

# Heart Failure Guidance Summary for GPs

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The regional heart failure guidance is available online at

<https://occg.info/heart-failure>

The below is a top-line summary of the guidance written for use in primary care. Hyperlinks will go to the online full version

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2. **Expected treatment pathways for patients with**
  - **Heart failure with a reduced ejection fraction (HF-REF)**
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3. **Checklist for regular review of patients with heart failure**

## Other advice is available online, including:

- **HF referrals and clinics**
- **Medications and local heart failure formulary**
- **Renal issues in patients with heart failure**
- **List of all GP pages on Oxfordshire HF website**

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## Diagnosis and initial treatment of heart failure

History and examination suggestive of possible heart failure ([further information](#))

Arrange initial tests ([further information on tests](#))

- Bloods: NT-proBNP, U&E, LFT, TFT, FBC
- ECG
- Do not request open access echocardiogram
- Consider in addition to help with severity / differentials
  - Chest x-ray
  - Urinalysis
  - Spirometry or peak flow

Consider initial treatment of fluid overload or breathlessness with diuretics, or of fast atrial fibrillation with beta blockers or digoxin. [See further information below.](#)

If symptoms are severe, especially if paroxysmal nocturnal dyspnoea or lung crepitations, consider referral to medicine at JR or Horton for inpatient / ambulatory assessment.

NT-proBNP greater than 2000ng/L

Refer [urgently](#) to Heart Failure clinic via ERS,  
Target to be seen within 2 weeks

NT-proBNP greater than 400ng/L, but less than 2000ng/L

Refer to Heart Failure clinic via ERS,  
Target to be seen within 6 weeks

NT-proBNP less than 400ng/L

Reconsider diagnosis of HF  
[Further advice](#)

## [NT-proBNP testing](#)

Blood testing for B-Type Natriuretic Peptide (BNP) is a key step in the diagnostic pathway for heart failure. This is now recommended by NICE as the first investigation when heart failure is suspected on clinical grounds.

N-Terminal B-Type Natriuretic Peptide (NT-proBNP) testing is now available to all GPs in the region via the OUH FT pathology labs and has replaced the previously used assay (as of November 2019). The normal and abnormal ranges are different. Unlike BNP, NT-proBNP is not subject to the issue of degradation with falsely low readings if the sample is delayed in transit. Nonetheless, samples need to reach the lab within 24h. Please send an serum sample (yellow/gold top tube – note this is a change from BNP).

[Considerably more advice, including tips for using NT-proBNP testing in clinic practice, is available online.](#)

**Expected pathway for patients with Heart Failure with reduced ejection fraction (HF-REF; Left ventricular ejection fraction <40%; severe LV systolic dysfunction)**

Diagnosis should be made only after an echocardiogram, with input from a cardiology specialist.

- Commence HF disease modifying therapies: **ACEi / ARB and beta blockers**
- Diuretics if needed
- Titrate ACEi / ARB and beta blockers to maximum tolerated dose

- Identify and treat comorbidities
- Hypertension
  - Renal Dysfunction
  - Diabetes
  - Pulmonary Disease
  - Ischaemic Heart Disease
  - Anaemia

- If remains symptomatic (any degree of breathlessness or other HF symptoms):**
- Start **Mineralocorticoid Receptor Antagonist** (eplerenone for most men, spironolactone for women)

Community Heart Failure Nurses can assist with medication titration and education.

Cardiac Rehabilitation is indicated

- If remains symptomatic (any degree of breathlessness or other HF symptoms):**  
Please **refer back to hospital HF clinic** for review and consideration of other HF therapies such as:
- **Dapagliflozin or other SGLT inhibitors**
  - **Sacubitril-valsartan**
  - Cardiac resynchronisation therapy
  - Intravenous iron infusion
  - Ivabradine or other drug therapies

Community Heart Failure Nurses can assist with medication titration and education, and may start these drug therapies as indicated.

Once diagnosis made and medications have been introduced and uptitrated, likely to be discharged out of hospital care back to community care.

NICE suggest a 6-monthly review for all patients with heart failure, and a 12-month review is in the quality outcome framework – **see suggested template for review**.

## Expected pathway for patients with Heart Failure with preserved ejection fraction (HF-PEF; LV ejection fraction >40%)

Diagnosis should be made only after an echocardiogram, with input from a cardiology specialist.

No evidence for disease modifying therapies in HF-PEF

Prescribe diuretics to relieve symptoms and signs of fluid overload

Identify and treat comorbidities

- Hypertension
- Renal Dysfunction
- Diabetes
- Pulmonary Disease
- Ischaemic Heart Disease
- Anaemia

Consider addition of **Mineralocorticoid Receptor Antagonist (eplerenone for most men, spironolactone for women)** to assist diuresis

Community Heart Failure Nurses are **not** currently commissioned to see these patients.

No evidence for cardiac rehabilitation

Once diagnosis made, likely to be discharged out of hospital care back to GP care.

Whilst we can discuss or see these patients if they continue to be problematic, as there are no additional available therapies we are unlikely to be able to add to the above.

NICE suggest a 6-monthly review for all patients with heart failure, and a 12-month review is in the quality outcome framework – [see suggested template for review](#)

The term heart failure with a 'moderately reduced' or 'mid-range' ejection fraction (HF-mREF) is sometimes used for patients with an ejection fraction of 40-50%. At the current time there is no robust evidence that these patients should be treated differently to other patients with HF – PEF, although we would have a low threshold for the use of ACE inhibitors / ARBs.

## General Practice Heart Failure Review Template

<b>Symptoms</b>	<ul style="list-style-type: none"> <li>• Are symptoms stable?</li> <li>• Are they still symptomatic? If so escalate treatment as per <a href="#">pathways above</a></li> <li>• Are they becoming fluid overloaded or dehydrated?</li> <li>• Record weight, BP and pulse</li> <li>• Check and record pulse rhythm using a code</li> </ul>
<b>Medication review</b>	<p><i>For Heart Failure with a reduced ejection fraction:</i></p> <ul style="list-style-type: none"> <li>• <a href="#">ACEi / ARB at maximum tolerated licenced dose</a>? If not titrate up unless BP less than 90 systolic or side effects</li> <li>• <a href="#">Beta blocker at maximum tolerated licenced dose</a>? If not titrate up unless BP less than 90 systolic or side effects</li> <li>• <a href="#">Mineralocorticoid Receptor Antagonist (MRA; e.g. Eplerenone for men or Spironolactone for women)) at maximum tolerated licenced dose</a>?</li> <li>• If they remain symptomatic after the above (any degree of breathlessness or other HF symptoms) – refer to hospital clinic for consideration of other therapies.</li> </ul> <p><i>For Heart Failure with preserved ejection fraction:</i></p> <ul style="list-style-type: none"> <li>• <a href="#">No evidence for disease modifying therapies</a></li> <li>• Titrate diuretics to symptoms and oedema</li> </ul>
<b>Bloods</b>	<ul style="list-style-type: none"> <li>• Renal function, potassium, sodium, haemoglobin stable?</li> </ul>
<b>Comorbidities and risk factors</b>	<ul style="list-style-type: none"> <li>• Hypertension, Diabetes, Atrial fibrillation</li> <li>• Smoking cessation</li> <li>• Alcohol intake</li> <li>• Cognitive status and nutritional status</li> </ul>
<b>Other tests and treatments</b>	<ul style="list-style-type: none"> <li>• Flu / pneumococcal vaccine is recommended for all HF patients</li> <li>• Annual ECG: if QRS width is newly &gt;130ms (3.25 small squares) then refer for reassessment in hospital HF clinic (to consider Cardiac Resynchronisation Therapy)</li> <li>• Consider resuscitation status and advanced care planning</li> </ul>

# Heart Failure Medications

by Dr Oliver Watkinson, Dr James Gamble. Reviewed and approved by Oxfordshire area prescribing committee, May 2021.

General guidelines for medications used for heart failure can be found in national and international guidelines:

**NICE guideline- Chronic heart failure in adults: diagnosis and management.** Quite brief with useful general advice about heart failure.

**European Society of Cardiology HF Guideline:** much lengthier document with a lot more detail .

The below notes relate to specific local arrangements.

## ACE Inhibitors

**Ramipril** is the first line ACE inhibitor in Oxfordshire. It is usually prescribed od. Some patients seem to do better with divided dosing. Postural light headedness can often be improved by taking at night. The target dose is 10mg; as with all ACE inhibitors the greatest prognostic and symptomatic benefit is achieved by titrating up to the maximum tolerated dose.

**Lisinopril** and **Perindopril** are also freely prescribable in Oxfordshire for heart failure. [Oxfordshire formulary link.](#)

## Angiotensin Receptor Blockers (ARB)

These have been shown to be equivalent to ACE inhibitors for patients with heart failure with a reduced ejection fraction. **Candesartan** is the first line ARB for heart failure in Oxfordshire. The target dose is 32mg.

Losartan can also be used in heart failure, with a target dose of 150mg. [Oxfordshire formulary link.](#)

## Beta Blockers

There are only a few beta blockers which have an evidence base for treatment of heart failure with reduced ejection fraction.

We usually use **bisoprolol** as first line, due to the ease of once daily dosing. The target dose is 10mg; as with all beta blockers the greatest prognostic and symptomatic benefit is achieved by titrating up to the maximum tolerated dose.

**Carvedilol** is a good alternative, which is prescribed bd and titrated to a target dose of 25mg BD. It has some additional vasodilatory properties mediated via  $\alpha$  receptors.

**Nebivolol** may be better tolerated in some patients from the respiratory and erectile point of view. It has been approved for prescribing in Oxfordshire as a third line option if the others are not tolerated

<http://www.oxfordshireformulary.nhs.uk/>

## Mineralocorticoid Receptor Antagonists

These are a key treatment in heart failure. The evidence base strongly supports prognostic benefit in heart failure with reduced ejection fraction, but we often suggest them as an adjunctive diuretic in heart failure with preserved ejection fraction. Potassium levels should be monitored after initiation.

**Spironolactone** is first line in females. The target dose is 25mg od in heart failure with reduced ejection fraction, though we sometimes use higher doses when required. 12.5mg tablets are not manufactured, so prescription of this dose will usually entail cutting tablets in half, which is very difficult for many patients, and not usually recommended. Eplerenone 25mg is equivalent to spironolactone 12.5mg and a more practical option.

**Eplerenone** has a lower risk of causing gynaecomastia and so we recommend it as first line for males (particularly if <65 years). The target dose in heart failure with reduced ejection fraction is higher – 50mg od. It is normally started at 25mg od and should be uptitrated to 50mg od when possible.

<http://www.oxfordshireformulary.nhs.uk/>

## Sacubitril/Valsartan (Angiotensin receptor neprilysin inhibitor; ARNI)

Sacubitril/Valsartan (Entresto) is used to treat heart failure with reduced ejection fraction, replacing an ACE inhibitor or ARB (which must NOT be prescribed with Entresto). It has been shown to be superior to an ACE inhibitor in reducing mortality and morbidity in this population.

In Oxfordshire it is subject to prescribing arrangements [as set out in the shared care protocol](#).

## SGLT-2 Inhibitors

Dapagliflozin has a licence and is [recommended by NICE](#) for use in heart failure with a reduced ejection fraction, added to optimised therapy with ACE/ARB/ARNI, Beta blocker, and aldosterone antagonist. See the local guideline for more detail and specific advice -available via <http://occg.info/heart-failure>.

<http://www.oxfordshireformulary.nhs.uk/>

Studies have shown considerable benefit when patients with heart failure (with or without diabetes) were treated with [Dapagliflozin](#) or [Empagliflozin](#). Other SGLT-2 inhibitors are also the subject of current trials in HF patients.

Canagliflozin (Invocana), Dapagliflozin (Forxiga), Empagliflozin (Jardiance), and ertugliflozin (Steglatro) are licenced for the treatment of Type 2 Diabetes. Several studies have shown significant improvement in cardiovascular outcomes including heart failure.

## Intravenous Iron Infusions

Iron deficiency is common in heart failure. It may be relative rather than absolute (i.e. low transferrin saturations without very low ferritin). Oral iron does not seem to result in symptomatic benefits in the context of heart failure, but intravenous iron does (even in the absence of anaemia).



In patients with heart failure and a reduced ejection fraction, please consider checking iron studies.

- Intravenous iron is recommended in these patients if they have low iron levels as shown by:
  - Serum ferritin less than 100 µg/L OR
  - Serum ferritin between 100 and 299µg/L and transferrin saturations less than 20%