Heart Failure (HF) - Primary Care Flow Charts

Pre diagnosis
Symptoms or signs suggestive of HF

12 lead ECG

Normal examination and 12 lead ECG
HF highly unlikely

Refer to the Heart Failure Clinic at VHK for Echo and expert assessment
Refer via SCI Gateway – Victoria Hospital – HF Clinic (Please use the specific HF clinic slot)

Abnormal 12 lead ECG
HF Possible

Diagnosis confirmed by Echo
Multidisciplinary management plan agreed with patient
Transfer back into primary care with appropriate specialist follow up as required
Ensure patient is included on the HF register and is coded as having a diagnosis of HF confirmed by echo or specialist assessment: (QOF HF2)

Arrange chest x-ray
Consider alternative diagnosis
Known HF presenting with worsening symptoms

**Acute**
Rapid deterioration in clinical condition

- Admit to Cardiology

**Chronic**
Deterioration over days or weeks

- Does patient have signs of fluid overload?
  - NO
    - Rapid expert assessment required
  - YES
    - Optimise diuretic
    - Consider spironolactone if not prescribed (Appendix 1)

Initiate treatment to ensure patient’s symptoms are being managed prior to being seen in HF clinic

Refer to the Heart Failure Clinic at VHK for review and management
(Patient will be seen at next HF clinic – maximum time to appointment 6 days).

Refer via SCI Gateway – Victoria Hospital – HF Clinic
(Please use the specific HF clinic slot)

If a more urgent review is required please email Fife.uhb.heartfailureservice@nhs.net
Patients referred via this route will be seen at a cardiology clinic the following day.

Weekly visits to HF clinic until patient stabilizes

Multidisciplinary management plan agreed by patient (Appendix 3)

If supportive palliative care is required ensure patient is on the non cancer palliative care register
HF Management after diagnosis or discharge from hospital

Is patient on maximum tolerated evidence based treatment?

Yes

Multidisciplinary management plan agreed by patient supported by the Heart Failure Liaison Nurse Service (Appendix 3)

No

Complete optimisation of medical therapy as set out in appendix 2

Multidisciplinary management plan agreed by patient with support of the Heart Failure Liaison Nurse Service (Appendix 3)

The Heart Failure Liaison Service is based at:

Address: Administration Building,
Cameron Hospital,
Windygates.
Tel No: 01592-226884
Fax: 01592-226989
Email: Fife-uhb.heartfailureservice@nhs.net

The Specialist Nurses are available for support and advice and can be contacted by patients, their GPs and carers.
Spironolactone Flow Chart

Indications
Should be considered for patients NYHA III-IV who have been optimised on an ACE-I or ARB and a beta-blocker and continue to be symptomatic

Contra-indications
Patient is treated with both an ACE-I and an ARB
Significant hyperkalaemia >5mmol/l
Significant renal dysfunction Cr >220mmol/l

Pre-initiation checks
- Where appropriate, stop potassium supplements & other potassium sparing diuretics 2 weeks before starting spironolactone.
- Substitute with a loop diuretic e.g. furosemide.
- Check blood chemistry:
  - Creatinine <220µmol/l
  - Urea < 12mmol/l
  - Potassium <4.5mmol/l

Commence Spironolactone
Initial dose
25mg od
Increments
double to
Target
50mg od

(Where dose reduction may be required consider 25mg od then 25mg alternate days depending on biochemistry)

Monitoring
Blood chemistry should be checked initially and at weeks 1, 2 & 4
Then
4 weekly for 3 months
3 monthly for 1 year
Then
6 monthly thereafter

Stop spironolactone and seek specialist advice where
The patient develops:
- Diarrhoea
- Vomiting
- Or any other cause of sodium & water depletion
- Gynaecomastia Consider eplerenone as an alternative. Initiate on 25mg daily, and increase to 50mg within four weeks taking into consideration serum potassium levels. Monitor as above
(Where dose reduction may be required consider 25mg od then 25mg on alternate days depending on serum potassium levels)

Blood chemistry
- Urea ↑ >18mmol/l (or by 50% from baseline)
- Creatinine ↑ ≥ 250µmol/l (or by 25% from baseline)
- Potassium > 5.5mmol/l
**Appendix 2 HEART FAILURE TITRATION GUIDANCE**

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>EVIDENCE BASED DRUGS</th>
<th>YES</th>
<th>NO</th>
<th>MTD*</th>
<th>OD**</th>
<th>DOCUMENT CONTRAINDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base line treatment</td>
<td>ACE-I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ARB (if intolerant of ACE-I)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Betablocker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid overload</td>
<td>Loop diuretic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NYHA class III or IV</td>
<td>Aldosterone antagonist</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>Warfarin</td>
<td></td>
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</tr>
</tbody>
</table>

*Maximum tolerated dose
**Optimal dose

**ACE INHIBITOR (ACE-I)**

<table>
<thead>
<tr>
<th>Name of drug</th>
<th>Start dose</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramipril</td>
<td>2.5mg od</td>
<td>10mg od</td>
</tr>
<tr>
<td>Perindopril</td>
<td>2mg od</td>
<td>4mg od</td>
</tr>
<tr>
<td>Trandolapril</td>
<td>1mg od</td>
<td>4mg od</td>
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</table>

**ANGIOTENSIN RECEPTOR BLOCKER (ARB)**

<table>
<thead>
<tr>
<th>Name of drug</th>
<th>Start dose</th>
<th>Target</th>
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</thead>
<tbody>
<tr>
<td>Candesartan</td>
<td>4mg od</td>
<td>32mg od</td>
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<tr>
<td>Losartan</td>
<td>25mg od</td>
<td>100mg od</td>
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</table>

**BETA- BLOCKER**

**Bisoprolol Titration**

<table>
<thead>
<tr>
<th>Week 1</th>
<th>→</th>
<th>1.25mg od</th>
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</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>→</td>
<td>2.5mg od</td>
</tr>
<tr>
<td>Week 3</td>
<td>→</td>
<td>3.75mg od</td>
</tr>
<tr>
<td>Week 4</td>
<td>→</td>
<td>5mg od</td>
</tr>
<tr>
<td>Week 8</td>
<td>→</td>
<td>7.5mg od</td>
</tr>
<tr>
<td>Week 12</td>
<td>→</td>
<td>10mg od</td>
</tr>
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</table>

**Carvedilol Titration**

<table>
<thead>
<tr>
<th>Week 1</th>
<th>→</th>
<th>3.125mg bd</th>
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</thead>
<tbody>
<tr>
<td>Week 3</td>
<td>→</td>
<td>6.25mg bd</td>
</tr>
<tr>
<td>Week 5</td>
<td>→</td>
<td>12.5 mg bd</td>
</tr>
<tr>
<td>Week 7</td>
<td>→</td>
<td>25mg bd</td>
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<tr>
<td>Week 9</td>
<td>→</td>
<td>*50mg bd</td>
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<tr>
<td></td>
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<td>*if weight &gt;85kg</td>
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Diagnosis of chronic heart failure due to left ventricular systolic dysfunction (LVSD)

Heart Failure Liaison Service aims:
- Develop a heart failure register.
- Refer to primary care for inclusion on heart failure and palliative care register.
- Carry out full assessments and assign treatment pathway based on patient’s risk of decompensation.
- Introduce core issues relating to lifestyle changes, education, self management, carer support, and benefits advice.
- Review medication and plan optimised pharmacological management.
- Have access to and will refer to other health care professionals.

Low Risk:
- Stable, established on treatment.
- Concordant with medication.
- Knowledgeable about condition.
- Adopting lifestyle changes and self managing.
- Receiving adequate social support.
- Annual Review within practice.
- Self management plan.

Moderate Risk:
- Stable, requiring dose titration.
- Not fully concordant with medications.
- Minimal understanding of condition and impact of not modifying behaviour.
- Requiring support, education and structured case management.
- Frequent review.
- Anticipatory care plan.

High Risk:
- Unstable, poor renal function. Symptomatic.
- Other co-morbidities, complex case management required.
- Poor understanding of condition and not concordant with medication.
- Requiring close monitoring of clinical status.
- Inadequate social support or haphazard follow-up.
- Advanced care plan.

Community Nurse:
- Address and support lifestyle issues, education and self management.
- Access to HF Liaison service as required.

Nurse with Specialist Knowledge:
- Address and provide further education on lifestyle issues, carer support, relaxation and anxiety management.
- Monitor dose titration.
- Intensive support for self management.
- Re-assessment/access to HF Liaison Service as required.
- Review as required.

Heart Failure Specialist Service:
- Case management plan.
- Review by cardiology (when required).
- Increased level of social support and carer education.
- Symptom control, patient autonomy and choice, access to specialist palliative care as required.
- Managed as per Gold Standard Framework and inform GP of process and progress.

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