



A summary of prescribing recommendations from NICE guidance

Chronic heart failure

NICE NG106; 2018

This guideline covers the diagnosis and management of chronic HF in people aged ≥18 years.

	Definition of terms
HF	heart failure
HFrEF	heart failure with reduced ejection fraction
HFpEF	heart failure with preserved ejection fraction
NT-proBNP	N-terminal pro-B-type natriuretic peptide
TTE	transthoracic echocardiography
ACEI	angiotensin converting enzyme inhibitor
ARB	angiotensin II receptor blocker
MRA	mineralocorticoid receptor antagonist
COPD	chronic obstructive pulmonary disease
ECG	echocardiogram
MDT	multidisciplinary team
NYHA	New York Heart Association
BP	blood pressure
CKD	chronic kidney disease

Diagnosis

- ◆ Take a careful, detailed history and perform a clinical examination and tests to confirm the presence of HF.
- ◆ Measure NT-proBNP in people with suspected HF.
- ◆ Be aware that:
 - the level of serum natriuretic peptide does not differentiate between HFrEF and HFpEF,
 - an NT-proBNP level <400 ng/litre (47 pmol/litre) in an untreated person makes a diagnosis of HF less likely and alternative causes for symptoms should be reviewed. If there is still concern that the symptoms might be related to HF, discuss with a physician with subspecialty training in HF,
 - people with an NT-proBNP level >2,000 ng/litre (236 pmol/litre) need urgent referral for specialist assessment and TTE within 2 weeks,
 - people with an NT-proBNP level between 400 and 2,000 ng/litre (47 to 236 pmol/litre) need referral for specialist assessment and TTE within 6 weeks.
- ◆ Be aware that:
 - obesity, African or African–Caribbean family origin, or treatment with diuretics, ACEIs, beta-blockers, ARBs or MRAs can reduce levels of serum natriuretic peptides,
 - high levels of serum natriuretic peptides can have causes other than HF (e.g. age >70 years, left ventricular hypertrophy, ischaemia, tachycardia, right ventricular overload, hypoxaemia [including pulmonary embolism], eGFR <60 ml/minute/1.73 m², sepsis, COPD, diabetes, or liver cirrhosis).
- ◆ Perform TTE to exclude important valve disease, assess systolic and diastolic function of the (left) ventricle, and detect intracardiac shunts.
- ◆ Refer people with HF caused by valve disease for specialist assessment and advice regarding follow-up.
- ◆ Consider alternative methods of imaging the heart if a poor image is produced by TTE - see [NICE Pathway](#).
- ◆ Perform an ECG and consider the following tests to evaluate possible aggravating factors and/or alternative diagnoses: chest X-ray, blood tests (renal, thyroid and liver function, lipid profile, glycosylated haemoglobin [HbA_{1c}], full blood count), peak flow or spirometry, and urinalysis.

- ◆ Try to exclude other disorders that may present in a similar manner.
- ◆ When a diagnosis of HF has been made, assess severity, aetiology, precipitating factors, type of cardiac dysfunction and correctable causes.
- ◆ The specialist HF MDT should offer people newly diagnosed with HF an extended first consultation, followed by a second consultation to take place within 2 weeks if possible. At each consultation:
 - discuss the person's diagnosis and prognosis,
 - explain HF terminology,
 - discuss treatments,
 - address the risk of sudden death, including any misconceptions about that risk,
 - encourage the person and their family or carers to ask any questions they have.

Information

- ◆ Discuss prognosis in a sensitive, open and honest manner. Be frank about the uncertainty in predicting the course of HF and revisit this discussion as the condition evolves.
- ◆ Provide information whenever needed throughout the person's care.
- ◆ Consider training in advanced communication skills for all healthcare professionals working with people who have HF.

Pharmacological Treatment

HFrEF

- ◆ **First-line:** Offer an ACEI and a beta-blocker licensed for HF. Use clinical judgement when deciding which drug to start first.
- ◆ Introduce treatment at a low dose and titrate upwards until the target or maximum tolerated dose is reached.
- ◆ **Do NOT** offer an ACEI if there is a clinical suspicion of haemodynamically significant valve disease until the valve disease has been assessed by a specialist.
- ◆ Consider an ARB licensed for HF as an alternative to an ACEI for people who have intolerable side effects with ACEIs.
- ◆ If neither ACEIs nor ARBs are tolerated, seek specialist advice and consider hydralazine in combination with nitrate (especially if the person is of African or Caribbean family origin and has moderate to severe HFrEF [NYHA class III/IV]).
- ◆ In people whose condition is stable and who are already taking a beta-blocker for a comorbidity (e.g. angina or hypertension), switch to a beta-blocker licensed for HF.
- ◆ **Do NOT** withhold treatment with a beta-blocker solely because of age or the presence of peripheral vascular disease, erectile dysfunction, diabetes, interstitial pulmonary disease or COPD.
- ◆ Offer an MRA, in addition to an ACEI (or ARB) and beta-blocker, to people who continue to have symptoms.

Interventional procedures – see [NICE Pathway](#)Cardiac rehabilitation – see [NICE Pathway](#)Palliative care – see [NICE Pathway](#)

Please go to www.nice.org.uk to check for any recent updates to this guidance.

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HFrEF in people with CKD

- ◆ For people who have HFrEF and CKD with an eGFR \geq 30 ml/min/1.73 m²:
 - offer the treatment outlined above, **AND**
 - if the person's eGFR is \leq 45 ml/min/1.73 m², consider lower doses and/or slower dose titration of ACEIs or ARBs, MRAs and digoxin.
- ◆ For people who have HFrEF and CKD with an eGFR <30 ml/min/1.73 m², the HF MDT should consider liaising with a renal physician.
- ◆ Monitor closely the response to titration of medicines in people who have HFrEF and CKD, taking into account the increased risk of hyperkalaemia.

Drug monitoring**ACEI/ARB/MRA**

- ◆ Measure serum sodium and potassium, and assess renal function, before and after starting treatment and after each dose increment.
- ◆ Measure BP before and after each dose increment - see [NICE Pathway: Hypertension](#).
- ◆ Once the target or maximum tolerated dose is reached, monitor treatment monthly for 3 months and then at least every 6 months, and at any time the person becomes acutely unwell.

Beta-blocker

- ◆ Assess heart rate and clinical status after each titration.
- ◆ Measure BP before and after each dose increment.

Specialist treatment

- ◆ Treatment should be started by a HF specialist with access to a HF MDT. Dose titration and monitoring should be performed by the most appropriate team member.

Ivabradine – see [NICE TA267](#)

- ◆ Recommended as a treatment option for people:
 - with NYHA class II to IV stable chronic HF with systolic dysfunction, **AND**
 - who are in sinus rhythm with a heart rate of \geq 75 beats per minute (bpm), **AND**
 - who are given ivabradine in combination with standard therapy including beta-blockers, ACEIs and MRAs, or when beta blocker therapy is contraindicated or not tolerated, **AND**
 - with a left ventricular ejection fraction of \leq 35%.
- ◆ Ivabradine should only be initiated after a stabilisation period of 4 weeks on optimised standard therapy.

Sacubitril valsartan – see [NICE TA388](#)

- ◆ Recommended as an option for treating symptomatic HFrEF for people:
 - with NYHA class II to IV symptoms, **AND**
 - with a left ventricular ejection fraction of \leq 35%, **AND**
 - who are already taking a stable dose of ACEIs or ARBs.
- ◆ For people whose treatment was started within the NHS before this guidance was published, treatment may continue without change to whatever funding arrangements were in place for them before this guidance was published until they and their NHS clinician consider it appropriate to stop.

Digoxin

- ◆ Digoxin is recommended for worsening or severe HFrEF despite first-line treatment for HF. Seek specialist advice before initiating.
- ◆ Routine monitoring of serum digoxin concentrations is not recommended. A digoxin concentration measured within 8 to 12 hours of the last dose may be useful to confirm a clinical impression of toxicity or non-adherence.
- ◆ The serum digoxin concentration should be interpreted in the clinical context as toxicity may occur even when the concentration is within the 'therapeutic range'.

Managing all types of HF**Diuretics**

- ◆ Diuretics should be routinely used for the relief of congestive symptoms and fluid retention and titrated (up and down) according to need.
- ◆ For people with HFpEF offer a low to medium dose of loop diuretics (e.g. <80 mg furosemide daily). People whose HF does not respond to this treatment will need further specialist advice.

Calcium-channel blockers

- ◆ Avoid verapamil, diltiazem and short-acting dihydropyridine agents in people who have HFpEF.

Amiodarone

- ◆ Make the decision to prescribe amiodarone in consultation with a specialist.
- ◆ Review the need to continue amiodarone at the 6-monthly clinical review.
- ◆ Offer liver and thyroid function tests, and review side effects, as part of the routine 6-monthly clinical review.

Anticoagulants

- ◆ For people who have HF and atrial fibrillation, see [NICE pathway: Atrial fibrillation](#)
- ◆ In people with HF in sinus rhythm, anticoagulation should be considered for those with a history of thromboembolism, left ventricular aneurysm or intracardiac thrombus.

Vaccinations

- ◆ Offer an annual vaccination against influenza.
- ◆ Offer a once-only vaccination against pneumococcal disease.

Contraception and pregnancy

- ◆ Discuss contraception and pregnancy with women of childbearing potential. If pregnancy is being considered or occurs, seek specialist advice. Subsequently, specialist care should be shared between the cardiologist and obstetrician.

Lifestyle advice**Salt and fluid restriction**

- ◆ **Do NOT** routinely advise people to restrict their sodium or fluid consumption. Ask about salt and fluid consumption and, if needed, advise as follows:
 - restricting fluids for people with dilutional hyponatraemia,
 - reducing intake for people with high levels of salt and/or fluid consumption.
- ◆ Continue to review the need to restrict salt or fluid.
- ◆ Advise people to avoid salt substitutes that contain potassium.

Smoking and alcohol

- ◆ See [NICE Pathway: Smoking and tobacco](#) and [Alcohol](#).

Air travel

- ◆ Air travel will be possible for the majority of people with HF, depending on their clinical condition at the time of travel.

Driving

- ◆ Physicians should be up to date with the latest Driver and Vehicle Licensing Agency guidelines. Check the [DVLA website](#) for regular updates.

Recommendations – wording used such as 'offer' and 'consider' denote the [strength of the recommendation](#).

Drug recommendations – the guideline assumes that prescribers will use a drug's [Summary of Product Characteristics \(SPC\)](#) to inform treatment decisions.