



# Michigan Quality Improvement Consortium Guideline

## *Adults with Systolic Heart Failure*

**The following guideline recommends diagnostic evaluation, pharmacologic treatment and education that support effective patient self-management.**

Eligible Population	Key Components	Recommendation and Level of Evidence
Adults with suspicion of left-ventricular systolic dysfunction, including heart failure	Evaluation	<p><u>Initial assessment should include:</u></p> <ul style="list-style-type: none"> <li>Thorough history and physical examination [C], including depression screening, and assessment for coronary artery disease and risk factors</li> <li>Testing includes: chest X-ray, 12-lead electrocardiogram, lipid profile, CBC, electrolytes, calcium, magnesium, BUN, creatinine, blood glucose, liver function tests, TSH, urinalysis, and echocardiography with Doppler [C]</li> <li>Serial monitoring should include: weight, volume status, electrolytes, renal function and activity tolerance</li> </ul>
Adults diagnosed with left-ventricular systolic dysfunction, including heart failure	Pharmacological management	<p><u>Drugs recommended for routine use:</u></p> <ul style="list-style-type: none"> <li>ACE inhibitors in all patients, unless contraindicated<sup>1</sup> [A]</li> <li>Beta-blockade using carvedilol, sustained-release metoprolol, bisoprolol in all stable patients, unless contraindicated<sup>1,2</sup> [A]</li> </ul> <p><u>Drugs recommended for use in select patients:</u></p> <ul style="list-style-type: none"> <li>Diuretics and sodium restriction for evidence of fluid retention [A]</li> <li>Spironolactone for patients with moderate or severe symptoms of heart failure, preserved renal function (creatinine &lt; 2.0 in women; creatinine &lt; 2.5 in men) and normal serum potassium concentration [A]</li> <li>In patients who cannot tolerate ACE inhibitors due to cough or angioedema, use angiotensin receptor blockers [A].</li> <li>Consider hydralazine and isosorbide dinitrate for patients who cannot tolerate ACE inhibitors or ARBs, or African-American patients who remain symptomatic despite therapy [A].</li> </ul>
	Education, counseling and risk factor modification	<p><u>Educate patient and family regarding:</u></p> <ul style="list-style-type: none"> <li>Careful review of medication regimen with patient and caregivers at hospitalization or other changes in treatment</li> <li>Daily self-monitoring of weight and adherence to recommended patient action plan</li> <li>Recognition of symptoms and when to seek medical attention</li> <li>Moderate dietary sodium restriction (e.g., 2,000-2,500 mg sodium/day)</li> <li>Risk factor modification (regular exercise 5 times per week as tolerated [B]; smoking cessation; control of BP, DM, lipids)</li> <li>Avoid excessive alcohol intake, illicit drug use, and the use of NSAIDS</li> <li>Vaccination against influenza and pneumococcal disease</li> <li>Consider referral for evaluation for implantable defibrillator, ventricular assist device or transplant in patients with LVEF&lt;30%, NYHA Class III-V patients and those with worsening CHF</li> <li>Discuss prognosis and advanced directives with all patients</li> </ul>

<sup>1</sup> Contraindications include: life-threatening adverse reactions (angioedema or anuric renal failure), pregnancy, hypotensive patients at immediate risk of cardiogenic shock, systolic blood pressure < 80 mm Hg, serum creatinine > 3 mg/dL, bilateral renal artery stenosis, or serum potassium > 5.5 mmol/L.

<sup>2</sup> Contraindications include: patients with current or recent fluid retention history, unstable or poorly controlled reactive airway disease, symptomatic bradycardia or advanced heart block (unless treated with a pacemaker), or recent treatment with an intravenous positive inotropic agent.

**Levels of Evidence for the most significant recommendations:** A = randomized controlled trials; B = controlled trials, no randomization; C = observational studies; D = opinion of expert panel

This guideline lists core management steps. It is based on the ACC/AHA 2009 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines ([www.acc.org](http://www.acc.org)). Individual patient considerations and advances in medical science may supersede or modify these recommendations.