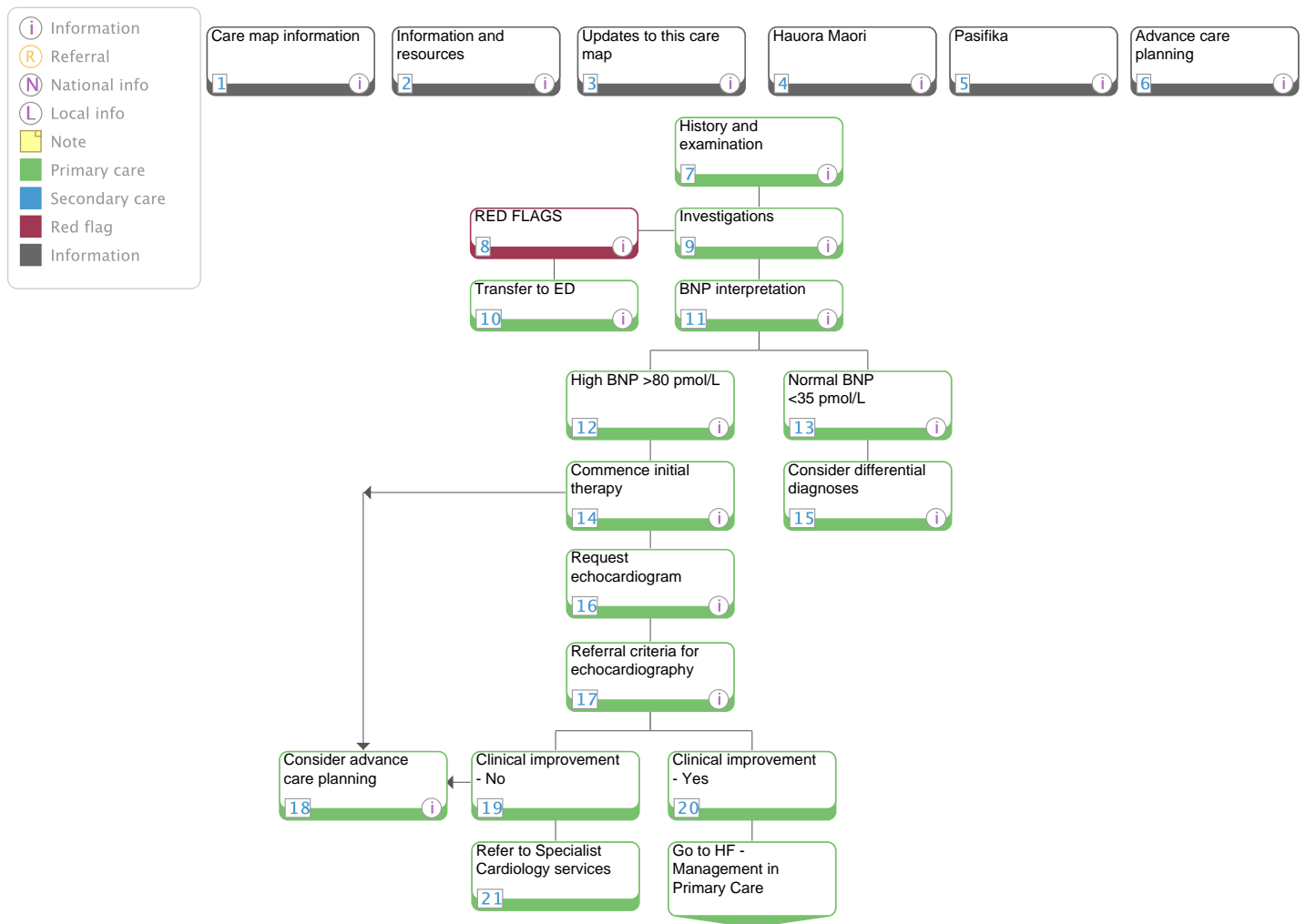


# Heart Failure (HF) - Suspected

Medicine > Cardiology > Heart Failure (HF)



# Heart Failure (HF) - Suspected

Medicine > Cardiology > Heart Failure (HF)

## 1 Care map information

Quick info:

### Scope:

- initial assessment, diagnosis and management of chronic heart failure (HF) in adults (age 18 years and older)

### Out of scope:

- assessment and management of HF in:
  - children and adolescents (under age 18 years)
  - pregnant women
- right-sided HF
- management of specific causes of HF

### Definition:

- HF is a complex clinical syndrome of symptoms and signs that suggest impairment of the heart as a pump supporting physiological circulation
- caused by structural or functional abnormalities of the heart

### Classification [1]:

- New York Heart Association (NYHA) class I:
  - includes asymptomatic left ventricular systolic dysfunction (LVSD)
  - ordinary physical activity does not cause fatigue, breathlessness, or palpitations
- NYHA class II:
  - symptomatically 'mild' HF
  - slight limitation of physical activity
  - ordinary physical activity may result in fatigue, palpitations, breathlessness, or angina pectoris
- NYHA class III:
  - symptomatically 'moderate' HF
  - the person is comfortable at rest, but ordinary physical activity will lead to symptoms
- NYHA class IV:
  - symptomatically 'severe' HF
  - symptoms of cardiac failure are present even at rest

### Incidence and prevalence [2]:

- in developed countries the prevalence of heart failure among adults is approximately 1-2%, although the prevalence may be more than 10% among older adults (>70 years)
- a typical primary care clinician, caring for 2000 people, is therefore likely to have approximately 40 people with HF, and more if their population is older
- the prevalence of HF is expected to rise in New Zealand through a combination of:
  - improved survival of people with ischaemic heart disease
  - more effective treatments for HF
  - the effects of an ageing population
- the mortality rate from heart failure for Maori aged over 65 years in New Zealand is significantly higher than for non-Maori for both males and females (RR 2.80 for males; RR 1.70 for females) [3]
- mortality rates for Maori are even more pronounced in younger age groups (45-65 years), and heart failure occurs approximately 10-15 years earlier in Maori compared to non-Maori

### Prognosis:

- 30-40% of people diagnosed with HF die within a year, after which mortality risk drops to less than 10% per year
- five year survival rate is estimated at 58%
- prognosis for people with HF and preserved ejection fraction is a little better than for people with HF and reduced ejection fraction
- younger people tend to do better, as do people with no co-morbidities
- HF has a major impact on quality of life (QoL) and is associated with mood disorders

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This Pathway should be used only for people in which it will influence the person's management. It is to be used as a guide and doesn't replace clinical judgement.

## References:

[1] Criteria Committee, New York Heart Association, Inc. *Diseases of the Heart and Blood Vessels. Nomenclature and Criteria for diagnosis*, 6th edition Boston, Little, Brown and Co. 1964, p 114

[2] bpac<sup>NZ</sup> Identifying patients with heart failure in primary care. Best practice Journal; Issue 50: 2013 Available from: <http://www.bpac.org.nz/BPJ/2013/february/identifying-heart-failure.aspx>

[3] Ministry of Health, Mortality Collection (MORT), National Minimum Dataset (Hospital Events) (NMDS), Ministry of Health: Wellington. Summary available at: <http://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/maori-health-data-and-stats/tatau-kura-tangata-health-older-maori-chart-book/nga-mana-hauora-tutohu-health-status-indicators-50-years/cardiovascular-disease-50-years>

## 2 Information and resources

### Quick info:

#### Resources for people:

- [Heart Foundation NZ](#) Resources for people and clinicians
- [Stanford self management programmes](#) for long term conditions support through Health Hawkes Bay
- [Staying well with heart failure](#). Heart foundation booklet
- [Patient medication information](#) Health Hawkes Bay
- [Sport Hawkes Bay](#) Green Prescription

#### Resources for clinicians:

- [New Zealand Heart Foundation](#)
- New Zealand Guideline. Cardiac Society of Australia and New Zealand. [Management of Chronic Heart Failure](#)
- Minimum [standards](#) for referral and access. Central region
- [eCourse on Heart Failure](#). The Heart Foundation, in conjunction with the Ministry of Health
- [Stanford self management programmes](#) for long term conditions support through Health Hawkes Bay
- [ESC Guidelines](#) for the diagnosis and treatment of acute and chronic heart failure 2016
- [Medication Information](#) for people and clinicians on Health Hawkes Bay (PHO) website

#### Language translation assistance:

HBDHB Interpreting Service. To make an appointment (charges may apply):

- phone 06 878 8109 ext 5805 or
- email [interpreting@hawkesbaydhb.govt.nz](mailto:interpreting@hawkesbaydhb.govt.nz)

These websites may help with simple words and phrases:

- [Babelfish](#)
- [Google translate](#)

[Language Line](#). Professional interpreters are available, free of charge, for telephone-based sessions (44 languages are supported):

- Phone 0800 656 656
- Monday - Friday 9am - 6pm
- Saturday 9am - 2pm

Bookings are not usually necessary. For longer consultations (for example, a nurse consultation for a newly diagnosed person) it is best to make a booking at least 24 hours in advance by calling the above number or emailing [language.line@dia.govt.nz](mailto:language.line@dia.govt.nz) and providing your contact details and a summary of the service you require (time and date of the meeting, language, approximate length of the appointment, gender of interpreter (if relevant)).

## 3 Updates to this care map

### Quick info:

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Date of publication: June 2016

Date of review and republication: October 2017

Next review due: October 2019

This care map has been developed in line with consideration to evidenced based guidelines. For further information on contributors and references please see the Pathway's Provenance Certificate.

NB: this information appears on each page of this care map

## 4 Hauora Maori

Quick info:

Maori are a diverse people and whilst there is no single Maori identity, it is vital practitioners offer culturally appropriate care when working with Maori whanau. It is important for practitioners to have a baseline understanding of the issues surrounding Maori health. This knowledge can be actualised by (not in any order of priority):

- considering the importance of introductions ('whanaungatanga') - a process that enables the exchange of information to support interaction and meaningful connections between individuals and groups. This means taking a little time to ask where this person is from or to where they have significant connections
- asking Maori people if they would like their whanau or significant others to be involved in assessment and treatment
- asking Maori people about any particular cultural beliefs they or their whanau have that might impact on assessment and treatment of the particular health issues

### Maori health services

HBDHB contracts Maori health providers to deliver community based nursing and social support services. Practitioners should discuss, where appropriate, information about relevant Maori health services. A referral to one of these providers may assist Maori people to feel more comfortable about receiving services following discussions.

#### **Central Hawke's Bay:**

[Central Health](#)

Cnr Herbert & Ruataniwha Streets, Waipukurau

Phone: 06 858 9559 Fax: 06 858 9229

Email: [reception@centralhealth.co.nz](mailto:reception@centralhealth.co.nz)

[Referral Form](#)

#### **Hastings:**

[Te Taiwhenua o Heretaunga](#)

821 Orchard Road, Hastings 4156

Phone: 06 871 5350 Fax: 06 871 535

Email: [taiwhenua.heretaunga@ttoh.iwi.nz](mailto:taiwhenua.heretaunga@ttoh.iwi.nz)

[Referral Form](#)

[Kahungunu Health Services](#) (Choices)

500 Maraekakaho Road, Hastings

Phone: 06 878 7616

Email: [kahungunu@paradise.net.nz](mailto:kahungunu@paradise.net.nz)

[Referral Form](#)

#### **Napier:**

[Te Kupenga Hauora](#)

5 Sale Street, Napier

Phone: 06 835 1840

Email: [info@tkh.org.nz](mailto:info@tkh.org.nz)

[Referral Form](#)

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## **Wairoa:**

Kahungunu Executive (no website)  
65 Queen Street, Wairoa 4108  
Phone: 06 838 6835 Fax: 06 838 7290  
Email: kahu-exec@xtra.co.nz

## **Secondary care Maori Health Services:**

Hawke's Bay DHB - Te Wahanga Hauora Maori Health Services  
Phone: 06 878 8109 ext. 5779, 06 878 1654 or 0800 333 671 Email: admin.maorihealth@hawkesbaydhb.govt.nz

## **Further Information**

Practitioners should be versed in the knowledge of:

- historical overview of legislation that impacted on Maori well-being
- Maori models of health, such as [Te Whare Tapa Wha](#) and Te Wheke when working with Maori whanau
- national Maori Health Strategies:
  - **Mai Maori Health Strategy 2014-2019** - [Full file](#) or [Summary diagram](#)
  - **He Korowai Oranga:** Maori Health Strategy - sets the [Government's overarching framework](#) to achieving the best health outcomes for Maori
- local [Hawke's Bay health sector's strategies and initiatives](#) for improving Maori health and wellbeing
- [Medical Council of New Zealand competency standards](#)

## **Cultural Competency Training**

Training is available through the Hawke's Bay DHB to assist you to better understand Maori culture and to better engage with Maori people. Contact the coordinator

Email: education@hbdhb.govt.nz to request details of the next courses.

## 5 Pasifika

### Quick info:

Pacific people value their culture, language, families, education and their health and wellbeing. Many Pacific families have a religious affiliation to a local church group.

The Pacific people are 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 in order to help you work with Pacific people more effectively
- for many families language, cost and access to care are barriers

Pacific ethnic groups in Hawke's Bay include Samoa, Cook Islands, Fiji, Tonga, Niue, Tokelau, Kiribati and Tuvalu. Samoan and Cook Island groups are the largest and make up two thirds of the total Pacific population. There is a growing trend of inter-ethnic relationships and New Zealand born Pacific populations.

Acknowledge [The FonaFale Model](#) (Pacific model of health) when working with Pacific people and families.

General guidelines when working with Pacific people and families (information developed by Central PHO, Manawatu):

- [Cultural protocols and greetings](#)
- [Building relationships](#) with your Pacific people
- [Involving family support and religion](#) during assessments and in the hospital
- [Home visits](#)

### **Hawke's Bay-based resources:**

- [HBDHB interpreting service website](#) or phone 06 8788 109 ext. 5805 (no charge for the hospital; charges may apply for community-based translations) or contact coordinator at interpreting@hbdhb.govt.nz
- Pacific Navigation Services Ltd Phone: 027 971 9199
- services to assist Pacific people to access healthcare ([SIA](#))

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- [Improving the Health of Pacific People in Hawke's Bay](#) - Pacific Health action Plan

## Ministry of Health resources:

- [Ala Mo'ui](#) Pathways to Pacific Health and wellbeing 2014-2018
- [Primary Care for Pacific people](#): a Pacific and health systems approach
- Health education resources in [Pacific languages](#) (links to a web page where you can download resources)

## 6 Advance care planning

Quick info:

### Advance Care Planning:

Advance Care Planning is a voluntary process of discussion and shared planning for future health care. It involves the person who is preparing the plan, and usually involves family/whanau and health care professionals.

### Advance Care Plan:

An Advance Care Plan is the outcome of Advance Care Planning. It is formulated by the person and sets out their views about care towards the end of their life. It may also include views about medical care and a wide range of other matters. An Advance Care Plan may include an Advance Directive.

### Advance Directive:

An Advance Directive is a statement a person makes about their medical care in the future and becomes effective if a person ceases to be competent to make decisions for themselves. An Advance Directive is legally binding if made in appropriate circumstances.

### Competency and Advance Care Planning:

Competent people have the right to make autonomous decisions that as medical professionals we may regard as imprudent, and sometimes such decisions are a reflection of the person's longstanding personality, beliefs or lifestyle. This right is described in the Health and Disability Consumers Rights Acts.

According to ACP - A Guide for the NZ Health Care Workforce - "in the context of ACP, competency relates to an individual's ability to make a decision regarding their own health care (that is, competence at decision-making or decision-capacity). At a minimum, decision making capacity requires the ability to understand and communicate, to reason and deliberate, and the possession of a set of values".

Helpful websites:

- [The code of rights](#)
- [Advance care planning guide Ministry of Health](#)
- [Advance care planning resources](#)

## 7 History and examination

Quick info:

Diagnosing chronic heart failure (HF):

- it can be difficult to confidently diagnose chronic HF because the symptoms and signs are often difficult to elicit and are often found in other common conditions
- there is no single diagnostic test for HF
- diagnosis relies on clinical judgement based on a combination of history, physical examination and appropriate investigations

Ask about:

- the onset and duration of symptoms, including:
  - dyspnoea (shortness of breath):
    - level of activity required to cause dyspnoea
    - exacerbating factors, e.g. walking up a hill
    - whether it occurs at rest or only with exertion
    - the effect on daily life
  - orthopnoea
    - number of pillows needed
- paroxysmal nocturnal dyspnoea (PND):

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- disturbance of sleep
- cough (nocturnal)
- ankle swelling
- abdominal bloating and discomfort
- weight gain secondary to fluid retention
- fatigue
- weight loss
- cerebral symptoms such as confusion, dizziness, and memory impairment
- nocturia
- constipation
- medical history and family history of the following:
  - HF
  - myocardial infarction (MI)
  - coronary artery disease (CAD)
  - angina
  - atrial fibrillation (AF)
  - diabetes mellitus (DM)
  - hypertension
  - excessive alcohol intake
  - cardiotoxic chemotherapy
- current medications

## Examination:

- measure the person's weight
- general appearance of the person and respiratory rate
- take pulse and blood pressure (BP) - lying and standing
- peripheral perfusion and oxygen saturation
- check specifically for the presence of the following signs of HF:
  - raised jugular venous pressure
  - laterally displaced apex beat
  - tachycardia
  - third heart sound, e.g. gallop rhythm
  - murmurs
  - lung crackles
  - enlarged liver – due to engorgement
  - ascites
  - dependent oedema – check ankle and sacral oedema

## 8 RED FLAGS

### Quick info:

Indications for immediate referral include:

- severe dyspnoea
- associated chest pain
- general signs of hypoperfusion:
  - cool, clammy skin
  - cyanosis or pallor
- haemodynamic instability

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## 9 Investigations

Quick info:

Initial investigations include:

- blood tests:
  - BNP - brain natriuretic peptide
  - full blood count (FBC)
  - ferritin (see [investigating anaemia](#))
  - electrolytes
  - renal function
  - liver function tests (LFTs), including GGT
  - thyroid function
  - non-fasting lipids
  - HbA1c
- urine dipstick
- ECG:
  - may help to identify possible causes of heart failure or aggravating factors, such as:
    - atrial fibrillation (AF)
    - left ventricular (LV) hypertrophy – seen in hypertension and aortic valve disease
    - previous myocardial infarction (MI) – indicated by Q-waves
    - left bundle branch block
  - although heart failure (HF) is unlikely if the ECG is normal, up to 1 in 10 people with HF may have a normal ECG
- chest X-ray may demonstrate:
  - cardiomegaly – indicated by a cardiothoracic diameter of more than 50%
  - vascular congestion
  - features of pulmonary oedema
  - a normal chest X-ray does not exclude HF

## 10 Transfer to ED

Quick info:

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

A clinical handover should take place with the necessary clinical documentation faxed to ED (06 878 1353) and the original sent with the person:

- ECG (include the most recent ECG if relevant)
- referral letter or electronic discharge summary from rural site

NB: the Emergency Department requires formal documentation (clinical assessment, investigations and working diagnosis/problem list and any intervention to date).

**Rural:**

- discuss with on-call Physician or on-call Intensivist if the requires urgent transfer to HB Regional Hospital.

NB: stable people can be managed in rural locations in consultation with the Medical team on-call, contact through Regional Hospital switchboard.

## 11 BNP interpretation

Quick info:

Interpreting brain natriuretic peptide (BNP) levels:

- heart failure (HF) is unlikely if levels of BNP are normal
- increased levels of BNP are not used exclusively to diagnose HF because levels are also known to:



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- increase with age
- differ between men and women
- be affected by co-morbidities, e.g. renal failure, and pharmacological treatments
- the following are known to reduce BNP levels:
  - obesity
  - treatment with:
    - diuretics
    - angiotensin-converting enzyme (ACE) inhibitors
    - beta blockers
    - angiotensin II receptor blockers (ARBs)
    - aldosterone antagonists
- the following are known to increase BNP levels:
  - left ventricular hypertrophy (LVH)
  - ischaemia
  - tachycardia
  - right ventricular (RV) overload
  - hypoxaemia, including pulmonary embolism (PE)
  - renal dysfunction – indicated by a eGFR of less than 60ml/minute
  - sepsis
  - chronic obstructive pulmonary disease (COPD)
  - diabetes mellitus (DM)
  - age of more than 70 years
- BNP cannot be used to differentiate between heart failure with reduced ejection fraction (HF-REF) and heart failure with preserved ejection fraction (HF-PEF)

## 12 High BNP >80 pmol/L

Quick info:

BNP >80 pmol/L is suggestive of heart failure (HF).

BNP 30-80 pmol/L indeterminate range.

For indeterminate values - clinical assessment is the key factor for interpretation.

**BNP may be elevated in other settings**, including atrial fibrillation, Left Ventricular Hypertrophy, valvular disease, post MI and in renal failure.

## 13 Normal BNP <35 pmol/L

Quick info:

The "rule out" cut point for heart failure in people with acute dyspnoea is 0-35 pmol/L at all ages.

Non-obese people with normal BNP levels are unlikely to have heart failure – differential diagnoses should be considered in these people.

## 14 Commence initial therapy

Quick info:

Request the person to weigh themselves and record their weight daily.

Advise restriction of salt intake (less than 6g per day):

- inform about the salt content of common foods
- advise people not to replace salt with salt substitutes that are high in potassium

Advise people to avoid excessive fluid intake:

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- restrict to less than approximately 2.0L a day in people with mild/moderate symptoms
- restrict to 1.5-2.0L per day in those with severe symptoms

Prescribe a loop diuretic [1]:

- if symptoms are sufficiently severe to warrant treatment while waiting for echocardiography and specialist assessment
- furosemide and bumetanide are the preferred choices of diuretic
- usually given once daily in the morning but may be given both in the morning and at lunchtime for additional diuresis
- titrate the dose to control symptoms - starting dose of 40mg furosemide once daily

Specific monitoring recommendations for people prescribed a loop diuretic [1]:

- monitor potassium and creatinine 1-2 weeks after starting, then after each dose change, then annually
- If the serum creatinine level increases by more than 20% of baseline or the estimated glomerular filtration rate decreases by more than 15% of baseline, re-measure renal function within 1 week
- if the potassium level decreases to <3.5 mmol/L review diuretic treatment
- **if the potassium concentration decreases to <3.0 mmol/L refer to Emergency Department urgently**

Prescribe an angiotensin converting enzyme (ACE) Inhibitor. The following [selection of ACE inhibitors](#) are recommended [5]:

- Lisinopril 2.5 mg daily titrated to 10 - 20 mg daily
- Cilazapril 0.5 mg daily titrated to 2.5 - 5 mg daily
- Quinapril 2.5 mg daily titrated to 7.5 - 10 mg twice daily
- Enalapril 2.5 mg daily titrated to 10 - 20 mg daily

NB reconsider use of ACE inhibitor if ejection fraction (EF) is normal.

Specific monitoring recommendations for people prescribed an ACE inhibitor:

- monitor potassium and creatinine 1-2 weeks after starting, then after each dose change, then annually
- potassium and creatinine increases are acceptable with the initiation of an ACE inhibitor but should settle within 2 months
- if the potassium >5.9 or creatinine >100% of baseline stop the ACE inhibitor and seek specialist advice
- if creatinine still increasing after two months or is 50-100% above baseline halve the ACE inhibitor dose, **seek specialist advice if not improving**
- acceptable increases include: potassium <6 mmol/L, creatinine increase up to 50% of baseline

References:

[4] McMurray J. et al, *ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012: The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC.* European Heart Journal, Volume 33, Issue 14, 1 July 2012, Pages 1787–1847. Available at: <https://academic.oup.com/eurheartj/article/33/14/1787/526884/ESC-Guidelines-for-the-diagnosis-and-treatment-of?searchresult=1>

[5] Medsafe data sheets. <http://www.medsafe.govt.nz>

## 15 Consider differential diagnoses

Quick info:

Consider the following conditions associated with shortness of breath:

- respiratory conditions, such as:
  - chronic obstructive pulmonary disease (COPD)
  - asthma
  - pneumonia
  - pulmonary embolism
  - sleep apnoea
- cancer
- obesity
- volume overload from:
  - renal failure
  - nephrotic syndrome

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- angina
- severe anaemia
- psychogenic causes, e.g. anxiety
- being unfit

Consider the following conditions associated with peripheral oedema:

- dependent oedema that is not pathological, e.g. from prolonged inactivity
- nephrotic syndrome
- medications, e.g. dihydropyridine calcium channel blockers, non-steroidal anti-inflammatory drugs (NSAIDs)
- hypoalbuminaemia
- venous insufficiency

## 16 Request echocardiogram

Quick info:

Refer people for transthoracic echocardiography (echo) within 6 weeks if BNP levels are elevated.

Echo remains fundamental in the diagnosis and monitoring of heart failure, however rapid access to ECG, BNP and chest X-ray can facilitate early treatment while also clarifying the need for an echo.

With advanced age or increased comorbidities and frailty, an echo is not recommended if it will not influence the person's management.

## 17 Referral criteria for echocardiography

Quick info:

Direct referral criteria for Echocardiography. Referrals must have the following included:

- ECG
- BNP

**Non acute onset:**

- ECG abnormal OR BNP  $\geq$  35 pg/ml
- time frame for echo up to 3 months

**Acute onset:**

- ECG abnormal OR BNP  $\geq$  100 pg/ml
- Time frame for echo ideally within 2 weeks

Refer to Cardiology Services through practice management referral process.

Further information for referral and access to secondary cardiac care is available in the [Minimum standards for referral and access to secondary cardiac care within the Central Region](#)

## 18 Consider advance care planning

Quick info:

Advance Care Planning (ACP) is a process of discussion and shared planning for future care. All people with an advanced life-limiting illness or condition should be given the opportunity to discuss their prognosis and end of life care.

See "Advance Care Planning" box at top of pathway for more information.

## Heart Failure Provenance Certificate – review and republish

### Overview

This document describes the provenance of Hawke's Bay's District Health Board's Heart Failure Pathway. It was developed in June 2015-February 2016 and first published in April 2016. A review of this pathway was completed by the clinical leads in September 2017 and was re-published in November 2017. A further review of the Pathway is due in November 2019.

The Collaborative Clinical Pathways programme is one initiative stemming from the *Transform and Sustain* agenda. The main aims of CCP are to:

- Identify opportunities to improve how health and disability care is planned and delivered within the district to improve patient access to a wider range of health services that are both closer to home and reduce avoidable hospital admissions.
- Provide health professionals throughout the Hawke's Bay district with best practice, evidence-based clinical pathways that are available at the point of care.

Outcomes we expect to achieve include faster access to definitive care, improved health equity and outcomes, better value from publically-funded resources, and better patient experience through clear expectations, improved access and greater health literacy. These outcomes are clearly aligned to the NZ healthcare *Triple Aim* and *Better, Sooner, More Convenient* policy directions.

### Editorial methodology

This Pathway 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 was developed by individuals with front-line clinical experience (see Contributors section of this document) and has undergone consultation to gain feedback and input from the wider clinical community.

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.

An update to this Pathway is scheduled for 12 months after first publication. However, feedback is welcomed at any time, with important updates added at the earliest opportunity within the Map of Medicine publishing schedule (the third Friday of each month).

## References

This Pathway has been developed according to the Map of Medicine editorial methodology. Its content is based on high-quality guidelines and practice-based knowledge provided by contributors with front-line clinical experience. Feedback on this Pathway was received from stakeholders during a consultation process.

1	Criteria Committee, New York Heart Association, Inc. <i>Diseases of the Heart and Blood Vessels. Nomenclature and Criteria for diagnosis</i> , 6th edition Boston, Little, Brown and Co. 1964, p 114
2	bpac <sup>nz</sup> Identifying patients with heart failure in primary care. Best practice Journal; Issue 50: 2013 Available from: <a href="http://www.bpac.org.nz/BPJ/2013/february/identifying-heart-failure.aspx">http://www.bpac.org.nz/BPJ/2013/february/identifying-heart-failure.aspx</a>
3	Ministry of Health, Mortality Collection (MORT), National Minimum Dataset (Hospital Events) (NMDS), Ministry of Health: Wellington. Summary available at: <a href="http://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/maori-health-data-and-stats/tatau-kura-tangata-health-older-maori-chart-book/nga-mana-hauora-tutohu-health-status-indicators-50-years/cardiovascular-disease-50-years">http://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/maori-health-data-and-stats/tatau-kura-tangata-health-older-maori-chart-book/nga-mana-hauora-tutohu-health-status-indicators-50-years/cardiovascular-disease-50-years</a>
4	McMurray J. et al, <i>ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012: The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC.</i> European Heart Journal, Volume 33, Issue 14, 1 July 2012, Pages 1787–1847. Available at: <a href="https://academic.oup.com/eurheartj/article/33/14/1787/526884/ESC-Guidelines-for-the-diagnosis-and-treatment-of?searchresult=1">https://academic.oup.com/eurheartj/article/33/14/1787/526884/ESC-Guidelines-for-the-diagnosis-and-treatment-of?searchresult=1</a>
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## Disclaimers

**Clinical Pathways Steering Group, Hawke's Bay DHB and Health Hawke's Bay – Te Oranga Hawke's Bay**

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