# Acute Chest Pain - Assessment

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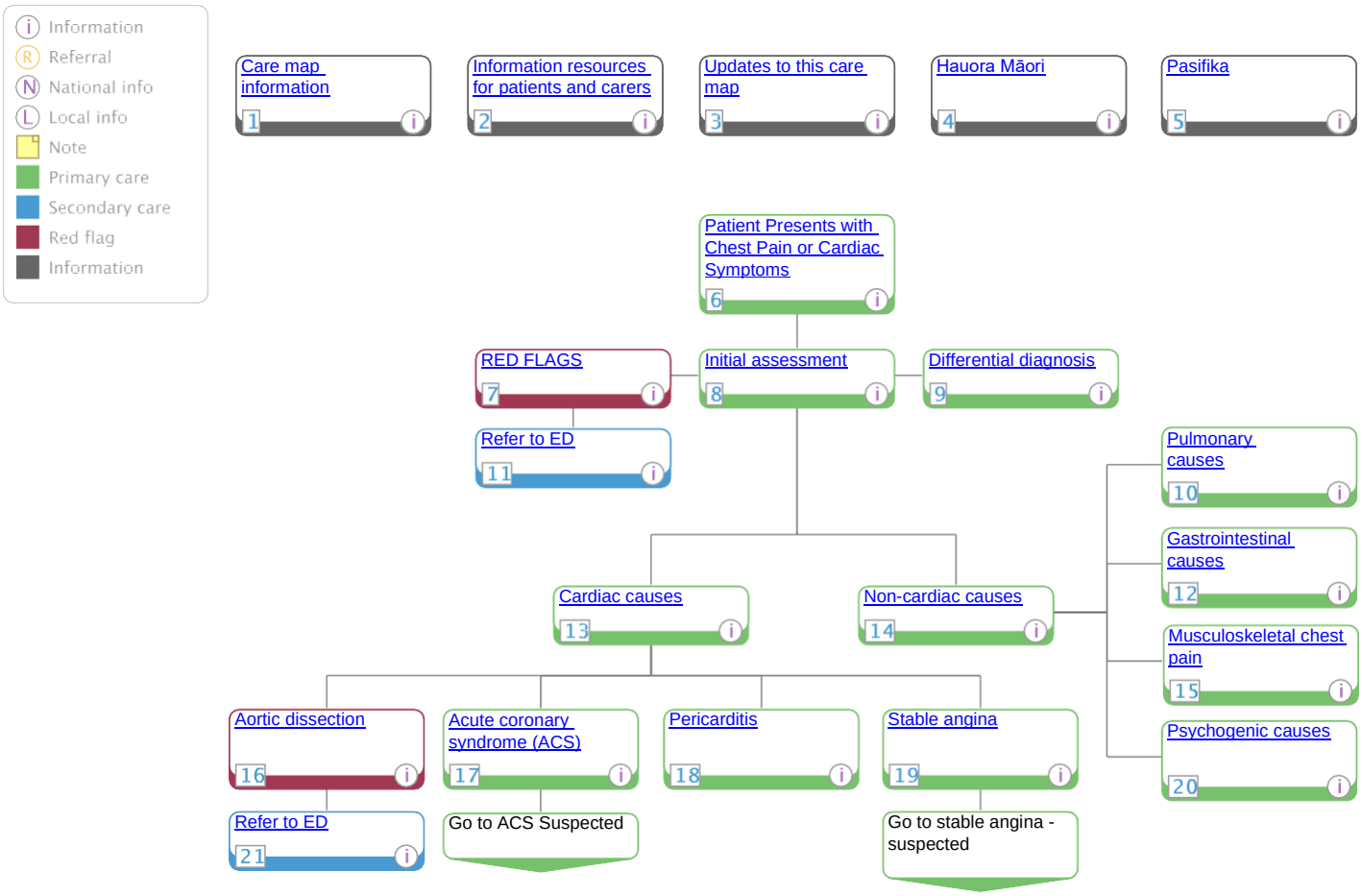

## 1. Care map information

**Scope:**

- assessment and diagnosis of acute chest pain in adults, in primary care

**Out of scope:**

- condition specific specialist management
- chronic chest pain
- children

**Definition:**

- chest pain is one of the most common challenges for clinicians – diagnosis includes:
  - conditions affecting organs throughout the thorax and abdomen; and
  - implications that vary from benign to life-threatening
  - potentially serious complications including:
    - ischaemic heart disease
    - aortic dissection
    - tension pneumothorax
    - pulmonary embolism
- overly conservative management of low-risk patients leads to unnecessary hospital admissions, test and investigations, procedures and anxiety

## 2. Information resources for patients and carers

**Patient and carer information**

- Managing your Angina

**Patient and carer Action Plans**

- Angina Action Plan

## 3. Updates to this care map

Localised Map: Version 3.

Reviewed and republished: August 2016.

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.

## 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. Patient Presents with Chest Pain or Cardiac Symptoms

Patient presents with chest pain or symptoms which could possibly be cardiac in origin.

## 7. RED FLAGS

Arrange immediate assessment in the Emergency Department (ED) for those patients with **unstable angina symptoms or suspected ACS.**

The following conditions require a rapid assessment and immediate emergency transfer to hospital by ambulance:

- pneumothorax
- aortic dissection
- pulmonary embolism
- oesophageal perforation

## 8. Initial assessment

**NB: history taking must NOT unnecessarily delay interventions or definitive care:**

**Assessment and management of chest pain:**

- needs to be decisive and quick
- the main challenge is not to miss cardiac or other life threatening causes, such as:
  - aortic dissection
  - acute coronary syndrome
  - pneumothorax
  - pulmonary embolism
  - oesophageal perforation

**Key features of history include:**

- review of cardiac risk factors present, e.g:
  - smoking
  - diabetes
  - hyperlipidaemia
  - hypertension
  - family history of ischaemic heart disease

**An initial assessment should include:**

- a quick assessment of the symptoms – typical acute coronary syndrome symptoms include:
  - central crushing or band-like chest pain
  - radiation to neck, jaw or upper limbs
  - associated nausea, vomiting, sweating, or shortness of breath
- acute coronary syndrome may also present with “atypical symptoms” including:
  - burning, sharp or pleuritic pain
  - pain to right arm

- indigestion, nausea, vomiting fatigue
- shortness of breath
- paroxysmal nocturnal dyspnoea
- tooth or jaw pain

Females can present with atypical symptoms and often late.

If acute coronary syndrome is suspected, arrange immediate emergency transfer to hospital by ambulance.

Other conditions, aside from acute coronary syndrome also require a rapid assessment and immediate emergency transfer to hospital by ambulance.

**Key features of examination include:**

- pulse
- blood pressure
- signs of failure
- respiratory rate
- raised jugular venous pressure (JVP)
- oedema
- lung sounds
- heart sounds

**Investigations:**

- 12 Lead ECG
- consider troponin test

## 9. Differential diagnosis

**Consider a differential diagnosis, including:**

- pneumothorax
- pulmonary embolism
- aortic dissection
- oesophageal rupture
- interabdominal pathology
- psychogenic

## 10. Pulmonary causes

Pulmonary causes of chest pain include:

- pulmonary embolism
- pneumonia
- pneumothorax
- pleuritis
- asthma

## 11. Refer to ED

The referring clinician is required to arrange the transfer of care.

In addition to arranging Ambulance Transfer, please call Palmerston North Hospital (06-358-8001 or 0800 764 677 and ask operator to page the **on-call Medical Registrar).**

A clinical handover should take place over the phone and followed up with necessary clinical documentation.

Please Note: The Emergency Department requires formal documentation (clinical assessment, investigations, medication list and working diagnosis/problem list and any intervention to date).

## 12. Gastrointestinal causes

Gastrointestinal causes of chest pain include:

- oesophageal perforation/rupture
- gastro-oesophageal reflux disease (GORD)
- oesophagitis
- oesophageal motility disorders, including oesophageal spasm
- peptic ulcer disease
- pancreatitis
- biliary disease

## 13. Cardiac causes

Cardiac causes including vascular causes could include:

- aortic dissection
- acute coronary syndrome
- pericarditis
- stable angina

## 14. Non-cardiac causes

Non-cardiac causes could include:

- pulmonary
- gastrointestinal
- musculoskeletal chest pain
- psychogenic

## 15. Musculoskeletal chest pain

Musculoskeletal causes of chest pain include:

- costrochondritis
  - inflammation of costal cartilages
  - may include sternal articulations
  - no swelling
- painful xiphoid syndrome
  - pain over xiphoid process reproduced by palpation
- rib fracture or trauma
  - pain over involved rib

- sternoclavicular arthritis
- precordial catch syndrome
- herpes zoster or postherpetic neuralgia

Features of musculoskeletal pain include:

- usually localised
- ache or sharp
- positional
- may be reproduced on turning or arm movement
- rheumatological diseases may cause musculoskeletal pain via thoracic joint involvement

Chest wall pain should be treated with analgesia, e.g. NSAIDS.

## 16. Aortic dissection

**Clinical features of aortic dissection:**

- abrupt onset of chest pain, or pain between the scapulae
- pain tearing or ripping in nature
- pain often worst at symptom onset
- as other vessels become involved, will see:
  - stroke symptoms (carotid artery)
  - cardiac tamponade (aortic root)
  - aortic regurgitation (aortic root)
  - abdominal/flank pain/limb ischaemia (abdominal aorta/renal arteries, iliac arteries)
- decreased pulsation in radial, femoral and carotid arteries

**Immediate referral to Emergency Department (ED):**

- the referring clinician is required to arrange the transfer of care
- in addition to arranging Ambulance Transfer, please call ED on 06-358-8001
- a clinical handover should take place over the phone and followed up with necessary clinical documentation
- please note: The Emergency Department requires formal documentation (clinical assessment, investigations and working diagnosis/problem list and any intervention to date)
- if time allows before arrival of ambulance put in an IV line and provide IV analgesia

## 17. Acute coronary syndrome (ACS)

**The following symptoms may indicate acute coronary syndrome (ACS):**

- tight, dull, or heavy pain in the chest (retrosternal or left chest) and/or other areas, e.g. arms, back, or jaw, lasting longer than 15 minutes
- chest pain associated with:
  - nausea and vomiting
  - marked sweating
  - breathlessness
  - a combination of the above
- chest pain associated with haemodynamic instability
- new onset chest pain, or abrupt deterioration in previously stable angina, with:
  - recurrent chest pain occurring frequently; and

- with little or no exertion; and
- episodes often lasting longer than 15 minutes

ECG changes:

- ST segment elevation
- ST segment depression
- T wave inversion
- pathological Q waves
- new left bundle branch block (LBBB)
- note that a normal resting 12-lead ECG **does not rule out** ACS

If you think there is a moderate to high risk that this is ACS follow the ***"ACS Suspected" Pathway***.

## 18. Pericarditis

**NB: if pericarditis is suspected and patient is unwell or diagnostic uncertain refer to ED.**

Typically presents in patients in their 20's.

Typical features of acute pericarditis are as follows:

- typically preceded by a viral illness
- retrosternal or left precordial chest pain:
  - radiates to the trapezius ridge
  - sharp or stabbing in nature
  - can be pleuritic or simulate ischaemia
  - varies with posture, e.g. worse when lying down – sitting up relieves pain
- shortness of breath (orthopnoea)
- fever – may be absent in elderly patients
- malaise
- myalgia
- nausea

Characteristic findings of ECG:

- resembles acute myocardial infarction
- tachycardia
- concave ST segment elevation
- PR segment **depression** in Lead II and PR segment **elevation** in aVR

## 19. Stable angina

Stable angina is typically brought on by exercise, cold weather and emotional stress.

Angina that is becoming more frequent or occurs at rest is NOT stable angina.

Suspect angina in people presenting with tight, dull, or heavy chest discomfort which is:

- retrosternal or left-sided, radiating to the left arm, neck, jaw, or back
- associated with exertion or emotional stress and relieved within several minutes by rest or glyceryl trinitrate (GTN)
- precipitated by cold weather or a meal

Some people present with atypical symptoms, including:

- breathlessness
- nausea
- epigastric discomfort or burping

Atypical symptoms are particularly likely in:

- older people
- women
- those with diabetes:
  - pain may be absent
  - may present simply with breathlessness and evidence of heart failure

Angina pain:

- is not usually sharp or stabbing or influenced by respiration
- is reproducible
- usually only lasts for minutes

ECG changes consistent with coronary artery disease:

- ischaemia or previous infarction:
  - pathological Q waves in particular
  - left bundle branch block (LBBB)
  - ST-segment and T wave abnormalities, e.g. flattening or inversion
- **NB: ECG may be normal**

## 20. Psychogenic causes

Psychogenic causes of chest pain include:

- panic disorder
- anxiety
- depression
- somatoform disorders

## 21. Refer to ED

The referring clinician is required to arrange the transfer of care.

In addition to arranging Ambulance Transfer, please call Palmerston North Hospital (06-358-8001 or 0800 764 677 and ask operator to page the **on-call Medical Registrar).**

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## Provenance Certificate

Overview | Editorial methodology | References | Contributors | Disclaimers

### Overview

This document describes the provenance of MidCentral District Health Board's **Chest Pain** pathway. This localised pathway was last updated on 11 August 2016.

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 – Chest Pain - MidCentral View. Palmerston North: Map of Medicine; 2016 (Version 3).

### Editorial methodology

This care map has been based on a Map of Medicine Care Map developed according to the Map of Medicine editorial methodology. The content of the Map of Medicine care map is based on high quality guidelines and practice-based knowledge provided by contributors with front-line clinical experience (see contributors section of this document). This localised version of the evidence-based, practice informed care map has been peer-reviewed by the CCP Executive Team and with stakeholder groups.

### 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 the CCP Executive Team and with stakeholder groups.

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| [1] bpac NZ. (2015). The immediate management of acute coronary syndromes in primary care. *Best Practice Journal, 67*, 39-41. |
| [2] bpac NZ. (2011). Medical management of stable angina pectoris. *Best Practice Journal, 39*, 39-47. |
| [3] New Zealand Transport Agency (NZTA). Medical aspects of fitness to drive. Wellington; 2009. |

## Contributors

The following individuals contributed to the review and update of this care map in August 2016:

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## Disclaimers

### CCP Executive Team, MidCentral DHB

It is not the function of the CCP Executive Team, 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.