MidCentral Health - Secondary Care

MidCentral Health offers adult and paediatric diabetes outpatient services, as well as podiatry, ophthalmology (eye screening) and renal clinics. MidCentral Health also has a wide range of other secondary services including emergency department, general medical and surgical services.

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<sup>69</sup>The Pharmacy Council of New Zealand

#### MidCentral Health - Diabetes Lifestyle Centre

The Diabetes Lifestyle Centre offers a specialist service providing episodic clinical management, crisis intervention and education both to those with diabetes and to clinicians in primary care and the hospital. Access is through referral from a specialist or GP. Staff at the centre include a diabetes nurse practitioner, diabetes nurse clinicians and a part time diabetes specialist dietitian.

#### MidCentral Health - Public Health Service

The Public Health Service has health promotion staff who cover a variety of areas (eg, nutrition, tobacco).

Public Health Nurses are based in facilities in Palmerston North, Dannevirke, Feilding, Levin, Otaki, Pahiatua, and Pongaroa. The Public Health Service promotes health by:

- ◇ Supporting community action, healthy environments, healthy public policy and the development of individuals' skills to enable people to make personal choices about their health and wellbeing
- ◇ Monitoring and enforcing legislation to promote and protect healthy environments
- ◇ Working with communities, individuals, local government, schools and other agencies to provide health advice and information
- ◇ Working to strengthen partnerships with Maori and to provide culturally appropriate services.

#### MidCentral Health - District Nursing Service

Since March 2000, 450 patients have received specialist level medical care in the privacy and comfort of their own homes with MidCentral's *Hospital in the Home* programme. The patients remain under the supervision of a specialist and can be fast tracked back into hospital if necessary. Care is episodic.

MidCentral Health district nursing service also provides episodic community care for patients and their families/whanua in collaboration with GPs and the Diabetes Lifestyle Centre. This specialist community nursing care includes clinical management, health surveillance and education, particularly for patients newly diagnosed with diabetes.

#### MidCentral Health - Wound Care Service

A significant number of patients with diabetes currently receive support, education, clinical management, and health surveillance from the Clinical Nurse Specialist Wound Care. The wound care service currently runs outpatient clinics in Horowhenua, Dannevirke and Palmerston North.

### Maori Health Providers

There are five contracted Maori health providers in MidCentral District offering a range of services including Maori Mobile Disease State Management Nursing. They are:

- ◇ Te Runanga O Raukawa - on the west coast from Otaki to Bulls
- ◇ Whakapai Hauora - Palmerston North
- ◇ Te Wakahuia - Palmerston North
- ◇ He Puna Hauora - Palmerston North
- ◇ Rangitane O Tamaki Nui A Rua - Dannevirke.

### Diabetes Societies

There are three diabetes societies in MidCentral District, all of which are affiliated to Diabetes New Zealand. They provide information and support to their communities.

Both Diabetes Horowhenua and Dannevirke are active within their regions, but with only up to 50 members each is unable to organise any major promotions.

Diabetes Manawatu is much bigger and employs a part time Field Officer. This society provides extensive education and advice to people newly diagnosed with diabetes. Diabetes Manawatu has a strong youth section that organises various activities such as camps and provides support services for children and parents. Diabetes Youth Manawatu has responsibility for youth throughout MidCentral District.

### Youth One Stop Shop

The Youth One Stop Shop offers youth one place where they can go for support and advice from a wide range of health and support services.

### Other Services and Providers

Other services available to the people of MidCentral District include Medlab (laboratory testing), health camps for children, and sports organisations.

## Appendix 3 - Key Stakeholders Who Have Provided Comment

This plan has been developed with the advice and knowledge of a large number of individuals, groups and organisations throughout MidCentral District. The table below acknowledges those who have participated.

Person	Position
Adrian Coombe	Volunteer Community Worker - Diabetes Youth
Alison Fellerhof	The Doctors - Practice Nurse
Alistair Watson	MCH - Clinical Director, Internal Medicine
Andrew Orange	MIPA - Clinical Services Manager
Aroha Ellwood	Te Runanga O Raukawa GM - Operations
Carol Haami	Whakapai Hauora - Whanau ora Nurse
Caryll Clausen	Chair - Manawatu/Horowhenua/Tararua Diabetes Trust
Charlotte Paddison	PhD Student
Chiquita Hansen	MDHB - Director Primary Health Care Nursing
Christine Andrews	Ministry of Health - Clinical Advisor
Clare Oliver	Community pharmacy
Craig Johnston	MDHB - Senior Portfolio Manager, Funding Division
Gill George	Te Wakahuia - Disease State Nurse
Heather Mordaunt	MCH - Health Promotion Nutrition/Physical Activity
Helen Snell	MCH - Nurse Practitioner, Diabetes
Ike Miritana	Manawhenua Hauora - Representative
Jane Ayling	MIPA - Practice Development Co-ordinator
Kathy Scott	Diabetes Society - Chair
Keith Aitkin	MCH - Podiatrist
Ken Morton	Manawatu/Horowhenua/Tararua Diabetes Trust - Manager
Leigh Hikawai	MDHB - Director Primary Health Care Nursing Maori
Lindsey Bates	MCH - Group Manager, Acute Medical Services
Lois Nikolajenko	MCH - Specialist Nursing
Mary Yiannoutsos	MCH - Specialist Diabetes Nursing
Mitch Jennings	Te Runanga O Raukawa - Disease State Management nurse
Oriana Paewai	MCH - Maori Health Advisor, Maori Health Unit
Paul Dixon	MCH – Physician, Endocrinology
Pauline Giles	MCH - Diabetes Lifestyle Centre, Specialist Diabetes Nursing
Rosemairi Knowles	MCH - Dietitian
Sandy Dawson	Ministry of Health - Chief Clinical Advisor
Sharon Searle	MCH - Te Kete Hauora
Sharon Vera	MCH - Health Promotion Development Advisor
Shirley-Anne Gardiner	MDHB - Health Planner, Funding Division
Tui Hancock	Te Runanga O Raukawa - DSM nurse
Virginia Jonesl	Whakapai Hauora
Virginia Signal	Cancer Society – Health Promoter
Warwick Davenport	Horowhenua Primary Health Organisation Representative

MCH: MidCentral Health    MDHB: MidCentral District Health Board    MIPA: Manawatu Independent Practice Association

## **Appendix 4 - Selected Ministry of Health Performance Indicators**

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This section summarises the diabetes indicators.

### **Case Detection - Indicator 1: Diabetes detection and follow up**

The indicator measures the effectiveness of the health care system in identifying the population with diabetes and monitoring the profile of risk factors for diabetic complications.

**NUMERATOR:** (DATA SOURCE: DHB)

The number of unique individuals with Type 1 or Type 2 diabetes on a diabetes register with a free annual check during the reporting period (calendar year)

**DENOMINATOR:** (DATA SOURCE: MINISTRY OF HEALTH)

The expected number of unique individuals to have Type 1 or Type 2 diabetes, as at the end of the reporting period.

### **Case Management - Indicator 2: Diabetes management**

This indicator provides an estimate of the present and future impact of diabetes. HBA1c remains the most commonly used predictor of microvascular complications and diabetes control. It is one indicator of the effectiveness of the overall health care system in reducing the population attributable risk for diabetes complications.

**NUMERATOR:** (DATA SOURCE: DHB)

The number of people with Type 1 or Type 2 diabetes on a diabetes register that have had a HBA1c blood test in the previous 12 months with an HBA1c equal or less than 8%, as at the end of the reporting period.

**DENOMINATOR:** (DATA SOURCE: DHB)

The number of people with Type 1 or Type 2 diabetes on a diabetes register that have had a HBA1c blood test in the previous 12 months, as at the end of the reporting period.

### **Eye Screening - Indicator 3: Retinal screening of people with diabetes in last two years**

Blindness from diabetic retinopathy is substantially preventable with effective screening and appropriate use of laser treatment. Retinopathy prevention is clearly established as cost-saving. This measure of screening uptake is responsive to short-term changes in the performance of the health care system. Reducing barriers to screening for those at highest risk, for example Maori and Pacific peoples, is a priority.

**NUMERATOR:** (DATA SOURCE: DHB)

The number of people with Type 1 or Type 2 diabetes on a diabetes register that have had retinal screening or an ophthalmologist examination in the last two years, as at the end of the reporting period.

**DENOMINATOR:** (DATA SOURCE: DHB)

The number of people with Type 1 or Type 2 diabetes on a diabetes register, as at the end of the reporting period.