

Cardiac Pain Management

Unique Identifier	CP10/Adult/027
Document Type	Clinical Guideline
Risk of non-compliance	may result in significant harm to the patient/DHB
Function	Clinical Practice, Patient Care
User Group(s)	Auckland DHB only
<ul style="list-style-type: none"> • Organisation(s) 	Auckland District Health Board
<ul style="list-style-type: none"> • Directorate(s) 	Adult Health
<ul style="list-style-type: none"> • Department(s) 	All departments
<ul style="list-style-type: none"> • Used for which patients? 	All adult patients
<ul style="list-style-type: none"> • Used by which staff? 	All nursing staff
<ul style="list-style-type: none"> • Excluded 	
Keywords	
Author	Nurse Consultant
Authorisation	
<ul style="list-style-type: none"> • Owner 	Director - Cardiac
<ul style="list-style-type: none"> • Delegate / Issuer 	Director - Cardiac
First issued	Yet to be determined
This version issued	29 January 2019 - updated
Review frequency	3 yearly

Contents

1. Purpose of guideline	3
2. Definitions.....	3
3. Detection of cardiac pain.....	3
3.1 Non-reporting of cardiac pain	3
3.2 Reasons why patients fail to report cardiac pain.....	3
3.3 Recommended best practice	4
3.4 Education and discharge planning	4
4. Differential diagnosis	4
5. Assessment	5
6. Characteristics of angina pain.....	5
6.1 Precipitating and aggravating factors	5
6.2 Quality of pain	6
6.3 Location of pain.....	6
6.4 Radiation	6
6.5 Alleviating factors.....	6
6.6 Duration.....	6
6.7 Associated symptoms.....	6
7. Intervention	7
7.1 Recommended best practice	7
7.2 APTT.....	8
7.3 Chest pain post PCI.....	8
8. Patient transfer to CCU.....	8

8.1	Transfer to CCU/CIU	8
9.	Documentation	9
10.	Discharge planning and cardiac rehabilitation	9
10.1	Planning	9
10.2	The plan	9
11.	Supporting evidence	10
12.	Associated documents	10
13.	Disclaimer	10
14.	Corrections and amendments	10

1. Purpose of guideline

To ensure that all episodes of cardiac pain or discomfort are assessed, reported and treated promptly and appropriately until resolved.

2. Definitions

Term	Definition
GTN	Glyceryl Trinitrate
ECG	Electrocardiogram
CTSU	Cardiac Thoracic Surgical Unit
IV	Intravenous
TROP T	Troponin T
APTT	Activated Partial Thromboplastin Time
MI	Myocardial Infarction
PCI	Percutaneous Coronary Intervention
CCU	Coronary Care Unit
CAD	Coronary artery disease
CIU	Cardiac Investigation Unit

3. Detection of cardiac pain

3.1 Non-reporting of cardiac pain

When caring for patients diagnosed with cardiac ischaemia, it is important to consider the following:

- Patients in hospital experiencing pain from whatever cause, will not always report it to nursing or medical staff.
- Self-reporting of symptoms cannot be relied upon as an indication of the frequency and severity of the patient's actual symptoms.
- Patient knowledge of their cardiac condition and/or familiarity with the hospital environment does not decrease the incidence of non-reporting of pain.
- Lack of detection of cardiac pain by nursing staff can potentially lead to significant delay in treatment, management and subsequent myocardial injury.
- Patient's interpretation of pain/discomfort is based on their own personal experience.

3.2 Reasons why patients fail to report cardiac pain

Nursing research and experience identifies the following factors as relevant to the under reporting of pain:

- Pain was not considered severe enough by the patient to report.
- Patients did not want to bother staff.
- Patients wanted to see if the pain would go away by itself.
- Failure of nursing staff to be proactive in asking about pain at time of intentional rounding.
- Psychological and cultural reasons specific to the individual patient (eg denial of illness, lack of privacy if in 4- bedded room).

- Pain is not the word that some patients would use to describe their cardiac symptoms eg tingling fingers, weight on the chest, and chest heaviness.

3.3 Recommended best practice

Follow the steps below to promote patient’s report of pain.

Step	Action
1.	Clarify with the patient how their typical cardiac symptoms present. This should be documented in the nursing assessment/observation chart.
2.	Engage with the patient in frequent and routine inquiries about how they are feeling, showing interest in symptoms described at time of intentional rounding.
3.	Stress to the patient that each episode of pain or discomfort needs to be reported to nursing staff immediately so that appropriate diagnosis and/or intervention can occur.
4.	Obtain a 12 lead ECG during the chest pain.

3.4 Education and discharge planning

Education of the patient about the reporting of cardiac pain or discomfort commences on admission and is reinforced throughout hospital stay.

Key factors for education of patient with diagnoses of angina/CAD, family, and caregiver are:

- Basic pathophysiology of cardiac ischaemia.
- Management of their cardiac symptoms stressing the need to use GTN spray early and appropriately and calling 111 after 10 minutes of unrelieved symptoms (15 minutes for no known history of angina/ CAD.
- Encourage contact with General Practitioner for ongoing or more frequent episodes of chest pain and shortness of breath or angina at rest or waking them from sleep.
- To ensure that all cardiac medications are taken as prescribed ensuring optimal treatment maintained.

4. Differential diagnosis

Many diagnoses, besides myocardial ischaemia, produce symptoms of chest pain. Differential diagnosis of angina-like chest pain include:

- Myocardial Infarction
- Pericarditis
- Aortic dissection
- Mitral valve prolapse
- Acute pulmonary embolus
- Gastrointestinal and oesophageal disorders
- Pneumothorax
- Musculoskeletal injury
- Pneumonia
- Myocarditis
- Somatoform disorder eg hyperventilation.

Careful history taking and examination by the medical and nursing team is required to determine the cause of the pain and intervention required.

5. Assessment

Angina symptoms are distinguished from non-cardiac pain or other cardiogenic pain on the basis of history, physical examination and laboratory findings.

Step	Action
1.	<p><u>The nurse gathers information about the patients pain assessing OLD CART method:</u></p> <ul style="list-style-type: none"> • Onset • Location • Duration • Characteristics • Accompanying symptoms • Radiation • Treatment
2.	<p><u>Check vital signs:</u></p> <ul style="list-style-type: none"> • Blood pressure • Heart rate • Respiratory rate • Skin colour • Warmth • Oxygen saturations • Temperature (if appropriate)
3.	Position patient comfortably i.e. semi-recumbent.
4.	Pain is treated as cardiac in origin until strong indication otherwise.
5.	If believed to be ischaemic in origin then commence intervention

6. Characteristics of angina pain

6.1 Precipitating and aggravating factors

Angina pain is generally precipitated by anything that increases oxygen demand of the myocardium.

For example:

- Cold
- Stress
- Heavy meal
- Exercise
- Emotional stress

Note: Patients with more severe or frequent angina pain that occurs at rest or with minimal exertion requires immediate medical assessment because their angina is becoming unstable.

6.2 Quality of pain

The patient may describe the pain as a:

- Sensation of pressure
- Tightness on the chest
- Weight in the chest
- Heaviness on the chest

Many patients use the term “**discomfort**” rather than pain and may therefore answer “no” to the question “Have you had chest pain?”

6.3 Location of pain

May occur anywhere from the diaphragm to the jaw. It is usually sub-sternal and not localised to a small discrete area.

6.4 Radiation

It may radiate to the:

- Jaw
- Upper neck
- Shoulders
- Back
- Arms (more commonly to the left)
- Fingers

6.5 Alleviating factors

Angina is often relieved by GTN spray, rest and oxygen.

Note: Patients having angina pain that is unrelieved by rest, spray and oxygen for longer than 10 minutes require immediate medical assessment.

6.6 Duration

Brief fleeting pains are rarely cardiac in origin.

2-5 minutes:

- Angina may last from 2-5 minutes after cessation of exercise or taking GTN spray.

More than 15 minutes:

- May indicate myocardial infarction or
- Non-cardiac in origin.

6.7 Associated symptoms

- Shortness of breath
- Sweating
- Nausea
- Vomiting

- Fatigue
- Dizziness

7. Intervention

Intervention will depend on the assessment findings.

Chest pain is assumed to be cardiac in origin until proven otherwise.

GTN spray is administered sublingually 1–2 sprays at a time as prescribed.

7.1 Recommended best practice

Follow the steps below to check and administer pain relief.

Step	Action
1.	If chest pain is suspected to be cardiac in nature, an 12 lead ECG is required with pain for diagnostic reasons
2.	Administer GTN spray sublingually, or assist the patient to self-administer GTN, as prescribed. Blood pressure should be taken before and after GTN administration to monitor hypotension. Note: Aortic stenosis can be a contraindication for GTN Spray
3.	Administer oxygen at 4 – 6 L/min via Hudson mask if oxygen saturation below 94%. Continuous pulse oximetry.
4.	If chest pain is unrelieved after 5 minutes, recheck BP before giving further GTN spray.
5.	If chest pain is still unrelieved, administer further GTN spray at 5-minute interval (two doses in total).
6.	If pain still persists after 5 minutes, repeat 12 lead ECG
7.	<ul style="list-style-type: none"> • Inform medical staff • Ensure prompt medical assessment and review of ECG.
8.	Connect patient to cardiac rhythm monitoring. (CRM)
9.	<ul style="list-style-type: none"> • Insert leuc if not already inserted. • Administer IV morphine and prophylactic metoclopramide as prescribed. • Administer IV fentanyl if patient is allergic to morphine or his/her creatinine is elevated.
10.	<ul style="list-style-type: none"> • Collect blood for baseline Troponin T and repeat at 3 hours (as requested by medical staff or as per local protocol) and • Take blood for APTT (if on heparin).
11.	When chest pain has subsided, Repeat 12 lead ECG to ensure changes have resolved.

Note: see [Documentation](#)

7.2 APTT

If patient is receiving IV heparin therapy for angina, unstable angina, or recent MI:

Step	Action
1.	Check the time that the last APTT was taken.
2.	<ul style="list-style-type: none"> • <u>Re-check APTT if:</u> <ul style="list-style-type: none"> – The last APTT was taken ≥ 2 hours before episode of pain or – The last APTT result was borderline therapeutic / sub therapeutic • Follow ward / unit guide lines protocol.

7.3 Chest pain post PCI

Prompt assessment of chest pain in the patient post PCI is vital.

Step	Action
1.	Record vital signs, including neurovascular observations on radial/groin access site
2.	Assess pain.
3.	Perform 12 lead ECG.
4.	Administer oxygen and GTN spray as prescribed.
5.	Check APTT as required.
6.	Inform registrar
7.	If pain persists, ensure angioplasty consultant is aware.

8. Patient transfer to CCU

8.1 Transfer to CCU/CIU

If chest pain is unrelieved 15 minutes after intervention and/or if the ECG shows evidence of myocardial ischaemia the patient may require transfer to CCU.

Transfer to CCU/ CIU is performed after assessment by medical staff and discussion with cardiology registrar.

Step	Action
1.	Ring CCU and ensure they have a bed space available and ready.
2.	Locate Orderly and request portable oxygen and resuscitation defibrillator. Patient is to transfer to CCU on a bed.
3.	Advise PAR (patient at risk) nurse and the Clinical Nurse Manager and inform of transfer.
4.	<u>Prior to transfer:</u> <ul style="list-style-type: none"> • Attach patient to cardiac monitor (via portable defibrillator) • Administer oxygen as prescribed • Make sure patient takes GTN spray
5.	Patient is transferred to CCU with an orderly and a senior nurse.
6.	Ensure that relatives are aware of transfer.
7.	Document transfer in clinical record.

9. Documentation

For each episode of chest pain the nurse documents the following in the patients clinical record and/or observation chart (Cardiology):

- Assessment findings
- Treatment and interventions
- Outcome

10. Discharge planning and cardiac rehabilitation

10.1 Planning

Discharge planning and phase I (inpatient) cardiac rehabilitation of patients with ischaemic heart disease:

- Should start as soon as the patient is symptom-free and able to discuss their condition.
- Is the responsibility of all those involved in the patient's care.
- Refer to Cardiac Rehabilitation Nurse Specialist.

10.2 The plan

The plan of care for the patient regarding discharge planning and rehabilitation should include:

- Encouraging independence in patient to carry out activities of daily living and assess for any potential risks, while they are still inpatient
- Discussion on the:
 - Diagnoses
 - Recovery and
 - Prognosis of the patients heart disease
- Risk factor:
 - Identification
 - Assessment
 - Modification
- Education with written literature on:
 - Symptom management and Angina Action Plan
 - Medications

Ongoing intervention if required

- Resumption of physical sexual and daily living activities including work and driving
- Identification and management of:
 - Psychological problems
 - Socio-economic problems
 - Work-related problems
- Referral to appropriate health professionals.
- Referral to Cardiac Rehabilitation Programme. See Cardiac Rehabilitation Website on HIPPO for contact details.
- Follow up appointments

11. Supporting evidence

- Mackintosh, C. (1994). Non-reporting of cardiac pain. *Nursing times*, 90(13), 36-39.
- Standing, J. (1997). Chest Pain Assessment Tools. *Journal of Clinical Nursing* (6), 5-92.
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- The National Heart Foundation of New Zealand (2017). Angina Action Plan. Retrieved from: <https://www.heartfoundation.org.nz/resources/angina-action-plan>
- The National Heart Foundation of New Zealand (2017). Angina. Retrieved from: <https://www.heartfoundation.org.nz/your-heart/heart-conditions/angina>
- The New Zealand Medical Journal (2013): ST elevation myocardial infarction: NZ management guidelines, 2013 vol 126 No. 1387.

12. Associated documents

- Oxygen Prescribing, Administration and Equipment for Adult
- Opioids Intravenous Administration – Adult

13. Disclaimer

No guideline can cover all variations required for specific circumstances. It is the responsibility of the health care practitioners using this Auckland DHB guideline to adapt it for safe use within their own institution, recognise the need for specialist help, and call for it without delay, when an individual patient falls outside of the boundaries of this guideline.

14. Corrections and amendments

The next scheduled review of this document is as per the document classification table (page 1). However, if the reader notices any errors or believes that the document should be reviewed **before** the scheduled date, they should contact the owner or [Document Control](#) without delay.