Clinical Effectiveness Southwark

QUAY HEALTH SOLUTIONS

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NHS Southwark Clinical Commissioning Group

The Health Foundation

This guide was written in 2018 and is awaiting an update. Please use with discretion. It does not include guidance on the use of SGLT2i. See: NICE guidance in this area.

Heart Failure

A guide for Southwark General Practice©

Key Messages

1. If you suspect a new heart failure diagnosis:
   - Do not ECHO
   - Check NT-proBNP
2. Treat diagnosed heart failure according to ejection fraction (EF):
   - Reduced EF: optimise prognostic medications, treat symptoms with diuretics
   - Preserved EF: symptomatic treatment only (diuretics), and manage co-morbidities.

Always work within your knowledge and competency

Why Heart Failure?

Common:

Over 1 in 7 patients aged over 85 years have Heart Failure (HF)[1].

Treatment works:

There is strong evidence for treatments to improve prognosis[2] and to reduce admissions[3].

High Mortality:

30–40% of patients diagnosed with HF die within 3 years[4]. Survival rates are worse than many cancers[5].

High Cost:

Accounts for 2% of the NHS budget[6] and 5% of all emergency medical admissions[7]. This is expected to rise by 50% for the coming generation[8].

Why Southwark?

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Hidden prevalence:

Around 600 people are estimated to be living with undiagnosed HF in Southwark[9].

Inadequate medicine optimisation:

Up to 80% of HF patients in Southwark may have sub-optimal treatment[9].

High admissions:

Admission rates for HF are significantly higher in Southwark than the England average (229 v 157 per 100K)[10].

Place of death:

The proportion of Southwark HF patients dying at home is one of the lowest in the UK[10].

New diagnosis of suspected Heart Failure [7]

Typical/ specific signs and symptoms [11]
- Breathlessness
- Orthopnoea, PND
- Fluid retention: ankles
- Elevated JVP, 3rd heart sound

Less typical/ specific signs and symptoms
- Nocturnal cough, wheeze, crepitations
- Confusion (elderly)
- Dizziness, syncope
- Weight gain or loss

Investigate

Do not ECHO
NT-proBNP
(note: on T-quest NT-proBNP = 'BNP')
CXR, ECG
FBC, Renal, Liver, HbA1c, Chol, TFT

NT-proBNP
(pg/ml or ng/L)

0 | 400 | 2000

NT-proBNP < 400

HF unlikely: consider other diagnosis
(Please see CES Breathlessness Guide)

NT-proBNP 400 -2000

Refer to HF Clinic

Routine 6 week referral
(See page 5 for referral advice)

NT-proBNP >2000

Refer to HF Clinic

Urgent 2 week referral
(See page 5 for referral advice)

Cardiology will investigate (including ECHO) and, if HF confirmed, will initiate management.

Management of HF REDUCED EF [7]

LVEF ≤40%

General HF management advice – all types of HF (*see page 6*)

Acutely fluid overloaded?

Yes

Diuretics for acute symptom control

- Consider **other causes** for decompensation? (infection, new AF)
- Do not routinely change prognostic medications if acutely unwell
- Consider **other sources of support** (*page 5*)

No

Prognostic Medications

- These will normally have been **started by HF team at diagnosis**
- **GPs** may be required to **optimise to target/maximum** tolerated dose
- These medications improve mortality *and* morbidity *and* symptoms

For further details on titration see 'Suggested medications' (*pages 7 & 8*)

ACE-I / ARB

Titrate to target dose unless:

- **symptomatic** hypotension; **U&Es** outside acceptable limits or **systolic <90 mmHg**

Beta Blockers

Titrate to target dose unless:

- **symptomatic** hypotension/ bradycardia or **systolic <90 mmHg** or **HR <50** (<80 bpm in AF)

Remains symptomatic despite maximum tolerated doses?

Spironolactone/ Eplerenone (MRA/AA)

Titrate to target dose unless:

- **symptomatic** hypotension; **U&Es** outside acceptable limits or **systolic <90 mmHg**
- Normally started by HF team

All HF patients need 6 monthly reviews (*see page 6*)

Need advice or support? *See page 5*

Use Diuretics at any time for control of fluid overload

NYHA Classification	
Class 1	No symptoms
Class 2	Breathless on moderate exertion
Class 3	Breathless during everyday activities
Class 4	Symptoms at rest

Management of HF PRESERVED EF [7]

LVEF ≥40%

General HF management advice – all types of HF (see page 6)

Manage all co-morbidities

Hypertension, AF, Diabetes, COPD etc
See page 7 and relevant CES Guides

Diuretics for acute symptom control

For fluid overload **symptom** control
There are **no treatments** that **improve prognosis** in HFpEF [12]

All HF patients need 6 monthly reviews (see *page 6*)

Southwark sources of support (all types of Heart Failure)

Problem	Who to contact	How
Diagnosis	HF team	Refer via **ERS** to '**Heart Failure Assessment**' (for 2 week referral, select 'Urgent' filter)
Routine advice	Community HF team	gst-tr.KHPcommunityHF@nhs.net (Same day advice on the management of confirmed heart failure patients)
Complex advice	Cardiology Consultants	gsttr.KHP-HFconsultant@nhs.net Consultant Connect via app
Admission avoidance and **same day support**	Community HF team @Home	gst-tr.KHPcommunityHF@nhs.net Call your locality **HF nurse North** Southwark: 07918 338750; **South** Southwark: 07918 338622 See: 'GSTT Community Heart Failure' website for full details **@Home**: 020 3049 5751 (between 8am and 11pm)
Progressive/ uncontrolled SOB despite full optimisation *(Consider other causes)*	Palliative care Cardiology Consultants	Palliative care: **North** Southwark: GSTT palliative care team: 0207 1884754. **South** Southwark: St Christopher's Hospice: 0208 768 4500 Email: gst-tr.gstt-palliativecare@nhs.net, referral form on DXS and full referral details on 'GSTT Palliative care' website Cardiology: gsttr.KHP-HFconsultant@nhs.net
Complex **elderly/ frail HF** patients	Older person team	Refer via **ERS** to '**Geriatric medicine**: Not otherwise Specified' (specific HF clinic in GSTT, General Geriatircs in KCH) Routine advice via ERS 'Geriatric medicine' advice and guidance, Urgent advice: **TALK Line GSTT**: 020 7188 1465; **KCH**: 020 3299 661
Virtual clinics	HF Clinical Pharmacists	gst-tr.khpheartfailurepharmacists@nhs.net (includes list review and complex medication enquires)
End of life	Palliative care (PC)	*See above*

General HF management advice – all types of HF [7]

Lifestyle	Advice
Smoking	Offer advice and refer/ self-refer to local **stop smoking service**
Weight	BMI >30 give loss advice; BMI <18.5 consider dietician referral
Salt	Do not routinely restrict. Do not use 'low salt' substitutes that contain potassium (e.g. LoSalt, Nu-Salt)
Fluid	Do not routinely restrict. If difficult to control HF, may suggest: 1.5 – 2L / 24h. More important is to report weight change (*see across*).
Exercise	Regular low-intensity physical activity recommended. Consider '**Exercise on referral**' if available; For complex/ advanced HF patients consider **cardiac rehab** via local HF services
Alcohol	<14 units/ week (unless alcohol induced cardiomyopathy, then abstain)
Mental Health	**Screen all patients**, mood disorders are common
Vaccinations	Flu (annually) and Pneumococcal (once)
Driving [13]	**Group 1 licence**: NYHA 1-3 can drive if stable and driving unaffected by symptoms. **Disqualified if NYHA 4** **Group 2 licence:** NYHA 1-2 can drive if stable and driving unaffected by symptoms. **Disqualified if NHYA 3-4 or HF rEF (EF≤40%)**

All HF patients need 6 monthly reviews

See: **'CES Heart Failure' EMIS template. Holistic review should include:**

- Clinical/ symptomatic assessment
- Fluid status and weight
- Cardiac rhythm (minimum of examining the **pulse**)
- Medication: are **all medications at target/ maximum tolerated dose**? (*see pages 8 and 9*)
- Lifestyle advice (see *above*)
- Nutrition: consider use of 'MUST tool'
- Review management of comorbidities (*see page 7*)
- Bloods: Renal function and Hb
- Review care plan

Remove aggravating factors

Alcohol	NSAIDs/ Cox 2-inhibitors	Glitazones	Diltiazem
Steroids	Tricyclics	Verapamil	Doxazosin

Daily weights

- Useful to monitor treatment and detect early decompensation
- Consider early morning weights (after voiding, before dressing)
- Review if weight gain >1.5kg in 2 days or worsening symptoms

Palliative Care

Would you be surprised if your patient **died within the next year?**

No

- Add patient to **Palliative care** register for discussion at next practice visit
- Consider referral to community palliative care team (*see page 5*)
- Considerations:
  - Advance care planning
  - Symptomatic management of SOB: hand-held fan and medications (low dose opioids)
  - Oxygen only indicated if hypoxic
  - Discussions about place of care and escalation planning
  - Consider adding to Coordinate My Care
  - DNACPR, ICD deactivation?

Still symptomatic despite maximum tolerated medications?

Consider **non-adherence** to medications

Reiterate **lifestyle** advice

Refer: see sources of support *(page 5)*

Prescribing Tips

Symptomatic medications: Loop Diuretics

- Offer **no prognostic benefit.** Use in both HF rEF and HF pEF to **control symptoms.**

Prognostic medications: ACE-I / ARB, Beta blocker, MRA/AA

- Offer prognostic and symptomatic benefits in HF with REDUCED ejection fraction only.
- Aim for the target dose of **ACE-I and beta-blocker**. **Some is better than none**, and a little of each is better than lots of one and none of the other.
- **Titrate to target/ maximum tolerated dose.** Seek advice if:
  - **Systolic BP 90 - 100** mmHg
  - **Heart rate 50 - 60** bpm (70-80 bpm patient with AF)

ACE-Is

- Cough is common in HF. There is better evidence for ACE-I improving survival than ARBs. Therefore, **do not change ACE-I unless certain that it is causing the cough.**

Beta Blockers

- **Should be used together with ACEI** +/- diuretic.
- Start low and go slow.
- Therapy should not be withheld for any of the following reasons: increasing age, presence of PVD, erectile dysfunction, DM, interstitial pulmonary disease and COPD without reversibility.

MRA/ AA (Spironolactone/ Eplerenone)

- Start if still symptomatic (NYHA 2-4) despite target/maximum tolerated ACE-I and BB. **Stop first** if struggling with hypotension or U&Es outside

Patient resources

Heart Failure self-management tool:
www.guysandstthomas.nhs.uk/resources/patient-information/cardiovascular/heart-failure-self-management-tool.pdf

Patient info about heart failure: www.bhf.org.uk/heart-health/conditions/heart-failure

Managing Comorbid Conditions

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Hypertension

- **Stop negatively ionotropic CCBs (diltiazem and verapamil.** Note amlodipine/ felodipine may increase ankle oedema.

AF

- Treat normally. *(See CES AF Guide)*

Diabetes

- **Avoid Glitazones**, otherwise treat normally. *(See CES Diabetes Guide)*

COPD

- Treat normally. *(See CES COPD Guide)*

CKD

- HF Prognostic medications can still be used.
- May require slower titration and closer monitoring. Please see suggested medications. (*pages 8 & 9*) or SEL APC Heart Failure guide for more detailed advice.

Diarrhoea and vomiting

- Review need to withhold or reduce ACEI/ARB and/or MRA/AA until recovered and eating and drinking normally. Do not stop BB without discussing with HF team.
- Consider using Medicine Sick Day Rules card.
- Consider referral to A&E or @Home team if locally available.

EMIS coding problem

Not all EMIS/ SNOMED Heart Failure codes include patients on QOF HF registers, for instance: 'Left Ventricular systolic dysfunction'

To ensure patients are on the QOF HF register, we recommend giving all patient an additional generic HF code: **'Heart failure' (SNOMED 84114007). This is additional to the code indicating the type of HF they have.**

For full information on this coding issue and what action to take please see: https://selondonccg.nhs.uk/wp-content/uploads/2021/02/Heart-Failure-coding-issue-communication-to-Primary-Care.docx

HF Preferred Medications [14,15]

	Drug	Starting dose	Target dose	Notes (please refer to the SEL APC guide or latest BNF for more detailed information, especially titration increments/cautions/contra-indications)
ACE-Is	1st line Ramipril	1.25mg OD	10mg OD or 5mg BD	• Double dose at 2-4 weekly intervals • Only use ARBs if ACE-I contraindicated • **Check renal function 1-2 weeks after dose increase** • Measure BP before and after each dose increase • Once the target or maximum tolerated dose of an ACE inhibitor is reached, **monitor monthly for 3 months** and then at least **6 monthly** or any time the patient becomes **acutely unwell** • Review other relevant medications: NSAIDs; nephrotoxics; diuretics, K^+ supplements • Side effects: dry cough, hypotension, renal impairment, hyperkalaemia • **Drug interactions:** beware potassium supplements/ potassium sparing diuretics and 'low salt' substitutes which have a high potassium content • **Contraindications/ Cautions include:** Renal artery stenosis, Aortic/Mitral stenosis, Pregnancy/ breastfeeding, Hepatic impairment, Hypotension
	2nd line Lisinopril	2.5mg OD	35mg OD	
ARBs	1st line Candesartan	2mg OD	32mg OD	
	2nd line Losartan	25mg OD	150mg OD	
BBs	1st line Bisoprolol	1.25mg OD	10mg OD	• Increase dose at 2-4 weekly intervals • **Stop when symptomatic with hypotension/ bradycardia**; many patients tolerate HR of 50bpm (80 in AF), and systolic of 90 mmHg • May temporarily worsen SOB/ fatigue, if marked, halve dose and review • **Do not stop suddenly** • **Drug interactions:** Digoxin, amiodarone, diltiazem, verapamil (generally contraindicated in HF) • Monitor IDDM patients closely • **Contraindications/ Cautions include:** Severe asthma, decompensated HF, 2nd/ 3rd degree heart block, HR<60
	2nd line Carvedilol	3.125mg BD	25mg BD (50mg BD if >85kg and mild HF)	

Renal function – action after dose increase monitoring [16]
For patients with eGFR >60 ml/min at initiation.
(For patient with eGFR <60 consult SEL APC guidance or discuss with Community HF team)

ACE-I and ARBs

Creatinine µmol/L	Potassium mmol/L	Action
↑ up to 50% (from baseline) or ↑ up to 265 µmol/L	↑ >5.5 – 5.9	**Review required:** Review nephrotoxic drugs and other causes of high potassium If no signs of fluid overload consider reducing diuretic dose Re-check in 2 weeks if not improved, halve dose of ACE-I Then re-check within 1 week. If not improved, discuss with Community HF team
↑ >50% (from baseline) or ↑ >265 µmol/L	↑ >5.9	**Discuss with Cardiology.** Note, it is rarely necessary to stop ACE-I/ ARB and this may precipitate a clinical deterioration, so discuss before stopping.

HF Preferred Medications [14,15]

	Drug	Starting dose	Target dose	Notes (please refer to the SEL APC guide or latest BNF for more detailed information, especially titration increments/cautions/contra-indications)
MRA/AAs	Spironolactone	25mg OD	50mg OD	• Start if still symptomatic (NYHA2-4) despite max tolerated ACE-I and BB • Do not use in patients with baseline K^+>5.5 or creatinine >200 • Baseline bloods: Renal and Liver function. Re-check baseline bloods at 1 week after initiation • Measure BP before and after each dose increase • **If remains symptomatic at 4 weeks** (and bloods satisfactory) **increase to target dose** and repeat bloods after 1 week • There is a higher **risk of hyperkalaemia** due to concomitant treatment with ACE-I • **Side effects**: gynecomastia, hyperkalemia, renal dysfunction • Avoid K^+rich foods (spinach, mangos, bananas, coconut) • **Contraindications/ Cautions include:** eGFR <30ml/min, hepatic impairment, K^+>5 mmol/L at initiation
	Eplerenone	25mg OD	50mg OD	
Loop diuretics	Furosemide	40mg	Titrate to symptoms	• Use for symptom control. Diuretics **offer no prognostic benefit.** • Start/ increase if clinically or symptomatically fluid overloaded • Use lowest effective dose • Review renal function after dose change and **keep K^+ between 3.6-5 mmol/L** • **Increase if** weight increases **>1.5kg in 2-3 days** • **Decrease if** weight reduces **>1.5kg in 2-3 days** or patient feels thirst/ dizziness/ washed out • Recommend patient **self-weight** in the morning after voiding, before breakfast/ dressing • Doses over 120mg (or 3mg bumetanide) - split into BD dosing • Consider other causes of fluid overload (adherence, salt, fluid, AF) • Bumetanide reserved for those unresponsive to furosemide, and may be useful if patient has gastrointestinal oedema • **Contraindications/ Cautions include:** Hypovolaemia/ dehydration, K^+< 3.3; Na^+< 130; gout
	Bumetanide	1mg	Titrate to symptoms	
	Sacubitril/valsartan (Entresto)			• Increasingly being by cardiologists used **instead of ACEI/ ARB** for patients who are difficult to control • Once established, it **requires standard monitoring** (6 monthly review with U&Es)

MRA /AA renal function monitoring

K^+	Action
5.5 – 5.9	Reduce dose (50mg OD to 25mg OD; 25mg OD to 25mg alternate days)
>5.9	**Stop and discuss with cardiology**

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Abbreviations

AA: Aldosterone Antagonist (e.g. spironolactone and eplerenone)

ACE-I: Angiotensin Converting Enzyme Inhibitor

AF: Atrial fibrillation

ARB: Angiotensin Receptor Blockers (e.g. candesartan)

BB: Beta blocker

BPM: Beats Per Minute

CCB: Calcium Channel blocker

CES: clinical Effectiveness Southwark

CHF: Chronic Heart Failure

Chol: Cholesterol

CKD: Chronic Kidney Disease

CXR: Chest x-ray

D&V: diarrhoea and vomiting

DM: diabetes Mellitus

DNACPR: Do not attempt cardiopulmonary resuscitation

DVLA: Driver and vehicle licensing agency

ECG: Electrocardiogram

Echo: Echocardiogram

EF: Ejection fraction

EMIS: Egton Medical Information Systems

ERS: E-referral system

FBC: Full Blood Count

GSTT: Guy's and St Thomas' NHS Foundation Trust

HbA1c: Glycated Haemoglobin Test

HF: Heart failure

HFpEF: Heart Failure with Preserved Ejection Fraction

HFrEF: Heart Failure with Reduced Ejection Fraction

HR: Heart Rate

ICD: implantable cardiac defibrillator

IDDM: Insulin dependent DM

IRT: Integrated Respiratory Team

JVP: jugular venous pressure

K+: Potassium

KCH: King's College Hospital NHS Foundation Trust

KHP: King's Health Partners

LV: Left Ventricle

LVEF: Left Ventricular Ejection Fraction

MI: myocardial infarction

MRA: Mineralocorticoid Receptor Antagonist

Na: Sodium

NICE: National Institute for Clinical Excellence

NSAID: Non-steroidal anti inflammatory

NT-proBNP: N-terminal pro B-Type Natriuretic Peptide

NYHA: New York Heart Association

PND: paroxysmal nocturnal dyspnoea

PVD: peripheral vascular disease

QOF: Quality and Outcomes Framework

SEL APC: South East London Area Prescribing Committee

SOB: Short/shortness of breath

TFTs: Thyroid function tests

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QUAY HEALTH SOLUTIONS

ihl improving health

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Making the right thing to do the easy thing to do.

October 2018 (review October 2020, or earlier if indicated)