



## Nurse Practitioner AHFCTS - Clinical Protocol Heart Failure

Scope		Outcomes
<b>Nurse Practitioner Advanced Heart Failure &amp; Cardiac Transplant Services (NP AHFCTS)</b>	<ul style="list-style-type: none"> <li>Inpatient and outpatient with clinical signs and symptoms of heart failure</li> </ul>	Identify patients suitable for NP AHFCTS CPG
<b>Medical Practitioner +/-Nurse Practitioner</b>	<ul style="list-style-type: none"> <li>History/symptoms consistent with heart failure</li> </ul>	Identify patients not suitable for NP AHFCTS CPG and redirect NP Mx to usual AHFCTS care with NP AHFCTS as part of the service team.
Initial Assessment & Interventions		Outcomes
<b>Primary survey assessment by telephone</b>	<ul style="list-style-type: none"> <li>Cardiac Assessment</li> <li>Respiratory assessment</li> <li>Abdominal assessment</li> </ul>	Abnormal primary survey identified → exit CPG
<b>History</b>	<ul style="list-style-type: none"> <li>Symptoms, current complaint</li> <li>Past medical &amp; surgical history</li> <li>Family history</li> <li>Social circumstances</li> <li>Medications</li> <li>Lifestyle factors               <ul style="list-style-type: none"> <li>Daily weight trend</li> <li>Fluid restriction (1.5L per day)</li> </ul> </li> <li>Allergies</li> </ul>	Identify patients not suitable for CPG → exit CPG
<b>Focused clinical assessment</b>	<ul style="list-style-type: none"> <li>Appearance</li> <li>NYHA class</li> <li>Observations – heart rate and rhythm, blood pressure and temperature</li> <li>Cardiac assessment of heart sounds &amp; JVP</li> <li>Respiratory assessment; respiratory rate, oxygen saturations, breath sounds, adventitious sounds</li> <li>Peripheral vascular system</li> <li>Abdominal assessment, evidence of hepatomegaly</li> </ul>	Determine need for further investigation in clinic ie: ECG to confirm rate and rhythm. Identify patients for telephone beta-blocker up-titration CPG



		and/or ascites.	
<b>Working diagnosis and Investigations</b>		<b>Outcomes</b>	
<b>Investigations Pathology</b>	<ul style="list-style-type: none"> <li>• Check most recent blood tests – FBP, U&amp;E's, LFT's, BNP, TFT's, iron studies</li> </ul>	Assessment stable, well controlled heart failure	
<b>Investigations - imaging</b>	<ul style="list-style-type: none"> <li>• Echocardiogram required:               <ul style="list-style-type: none"> <li>○ routine care</li> <li>○ symptoms of decompensation</li> </ul> </li> <li>• CXR required:               <ul style="list-style-type: none"> <li>○ short of breath</li> <li>○ abnormalities noted on auscultation – decreased breath sounds, presence of crackles.</li> </ul> </li> </ul>	<p>Evaluation &amp; assessment of heart function and valvular function</p> <p>Diagnosis of pulmonary oedema or effusions</p>	
<b>Interpretation of results (diagnostic features) and management decisions</b>		<b>Outcomes</b>	
<b>No signs or symptoms of decompensated heart failure</b>	<ul style="list-style-type: none"> <li>• Optimisation of heart failure medications, ACE I and beta-blockers</li> <li>• Patient education and reinforcement of symptoms to report</li> <li>• Contact number provided</li> <li>• Advise for symptoms out of hours</li> <li>• Follow-up telephone call to be arranged</li> <li>• Follow-up clinic appointment</li> </ul>	Optimisation of heart failure medications and symptom control	
<b>Signs of decompensated heart failure</b>	<ul style="list-style-type: none"> <li>• Consider cause of decompensation</li> <li>• Diuretic adjustment to aim for euvoleamic state</li> <li>• Changes to heart failure medications and reduction of beta-blocker dose</li> <li>• Changes to timing of medications if lightheaded</li> <li>• Optimisation of heart failure medications, ACE I and beta-blockers</li> <li>• Patient education and reinforcement of symptoms to report</li> <li>• Patient concordance with therapy               <ul style="list-style-type: none"> <li>○ Daily weight trend</li> </ul> </li> </ul>	Cause of decompensation investigated. Resolution of symptoms. Admission to ward or telephone triage arranged and clinical assessment within 1 week.	



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	<ul style="list-style-type: none"> <li>○ Fluid restriction (1.5L per day)</li> <li>○ Medications</li> <li>● Contact number provided</li> <li>● Advise for symptoms out of hours</li> <li>● Follow-up telephone call to be arranged</li> <li>● Follow-up clinic appointment</li> </ul>	
<b>Patient Discharge Education</b>		<b>Outcomes</b>
<b>Medication instruction for up-titration</b>	<ul style="list-style-type: none"> <li>● Verbal instructions from NP AHFCTS <ul style="list-style-type: none"> <li>○ Changes to medications or drug doses</li> <li>○ Monitor daily weight</li> <li>○ Fluid restriction</li> </ul> </li> <li>● Report symptoms</li> <li>● Provision medication education and medication list.</li> </ul>	Ensure patient understands treatment, symptoms to report and contact person
<b>Follow up appointments</b>	<ul style="list-style-type: none"> <li>● Verbal instructions from NP AHFCTS</li> <li>● Outpatient appointment in AHFCTS clinic</li> </ul>	Patient understands problem, treatment, follow up and is safe for discharge home
<b>Other referrals</b>	<ul style="list-style-type: none"> <li>● Referrals by medical practitioner ± nurse practitioner as indicated to;</li> <li>● Cardiac gym</li> <li>● Social worker</li> <li>● Dietician</li> <li>● Occupational therapy</li> <li>● Silver chain nursing service</li> <li>● Pharmacist</li> </ul>	Patient understands the problem, treatment, follow up and is safe for discharge home
<b>Letters</b>	<ul style="list-style-type: none"> <li>● Local medical officer letter</li> </ul>	Ensures continuity of care and referral to health care team



<b>Medications</b>		<b>Outcomes</b>
<b>General information</b>	Patient will be educated re medication usage, potential adverse effects and course of action to take in event of adverse effect.	Patient will use the medication in an effective and safe manner. Prescribing NP will be informed of significant adverse effects of medication.
<b>Angiotensin converting enzyme inhibitors (ACE I) indicated for use in heart failure</b>	<b>Enalapril:</b> 2.5mg - 20mg daily <b>Lisinopril:</b> 5mg - 20mg daily <b>Perindopril:</b> 2.5mg -10mg daily <b>Ramipril:</b> 2.5mg - 10mg daily <b>Trandolapril:</b> 1mg - 4mg daily Patient is intolerant of ACE I illustrated by hypotension, cough or elevated creatinine. Refer patient to the Consultant or Registrar.	Patients given medication appropriate to indications and contraindications, allergies, current medications and past medical history  Intolerant to ACE I exit CPG
<b>Angiotensin receptor blockers (ARB) indicated for use in heart failure</b>	<b>Candesartan</b> 4mg - 32mg daily <b>Irbesartan</b> 75mg -300mg daily Patient is intolerant of ACE I illustrated by hypotension, cough or elevated creatinine. Refer patient to the Consultant or Registrar.	Exit CPG
<b>Anticoagulant</b>	<b>Warfarin</b> as per INR Excessive INR and or bleeding- considered to be contributed by warfarin induced coagulopathy will be managed as per Guidelines for the management of an elevated international normalised ratio in adult patients with or without bleeding. Refer patient to the Consultant or Registrar.	Exit CPG
<b>Antiplatelet</b>	<b>Aspirin</b> 150mg daily	



<b>Beta-blockers indicated for use in heart failure</b>	<b>Commence if patient euvoelaemic</b> <b>Bisoprolol:</b> 1.25mg -10mg daily. <b>Carvedilol:</b> 3.125mg - 25mg bd <b>Metoprolol XL:</b> 23.75mg - 95mg daily. Patient is intolerant of beta-blocker illustrated by worsened heart failure symptoms or bradycardia and hypotension. Refer patient to the Consultant or Registrar.	Exit CPG
<b>Cholesterol lowering agent</b>	<b>Atorvastatin:</b> 10mg – 80mg daily <b>Pravastatin:</b> 20mg – 80mg daily <b>Simvastatin:</b> 10mg – 80mg daily Patient is intolerant of medication or liver function impaired by medications. Refer patient to the Consultant or Registrar.	Exit CPG
<b>Diuretics</b>	<b>Bumetanide:</b> 0.5mg - 4 mg daily <b>Frusemide:</b> 20mg - 40mg max 1g daily <b>Hydrochlorthiazide:</b> 25mg -100mg daily <b>Spirolactone:</b> 25mg - 50mg daily Patient is refractory to diuretic or renal function impaired. Refer patient to the Consultant or Registrar.	Exit CPG
<b>Clinical audit evaluation strategies</b>		
<b>Unscheduled clinic visit</b>	AHFCTS attendance register and NP AHFCTS clinical log	
<b>Missed problem</b>	AHFCTS weekly meeting Heart failure multidisciplinary team monthly meeting	



<b>References</b>	
<p>AMH (2007) <i>Australian Medicines Handbook</i>. Adelaide: AMH Pty LTD</p> <p>Fonarow, G.C., Abraham , W.T., Albert, N.M., Stough, W.G., Gheorghiade, M., Greenberg, B.H., O'Connor, M., Peiper, K., Sun, J.L. Yancy, C.W. &amp; Young, J.B. (2008). Factors Identified as Precipitating Hospital Admissions for Heart Failure and Clinical Outcomes. Findings from OPTIMIZE-HF. <i>Archives of Internal medicine</i>, 168(8), 847-54.</p> <p>Krum, H., Tonkin, A.M., Currie, R., Djundjek, R., &amp; Johnston, C.I. (2001). Chronic heart failure in Australia general practice. The Cardiac Awareness Survey and Evaluation (CASE) Study. <i>Medical Journal of Australia</i>, 174(9), 432-3.</p> <p>National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand (Chronic Heart Failure Guidelines Expert Writing Panel). Guidelines for the prevention, detection and management of chronic heart failure in Australia, 2006.</p> <p>O'Driscoll, G. (2000). Chronic heart failure: A guide for practical management. <i>Australian Family Physician</i>, 29(5), 1-5.</p>	
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<b>Key to terms</b>	
<p><b>NP AHFCTS-</b> Nurse Practitioner Advanced Heart Failure &amp; Cardiac Transplant Service <b>CPG-</b> Clinical Practice Guideline</p>	
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