

# Heart Failure Care Guide

November 2023



*Information contained in the Care Guide is not a substitute for a health care professional's clinical judgment. Evaluation and treatment should be tailored to the individual patient and the clinical circumstances. Furthermore, using this information will not guarantee a specific outcome for each patient. Refer to "Disclaimer Regarding Care Guides" for further clarification.*

<https://cchcs.ca.gov/clinical-resources/>

## Table of Contents

GOALS.....	3
ALERTS.....	3
DEFINITIONS.....	3
HEART FAILURE CLASSIFICATIONS.....	3
HEART FAILURE STAGES .....	4
NYHA FUNCTIONAL CLASSIFICATION .....	5
EVALUATION.....	5
HISTORY AND PHYSICAL EXAMINATION .....	5
DIAGNOSTIC TESTING.....	5
LABORATORY TESTING .....	6
ADVANCED CARDIAC TESTING .....	7
DOCUMENTATION IN ELECTRONIC HEALTH RECORD SYSTEM.....	7
DIAGNOSTIC ALGORITHM FOR PATIENTS WITH SUSPECTED HEART FAILURE .....	8
TREATMENT.....	9
Guideline-Directed Medical Therapy (GDMT).....	10
Treatment for Stage A and Stage B Heart Failure.....	11
Treatment for Stage C and Stage D Heart Failure .....	13
Additional Treatment for Stage C and Stage D Heart Failure Once GDMT Optimized .....	14
Device and Interventional Therapy .....	17
Support Services.....	18
MONITORING .....	19
HOSPITALIZATIONS DUE TO HEART FAILURE .....	21
Heart Failure Decompensation.....	21
Return From Higher Level of Care Clinic Follow-Up .....	21
REFERENCES .....	23
PATIENT EDUCATION.....	PE-1
EDUCACIÓN PARA EL PACIENTE .....	PE-2

**GOALS**

- ✓ Identify and stage patients with heart failure (HF)
- ✓ Document left ventricular ejection fraction (LVEF)
- ✓ Assess and document New York Heart Association (NYHA) Functional Classification
- ✓ Treat patients with HF using guideline-directed medical therapy (GDMT)
- ✓ Counsel all patients on healthy lifestyle choices
- ✓ Decrease morbidity and mortality related to HF, as well as decreased hospitalizations due to HF

**ALERTS**

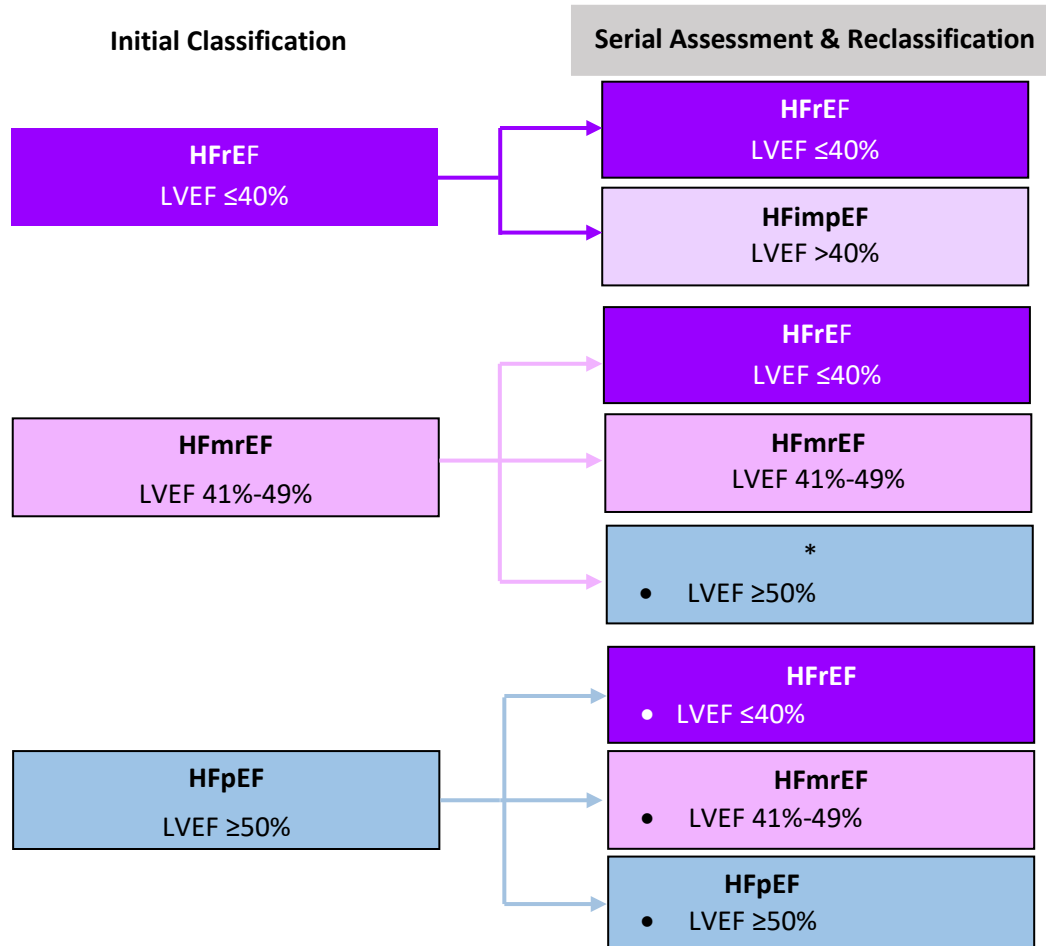
- Laboratory evaluation monitors GDMT for adverse effects and potential drug-drug interactions (DDI)
- Electrocardiography (ECG) and echocardiography (echo) are part of the standard evaluation of HF
- Serial LVEF assessment, heart rate, blood pressure, weight, and renal function are vital for prognostication
- Cardiovascular complications of cancer therapy include cardiomyopathy and HF

**DEFINITIONS**

**HEART FAILURE CLASSIFICATIONS**

HF results from any structural and/or function impairment of ventricular filling or ejection of blood. Classification of HF by left ventricular ejection fraction (LVEF) affects prognosis and response to treatment.

- **HF with reduced LVEF (HFrEF):** AHA/ACC definition is LVEF ≤40%, also known as systolic dysfunction
- **HF with preserved LVEF (HFpEF):** AHA/ACC definition is LVEF ≥50% with evidence of increased LV filling pressures, also known as diastolic dysfunction
- **HF with mildly reduced LVEF (HFmrEF):** AHA/ACC definition is LVEF 41%-49% with evidence of increased LV filling pressures
- **HF with improved LVEF (HFimpEF):** AHA/ACC definition is previous LVEF ≤40% and follow up LVEF >40%<sup>1</sup>



## Definitions Cont'd

Since left-sided HF can cause right ventricular dysfunction (RVD), right heart failure (RHF) can result from the inability of the right ventricle (RV) to support optimal circulation in the presence of adequate preload. RVD increases in prevalence with more advanced HF secondary to increased RV afterload from postcapillary pulmonary hypertension, volume overload, arrhythmias, or underlying myocardial disease processes. This care guide will focus on left-sided HF. For patients with suspected or diagnosed RHF, specialty consultation is advised.<sup>2,3</sup>

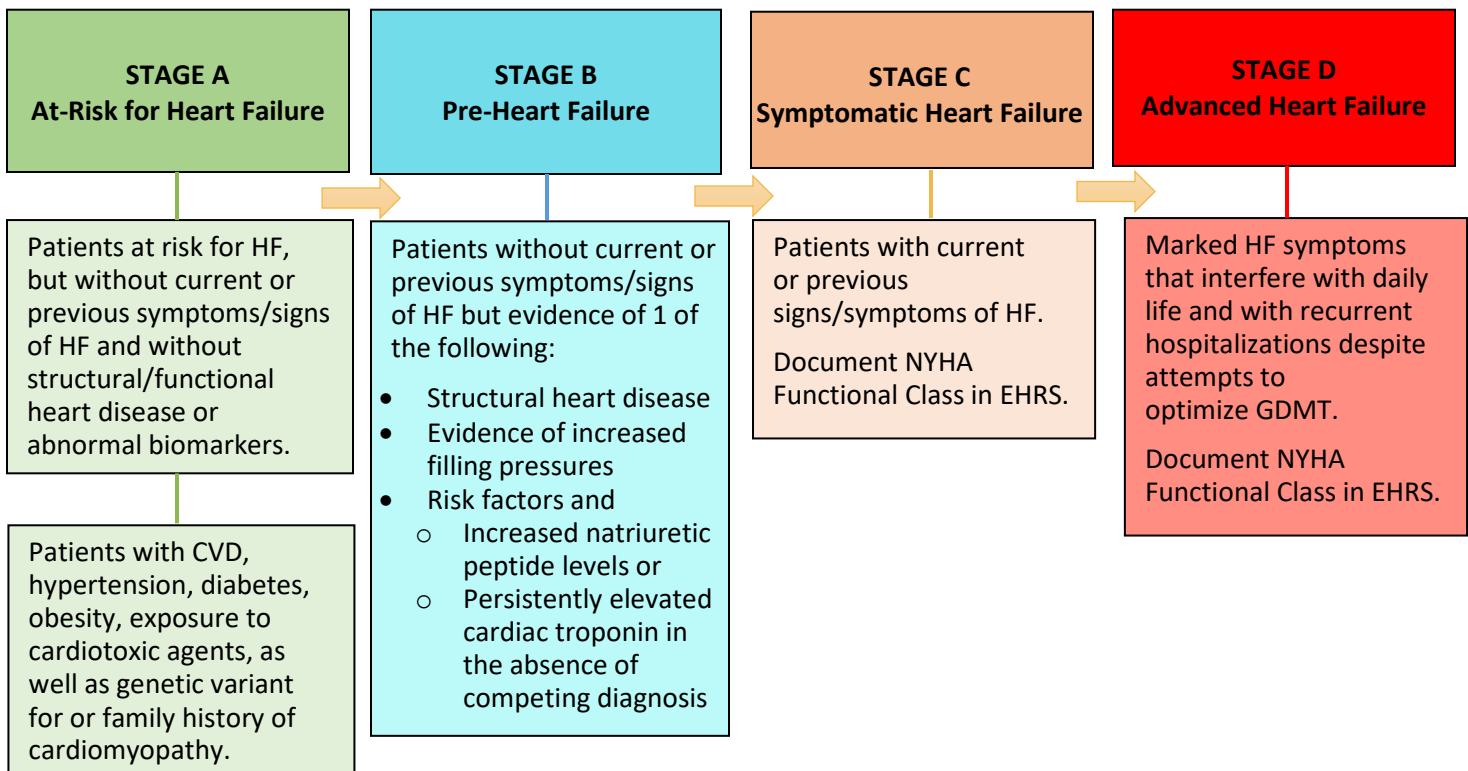
### HEART FAILURE STAGES

Patients with HF can be asymptomatic or can present with various symptoms and signs. Given this range, the ACC/AHA stages HF to emphasize its development and progression as it relates to survival. These stages are:

- **Stage A:** At risk for heart failure but do not have symptoms, structural/function heart disease, or abnormal biomarkers due to the following risk factors:

HF Risk Factors <sup>1</sup>
Hypertension
Clinical atherosclerotic cardiovascular disease (ASCVD)
Diabetes
Obesity and metabolic syndrome
Exposure to cardiotoxic agents, such as certain chemotherapeutic agents or radiation therapy
Genetic variants for cardiomyopathy
Family history of cardiomyopathy
Myocarditis (infectious, toxin or medication, immunological, hypersensitivity)
Peripartum cardiomyopathy
Stress cardiomyopathy (Takotsubo)
Substance abuse (e.g., alcohol, cocaine, methamphetamine)

- **Stage B:** Pre-HF without current or previous symptoms but evidence of structural heart disease, increased filling pressures in the heart, or other risk factors with increased natriuretic peptide levels and/or persistently elevated cardiac troponin in the absence of a competing diagnosis
- **Stage C:** Symptomatic HF, current or previous symptoms
- **Stage D:** Advanced HF with marked symptoms that interfere with daily life function or lead to repeated hospitalizations despite attempts to optimize GDMT<sup>1</sup>



## Definitions Cont'd

### NYHA FUNCTIONAL CLASSIFICATION

In addition to staging, NYHA Functional Classification characterizes patients' symptoms and functional capacity with stage C or stage D HF. It is an independent predictor of mortality and is used to determine the eligibility of patients for treatment strategies. NYHA classification is identified as a baseline at the time of initial diagnosis then reassessed after treatment. This serial monitoring prognosticates patients based on the trajectory of their symptoms.<sup>1</sup>

NYHA Functional Classification for Stage C or Stage D Heart Failure <sup>1</sup>	
NYHA Classification	Definition By Symptoms
NYHA Class I	Asymptomatic with treatment with no limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitations, or shortness of breath.
NYHA Class II	Mild symptoms with slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigues, palpitations, shortness of breath, or chest pain.
NYHA Class III	Marked symptoms with significant limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitations, shortness of breath, or chest pain.
NYHA Class IV	Profound symptoms with symptoms of HF at rest. Any physical activity causes further discomfort.

## EVALUATION

### HISTORY AND PHYSICAL EXAMINATION

The history and physical examination remain the cornerstone in the assessment of HF:

- **Clinical history:** Review clinical history. Assess for the cause of an underlying cardiomyopathy, such as prior acute coronary syndrome (ACS)<sup>1</sup>, history of cancer<sup>6,7</sup>, inherited cardiomyopathy, etc.
- **Physical examination:** Height, weight compared to (known or estimated) dry weight, unintentional weight loss, BMI, blood pressure, heart rate, jugular venous pressure, cardiac evaluation, pulmonary evaluation, and examination of extremities<sup>1</sup>

### DIAGNOSTIC TESTING

After a complete history and physical examination, the diagnosis of HF is made in at risk or symptomatic patients by cardiac imaging to look for structural and/or functional heart disease:

- **Electrocardiogram (ECG)**
- **Chest x-ray (CXR)** is a useful initial diagnostic test for symptomatic patients to assess for cardiomegaly, pulmonary congestion, and interstitial or alveolar edema
- Resting **transthoracic echo (TTE)** is the most useful initial diagnostic test that provides diagnostic and prognostic data to guide evidence-based pharmacological and device-based therapy
  - Structural heart disease
    - Reduced left or right ventricular systolic function
    - Reduced ejection fraction
    - Reduced global longitudinal strain
    - Ventricular hypertrophy
    - Chamber enlargement
    - Wall motion abnormalities
    - Valvular heart disease
  - Evidence for increased filling pressures
    - Diastolic dysfunction with echo parameters, such as elevated E/e', elevated E/A, peak tricuspid regurgitation velocity.<sup>1,4,5</sup>

















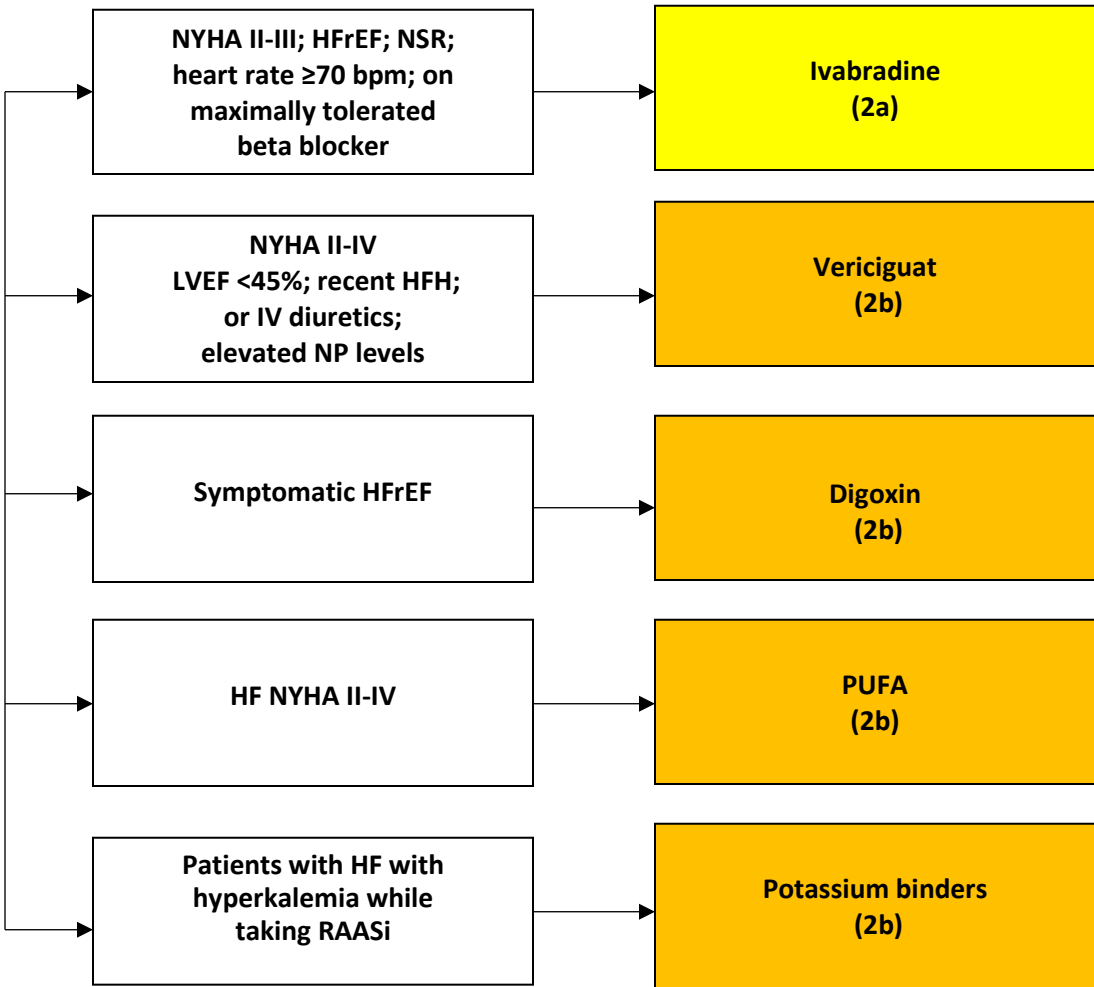


### TREATMENT CONT'D

ADDITIONAL TREATMENT FOR STAGE C AND STAGE D HEART FAILURE ONCE GDMT OPTIMIZED

## Treatment of HFrEF: Stage C and Stage D

### Consider Additional Therapies Once GDMT Optimized

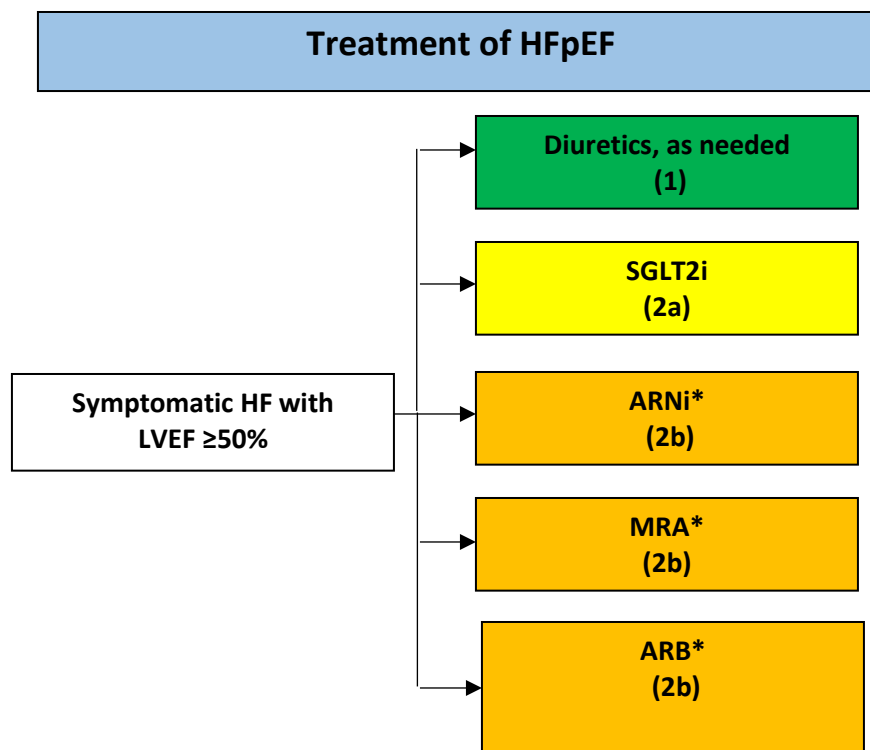




## TREATMENT CONT'D

Keep in mind that the **bold** medications are CCHCS formulary options for GDMT.<sup>1</sup>

- Patients with HFpEF (See algorithm below)
  - Avoid excessive sodium intake to 2 to 3 g/d with DASH diet
  - Antihypertensive medications should be titrated to attain blood pressure targets, which includes RAASi, beta blockers, and MRA
    - ARNi
    - ARB
  - Beta blocker
    - Continue AF/AFL rate control for improved symptom control, can also consider nondihydropyridine calcium channel blockers
    - Also indicated for patients with a history of MI, symptomatic CAD, or history of percutaneous coronary intervention (PCI)
  - MRA
  - SGLT2i<sup>1,4</sup>



- Specific cardiomyopathies require consultation referral, including but not limited to the following:
  - Valvular heart disease leading to HF
  - Pulmonary hypertension
  - Stage D (advanced) HF who may benefit from
    - Durable mechanical circulatory support (MCS), such as ventricular assist device (VAD) or total artificial heart (TAH)
    - Cardiac transplantation
    - Palliative care
  - Genetic cardiomyopathies
  - Congenital heart diseases
  - Cardiac amyloidosis<sup>1</sup>
  - Cardio-oncology from cancer-related cardiomyopathy<sup>6,7</sup>
  - HF during pregnancy or history of peripartum cardiomyopathy<sup>1</sup>



**TREATMENT CONT'D****DEVICE AND INTERVENTIONAL THERAPY**

On top of GDMT, specialist referral is required when considering treatment with cardiac implantable devices, such as implantable cardioverter-defibrillator (ICD) and cardiac resynchronization therapy (CRT), for the following patient populations.<sup>1</sup>

Indications for ICD and CRT Therapy <sup>1</sup>		
Population	ICD	CRT
If comorbidities or frailty limit expected survival to less than a year, continue GDMT without device therapy		
<b>Ischemic Cardiomyopathy</b>		
LVEF ≤ 35% at least 40 days post-MI, NYHA class II-III, on chronic GDMT	✓	
LVEF ≤ 30% at least 40 days post-MI, NYHA class I, on chronic GDMT	✓	
Sinus rhythm, left bundle branch block (LBBB) with QRS duration ≥ 150 ms, LVEF ≤ 30%, NYHA class I, on chronic GDMT		✓
<b>Nonischemic Cardiomyopathy</b>		
LVEF ≤ 35%, NYHA class II-III, on chronic GDMT	✓	
<b>ECG Criteria</b>		
High risk of ventricular arrhythmia for primary prevention of sudden cardiac death (SCD)	✓	
Genetic arrhythmogenic cardiomyopathy, LVEF ≤ 45%,	✓	
High-degree or complete heart block, LVEF 36-50%		✓
Atrial fibrillation/flutter (AF/AFL), LVEF ≤ 35%, on chronic GDMT, if <ul style="list-style-type: none"> <li>• Patient requires ventricular pacing</li> <li>• Patient meets other CRT criteria</li> <li>• Rate control therapy will allow near 100% ventricular pacing</li> </ul>		✓
Sinus rhythm, LBBB with QRS duration ≥ 120 ms, LVEF ≤ 35%, NYHA class II-ambulatory IV, on chronic GDMT		✓
Sinus rhythm, non-LBBB with QRS duration ≥ 150 ms, LVEF ≤ 35%, NYHA class II-ambulatory IV, on chronic GDMT		✓
Sinus rhythm, non-LBBB with QRS duration between 120-149 ms, LVEF ≤ 35%, NYHA class III-ambulatory IV, on chronic GDMT		✓
LVEF ≤ 35% on chronic GDMT with an anticipated requirement for significant ventricular pacing		✓

Wearable cardioverter-defibrillators (WCDs) are external devices capable of automatic detection and defibrillation of malignant arrhythmias (ventricular tachycardia [VT], ventricular fibrillation [VF]) that can lead to sudden cardiac death (SCD). Unlike ICDs, WCDs do not have pacing capabilities. There are two FDA approved WCDs: LifeVest® and ASSURE®. The indications for WCD therapy are:

- Temporary bridge therapy for indicated or interrupted ICD therapy
- Early post-MI (within 40 days) with LVEF ≤ 35%
- LVEF ≤ 35% early after coronary revascularization (e.g. PCI, coronary artery bypass graft [CABG]) within 90 days
- Potentially recoverable newly diagnosed nonischemic cardiomyopathy LVEF ≤ 35% who has been on GDMT <3 months or not yet on target doses of GDMT; reassess LVEF ≥3 months to determine if ICD is indicated
- Peripartum cardiomyopathy while awaiting repeat assessment of recovery of ventricular function
- Bridge to heart transplant

For patients in whom WCD is recommended by their specialist or after discharge from HLOC, providers would need to submit a Request For Services form (RFS) to obtain approval.<sup>9</sup>

## TREATMENT CONT'D

### Additional intervention therapy

- Ischemic cardiomyopathy with LVEF  $\leq$  35% with suitable coronary anatomy
  - Surgical revascularization (CABG) plus GDMT
- HFrEF with severe secondary mitral regurgitation (MR) NYHA II-IV
  - Optimize GDMT before intervention with secondary MR
  - If suitable anatomy, transcatheter edge-to-edge mitral valve repair or mitral valve surgery
- NYHA III with history of HF hospitalization and elevated natriuretic peptide levels
  - Wireless monitoring of pulmonary artery (PA) pressure with implanted hemodynamic monitor
- Patients with refractory HF despite GDMT and appropriate device therapy (Stage D)
  - Durable MCS, such as VAD or TAH
  - Cardiac transplantation
  - Palliative care, which can be initiated before HF Stage D<sup>1</sup>

### SUPPORT SERVICES

Timely referral for review and consideration of advanced HF therapies is crucial to achieve optimal patient outcomes. Think “I-NEED-HELP” to identify patients with advanced HF and assist in decision-making for referral to specialists:

Intravenous inotropes

NYHA class IIIB to IV or persistently elevated natriuretic peptides

End-organ dysfunction

LVEF  $\leq$  35%

Defibrillator shocks

Hospitalizations  $>$  1

Edema despite escalating diuretics

Low systolic blood pressure (SBP)  $\leq$  90 mmHg and high heart rate

Progressive intolerance or down-titration of GDMT

Clinical Indicators of Advanced HF
Repeated hospitalizations or emergency department visits for HF in the past 12 months.
Need for intravenous inotropic therapy.
Persistent NYHA functional class III to IV symptoms, despite therapy.
Severely reduced exercise capacity (peak $VO_{21}$ $<$ 14 mL/kg/min or $<$ 50% predicted, 6 min walk test distance $<$ 300 m, or inability to walk 1 block on level ground because of dyspnea or fatigue).
Intolerance to RAASi because of hypotension or worsening renal function.
Intolerance to beta blockers as a result of worsening HF or hypotension.
Recent need to escalate diuretics to maintain volume status, often reaching daily furosemide equivalent dose $>$ 160 mg/d or use of supplemental metolazone therapy.
Refractory clinical congestion.
Progressive deterioration in renal or hepatic function.
Worsening right HF or secondary pulmonary hypertension.
Frequent SBP $\leq$ 90 mm Hg.
Cardiac cachexia
Persistent hyponatremia (serum sodium, $<$ 134 mEq/L)
Refractory or recurrent ventricular arrhythmias; frequent ICD shocks.
Increased predicted 1-year mortality (eg, $>$ 20%) according to HF survival models (e.g., MAGGIC <sup>21</sup> , SHFM <sup>22</sup> ).

MAG-GIC, Meta-analysis Global Group in Chronic Heart Failure; SBP, systolic blood pressure; SHFM, Seattle Heart Failure model; and  $VO_{21}$  oxygen consumption/oxygen uptake.

## TREATMENT CONT'D

- Patients with stage C or D
  - Advised specialty consultation with multidisciplinary team
    - Guide GDMT
    - Specific patient education and support for self-care
  - Up to date vaccinations
    - Respiratory illnesses (e.g., influenza, pneumococcal, coronavirus)
  - Additional screening
    - Depression and social isolation
    - Frailty
    - Low health literacy<sup>1</sup>

## MONITORING

When a patient returns to clinic, the following steps should be taken:

- Assess patient adherence to diet and medications.
- Check blood pressure and heart rate. Initiate or adjust GDMT accordingly.
- Check patient's current weight and compare to their estimated or known dry weight. Initiate or adjust diuretic therapy accordingly.
- Check jugular venous pressure and examine the extremities to further assess for volume overload. Initiate or adjust diuretic therapy accordingly.
- Perform cardiac evaluation. Recheck ECG, if clinically indicated.
- Perform pulmonary evaluation. Recheck CXR, if clinically indicated.
- Consider rechecking the following labs, if clinically indicated:
  - CBC, if concern for anemia, increased bleeding risk, and/or infection
  - CMP, if on GDMT and/or diuretics
  - Other labs as clinically indicated: UA, lipid profile; iron studies; TSH
  - Do not order serial measurements of natriuretic peptides (BNP or NT-proBNP) because evidence for treatment guidance remains insufficient
- Patients that present with concerning signs or symptoms warrant transfer to a higher level of care (HLOC)

Repeat TTE in the follow patients:

- Significant clinical change (improvement or worsening despite GDMT)
- Receiving GDMT to reassess for invasive procedure or device therapy
  - >40 days after MI
  - >90 days after revascularization
  - >90 days after GDMT to optimize dosing<sup>1,5</sup>
- Patients with lifelong risk of cardiomyopathy, such as at-risk childhood cancer survivors, in whom cardiotoxicity may not manifest until decades after cancer treatment<sup>6,7</sup>

Point-of-care cardiac ultrasound (POCUS), if available, may be used to assess cardiac function, volume status and pulmonary congestion.

For advanced cardiac imaging (e.g., CMR) or invasive procedure, required consultation referral.

In select ambulatory patients with HF, CPET is recommended to determine appropriateness of advanced treatments (e.g., MCS such VAD or TAH, heart transplantation) in addition to GDMT. Required consultation referral to advanced heart failure program.<sup>1,5</sup>

**MONITORING CONT'D**

In patients with HFrEF, titrate GDMT to achieve target doses every 1-2 weeks depending on patient's symptoms, vital signs, volume status, and laboratory findings. Reaching target doses of all GDMT drug classes has been estimated to reduce all-cause mortality by 73% compared to no treatment. See GDMT Dosing below.<sup>1</sup>

GDMT Dosing <sup>1</sup>		
Drug	Initial Dose	Target Dose
<b>ARNi</b>		
Sacubitril/valsartan	49/51 mg BID (24/26 mg BID)	97/103 mg BID
<b>ACEi</b>		
<b>Enalapril</b>	2.5 mg BID	10-20 mg BID
<b>Lisinopril</b>	2.5-5 mg once daily	20-40 mg once daily
<b>ARB</b>		
<b>Losartan</b>	25-50 mg once daily	50-150 mg once daily
Valsartan	20-40 mg once daily	160 mg BID
<b>H-ISDN</b>		
<b>Isosorbide dinitrate</b>	20-30 mg every 6-8 hours	120 mg total daily in divided doses
<b>Hydralazine</b>	25-50 mg every 6-8 hours	300 mg total daily in divided doses
<b>Beta Blockers</b>		
<b>Carvedilol</b>	3.125 mg BID	25-50 mg BID
Carvedilol CR	10 mg once daily	80 mg once daily
<b>Metoprolol succinate XL</b>	25 mg once daily	200 mg once daily
Bisoprolol	1.25 mg once daily	10 mg once daily
<b>MRA</b>		
<b>Spirolactone</b>	25 mg once daily	25-50 mg once daily
Eplerenone	25 mg once daily	50 mg once daily
<b>SGLT2i</b>		
<b>Empagliflozin</b>	10 mg once daily	10 mg once daily
Dapagliflozin	10 mg once daily	10 mg once daily
<b>I<sub>f</sub> Channel Inhibitor</b>		
Ivabradine	5 mg BID	7.5 mg BID
<b>Soluble Guanylate Cyclase Stimulator</b>		
Vericiguat	2.5 mg once daily	10 mg once daily
<b>Cardiac Glycoside</b>		
<b>Digoxin</b>	0.125-0.25 mg daily	Titrate to achieve serum digoxin level between 0.5-0.9 ng/mL

**Bold = formulary medication**

Co-management with specialists is recommended for patients who:

- Cannot reach target doses of GDMT because of limitations with blood pressure, heart rate, renal function, electrolytes, or other issues
- Have frequent episodes/hospitalization due to HF decompensation
- Have comorbidities that affect HF management, such as valvular heart disease, arrhythmias, cardiac ischemia, or other issues
- Require cardiovascular surgery or other cardiac interventions like catheterization, ablation, or biopsy
- Require device therapy, such as ICD or CRT
- Have Stage D (advanced) HF

**HOSPITALIZATIONS DUE TO HEART FAILURE**

**HEART FAILURE DECOMPENSATION**

Most HF hospitalizations for decompensation are not truly “acute” but follow a gradual increase in cardiac filling pressures on preexisting structural heart disease, often with precipitating factors as listed in the table. Patients may present with unintentional weight gain or weight loss over several days or weeks, worsening or sudden onset shortness of breath/dyspnea on exertion, orthopnea, paroxysmal nocturnal dyspnea, fatigue, chest pain, and peripheral edema.

Initial triage includes clinical assessment of

- Blood pressure
- Heart rate
- Current weight compared to their known or estimated dry weight
- Jugular venous pressure
- Cardiac evaluation
- Pulmonary evaluation
- Examination of extremities

Factors Precipitating HF Hospitalizations
ACS
Uncontrolled hypertension
AF/AFL or other arrhythmias
Additional cardiac disease (e.g., endocarditis)
Acute infection (e.g., pneumonia, urinary tract infection)
Nonadherence to medication or dietary intake
Anemia
Hyperthyroidism/hypothyroidism
Medications that increase sodium retention (e.g., NSAIDs)
Medications with negative inotropic effect (e.g., verapamil)

Some patients present with pulmonary congestion/edema and severe hypertension. Others present with hypoperfusion or cardiogenic shock, conduction block, malignant arrhythmias, or cardiac ischemia. Patients that present with concerning signs or symptoms warrant transfer to HLOC.

**RETURN FROM HIGHER LEVEL OF CARE CLINIC FOLLOW-UP**

Hospitalizations due to HF decompensation signal worse prognosis and the need to restore hemodynamic compensation, so early **follow-up within 5 days** of hospital discharge is required. When a patient returns from a recent hospitalization to their clinic follow-up, this is an opportunity to redirect the disease trajectory. Reassess and educate the patient on precipitating factors, comorbidities, optimal volume status as determined by their dry weight, and the importance of medication and dietary adherence. Goals of care should also be addressed. Patients who present with residual congestion and/or weight that is still above their dry weight merit close follow-up because they face a higher risk of rehospitalization and death. These patients warrant adjustment of their diuretic regimen to manage fluid retention and to decrease the risk of rehospitalizations. Finally, GDMT should be optimized toward target doses to decrease the risk of rehospitalizations and death. (See GDMT Dosing on page 20)

Clinic Follow-Up After HF Hospitalization
Adjust diuretics based on volume status and electrolytes
Optimize GDMT Plan to resume medications held during hospitalization Plan to initiate new medications Plan to titrate GDMT to target doses
Coordinate labs (e.g., CMP with medication adjustments)
Reinforce patient adherence to diet and medication
Address precipitating factors
Address high-risk comorbid conditions Renal dysfunction (acute and/or chronic) Pulmonary disease DM Mental health/substance use disorder Cognitive impairment
Refer for GDMT co-management, if indicated
Refer for intervention or device therapy, if indicated
Discuss goals of care and promote shared decision-making

**HOSPITALIZATIONS DUE TO HEART FAILURE CONT'D**

When a patient returns from HLOC for HF, consider using the following discharge checklist to optimize management.

Hospital Discharge Checklist		
LVEF	Document recent LVEF % and recent assessment	Order repeat TTE, if clinically indicated
ARNi or ACEi/ARB	Document name of medication, current/target dose	If not prescribed, document reason
H-ISDN	Document name of medication, current/target dose	If not prescribed, document reason
Beta blocker	Document name of medication, current/target dose	If not prescribed, document reason
MRA	Document name of medication, current/target dose	If not prescribed, document reason
SGLT2i	Document name of medication, current/target dose	If not prescribed, document reason
Ivabradine	Document ivabradine current/target dose	
Vericiguat	Document vericiguat current/target dose	
Digoxin	Document digoxin dose	Document serum digoxin level
Anticoagulation	Document indication, such as comorbid AF/AFL	Document name of medication/dose
Antiplatelet(s)	Document indication, such as clinical ASCVD	Document name of medication/dose
Lipid lowering	Document indication, such as clinical ASCVD	Document name of medication/dose
Lab monitoring	Document recent labs/labs upon discharge	Order next set of labs/date
SCD prevention	Document indication for ICD and/or bridge WCD	Order referral to specialist, if indicated
BP control	Document BP at discharge and at follow up	Titrate GDMT for BP <130/80

Co-management with specialists is recommended for patients who:

- Cannot reach target doses of GDMT because of limitations with blood pressure, heart rate, renal function, electrolytes, or other issues
- Have frequent hospitalization due to HF decompensation
- Have comorbidities that affect HF management, such as VHD, arrhythmias, cardiac ischemia, or other issues
- Require cardiovascular surgery or other cardiac interventions like catheterization, ablation, or biopsy
- Require device therapy, such as ICD or CRT
- Have Stage D (advanced) HF

**REFERENCES**

1. Heidenreich, Paul A., et al. "2022 AHA/ACC/HFSA guideline for the management of heart failure: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines." *Journal of the American College of Cardiology* 79.17 (2022): e263-e421.
2. Konstam, Marvin A., et al. "Evaluation and management of right-sided heart failure: a scientific statement from the American Heart Association." *Circulation* 137.20 (2018): e578-e622.
3. Houston, Brian A., Evan L. Brittain, and Ryan J. Tedford. "Right Ventricular Failure." *New England Journal of Medicine* 388.12 (2023): 1111-1125.
4. Kittleson, Michelle M., et al. "2023 ACC Expert Consensus Decision Pathway on Management of Heart Failure With Preserved Ejection Fraction: A Report of the American College of Cardiology Solution Set Oversight Committee." *Journal of the American College of Cardiology* 81.18 (2023): 1835-1878.
5. Heidenreich, Paul A., et al. "2020 ACC/AHA clinical performance and quality measures for adults with heart failure: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures." *Circulation: Cardiovascular Quality and Outcomes* 13.11 (2020): e000099.
6. Alexandre, Joachim, et al. "Cardiovascular toxicity related to cancer treatment: a pragmatic approach to the American and European cardio-oncology guidelines." *Journal of the American Heart Association* 9.18 (2020): e018403.
7. Bottinor, Wendy, and Eric J. Chow. "Mitigating, monitoring, and managing long-term chemotherapy-and radiation-induced cardiac toxicity." *Hematology* 2022.1 (2022): 251-258.
8. Health Care Department Operations Manual, Chapter 1, Article 4.22, Medical Provider Documentation Expectations
9. Al-Khatib, Sana M., et al. "2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society." *Journal of the American College of Cardiology* 72.14 (2018): e91-e220.

Reference articles available upon request to [m CDADS@cdcr.ca.gov](mailto:CDADS@cdcr.ca.gov)

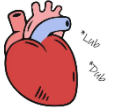
## PATIENT EDUCATION



### Heart Failure: What you Should Know

#### What is Heart Failure?

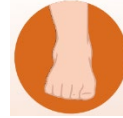
- Heart “failure” does not mean your heart has failed or stopped beating. It means that your heart is not pumping blood through your body as well as it should.
- This can result in fluid backing up in your body because your organs do not get as much blood as they need.



#### How do I know if I have Heart Failure?

If you have heart failure you may have any of the following symptoms:

- Swelling in your belly or feet, ankles, and legs
- Feeling short of breath
- Feeling tired, weak, lightheaded, or dizzy
- Racing heart, even when resting
- Gaining weight



#### Is There a Test for Heart Failure?

If your health care team thinks you may have heart failure, they may order some of these tests:

- **Electrocardiogram (ECG):** This test measures the electrical pulses made by your heart. This is measured by soft pads placed on your skin.
- **Chest X-ray:** This can show if there is fluid in your lungs and shows the general shape of your heart and large blood vessels.
- **Echocardiogram:** This test uses sound waves to create a picture of your heart as it is beating.
- **Stress test:** You may be asked to walk or run on a treadmill while you have an ECG or other heart tests. Exercise makes the heart beat harder and helps the doctor see what the heart is doing under stress. If you cannot run or walk, you might get medicine to make your heart beat harder.
- **Blood tests:** There are blood tests to measure levels of certain elements in your blood. People with heart failure may have high levels.



Source: Shutterstock

#### How is Heart Failure Treated?

- The first treatment is healthy lifestyle, which includes heart-healthy food choices and exercise.
- Heart failure is usually treated with several medications prescribed by your health care provider. Some of these medications can cause increased urination, dry mouth (xerostomia), rash, or other side effects. Please notify your doctor if you experience a potential side effect.
- Other treatments can include a device placed in your chest to protect the heart from abnormal rhythms.
- In some cases, heart failure can be managed with procedures done by heart specialists.



#### What Can I do if I Have Heart Failure?

- Take all your medicines every day, even if you feel well.
- Tell your health care team if you feel sick or suddenly gain weight. This could mean there is fluid backing up in your body.
- Complete lab tests and heart tests as ordered by your health care provider.
- Eat less salt. Follow heart-healthy food choices.
- Lose weight if you are overweight or obese
- Don't smoke or drink alcohol
- Exercise as recommended by your health care team
- Do not take over the counter medications purchased at the canteen. Some common medicines like Aleve and Advil can make heart failure worse.
- Follow up with your health care provider and any heart specialists as scheduled.





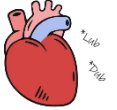
## EDUCACIÓN PARA EL PACIENTE



## Insuficiencia Cardíaca: Lo que Debe Saber

## ¿Qué es la Insuficiencia Cardíaca?

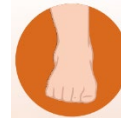
- La “insuficiencia” cardíaca no significa que el corazón haya fallado o haya dejado de latir. Significa que su corazón no está bombeando la sangre a través de su cuerpo tan bien como debería.
- Esto puede provocar una acumulación de líquido en su cuerpo porque sus órganos no reciben tanta sangre como necesitan.



## ¿Cómo sé si sufro de Insuficiencia Cardíaca?

Si sufre de insuficiencia cardíaca, puede presentar alguno de los siguientes síntomas:

- Hinchazón en el vientre o en los pies, tobillos y piernas.
- Sensación de falta de aire
- Sensación de cansancio, debilidad, mareo o vértigo
- Corazón acelerado, incluso estando en reposo
- Aumento de peso



## ¿Existe una Prueba para Detectar la Insuficiencia Cardíaca?

Si su equipo de atención médica considera que usted puede sufrir de insuficiencia cardíaca, es posible que soliciten algunas de estas pruebas:

- **Electrocardiograma (ECG, por sus siglas en inglés):** Esta prueba mide los impulsos eléctricos emite el corazón. Se mide mediante la colocación de almohadillas blandas sobre la piel.
- **Radiografía de Tórax:** Puede revelar si hay líquido en los pulmones y muestra el perfil general de su corazón y los principales vasos sanguíneos.
- **Ecocardiograma:** Esta prueba utiliza ondas sonoras para crear una imagen de su corazón mientras late.
- **Prueba de Esfuerzo:** Es posible que le pidan que camine o corra en una cinta caminadora mientras le practican un ECG u otras pruebas cardíacas. El ejercicio hace que el corazón lata con más intensidad y ayuda al médico a ver lo que hace el corazón en situaciones de esfuerzo. Si no puede correr ni caminar, es posible que le administren medicamentos para que su corazón lata con más fuerza.
- **Análisis de sangre:** Existen análisis de sangre para medir los niveles de determinados elementos en la sangre. Las personas con insuficiencia cardíaca pueden tener niveles elevados.



## ¿Cómo se Trata la Insuficiencia Cardíaca?

- El primer tratamiento es un estilo de vida saludable, que incluye elección de vida saludables para el corazón y ejercicio.
- La insuficiencia cardíaca suele tratarse con varios medicamentos recetados por su proveedor de atención médica. Algunos de estos medicamentos pueden provocar aumento de la orina, sequedad de boca (xerostomía), sarpullido u otros efectos secundarios. Notifique a su médico si experimenta un posible efecto secundario.
- Otros tratamientos pueden incluir la colocación de un dispositivo en el pecho para proteger el corazón de ritmos anormales.
- En algunos casos, la insuficiencia cardíaca puede tratarse con procedimientos realizados por especialistas del corazón.



## ¿Qué puedo hacer si sufro de insuficiencia cardíaca?

- Tome todos sus medicamentos a diario, aunque se sienta bien.
- Informe a su equipo de atención médica si se siente mal o aumenta de peso repentinamente. Esto podría significar que hay líquido acumulado en su cuerpo.
- Complete los análisis de laboratorio y las pruebas cardiológicas que le indique su proveedor de atención médica.
- Consuma menores cantidades de sal. Elija alimentos saludables para el corazón.
- Pierda peso si tiene sobrepeso u obesidad
- No fume ni consuma alcohol
- Haga ejercicio tal como se lo recomiende su equipo de atención médica
- No tome medicamentos de venta libre comprados en la cantina. Algunos medicamentos comunes como Aleve y Advil pueden empeorar la insuficiencia cardíaca.
- Haga el seguimiento programado con su proveedor de atención médica y cualquier especialista del corazón.

