



**BACKGROUND:** This document is intended to provide a brief rationale for each of the measures that are measured under Target: Heart Failure for each of the three key categories: (1) Medication Optimization, (2) Early Follow-up Care Coordination, and (3) Enhanced Patient Education. To qualify for the Target: Heart Failure Honor Roll, hospitals must demonstrate 50% or greater compliance on the following measures within those key areas for at least one calendar quarter.

For more information on Target: Heart Failure, visit [Heart.org/TargetHF](https://www.heart.org/TargetHF)

---

---

## ACE Inhibitor (ACEI) and Angiotensin Receptor Blocker (ARB) or Angiotensin Receptor/Neprilysin Inhibitor (ARNI) at Discharge:

### Guideline Recommendations:

#### Class I

The clinical strategy of inhibition of the renin-angiotensin system with ACE inhibitors (Level of Evidence: A) OR ARBs (Level of Evidence: A) OR ARNI (Level of Evidence: B-R) in conjunction with evidence-based beta blockers (20-22), and aldosterone antagonists in selected patients, is recommended for patients with chronic HFrEF to reduce morbidity and mortality. (Citation 1, p. e144)

The use of ACE inhibitors is beneficial for patients with prior or current symptoms of chronic HFrEF to reduce morbidity and mortality (Level of Evidence: A). (Citation 1, p. e144)

The use of ARBs to reduce morbidity and mortality is recommended in patients with prior or current symptoms of chronic HFrEF who are intolerant to ACE inhibitors because of cough or angioedema (LanTm[w 9 -0 3 9 507 (i)-

R). (Citation 1, p. e145)

Level of Evidence: B-





can reduce the risk of death and the combined risk of death or hospitalization. These benefits of beta blockers were seen in patients with or without CAD and in patients with or without diabetes mellitus, as well as in women and blacks. The favorable effects of beta blockers were also observed in patients already taking ACE inhibitors.

Three beta blockers have been shown to be effective in reducing the risk of death in patients with chronic HFrEF: bisoprolol and sustained-release metoprolol (succinate), which selectively block beta-1- $\epsilon$  [ ] .t € ¶ and carvedilol, which blocks alpha-1-, beta-1-, and beta-2-receptors. Positive findings with these 3 agents, however, should not be considered a beta-blocker class effect. Bucindolol lacked uniform effectiveness across different populations, and short-acting metoprolol tartrate was less effective in HF clinical trials. Beta-1 selective blocker nebivolol demonstrated a modest reduction in the primary endpoint of all-cause mortality or cardiovascular hospitalization but did not affect mortality alone in an elderly population that included patients with HFpEF.

Beta blockers should be prescribed to all patients with stable HFrEF unless they have a contraindication to their use or are intolerant of these drugs. Because of its favorable effects on survival and disease progression, a clinical trial-proven beta blocker should be initiated as soon as HFrEF is diagnosed. Even when symptoms are mild or improve with other therapies, beta blocker therapy is important and s



#### Class IIb

In appropriately selected patients with HFpEF (Eg. " " è! \$ò " \_o < R. \_ ] 4 > 'o < \_o ' t € ) ' R] q g, g r (Eg. g ' E' year, estimated glomerular filtration rate >30 mL/min, creatinine <2.5 mg/dL, potassium <5.0 mEq/L), aldosterone receptor antagonists might be considered to decrease hospitalizations. (Level of Evidence: B-R) (Citation 1, p. e147)

#### Class III:

Inappropriate use of aldosterone receptor antagonists is potentially harmful because of life-threatening hyperkalemia or renal insufficiency when serum creatinine is more than 2.5 mg/dL in men or more than 2.0 mg/dL in women (or estimated glomerular filtration rate <30 mL/min/1.73 m<sup>2</sup>), and/or potassium more than 5.0 mEq/L. (Level of Evidence: B) (Citation 2, p. e269)

#### Rationale:

The landmark RALES trial (Randomized Aldactone Evaluation Study) showed a 30% reduction in mortality (RR=0.70, 95% CI 0.57-0.87) (Lancet 2001; 358: 2167-2175)





[Failure](#) summarizes data relevant to contributory risk and provides guidance and recommendations on the management of hypertension, obesity, diabetes mellitus, hyperlipidemia, and metabolic syndrome in the development and prognosis of HF. It promotes communication between physicians and other healthcare professionals and patients on the management of these comorbidities. (Page e535) (Citation 5)

#### Class IIa

Scheduling an early follow-up visit (within 7 to 14 days) and early telephone follow-up (within 3 days) of hospital discharge is reasonable. (*Level of Evidence: B*) (Citation 2, p. e290)

#### Rationale:

The prognosis of patients hospitalized with HF, and especially those with serial readmissions, is suboptimal. Hence, appropriate levels of symptomatic relief, support, and palliative care for patients with chronic HF should be addressed as an ongoing key component of the plan of care, especially when patients are hospitalized with acute decompensation.

For patients with HF, the transition from inpatient to outpatient care can be an especially vulnerable period because of the progressive nature of the disease state, complex medical regimens, the large number of comorbid conditions, and the multiple clinicians who may be involved. Patient education and



Throughout the hospitalization as appropriate, before hospital discharge, at the first post-discharge visit, and in subsequent follow-up visits, the following should be addressed. (*Level of Evidence: B*) (Citation 2, p. e289--290):

- a. assessment of precipitant causes of HF, barriers to optimal care transitions, and limitations in post-discharge care
- b. assessment of volume status and supine/upright hypotension with adjustment of HF therapy
- c. assessment of volume status and supine/upright hypotension with adjustment of HF therapy
- d. assessment of volume status and supine/upright hypotension with adjustment of HF therapy
- e. assessment of volume status and supine/upright hypotension with adjustment of HF therapy
- f. assessment and management of comorbid conditions\*
- g. assessment and management of comorbid conditions\*
- h. reinforcement of HF education, self-care, emergency plan, and follow-up



includes special emphasis on ensuring adherence to an evidence-based medication regimen is associated with improved patient outcomes. (Citation 2, p. e290)

More intensive delivery of discharge instructions, coupled tightly with subsequent well-coordinated follow-up care for patients hospitalized with HF, has produced positive results in several studies. The addition of a 1-hour, nurse educator–delivered teaching session at the time of hospital discharge, using standardized instructions, resulted in improved clinical outcomes, increased self-care and treatment adherence, and reduced cost of care. Patients receiving the education intervention also had a lower risk of rehospitalization or death and lower costs of care (365). There are ongoing efforts to further develop evidence-based interventions in this population. Transitional care extends beyond patient education. Care information, especially changes in orders and new diagnostic information, must be transmitted in a timely and clearly understandable form to all of the patient’s clinicians who will be delivering follow-up care. Other important components of transitional care include preparation of the patient and caregiver for what to expect at the next site of care, reconciliation of medications, follow-up plans for outstanding tests, and discussions about monitoring signs and symptoms of worsening conditions. Early outpatient follow-up, a central element of transitional care, varies significantly across US hospitals. Early post-discharge follow-up may help minimize gaps in understanding of changes to the care plan or knowledge of test results and has been associated with a lower risk of subsequent rehospitalization. A follow-up visit within 7 to 14 days and/or a telephone follow-up within 3 days of hospital discharge are reasonable goals of care. (Citation 2, p. e290)

## Outpatient Cardiac Rehabilitation Program Referral:

### Guideline Recommendations:

#### Class I

Exercise training (or regular physical activity) is recommended as safe and effective for patients with HF who are able to participate to improve functional status. (*Level of Evidence: A*) (Citation 2, p. e264)

#### Class IIa

Cardiac rehabilitation can be useful in clinically stable patients with HF to improve functional capacity, exercise duration, Health-Related Quality of Life (HRQOL), and mortality. (*Level of Evidence: B*) (Citation 2, p. e264)

It is recommended that HF disease management include integration and coordination of care between the primary care physician and HF care specialists and with other agencies, such as home health and cardiac rehabilitation. (*Strength of Evidence 5 C*) (Citation 4, p. e103)

### Rationale:

Exercise training services have been shown to improve functional status and may help reduce morbidity and mortality in persons with stable chronic heart failure with reduced HFrEF. However, these services are used in a minority of eligible patients. A key component to outpatient exercise training (typically carried out in a CR program) is the appropriate and timely referral of patients. Generally, the most important time for this referral to take place is while the patient is hospitalized for a HFrEF. Effective referral of appropriate inpatients to an outpatient exercise training program is the responsibility of the healthcare team within a healthcare system that is primarily responsible for providing cardiovascular care to the patient with HFrEF during hospitalization. Published evidence suggests that automatic referral systems, accompanied by CR referral and enrollment, where exercise training typically ta





## Provision of at least 60 minutes of heart failure education by a qualified heart failure educator:

### Guideline Recommendations:

#### Class I

Patients with HF should receive specific education to facilitate HF self-care (*Level of Evidence: B*) (Citation 2, p. e262)

Throughout the hospitalization as appropriate, before hospital discharge, at the first post-discharge visit, and in subsequent follow-up visits, the following should be addressed. (*Level of Evidence: B*) (Citation 2, p. e289)

- a. precipitant causes of HF, barriers to optimal care transitions, and limitations in post-discharge
- b. assessment of volume status and supine/upright hypotension with adjustment of HF therapy as
- c. assessment of renal function and electrocardiogram
- d. assessment of medication adherence
- e. assessment of social support
- f. assessment of patient readiness for self-care



includes special emphasis on ensuring adherence to an evidence-based medication regimen is associated with improved patient outcomes. More intensive delivery of discharge instructions, coupled tightly with subsequent well-coordinated follow-up care for patients hospitalized with HF, has produced positive results in several studies. The addition of a 1-hour, nurse educator– delivered teaching session at the time of hospital discharge, using standardized instructions, resulted in improved clinical outcomes, increased self-care and treatment adherence, and reduced cost of care. Patients receiving the education intervention also had a lower risk of rehospitalization or death and lower costs of care. There are ongoing efforts to further develop evidence-based interventions in this population. (Citation 2, p. e290)

Education, support, and involvement of patients with HF and their families are critical and often complex, especially during transitions of care. Failure to understand and follow a detailed and often nuanced plan of care likely contributes to the high rates of HF 30-day rehospitalization and mortality seen across the United States. One critical intervention to ensure effective care coordination and transition is the provision of a comprehensive plan of care, with easily understood, culturally sensitive, and evidence-based (at)8.4 (i)-6.7 (e)5.6 (n)5.4 (td



- Video tape
- One-on-one or group discussion
- Reading materials, translators, telephone calls, mailed information
- Internet
- Visits

Repeated exposure to material is recommended because a single session is never sufficient (*Strength of Evidence B*). (Citation 4, p. e100)

### Rationale:

Successful education is an interactive process in which patients and caregivers participate by asking questions and by demonstrating that they have comprehended and retained what they were told. Misperceptions by patients and family are very common, but they can be avoided when an interactive learning process is used.<sup>4</sup> Very few clinicians have strategies in place for assessing that patients have understood and retained the education given to them. Retention of learned material is poor among the elderly and any patient with a chronic disease, but it is enhanced when the learner shows mastery of the learned material by recitation of specific details or by demonstration. (Citation 4, p. e101)

Although most clinicians would argue for the value of face-to-face education and counseling, studies have shown that select patients who are motivated to learn and change can derive significant benefit from interventions delivered by mail, telephone, or technology. (Citation 4, p. e100)

### Citations:

1. Yancy CW, Jessup M, Bozkurt B, Butler J, Casey DE Jr, Colvin MM, Drazner MH, Filippatos GS, Fonarow GC, Givertz MM, Hollenberg SM, Lindenfeld J, Masoudi FA, McBride PE, Peterson PN, Stevenson LW, Westlake C. 2017 ACC/AHA/HFSA focused update of the 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America. *Circulation*. 2017;136:e161. DOI: 10.1161/CIR.0000000000000509. Available at: <http://circ.ahajournals.org/content/136/6/e137>



5. Bozkurt B, Aguilar D, Deswal A, Dunbar SB, Francis GS, Horwich T, Jessup M, Kosiborod M, Pritchett AM, Ramasubbu K, Rosendorff C and Yancy C. Contributory Risk and Management of Comorbidities of Hypertension, Obesity, Diabetes Mellitus, Hyperlipidemia, and Metabolic Syndrome in Chronic Heart Failure: A Scientific Statement From the American Heart Association. *Circulation*. 2016; 134:e535. doi: 10.1161/CIR.0000000000000450 Available at: <http://circ.ahajournals.org/content/134/23/e535>