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**Heart Failure Outpatient Clinical Pathway**

	<b>PHASE 1: INITIAL CONSULT AND TREATMENT</b>	<b>PHASE 2: OPTIMIZATION OF THERAPY</b>	<b>PHASE 3: REASSESSMENT AND FURTHER OPTIMIZATION</b>	<b>PHASE 4: MAINTAINENCE</b>
<b>I. PROVIDER</b>	<p>Complete history and physical including:</p> <ul style="list-style-type: none"> <li>• Weight, vital signs, orthostatic BP, HR, signs and symptoms indicative of volume status, waist circumference, BMI, functional status, assessment of cardiovascular and noncardiovascular comorbidities or behaviors that might cause or accelerate the development or progression of HF</li> <li>• Evaluate medications, including over-the-counter medications, current or past alcohol use, chemotherapy, diet, activity, fluid management, and self-care/other factors that might influence HF status. (Self-care practices: weight monitoring, sodium restriction, alcohol restriction, fluid restriction, physical activity, smoking cessation, medication instruction, minimizing or avoiding NSAIDs, symptom management, coping mechanisms)</li> <li>• Assess patient knowledge and self-care practices; initiate patient education</li> <li>• Advanced directives</li> </ul>	<ul style="list-style-type: none"> <li>• Perform interim history and physical</li> <li>• Document vital signs, orthostatic BP, HR, and weight</li> <li>• Assess signs and symptoms indicative of volume status</li> <li>• Assess functional status</li> </ul>	<ul style="list-style-type: none"> <li>• Perform interim history and physical</li> <li>• Document vital signs, orthostatic BP, HR and weight</li> <li>• Assess signs and symptoms indicative of volume status</li> <li>• Assess functional status</li> </ul>	<ul style="list-style-type: none"> <li>• Perform interim history and physical</li> <li>• Document vital signs, orthostatic BP, HR and weight</li> <li>• Assess signs and symptoms indicative of volume status</li> <li>• Assess functional status</li> </ul>

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<p><b>II. CONSULTS</b></p>	<p>If indicated:</p> <ul style="list-style-type: none"> <li>• Subspecialty consultation (see algorithms)</li> <li>• Cardiac rehabilitation</li> <li>• Home health care</li> <li>• Nutritionist</li> <li>• Pharmacist</li> <li>• Social work</li> <li>• Hospice</li> <li>• Other services as indicated</li> </ul>	<ul style="list-style-type: none"> <li>• Consultation p.r.n</li> </ul>	<ul style="list-style-type: none"> <li>• Consultation p.r.n</li> </ul>	<ul style="list-style-type: none"> <li>• Consultation p.r.n</li> </ul>
<p><b>III. DIAGNOSTIC STUDIES</b></p>	<p>1. Lab work:</p> <ul style="list-style-type: none"> <li>• CBC</li> <li>• Comprehensive metabolic profile, calcium and magnesium</li> <li>• Lipid profile</li> <li>• PT/INR (if on anticoagulation)</li> <li>• HbA<sub>1c</sub></li> <li>• Thyroid-stimulating hormone</li> <li>• Liver function test</li> <li>• UA</li> <li>• BNP (if indicated)</li> <li>• Digoxin level if signs or symptoms of toxicity or recent addition of interacting drug</li> </ul> <p>2. Other procedures as appropriate:</p> <ul style="list-style-type: none"> <li>• Disease-specific screening labs as indicated</li> <li>• 12-lead EKG, document QRS duration</li> <li>• Echo with Doppler flow studies; document EF</li> <li>• Posterior-to-anterior (PA) and lateral chest X-ray</li> <li>• Consider noninvasive imaging to detect ischemia/viability</li> <li>• Consider left heart catheterization, if indicated</li> </ul>	<p>1. Lab work as necessary:</p> <ul style="list-style-type: none"> <li>• Basic metabolic profile</li> <li>• If taking aldosterone antagonist, check serum potassium and creatinine at 3 days, 1 week, 1 month (x 3 months) and then as needed</li> <li>• Lipid profile (if indicated)</li> <li>• CBC (if indicated)</li> <li>• Digoxin level if signs or symptoms of toxicity or recent addition of interacting drug</li> <li>• PT/INR every month and p.r.n (if on anticoagulation)</li> <li>• HbA<sub>1c</sub> (if diabetic)</li> <li>• BNP (if indicated)</li> </ul>	<p>1. Lab work as necessary:</p> <ul style="list-style-type: none"> <li>• Basic metabolic profile</li> <li>• If taking aldosterone antagonist, check serum potassium and creatinine at 3 days, 1 week, 1 month (x 3 months) and then as needed</li> <li>• Lipid profile (if indicated)</li> <li>• CBC (if indicated)</li> <li>• Digoxin level if signs or symptoms of toxicity or recent addition of interacting drug</li> <li>• PT/INR every month and p.r.n (if on anticoagulation)</li> <li>• HbA<sub>1c</sub> (if diabetic)</li> <li>• BNP (if indicated)</li> </ul> <p>2. Other procedures:</p> <ul style="list-style-type: none"> <li>• 12-lead EKG</li> <li>• Echo/MUGA</li> </ul>	<p>1. Lab work as necessary:</p> <ul style="list-style-type: none"> <li>• Basic metabolic profile</li> <li>• If taking aldosterone antagonist, check serum potassium and creatinine at 3 days, 1 week, 1 month (x 3 months) and then as needed</li> <li>• Lipid profile (if indicated)</li> <li>• CBC (if indicated)</li> <li>• Digoxin level if signs or symptoms of toxicity or recent addition of interacting drug</li> <li>• PT/INR every month and p.r.n (if on anticoagulation)</li> <li>• HbA<sub>1c</sub> (if diabetic)</li> <li>• BNP (if indicated)</li> </ul> <p>2. Other procedures:</p> <ul style="list-style-type: none"> <li>• Echo/MUGA if there is a change in clinical status</li> </ul>

<p><b>IV. MEDICAL THERAPY</b></p> <p>(See individual treatment algorithms for details)</p>	<ol style="list-style-type: none"> <li>1. ACEI/ARB: initiate if not receiving prior therapy; if receiving therapy, titrate to target dose; document contraindications or intolerance; see algorithm for details</li> <li>2. Beta blocker: initiate if not receiving prior therapy; if receiving therapy, titrate to target dose; document contraindications or intolerance; see algorithm for details</li> <li>3. Aldosterone antagonist: initiate if not receiving prior therapy and post-MI with HF or DM or moderately severe-to-severe HF symptoms; if receiving therapy, dose per algorithm; document contraindications or intolerance; see algorithm for details</li> <li>4. Hydralazine/isosorbide dinitrate: in black patients on standard medical therapy including ACEI and BB; others may benefit similarly but this has not yet been tested; see algorithm for details</li> <li>5. Diuretic: initiate or titrate as indicated by volume status; see algorithm for details</li> <li>6. Digitalis: for atrial fibrillation requiring rate control or residual symptoms; see algorithm for details</li> <li>7. Anticoagulation: for atrial fibrillation; document contraindications; see algorithm for details</li> <li>8. Antiplatelet therapy: if CAD, prior MI, diabetes, prior CVA/TIA, or peripheral vascular disease</li> <li>9. Lipid-lowering therapy: if hyperlipidemia, CAD, prior MI, diabetes, prior CVA/TIA, or peripheral vascular disease</li> <li>10. Assess use of over-the-counter or nonprescription therapies</li> <li>11. Pneumococcal vaccination and annual influenza vaccination are recommended in all patients with HF in the absence of known contraindications</li> </ol>	<ul style="list-style-type: none"> <li>• Assess if all indicated therapies have been titrated to target dose</li> <li>• Assess use of over-the-counter or nonprescription therapies</li> <li>• Assess need for vaccination</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust medications as needed</li> <li>• Assess use of over-the-counter or nonprescription therapies</li> <li>• Assess need for vaccination</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust medications as needed</li> <li>• Assess use of over-the-counter or nonprescription therapies</li> <li>• Assess need for vaccination</li> </ul>
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<p><b>V.</b> <b>DEVICE THERAPY</b> (See individual treatment algorithms for details)</p>	<p>1. Indicated for secondary prevention if:</p> <ul style="list-style-type: none"> <li>• Congenital high risk of VT/VF</li> <li>• Cardiac arrest due to VT/VF</li> <li>• Sustained VT/VF, spontaneous or induced by EPS</li> <li>• Hemodynamically disabling VT</li> <li>• Syncope</li> </ul> <p>2. Consider primary ICD and/or CRT for eligible patients receiving optimal medical therapy; see algorithms for details</p> <p>3. Monitor patient with existing device therapy</p>	<ul style="list-style-type: none"> <li>• Monitor patient with existing device therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Reassess LVEF and functional status; review indications for ICD/CRT per algorithms</li> <li>• Recommend ICD and/or CRT for eligible patients receiving optimal medical therapy; see algorithms for details</li> <li>• Monitor patient with existing device therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Periodically reassess LVEF and functional status; review indications for ICD/CRT per algorithms</li> <li>• Monitor patient with existing device therapy</li> </ul>
<p><b>VI.</b> <b>PATIENT EDUCATION</b></p>	<p>Assess knowledge base, identify potential barriers to adherence, and provide patient and family education:</p> <ul style="list-style-type: none"> <li>• Causes of HF</li> <li>• What is ejection fraction?</li> <li>• Medication instruction</li> <li>• Minimizing/avoiding use of NSAIDs</li> <li>• Risk of sudden death</li> <li>• Potential need for device therapy</li> <li>• ICD/CRT education</li> <li>• Diet</li> <li>• Activity</li> <li>• Smoking cessation counseling</li> <li>• Limiting alcohol intake</li> <li>• Daily weight monitoring</li> <li>• Importance of adherence</li> <li>• Fluid management</li> <li>• Signs or symptoms of worsening condition</li> <li>• When to call provider</li> <li>• Social isolation/depression</li> <li>• Prognosis/end-of-life issues</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing assessment of knowledge base and educational needs of patient and family</li> <li>• Review recommendations</li> <li>• Reassess adherence</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing assessment of knowledge base and educational needs of patient and family</li> <li>• Review recommendations</li> <li>• Reassess adherence</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing assessment of knowledge base and educational needs of patient and family</li> <li>• Review recommendations</li> <li>• Reassess adherence</li> </ul>

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<p><b>VII. DIET/ FLUIDS</b></p>	<p>1. 2- to 3-gram sodium diet. &lt;2-gram sodium restriction if moderate-to-severe symptoms (NYHA class III-IV)</p> <p>2. Low-saturated-fat, low-cholesterol diet (if indicated)</p> <p>3. Diabetic dietary teaching (if indicated)</p> <p>4. Fluid restriction &lt;2 L/day is recommended in patients with moderate hyponatremia (serum sodium &lt;130 mEq/L) and should be considered to assist in treatment of fluid overload in other patients</p>	<ul style="list-style-type: none"> <li>• Assess dietary adherence and need for further dietary education/counseling and/or compliance monitoring</li> <li>• Emphasize importance of dietary/fluid management adherence</li> </ul>	<ul style="list-style-type: none"> <li>• Emphasize importance of dietary/fluid management adherence</li> </ul>	<ul style="list-style-type: none"> <li>• Emphasize importance of dietary/fluid management adherence</li> </ul>
<p><b>VIII. ACTIVITY</b></p>	<p>1. Advise patient of the potential benefits of aerobic activity and discuss initiation of a walking program increasing to 30–60 min daily, as tolerated.</p> <p>2. Discourage lifting, pushing, or pulling weights over 25 pounds</p> <p>3. If homebound, evaluate for physical therapy</p> <p>4. Consider referral to specialized cardiac rehabilitation</p>	<ul style="list-style-type: none"> <li>• Continue to assess and promote potential benefits of a physical activity program</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to assess and promote potential benefits of a physical activity program</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to assess and promote potential benefits of a physical activity program</li> </ul>
<p><b>IX. MONITORING</b></p> <p>(See individual treatment algorithms for details)</p>	<p>Provider follow-up:</p> <ul style="list-style-type: none"> <li>• Medication adjustments</li> <li>• Symptoms</li> <li>• Problems</li> <li>• Lab results and follow-up labs</li> <li>• Phone-in prescriptions as needed</li> <li>• Consider referral to comprehensive HF disease management program for patients recently hospitalized for HF or other patients at high risk</li> <li>• Device monitoring (device function, rhythm, antiarrhythmic therapy, pacing, heart rate variability, patient activity, volume status)</li> </ul>	<p>Provider follow-up:</p> <ul style="list-style-type: none"> <li>• Medication adjustments</li> <li>• Symptoms</li> <li>• Problems</li> <li>• Lab results and follow-up labs</li> <li>• Phone-in prescriptions as needed</li> <li>• Consider referral to comprehensive HF disease management program for patients recently hospitalized for HF or other patients at high risk</li> <li>• Device monitoring (device function, rhythm,</li> </ul>	<p>Provider follow-up:</p> <ul style="list-style-type: none"> <li>• Medication adjustments</li> <li>• Symptoms</li> <li>• Problems</li> <li>• Lab results and follow-up labs</li> <li>• Phone-in prescriptions as needed</li> <li>• Consider referral to comprehensive HF disease management program for patients recently hospitalized for HF or other patients at high risk</li> <li>• Device monitoring</li> </ul>	<p>Provider follow-up:</p> <ul style="list-style-type: none"> <li>• Medication adjustments</li> <li>• Symptoms</li> <li>• Problems</li> <li>• Lab results and follow-up labs</li> <li>• Phone-in prescriptions as needed</li> <li>• Consider referral to comprehensive HF disease management program for patients recently hospitalized for HF</li> </ul>

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		<p>antiarrhythmic therapy, pacing, heart rate variability, patient activity, volume status)</p>	<p>(device function, rhythm, antiarrhythmic therapy, pacing, heart rate variability, patient activity, volume status)</p>	<p>or other patients at high risk</p> <ul style="list-style-type: none"> <li>• Device monitoring (device function, rhythm, antiarrhythmic therapy, pacing, heart rate variability, patient activity, volume status)</li> </ul>
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This is a general guideline to assist in the management of patients. This guideline is not designed to replace clinical judgment or individual patient needs.

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Developed by the IMPROVE HF Steering Committee



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