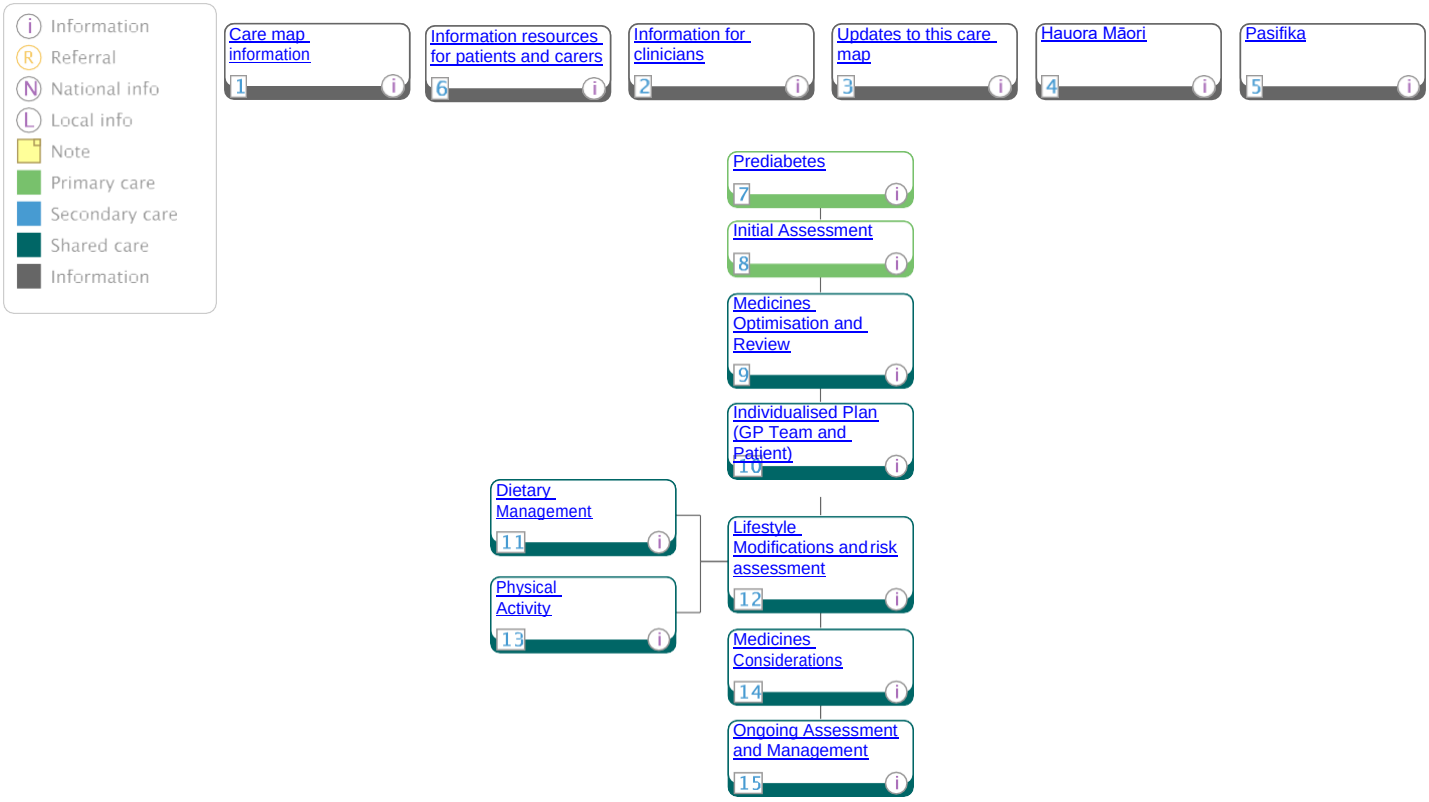
Diabetes – Prediabetes Management

Medicine > Endocrinology > Diabetes



1. Care map information

People with pre-diabetes are at increased risk of developing Type 2 diabetes and cardiovascular disease.

Scope

Management of adults with prediabetes

Definition

Pre-diabetes (intermediate hyperglycaemia) is a biochemical state in which a person has glucose levels above the normal range, but does not yet meet the criteria for diagnosis of diabetes (HbA1c 41-49 mmol/mol0 .

Pre-diabetes can often lead to diabetes although changing the amount and type of food eaten and increasing physical activity may prevent the development of diabetes

The term diabetes mellitis describes a metabolic disorder of multiple aetiology characterised by chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both. The effects of diabetes mellitis include long-term damage, dysfunction and failure of various organs

Abbreviations:

ACE Inhibitor - Angiotensin Converting Enzyme Inhibitor
ARB - Angiotensin Receptor Blocker
ARC - Aged Residential Care
BMI - Body Mass Index
CHO - Carbohydrate
DKA - Diabetic ketoacidosis
eGFR - Estimated Glomerular Filtration Rate
GI - Glycaemic index
HbA1c - Glycated haemoglobin
HHNS - Diabetic hyperosmolar hyperglycaemic non-ketotic syndrome
MODY - Maturity onset diabetes in youth
NDNKSF - National Diabetes Nursing Knowledge and Skills Framework
OGTT - Oral glucose tolerance test.

References:

See Provenance Certificate for full list of references.

2. Information for clinicians

NZ Primary Care Handbook 2012
Diabetes NZ - About Diabetes and Living with Diabetes brochure
Diabetes NZ - Staying Well with type 2 diabetes booklet
Health Navigator- Diabetes Heart Foundation (website)
Healthy Eating
Diabetes NZ - Diabetes and healthy food choices
NZ Heart Foundation: A guide to heart healthy eating
Ministry of Health: Food and physical activity

Physical Activity

My Health myself – Self-Management Course:

- Info about the course including registration criteria
- Referral Form

PETALs -Horowhenua:

- PETALs brochure
- PETALs referral

MHT Diabetes Trust Prediabetes and Diabetes structured education programmes

THINK Hauora referral criteria
THINK Hauora Clinical Dietitians
THINK Hauora Physical Activity Educators

THINK Hauora Clinical community Nurse LTC

Green Prescription

3. Updates to this care map

Date of publication: May 2013

Interim update: October 2017.

This care map has been updated in line with consideration to evidenced based guidelines.

For further information on contributors and references please see the care map's Provenance.
NB: This information appears on each page of this care map.

4. Hauora Māori

Māori are a diverse people and whilst there is no single Māori identity, it is vital practitioners offer culturally appropriate care when working with Māori Whānau. It is important for practitioners to have a baseline understanding of the issues surrounding Māori health.

This knowledge can be actualised by (not in any order of priority):

- acknowledging Te Whare Tapa Whā (Māori model of health) when working with Māori Whānau
- asking Māori clients if they would like their Whānau or significant others to be involved in assessment and treatment
- asking Māori clients about any particular cultural beliefs they or their Whānau have that might impact on assessment and treatment of the particular health issue (Cultural issues)
- consider the importance of whānaungatanga (making meaningful connections) with their Māori client / Whānau
- knowledge of Whānau Ora, Te Ara Whānau Ora and referring to Whānau Ora Navigators where appropriate
- having a historical overview of legislation that has impacted on Māori well-being

For further information:

- Hauora Māori
- Central PHO Māori Health website

5. Pasifika

Pacific Cultural Guidelines (Central PHO) 6MB file

Our Pasifika community:

- is a diverse and dynamic population:
  - more than 22 nations represented in New Zealand
  - each with their own unique culture, language, history, and health status
  - share many similarities which we have shared with you here in order to help you work with Pasifika patients more effectively

The main Pacific nations in New Zealand are:

- Samoa, Cook Islands, Fiji, Tonga, Niue, Tokelau and Tuvalu

Acknowledging *The FonoFale Model (pasifika model of health)* when working with Pasifika peoples and families.

Acknowledging general pacific guidelines when working with Pasifika peoples and families:

- Cultural protocols and greetings
- Building relationships with your pasifika patients
- Involving family support, involving religion, during assessments and in the hospital
- Home visits
- Contact information

Pasifika Health Service

The Pasifika Health Service is a service provided free of charge for:

- all Pasifika people living in Manawatu, Horowhenua, Tararua and Otaki who have long term conditions
- all Pasifika mothers and children aged 0-5 years
- an appointment can be made by the patient, doctor or nurse
- the Pasifika Health Service contact details are:
  - Palmerston North Office - 06 354 9107
  - Horowhenua Office - 06 367 6433
- the Pasifika Health Service brochure

Additional resources:

- Ala Mo'ui - Pathways to Pacific Health and Wellbeing 2014-2018
- Primary care for pacific people: a pacific health systems approach

6. Information resources for patients and carers

Diabetes NZ - About Diabetes and Living with Diabetes brochure
Diabetes NZ - Reduce the risk of complications brochure
Diabetes NZ - Staying Well with type 2 diabetes booklet
Health Navigator - Diabetes
Heart Foundation (website)
Healthy Eating
Diabetes NZ - Diabetes and healthy food choices
NZ Heart Foundation: A guide to heart healthy eating
Ministry of Health: Food and physical activity
Physical Activity

My Health myself – Self-Management Course:

- Info about the course including registration criteria
- Referral Form

PETALs - Horowhenua:

- PETALs brochure
- PETALs referral

MHT Diabetes Trust Prediabetes and Diabetes structured education programmes

7. Pre-diabetes

Pre-diabetes (intermediate hyperglycaemia) is a biochemical state in which a person has glucose levels above the normal range, but does not yet meet the criteria for diagnosis of diabetes.

It is an independent risk factor for for type 2 diabetes and cardiovascular disease

The primary aim of management of pre-diabetes is to prevent progression to diabetes.

8. Initial Assessment

Ask about:

Personal and/or family history of:

- diabetes (T1 or T2)
- cardiovascular disease (CVD)
- cerebrovascular disease
- lipid abnormalities
- meal pattern
- weight history
  - normal weight BMI of 18.5-24.9 kg/m2
  - overweight BMI of 25.0-29.9 kg/m2
  - obese BMI of 30 kg/m2 or greater
  - risk factors for coronary artery disease:
- smoking
  - hypertension
  - obesity (particularly central obesity, measure waist circumference
  - dyslipidaemia
- physical activity levels
- current medications (prescribed, over the counter or alternative therapies)
  - particularly medicines that impact on blood glucose e.g. antipsychotics, corticosteroids
- treatment of other conditions, including endocrine, mental health and eating disorders
- psychosocial, cultural or economic factors that may affect management (Refer to Hauora Māori and Pacific nodes)
- use of alcohol or drugs

Gestational history:

- history of gestational diabetes
- delivery of a baby weighing more than 4.08kg (9lbs)
- pre-eclampsia
- stillbirth

Contraception, reproductive and sexual history

9. Medicines Optimisation and Review

Identifying patients with pre-diabetes (intermediate hyperglycaemia) provides a good opportunity to review and optimise current medicines, particularly in those patients with multiple morbidity.

- Consider variation in health literacy levels. Does the patient currently understand and take medicines as prescribed?
- Consider co-morbidities and the impact these may have on lifestyle, hyperglycaemia, and on the ability of the patient to

understand and manage their medicines eg mental illness
- Consider if any current medicines may be contributing to hyperglycaemia eg corticosteroids, antipsychotics

For information relating to completing a 'medicines review' refer to:
Key steps in Optimising medicines

For further information relating to pre-diabetes refer to Best Practice Journal: Initiating interventions in people with intermediate hyperglycaemia ('pre-diabetes')

10 Individualised Plan (GP Team and Patient)

Pre-diabetes should be managed along with associated cardiovascular risk factors eg, tobacco smoking, high blood pressure, high cholesterol.

Lifestyle interventions can delay or reduce progression to type 2 diabetes, and possibly reduce long-term morbidity and mortality.

A range of interventions are effective; the choice will depend on individual/ whānau/family preferences and community resources.

Ongoing support and follow up are required to enable behaviour change.

Initial intervention includes advice on
- lifestyle modifications
- dietary management
- physical activity
- cardiovascular risk management
- medicines considerations

11. Dietary Management

Start a conversation about healthy eating to find out what people already know about the types and amounts of food and drink that can help reduce the risk of type 2 diabetes.

Help people to assess their own food habits and identify healthier choices, based on their individual needs, preferences and circumstances (NICE 2012)

Offer referral to a Clinical Dietitian for an individualized dietary management plan.

Provide supporting information where necessary and encourage people to follow the nine steps for heart healthy eating

Use the healthy plate model to identify dietary goals for change and encourage lower fat cooking methods where possible, such as; grilling, baking, poaching or steaming food instead of frying or roasting in fat/oil.

For more information, access the following health resources:
- Healthy Eating
- Physical Activity
- Ministry of Health: Food and physical activity
- NZ Heart Foundation: A guide to heart healthy eating
- Diabetes New Zealand: Diabetes and Healthy Food Choices

Encourage people with pre-diabetes to eat the right amount of food and keep active to maintain a healthy body weight

Offer support for weight reduction if BMI is above the healthy range (20-25kg/m2) and refer to appropriate service providers e.g:
- THINK Hauora Clinical Dietitians
- MHT Diabetes Trust Prediabetes structured education programmes referral form
- PETALs - Horowhenua:

- PETALs brochure
- PETALs referral

12. Lifestyle modifications and risk assessment

Initial intervention includes advice on:

- dietary management
- physical activity
- smoking cessation
  - Advise smokers to quit and offer support/treatment for this.
  - information relating to therapeutic aids in smoking cessation
- alcohol
- recreational drugs
- Complete cardiovascular risk assessment

The Manawatu, Horowhenua and Tararua (MHT) Diabetes Trust offer a number of classes including; MHT Diabetes Trust service brochure

Referral form

- Prediabetes education
- Healthy food choices and label reading

Referral links:

PETALs - Horowhenua:

- PETALs brochure
- PETALs referral

Te Ohu Auahi Mutunga - Smoking Cessation Services is a collective of Iwi and Māori Health Providers with invited partner Central Primary Health Organisation.

13. Physical Activity

Support people to increase physical activity

- help the individual to identify an activity that fits with their lifestyle and is sustainable – often exercise with others is more enjoyable
- recommend aiming for 30 minutes of moderate intensity exercise, such as brisk walking, on most days. Where possible, this should be increased to 60 minutes per day
- remind people that any increase in activity, however small, is a positive step; even 'snacks' of exercise of three to ten minutes per day may have some benefit.
- encourage people to reduce inactivity. Recommend avoiding sitting for extended periods and encourage taking time to stand, stretch, and walk around
- recommend including some muscle strengthening activities on at least two days per week
- consider:
  - THINK Hauora Physical Activity Educators
  - Green Prescription (GRx)
  - PETALs -Horowhenua
    - PETALs brochure
    - PETALs referral
  - MHT Diabetes Trust Prediabetes structured education programmes-referral form

14. Medicines Considerations

If no improvement in glycaemic control has occurred following approximately six months of lifestyle intervention, metformin may be considered as an adjunct to continued lifestyle interventions, particularly in those patients identified as being at high risk of developing diabetes.

Metformin is an adjunct, not an alternative, and is less effective alone than lifestyle change.

Metformin

Please note: Pre-diabetes is not an approved use for metformin, however it is fully subsidised for this indication.

- Prior to commencing metformin check renal function: It is recommended that reduced doses are used in renal impairment
- Commence at a low dose (500mg daily with food). Increase dose gradually over several weeks as tolerated and if required, to a maximum dose of 2g daily (depending on renal function).
- For more information relating to metformin dosing refer to:
  - Metformin - Link to NZ formulary
  - Metformin-SaferX

Optimise medicines in relation to cardiovascular risk:

- For information relating to cardiovascular disease management refer to:
  - New Zealand Formulary
  - NZ Primary Care Handbook
- Diabetes is an independent risk factor for cardiovascular disease so maintenance of cholesterol etc is important.
- NZ Primary Care Handbook (2012) on lipid modification
- information relating to management of lipids
- consider stopping statins in people over the age of 80 years.
- target LDL values are < 2.0mmols/l in those with diabetes.

Consider referral to cardiologist or Diabetes and Endocrinology Service if not meeting targets

- information relating to the management of hypertension
- information relating to therapeutic aids in smoking cessation

15. Ongoing Assessment and Management

These people are at risk of developing Type 2 diabetes and associated complications and require ongoing monitoring:

- follow up must reflect the individual's goals and plans, and be agreed with them in the context of whānau/family
- initial HbA1c should be repeated after three months of lifestyle change and thereafter at six to twelve month intervals
- self-monitored blood glucose measurement and retinal screening are not required or recommended for those with pre-diabetes.

Need to be advised that if develop symptoms of Type 2 diabetes they need to see provider earlier than 6-12 months.

Diabetes

Provenance Certificate

Overview | Editorial methodology | References | Contributors | Disclaimers

Overview

This document describes the provenance of MidCentral District Health Board's **Diabetes** pathway. This pathway is regularly updated to include new, quality-assessed evidence, and practice-based knowledge from expert clinicians. Please see the Editorial Methodology section of this document for further information.

This localised pathway was last updated in **October 2017**.

For information on changes in the last update, see the information point entitled 'Updates to this care map' on each page of the pathway.

One feature of the "Better, Sooner, More Convenient" (BSMC) Business Case, accepted by the Ministry of Health in 2010, was the development of 33 collaborative clinical pathways (CCP).

The purpose of implementing the CCP Programme in our DHB is to:

- Help meet the Better Sooner More Convenient Business Case aspirational targets, particularly the following:
    - Reduce presentations to the Emergency Department (ED) by 30%
    - Reduce avoidable hospital admissions to Medical Wards and Assessment Treatment and Rehabilitation for over-65-year-olds by 20%
    - Reduce poly-pharmacy in the over-65-year-olds by 10%
- Implement a tool to assist in planning and development of health services across the district, using evidence-based clinical pathways.
- Provide front line clinicians and other key stakeholders with a rapidly accessible check of best practice;
- Enhance partnership processes between primary and secondary health care services across the DHB.

To cite this pathway, use the following format:

Map of Medicine. Medicine. MidCentral District View. Palmerston North: Map of Medicine; 2014 (Issue 1).

Editorial methodology

This care map was based on high-quality information and known Best Practice guidelines from New Zealand and around the world including Map of medicine editorial methodology. It has been checked by individuals with front-line clinical experience (see Contributors section of this document).

Map of Medicine pathways are constantly updated in response to new evidence. Continuous evidence searching means that pathways can be updated rapidly in response to any change in the information landscape. Indexed and grey literature is monitored for new evidence, and feedback is collected from users year-round. The information is triaged so that important changes to the information landscape are incorporated into the pathways through the quarterly publication cycle.

References

This care map has been developed according to the Map of Medicine editorial methodology. The content of this care map is based on high-quality guidelines and practice-based knowledge provided by contributors with front-line clinical experience. This localised version of the evidence-based, practice- informed care map has been peer-reviewed by stakeholder groups and the CCP Programme Clinical Lead.

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Contributors

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Disclaimers

Clinical Board Central PHO, MidCentral DHB

It is not the function of the Clinical Board Central PHO, MidCentral DHB to substitute for the role of the clinician, but to support the clinician in enabling access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care. Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness and completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.