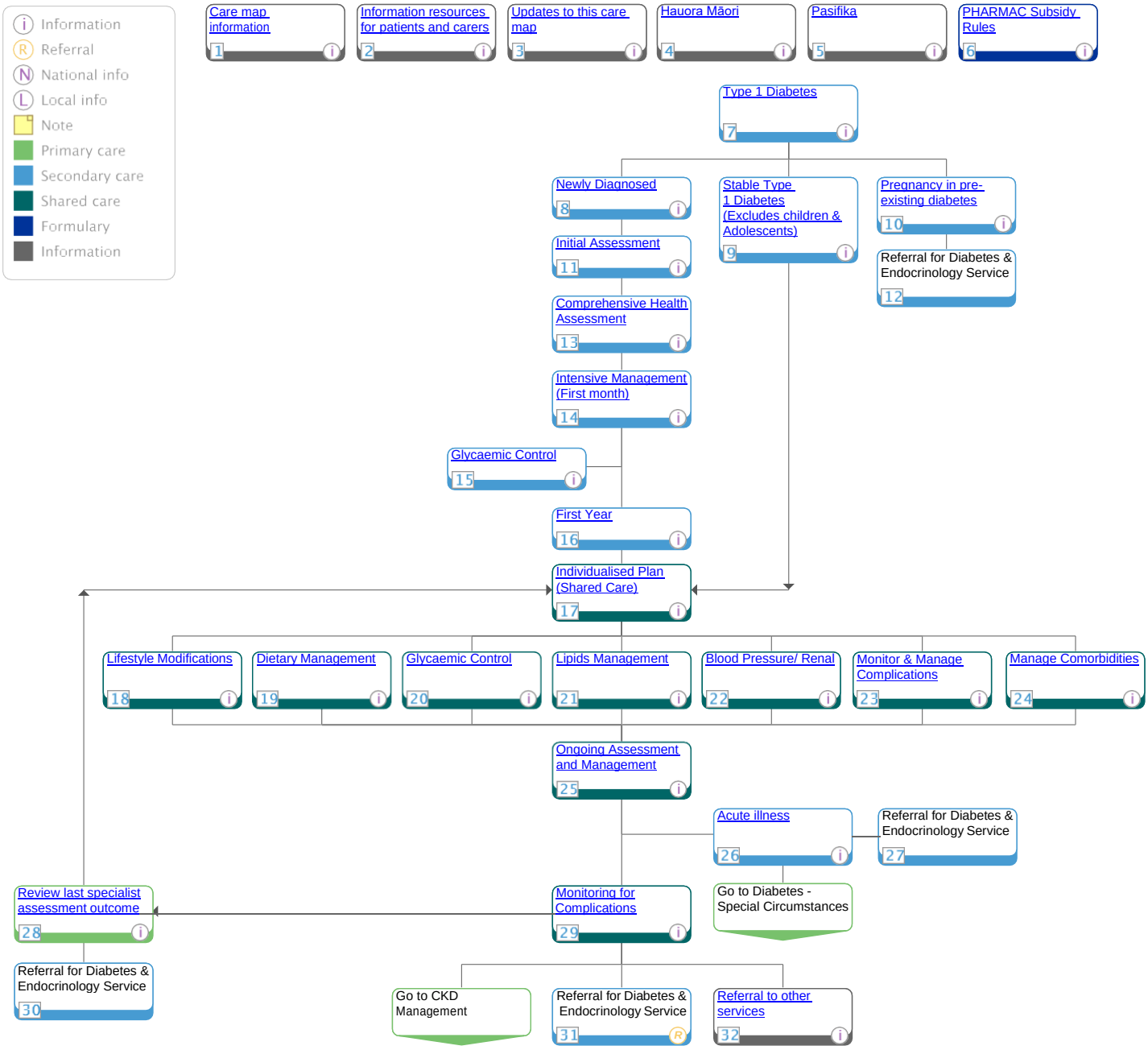
# Diabetes – Type 1 Management (Shared Care)

Medicine > Endocrinology > Diabetes



## 1.Care map information

**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 resources for patients and carers

Manawatu, Horowhenua, Tararua Diabetes Trust - referral forms for local support group events (adults and youth)
Massey University Health Conditions Psychology Service
Diabetes NZ - About Diabetes and Living with Diabetes brochure
Diabetes NZ - website
Diabetes NZ - Pre diabetes brochure
Diabetes NZ - Staying Well with type 2 diabetes booklet
Manawatu, Horowhenua, Tararua Diabetes Trust education resources
Diabetes UK website for educational resources
Heart Foundation (website)
Dietitian NZ website
Ministry of Health website - Nutrition
Sport Manawatu

**Te Ara Whānau Ora Brochure:**

- Te Ara Whānau Ora Brochure

**Patient version of pathway:**

- Patient version of pathway

## 3. Updates to this care map

Date of draft publication: May 2013.
Interim update:

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 Wha (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 Maori 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 - Better Health for Pasifika Communities:**

- 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

- Better Health for Pasifika Communities brochure

**Additional resources:**

- Ala Mo'ui - Pathways to Pacific Health and Wellbeing 2010-2014
- Primary care for pacific people: a pacific health systems approach
- Tupu Ola Moui: The Pacific Health Chart Book 2004
- Pacific Health resources
- List of local Maori/Pacific Health Providers
- Central PHO Pacific Health website

## 6. PHARMAC Subsidy Rules

According to the Pharmaceutical Schedule and updates, as of 1 April 2012 the following subsidy rules applied:**Insulin Syringes**

- disposable with attached needle
- maximum of 100 per prescription (prescribed on the same prescription as the one used for the supply of insulin or when prescribed for an insulin patient and the prescription is endorsed accordingly)
- sizes: 0.3mL, 0.5mL and 1mL Gauge: 29g and 31g
- needle size: 12.7mm or 8mm
- subsidised brands: ABM, DM Ject, B-D Ultra Fine

**Insulin Pen Needles**

- maximum of 100 per prescription (prescribed on the same prescription as the one used for the supply of insulin or when prescribed for an insulin patient and the prescription is endorsed accordingly) Gauge: 29g, 31g and 32g
- sizes: 12.7mm (29g), 8mm (31g), 6mm (31g), 5mm (31g), 4mm (32g)
- subsidised brands: ABM, B-D Micro Fine, SC Profi-Fine, Fine Ject(Note: Not all of the above brands are available in multiple sizes or gauge)

**Blood Glucose Testing**

- maximum of 50 strips per prescription unless:
  - prescribed with insulin or a sulphonylurea on same prescription
  - prescribed on different prescription page from insulin or a sulphonylurea and the prescription is endorsed accordingly
  - prescribed for a pregnant woman with diabetes and prescription is endorsed accordingly

**Ketone Testing**

- maximum of 20 strips per prescription
- not available on BSO
- subsidised brands: Optimum Blood Ketone Test Strips

**Blood Glucose Meters**

- maximum of 1 meter per prescription
- subsidised for patients who begin insulin or sulphonylurea therapy after March 2005 (or prescribed to a pregnant woman with diabetes)
- only 1 meter per patient (no further prescriptions will be subsidised)
- the prescription must be endorsed accordingly

## 7. Type 1 Diabetes

Type 1 diabetes is very much shared care management between primary and secondary teams.

While common in young people, it can occur at any age.

Type 1 diabetes is due to destruction of the pancreatic islet cells leading to absolute insulin deficiency.

Characterised by relatively short history - severe insulin deficiency with marked hyperglycaemia leading to ketosis due to fat breakdown. Immediate insulin therapy is required to avoid life threatening ketoacidosis [24, 25].

## 8. Newly Diagnosed

Type 1 diabetes:

- generally presents with acute hyperglycaemic symptoms [5]:
  - polydipsia
  - polyuria
  - polyphagia
  - tiredness
- often associated with ketonuria [5]
- marked weight loss [5]
- often presents in younger patients [5]
- the initial management should be started by the Diabetes and Endocrinology Service and involve the care of a multidisciplinary diabetes team [13]

**Give the patient information on:**

- an explanation of diabetes
- physiological insulin replacement
- self-blood glucose monitoring
- dietary recommendations and lifestyle modifications
- structured education plan [27]

Explain diabetes to patient in simple terms

Ministry of Health. 2010. Korero Marama: Health Literacy and Maori

Ministry of Health & Mauri Ora Associates (2010) Cultural Competency, Health Literacy and the NZ Healthcare System Survey Summary

Health literacy resources

## 9. Stable Type 1 Diabetes (Excludes children & adolescents)

Adults with stable type 1 diabetes will have shared care with the Diabetes and Endocrinology Service.

The Diabetes and Endocrinology Service will provide the management plan for the general practice teams to implement and oversee for the patient.

Episodic care is required by the Diabetes and Endocrinology Service during periods of decompensated type 1 diabetes.

Those at high risk of Diabetes related complications as per the Primary Health Care Handbook (2012) p. 50 should be referred to the Diabetes and Endocrinology Service for assessment and management plan.

## 10. Pregnancy in pre-existing diabetes

Pregnancy in type 1 diabetes is associated with adverse outcomes including:

- perinatal mortality rate
- congenital malformations
- hypertensive disorders of pregnancy
- polyhydramnios
- macrosomia
- neonatal metabolic problems [24].

Pre-pregnancy counselling is required. Refer to the Diabetes and Endocrinology Service for this.

Care will continue to be under the Diabetes and Endocrinology Service for the duration of the pregnancy.

## 11. Initial Assessment

Initial assessment:

- initial information/advice
- psychological support
- treatment begins
- referral to specialist dietitian ( at the Diabetes and Endocrinology Service) for initial dietary advice
- urgently refer adults who are unwell, who have ketones in their urine or blood (> 0.6mmol/L) or a blood glucose level > 15mmol/L to the Diabetes and Endocrinology Service
- refer adults with diabetic ketoacidosis (DKA) for urgent hospital treatment
- newly diagnosed people with none of the above symptoms should be urgently referred to the Diabetes and Endocrinology Service for assessment and ambulatory initiation of insulin same day [27]

Initial treatment includes insulin therapy and advice on diet, participating in physical activity, smoking cessation, alcohol and recreational drugs [27].

## 13. Comprehensive Health Assessment

Assessment will include the following:

- relevant history
- known allergies
- current medications
- self-perception/self-concept pattern
- nutrition/metabolic pattern
- diabetes history
- food recall
- role/relationship pattern
- health perception/health management pattern
- coping/stress tolerance pattern
- values/beliefs
- cognitive perception pattern
- cardiology system
- lower limb assessment
- pain or discomfort
- respiratory system

- sexual and reproductive pattern
- sleep/rest pattern
- activity / exercise pattern
- elimination pattern
- goals of treatment [27]

## 14. Intensive Management (First month)

Intensive management:

- provide intensive follow-up for insulin titration and survival education
- explain the condition and its management, taking account of people's emotional state and cultural/social background.
- provide information about local Diabetes society & Diabetes NZ
- discuss impact of the condition on work.
- referral to specialist dietitian services (the Diabetes and Endocrinology Service) [27].

## 15. Glycaemic Control

The objectives of insulin treatment for type 1 diabetes is to lower blood glucose levels to as near normal range as possible without causing significant hypoglycaemia. This includes:

- maintain body weight
- avoid hyperglycaemic symptoms
- delay or prevent onset of complications
- avoid diabetic ketoacidosis [27].

## 16. First Year

First year:

- continued psychological support
- optimisation of blood glucose control
- advice and treatment to prevent and manage cardiovascular risk factors - proactive management of blood pressure and lipids
- agree continuing care planning
- consider referral to diabetes specialist dietitian (see local tab)
- take account of the needs of different population groups, e.g. teenagers, Māori, Pacific peoples and those living in sheltered/ residential care [27].

## 17. Individualised Plan (Shared Care)

Care planning, usually reviewed annually, is at the heart of managing a person's diabetes. This is ideally a specialist review by the Diabetes and Endocrinology Service:

- provide intensive follow-up for insulin titration and survival education
- explain the condition and its management, taking account of people's emotional state and cultural/social background.
- provide information about local Diabetes society & DNZ
- discuss impact of the condition on work [27]

Level of nursing skill required:

- NDNKSF Level 4 - specialist/expert
- NDNKSF Level 3 - specialty proficient (in collaboration with the Diabetes and Endocrinology Service)

## 18. Lifestyle Modifications

**Specialist Care:**

Culturally appropriate education should be offered after diagnosis to all adults with Type 1 diabetes (and to those with significant input into the diabetes care of others). It should be repeated as requested and according to annual review of need. This should encompass the necessary understanding, motivation and skills to manage appropriately:

- management of diabetes and modification of regimens to accommodate life context
- blood glucose control (insulin, self-monitoring, nutrition)
- arterial risk factors (blood lipids, blood pressure, smoking)
- late complications (feet, kidney, eye, heart) [27]

**Primary Care:**

Initial treatment includes insulin therapy, and advice regarding:

- physical activity
- smoking cessation
- healthy eating
- alcohol and recreational drugs [27].

**Smoking Cessation Services:**

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

Whānau Ora Navigators
Iwi Māori Services

Sport Manawatu

Heart Foundation (website)

See smoking cessation pathway

## 19. Dietary Management

**Initial Dietary Advice:**

- try to eat regular meals e.g. three meals a day
- include carbohydrate (CHO) foods at each meal
- reduce added fat and salt
- aim for five portions of fruit and vegetables per day
- limit added sugar, sugary food and drinks
- keep alcohol to safe limits
- eat the right amount of food and keep active to maintain a healthy weight (BMI = 20-25)

Nutritional recommendations with Type 1 diabetes should be modified to consider personal/cultural needs and in the context of the insulin preparations chosen to match food and dietary choices.

All healthcare professionals providing advice on the management of type 1 diabetes should be aware of appropriate nutritional advice on common topics of concern and interest to adults living with type 1 diabetes and should be prepared to seek advice from colleagues with more specialised knowledge [5].

Refer to Diabetes Specialist dietitian (at the Diabetes and Endocrinology Service) for individualised dietary management plan.

Common topics include:

- matching CHO, insulin and physical activity
- CHO awareness and CHO counting
- weight management
- glycaemic index (GI) of specific foods
- protein, fat and fibre intake
- micronutrient intake
- alcohol, salt, sweeteners and "diabetic" foods[5]

## 20. Glycaemic Control

Managed by the Diabetes and Endocrinology Service in the first year and includes regular and/or episodic care:

- target for glycaemic control is agreed with the patient
- usually intensive therapy including insulin
- intensive education process and follow-up
- psychological support may be required

## 21. Lipids Management

Diabetes is an independent risk factor for cardiovascular disease so maintenance of cholesterol and triglycerides at levels as near to normal as possible is important. A diet low in saturated fat, total fat, and cholesterol and an increase in exercise is the basis of lipids modifying therapy.

Medications are not a substitute for these elemental measures.

A diagnosis earlier in life, as is common with Type 1 diabetes, increases the potential burden of disease and exposure to risk for complications. If not meeting target, refer to the Diabetes and Endocrinology Service for assessment and management plan [20, 28].

NZ Primary Care Handbook (2012) on lipid modification

## 22. Blood Pressure/Renal

See primary care handbook (2012) (p 55)

Target BP <130/80mmHg or 120 - 129/80mmHg if proteinuria greater than 1g/day (1 g/day ≈ urine protein: creatinine ratio 100mg/mmol) [8].

Start ACE inhibitor, titrate dose, or change to an ARB (Angiotensin Receptor Blocker) if intolerant. (NB ACE inhibitor and ARB both contraindicated during pregnancy).

Refer to Primary care guidelines for step-wise approach.

If adding beta blocker consider using one with less effect on diabetes (carvedilol or bisoprolol) NB beta blocker may mask some symptoms of hypoglycaemia [13, 20].

**Renal Function**

Monitor for microalbuminuria. As soon as positive, start ACE Inhibitor even if not hypertensive. Control of blood pressure is essential [20].

See Renal Map of Medicine

## 23. Monitor & Manage Complications

Complications include:

- new stroke
- diabetic Ketoacidosis
- severe Hypoglycaemia
- eye disease
- peripheral vascular disease
- hypoglycaemic unawareness (see special circumstances in diabetes map)
- gastroparesis
- erectile dysfunction [27]

**Early identification of patients at high risk of diabetes-related complications**

- the risk of complications varies greatly across the diabetic population
- the aim is prevention of complications, especially targeting those at high risk
- patients with existing complications (eg, foot, eye, kidney or cardiovascular disease) are in a high-risk category and should be managed intensively [27]

Refer those at high risk to the Diabetes and Endocrinology Service.

## 24. Manage Comorbidities

Comorbidities can complicate the management of diabetes.

Examples include:

- heart failure
- polymyalgia
- some respiratory conditions such as COPD
- eating disorders
- coeliac disease
- fredricks ataxia
- cystic fibrosis

If guidance is needed in the management of diabetes with comorbidities, consult or refer to specialist services.

## 25. Ongoing Assessment and Management

**Annual Specialist review at Diabetes and Endocrinology Service with 3-6 monthly review in primary care:**

- exploration of any concerns, providing support and counselling as appropriate
- assessment of ability to manage self-care
- review of dietary management plan
- review of metabolic control:
  - HbA1c and blood glucose monitoring
  - episodes of diabetic ketoacidosis (DKA) and hypoglycaemia
  - dietary assessment
  - advice on clinical options
- weight management
- sexual health

- smoking cessation
- pain management
- prevention/early detection and management of long-term complications (diabetic retinopathy, diabetic renal disease, diabetic neuropathy, cardiovascular risk factors, hyperlipidaemia, hypertension and foot problems)
- identification and management of other problems, such as depression, eating disorders, skin problems etc
- agree revised care planning
- the cycle of care continues.

## 26. Acute illness

This includes potential or actual loss of glycaemic control.
If this impacts on a person's diabetes, go to special instances for sick day management.
Diagnose and treat underlying illness.

## 28. Review last specialist assessment outcome

If patient not seen in last year or new to the district, re-refer.

## 29. Monitoring for Complications

Complications include:

- new stroke
- diabetic ketoacidosis
- feet
- eyes
- severe hypoglycaemia
- hypoglycaemic unawareness (see special circumstances in diabetes map)
- gastroparesis
- erectile dysfunction.

**Early identification of patients at high risk of diabetes-related complications:**

- the risk of complications varies greatly across the diabetic population
- the aim is prevention of complications, especially targeting those at high risk
- patients with existing complications (eg, foot, eye, kidney or cardiovascular disease) are in a high-risk category and should be managed intensively.

Refer those at high risk to the Diabetes and Endocrinology Service.

## 32. Referral to other services

**MidCentral Health**

- Podiatry
- Respiratory Services - Sleep Apnoea
- Supportlinks referral form
- Diabetes Specialist Dietitian

**Other Providers**

Massey University Health Conditions Psychology Service

- Referral form

THINK Hauora Te Ara Rau (Primary Mental Health Services)

**THINK Hauora Services**

- Podiatry
- Diabetic Retinal Screening Programme -website with contact details
- Dietitian services

**Smoking Cessation Services**

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

Utilise resources within the General Practice Team

Iwi Maori Services

# 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

MidCentral DHB's Collaborative Clinical Pathway editors and facilitators worked with clinical stakeholders such as front-line clinicians and pharmacists to gather practice-based knowledge for its care maps.

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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.