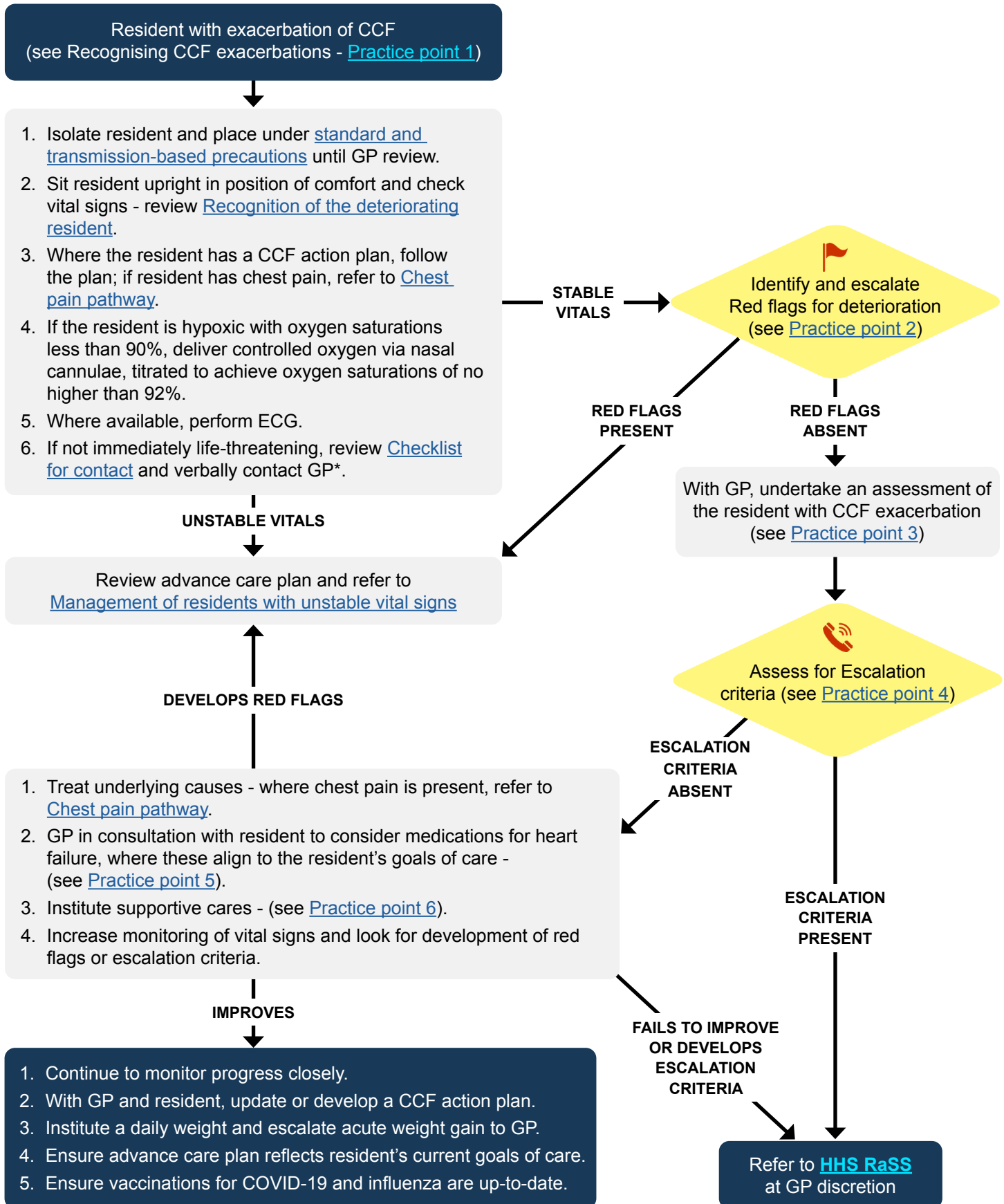


# Congestive cardiac failure (CCF)



\*Where timely, arrange telehealth or face-to-face GP review

# Congestive cardiac failure (CCF) practice points

## 1) Recognising CCF exacerbations

Exacerbation of CCF should be suspected in residents who have any of the following symptoms or examination findings, where no alternate more likely cause is identified:

1. Increased shortness of breath and / or reduced exercise tolerance.
2. Orthopnoea or resident props self up on increasing number of pillows to sleep or sleeps in a recliner chair.
3. Paroxysmal nocturnal dyspnoea or sudden onset shortness of breath during sleep.
4. Dry irritating cough that may occur particularly at night, where there is no other cause identified.
5. Progressive abdominal distension, ankle swelling or increase in weight in a resident with prior CCF.
6. Tachypnoea (increased respiratory rate) and increased work of breathing in a resident with a prior history of CCF.
7. Bilateral inspiratory crackles on chest auscultation (note wheeze may predominate) where infection has been excluded.

## 2) Red flags for deterioration in resident with CCF exacerbation

If any of the following red flags are identified in residents who have an exacerbation of CCF, review the resident's advance care plan, consult resident or substitute health decision maker (or nominated decision support person) and refer to [Management of residents with unstable vital signs pathway](#).

The following are considered red flags in the resident with a CCF exacerbation:

- Vital signs in the red or danger zone and unresponsive to management - refer to [Recognition of the deteriorating resident](#)
- Altered mental state or difficult to rouse relative to baseline
- The resident has significant agitation or distress
- Syncope
- Vomiting or inability to eat or sleep due to shortness of breath
- Worsening hypoxaemia (oxygen saturations lower than usual for the resident) or inability to speak in sentences (where resident can usually do this) or significant respiratory distress despite management

Note: a decision to transfer a resident to hospital with an exacerbation of CCF should always consider resident goals of care and be respectful of informed choice by the resident (or substitute decision maker).

## Congestive cardiac failure (CCF) practice points (cont'd)

### 3) Assessment of the resident with suspected CCF

Goals of assessment of the resident with suspected exacerbation of CCF are to:

1. Confirm an exacerbation of CCF and determine severity.
2. Identify the cause of CCF exacerbation.

#### Confirm an exacerbation of CCF and determine severity

- On history, confirm symptoms as per [Practice point 1](#)
- Examination:
  - Perform an assessment of vital signs: where vital signs are unstable, refer to the [Management of Unstable Residents Pathway](#) to guide response; note that residents may present with tachypnoea (increased respiratory rate) and increased work of breathing
  - Focal bibasal crackles that do not clear on coughing
  - Pitting ankle oedema
- Assess for red flags - presence of [red flags](#) suggest severe exacerbation of CCF or an alternate cause

#### Identify causes of CCF exacerbation using:

- History from the resident and carers (and family where appropriate and relevant) for:
  - Chest pain - refer to [Chest pain pathway](#)
  - Non-compliance with fluid restriction (where one has been advised)
  - Recent change to medications such as commencement of medications that may exacerbate heart failure (e.g. calcium channel blockers such as verapamil; beta-blockers; corticosteroids; NSAIDs; urinary alkalinisers; soluble effervescent products such as soluble panadol; pioglitazone or saxagliptin) or cessation of medications that may relieve heart failure (e.g. diuretics)
  - History of fevers or rigors (uncontrolled shivering and shaking), noting that infection may worsen heart failure
- Assess pulse (tachy- or brady-arrhythmias), blood pressure (hypertension) and oxygen saturations
- Assess for presence of cardiac murmur (valvular disease may worsen heart failure)
- Isolated right heart failure (clear chest and pitting ankle oedema) - additional to above, perform risk assessment for pulmonary emboli, chronic lung disease or obstructive sleep apnoea
- Investigations:
  - Where aligned to a resident's goals of care, consider investigations: full blood count (to identify anaemia) and electrolytes, renal and liver function tests, thyroid function tests, iron studies and troponin
  - For residents presenting with shortness of breath, consider performing a respiratory virus PCR as COVID-19 or influenza may present with similar symptoms; early identification of influenza or COVID-19 will allow early implementation of anti-viral therapy and may limit outbreak size and duration
  - For residents with a history of CCF, review of prior echocardiography may guide management based on whether ejection fraction was reduced or preserved; in those residents who remain independent in ADLs and who have active goals of care, consider echocardiography where symptoms are not responsive to medical management

### 4) Escalation criteria

First screen for [red flags](#) as above. Where there are no red flags, presence of any of the following may prompt escalation to [HHS RaSS](#) at GP discretion (or in resident's nearing end of life, to the resident's palliative care provider):

- Red flags in a resident who has conservative goals of care and does not wish to be transferred to hospital
- Resident is not improving despite GP management of CCF
- Worsening renal function in setting of CCF
- Diagnostic uncertainty

## Congestive cardiac failure (CCF) practice points (cont'd)

### 5) Medications for residents with an exacerbation of CCF

**Individualise medication management** for residents with an exacerbation of CCF - consider the resident's goals of care, frailty and comorbidities when determining risks versus benefits of therapy. Refer to [Therapeutic Guidelines](#) for detailed prescribing information. Medication options include:

1. Angiotensin converting enzyme inhibitors (ACE-I) or angiotensin receptor blockers or neprilysin inhibitors:  
These drugs are of benefit in those known to have a reduced ejection fraction. Where clinically appropriate, commence at low dose and up-titrate only after 2 weeks of initial therapy; monitor blood pressure and check renal function for increasing creatinine and potassium.
2. Beta-blockers (e.g. bisoprolol, carvedilol, metoprolol XL or nebivolol):  
Beta-blockers may reduce hospitalisation and mortality but should not be commenced or uptitrated in residents with fluid overload or worsening heart failure as they may precipitate worsening of the resident's condition. Frail older people are often bradycardic and therefore beta-blockers may require lower dosing.
3. Mineralocorticoid receptor antagonists or MRAs (e.g. spironolactone):  
MRAs reduce mortality and hospitalisation, including in frail older persons. However, older persons are at higher risk of worsening of renal function in association with these medications - monitor serum potassium and creatinine.
4. SGLT2 inhibitors (e.g. empagliflozin or dapagliflozin):  
These medications are associated with reduced hospitalisation and mortality including in older persons with heart failure, regardless of diabetic status or ejection fraction. However there is increased risk of UTI and should be avoided in those with a history of recurrent UTI and increase risk of ketoacidosis in diabetic residents.
5. Furosemide is indicated in those with shortness of breath and clinical findings of oedema. Monitor residents on furosemide for dehydration and assess renal function against clinical findings to allow dose titration. Where there is isolated persistent peripheral oedema, consider contribution of venous insufficiency or calcium channel blockers.

### 6) Supportive cares for residents with an exacerbation of CCF

**Supportive care** for residents with an exacerbation of CCF includes:

1. Fluid management:
  - Institute a daily weight chart to identify fluid retention (increase in weight by 2kg over 2 days should prompt GP review with consideration of a temporary increase in diuretic therapy)
  - Where a resident has fluid overload, GP to consider with resident, a daily fluid restriction to 1.5 litres
2. Optimise nutritional intake:
  - Consider supplemental protein (20g per day)
3. Where the resident is anaemic, treat reversible causes of anaemia. Where a resident is iron deficient (serum ferritin < 100mg/L or between 100 and 300mg/L with transferrin saturation < 20%), consider an iron infusion (even in those who do not have anaemia) as this may improve symptoms of heart failure and improve quality of life.
4. Institute a medication review via GP or residential medication management review (RMMR) for agents that may worsen cardiac failure (e.g. calcium channel blockers such as verapamil; betablockers; corticosteroids; NSAIDs; urinary alkalinisers; soluble effervescent medications such as soluble panadol; pioglitazone or saxagliptin). Soluble effervescent medications contain significant salt and should be changed to non-soluble / crushable substitutes.
5. Falls risk management plan - residents with CCF are at increased risk of falls - screen for postural drop in blood pressure and ensure hydration is maintained; regular exercise adapted to resident capacity may improve outcome.
6. Delirium prevention and management - residents with CCF are at increased risk of delirium. Where this occurs, there should be assessment to identify and manage precipitating factors (where such management is aligned to goals of care).
7. Symptom relief - Where symptoms persist despite maximal therapy, consider consultation with [HHS RaSS](#) team at GP discretion or transition to a palliative approach, as guided by informed choice of the resident or their substitute decision maker. In a person with palliative goals of care, treatment of the underlying cause (where this is reversible) may still be clinically appropriate where this aligns with the resident's wishes. Guidance for strategies (drug and non-drug) to relieve breathlessness or dyspnoea with a palliative approach to care is found [here](#).

## Congestive cardiac failure (CCF) references

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## Congestive cardiac failure (CCF) version control

<b>Pathway</b>	Congestive cardiac failure				
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<b>Author</b>	Improving the quality of care and choice of care setting for residents of aged care facilities with acute healthcare needs steering committee				
<b>Custodian</b>	Queensland Dementia, Ageing and Frailty Clinical Network				
<b>Supersedes</b>	Congestive cardiac failure 2.0				
<b>Applicable to</b>	Residential aged care facility registered nurses and General Practitioners in Queensland RACFs, serviced by a RACF acute care support service (RaSS)				
<b>Document source</b>	Internal (QHEPS) and external				
<b>Authorisation</b>	Executive Director, Healthcare Improvement Unit				
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