Dear Colleagues,

As part of the work of NHS Grampian on managing long term conditions, cardiovascular disease (CVD) has been identified as a local priority.

Our intention in compiling a Cardiovascular Disease Resource Pack is to facilitate access to information required for the management of patients with CVD in primary care. It should be considered as an adjunct to local and national CVD guidelines. The pack will be regularly reviewed and updated. Any relevant updates will be distributed to your practice for insertion into the pack. It is our hope for the future that the resource pack will be available on line.

The protocols and patient information leaflets are examples which practices can use or adapt to suit their own requirements. The fundamental design of the pack allows the opportunity to personalise it by adding any additional material considered pertinent to your own practice.

A multidisciplinary team from both primary and secondary care has developed this pack. Any feedback you may have would be very welcome.

Regards

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ACKNOWLEDGEMENTS

We wish to express our gratitude and thanks to the following people for their contributions to this pack.

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Joan Thain         Cardiac Rehabilitation Health Visitor
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CARDIOVASCULAR RISK ASSESSMENT

This should be carried out in patients with blood pressure >140/90mmHg. Risk factors for cardiovascular disease (CVD) are classed as modifiable (can be changed) or non-modifiable (cannot be changed) are shown in table 1.

TABLE 1. RISK FACTORS FOR CARDIOVASCULAR DISEASE

<table>
<thead>
<tr>
<th>Modifiable Risk Factors</th>
<th>Non-modifiable Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Age</td>
</tr>
<tr>
<td>Obesity</td>
<td>Gender</td>
</tr>
<tr>
<td>Lack of exercise</td>
<td>Ethnic origin</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Family history</td>
</tr>
<tr>
<td>Excess dietary sodium</td>
<td>History of cardiovascular disease (CVD)</td>
</tr>
</tbody>
</table>

NON-MODIFIABLE RISK FACTORS

These factors should be noted at the assessment:

**Age**: hypertension is more prevalent with advancing age.

**Gender**: pre-menopausal women tend to have lower blood pressure than men of the same age this difference is less apparent in those over the age of 50yrs.

**Ethnic origin**: hypertension is more common in those of Afro-caribbean origin. The prevalence of diabetes, heart disease and hypertension is more prevalent in those originating from the Indian subcontinent where CVD risk increases risk by a factor of 1.4.

**Family history**: those individuals with a family history of premature cardiovascular disease or stroke in a first degree relative (parent or sibling) before the age of 65yrs for females and 55yrs in males increases risk by a factor of 1.3.

**History of cardiovascular disease**: if there is a past history of CVD (stroke, T.I.A, MI, PVD or renal disease these individuals are at greater risk and secondary prevention of cardiovascular disease is vital.

MODIFIABLE RISK FACTORS

**Smoking**: there is no association with smoking and hypertension however there is significant evidence of the link with smoking and cardiovascular and pulmonary disease. Smoking cessation advice should be given with prescribing of nicotine replacement therapy and access to NHS Stop Smoking Services.
**Obesity:** reducing weight can help blood pressure control (5-10mmHg per 10kg weight loss). Body Mass Index (BMI) should be between 20-25. Central obesity is also associated with high CVD risk. Waist circumference is a measure of central obesity. Ideal waist circumference are shown in table below

<table>
<thead>
<tr>
<th></th>
<th>IDEAL</th>
<th>INCREASED RISK</th>
<th>GREATEST RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEN (cm)</td>
<td>&lt;94</td>
<td>94-101</td>
<td>&gt;102</td>
</tr>
<tr>
<td>WOMEN (cm)</td>
<td>&lt;80</td>
<td>80-87</td>
<td>&gt;88</td>
</tr>
</tbody>
</table>

**HOW TO MEASURE WAIST CIRCUMFERENCE**
- Use a flexible tape of adequate length
- Remove the patient’s clothing from around the waist
- Have the patient stand erect with abdomen relaxed feet 25-30 cm apart, weight evenly distributed, arms loosely at their side
- Find the upper edge of the hip bone (iliac crest) and the lower edge of the lowest rib
- Take the midpoint between the two levels
- Make the measurement horizontally at this midpoint level, whether the umbilicus is above or below
- Ask patient to breathe in and then out gently, then take the measurement.

**Lack of exercise:** regular aerobic exercise (brisk walking, jogging, cycling) for 30-60mins 3-5 times a week can reduce weight and blood pressure.

**Alcohol:** recommended limits 21 units/week for men and 14 units/week for women can reduce both weight and blood pressure.

**Excess dietary sodium:** reducing salt in the diet can help reduce blood pressure. Daily intake should be <6gm (2.4gm sodium).
DIAGNOSIS

A diagnosis of hypertension can have serious implications on an individuals’ employment and can affect insurance premiums and therefore should not be made on the basis of one clinic visit reading. Everyone over the age of 40yrs up to the age of 80yrs or more should have their blood pressure measured at least every 5 years. BP should be measured on at least 3 occasions to make a diagnosis of hypertension.

TREATMENT THRESHOLDS (SEE FIGURE 1)

SBP>220mmHg and/or DBP>120mmHg: seek immediate medical advice to exclude accelerated hypertension (papilloedema and/or retinal haemorrhages) if excluded commence pharmacological treatment immediately

SBP 180-219mmHg and/or DBP 110-119mmHg: seek medical advice to exclude accelerated hypertension if not confirm over 1-2 weeks then commence pharmacological treatment

SBP 160-179mmHg and/or DBP 100-109mmHg:
- If target organ damage or diabetes present or if 10yr CVD risk is >20% monitor weekly for 4 weeks if persists at this level commence pharmacological treatment
- If NO target organ (see below) damage or diabetes or if 10yr CVD risk is <20% monitor weekly initially, give lifestyle advice and if BP persists at this level over 4-12 weeks commence pharmacological treatment

SBP 140-159mmHg and/or DBP 90-99mmHg:
- If target organ damage or diabetes present or if 10yr CVD risk is >20% monitor weekly if persists at this level over 12 weeks commence pharmacological treatment
- If NO target organ damage or diabetes or if 10yr CVD risk is <20% monitor monthly for 3-6 months and give lifestyle advice if BP persists at this level treatment should be commenced
- If BP falls below 140/90 at least annual measurements should be taken

SBP 130-139mmHg and/or DBP 85-89mmHg: blood pressure should be checked annually especially in the elderly

BP<130/85: blood pressure should be checked every 5 years

TARGET ORGAN DAMAGE
- Stroke
- T.I.A
- CHD
- LVH
- heart failure
- renal disease
- peripheral vascular disease
- retinopathy
Figure 1 British Hypertension Society Guidelines Journal of Hypertension (2004) 18, 139-1
BLOOD PRESSURE MEASUREMENT

Measurement of blood pressure must be carried out by fully trained health care professionals using properly maintained and validated equipment.

EQUIPMENT

Blood pressure (BP) can be measured by using an automatic blood pressure device or by a mercury sphygmomanometer. A list of validated machines can be found at www.bhsoc.org or www.dableducational.com. Aneroid, wrist or finger blood pressure monitors are NOT recommended for use in hypertension clinics. The correct size of cuff must be used such that the enclosed bladder encircles at least 80% (but not more than 100%) the upper arm. Too large a cuff will result in underestimation of the blood pressure and too small a cuff will overestimate the blood pressure. A selection of cuffs should be available as detailed in table 2.

TABLE 2. BLOOD PRESSURE CUFF SIZES

<table>
<thead>
<tr>
<th>INDICATION</th>
<th>BLADDER Width x length (cm)</th>
<th>ARM CIRCUMFERENCE (cm)</th>
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<tr>
<td>Small adult/child</td>
<td>12 x 18</td>
<td>&lt;23</td>
</tr>
<tr>
<td>Standard adult</td>
<td>12 x 26</td>
<td>&lt;33</td>
</tr>
<tr>
<td>Large adult</td>
<td>12 x 40</td>
<td>&lt;50</td>
</tr>
<tr>
<td>Adult thigh cuff</td>
<td>20 x 42</td>
<td>&lt;53</td>
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Automatic blood pressure devices can produce a wide variation in measurements in patients with an irregular pulse. In these cases a mercury sphygmomanometer or manual device eg Accosson Greenlight 300 (www.greenlight300.com/) should be used. Automatic devices should be calibrated as per manufacturer’s instructions, usually every 2 years. A mercury spillage kit should be available and mercury sphygmomanometers should be serviced 6 monthly. The Accoson Greenlight 300 monitor requires to be calibrated every 4 years.
MEASURING BLOOD PRESSURE

The pulse should be counted and assessed before measuring the blood pressure. Initial blood pressure measurements should be taken in both arms and if there is a significant difference (>10mmHg) the arm with the higher value should be used for future measurements.

MEASURING BLOOD PRESSURE USING AN AUTOMATIC DEVICE

- The patient should be seated for at least five minutes, relaxed and not moving or talking.
- The arm should be supported at heart level and any tight clothing removed.
- Ensure correct size of cuff is applied with the indicator mark on the cuff over the brachial artery.
- At least two measurements should be taken with a minute between each reading.
- If there is a large difference between measurements (>10mmHg) a third reading should be taken and the mean of the last two readings recorded.

MEASURING BLOOD PRESSURE USING A MERCURY SPHYMOMANOMETER/MANUAL MACHINE

- The patient should be seated for at least five minutes, relaxed and not moving or talking.
- The arm should be supported at heart level and any tight clothing removed.
- Ensure correct size of cuff is placed with the centre of the bladder over the brachial artery.
- The mercury column must be vertical and at the observers eye level.
- Palpate the brachial pulse and rapidly inflate the cuff until the pulsation disappears.
- Deflate the cuff and note the pressure when the pulse re-appears (estimated systolic pressure).
- Re-inflated cuff to 30mmHg above the estimated systolic pressure.
- Place the stethoscope diaphragm over the brachial artery and deflate the cuff slowly (2mmHg/second).
- Systolic pressure (Korotkoff Phase 1) is recorded as the first clear tapping sound of two consecutive beats.
- Diastolic pressure (Korotkoff Phase V) is recorded as the point when the sounds disappear.
- When the sounds disappear rapidly deflate the cuff.
- Measurements should be recorded to nearest 2mmHg.
- At least two measurements should be taken with a minute between each reading.
- If there is a large difference between measurements (>10mmHg) a third reading should be taken and the mean of the last two readings recorded.
HOME BLOOD PRESSURE MONITORING
Use ONLY validated automatic devices with correct size of cuff (wrist and finger monitors should NOT be used for home monitoring)
Readings should be taken twice a day for a week. Patients should be given written instructions on how to measure their blood pressure and a recording sheet to record the readings (see page 18 & 19). The first day’s readings should be discounted as they may be inaccurate due to anxiety and/or unfamiliarity with the device. For home readings and 24hr ambulatory blood pressure monitoring the thresholds and targets for blood pressure should be adjusted downwards by 10/5mmHg.

24 HOUR AMBULATORY BLOOD PRESSURE MONITORING (ABPM)
Not required for all patients but is useful in these situations:
• Unusual blood pressure variability
• Possible ‘white-coat hypertension’
• Informing equivocal treatment decisions
• Evaluation of nocturnal hypertension
• Evaluation of drug-resistant hypertension
• Determining the efficacy of drug treatment over 24 hours
• Diagnoses and treatment of hypertension in pregnancy
• Evaluation of symptomatic hypotension

Out-patient 24hr ABPM can be accessed directly by letter to Ward 6, Clinical Pharmacology Unit at ARI or via SCI gateway Cardiology/Hypertension. Patients should be given written instructions on the use of the monitor and a diary sheet documenting their activities during the 24hr period should be completed (see page 20 & 21). The monitor will be removed after 24hrs at the clinic or if more convenient can be removed by the patient and handed into their GP practice for delivery back to ARI via the internal hospital mailing system.
HYPERTENSION CLINIC PROTOCOL

NAME OF PRACTICE

Date of protocol

Date for review

Person responsible for review of protocol
HYPERTENSION CLINIC PROTOCOL

This protocol is designed for use in nurse-led clinics with the support of general practitioners. The protocol can be adapted for the individual needs of the practice. It is based on the recommendations British Hypertension Society Guidelines 2004 and the NICE Hypertension Guidelines 2006.

SCREENING VISIT

Patients with BP >140/90 (confirmed on 3 separate visits where two BP measurements have been taken) should have cardiovascular risk assessment carried out

- Record BP (see page 9)
- Height
- Weight
- BMI
- Urinalysis

<table>
<thead>
<tr>
<th>RESULT</th>
<th>ACTION</th>
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<tbody>
<tr>
<td>Protein + or more</td>
<td>Send MSSU, if negative send EMU for albumin/creatinine ratio</td>
</tr>
<tr>
<td>Blood</td>
<td>Send MSSU, if negative re-check urinalysis in 3 weeks if blood still present see GP</td>
</tr>
<tr>
<td>Glucose</td>
<td>Arrange for fasting blood sugar</td>
</tr>
</tbody>
</table>

- ECG to exclude LVH
- Bloods U&E, LFT, TFT, glucose, lipids and FBC
- Current medication
- Note previous drug intolerances
- Calculate 10yr CVD risk using cardiovascular risk calculator or by referring to Joint British Society cardiovascular disease risk prediction charts found in the British National Formulary
- Record family history if first degree relative (parent or sibling) has history of CVD or stroke in males <55yrs and females <65yrs CVD risk is multiplied by 1.5
- Assess for target organ damage (see page 7)
- Assess diet give diet sheets on salt, healthy eating (see section 4)
- Assess alcohol intake: recommended limit per week <14 units for female, <21 units for male
- Smoking – advise on stopping, prescribe nicotine replacement therapy and offer referral for smoking cessation advice NHS Smoking Advice Service free phone 0500 600 332
- If patient meets criteria for drug treatment (see page 8) and commence treatment as per BHS/NICE guidelines (see page 17)
- If patient commences anti-hypertensive treatment record appropriate READ code for hypertension
- Target blood pressure for hypertensive patients

<table>
<thead>
<tr>
<th>CLINIC BP</th>
<th>NO DIABETES</th>
<th>ESTABLISHED CVD, DIABETES CHRONIC RENAL DISEASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimal</td>
<td>&lt;140/85</td>
<td>&lt;130/80</td>
</tr>
<tr>
<td>Audit Standard</td>
<td>&lt;150/90</td>
<td>&lt;140/80</td>
</tr>
</tbody>
</table>

**REVIEW VISITS**

- Record BP (see page 9)
- Check weight/BMI
- Review lifestyle factors: diet, exercise, alcohol, smoking status
- **Lifestyle advice should be reinforced at each visit**
- Review for BP check and U&E 1-2 weeks after commencement of ACE inhibitor or angiotensin II receptor antagonist and with any subsequent increase in dosage
- Patients on other hypertensive agents should be reviewed for BP check monthly and medication adjusted to achieve target BP (see target BP table above)
- Patients at target should have BP check every 6-9 months
- Annual U&E, glucose and lipids
- For patients with BP >140/90 who do not meet threshold for treatment measure BP annually, re-calculate 10yr CVD risk and re-assess for target organ damage and treat if threshold met

**REFERRAL TO SECONDARY CARE**

- Severe hypertension >220/120
- To exclude possible secondary cause eg. hypokalaemia/increased plasma sodium (Conn’s syndrome)
- Resistant hypertension (BP not at target on 3 or more drugs)
- Young age (hypertension if aged <30yrs)
- Multiple drug intolerance
- Suspected “white coat hypertension”

*Referral to secondary care can be made via SCI gateway under Cardiology/Hypertension*
# DRUGS USED IN THE MANAGEMENT OF HYPERTENSION

<table>
<thead>
<tr>
<th>Class of Drug Formulary drug</th>
<th>Indication/ Mode of Action</th>
<th>Contra-indications/ Cautions</th>
<th>Side Effects</th>
<th>Monitoring Required</th>
<th>Advice/ Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACE inhibitors</strong>&lt;br&gt;Ramipril&lt;br&gt;1.25-10mg daily&lt;br&gt;Lisinopril 2.5-20mg daily&lt;br&gt;Enalapril&lt;br&gt;2.5-40mg in 1 – 2 divided doses</td>
<td>Reduction in the peripheral vascular resistance with a subsequent fall in BP&lt;br&gt;Used for treatment of heart failure, hypertension and renal protection in patients with proteinuria, diabetes and chronic kidney disease</td>
<td>Renal Artery Stenosis&lt;br&gt;Use with caution in peripheral vascular disease due to association with renovascular disease&lt;br&gt;Use with caution in aortic stenosis&lt;br&gt;Contra-indicated in pregnancy and breast feeding</td>
<td>Hypotension, renal impairment, persistent dry cough, angioedema, urticaria, diarrhoea, headache, fatigue, taste disturbances</td>
<td>U&amp;Es&lt;br&gt;Prior to treatment, after each dose increase and annually as part of review</td>
<td>Initial dose may cause hypotension. Dose should be titrated to a maximum if renal function satisfactory. Avoid potassium supplements and NSAIDs</td>
</tr>
<tr>
<td><strong>Alpha 1 Antagonists</strong>&lt;br&gt;Doxazosin MR&lt;br&gt;4-8mg daily</td>
<td>Reduce peripheral resistance and should only be used in combination with antihypertensive agents in the treatment of resistant hypertension. Also used for benign prostatic hypertrophy</td>
<td>Postural hypotension with initial dose. Use with care if already on treatment for hypertension&lt;br&gt;Use with caution in hepatic impairment and heart failure.</td>
<td>Headaches, palpitations, dizziness, fatigue, hypotension, peripheral oedema, urinary incontinence</td>
<td>Side effects&lt;br&gt;Blood pressure</td>
<td>Dose should be gradually titrated upwards after 1-2 weeks</td>
</tr>
<tr>
<td><strong>Angiotensin II Antagonists</strong>&lt;br&gt;Losartan&lt;br&gt;25-100mg&lt;br&gt;Candesartan&lt;br&gt;2-32mg</td>
<td>Act by blocking the vasoconstrictor effects of angiotensin II. This results in reduced peripheral vascular resistance and vasodilatation thus reducing Blood Pressure&lt;br&gt;Used as alternative for patients intolerant of ACE</td>
<td>Renal Artery Stenosis&lt;br&gt;Use with caution in peripheral vascular disease due to association with renovascular disease&lt;br&gt;Use with caution in aortic stenosis&lt;br&gt;Contra-indicated in pregnancy and breast feeding</td>
<td>Usually mild, dizziness, diarrhoea, taste disturbance, cough, urticaria, myalgia, migraine</td>
<td>Monitor plasma potassium, U&amp;Es&lt;br&gt;Annually and after each dose increase</td>
<td>Initial dose may cause hypotension. Titrate dose up if renal function satisfactory. Avoid potassium supplements and NSAIDs</td>
</tr>
<tr>
<td><strong>Beta Blockers</strong>&lt;br&gt;Atenolol&lt;br&gt;25-100mg daily</td>
<td>Reduce cardiac output and inhibit renin release. Prevent angina symptoms and reduce cardiovascular mortality and morbidity.</td>
<td><strong>Contraindicated</strong> in Asthmatic patients.&lt;br&gt;Use with caution in patients with COPD, peripheral vascular disease, diabetes</td>
<td>Bronchoconstriction, Bradycardia&lt;br&gt;Peripheral Vasconstriction&lt;br&gt;Fatigue, lethargy, impotence</td>
<td>Monitor Symptoms&lt;br&gt;Blood pressure</td>
<td>Patients must be advised not to stop β- blockers suddenly or allow them to run out.</td>
</tr>
</tbody>
</table>
### DRUGS USED IN THE MANAGEMENT OF HYPERTENSION

<table>
<thead>
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<th>Side Effects</th>
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<th>Advice/ Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dihydropyridine Calcium channel blockers</strong>&lt;br&gt;Felodipine MR 2.5mg-10mg daily&lt;br&gt;Amlodipine 5mg or 10mg daily&lt;br&gt;Relaxes vascular smooth muscles which causes vasodilation&lt;br&gt;Effective in the treatment of angina and hypertension&lt;br&gt;Cardiogenic Shock&lt;br&gt;Unstable angina&lt;br&gt;Significant Aortic Stenosis&lt;br&gt;Pregnancy and Breast Feeding</td>
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<td>Oedema, commonly swollen ankles&lt;br&gt;Cardiogenic Shock&lt;br&gt;Unstable angina&lt;br&gt;Significant Aortic Stenosis&lt;br&gt;Pregnancy and Breast Feeding&lt;br&gt;Oedema, commonly swollen ankles&lt;br&gt;Headache, fatigue, nausea and flushing, gum hyperplasia, rashes</td>
<td>Symptom Control&lt;br&gt;Side effects&lt;br&gt;Blood pressure</td>
<td>Ankle oedema may be persistent. Grapefruit juice increases plasma concentration of felodipine.</td>
<td></td>
</tr>
<tr>
<td><strong>Rate Limiting Calcium channel blockers</strong>&lt;br&gt;Diltiazem e.g.&lt;br&gt;Dilziem®&lt;br&gt;180-360mg daily&lt;br&gt;Verapamil&lt;br&gt;180-240mg daily&lt;br&gt;These drugs are appropriate for patients intolerant of β-blockers and with no evidence of LVF&lt;br&gt;Verapamil has a negative inotropic effect, reducing cardiac output and slowing the heart. Must not be used with β-blockers&lt;br&gt;Diltiazem must only be used with caution in combination with β-blockers&lt;br&gt;Verapamil has a negative inotropic effect, reducing cardiac output and slowing the heart. Must not be used with β-blockers&lt;br&gt;Diltiazem must only be used with caution in combination with β-blockers&lt;br&gt;Constipation is a common side effect&lt;br&gt;Nausea, headache, flushing, dizziness, ankle oedema, fatigue&lt;br&gt;Constipation is a common side effect&lt;br&gt;Nausea, headache, flushing, dizziness, ankle oedema, fatigue&lt;br&gt;Symptom Control&lt;br&gt;Side effects&lt;br&gt;Blood pressure</td>
<td>Symptom Control&lt;br&gt;Side effects&lt;br&gt;Blood pressure</td>
<td>Sudden withdrawal may be associated with increase in angina symptoms. Grapefruit juice increases plasma concentration of verapamil.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Thiazide Diuretics</strong>&lt;br&gt;Bendroflumethiazide 2.5mg&lt;br&gt;Cause sodium loss and reduction in smooth muscle tone&lt;br&gt;Contraindicated if patient has gout&lt;br&gt;Impotence&lt;br&gt;U&amp;Es as part of Annual Review</td>
<td>Bendroflumethiazide 2.5mg&lt;br&gt;Cause sodium loss and reduction in smooth muscle tone&lt;br&gt;Contraindicated if patient has gout&lt;br&gt;Impotence&lt;br&gt;U&amp;Es as part of Annual Review</td>
<td>Impotence</td>
<td>U&amp;Es as part of Annual Review</td>
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Some drugs can cause an increase in blood pressure and it important to consider this prior to initiating, increasing doses or changing therapy. The most common examples are NSAIDs, Cox-2 inhibitors, HRT, oral contraceptives and steroids. Over the counter remedies such as sympathomimetics (cold cures) and analgesics need to be taken cognisance of. Soluble formulations such as Solpadol® contain a lot of sodium and should be avoided. Care should be taken if prescribing Aspirin if indicated BP should be controlled to audit standard of <150mmHg systolic and <90mmHg diastolic.
Drugs in the Grampian Joint Formulary which are recommended for Use in Grampian are as follows:

- **ACE Inhibitors**: Lisinipril, Ramipril or Captopril
- **Angiotensin –II receptor antagonists**: Candesartan, Losartan
- **Calcium Channel Blocker**: Amlodipine or Felodipine
- **Thiazide Diuretic**: Bendroflumethiazide

**Beta Blockers:**

- No longer first choice of treatment for hypertension alone
- Should be considered for younger people
- An option for women of childbearing potential
- Are useful in patients with evidence of increased sympathetic drive
- Use in patients with intolerance of or contraindications to ACE inhibitors or angiotensin II receptor antagonists
HOME BLOOD PRESSURE MONITORING

INSTRUCTIONS FOR PATIENTS

- Wear short sleeved/loose fitting clothing and apply cuff next to your skin
- Sit with your arm supported (on a table/desk) and the cuff should be at heart level
- Rest for at least 5 minutes before taking readings
- Use the same arm and ensure your arm is relaxed and not tense
- Do not talk or move your arm during the measurement.
- Take 3 measurements 1-2 minutes apart twice a day.
- Measurements should be taken in the morning before taking blood pressure medication and in the evening (approx 12 hours later)
- Record readings on sheet (see page 19)
- Do NOT alter your blood pressure medication unless advised by doctor/nurse
## OMRON READINGS

<table>
<thead>
<tr>
<th>Patient Details</th>
<th>Medication</th>
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<th>Date</th>
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<th>B.P</th>
<th>Pulse</th>
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24HR AMBULATORY BLOOD PRESSURE MONITORING

INSTRUCTIONS FOR PATIENTS

- Please wear a loose fitting or short sleeved shirt or blouse and if possible bring a belt with you
- The monitor has been programmed for you and will be fitted by a nurse
- It is a small battery operated device which is held in a pouch which will be attached to your belt around your waist
- The cuff will be placed on your non-dominant upper arm
- The monitor will measure your blood pressure automatically every 30 minutes during the day and every 60 minutes overnight
- It is important to keep your arm still and relaxed during the measurement
  - If you are seated rest your arm on a table or arm of a chair
  - If you are standing or walking keep your arm still and relaxed by your side
  - Two beeps will sound before each 30 minute measurement with NO beep during the 60 minute overnight measurements
  - If the monitor fails to obtain a blood pressure reading it will repeat the measurement a few minutes later
- The monitor can be removed from your belt and placed under your pillow during the night
- You can remove the cuff in between measurements to have a wash/shower
- You should carry out your normal daily routine during the 24hours
- You will be given a diary sheet to complete to record your activities, the time of going to bed and the time of rising (see page 21)
- The monitor will be removed after 24hrs at the clinic or you can remove and switch the monitor off and hand the machine into your GP practice
# 24 HOUR BLOOD PRESSURE ACTIVITY SHEET

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
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<td>MORNING</td>
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<td>EVENING</td>
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<th>TIME</th>
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<td>BEDTIME</td>
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<tr>
<th>TIME</th>
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<td>MORNING</td>
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PATIENT INFORMATION LEAFLETS/BOOKLETS

Hypertension patient information leaflets are available in an A4 tear-off pad format from Health Information Resources. The Health Information Resources Service is based at Summerfield House and provides a large database of patient education material which can be accessed via the NHS Grampian Website.

Contact information:
Tel: 01224 558504
Fax: 01224 558630
e-mail: grampainresources@nhs.net
CONTACTS

Alison de Vries  Ward 6, Clinical Pharmacology Unit, ARI
Cardiovascular Specialist Nurse  Tel: 01224 554499
e-mail: alison.devries@nhs.net

MEDICAL CONTACTS

Professor John Webster  Ward 6, Clinical Pharmacology Unit, ARI
Tel: 01224 554499
Bleep: 2431

Dr David Williams  Ward 6, Clinical Pharmacology Unit, ARI
Tel: 01224 554499
Bleep: 2904

Dr James McLay  Ward 6, Clinical Pharmacology Unit, ARI
Tel: 01224 554499
Bleep: 2426

For medical emergency/out of hours contact on-call doctor carrying Stroke Page via hospital switch board.
REFERENCES/FURTHER READING


JBS 2: Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice Heart 2005;91(Supplement 5


SECONDARY PREVENTION CONTENTS

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DVLA..........................................................................................................49
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PRIMARY CARE

SECONDARY PREVENTION CLINIC PROTOCOL

NAME OF PRACTICE:

DATE OF PROTOCOL:

DATE FOR REVIEW:

PERSON RESPONSIBLE FOR REVIEW OF PROTOCOL:
The main objective of the nurse led secondary prevention clinic is to provide continuing and structured care for patients with established coronary heart disease (CHD). It also aims to advise and support patients and, where appropriate their family, in behavioural changes that may improve their quality of life and wellbeing. The following protocol is based on the Scottish Intercollegiate Guideline 97(2007), British Hypertension Society Guidelines (2004) and the Secondary Prevention Cardiac Clinic Nurses’ Manual (1995) which evaluated/demonstrated the benefits of nurse led secondary prevention clinics. The clinic will fulfil the indicators required by the quality and outcomes framework as part of the current General Medical Services (GMS) contract. The patients attending the secondary prevention clinic will include patients who have had a confirmed myocardial infarction, angina, coronary artery bypass graft (CABG), angioplasty or stenting.

REGISTER OF PATIENTS

An accurate register of patients with coronary heart disease must be maintained. The GMS contract now requires that the register should be computerised. As patients who are identified with CHD should be appropriately read coded and added to the register. The number of patients on the register will give an approximation for determining the duration and frequency of the Secondary Prevention Cardiac Clinics.

KEY PERSONNEL

Ideally the following key personnel will be involved in the diagnosis and care of patients with coronary heart disease:

- General Practitioner (GP)
- Practice Nurse
- Clerical Assistant
- Cardiac Rehabilitation Physiotherapist
- Dietitian

It must be remembered that patients are ultimately the responsibility of the GP and systems should be in place to facilitate referral to the GP if the nurse has any concerns. See appendix 1 (page 30) for a referral sheet that may help facilitate this process.

APPOINTMENTS AND RECALL

Patients should be invited by letter to attend the clinic. Standard letters can be created which in turn can be mail merged with a computer generated recall search. Smaller practices may prefer to invite patients by phone call. Patients should be given an appointment for blood tests, U&ES, LFTs, lipids and glucose, the week before the clinic. It is not necessary that the blood tests are done fasted but the practice may prefer it and if the patient has impaired
glucose tolerance this will be essential that the patient is fasted. Having the blood test results available at the clinic facilitates an immediate response to any modifiable risk factors.

THE CLINIC

Appointments will last approximately 30 minutes and will be carried out on an annual basis for patients on the CHD register. Patients newly diagnosed with CHD or those who have had a recent event or surgery may require more frequent appointments and will be seen according to their needs. Any co-morbidity such as diabetes, chronic kidney disease and hypertension will be addressed at the clinic and data entered appropriately. From diagnosis all patients will be offered a review of the following indicators annually.

1. SYMPTOMS

To establish whether the patient has symptoms of CHD i.e. chest pain, breathlessness, ankle oedema or claudication.

The Cardiovascular Limitations and Symptoms Profile (CLASP) (appendix 2, page 31) may be used to assess symptoms. Patients with uncontrolled symptoms should be referred to the GP. Referral should be considered if the scores are:

- Angina >10
- Shortness of breath >9
- Ankle swelling >8

2. MEDICATION REVIEW

- Concordance with treatment
- Side effects
- Efficacy of treatment and dosage alteration if required
- Record any contraindications and exemption code from GMS contract

3. ASSESSMENT OF RISK FACTORS and LIFE STYLE

Assess modifiable risk factors and give advice on lifestyle changes as appropriate.

MODIFIABLE RISKS ARE:

- BLOOD PRESSURE: target ≤140/85 (non diabetics) ≤ 130/80 (diabetics, chronic kidney disease)
- CHOLESTEROL: target cholesterol ≤5.0mmol/L and ≤3.5mmol/L if post coronary artery by-pass graft surgery
- DIABETES: optimise glycaemic control
- SMOKING: record smoking status and offer smoking cessation advice and offer referral to NHS Smoking Advice Service free phone 0500 600 332
- EXERCISE: For clinically stable patients advise 30 minutes moderate exercise 3-5 days/week using Borg assessment tool for perceived scale of exertion (appendix 3, page 32)
- DIET: target body mass index (BMI) ≤ 25
- ALCOHOL: Recommended intake <21 units for a man and<14 units for a woman
• SEXUAL HEALTH: Erectile dysfunction/loss of libido
• DEPRESSION SCREENING: This is now a GMS contract requirement. Can be assessed using PHQ-9 (appendix 4 page 33)

COMPLETION OF CONSULTATION/ANNUAL REVIEW

It should be emphasised that long-term compliance is the key to successful secondary prevention. Patients should also be made aware that any worsening symptoms should not be ignored that they should make an appointment to see their GP if this is the case.
### APPENDIX 1

<table>
<thead>
<tr>
<th>NURSE LED CLINIC SECONDARY PREVENTION</th>
<th>NURSE LED CLINIC SECONDARY PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor:</td>
<td>Doctor:</td>
</tr>
<tr>
<td>Patient name:</td>
<td>Patient name:</td>
</tr>
<tr>
<td>DOB/CHI:</td>
<td>DOB/CHI:</td>
</tr>
<tr>
<td>Issue/problem to be addressed:</td>
<td>Issue/problem to be addressed:</td>
</tr>
<tr>
<td>Doctors comments:</td>
<td>Doctors comments:</td>
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<tr>
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</tbody>
</table>

**PLEASE RETURN FORM TO ........................................**

**PLEASE RETURN FORM TO ........................................**
APPENDIX 2

CARDIOVASCULAR LIMITATIONS AND SYMPTOMS PROFILE (CLASP)

Individual questions are scored and summed to give totals for each dimension of the questionnaire: angina, shortness of breath and ankle swelling. Within each of these totals, threshold scores are provided to classify clients as mild, moderate or severe depending on the level of impairment of level of functioning.

**Angina**

<table>
<thead>
<tr>
<th>Question A1 - A5</th>
<th>Total</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 - 17</td>
<td>5 - 8</td>
<td>9 - 12</td>
<td>13 - 17</td>
</tr>
</tbody>
</table>

Consider referral if symptoms are new or deteriorating, or if score is 10 or more

**Shortness of breath**

<table>
<thead>
<tr>
<th>Question B1 - B5</th>
<th>Total</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 - 14</td>
<td>5 - 7</td>
<td>8 - 10</td>
<td>11 - 14</td>
</tr>
</tbody>
</table>

Consider referral if symptoms are new or deteriorating, or if score is 9 or more

**Ankle swelling**

<table>
<thead>
<tr>
<th>Question C1 - C3</th>
<th>Total</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 - 10</td>
<td>3 - 4</td>
<td>5 - 7</td>
<td>8 - 10</td>
</tr>
</tbody>
</table>

Consider referral if symptoms are new or deteriorating, or if score is 8 or more
APPENDIX 3

THE BORG SCALE OF PERCEIVED EXERTION

The Borg scale of perceived exertion is only a guide in determining the intensity of exercise. As a simple guide, if you can't talk, then you are working hard and likely to be close to your anaerobic level, if you're able to say a few words, then you're likely to be at your upper end of your aerobic level, whereas if you can have a comfortable conversation, then you're not really working that hard.

<table>
<thead>
<tr>
<th>ORIGINAL SCALE</th>
<th>REVISED SCALE</th>
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<tbody>
<tr>
<td>6</td>
<td>0 - Nothing at all</td>
</tr>
<tr>
<td>7 - Very, very light</td>
<td>0.5 - Very, very weak</td>
</tr>
<tr>
<td>8</td>
<td>1 - Very weak</td>
</tr>
<tr>
<td>9 - Very light</td>
<td>2 - Weak</td>
</tr>
<tr>
<td>10</td>
<td>3 - Moderate</td>
</tr>
<tr>
<td>11 - Fairly light</td>
<td>4 - Somewhat strong</td>
</tr>
<tr>
<td>12</td>
<td>5 - Strong</td>
</tr>
<tr>
<td>13 - Somewhat hard</td>
<td>6 - Very strong</td>
</tr>
<tr>
<td>14</td>
<td>7 - Very strong</td>
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<tr>
<td>15 - Hard</td>
<td>8</td>
</tr>
<tr>
<td>16</td>
<td>9 - Very, very strong</td>
</tr>
<tr>
<td>17 - Very hard</td>
<td>10 - * Maximal</td>
</tr>
<tr>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>19 - Very, very hard</td>
<td>-</td>
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<tr>
<td>20 - * Maximal</td>
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</table>
APPENDIX 4

Patient Health Questionnaire (PHQ-9)

The PHQ-9 is a nine question self-report measure of severity that takes approximately 3 minutes to complete. It uses DSM-IV criteria and scores are categorised as minimal (1-4), mild (5-9), moderate (10-14), moderately severe (15-19) and severe depression (20-27). This can be accessed through VISION or the internet.
# COMMONLY DRUGS USED IN SECONDARY PREVENTION

<table>
<thead>
<tr>
<th>CLASS OF DRUG</th>
<th>INDICATION/ MODE OF ACTION</th>
<th>CONTRAINDICATIONS/ CAUTIONS</th>
<th>SIDE-EFFECTS</th>
<th>MONITORING REQUIRED</th>
<th>ADVICE/ CAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACE- inhibitors</strong></td>
<td>Reduction in the peripheral vascular resistance with a subsequent fall in blood pressure. For treatment of heart failure, hypertension, post MI, diabetic nephropathy and CKD.</td>
<td>Avoid use of potassium supplements or potassium sparing diuretics as may cause potassium retention. Should be used with care or avoided in aortic stenosis Renal artery stenosis. Contra- indicated in pregnancy and should be avoided in patients who may become pregnant.</td>
<td>Hypotension, renal impairment, persistent dry cough, fatigue, taste disturbances, headache.</td>
<td>U&amp;Es prior to treatment, Monitor symptoms, blood pressure, urea, creatinine and potassium at each dose titration</td>
<td>Initial dose may cause hypotension and should be taken at night. Dose should be titrated to a maximum if renal function satisfactory. Avoid potassium supplements and NSAIDS.</td>
</tr>
<tr>
<td>ENALAPRIL: 2.5-40mg in 1 – 2 divided doses</td>
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<tr>
<td>RAMIPRIL: 1.25-10mg daily</td>
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<tr>
<td>CAPTOPRIL: 6.25mg- 50mg BD</td>
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<tr>
<td>LISRINOPRIL: 2.5mg- 20mg daily</td>
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<tr>
<td><strong>Angiotensin II Antagonists</strong></td>
<td>Act by blocking the vasoconstrictor effects of angiotensin II. This results in reduced peripheral vascular resistance and vasodilatation thus reducing blood pressure</td>
<td>Renal artery stenosis. Should be used with care or avoided in aortic stenosis Contra- indicated in pregnancy and should be avoided in patients who may become pregnant.</td>
<td>Usually mild, diarrhoea, taste disturbance, dizziness, migraine, hypotension, hyperkalaemia, myalgia and urticaria,</td>
<td>U&amp;Es prior to treatment. Monitor symptoms, blood pressure, urea, creatinine and potassium at each dose titration</td>
<td>Initial dose may cause hypotension and should be taken at night. Dose should be titrated to a maximum if renal function satisfactory. Do not take potassium supplements. Avoid potassium supplements and NSAIDS.</td>
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<tr>
<td>LOSARTAN : 25mg-100mg</td>
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<tr>
<td>CANDESARTAN 2mg-32mg</td>
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</tr>
<tr>
<td>CLASS OF DRUG</td>
<td>INDICATION/MODE OF ACTION</td>
<td>CONTRAINDICATIONS/CAUTIONS</td>
<td>SIDE-EFFECTS REQUIRED</td>
<td>MONITORING REQUIRED</td>
<td>ADVICE/CAUTIONS</td>
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<tr>
<td><strong>Antiplatelet</strong></td>
<td>Antiplatelet drugs inhibit thrombus formation in arterial blood vessels. Clopidogrel is indicated for patients truly intolerant of aspirin.</td>
<td>Aspirin and clopidogrel are contra-indicated in patients with active peptic ulceration and bleeding disorders. Allergy to aspirin.</td>
<td>Aspirin: Bronchospasm, GI bleed Clopidrogel: GI bleed Nausea, diarrhoea, headache, dizziness, rash. Patients on combined therapy are at a higher risk of internal bleeds.</td>
<td>Check For GI Problems. May Require GI Protection.</td>
<td>Dispersible aspirin should be given with or after food preferably dissolved in water.</td>
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<tr>
<td><strong>Aspirin:</strong> 75mg daily</td>
<td><strong>Clopidogrel:</strong> 75mg daily (refer to NHSG clopidogrel guidelines)</td>
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</tr>
<tr>
<td><strong>Amiodarone</strong></td>
<td>Reserved for treatment of life-threatening arrhythmias when other drugs are ineffective or contraindicated.</td>
<td>Patient should have chest X-ray before commencing treatment. Use with caution in heart failure, renal impairment and in the elderly.</td>
<td>Contains iodine and may cause thyroid dysfunction, photosensitive reaction, shortness of breath and corneal micro deposits affecting vision. Thyroid function and signs of breathlessness (pulmonary fibrosis) every 6 months.</td>
<td></td>
<td>After the initial loading dose, reduce to a maintenance dose. Advice on use of sunscreen. Take only once daily. Regular blood tests important.</td>
</tr>
<tr>
<td>Maintenance dose 200mg daily or minimum required to control arrhythmia</td>
<td>To access protocol – <a href="http://intranet.grampian.scot.nhs.uk/foi/files/SCPAmiodarone250806final.doc">http://intranet.grampian.scot.nhs.uk/foi/files/SCPAmiodarone250806final.doc</a></td>
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</tr>
<tr>
<td>CLASS OF DRUG</td>
<td>INDICATION/ MODE OF ACTION</td>
<td>CONTRAINDICATIONS/ CAUTIONS</td>
<td>SIDE-EFFECTS</td>
<td>MONITORING REQUIRED</td>
<td>ADVICE/ CAUTIONS</td>
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</tr>
<tr>
<td>Rate- Limiting Calcium channel blockers</td>
<td>These drugs are appropriate for patients intolerant of β-blockers and with no evidence LVF.</td>
<td>Verapamil and diltiazem should be avoided in heart failure. Verapamil must not be used with β-blockers. Diltiazem must only be used with caution in combination with β-blockers. It has some negative inotropic effects and may have an adverse effect on mortality in patients with left ventricular dysfunction after myocardial infarction. A long-acting formulation should be used; different versions of modified-release preparation may not have the same clinical effect.</td>
<td>Constipation is a common side effect. Nausea, headache, flushing, dizziness, ankle oedema, fatigue.</td>
<td>Symptom Control Side effects. Blood Pressure</td>
<td>Sudden withdrawal may be associated with increase in angina symptoms. Grapefruit juice increases plasma concentration of verapamil.</td>
</tr>
<tr>
<td>CLASS OF DRUG</td>
<td>INDICATION</td>
<td>CONTRAINDICATIONS/CAUTIONS</td>
<td>SIDE-EFFECTS</td>
<td>MONITORING REQUIRED</td>
<td>ADVICE/CAUTIONS</td>
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<tr>
<td><strong>Cardiac glycosides</strong>&lt;br&gt;DIGOXIN: 62.5mcg-250mcg daily</td>
<td>Used to control ventricular rate in patients with Atrial Fibrillation. Can improve symptoms of heart failure.</td>
<td>Recent infarct, heart block. Pre-excitation syndromes (e.g. Wolff-Parkinson-White) unless specifically prescribed by a specialist. Hypokalaemia predisposes to dangerous arrhythmias.</td>
<td>Bradycardia or tachyarrhythmias. Digoxin toxicity can result in nausea, vomiting, anorexia, diarrhoea, blurring of vision.</td>
<td>Plasma digoxin concentration is not routinely indicated but can help check on compliance and to confirm toxic levels</td>
<td>Elderly patients sensitive to side effects due to impaired renal function. Take once daily. May need to take a potassium sparing diuretic.</td>
</tr>
<tr>
<td><strong>Thiazide Diuretics</strong>&lt;br&gt;Bendroflumethiazide 2.5mg</td>
<td>Cause sodium loss and reduction in smooth muscle tone</td>
<td>Indicated as first line treatment in the management of hypertension Contraindicated if patient has Gout</td>
<td>Few with low doses Impotence, hyperlipidaemia.</td>
<td>U&amp;Es as part of Annual Review</td>
<td></td>
</tr>
<tr>
<td><strong>Potassium Sparing Diuretics</strong>&lt;br&gt;SPIRONOLACTONE 25mg-100mg. AMILORIDE 5MG</td>
<td>Has an additive effect when used with other diuretics. Low doses are used in severe heart failure</td>
<td>Useful additional therapy for patients with heart failure. Use with caution in elderly patients and those with hepatic and renal impairment.</td>
<td>Risk of hyperkalaemia when prescribed in conjunction with ACE inhibitors.</td>
<td>Annual U&amp;Es. More frequent monitoring if on combination with ACEs.</td>
<td>Avoid with ACE inhibitors. Avoid any potassium supplements Discontinue spironolactone if diarrhoea/vomiting occurs.</td>
</tr>
<tr>
<td><strong>Loop Diuretics</strong>&lt;br&gt;FUROSEMIDE 20-120mg daily</td>
<td>Used in pulmonary oedema due to chronic heart failure and in patients with left ventricular systolic dysfunction</td>
<td>Liver cirrhosis and renal failure</td>
<td>Hypokalaemia, hyponatraemia, Hyperuricaemia and gout</td>
<td>U&amp;Es as part of Annual Review</td>
<td>Act within an hour of taking. May be given more than once daily</td>
</tr>
<tr>
<td>CLASS OF DRUG</td>
<td>INDICATION/ MODE OF ACTION</td>
<td>CONTRAINDICATIONS/ CAUTIONS</td>
<td>SIDE-EFFECTS</td>
<td>MONITORING REQUIRED</td>
<td>ADVICE/ CAUTIONS</td>
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<tr>
<td>Nicotine Replacement Therapy (NRT)</td>
<td>Various products Dose depends on habit</td>
<td>Avoid in severe cardiovascular disease, immediate post MI, recent cerebrovascular accident (including transient ischaemic attack)</td>
<td>Nausea, dizziness, headache and flu like symptoms, GI disturbance, insomnia, vivid dreams</td>
<td></td>
<td>Dose will depend on number of cigarettes smoked daily. Choice of product must suit the patient</td>
</tr>
<tr>
<td>Nitrates</td>
<td>Causes vasodilatation of both arteries and veins. Used to relieve acute angina attacks. Longer acting nitrates help to control symptoms of angina but do not improve mortality</td>
<td>Hypersensitivity to nitrates. Tablets should be discarded 6 weeks after opening the bottle. Must be kept in glass bottle Modified release preparations are formulated to ensure nitrate free period to prevent nitrate tolerance developing.</td>
<td>Headache Postural hypotension Flushing. Tolerance to Nitrates</td>
<td></td>
<td>Check not being used too frequently. Side-effects Patients must be educated in correct use. Spray should be carried at all times Frequent use indicates angina is not well controlled.</td>
</tr>
<tr>
<td>Potassium Channel Activators</td>
<td>NICORANDIL: 10-30mg twice daily</td>
<td>Low systolic blood pressure, acute pulmonary oedema , acute MI.</td>
<td>Flushing, nausea, vomiting and dizziness. High doses may increase heart rate or cause fall in BP.</td>
<td></td>
<td>Symptom control Blood Pressure. When starting drug advise patients not to drive or operate machinery until certain performance not impaired.</td>
</tr>
<tr>
<td>CLASS OF DRUG</td>
<td>INDICATION/ MODE OF ACTION</td>
<td>CONTRAINDICATIONS/ CAUTIONS</td>
<td>SIDE-EFFECTS</td>
<td>MONITORING REQUIRED</td>
<td>ADVICE/ CAUTIONS</td>
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<tr>
<td>Statins</td>
<td>Inhibits the enzyme responsible for synthesis of cholesterol. All patient post MI should be treated with a statin. All patients with a confirmed diagnosis of IHD should be treated with a statin.</td>
<td>Contraindicated in active liver disease, persistently abnormal LFTs and in pregnancy. Use with caution in patients with liver disease or with a high alcohol intake.</td>
<td>Reversible myositis is a rare but significant side effect. Altered liver Function Headaches, GI pain, flatulence, diarrhoea, nausea and vomiting.</td>
<td>Check LFTs before and within 1-3 months of starting treatment. Recheck lipid profile as part of annual review.</td>
<td>Simvastatin should be taken at night. Patients must be given dietary advice. Cholesterol levels should be reviewed, and the dose titrated upwards until cholesterol level is reduced below 5mmol/l.</td>
</tr>
<tr>
<td>SIMVASTATIN: 40-80mg</td>
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<tr>
<td>ATORVASTATIN: 10-80mg</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PRAVASTATIN: 10-80mg</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROSUVASTATIN: 5-20mg</td>
<td></td>
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</tr>
<tr>
<td>WARFARIN</td>
<td>Used to manage patients with AF. Prevents thrombus formation. Target INR of 2.5 for Arial fibrillation, cardioversion, cardiomyopathy and mural thrombus following MI. Target INR 3.5 for patients with mechanical prosthetic heart valves.</td>
<td>Avoid in cerebral artery thrombosis or peripheral artery occlusion. Caution in renal and hepatic disease. INR is a snapshot and this can change very rapidly. Many drugs interfere with both the pharmacology and bleeding risks of warfarin, mostly by enhancing the anticoagulant effect</td>
<td>Haemorrhage Bruising. Caution with other drugs, alcohol and green vegetables.</td>
<td>Routine INR, Interval a max of 12 weeks. Annual FBC.</td>
<td>Take at the same time each day. Ensure Patient has Treatment Booklet. New treatment can alter anticoagulant effect of warfarin so good to check for any symptoms such as bruising or bleeding</td>
</tr>
</tbody>
</table>

Note: This list of drugs is not exhaustive but reflects the options that are currently first choice in the Grampian Joint Formulary.
NHS GRAMPIAN SMOKING ADVICE SERVICE

For help to stop smoking please call the NHS Grampian Smoking Advice Service on Free phone 0500 600 332.

The NHS Grampian Smoking Advice Service was launched in 2000.

We aim to provide a smoking cessation service which is free and available to all smokers in Grampian who want to give up.

**The Smoking Advice Service has three main functions:**

1. Depending on what the individual wants, we can provide different levels of support. This could range from a brief discussion to coming along to a structured smoking cessation programme.
   The programme sessions are:
   - 6 group sessions
   - one hour a week
   - led by trained smoking cessation advisors
   - provided throughout Grampian at different times and locations
   
   We make every effort to accommodate the individual needs of clients when setting up new sessions.

   There is evidence to suggest that taking part in this smoking cessation programme is extremely beneficial when trying to stop smoking. Our data shows the more sessions you attend, the more likely you are to successfully stop smoking. The NHS Grampian Smoking Cessation Service is nationally recognised as an example of best practice. It is very important that people in Grampian are aware of the help that is available to help them stop smoking.

2. We act as a point of contact and provide information to health staff and the general public on smoking cessation.

3. We provide training for smoking cessation advisors and to other health care staff who provide smoking cessation support to their patients.

Please also see our [Healthy Living](#) pages for more information about tobacco & smoking
CAR DIAC REHABILITATION

Brenda Anderson, Cardiac Rehabilitation Manager and Joan Thain Cardiac Rehabilitation Health Visitor NHS Grampian kindly provided the following information. Their contact details are listed below:

Brenda Anderson
Westburn Centre
Foresterhill Site
Westburn Rd
Aberdeen
AB25 2ZN
T: 01224 554237

Joan Thain
Cardiac Rehabilitation Manager
Foresterhill Site
Westburn Road
Aberdeen
AB25 2ZN
CRITERIA AND PROTOCOL FOR PATIENTS ATTENDING CARDIAC REHABILITATION PROGRAMME

DEFINITION

“The sum of activities required to ensure the best possible physical, mental and social conditions so that the patient may by their own efforts achieve and maintain their optimum state of health.” (WHO 1993)

The responsibility ultimately lies with the patient.

REFERRAL

Cardiologists and Cardiac Surgeons are agreeable to their patients, if appropriate, attending the cardiac rehabilitation programme.

Therefore:

• Nursing staff in the cardiology wards will make direct patient referrals to the cardiac rehabilitation co-ordinators.
• Cardiac surgery referrals will be sent to the cardiac rehabilitation co-ordinators on discharge for integration into the phase III outpatient programme.

Referrals may also be accepted from:

• General Practitioners when no longer under the care of the Cardiologist
• Other Hospitals
• Consultant Physicians, this is usually documented in-patients’ medical notes.

PATIENT SELECTION

Patients with cardiac conditions i.e.; Post MI and Post Cardiac surgery. The cardiac rehabilitation nurse and physiotherapist before commencement of the programme will individually assess patients.

Conditions that will prevent/delay a patient’s entry into the exercise programme are:

1. Unstable Angina
2. Significant drop (greater than or equal to 20mmHg) resting systolic BP from the patient’s average levels that cannot be explained by medications. BP greater than 180/100
3. Acute systemic illness or fever.
4. Uncontrolled atrial or ventricular dysrhythmias.
5. Uncontrolled tachycardia (greater than 100 beats per minute).
7. Second or third degree heart block.
8. Active pericarditis or myocarditis.
9. Recent embolism
10. Thrombophlebitis
11. Resting ST displacement (greater than 2mm)
13. Orthopaedic problems that would prohibit exercise.
15. Wound Infection/uncontrolled wound pain
16. Unstable sternum

WAITING LIST

The intention is not to have a waiting list for the post MI/post cardiac surgery patients. If one arises it will be kept to a minimum by introduction of a relief class on a Friday at Westburn Centre.

PATIENTS

POST MI

1. Post confirmed MI. Contact will be as near to initial admission as possible. A minimum of 1-2 visits from Rehabilitation Co-ordinator during hospital stay should be aimed for.
2. The patient will receive advice, support, and appropriate booklets from the Rehabilitation Co-ordinator. (including the Heart Manual).
3. Spouse/family support will be offered.

CARDIAC SURGERY

All patients offered comprehensive Pre-Operative Information Session by the CR Team in local area.
1. On admission to hospital – (pre-surgery). The patient will be seen by a physiotherapist and given information related to surgery and condition.
2. The patient will receive advice, support and appropriate written information post-operatively from the cardio-thoracic physiotherapist and ward nursing staff.
3. Spouse/family support will be offered.

AGE

Patients will be individually assessed – no age limit.

ATTENDANCE

Patients are offered the phase III programme: -

- Two sessions per week
- 1.5 hrs (Exercise and Relaxation) each session attended
- 1 hr Education session once per week (See appendix 1 for list of sessions provided)
- These will be over an eight-week period.
Therefore 8 sessions if attending once per week and 16 sessions if attending twice per week.

Spouses/partners are welcome to attend if no contra-indications to exercise

The multi-disciplinary team (MDT) delivers the comprehensive CR programme (See appendix 2 for list of MDT and roles)

GROUPS

Mixed ability and stages as a roll on roll off programme. Initially only post MI patients but now also includes post surgical patients.

The valvular patients with no pre-existing Coronary heart disease will be individually assessed for suitability for the programme.

There is no research evidence to show that cardiac rehabilitation is beneficial to valve surgery patients. However, if the individual has become very deconditioned (or has other co-morbidity) pre-operatively then cardiac rehabilitation would then be beneficial to them. (SIGN 2002)

NUMBERS IN GROUPS

ALL CLASSES RUNNING WITH A MAXIMUM OF 15 PERSONS IN EACH.

STAFF PRESENT DURING EXERCISE SESSIONS

Ratio of approximately 1:5 staff to patients. All staff must be proficient in Basic life Support and one per session must be an Immediate Life Support Provider and proficient in use of AED. The staffing will comprise one Cardiac Rehabilitation Co-ordinator, one Senior Physiotherapist and one Technical Instructor.

RELATIVES

Relatives/spouses will be encouraged to attend the education sessions. They will be invited to participate in the exercise component of the programme but will be required to sign an individual disclaimer, and may have to seek further advice from GP.
LOCATIONS

ABERDEEN

The sessions will be held at Westburn Centre, Foresterhill, GUHT Foresterhill Site. The Gymnasium will be used for the exercise component and the education/information will be in an adjoining room.

2 Groups concurrently running on a Tuesday and Thursday
1 Group running on a Wednesday and Thursday (with view to future increase in service to 2 groups on these days)

4 X RURAL SITES

Rural sites each have 1 Physiotherapist and 1 Cardiac Nurse. Access is available to the MDT at ARI if any additional patient input is required.

Inverurie  Garioch Sports Centre (up back of safeways/industrial estate)
Classes held on Tuesday and Thursday mornings.

Banchory  Banchory Sports Centre (down from Raemoir garden centre)
Classes held on Tuesday and Thursday mornings

Peterhead  The Rescue Hall (near Peterhead Academy)
Classes held on Tuesday and Thursday mornings

Banff  Princess Royal Sports Centre (by the football ground)
Classes held on Wednesday and Friday mornings

RESUSCITATION EQUIPMENT

1 X Defibrillator will be situated in the Gymnasium.

There will also be 1st line equipment available, the content of this has been decided with the resuscitation department.
All staff will be proficient in Basic Life Support and defibrillator training will be undertaken by the CR staff annually.

A 999 CALL NEEDS TO BE PLACED FOR ANY CLINICAL EMERGENCY EXPERIENCED.
FORMAT OF EXERCISE

1. Individual assessment by the cardiac nurse and physiotherapist will be undertaken on arrival by completion of assessment sheet and “shuttle walk”.
2. HAD scale completed during initial assessment visit and database questionnaire. (BHF).
3. One hour of progressive cardiovascular exercise incorporating structured warm-up and cool-down periods. Patient involvement encouraged by requesting completion of visual analogue scales (Borg Scale) for exertion after each session aiming for set targets. Monitoring of heart rate at regular intervals.
4. Relaxation – 30 minutes
5. Patient education (once per week) – One hour.

Time will be allowed before and after each session for questions and discussion. Individual goals will be monitored throughout the 8-week programme

DISCHARGE

1. Prepare patients for discharge – preset date (8 weeks after start date)
2. HAD scales and database questionnaire will be checked again for evaluation of benefits of programme.
3. Discuss with patient the importance of maintaining lifestyle changes.
4. Information will be given to the patient on long-term exercise classes within the community.
5. Shuttle walk test will be repeated
6. Completion of patient held record and assessment forms.
8. Referral to long term exercise programmes- PHASE IV forms

FOLLOW-UP

Lifestyle change assessment by Cardiac Rehabilitation Manager will be followed up at set intervals after completion of programme, for audit and evaluation purposes
CARDIAC REHABILITATION PROTOCOL/PATHWAY

Individuals Post Myocardial Infarction/Cardiothoracic Surgery

Inpatient Referrals
Patient Admission
Referred to CR Nurse
Risk Factor Modification
Plan discharge and follow up
Ensure liaison awareness.
Introduce Heart Manual.

Outpatient Referrals
Referred to CR Nurse
Risk Factor Modification
Agree care plan
Referral to Community Nurse/Heart Manual.

Community Nurse (CN) Visit (1)
(within 7 working days)
Initial assessment at home, including HAD scale, Activity Plan.
Establish plans for phase III.

CN visits (2/3) / contact weeks 3 & 6.
Risk Factor Modification/Activity Plan
CR Team sends out appointment for Phase III, at week 3.

Attending
hospital/community Phase III
Programme. (week 4-6)
Pre-class assessment / Individualised care plan. 6 sites available.

Not Attending Phase III
Final visit by CN (4) assessment. referral to Secondary Prevention Clinic and Phase IV.

Completion of Heart Manual (week 6-14)
8 week outpatient programme
Ongoing review and assessment.

Other CHD conditions

Complete post-rehab assessment
(week15 +)
Discuss plans for long-term maintenance
Refer to Secondary Prevention Clinic and Phase 4 exercise classes.
Discharge letter to GP.

GP Referral to Phase IV
Exercise Classes (GCRA)- 27 classes available.
To access the medical practitioners ‘At a glance guide to the current medical standards of fitness to drive’ go to - http://www.dvla.gov.uk/media/pdf/medical/aagv1.pdf

VOCATIONAL DRIVING LICENSES

The DVLA has applied stricter standards for those with a cardiovascular condition. This may disqualify LGV (vehicles > 3.5 metric tones) and PCV (vehicles with >8 seats excluding the driver) drivers. Drivers of taxicabs are not normally included in this guideline.

Vocational drivers, with heart disease, require regular review and will require an exercise tolerance test at least every three years.


CONTACTING THE DVLA

BY TELEPHONE:

You can notify DVLA of a medical condition by telephone. Please remember to quote your full name, date of birth and or driver number (if known). You must also give details of your specific medical condition or disability in order that you can be sent the appropriate medical questionnaire.

Telephone: 08706000301

(Monday to Friday, 8.00 am to 5.30 pm and Saturday, 8.00am to 1.00pm)
REFERENCE LINKS

British Hypertension Society (accessed September 2008) www.bhsoc.org

Scottish Intercollegiate Guideline Network (accessed September 2008)
http://www.sign.ac.uk/guidelines/fulltext/97/index.html


NHS Grampian Clinical Guidance Intranet (accessed September 2008)
http://www.nhsgclinicalguidance.scot.nhs.uk/

Grampian Joint Formulary (accessed September 2008)
http://www.nhsgrampian.org/nhsgrampian/GJF

HEART FAILURE

INTRODUCTION

This section is based on Scottish Intercollegiate Guideline Network (SIGN) 95 Management of Chronic Heart Failure and NHS Grampian Medical Treatment Guidelines for Chronic Heart Failure (CHF) due to Left Ventricular Systolic Dysfunction (LVSD) and should be considered for use as an adjunct to them.

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Email: r.odwyer@nhs.net

Audrey Stables
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Bydand Medical Group
Bleachfield Street
Huntly
AB54 8EX
Tel 01466 792116
Email: a.stables@nhs.net
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DEFINITION AND BACKGROUND

DEFINITION OF HEART FAILURE

Heart failure is a complex clinical syndrome caused by impaired left ventricular function, which leads to a reduction in cardiac function. This results in the heart failing to pump blood at a rate sufficient for the body’s metabolic requirements.

The syndrome is characterised by symptoms such as dyspnoea and fatigue, both of which can cause reduction in exercise tolerance and can severely limit patients’ physical activity to perform everyday activities (Cowie, Kirby 2003). Other symptoms are fluid retention, which may lead to peripheral oedema, pulmonary congestion and raised jugular pressure. However, patients may also present with orthopnoea and/or paroxysmal nocturnal dyspnoea.

The European Society of Cardiology guidelines for the diagnosis of heart failure requires the following features – symptoms of heart failure and objective evidence preferably by echocardiography of cardiac dysfunction.

BACKGROUND

Heart failure due to left ventricular systolic dysfunction is a major health problem and accounts for 1 to 2% of the whole health care budget and 5% of all hospital acute admissions (Davis, Hobbs, Lip 2000).

Almost any form of cardiac disease can produce heart failure but the most common cause in Western Society is coronary artery disease. In the studies of left ventricular dysfunction (SOLVD) coronary artery disease accounted for almost 75%.

The incidence and prevalence in heart failure increases steeply in the elderly and is more common in men that women and has a poor long term prognosis. The true contribution of heart failure to overall mortality is almost certainly underestimated. However, a lot has changed over the past few years, including improved methods of diagnosing heart failure, with greater access of echocardiography, and the development of drugs that improve outcomes, making earlier diagnosis worthwhile. Previously, without confirmed effective treatments, heart failure was generally under-diagnosed, misdiagnosed or simply ignored. Several clinical trials over the past few years have shown that treatment with Angiotension Converting Enzyme (ACE) Inhibitors and Beta-blocker therapy can improve survival and quality of life for people diagnosed with heart failure due to left ventricular systolic dysfunction. Preventing disease progression by education, medication and treatment will surely reduce the frequency and duration of hospital admissions, and therefore plays an important role for the future of the management of heart failure patients.
INITIATING A CHRONIC DISEASE MANAGEMENT CLINIC

National guidelines for chronic disease management suggest that a structured and co-ordinated approach to organisation will improve patient care. The following document aims to provide guidelines, which suggest methods for the organisation and delivery of chronic disease management care in general practice.

IDENTIFY KEY PERSONNEL

A lead GP with a special interest should be identified for the nurse to refer to on clinical issues. In a nurse led clinic, the nurse should be qualified or working towards a qualification in the relevant area. Establish the staff to be involved. This should be a multidisciplinary team including GP, nursing and administration staff. In some areas additional members of staff may be required.

CREATING AND MAINTAINING A REGISTER

The first process must be the creation of a register when deciding to manage patients in a structured way. This will determine the scale of the task ahead. The following methods can be used to identify existing patients:
- Computer search of read codes
- Repeat prescriptions
- Patients notes – hospital letters

OPPORTUNISTIC ENCOUNTERS

The maintaining of a register is of great importance. There should be a named person responsible for this task. A system should be in place to enable all newly identified patients to be correctly read coded and added to the register.

PLANNING AND LOGISTICS

The size of the register will determine the frequency and the duration of the clinics and also the resources required in terms of staff, equipment and space. It is important that the clinic should be held on the same day and time, allowing for continuity. From a practical point it would be best practice to hold the clinic when a GP is on the premises. Each member of the team needs to be aware of their specific responsibilities and training requirements. The clinic must be time protected and time should be set aside for communication between involved staff.

AUDIT

This is a valuable tool for assessing how well you are doing. Audit is about deciding what standards you are hoping to achieve and the process by which it can be done. Deciding on which area to be audited is a decision for the team.
NURSE INVOLVEMENT IN CHF CLINIC

Where patient is cared for jointly by GP and Practice nurse

The level of the nurse involvement will depend on her level of training and expertise e.g. CHD diploma or Independent Nurse Prescriber.

THE ROLE OF THE PRACTICE NURSE:

- Take a basic cardiac history, recognise deteriorating signs and symptoms and refer appropriately
- Inform patient whom to contact should they have deteriorating signs/symptoms
- Record baseline observations and update register
- Check patient is on appropriate medication and check compliance and refer as required to GP/HFSN
- Provide basic information on diet and exercise
- Encourage smoking cessation
- Ensure all patients have annual influenza vaccination
- Ensure all patients have had a pneumococcal vaccination
- Provide information/education to patients/relatives e.g. BHF CHSS materials.
- Establish regular follow up procedure

According to experience up titration of appropriate medication e.g. Diuretics, ACE Inhibitors and Betablockers in accordance with SIGN Guidelines No 95 and NHS Grampian Medical Therapy Guidelines for Chronic Heart Failure.

TRAINING NEEDS:

Access to HFSN in house training
Preferably CHD Diploma/Nurse Prescriber
Where the patient is managed by the heart failure specialist nurse (HFSN) with GP support/advice the Management of Heart Failure Diploma is required.

THE ROLE OF THE HEART FAILURE SPECIALIST NURSE

• As for previous level plus:

• Take a full cardiac history

• Perform examination, chest auscultation, assess breathlessness, oedema, NYHA classification

• Suggest further investigations if required e.g. Bloods, ECG, CXR, Echo

• Counselling on heart failure and its associated signs and symptoms

• Discuss disease management and the use of certain medications – doses, side effects

• Use of evidence based practice and medical therapy guidelines on appropriate initiation and titration of drugs

• Advise patient on self-management

• Liase with other health professionals

• Provide regular follow up with patients/relatives

• Consider extra social support

• Contact number for HFSN

Roz O’Dwyer/ Audrey Stables
September 2008
<table>
<thead>
<tr>
<th>NAME OF PRACTICE</th>
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<th>Date for review</th>
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<th>Person responsible for review of protocol</th>
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PRIMARY CARE CHRONIC HEART FAILURE CLINIC PROTOCOL

DEFINITION

Chronic Heart Failure is a complex clinical syndrome that can result from any structural or functional cardiac or non-cardiac disorder that impairs the ability of the heart to respond to physiological demands for increased cardiac output. Chronic Heart Failure is characterised by symptoms such as breathlessness, fatigue and fluid retention (SIGN 95). This protocol should be used where the care of a patient with Chronic Heart Failure is shared between the general practitioner (GP) and the nurse. The level of the nurse involvement will depend on her level of training and expertise. The protocol is based on the Scottish Intercollegiate Guidelines Network Management of Chronic Heart Failure Clinical Guideline 95 February 2007.

AIM

To improve quality of life and mortality of patients with Chronic Heart Failure.
To improve patients and carers knowledge of Chronic Heart Failure.
Ensure titration of evidence based Heart Failure medication to maximum tolerated dose and improve drug compliance.
Offer continual support and education to patients, carers and staff involved in care.

SERVICE OBJECTIVES

To monitor, evaluate and audit the service at regular intervals to ensure both a high standard of care and the effectiveness of the service in improving health outcomes.

INCLUSION CRITERIA

All Chronic Heart Failure patients with diagnosis of LVSD on ECHO (or coronary angiography).
Willingness to attend.

EXCLUSION CRITERIA

Unwilling to attend Chronic Heart Failure Clinic.
Terminally ill.

RECORD KEEPING

The practice will use a standardised minimum data set that will include:
Computerised Records and/or written records.
CHRONIC HEART FAILURE STRUCTURED CARE APPOINTMENTS

Patients will be invited by letter to attend the clinic. They may also have been asked to have appropriate blood tests the week preceding their appointment. The appropriate tests would be U&E’s, LFT’s, Glucose, Random Cholesterol and FBC. Having the blood tests available at the clinic allows for a more immediate response to any treatment changes and disease management plan.

FIRST APPOINTMENT – NEW PATIENT ASSESSMENT

The practice will allow 30 - 45 minutes for an initial assessment, which will include:

FIRST VISIT
Assess current cardiac condition

- Breathless on exertion/rest
- Orthopnoea/PND – how many pillows do they need to sleep comfortably?
- Dizziness/syncope
- Cough with expectorate
- Palpitation
- Chest pain
- Oedema/ascites present
- Auscultation of the chest

Other

- Lethargy
- Nausea/vomiting, diarrhoea

Examination

- Blood pressure both sitting and standing, especially if reports dizzy spells
- Pulse – rhythm and rate
- Respiration
- Chest sounds
- Weight – compare current with previous
- Check blood results if available, if not then take bloods
- Discussion regarding heart failure – causes, management and treatment
- General advice on lifestyle: diet, exercise, smoking cessation
- Discuss daily weight rationale and fluid intake (do they need to restrict/increase intake?)
- Assess medications – new drugs, change of dose, side effects, compliance, supply
- Ensure an up-to-date medication list is available to the patient
- Assess patient for up/down titration and action accordingly – Follow medical therapy guidelines
- Confirm immunisation status – Flu vaccine/Pneumococcal vaccine
• Social support i.e. home help, financial support?
• Psychological support – ensure patient has contact details

RECORD KEEPING

Record all information on computer or notes. To obtain a template on Vision go to Guidelines, Heart failure and enter all relevant information for the patient. This template can also give you a direct link to NHS Grampian Medical Treatment Guidelines for Chronic Heart Failure due to Left ventricular Systolic Dysfunction and SIGN Guidelines 95.

SECOND VISIT

The practice will allow 20-30 minutes for second and follow up appointments.

• Assess current cardiac condition as per 1st visit
• Adjust and optimise drug therapy as per guidelines (see pg 64)
• Confirm knowledge/compliance/supply of therapy
• Continue with education, concentrating on areas requiring further input from 1st visit
• Continue to monitor social aspect – follow up any outstanding issues from 1st visit
• Update all documentation
• Book next appointment clinic/telephone follow-up

SUBSEQUENT VISITS

• Individual patients will vary as to the frequency of subsequent visits – adjust to suit
• Continue to adjust and optimise drug therapy as per guidelines
• Monitor blood chemistry as stated in the guidelines according to the individual patient needs
• Continue cardiac assessment on each visit
• Ensure patient is aware to contact practice/NHS 24 if any concerns or deterioration
HEART FAILURE NURSE ASSESSMENT

In order to assess the patient’s heart failure status you need to enquire about their symptoms

1. Any dizziness/lightheadedness/syncope?
   If so when? Is it on standing up/moving too quickly/bending?
   • Check BP – sitting and standing. Are they taking the correct dose of medication? Are they on high dose of diuretic? Could you split the dose of medications?

2. Any chest pain/discomfort?
   If so when? Is it on exercise/rest/during the day/night?
   • Have they a GTN spray? Are they using it correctly? Could they use GTN spray prior to exercise?
   Are they on antianginal drugs? Are they aware when to contact GP/GMEDS.

3. Any palpitation?
   If so when? On exercise/rest?
   • Check drugs. Is it anxiety related?

4. Any dyspnoea?
   If so when? Is it on exertion/at rest? Has it altered in the past few days/weeks?
   • Are they on diuretics? Could the diuretic be increased? (check U+E’s are stable)
   Could they be anaemic?

5. Any orthopnoea?
   Is this worse than before?
   • How many pillows do they sleep with?

6. Any paroxysmal nocturnal dyspnoea?
   Is this worse than before?
   • Try sleeping with more pillows, leave window slightly open.

7. Any nausea/reduced appetite?
   • Check drugs (spironolactone, digoxin can cause nausea).

8. Bloated feeling/waistbands feeling tighter?
   • Any abdominal distension due to fluid retention?

9. Constipation/diarrhoea?
   • Constipation may be the cause of bloating rather than fluid retention.

10. Any pains in lower limbs?
    • Claudication may have worsened since commencement of betablockers.
    However not a C/I for prescribing betablockers

11. Ankle/leg/sacrum oedema?
    At morning/night/all the time?
    • Check diuretic dose. Could it be increased? Elevate legs.
12. Cold hands/feet?
   • Side effect of betablockers.

13. Any recent drug changes?
   • NSAID’s cause fluid retention and worsen renal function therefore should be avoided if possible.

   Ensure patient taking correct medication.
   • Review patient’s medication to ensure they are receiving appropriate therapy in effective doses and adjust according to medical therapy guidelines.
NEW YORK HEART ASSOCIATION (NYHA) CLASSIFICATION

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>No limitation of physical activity (asymptomatic LVSD)</td>
</tr>
<tr>
<td>Class II</td>
<td>Slight limitation - ordinary activities cause symptoms</td>
</tr>
<tr>
<td>Class III</td>
<td>Marked limitation - less than ordinary activity causes symptoms</td>
</tr>
<tr>
<td>Class IV</td>
<td>Unable to perform any activity – may have symptoms at rest</td>
</tr>
</tbody>
</table>
DRUGS USED IN CHRONIC HEART FAILURE

Diuretic therapy should be considered for heart patients with dyspnoea or oedema. The dose of diuretic should be individualised to reduce fluid retention without overtreating. Most patients will require to be treated with a loop diuretic.

<table>
<thead>
<tr>
<th>DIURETIC</th>
<th>STARTING DOSE</th>
<th>INCREMENTAL DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furosemide</td>
<td>40mg daily</td>
<td>40mg</td>
</tr>
<tr>
<td>Bumetanide</td>
<td>1mg daily</td>
<td>1mg</td>
</tr>
</tbody>
</table>

- The dose of diuretic should be increased/decreased by 1 increment
- Blood chemistry should be checked following each increase
- Observe for side effects
- Over-treatment can lead to dehydration which results in dizziness, fatigue and uraemia
- Under-treatment can lead to oedema, increase in weight, raised JVP and dyspnoea

All patients diagnosed with LVSD should be prescribed an Angiotension Converting Enzyme (ACE) inhibitor as studies have proven that they improve the symptoms of heart failure, reduce mortality, slow progression of the disease and reduce hospitalisations.

<table>
<thead>
<tr>
<th>ACE INHIBITOR</th>
<th>STARTING DOSE</th>
<th>TARGET DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramipril</td>
<td>1.25mg once daily</td>
<td>5mg twice daily or 10mg daily</td>
</tr>
<tr>
<td>Lisinopril</td>
<td>2.5mg – 5mg once daily</td>
<td>20mg once daily</td>
</tr>
<tr>
<td>Enalapril</td>
<td>2.5mg twice daily</td>
<td>10 - 20mg twice daily</td>
</tr>
<tr>
<td>Captopril</td>
<td>6.25mg three times daily</td>
<td>50mg three times daily</td>
</tr>
</tbody>
</table>

- Start with a low dose and double dose at not less than 2 weekly intervals
- Aim for target dose or maximum tolerated dose
- Monitor BP and blood chemistry (urea, creatinine and electrolytes)
- Check blood chemistry 1 – 2 weeks after initiation and after each dose titration
- Observe for side effects (dizziness, hypotension, cough, worsening renal impairment, hyperkalaemia etc)

CONTRAINDICATIONS

- Pregnancy
- Renal artery stenosis

CAUTIONS

- Hyperkalaemia (K > 5 mmol/l)
- Significant renal dysfunction (creatinine >221micromol/l)
- Asymptomatic hypotension (BP < 90 mmHg)

If patient unable to tolerate ACE inhibitor change to Angiotension Receptor Blocker (ARB).
<table>
<thead>
<tr>
<th>ARB</th>
<th>STARTING DOSE</th>
<th>TARGET DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candesartan</td>
<td>2mg or 4mg daily</td>
<td>32mg daily</td>
</tr>
<tr>
<td>Valsartan</td>
<td>40mg twice daily</td>
<td>160 mg twice daily</td>
</tr>
</tbody>
</table>

- Start with a low dose and double dose at not less than 2 weekly intervals
- Aim for target or maximum tolerated dose
- Monitor BP and blood chemistry
- Check blood chemistry 1 – 2 weeks after initiation and after each dose titration
- Observe for side effects (dizziness, hypotension, worsening renal impairment, hyperkalaemia etc)

All patients with LVSD should be started on beta blocker therapy as soon as their condition is stable as studies have shown these agents reduce mortality, hospitalisations, improve exercise tolerance and slow the progression of the disease.

### BETA BLOCKER

**Table 1: Bisoprolol (minimum) titration schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisoprolol dose (mg)</td>
<td>1.25</td>
<td>2.5</td>
<td>3.75</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
<td>10</td>
</tr>
<tr>
<td>Times daily [Once daily – od]</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
<td>od</td>
</tr>
</tbody>
</table>

The above titration regime is for guidance and some patients, such as the frail or elderly, may benefit from even slower titration.

**Table 2: Carvedilol (minimum) titration schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carvedilol dose (mg)</td>
<td>3.125</td>
<td>3.125</td>
<td>6.25</td>
<td>6.25</td>
<td>12.5</td>
<td>12.5</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>50*</td>
</tr>
<tr>
<td>Times daily [Twice daily – bd]</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
<td>bd</td>
</tr>
</tbody>
</table>

*Maintenance in patients with mild to moderate HF > 85kg

- Start at low dose and double dose at not less than 2 weekly interval (see above table)
- Aim for target dose or maximum tolerated dose
- Monitor heart rate, BP and clinical status before commencement and each up titration
- Check blood chemistry 1 –2 weekly after initiation and before uptitration
- Observe for side effects (worsening symptoms, bradycardia, hypotension etc)

The following criteria should be met before a patient with heart failure receives a Betablocker:
- A confirmed diagnosis by ECHO
- Already receiving standard therapy i.e. diuretic (if required) ACE Inhibitor
- The patient must be clinically stable
- No adjustment in dose of treatment in past 2 weeks
- No admission to hospital with heart failure in past month
- No clinical evidence of cardiac decompensation
- Heart rate > 60 bpm
- Systolic blood pressure > 90 mmHg
- No contra-indication e.g. Asthma, Heart block (examine ECG)

**ADVERSE EFFECTS**

Patients will often experience temporary deterioration during initiation and up-titration. This can be minimised by appropriate patient selection, use of a small initial dose of betablocker and slow and cautious up-titration. Usually initial problems can be overcome by adjustment of the dose of concomitant medications. Generally beta-blockers should not be stopped suddenly although this may be necessary in some cases if the patient develops a significant bradycardia or worsening of symptoms.

**Worsening heart failure**
- May become more breathless and/or oedematous, usually this can be corrected by increasing the dose of diuretic (may be necessary on a temporary basis)
- Normally the patient should improve within 2-3 days
- If the patient does not improve within 1 week consider also decreasing or stopping the dose of the betablocker

**Symptomatic Hypotension**
- If systolic blood pressure falls < 90mmHg blood chemistry should be checked
- Consider over diuresis and whether reduction in the dose of diuretic may improve matters
- If dizziness, light-headedness review other medication – consider times of dosage

**Bradycardia**
- If heart rate falls < 55 bpm and worsening symptoms reduce to previous dose level
- Review within 1 week and reduce further if heart rate remains < 55 bpm
- Review other medication
- If heart rate drops to < 45 bpm stop beta blocker and arrange 12 lead ECG to rule out heart block
- Seek specialised advice
ALDOSTERONE ANTAGONIST

Patients who remain symptomatic (NYHA III-IV) despite treatment with diuretic, ACE inhibitor and a Betablocker should be considered for treatment with Spironolactone.

<table>
<thead>
<tr>
<th>ALDOSTERONE ANTAGONIST</th>
<th>STARTING DOSE</th>
<th>TARGET DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spironolactone</td>
<td>25mg once daily</td>
<td>25mg – 50mg daily</td>
</tr>
<tr>
<td>Eplerenone</td>
<td>25mg once daily</td>
<td>50mg daily</td>
</tr>
</tbody>
</table>

- Check urea, creatinine and electrolytes at 1, 4, 8 and 12 weeks; 6, 9 and 12 months
- Six monthly thereafter
- If K+ > 5.5 mmol/l or creatinine > 220mmol/l reduce dose to 25mg on alternative days and monitor blood chemistry closely
- If K+ > 6 mmol/l or creatinine > 300mmol/l stop spironolactone immediately and seek advice

CAUTIONS

- Hyperkalaemia. (K+ > 5.0 mmol/l)
- Significant renal dysfunction (creatinine > 220 micromol/l)
- The patient may become sodium and water depleted on spironolactone, requiring a reduction in the dose of diuretic (furosemide) or discontinuation of spironolactone
- If diarrhoea and/or vomiting occurs patients should stop spironolactone immediately

Drugs to avoid in patients with chronic heart failure

<table>
<thead>
<tr>
<th>DRUG OR CLASS</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I and III anti-arythmics (excluding amiodarone)</td>
<td>Reduced contractility</td>
</tr>
<tr>
<td>Rate limiting calcium channel blocker (verapamil and diltiazem)</td>
<td>Reduced contractility</td>
</tr>
<tr>
<td>Other calcium channel blockers (except amlodipine and felodipine)</td>
<td>Reduced contractility</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>Sodium and water retention</td>
</tr>
<tr>
<td>Non-steroidal anti-inflammatory drugs</td>
<td>Sodium and water retention</td>
</tr>
<tr>
<td>Glitazones</td>
<td>Fluid retention</td>
</tr>
<tr>
<td>Tricyclic antidepressants</td>
<td>Reduced contractility</td>
</tr>
<tr>
<td>Macrolide antibiotics and some antifungal agents</td>
<td>Proarrhythmia mediated by QT prolongation</td>
</tr>
<tr>
<td>Terfenadine and some other anti-histamines</td>
<td>Proarrhythmia mediated by QT prolongation</td>
</tr>
</tbody>
</table>
GUIDELINES FOR BETA BLOCKER INITIATION AND TITRATION IN HEART FAILURE PATIENTS

The following guidelines have been produced to provide information for staff involved in the management of patients with Chronic Heart Failure due to Left Ventricular Systolic Dysfunction. They are to be used in conjunction with NHS Grampian Medical Treatment Guidelines for Chronic Heart Failure (CHF) due to Left Ventricular Systolic Dysfunction (LVSD). SIGN 95 (2007) states: All patients with heart failure due to LVSD of all NYHA functional classes should be started on beta blocker therapy as soon as their condition is stable (unless contra indicated by a history of asthma, heart block or symptomatic hypotension).

BENEFITS OF BETA BLOCKERS

They have been shown to
- Reduce myocardial oxygen demand and ischaemia
- Decrease the incidence of arrhythmias
- Reduce mortality
- Slow disease progression
- Improve haemodynamic response at rest and on exercise
- Reduce hospitalisation for reasons of CHF

PATIENT SUITABILITY

All patients with CHF due to LVSD of all NYHA classes who have stable heart failure symptoms. Recent instability of patient symptoms is a contra indication to initiation.

All patients should ideally be on standard heart failure therapies i.e. Diuretics, ACE I, and +/- Digoxin. However Beta Blockers are still indicated in those patients intolerant of ACE I’s.

CONTRA INDICATIONS TO BETA BLOCKADE

- Asthma
- Heart Block
- Symptomatic hypotension

In patients with hypotension (<90 mmHg systolic) or bradycardia (<55 bpm) senior medical advice i.e. cardiologist should be sought prior to introduction of beta blockade.

EXAMINATIONS TO BE PERFORMED (prior to initiation of beta blockade)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLOODS</td>
<td>Renal function, liver function, glucose, digoxin levels (If on Digoxin)</td>
</tr>
<tr>
<td>ECG</td>
<td>Detection of any arrhythmias particularly bradycardias and heart block (To be performed within last 3 months prior to initiation)</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>To be performed at initiation to determine target dose of medication</td>
</tr>
<tr>
<td>OBSERVATIONS</td>
<td>BP, Pulse, Respiratory rate</td>
</tr>
</tbody>
</table>

Roz O’Dwyer/ Audrey Stables
September 2008
REQUIREMENTS PRIOR TO INITIATION/TITRATION

In order to ensure the patient is stable and therefore suitable for beta blockade therapy. The following signs and symptoms should be assessed prior to initiation and titration.

SIGNS:
- Elevated JVP
- Increase in weight
- Dependent oedema
- Wheeze/crackles in auscultation
- Tachypnoea
- (Gallop rhythm/added heart murmurs)

SYMPTOMS:
- Increasing dyspnoea
- Orthopnoea
- Paroxysmal nocturnal dyspnoea
- Reduction in exercise tolerance
- Cough
- Fatigue

INITIATION

Therapy should be with Bisoprolol, Carvedilol or Nebivolol. Beta blockade therapy should be initiated at lowest dose and titrated slowly. Some patients may benefit from even slower titration i.e. frail or elderly patients.

Patient education is very important with regards to assisting in drug compliance and ensuring safety with the titration system. Patients must be advised of possible side effects and to seek assistance if these occur.
NHS GRAMPIAN
Referral to Heart Failure Specialist Nurse

*Please ensure patient has a definite diagnosis of left ventricular dysfunction on echo before referral*

| Name: ___________________________ | Date of referral: __________________ |
| Address: ___________________________________________________ |
| Tel No: Home/Work | GP Practice: ____________________ |

**DIAGNOSIS/DATE:**  
**ECHO/DATE:**

**OTHER MEDICAL CONDITIONS:**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Present?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrial Fibrillation</td>
<td></td>
</tr>
<tr>
<td>Valvular Disease</td>
<td></td>
</tr>
<tr>
<td>MI</td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td></td>
</tr>
<tr>
<td>COPD</td>
<td></td>
</tr>
<tr>
<td>Thyroid condition</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
</tr>
<tr>
<td>Renal problems</td>
<td></td>
</tr>
<tr>
<td>CHD</td>
<td></td>
</tr>
</tbody>
</table>

Other relevant conditions:

**CURRENT MEDICATION:**

1.  
2.  
3.  
4.  
5.  
6.  
7.  
8.  
9.  

**REASON FOR REFERRAL:**

- Recent hospital admission
- Deterioration of condition
- Patient education
- Review of medication
- Other:

**OTHER RELEVANT INFORMATION:**

Referring Agent: ______________________  Signature: ______________________

*Please send to:*

- Roz O'Dwyer  HFSN  Jesmond Surgery  Aberdeen  AB22 8UR  Tel. 01224 846611
- Audrey Stables  HFSN  Huntly Health Centre  Aberdeenshire  AB54 8EX  Tel. 01466 792116
- Jan Henderson  HFSN  Dr Grays Hospital  Moray  IV30 1SN  Tel. 01343 567850

Roz O'Dwyer/ Audrey Stables  
September 2008
What is heart failure?

Heart failure is a common condition which results in the heart being less efficient at pumping blood around the body. Although not completely curable, there is very effective treatment available.

What are the symptoms of heart failure?

- Shortness of breath – especially on exertion or when lying flat in bed.
- Waking up breathless at night
- Weakness/tiredness
- Swollen feet, ankles, legs, abdomen.

What causes heart failure?

Heart failure can be caused by a number of things including:

- Heart attacks in the past
- Coronary Heart Disease
- Narrow or leaking heart valves
- Hypertension
- Viral heart infection
- Excessive alcohol intake
- Heart rhythm problems
- Heart muscle disease, such as cardiomyopathy
What you can do you help yourself

A few simple lifestyle changes can make a big difference on how you will feel.

**DAILY WEIGHTS**
Weigh yourself every morning after going to the toilet and before getting dressed. Keep a daily record. This can indicate if you are retaining too much fluid. Report an increase 2-3 lbs/day to heart failure nurse or GP.

**USE LESS SALT**
Avoid foods high in salt i.e. canned foods, cheeses and processed meats and do not add salt at the table. **DO NOT** use salt alternatives as they contain potassium which may be detrimental to your health. Use herbs and spices instead to add flavour.

**DRINK LESS ALCOHOL**
Alcohol can worsen Chronic Heart Failure (CHF). Stick to recommended levels.

**GET SOME EXERCISE**
Exercise regularly within limitation. Set yourself small goals and take it gently.

**STOP SMOKING**
Smoking harms the heart and lungs.

**LOSE WEIGHT**
Being overweight means the heart has to work harder. A few small changes can be made gradually - a low fat varied healthy diet.

**GET IMMUNISED**
It is recommended to have annual flu injection and a one off pneumonia jab to give yourself protection against infection.

*REMEMBER THESE BASIC POINTS*

- Take your medication. NEVER stop taking your tablets unless told to do so by your GP or nurse
- Make sure you do not run out of tablets
- Eat a healthy, balanced diet
- Report any sudden weight changes (over 2-3lbs/day)
- Report any increase in breathlessness
- Report any increase in the swelling of your ankles
READ CODES FOR HEART FAILURE

Code LVF (LVSD) #G581
Heart Failure Annual Review #662W
Max tolerated dose ACE inhibitor #B6Q
Max tolerated dose ARB #86T
Max tolerated dose Betablocker #86V

NYHA I #662f
NYHA II #662g
NYHA III #662h
NYHA IV #662i

ACE C/I #8I28
ACE declined #8I38
ACE not indicated #8I64

ARB C/I #8I2H
ARB not tolerated #8I75
ARB not indicated #8I6C

BB C/I #8I26
BB not tolerated #8I73
BB not indicated #8I62
BB refused #8I36
REFERENCES


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June Gordon
September 2008
COMMUNITY DIETETIC SERVICES

The Community Dietetic Service can offer training for all levels of health care staff to facilitate the delivery of first line nutrition advice within primary care. Depending on need, individual patient consultations with a Dietitian within a clinic or home setting can also be arranged.

1. TRAINING AND EDUCATION FOR ALL LEVELS OF STAFF

General queries regarding nutrition and cardiovascular disease training and education for all levels of staff can be directed to one of the following:

(a) Aberdeen City and Shire:

Community Dietetic Department
Westholme
Woodend Hospital
Aberdeen
(Tel No: 01224 556305 or internal Ext 56305)

(b) Moray:

Department of Nutrition & Dietetics
Dr Gray’s Hospital
Elgin
Moray
IV30 1SN
(Tel No: 01343 567350 or internal Ext 67350)

2. INDIVIDUAL PATIENT CONSULTATIONS (CLINICS & DOMICILIARY VISITS)

If after giving 1st line advice it is thought that a patient needs individual dietetic input, referrals should be made on the relevant form to the appropriate dietetic department. If the referral is appropriate, the secretary will send the patient a letter asking them to contact the Department. They can then make an appointment at a community dietetic clinic venue appropriate to them.

NB A domiciliary visit will only be deemed necessary if the patient is housebound, unable to attend clinic due to illness/frailty/disability or severe transport problems (i.e. unable to use public transport at any time, has no carers and relies on patient transport to access health services).
(a) Aberdeen City and Shire Clinics – if the patient is registered with an Aberdeen City or Shire GP, please complete the Aberdeen City and Shire “Request for Community Service” form within this section and send to:

Community Dietetic Department
Westholme
Woodend Hospital
Aberdeen
(Tel No: 01224 556305 or internal Ext 56305)

(b) Aberdeen City Domiciliary Visits - if the patient is registered with an Aberdeen City CHP GP, please complete the “Community Therapy Services Referral” form and send to:

Administrator
Links Resource Centre
City Hospital
Park Road
Aberdeen
AB24 5AU
(Tel No: 01224 558399 or internal Ext 58399)

NB: For Aberdeenshire Domiciliary Visits please use the City and Shire “Request for Community Service form”.

(c) Moray – if the patient is registered with a Moray CHP GP, please complete the “Moray Dietetic Referral” within this section and send to:

Department of Nutrition & Dietetics
Dr Gray’s Hospital
Elgin
Moray
IV30 1SN
(Tel No: 01343 567350 or internal Ext 67350)

NB: IF REFERRAL IS URGENT, PLEASE SPECIFY THIS ON THE REFERRAL FORM/LETTER.
REQUEST FOR COMMUNITY SERVICE (ABERDEEN CITY/SHIRE)

<table>
<thead>
<tr>
<th>PATIENT’S NAME:</th>
<th>G.P.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDRESS:</td>
<td>PRACTICE:</td>
</tr>
<tr>
<td>REFERRING HCP:</td>
<td>ADDRESS:</td>
</tr>
<tr>
<td>TEL. NO:</td>
<td></td>
</tr>
<tr>
<td>DOB:</td>
<td>CHI:</td>
</tr>
<tr>
<td>TEL. NO:</td>
<td></td>
</tr>
<tr>
<td>ABLE TO ATTEND CLINIC: YES / NO</td>
<td>DATE OF REFERRAL:</td>
</tr>
<tr>
<td>HOME VISIT REQUIRED: YES / NO</td>
<td>SIGNATURE:</td>
</tr>
</tbody>
</table>

Reason for Referral:
(Please indicate where possible weight/BMI/recent unexplained weight loss/appetite problems/previous dietetic contact etc.)

Has any first line dietary advice (verbal or leaflets) been given?

Relevant Medical History/Medication/Biochemical results e.g., lipid profile

Relevant Social History (e.g. Will it be appropriate to have family/carers present?)

Any additional Information (e.g. Directions to house, name of main carer etc.)
COMMUNITY THERAPY SERVICES
FAO Administrator, Links Resource Centre, City Hospital, Park Road, Aberdeen, AB24 5AU
Tel: 01224 558399   Fax: 01224 558360

REFERRAL FORM

PATIENT DETAILS:
DOB/CHI ___________________________   MALE □   FEMALE □
SURNAME ___________________________________   FORENAME __________________
ADDRESS
______________________________________________________________________________
______________________________________________________________________________
POSTCODE ______________
TELEPHONE No ___________________________
G.P. NAME _______________________________________   TEL No ______________
PRACTICE ___________________________________________

REASON FOR REFERRAL/CURRENT MEDICAL ISSUES:

Disciplines Suggested: CH □   DT □   OT □   PT □   SLT □

RELEVANT PAST MEDICAL HISTORY:

MEDICATION:

PERSON REFERRING:
NAME (Printed) ___________________________   WARD _____________
DESIGNATION ___________________________   TEL No ______________
SIGNATURE ___________________________________   DATE
MORAY DIETETIC REFERRAL FORM  
Department of Nutrition & Dietetics  
Dr Gray’s Hospital, Elgin, Moray  
Tel: 01343 567350 Fax: 01343 567487

<table>
<thead>
<tr>
<th>Name:</th>
<th>G.P.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Practice:</td>
</tr>
</tbody>
</table>

Referring Health Care Professional:

<table>
<thead>
<tr>
<th>Tel No:</th>
</tr>
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</table>

D.O.B.

<table>
<thead>
<tr>
<th>Unit/CHI No:</th>
</tr>
</thead>
</table>

In patient - Location:

<table>
<thead>
<tr>
<th>Urgent Appointment</th>
<th>Y / N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Visit required</td>
<td>Y / N</td>
</tr>
</tbody>
</table>

| Single Shared Assessment Completed | Y / N |

Date of referral:

<table>
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<tr>
<th>Signature:</th>
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</table>

Height:  Weight:  BMI:  MUST Score:

Diagnosis & Medical History (include all relevant medical diagnoses, medications, biochemical results etc.)

Dietary / Nutritional Problems (e.g. unintentional weight loss/gain, poor appetite, swallowing problems, GI disturbance, behavioural problems relating to food etc.)

Has first line dietary advice been given, if yes, please provide details? (e.g. verbal advice or leaflets)

Mobility (e.g. ability to stand on scales – please attach copy of Moving & Handling Risk Assessment if one has been completed)

Relevant Social History (e.g. please consider family circumstances, will it be appropriate to have family/carers present?)

Any Additional Information (e.g. directions to house, name of main carer etc)
THE USE OF ORAL NUTRITIONAL SUPPLEMENTS

(Adapted from a statement on “The Use of Oral Nutritional Supplements" by Carole Noble, Dietetic Prescribing Advisor, Community Dietetic Department, NHS Grampian)

To identify patients at risk of malnutrition, “MUST” screening should be used. If you require training on using “MUST” please contact the relevant Dietetic Department for your area (listed below).

First line dietary advice for the treatment of malnutrition and weight loss should focus on fortifying and increasing food intake rather than using Oral Nutritional Supplements (ONS). Written dietary advice to support this is available in the leaflet “the best weight is…UP!” available in tear-off pad format from your local Dietetic Department. This is also available electronically in pdf format on the document silo on the NHSG intranet.

If food fortification advice is insufficient, over the counter products such as “Build Up” or “Complan” can be tried. Not all prescribed ONS are suitable for all patients therefore patients requiring a prescribed ONS should be referred to a dietitian for a full dietary assessment.

Ref: “Policy & Procedure for GPs and Primary Care Staff for managing malnutrition and prescribing nutritional supplements in adults”, NHSG intranet document silo.

Dietetic Department Contacts:

(a) Aberdeen City/Shire:

Community Dietetic Department
Westholme
Woodend Hospital
Aberdeen
(Tel: 01224 56305 or Internal Ext 56305)

(b) Moray

Department of Nutrition & Dietetics
Dr Gray’s Hospital
Elgin
Moray
IV30 1SN
(Tel No: 01343 567350 or Internal Ext 67350)
<table>
<thead>
<tr>
<th>LEAFLET</th>
<th>BRIEF DESCRIPTION</th>
<th>SUGGESTED USE IN CVD</th>
<th>HOW TO OBTAIN FREE COPIES</th>
</tr>
</thead>
</table>
| **General Healthy Eating**      | Basic information explaining the main food groups and roughly how much we should aim to eat daily | • For those who require general information on a well balanced diet                   | Aberdeen City/Shire = Ext 56305 or email linda.morrice@nhs.net  
Moray = Ext 67350 |
| (Small pink leaflet folded threefold) |                                                                                   |                                                                                      |                           |
| **Eating for a Healthy Heart**  | 1st line advice for CVD. Outlines reasons for and explains how to achieve heart healthy diet. | • Secondary prevention                                                               | Aberdeen City/Shire = Ext 56305 or email linda.morrice@nhs.net  
Moray = Ext 67350 |
| (A4 tear-off pad and/or electronic pdf format) |                                                                                   |                                                                                      |                           |
| **The best weight is…UP**       | Gives information about fortifying foods to enable individuals to increase their calorie intake in a “healthy” way. Gives meal and snack suggestions. | • Useful for clients who have difficulty eating, poor appetite and/or are gradually losing weight e.g. heart failure patients | Aberdeen City/Shire = Ext 56305 or email linda.morrice@nhs.net  
Moray = Ext 67350 |
| (A4 tear-off pad and/or electronic pdf format) |                                                                                   |                                                                                      |                           |
| **Salt…are you eating too much?** | Gives information on sources of salt in the diet, recommended amounts, reasons for reducing intake and means of doing so | • Hypertension  
• Heart Failure | Aberdeen City/Shire = Ext 56305 or email linda.morrice@nhs.net  
Moray = Ext 67350 |
| (A5 tear-off pad)                |                                                                                   |                                                                                      |                           |
# DIETARY INFORMATION LEAFLETS FOR CARDIOVASCULAR DISEASE (CVD)

<table>
<thead>
<tr>
<th>LEAFLET</th>
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<th>SUGGESTED USE IN CVD</th>
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<tbody>
<tr>
<td><strong>Strive for five</strong></td>
<td>Emphasises importance of eating 5 portions of fruit and/or veg daily and gives examples of how to achieve this</td>
<td>• Where clients are unsure how to achieve 5/day &lt;br&gt;• To emphasise relevance of dietary antioxidants</td>
<td>Aberdeen City/Shire = Ext 56305 or email <a href="mailto:linda.morrice@nhs.net">linda.morrice@nhs.net</a> &lt;br&gt;Moray = Ext 67350</td>
</tr>
<tr>
<td>(Colourful A4 leaflet folded threefold)</td>
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<tr>
<td><strong>Oily Fish – Don’t Give It a Miss</strong></td>
<td>Highlights health benefits of oil-rich fish. Gives recommended amounts and recipe ideas.</td>
<td>• Promotion of oil-rich fish as a protective aspect&lt;br&gt;• Recipe ideas using oil-rich fish</td>
<td>Aberdeen City/Shire = Ext 56305 or email <a href="mailto:linda.morrice@nhs.net">linda.morrice@nhs.net</a> &lt;br&gt;Moray = Ext 67350</td>
</tr>
<tr>
<td>(A5 booklet)</td>
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<tr>
<td><strong>Hypertension</strong></td>
<td>Patient information and advice leaflet covering lifestyle and dietary management for elevated blood pressure/hypertension</td>
<td>• 1st line lifestyle management advice for individuals with elevated blood pressure or hypertension</td>
<td>Contact Health Information Resources Service on Ext 58504 or order online at <a href="http://www.nhsghpcat.org">www.nhsghpcat.org</a></td>
</tr>
<tr>
<td>(A4 tear off pad and/or electronic pdf format)</td>
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For information on the full range of advice leaflets available from Community Dietetics for Aberdeen City and Shire, please contact Linda Morrice on 01224 556305 or internal Ext 56305 or email linda.morrice@nhs.net

Additional Food Fact sheets for use in CVD can be downloaded from the British Dietetic Association website [www.bda.uk.com/foodfacts/index.html](http://www.bda.uk.com/foodfacts/index.html)
USEFUL WEBSITES

www.ash.org.uk
www.bhsoc.org
www.bpassoc.org.uk/
www.bhf.org.uk
www.cardiac.org.uk
http://cgi.grampian.scot.nhs.uk
www.chss.org.uk
www.dableducational.com
www.grca.org.uk
www.heartjinl.com
www.nha.uk.net
www.nice.org.uk
www.sign.ac.uk

Smoking cessation website
British Hypertension Society
Blood Pressure Association
British Heart Foundation
British Cardiac Society
NHS Grampian clinical guidance intranet
Chest, Heart and Stroke
Information on blood pressure monitors
Grampian Cardiac Rehabilitation Association
Joint British Societies
Nurses Hypertension Association
National Institute for Health Clinical Excellence
Scottish Intercollegiate Guidelines Network