



**Health Innovation**  
WEST MIDLANDS



# **MIDLANDS HEART FAILURE PATHWAY TOOLKIT**

**A resource for health care professionals and commissioners**

Created by Health Innovation West Midlands (HIWM) and NHSE Midlands

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**Introduction**

Scope of Toolkit .....	3
What is Heart Failure .....	4
TYPES .....	4
CAUSES .....	4
What should we do? .....	5
Why should we do it? .....	5

**Prevention**

How can primary care teams aid in the prevention of heart failure? .....	6
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**Case Finding**

Why is case finding important? .....	7
Case finding tools .....	8
Performing your own case finding exercise.....	9
What can I do in my practice? .....	10

**Diagnosis**

How can we quickly assess? .....	11
Do you think your patient could have heart failure? .....	12
NTProBNP Blood Test .....	13
ECHO .....	13
ECG .....	14
Breathlessness Clinics .....	14

**Management**

Principles of heart failure management .....	15
Management of HFrEF – The 4 pillars .....	16
Principles of managing HF with mildly reduced ejection fraction and preserved Ejection Fraction (HfpEF) ...	17
Considerations when treating people with HF.....	18
Acute Management – the decompensating patient..	19-20
Acute Management – the admitted patient.....	21-22
Advanced Heart Failure Care .....	23-26

**Self-Management**

How can we support heart failure patients to self-manage their condition? .....	27
Interventions and tools that aid self-management .....	28
Symptom Checker.....	29
Innovative ways of working to promote self-management – Virtual Monitoring .....	30

**Palliative Care**

Palliative Care and Heart Failure management Assessment Tools .....	31
Where can you get further support to aid palliative care ....	32

**Further Resources**

Where can I read more to aid improvement in heart failure .....	33
Summary of abbreviations .....	34
Case Studies .....	35

## Scope of Toolkit

- The NHS Long Term Plan and the Cardiac Pathways Improvement Programme both indicate that improvement in heart failure is part of the national NHS agenda.
- All heart failure patients will access GP services and heart failure patients have a high hospital admission rate.
- This toolkit is for health care professionals working across all settings and aims to give health care professionals top tips of how they can be managed effectively.
- Advice and guidance is always available from your local specialist team and check your local pathway for specific information. This guide is developed as an overarching toolkit.



[Image ref](#)

## What is Heart Failure

- Heart failure (HF) is a common complex clinical syndrome of symptoms and signs that occur when the heart is unable to pump blood around the body as effectively as it should.
- HF can occur at any age but is most common in older people.
- HF is caused by structural or functional abnormalities of the heart and usually occurs because the heart has become too weak or stiff.
- HF is a long-term condition that tends to get gradually worse over time.
- HF cannot usually be cured; with appropriate medication the symptoms can often be controlled for many years.

The main symptoms of HF are:

- breathlessness,
- fatigue
- oedema (fluid retention).

## TYPES:

The degree of heart failure is based on measurement of the left ventricular ejection fraction (**LVEF**). The ejection fraction (EF) is a measure of how much blood the left ventricle pumps out with each contraction. It is expressed as percentage. **A normal ejection fraction is considered to be greater than or equal to 55%**. Heart failure patients with an ejection fraction of 50% or more are classed as having heart failure with preserved ejection fraction (**HFpEF**). In HFpEF the heart can pump blood out but is unable to relax to fill with blood sufficiently.

Patients with an **ejection fraction of less than 40% are classed as having heart failure with reduced ejection fraction (HFrEF)**. HFrEF is also referred to as left ventricular systolic dysfunction (LVSD). When a patient has HFrEF the left ventricle of the heart does not pump well enough to adequately meet the needs of the body. Heart failure with mildly reduced ejection fraction (**HFmEF**) are those patients with a LVEF between 41% and 49%

Around 60% of all heart failure patients have HFrEF, however in England, only 33% of heart failure patients have an LVSD/HFrEF code in their primary care clinical record. There is a strong evidence base showing that optimisation of medication can reduce morbidity and mortality in patients with HFrEF

## CAUSES:

- Coronary heart disease
- High blood pressure
- Heart valve disease
- Arrhythmias, such as atrial fibrillation
- Cardiomyopathy
- Congenital heart disease

## What should we do?

**The overall aims of improving heart failure care within your clinical setting should be to:**

- Improve the detection of patients with heart failure, ensure timely diagnosis (Natriuretic Peptide Tests and echocardiogram) in primary care.
- Improve the quality of registers in primary care to ensure patients with heart failure are appropriately coded (HFrEF and HFpEF).
- Ensure that patients with HFrEF receive a 12 monthly review and optimisation of their therapy to prevent avoidable hospital admissions.
- Ensure that patients receive optimal management according to [NICE](#) guidance.

## Why should we do it?

**Benefits -**

**For the patient:**

- Initiation and optimisation of evidence-based therapies
- Improved symptom control
- Improved quality of life
- Education and empowerment to self-manage
- Reduction in readmissions

**For Primary Care Networks (PCNs) and GP practices:**

- Increased recorded heart failure prevalence leading to an increase in QOF income
- Improved coding, resulting in an up-to-date heart failure register enabling practices to recall patients with ease for ongoing review
- Education and upskilling of clinical staff

**For Secondary Care providers**

- Reduced length of stay
- Reduced waiting lists
- Opportunity to focus on advanced/specialist care

**For the whole NHS:**

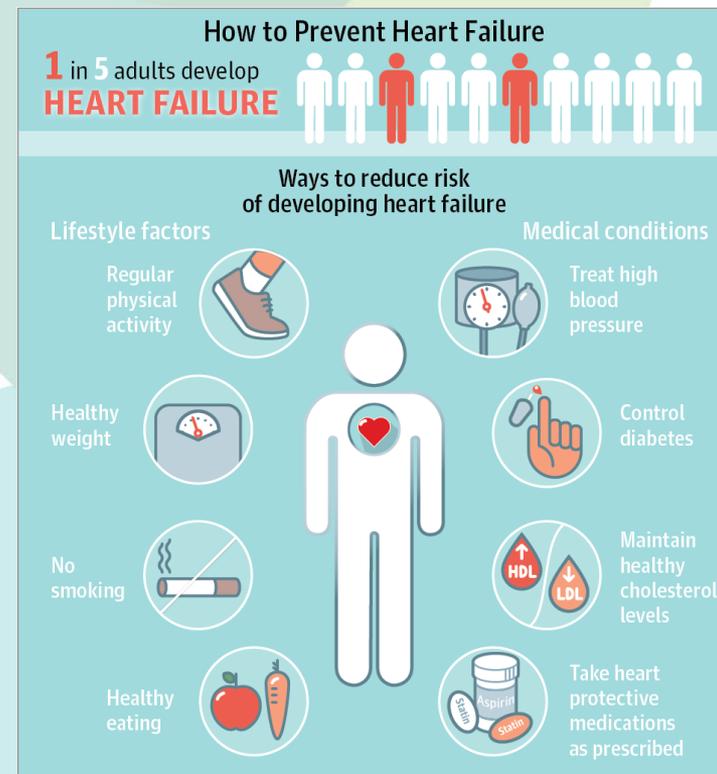
- Reduction in non-elective admissions and readmissions for heart failure
- Opportunity to have improved links between primary and secondary care

## How can health care professionals aid in the prevention of heart failure

Prevention is key. When you have patients increasing in age and those with other pre-existing cardiovascular risk factors or conditions it is important to think of preventing heart failure and other CVD conditions early.

Here is a checklist that you can use as a guide when considering prevention:

- Perform [NHS Health Checks](#) and utilise the [QRISK](#) tools
- Case finding and optimise hypertensive patients using a framework such as the [UCL Proactive care frameworks](#)
- Optimise lipid treatments using the [national lipid pathways](#). The West Midlands also has a FH service that you can refer to.
- Rate control patients with atrial fibrillation and anticoagulate them effectively.
- Refer diabetic patients to the [diabetes prevention programme](#)
- Utilise the [digital weight management service](#)
- Refer smokers to your local [smoking cessation](#) service
- Utilise any available **exercise prescription** service
- Utilise **social prescribers** or **community connectors** within your area to assist patients in setting goals to improve their overall cardiovascular health.
- Perform **annual reviews** for patients with existing heart disease or risk factors. Maximise the use of the workforce to undertake these reviews.



## Why is case finding important?

The estimated true prevalence of heart failure is 1.4%, however currently in England the prevalence is approximately 1.0%, leaving a **detection gap of over 300,000 people**. Around 60% of all heart failure patients have HF<sub>r</sub>EF, however in England only 33% of heart failure patients have an LVSD/HFrEF code in their primary care clinical record.

There is a strong evidence base showing that optimisation of medication can reduce morbidity and mortality in patients with HF<sub>r</sub>EF.

The objectives of case findings are as follows:

- Increase heart failure prevalence
- Improve LVSD coding
- Increase the uptake of medications as per NICE guidelines

### Heart failure (HF)

Indicator	Points	Thresholds
<b>Records</b>		
HF001. The contractor establishes and maintains a register of patients with heart failure	4	N/A
<b>Initial diagnosis</b>		
HF008. The percentage of patients with a diagnosis of heart failure on or after 1 April 2023 which: 1. Has been confirmed by an echocardiogram or by specialist assessment in the 6 months before entering on to the register; or 2. If registered at the practice after diagnosis, with no record of the diagnosis originally being confirmed either by echocardiogram or by specialist assessment, a record of an echocardiogram or a specialist assessment within 6 months of the date of registration.	6	50–90%
<b>Ongoing management</b>		
HF003. In those patients with a diagnosis of heart failure due to left ventricular systolic dysfunction or whose heart failure is due to reduced ejection fraction the percentage of patients who are currently treated with an angiotensin-converting enzyme inhibitor (ACE-I) or Angiotensin II receptor blockers (ARB).	6	60–92%
HF006. The percentage of patients with a diagnosis of heart failure due to left ventricular systolic dysfunction or whose heart failure is due to reduced ejection fraction, who are currently treated with a beta-blocker licensed for heart failure.	6	60-92%
HF007. The percentage of patients with a diagnosis of heart failure on the register, who have had a review in the preceding 12 months, including an assessment of functional capacity and a review of medication to ensure medicines optimisation at maximal tolerated doses	7	50-90%

HF006 and HF007 are difficult to interpret due to the variability in the LVSD coding. This is due to denominator (number of people with HF due to LVSD) is inaccurate and underestimates the total LVSD burden. Besides, the QOF data only records if a patient has been prescribed a drug, not if they have been prescribed the maximum tolerated dose. By addressing the quality of LVSD coding will improve the interpretation of QOF data.

## Case finding tools

There are many case-finding tools available for practices to obtain to aid them in case finding.

They are there to assist GP practices to interrogate their clinical data enabling them to improve management and care of HF patients with LVSD. Many provide detailed reports to enable practices to prioritise which patients to review.

This list is not exhaustive, but these are some that we are aware of that other primary care networks have used to aid case-finding.

- UCL PROACTIVE CARE FRAMEWORK – a free resource for primary care to utilise to undertake searches and perform HF reviews [Heart Failure Proactive Care Framework \(pcdn.co\)](https://www.pcdn.co)
- ENHANCE-HF (Oberoi Consulting) Paid service provided by Servier and developed and delivered by Oberoi Consulting [Project HF Page – Oberoi Disease Management \(oberoi-dm.co.uk\)](https://www.oberoi-dm.co.uk)
- ARDENS TOOLS – Paid service but many practices already would have this system embedded in their systems, thus making it a more familiar system to work with and provides templates and alerts for EMIS. [Heart Failure : Ardens EMIS Web](#)
- ECLIPSE – risk stratification system for primary care [Primary Care — Eclipse Live](#)
- CDRC- search tools that can be embedded into primary care systems - [Clinical Digital Resource Collaborative \(cdr.nhs.uk\)](https://www.cldr.nhs.uk)



To access the image, [click here](#)

Criteria	Population Count	%	Last Run	Search Type	Schedule	Case System
CDM Heart Failure ICD7	12075	100%	10-Nov-2012	Relevant		N/A
ICD7 HF Regular	132	1%	11-Oct-2012	Relevant		BOOKED CT
Heart Failure Outcast Data	132	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg and ICD7 HF code	36	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg and ICD7 HF code	0	0%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg with multiple ICD7 HF codes	69	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg with ICD7 HF ICD7 HF code	59	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg with multiple ICD7 HF codes	0	0%	11-Oct-2012	Relevant		N/A
ICD7 HF reg with ICD7 HF code	18	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg with ICD7 HF code relating to ICD7	7	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg with ICD7 HF code relating to ICD7	112	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg. Do have ICD7 HF code in last 4 months and ICD7	21	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg. Do have ICD7 HF code in last 4 months and ICD7	3	1%	11-Oct-2012	Relevant		BOOKED CT
ICD7 HF reg. Do have ICD7 HF code in last 4 months	12	1%	11-Oct-2012	Relevant		BOOKED CT

Ardens case finding tool, [click for the image](#)

[CVD Prevent](#) is also available as a national audit of GP records, that is now beginning to have some HF indicators to review

## Performing your own case finding exercise

The aim of the code cleansing search is to identify patients where a diagnosis of HF has been made previously but has not been correctly coded. By searching through hospital discharge letters, cardiology letters and ECHO reports coding can be improved.

You could look for the following:

- Patients with a previous high NTproBNP but not on the register
- Patients where LVSD is recorded but not heart failure
- Patients where a code has been used but not a QOF recognised code
- Patients on spironolactone or epleronone but not on the HF register
- Patients with a HF code but not coded as LVSD.

The next step would be to perform virtual reviews of patients who have HFReF/ LVSD to create a risk-stratified list of patients, some of whom will need further action.

<b>Priority One</b> -Symptomatic and/or unplanned admission in the past six months and fully optimised on medications available in primary care	Discuss with specialist team
<b>Priority Two</b> Symptomatic and/or unplanned admission in the past six months and not fully optimised on the range of medications available in primary care	Optimise medicines in primary care Consult with HF specialist team if unsure of titration guidance.
<b>Priority Three</b> - not symptomatic and no unplanned admissions in past six months	Check therapy optimised. Review every 6 –12 months.

## What can I do in primary care?

- Consider using one of the tools in this toolkit to case find your patients
- Talk to IT colleagues, medicine management colleagues, or colleagues within practice that have experience of coding and performing searches and utilise their experience to undertake a case-finding exercise.
- Once a code cleansing exercise has been done you can ensure that:
  - all patients with heart failure are given a heart failure code
  - all patients with HFrEF are given the appropriate code
  - identify patients coded as having HFrEF who are not on optimal treatment in preparation for reviewing these patients.





## How can we quickly assess?

Are your patients breathless?

Are they more tired than usual?

Have they got swollen ankles? Or swollen legs and stomach?

Are they more breathless walking up the stairs?

Are they having to use more pillows at night?

If so, consider heart failure as a potential cause.

Pumping Marvellous charity has [posters](#) available for health care settings, that can raise patient awareness of the symptoms.



## Do you think your patient could have heart failure?

Early diagnosis can enable patients to live longer, healthier lives. 80% of heart failure is currently diagnosed in hospital, despite 40% of patients having symptoms that should have triggered an earlier assessment. The following four interventions will be key in enabling you to diagnose heart failure earlier and potentially prevent hospital admissions for these patients.

**NTpro BNP blood test**

**ECHO**

**ECG**

**Breathlessness Clinic Referral/Urgent HF clinic**

## NTProBNP Blood Test

Natriuretic peptides are substances made by the heart. Two main types of these substances are brain natriuretic peptide (BNP) and N-terminal pro b-type natriuretic peptide (NT-proBNP). Normally, only small levels of BNP and NT-proBNP are found in the bloodstream. High levels can mean the heart isn't pumping as much blood as the body needs, therefore an indicator of heart failure.

If the NT-pro-BNP level is **above 2000 ng/L (236 pmol/L)**, refer **urgently** for specialist assessment and echocardiography **to be seen within 2 weeks**.

• If the NT-pro-BNP level is **between 400–2000 ng/L (47–236 pmol/L)**, refer for specialist assessment and echocardiography **to be seen within 6 weeks**.

• If NT-pro-BNP is **less than 400 ng/L (47 pmol/L)**, be aware that a diagnosis of heart failure is less likely. Consider **discussion with your local heart failure specialist** if heart failure still suspected.

**CAUTION:** remember the NTproBNP can be raised in other conditions - atrial fibrillation, CKD, COPD, HTN, advanced age, infection. Therefore, it is important is to observe for signs and symptoms of HF first, then do the

NTproBNP

## ECHO

Natriuretic peptides may aid in establishing a working diagnosis in patients suspected of HF, but echocardiography remains the optimal choice for diagnosing HF. Therefore, referral for an ECHO is important and a specialist referral will not be accepted without one.

However, we know that ECHO waiting times are hugely variable and the pandemic has had a greater impact on this.

Consider:

- **utilising community diagnostic centres for obtaining the ECHO**
- **tapping into primary care GPs that have a specialist interest in HF and may be able to utilise and perform ECHO when appropriately trained**
- **having point of care ultrasound within PCN's so that ECHOs can be obtained quickly and where appropriately trained staff are available**

## ECG

The electrocardiogram (ECG) at rest is a non-invasive investigation that is recommended in the initial evaluation of patients with heart failure. This is because the ECG is crucial in the detection of many abnormalities that may either cause or worsen HF. Again, specialist referrals may not be accepted without one.

- Consider having ECG availability in GP practices, or at least at PCN level.
- Utilise advice and guidance for interpretation of ECGs.
- Utilise community diagnostic hubs to obtain ECGs.

## Breathlessness Clinics

If a patient is breathless, always consider heart failure. However, we know that diagnosis and symptom control can be challenging.

- Always follow the [breathlessness pathway](#).
- Research and obtain any local pathways for practice staff to utilise
- Refer to any breathlessness clinics or urgent HF clinics
- Consider commencing a breathlessness clinic within PCNs utilising appropriate workforce which may include GPs with a specialist interest in breathlessness and physios, respiratory nurses and physios for pharmacological and non-pharmacological management

**CAUTION:** Breathlessness clinics are suitable if your area does not have access to urgent one stop HF clinics. If these are in place, then patients with suspected heart failure should be referred there rather than breathlessness clinics to avoid additional steps within the pathway.

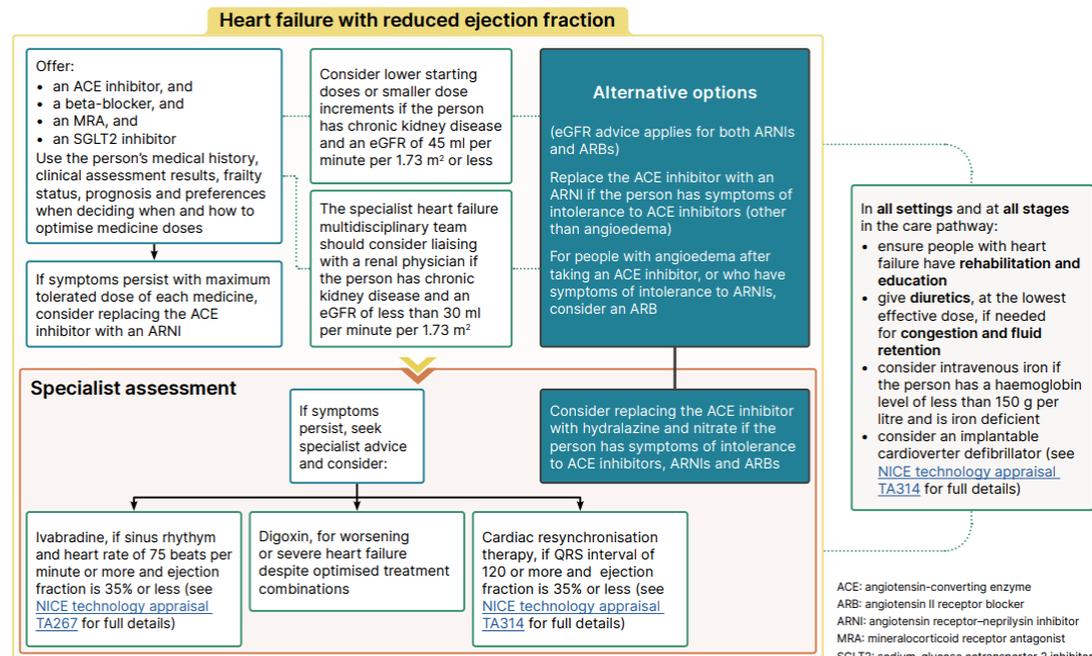
## Principles of heart failure management

Once a patient has been diagnosed, they should be referred to the heart failure specialist team  
Commence initial therapy according to [NICE](#) guidance

The HF specialist team will then offer guidance and commence up titration of the medicines  
Ensure a plan is received from the specialist team

Continue up titration if necessary, according to [NICE](#) guidance  
Review the patient regularly

### Chronic heart failure: core treatments for heart failure



**NICE** National Institute for Health and Care Excellence

This diagram covers only part of the guideline content. For full details, see [Chronic heart failure in adults: diagnosis and management](#). © NICE 2025. All rights reserved. Subject to [Notice of rights](#). Last updated September 2025. ISBN 978-1-4731-7201-2

## Management of HFrEF – The 4 pillars

Within your review of HF patients, the ultimate aim should be uptitration of the evidence-based medications, commonly known as the 4 pillars.

NICE and ESC recommend:

- **ACE-I or ARB ( examples being Ramipril or Losartan)**
- **Beta Blockers ( examples being Bisoprolol, Carvedilol)**
- **Mineralocorticoid receptor antagonists (MRAs) ( examples being Epleronone or Spironolactone)**
- **SGLT2i ( examples being Dapagliflozin or Empagliflozin)**
- **ARNI is also recommended as a replacement for ACE. (Sacubitril/Valsartan)**
- **Ask the HF specialist team for advice on up titration, and on switching ACE-I to ARNI**
- **Consider joining HF MDTs to discuss patients**
- **See your local drugs and therapeutics guidance ( example for uptitration in resources section)**

### European Society of Cardiology (ESC) (2021) recommendations

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
An ACE-I is recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. <sup>110–113</sup>	I	A
A beta-blocker is recommended for patients with stable HFrEF to reduce the risk of HF hospitalization and death. <sup>114–120</sup>	I	A
An MRA is recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. <sup>121,122</sup>	I	A
Dapagliflozin or empagliflozin are recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. <sup>108,109</sup>	I	A
Sacubitril/valsartan is recommended as a replacement for an ACE-I in patients with HFrEF to reduce the risk of HF hospitalization and death. <sup>105</sup>	I	B

# Principles in managing HF with mildly reduced Ejection Fraction (HFmrEF) and preserved Ejection Fraction (HFpEF)

HFpEF is difficult to diagnose and is prone to over and under diagnosis. The main symptom is breathlessness, but this is non-specific .

Diagnosis is normally confirmed by :

- Clinical evidence of fluid overload.
- ECHO confirming structural changes
- Elevated NT-BNP level
- Response to treatment i.e., there should be at least a short-term improvement with diuretic treatment. If a patient doesn't respond to treatment, consider whether diuretic dose is sufficient or if diagnosis is correct .

***The mainstay of treatment is holistic care of the patient, fluid management, rate control of arrhythmias and blood pressure control. Treat fluid overload with diuretics. The new NICE guidelines suggest for patients with HFmrEF the consideration of***

- an ACE inhibitor, and • a beta-blocker, and • an MRA, and • an SGLT2 inhibitor as treatment.***

***In patients with HFpEF, the new NICE guidelines (link) suggest the consideration of***

- an MRA, and • an SGLT2 inhibitor as treatment.***

## Chronic heart failure: core treatments for heart failure

### Heart failure with mildly reduced ejection fraction

#### Consider:

- an ACE inhibitor, and
- a beta-blocker, and
- an MRA, and
- an SGLT2 inhibitor

For guidance on SGLT2 inhibitors, see [NICE technology appraisal TA929](#) and [NICE technology appraisal TA902](#)

Use the person's medical history, clinical assessment results, frailty status, prognosis and preferences when deciding when and how to optimise medicine doses

Consider lower starting doses or smaller dose increments if the person has chronic kidney disease and an eGFR of 45 ml per minute per 1.73 m<sup>2</sup> or less

The specialist heart failure multidisciplinary team should consider liaising with a renal physician if the person has chronic kidney disease and an eGFR of less than 30 ml per minute per 1.73 m<sup>2</sup>

#### Alternative options

(eGFR advice applies for ARBs)

Consider replacing the ACE inhibitor with an ARB if the person has symptoms of intolerance to ACE inhibitors

In all settings and at all stages in each care pathway:

- ensure people with heart failure have **rehabilitation and education**
- give **diuretics**, at the lowest effective dose, if needed for **congestion and fluid retention**

### Heart failure with preserved ejection fraction

#### Consider:

- an MRA, and
- an SGLT2 inhibitor

For guidance on SGLT2 inhibitors, see [NICE technology appraisal TA929](#) and [NICE technology appraisal TA902](#)

Use the person's medical history, clinical assessment results, frailty status, prognosis and preferences when deciding when and how to optimise medicine doses

Consider lower starting doses or smaller dose increments if the person has chronic kidney disease and an eGFR of 45 ml per minute per 1.73 m<sup>2</sup> or less

The specialist heart failure multidisciplinary team should consider liaising with a renal physician if the person has chronic kidney disease and an eGFR of less than 30 ml per minute per 1.73 m<sup>2</sup>

ACE: angiotensin-converting enzyme  
ARB: angiotensin II receptor blocker  
ARNI: angiotensin receptor-neprilysin inhibitor  
MRA: mineralocorticoid receptor antagonist  
SGLT2: sodium-glucose cotransporter 2 inhibitor

## Considerations when treating people with heart failure

Some patients can develop heart failure, but are not fitting in the normal categories of HFrEF, HFmEF or HFpEF. For example, patients with;

- Pulmonary hypertension
- Cardiac stunning after a myocardial infarction
- High output cardiac failure ( liver failure, obesity, thiamine deficiency, hormonal imbalances)
- Genetic abnormalities

Here, conventional therapies might not be indicated or are not studied well.

Please bear these patients in mind, **refer** to the local heart failure department for individual assessment and management.

## ACUTE MANAGEMENT – decompensating

When patients are decompensating, some hospital admissions are unavoidable. However, commissioners should consider the commissioning of:

- Ambulatory heart failure units
- Community IV diuretics services
- Virtual wards
- Advice and Guidance services

These services can potentially avoid hospital admissions and enable patients to be managed within the community.

The commissioning of community heart failure teams and long-term conditions care coordinators will enable these services to be embedded and will enable decompensating patients to be identified earlier.

Having a wide multi-disciplinary team and regular heart failure MDT meetings will ensure that the management of heart failure patients can be discussed and can potentially avoid hospital admissions.

**Acutely Decompensated Heart Failure**

(rapid worsening of symptoms and or signs of HF as a de novo presentation or in a known HF patient, that warrant immediate medical intervention)

**Identification of Decompensation****Symptoms**

- Worsening shortness of breath, fatigue or new shortness of breath at rest
- Increased numbers of pillows at night (orthopnoea) or frequent waking due to cough or breathlessness (PND)
- Increased weight of  $\geq 2$  kgs in 3 days
- Fluid accumulation in the form of ankle/leg swelling, sacral oedema or abdominal distension

**Signs**

- Low BP, increased HR, low oxygen saturations (compare with previous observations if available)
- Peripheral oedema, Increased JVP, sacral oedema
- Pulmonary Oedema

**Further clinical assessment**

- Blood Tests – FBC, UEs, NT proBNP/BNP, LFTs, TFTs,
- ECG
- Chest XRav
- Exclude other acute illnesses (pneumonia, COPD exacerbation, sepsis)
- Medication review
- Urine for ACR if worsening renal function

**Haemodynamically stable?**

SBP  $\geq 90$  mmHg  
(compare usual BP)  
Sats  $\geq 90\%$   
HR 50-130

*\*obtain a manual blood pressure reading for patients with atrial fibrillation*

No

Yes

**Specialist advice/intervention****Refer to hospital or if in-patient (to HF Team) urgently if...**

- Syncope or blackout
- New shortness of breath at rest
- Ongoing chest pain/suspicion of acute MI
- BP  $< 90$  mm Hg
- Sats  $< 90$
- HR  $> 130$
- Pulmonary oedema
- Suspicion of sepsis

**Refer urgently to HF Team**

- Need for IV diuretics (Community/ Ambulatory HF Units/in-patient, HF virtual wards)
- Early access to Echo and other diagnostics – assess if HFrEF/HFpEF
- Evidence-based HF medications and optimisation
- Consider Advanced HF therapies
- Multi-disciplinary input including role of palliative input if appropriate
- Patient education
- Follow-up with HF team (hospital/community – irrespective of ejection fraction)
- Referral to cardiac rehab when stable

**Primary Care Management**

- If diuretic naive start Frusemide 40 mg OD or bumetanide 1mg
- If already on diuretics increase dose x2 times to maximum of Furosemide 80 mg BD or equivalent
- Consider adding in a Thiazide (Bendroflumethiazide / Metolazone 2.5 to 5 mg) alternate days or twice a week with close monitoring of renal function
- Mineralocorticoid receptor antagonists (MRA): 25 mg daily

**Do not stop HF treatment without discussing with HF team**

**Phase of illness - have you considered?**

- Medical review
- All reversible causes of deterioration explored
- Clear, sensitive communication with patient and those identified as important to them
- Person and agreed others are involved in decisions about treatment and care as they want
- Prioritised as appropriate Gold Standards Framework meeting

- Update EPaCCS Record as and when necessary
- Work closely with other services e.g. Specialist Palliative Care
- Review or offer Advanced Care Plan, share information with patients consent
- DNR/CPR considered, outcome documented, information shared appropriately including ambulance service

- A holistic needs assessment and a keyworker identified including benefits (e.g. blue badge, prescription exemption etc.) and individual needs identified that are important are explored, respected and met as far as possible.
- Continuing Health Care funding
- DS1500
- Anticipatory medication prescribed and available
- Equipment assessment

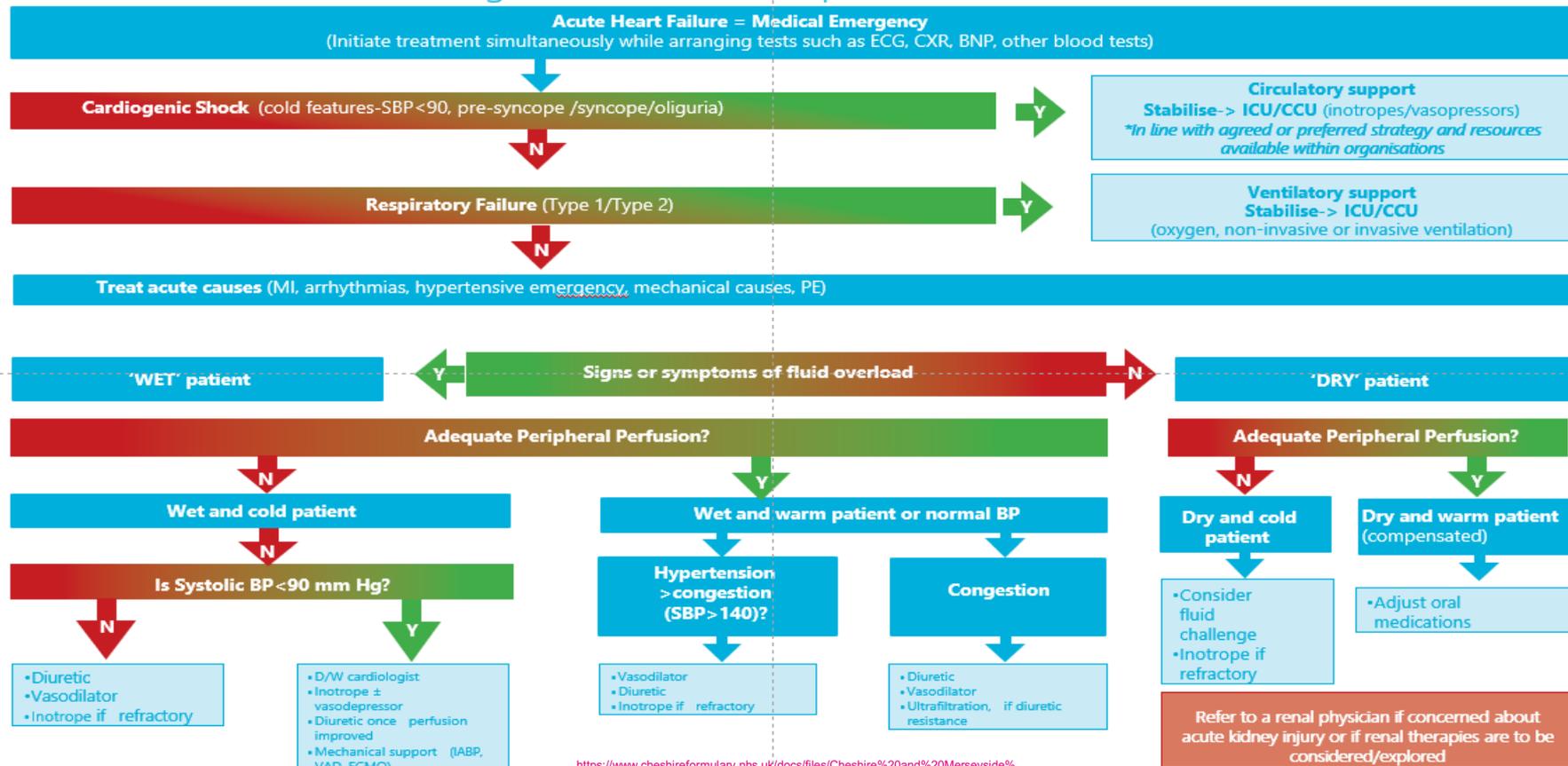
- ICD discussion and deactivation
- An opportunity for an Advanced Care Planning discussion?
- Agree on-going monitoring and support to avert crisis
- OOH/NWAS updated including DNACPR status and Advanced Care Plan

## ACUTE MANAGEMENT – hospital admission

When a patient does have to be admitted, it is important for policies to be in place that enables heart failure patients to be identified quickly and transferred to a cardiology ward. Evidence suggests that management of heart failure on a cardiology ward/heart failure unit is associated with lower in-hospital and out of hospital mortality.

- An identification system that alerts when heart failure patients are admitted will allow the specialist teams to provide timely advice and will enable treatments to be commenced that can potentially reduce length of stay.
- Commissioners should consider that acute trusts should have access to in and outreach heart failure specialists.
- Evidence suggests that all heart failure patients should be seen within 2 weeks following discharge (add NICE link), this promotes reduction in readmissions.
- Patient initiated follow up (PIFU) should be made available.

## Management of acute hospitalised heart failure



## ADVANCED HEART FAILURE CARE

Unfortunately, despite medical therapy, some patients will continue to decompensate and require multiple admissions. For some patients advanced management, such as device therapy or heart transplantation may be an option to improve quality of life. To recognise when this is required, it is advised to use the I NEED HELP criteria and make contact with your local heart failure service if at least one marker is present

- **I**notropes
- **N**YHA 3/4 or high NT Pro BNP
- **E**nd organ damage
- **E**jection Fraction (<20%)
- **D**efibrillator shocks
  
- **H**ospitalisation >1 in 12 months
- **E**dema persisting / higher diuretic dose need
- **L**ow blood pressure
- **P**rognostic medication (unable to start or reducing)

Advice and guidance should be sought from your local heart failure service and if necessary, the regions heart transplant centres (referral pathways on following slides)

- Queen Elizabeth Hospital Birmingham
- Papworth Hospital, Cambridge



# ADVANCED HEART FAILURE CARE - QUEEN ELIZABETH HOSPITAL BIRMINGHAM PATHWAY

## Cardiogenic Shock Referral: Heart Lung Transplant / Mechanical Circulatory Support

- A** **Inclusion (at least one in each category):**
1. Evidence of cardiac dysfunction
    - Abnormal Echo (EF<30%)/Angiogram (Provide the presumed diagnosis)
  2. Circulatory failure
    - SBP<100mmHg and/or use of inotropes/vasopressors
    - CI <2.2ml/kg/min
  3. Evidence of hypoperfusion
    - Clinical assessment, Lactate>2, oliguria (<30 ml/hr), SCVO<sub>2</sub><50%
- B** **Exclusion:**
- Irreversible multi-organ failure
  - Severe neurological injury
  - Severe frailty/ psychosocial concerns (substance abuse)
  - Morbid obesity
  - Extensive vascular disease
  - Malignancy
- C** **Inclusion met AND No Exclusion criteria**
- Prepare data set
- patient detail, clinical status, level of support, TTE, bloods (inc. ABG), social history and pre-morbid status
- **Proceed with cardiogenic shock referral (page 2)**

## Cardiogenic Shock Referral: Heart Lung Transplant / Mechanical Circulatory Support

1

### Cardiogenic Shock Referral via switchboard to Transplant Cardiologist

#### I. Is the patient “crashing”? (Transfer Target 4hrs)

- Cardiology referral to transplant service by phone
- Intensivist to intensivist discussions and referral / refusal via NORSE
- Immediate ad hoc mini cardiology / cardiac surgical / intensivist MDT (<30 minutes) to determine candidacy for escalation of support
- If confirmed, arrange immediate transfer to QE ITU D or other available bed.

#### II. Is the patient “declining on inotropes/pressors”? (Transfer Target <12hrs)

- Cardiology referral to transplant service by phone
- Intensivist to intensivist discussions and referral / refusal via NORSE
- Ad hoc mini cardiology / cardiac surgical / intensivist MDT (<60 minutes) to determine candidacy for escalation of support
- If confirmed, arrange transfer to QE ITU

#### III. Is the patient “stable but on inotropes”? (Transfer Target <48hrs)

- Cardiology referral to transplant service by phone and e-mail
- Transfer to CCU or ITU if appropriate
- If deterioration in clinical condition, proceed as (I) or (II)
- Document all referrals – patients details and decision with reasons in transplant service spreadsheet.

2

### Patient Accepted

For patient groups (I) or (II):

- Intensivist to intensivist discussions to optimise care and plan transfer
- Adult Critical Care Transfer Service (ACCOTS) to facilitate transfer of patient
- Inform QE ITU team of any changes in clinical condition

3

### Destination

MDT assessment on arrival onto QE ITU

Immediate aim: stabilise on medical therapy / temporary mechanical circulatory support as required

Ultimate aim: Plan destination treatment: Medical therapy / Palliation and treatment withdrawal / durable LVAD or urgent transplant

Audit – referral / arrival time to immediate treatment decision

# ADVANCED HEART FAILURE CARE - PAPWORTH HOSPITAL

referapatient.org

How it works | New Referral | Quick Message | Handover or Takeover a referral | Track My Referral

Which Hospital or Service Provider would you like to send a referral to?

Royal Papworth Hospital, Papworth Hospital NHS Foundation Trust

And to which speciality or on which pathway would you like to send your referral?

Acute Heart Failure

This referral form should be used if you wish to make an urgent / emergency acute heart failure referral or if you need urgent advanced heart failure advice during weekday hours 08:00-18:00.

If the referral is an emergency, or outside of these hours, or if you still wish to discuss in person please contact the on-call Transplant team via the Royal Papworth switchboard on 01223 698 000. The form will still need to be completed in order for us to accept the referral.

If your referral is urgent, and you have not had a response within one working day please also contact the on-call Transplant team via the Royal Papworth switchboard on 01223 698 000.

If your referral is for a routine outpatient review then please send a referral letter to our department:  
Department of Advanced Heart Failure and Transplantation,  
Royal Papworth Hospital NHS Foundation Trust,  
Papworth Road,  
Cambridge Biomedical Campus,  
Cambridge,  
CB2 0AY

To make a referral using this form you will require the following:  
Your patient's name, address, date of birth and 10-digit NHS number  
A Trust or nhs.net email address  
The referring Consultant's Trust or nhs.net email address

All fields marked with a \* are mandatory and the form cannot be submitted unless they are completed

Please ensure that images are sent via PACS to Royal Papworth Hospital NHS Foundation Trust

## How can we support heart failure patients to self-manage their condition?

According to the [European Society of Cardiology Guidelines](#) for the diagnosis and treatment of acute and chronic heart failure, self-management is integral to achieving best patient outcomes: to reduce mortality and improve quality of life.

With heart failure patients, self-management can be challenging due to the unpredictable nature of the disease, but the key recommendations that aid in reducing burden on the health care system and improving patients' quality of life are self-management strategies such as:

### Chronic heart failure patients should:

- Monitor and identify changes in symptoms (e.g. daily weighing)
- Manage symptom changes (e.g. > 2 kg over 3 days) by adapting behaviour (e.g. see their primary care physician)
- Adhere to medication, diet and exercise regimens
- Avoid excess sodium, fat, cholesterol and alcohol
- Abstain from cigarette smoking
- Report mental health disturbance (e.g. depression, anxiety) to their healthcare professional
- Take medications as prescribed, be aware of key medicines to be prescribed, seek support from local healthcare professionals (GP, pharmacist, HF nurse)

**Self-care enables reduced bad days, improved good days, reduced hospital admissions, improved symptoms, improved prognosis.**

## Interventions and tools that aid self-management

- **Cardiac Rehabilitation** is recommended by NICE as an intervention that can aid heart failure patients with self-management for lifestyle advice as well as improving symptom control. Discuss with your local cardiac rehabilitation team to discuss how you can refer patients into their service
- There are now a number of home-based rehab programmes specifically for heart failure that can be commissioned or accessed for free.

[REACH HF](#)

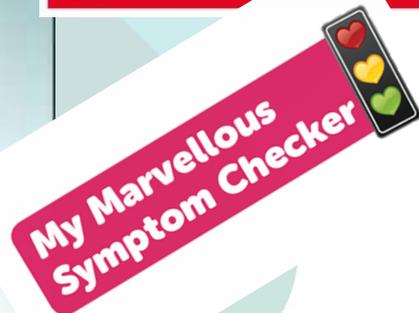
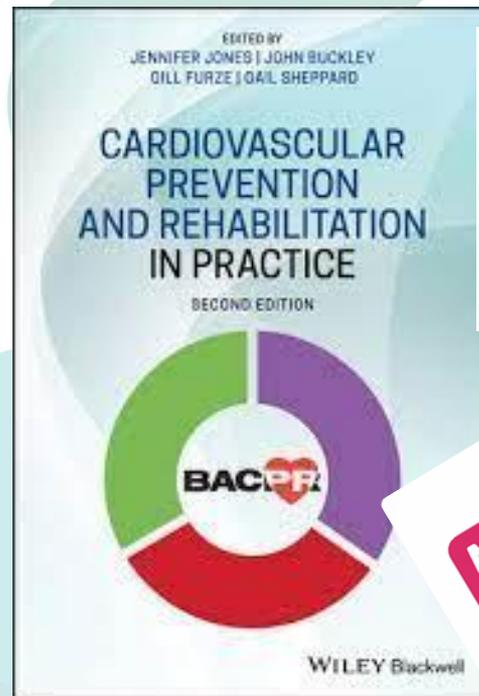
[Cardiac Rehab | Pumping Marvellous](#)

[BHF Cardiac Rehab](#)

NICE have now made recommendations for digital platforms for cardiac rehabilitation which can be found [here](#)

**To find local cardiac rehabilitation centre and contact details:** [Cardiac Rehabilitation \(cardiac-rehabilitation.net\)](#)

- There are many charities that provide excellent **patient information** and booklets that can aid patient in self- management
- ✓ Pumping Marvellous [Home - Pumping Marvellous](#)
- ✓ British Heart Foundation [Information for those affected by heart and circulatory diseases - BHF](#)
- ✓ Heart Failure Matters [What Can You Do to Manage Heart Conditions? \(heartfailurematters.org\)](#)



# Symptom Checker



## GREEN - KEEP WATCH

Your weight has not increased/had increased by 4lb/2kg over 3 days but you agree with the statements below:



You are no more breathless than usual.



Your ankles are no more swollen than usual.



All of your other medical conditions are OK.



You are as active and mobile as you normally are.



Your main carer's health is unchanged.

## WHAT SHOULD YOU DO?

There is no need for a review by the heart failure specialist team/GP/Practice Nurse apart from your regular reviews. However, you should be reviewed at least twice a year.



JOIN OUR PATIENT AND CARER COMMUNITY - SCAN WITH YOUR DEVICE HERE



## AMBER - STAY ALERT

Your weight has increased/had increased by 4lb/2kg over 3 days and/or one of the statements below is true:



You are feeling more breathless than usual.



Your legs are more swollen than before.



You are breathless at night or need more pillows to sleep on.



You are unable to be as active as usual/you are a bit more muddled than usual.



Any of your other conditions are worsening.



Your main carer is becoming more ill and unable to help/look after you as much as before.

## WHAT SHOULD YOU DO?

The amber status is to improve your symptoms and/or consider a sooner appointment with the heart failure specialist team/GP/Practice Nurse if you feel it is necessary.



## RED - TAKE ACTION

If your symptoms continue to worsen over 3 days, or you have any of the problems below:



You have symptoms of an infection and/or you feel very unwell.



You have blacked out.



Any of your other medical conditions are continuing to worsen.



You have become confused about your medications.



My medication has been reduced/stopped and I am not sure why/my heart failure team are unaware.



You have worsening breathlessness or leg swelling or are unable to be as active as usual.



You have worsening or new angina.



Your carer becomes very ill/has been admitted to hospital and is unable to take care of you.



You have had diarrhoea or vomiting for more than 24 hours.

## WHAT SHOULD YOU DO?

Consider urgent advice from your GP or heart failure team if you feel very unwell, call 999

Encourage patients to monitor their own symptoms, and have a clear patient initiated follow up pathway in place to enable a prompt review of symptoms and management plan.

Pumping Marvellous symptom checker is an example that can be provided to patients

[My Marvellous Symptom Checker | Pumping Marvellous](#)

## Innovative ways of working to promote self-management – Virtual Monitoring

**Virtual Monitoring** can reduce face to face contacts. Some patients have actively demonstrated effective self-management via virtual/ digital use of clinical assessment devices.

The devices enable patients to highlight when they may be deteriorating or provide them with confidence during evidence-based medication therapy titration.

The **HF@Home** project has been implemented to develop and test approaches using remote monitoring and education, to better support people with heart failure in the community. Several heart failure services, including primary care, are testing this approach to aid in up titration of medications as well as to support patients to self-manage. [NHS England » Managing heart failure @home.](#)

Haemodynamic-guided monitoring with pulmonary artery pressure sensors, such as **CardioMEMS** is also being recognised as a method for patient-initiated readings to be submitted to clinicians. This can identify deterioration early, so that interventions can be put in place to prevent symptoms worsening. Nice guidance can be found [here](#).

Equally, heart failure remote alert systems for patients with implanted heart devices can enable clinicians to be alerted when a person's condition becomes 'high risk' of them being hospitalised.

Risk factor monitoring	Medication adherence	Symptom monitoring
<ul style="list-style-type: none"> <li>• Blood pressure</li> <li>• Smoking</li> <li>• Diet</li> <li>• Weight</li> </ul> 	<ul style="list-style-type: none"> <li>• Medication tracking</li> <li>• Smart pillbox</li> </ul> 	<ul style="list-style-type: none"> <li>• Home electrocardiogram</li> <li>• Pulse oximeter</li> <li>• Pulmonary artery pressure monitoring</li> </ul> 

**Clinicians should work with commissioners and digital leads to inform them of how these new innovations can promote self-management, avoid hospital admissions or reduce length of stay.**

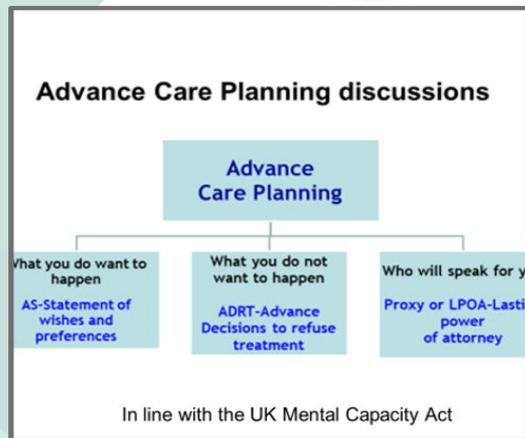
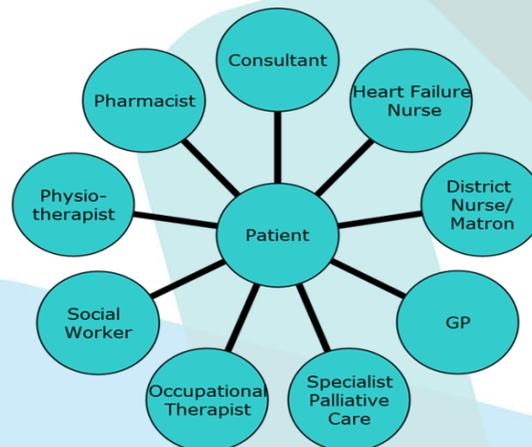


## Where can you get further support to aid palliative care

If it is now thought your patient is reaching end of life, it is important to involve as many multi-disciplinary members as possible.

Palliative care teams, community nursing teams, occupational therapists and physios can all aid patients to improve the quality of the last few years, months or days of their life.

- Contact your local hospice to see if they provide support for heart failure patients
- Implement advanced care planning [Gold Standard Framework - Advance Care Planning \(goldstandardsframework.org.uk\)](https://goldstandardsframework.org.uk)
- Discuss RESPECT form completion [ReSPECT for healthcare professionals | Resuscitation Council UK](#)
- If the patient has a automatic implantable cardioverter defibrillator (AICD), this may need deactivating, so contact local centre to arrange this. [ICD deactivation at the end life: Principles and practice - BHF](#)
- Symptom control should be the key priority. Discuss with heart failure specialist team, palliative care teams and pharmacy colleagues to ensure symptom relief is managed effectively.



## Where can I read more to aid improvement in heart failure

### DATA

Understanding what the current status of heart failure is in your area is important.

The HIWM are happy to help you with this so please do contact us, however you can access data via fingertips. [Public health profiles - OHID \(phe.org.uk\)](#)

HIWM and NHSE Midlands team collaborated to survey heart failure services to produce a [State of the Region report](#) on heart failure within the Midlands.

### POLICY

- BHF Report - [Heart Failure report - BHF](#)
- BSH pathway [British Society for Heart Failure \(bshpathway.org.uk\)](#)
- OAHNS toolkit [Excellence-in-HF-toolkit.pdf \(oxfordahsn.org\)](#)
- GIRFT report - [Cardiology - Getting It Right First Time – GIRFT](#)
- NICOR report - <https://www.nicor.org.uk/interactive-reports/national-heart-failure-audit-nhfa>
- Cheshire and Merseyside HF Pathway- [Cheshire and Merseyside Health Care Partnership Heart Failure Pathway - 2021.pdf \(cheshireformulary.nhs.uk\)](#)
- Health Innovation Kent Surrey and Sussex HF pathway - [Heart-Failure-Pathway.-Sussex-ICB.-Final-version.pdf \(healthinnovation-kss.com\)](#)
- Health Innovation Kent Surrey and Sussex - [Frailty–First and End of Life Practical Management Pathway for Heart Failure](#)

### EDUCATION

- HIWM education sessions are available on request.
- HEE HF education modules Heart Failure and Heart Valve Disease – elearning for healthcare (e-lfh.org.uk)

# Further Resources

**ACE-I** – Angiotensin converting enzyme inhibitor  
**AF** – Atrial Fibrillation  
**AICD** – Automatic Implantable cardioverter defibrillator  
**ARB** –Angiotensin II receptor blockers  
**ARNI** Angiotensin receptor/neprilysin inhibitor  
**BHF** – British Heart Foundation  
**BSH** – British Society of Heart Failure  
**CVD** – Cardiovascular Disease  
**ECG** - Electrocardiogram  
**ECHO** – Echocardiography  
**ESC** – European Society of Cardiology  
**HIWM** – Health Innovation West Midlands  
**HF** – Heart Failure  
**HF<sub>r</sub>EF** – Heart Failure with Reduced Ejection Fraction  
**HF<sub>p</sub>EF** – Heart Failure with Preserved Ejection Fraction  
**ICS** – Integrated Care System

**LVEF** – Left Ventricular Ejection Fraction  
**LVSD** – Left Ventricular Systolic Dysfunction  
**MDT** – Multi Disciplinary Team  
**MRA** -Mineralocorticoid receptor antagonists  
**NICE** – National Institute of Clinical Excellence  
**NICOR**- National Institute for Cardiovascular Outcomes Research  
**NTproBNP** - N-terminal pro b-type natriuretic peptide  
**NYHA** – New York Heart Association  
**OAHSN** – Oxford Academic Health Science Network  
**PCN** – Primary Care Network  
**QOF** – Quality Outcomes Framework  
**RN** – Registered Nurse



**Health Innovation**  
WEST MIDLANDS



## CASE STUDIES

The following section shows some case studies of where innovative evidence-based practice has been utilised to improve the diagnosis or management of heart failure patients. We are eager to add to this, so please do contact us to share your work



**CASE STUDY NAME:**

**AREA:**

**LEAD CONTACT AND CONTACT DETAILS:**

### **Challenge**

Problem trying to resolve/Baseline data etc.

### **Images summarising impact**

### **Intervention description**

How did you do it? Which stakeholders did you convene. What population did you cover?

### **Impact to date**

We have engaged XXX people/undertaken xxx reviews/increased meds by xxxxx

### **Learning**

We learnt that..... Consider key points that will aid people to replicate



**Health Innovation**  
WEST MIDLANDS

**This has been created by Health Innovation West Midlands  
and NHS England Midlands Team**

For further information, please contact Pip Richards  
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