



Getting Started Kit: Improved Care for Patients with Congestive Heart Failure How-to Guide

5 Million Lives Campaign

We invite you to join the 5 Million Lives Campaign, a national initiative to dramatically improve the quality of American health care. The Institute for Healthcare Improvement (IHI) and its partners seek to engage thousands of U.S. hospitals in an effort to reduce harm for five million American patients between December 2006 and December 2008. This ambitious work builds upon the great energy and commitment shown by hospitals during the 100,000 Lives Campaign, a national, IHI-led initiative that focused on reducing unnecessary mortality and ran from December 2004 to June 2006. Complete details, including materials, contact information for experts, and web discussions, are on the web at <http://www.ihl.org/IHI/Programs/Campaign/>.

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This How-to Guide is dedicated to the memory of David R. Calkins, MD, MPP (May 27, 1948 – April 7, 2006) -- physician, teacher, colleague, and friend -- who was instrumental in developing the Campaign's science base. David was devoted to securing the clinical underpinnings of this work, and embodied the Campaign's spirit of optimism and shared learning. His tireless commitment and invaluable contributions will be a lifelong inspiration to us all.

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Campaign Donors

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Contributors

The work of several leading organizations has informed the development of this guide.

These include:

American Heart Association
Society of Hospital Medicine
Centers for Medicare and Medicaid Services
American College of Cardiology

Goal:

Significantly improve care and reduce readmissions for patients with congestive heart failure by reliably implementing the components of care recommended in this Guide.

What Is Congestive Heart Failure?

For many years, congestive heart failure (CHF) was defined as a condition in which the heart fails to pump an adequate supply of blood to meet the body's needs. This definition, although correct, is now recognized as incomplete. Congestive heart failure is now accepted as a complex clinical syndrome that can result from any structural or functional cardiac disorder that impairs the ability of the ventricle to fill with or eject blood. It is characterized by dyspnea and fatigue secondary to structural and functional changes in the heart.

The chief symptoms of congestive heart failure (CHF)—dyspnea and fatigue—limit exercise tolerance and promote fluid retention, which may lead to pulmonary congestion and dependent edema, and significantly impact a patient's ability to function. Patients may have difficulty lying flat in bed secondary to fluid overload in the lungs and dependent edema, especially swelling of the lower extremities. Occasionally, patients with CHF do not have obvious clinical signs or symptoms, or their signs and symptoms may be attributed to another cardiac or noncardiac disorder.

Because not all patients have volume overload at the time of initial or subsequent evaluation, the term "heart failure" is often preferred over the term "congestive heart failure." The 5 Million Lives Campaign will use the term "congestive heart failure."

Patients with congestive heart failure or left ventricular dysfunction CHF typically present in one to three ways:

- With a syndrome of decreased exercise capacity;
- With a syndrome of fluid retention;
- With no symptoms or symptoms of another cardiac or noncardiac disorder.

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The 5 Million Lives Campaign is focusing initially on inpatient treatment for patients with congestive heart failure, in an effort to reduce harm and prevent the need for hospital readmission. The first job for hospitals is to reliably implement the in-hospital interventions described in this How-to Guide and then to focus aggressively on the transition of patients out of the hospital.

Hospitals that go beyond a basic discharge plan and focus intensively on improving the transition of patients from hospital to ambulatory care will have a much greater impact on reducing rehospitalizations. Numerous studies have demonstrated the benefit of prompt post-discharge support and follow-up, and hospitals can play a pivotal role in initiating a strong ambulatory care plan. Additional changes to improve the hospital's transition of patients to the community will be added by the spring of 2007.

Phillips CO, Wright SM, Kern DE, Singa RM, Shepperd S, Rubin HR. Comprehensive discharge planning with postdischarge support for older patients with congestive heart failure. *JAMA*. 2004; 291:1358-1367.

Why Is Delivering Reliable, Evidence-Based CHF Care Important?

Congestive heart failure is a major and growing public health problem, affecting 4.9 million people, mostly elderly, with 550,000 new cases diagnosed each year in the US. Congestive heart failure is the underlying cause for 12 to 15 million office visits and 6.5 million hospital days each year. As the elderly population grows in coming decades, the prevalence of CHF is expected to increase substantially.

Heart Disease and Stroke Statistics: 2006 update. *Journal of the American Heart Association*. Dallas, TX: American Heart Association; 2006.

O'Connell JB, Bristow MR. Economic impact of heart failure in the United States: Time for a different approach. *J Heart Lung Transplant*. 1994;13:S107-112.

CHF carries with it a substantial human toll. The debilitation from the condition itself significantly affects a person's ability to function in daily life. Yet, because of inadequate treatment, discharge guidance, and follow-up, many patients with CHF are caught in a "revolving door" process that ultimately culminates in deterioration and rehospitalization. This is reflected in the following readmission rates among 616,000 Medicare discharges in 2005: 27% within 30 days, 39% within 60 days, and nearly 50% within 90 days of hospital discharge.

Personal communication with Stephen F. Jencks MD, MPH, Centers for Medicare & Medicaid Services, based on MedPar data (Medicare hospital claims).

In addition to its human toll, CHF carries a substantial economic burden. The estimated direct and indirect cost of CHF in the US for 2006 is \$29.6 billion. The unacceptably high rehospitalization rate drives burgeoning costs and also provides a signal that current management approaches to CHF are less than optimal. Evidence-based treatment approaches offer opportunities to reduce mortality and rehospitalization rates for patients with CHF.

Heart Disease and Stroke Statistics: 2006 update. *Journal of the American Heart Association*. Dallas, TX: American Heart Association; 2006.

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The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Centers for Medicare & Medicaid Services (CMS) have both identified CHF as an important area for improvement in hospitals. CMS has included CHF as a diagnosis for which participating hospitals may collect and report data on quality measures. Public reporting and access to results of this data have begun, and it is likely that all hospitals will be required to report this data publicly in the future. In addition, reliable performance of evidence-based CHF care will be a target for pay-for-performance initiatives.

What Are the Key Components of Reliable, Evidence-Based CHF Care?

Numerous studies have established a firm evidence base indicating that specific components of CHF care reduce morbidity and mortality. Of course, care must be tailored to the patient's clinical condition and comorbidities, but the following seven key care components should be provided to all CHF patients, in the absence of contraindications or intolerance:

1. Left ventricular systolic (LVS) function assessment
2. ACE-inhibitor or angiotensin receptor blockers (ARB) at discharge for CHF patients with systolic dysfunction (Left Ventricular Ejection Fraction (LVEF) <40%)
3. Anticoagulant at discharge for CHF patients with chronic or recurrent atrial fibrillation (AF)
4. Smoking cessation advice and counseling
5. Discharge instructions that address all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring, and what to do if symptoms worsen
6. Influenza immunization* (seasonal)
7. Pneumococcal immunization*

*Influenza and pneumococcal immunization are included as components based on recommendations from the Advisory Committee on Immunization Practices (ACIP) for screening and providing vaccination prior to discharge for high-risk hospitalized patients.

<http://www.cdc.gov/mmwr/PDF/rr/rr4608.pdf>

<http://www.cdc.gov/mmwr/PDF/rr/rr5510.pdf>

ACIP recommends special priority for immunization of individuals with pulmonary or cardiac disease (MMWR July 28, 2006, page 11), and influenza immunization reduces the risk of hospitalization for persons with heart failure. Pneumococcal vaccine is

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likewise especially recommended for persons with heart failure (MMWR April 4, 1997, RR-8) and is likely to be of special value to them since it is most effective in preventing invasive disease for which heart failure patients are at higher risk. There is no evidence that patients benefit from deferring immunization until after discharge.

The American College of Cardiology (ACC) and the American Hospital Association (AHA) have included all but the immunization components in their 2005 Clinical Performance Measures for Adults with Chronic Heart Failure. Cardiologists and expert panels have reached broad consensus that these care components should be provided to all patients with CHF, unless a clear contraindication exists and is documented in the medical record.

ACC/AHA 2005 Clinical Performance Measures for Adults with Chronic Heart Failure. Journal of the American College of Cardiology. 2005;46:1145-1178.

The Campaign also strongly recommends that hospitals consider an additional evidence-based intervention:

- Beta-blocker therapy at discharge for stabilized patients with left ventricular systolic dysfunction, without contraindications

Beta-blocker therapy is recommended by the AHA/ACC 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult and is supported by robust evidence that this class of drugs substantially improves clinical outcomes. Beta-blocker use at discharge in eligible patients is also one of the key performance measures in the AHA's Get With The Guidelines-HFSM (GWTG-HFSM) initiative.

Nonetheless, although strongly supported by the Campaign, a performance measure for beta-blocker therapy at discharge is not currently included in the ACC/AHA Heart Failure Clinical Performance Measures or JCAHO and CMS Core Measures, and there still is some debate about the best time to initiate treatment. Therefore, this measure is currently optional for the Campaign, and is not yet included in the seven key components of care for universal adoption by hospitals. Initiation of beta blocker at

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hospital discharge does have the advantage of ensuring that the drug is prescribed and improving overall treatment rates. However, it is important to start at low dose, up-titrate the beta-blocker dose gradually, and defer therapy in patients who are not stabilized and/or have more than minimal evidence of fluid overload or volume depletion.

Regardless of when a beta blocker is started, the Campaign strongly urges that therapy be provided for all eligible patients, preferably at discharge, provided that the patient is stable, does not meet exclusion criteria, and will receive follow-up.

ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult. *Journal of the American Heart Association*. Dallas, TX: American Heart Association; 2005.

The Cardiac Insufficiency Bisoprolol Study II (CIBIS-II): A randomized trial. *Lancet*. 1999;353:9-13.

Hjalmarson A, Goldstein S, Fagerberg B, et al., for the MERIT-HF Study Group. Effects of controlled-release metoprolol on total mortality, hospitalizations, and well-being in patients with heart failure: The Metoprolol CR/XL Randomized Intervention Trial in congestive heart failure (MERIT-HF). *JAMA*. 2000;283:1295-1302.

Effect of metoprolol CR/XL in chronic heart failure: Metoprolol CR/XL Randomised Intervention Trial in Congestive Heart Failure (MERIT-HF). *Lancet*. 1999;353:2001-2007.

Packer M, Bristow MR, Cohn JN, et al., for the U.S. Carvedilol Heart Failure Study Group. The effect of carvedilol on morbidity and mortality in patients with chronic heart failure. *N Engl J Med*. 1996;334:1349-1355.

Packer M, Coats AJ, Fowler MB, et al. Effect of carvedilol on survival in severe chronic heart failure. *N Engl J Med*. 2001;344:1651-1658.

Tips for Getting Started

Improving CHF care can seem like an overwhelming challenge. If your team tries to do everything all at once, it may well prove overwhelming. Here are a few tips we have learned from other quality improvement work and from those who have already achieved success in delivering reliable, evidence-based care for CHF.

1. Segment the population. Rather than trying to improve every aspect of care for every CHF patient who comes to your hospital, start with a smaller group, such as only those patients who are being discharged directly to home. Once your team has implemented improvements with this group, spread the improvements to other groups, such as patients who do not need ICU care.
2. Start by designing for a homogeneous population and control as many variables as possible to test the design. There will always be exceptions that your team feels they cannot control, such as the patient transferred from another facility where it is unknown if the left ventricular systolic (LVS) function has been assessed prior to admission. Don't start with the exceptions; start with those for which you can control most of the factors, and bring in the rest later.
3. Remember that many CHF components (such medication prescription) need to happen at discharge, in contrast with those that can be provided at any time (such as smoking cessation). Designing timed care components will require different types of strategies and redesign from designing the others. Perhaps design the care components to most likely support patient self-management at discharge and ensure that discharge activities (education, preparation for home supplies/support, contract) are not left to the last minute.
4. Use small tests of change to test the design. (See the Model for Improvement.)

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5. Measure the process; if the science is right, the outcomes will follow.

6. Consider a “service line” concept for heart failure. If you already have one, use this group to develop your core improvement team.

7. Use standard approaches such as order sets, but remember that these alone will not accomplish the goal. Develop the order sets using evidence-based medicine and society guidelines.

8. Conduct multidisciplinary rounds on all CHF patients and be sure to include every member of the health care team (physician, nurse, pharmacist, discharge planner).

Potential Impact

Over 50 clinical trials have shown that, in patients with reduced left ventricular systolic function, ACE inhibitors, angiotensin receptor blockers (ARBs), and beta blockers reduce symptoms, readmission rates, and mortality. For example, studies report that the use of ACE inhibitor or ARB at adequate doses may reduce the risk of mortality by 15-25% and anticoagulation for people with heart failure and atrial fibrillation may reduce stroke by 60-70%.

Effect of enalapril on survival in patients with reduced left ventricular ejection fractions and congestive heart failure. The SOLVD Investigators. *N Engl J Med.* 1991;325(5):293-302.

Effects of enalapril on mortality in severe congestive heart failure: Results of the Cooperative North Scandinavian Enalapril Survival Study (CONSENSUS). The CONSENSUS Trial Study Group. *N Engl J Med.* 1987;316:1429-1435.

Yusuf S, Pfeffer MA, Swedberg K, et al. Effects of candesartan in patients with chronic heart failure and preserved left-ventricular ejection fraction: the CHARM-Preserved Trial. *Lancet.* 2003;362:777-781.

Shivkumar K, Jafri SM, Gheorghiade M. Antithrombotic therapy in atrial fibrillation: A review of randomized trials with special reference to the Stroke Prevention in Atrial Fibrillation II (SPAF II) Trial. *Prog Cardiovasc Dis.* 1996;38:337-342.

The Gap Between Reliable, Evidence-Based Care for Congestive Heart Failure and Actual Care

Beginning with discharges in 2004, eligible acute-care hospitals could elect to report quality data in order to receive the incentive payment established by Section 501(b) of the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA). To obtain increased payment, the provision requires eligible hospitals to report on an initial set of ten quality performance measures (the "starter set"), including CHF measures and to agree to have their data displayed publicly.

The Centers for Medicare & Medicaid Services (CMS), along with the Hospital Quality Alliance (HQA), report the following results from data reported for discharges from January 2005 through December 2005 www.HospitalCompare.hhs.gov

Percent of CHF patients given:	Average for all hospitals reporting in the US	Top 10% of hospitals nationwide
ACE inhibitor or ARB for left ventricular systolic dysfunction (LVSD)	81%	100%
Assessment for left ventricular function (LVF)	81%	95%
Discharge instructions	54%	89%
Smoking cessation advice/counseling	76%	100%

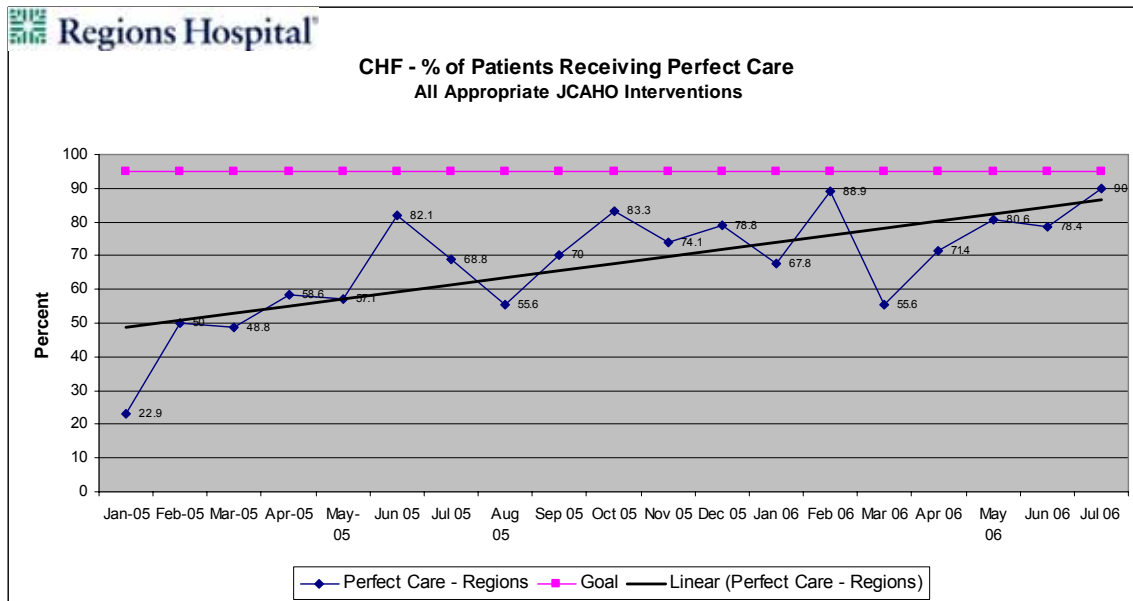
The AHA's GWTG-HFSM is a national quality improvement initiative of the American Heart Association to help hospitals redesign systems of care to improve adherence to guidelines in patients admitted with CHF. The table below summarizes performance on the anticoagulation for atrial fibrillation indicator for CHF hospitalizations. This data was collected from 17,941 patients who were admitted to 144 hospitals participating in the GWTG-HFSM program from January 1, 2005, through December 31, 2005.

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Percent of CHF patients given:	Average for all GWTG-HF hospitals	Top 10% of GWTG-HF Hospitals
Anticoagulation for atrial fibrillation	62.7%	69.0%

Examples of Success

Health Partners, a Minnesota-based not-for-profit HMO, took on the challenge to improve CHF care across their continuum of care, including inpatient care, medication reconciliation, and ambulatory care. The graph below shows improvement in “perfect care,” or the percentage of CHF patients who received *all* of these care components: LVS, ACE-inhibitor or angiotensin receptor blockers (ARB) at discharge, smoking cessation counseling, and discharge instructions including activity level, diet, discharge medications, follow-up appointment, weight monitoring, and what to do if symptoms worsen.



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At UCLA Medical Center, significant improvements were seen with a comprehensive CHF management program involving 214 hospitalized advanced systolic heart failure patients (NYHA class III or IV) hospitalized with heart failure. The program included modifications in drug therapy, inpatient and outpatient patient education, and regular outpatient follow-up with the heart failure team. When data were compared for the six-month period before initiation of the program with those from the six months following implementation, it was found that ACE inhibitor use increased by 18% (from 77% to 95%, $P < .05$), more patients were treated with target doses, and hospital admission declined by 85% ($P = .0001$).

Fonarow GC, Stevenson LW, Walden JA et al. Impact of a comprehensive heart failure management program on hospital readmission and functional status of patients with advanced heart failure. *J Am Coll Cardiol.* 1997;30:725-732.

Note that these hospitals were able to achieve breakthrough performance by combining reliable in-hospital care with strong post-discharge follow-up and support.

Forming the Team and Setting Your Aim

From the list of the seven care components for CHF, determine the key stakeholders in your organization who have essential roles in ensuring that patients receive the care components. For example, discharge planning is crucial for patients with CHF, so it will be essential that you include someone from the Discharge Planning Department.

An example of a team for improving CHF care includes the following:

- Chief of Cardiology
- Chief of Emergency Medicine
- Hospitalist
- Nursing Clinical Coordinator or Educator
- Case Manager or Discharge Planner
- Quality Improvement Representative
- A Patient

Before starting any improvement work, it is always wise to establish the aim of the work. The aim statement should include 1) a clear statement of purpose, 2) a measurable goal, 3) a description of how this will be done, and 4) a specific timeframe.

The overall goal of the Campaign is to reduce harm and save lives by providing optimal care and reducing hospital readmissions for patients with CHF. Hospitals may set specific aim statements in pursuit of this overall goal. These aim statements might specify percentage reductions within a set timeframe.

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A sample aim statement might be:

- Process aim: Achieve 80% compliance with all seven care components (“all-or-none” compliance) by June 2007 (or a 50% improvement in compliance with all care components by June 2007 if the initial rate of “all-or-none” compliance is low); achieve 95% all-or-none compliance by December 2008.
- Outcome aim: Reduce hospital readmissions for CHF by 50% by implementing all seven care components by December 2008.

This is only meant to be an example; your team should develop its own aim statement so that the team will feel ownership and support it. If your organization is enrolled in the 5 Million Lives Campaign, the wording of your aim statement may be very similar to the example, but be sure the team discusses and adopts it first.

In order to be most effective, a core team of no more than five to seven people should oversee the work. As different changes are tested, other key people in the organization can be included on an ad hoc basis, especially if they can offer some special expertise that is limited to one area of the work. For example, if your hospital has an advanced life support service (paramedics), you may want to include a representative in a few meetings if you are discussing identification of potential CHF patients prior to hospital arrival, either to provide care in the field or have a response team ready and waiting when the patient arrives. There would not be a need to include that person in all meetings about CHF care, since not all of the work will focus on initial identification and treatment.

Another approach to the improvement is to create sub-teams to work on specific care components or groups of care components. Many of the components of care for CHF happen at discharge or in preparation for discharge, such as prescribing medications. One sub-team might work only on discharge activities to ensure that the patient and caregivers are fully prepared to self-manage at home. Include key staff related to these areas, such as discharge planning, floor nurses, and pharmacists. Another sub-team

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might focus on the care components that must occur during the stay or prior to discharge, such as smoking cessation counseling, and include a different group of key staff. These are just a few examples of sub-groups, which can be an effective way to divide the work and achieve improvement more quickly. The sub-groups should report their work and results to the core team, which oversees the entire project and ensures coordination.

Using the Model for Improvement

In order to move this work forward, IHI recommends using the Model for Improvement. Developed by Associates in Process Improvement, the Model for Improvement is a simple yet powerful tool for accelerating improvement that has been used successfully by hundreds of health care organizations to improve many different health care processes and outcomes.

The model has two parts:

- Three fundamental questions that guide improvement teams to 1) set clear aims, 2) establish measures that will tell if changes are leading to improvement, and 3) identify changes that are likely to lead to improvement.

- The Plan-Do-Study-Act (PDSA) cycle to conduct small-scale tests of change in real work settings — by planning a test, trying it, observing the results, and acting on what is learned. This is the scientific method, used for action-oriented learning.

Implementation: After testing a change on a small scale, learning from each test, and refining the change through several PDSA cycles, the team can implement the change on a broader scale — for example, for an entire pilot population or on an entire unit.

Spread: After successful implementation of a change or package of changes for a pilot population or an entire unit, the team can spread the changes to other parts of the organization or to other organizations.

You can learn more about the Model for Improvement on www.IHI.org

Sample First Test of Change

Using the Model for Improvement, teams conduct small tests of change to start improvement work. With this approach, team members can learn quickly what works or how changes need to be refined before full implementation.

Here is an example of the plan for a small test of one CHF care element:

Goal: Standardize ordering of left ventricular function (LVF) testing.

Change: Use a nurse-driven protocol for ordering LVF testing.

Scale: One nurse will test the protocol with his/her next CHF patient.

Plan:

1. On the unit, the nurse will identify whether the next CHF patient needs LVF testing.
2. For the next patient who needs LVF testing, the nurse will use the draft standard protocol to order the test.
3. The nurse will ensure that the test is completed and results are seen by patient's doctor.

Process Measures for CHF

Compliance with each of the seven key components of evidence-based CHF care can easily be measured. In fact, your organization may already be collecting some of this data for JCAHO core measures or for CMS. Documentation that each component of care was provided or contraindicated should be in the medical record for each patient with CHF. These are “process measures”: Improvement in an individual measure indicates that the processes surrounding that care element have improved. However, improvement in patient outcomes requires improvement in all seven measures. (See Appendix A for detailed information about the measures for this intervention.)

1. Left ventricular systolic (LVS) heart function assessment

Percent CHF patients with documentation in the hospital record that left ventricular systolic (LVS) function was evaluated before arrival, during hospitalization, or is planned after discharge.

2. ACE-inhibitor or angiotensin receptor blockers (ARB) at discharge for Heart Failure patients with LVS dysfunction

Percent CHF patients with left ventricular systolic dysfunction (LVSD) (LVEF <40%) without contraindications for ACE-inhibitors or ARB contraindications prescribed an ACE-inhibitor or ARB at discharge.

3. Anticoagulant at discharge for CHF patients with chronic/recurrent AF

Percent of CHF patients with chronic or recurrent AF and without warfarin contraindications prescribed warfarin at discharge

4. Influenza immunization

Percent of CHF patients with documentation in the hospital record of having been immunized for influenza (seasonal measure)

5. Pneumococcal immunization

Percent of CHF patients with documentation in the hospital record of having been immunized for pneumococcal pneumonia

6. Smoking cessation counseling

Percent of CHF patients who are current or recent smokers (cigarette smokers) who received smoking cessation advice or counseling prior to hospital discharge.

7. Discharge instructions

Percent of CHF patients with documentation in the hospital record of having received written discharge instructions or educational material given to patient or caregiver addressing all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring and what to do if symptoms worsen.

Organizations should aspire to provide patients with “perfect care,” that is, provision of all seven of the key care components, or documentation of contraindication. This patient-centered philosophy is at the heart of the last recommended process measure: Percent of CHF Patients Receiving Perfect Care. Patients are counted as having received “perfect care” only if all seven components are documented as given in appropriate timeframes, or that clear contraindications exist. If documentation for any one item is missing, the patient is not considered as having received “perfect care.” For a discussion of this “all-or-none” approach to measurement, see Nolan T, Berwick DM, “All-or-none measurement raises the bar on performance” ([JAMA. 2006;295\(10\):1168-1170](#)).

This is an important measure, and it is difficult to improve performance on this measure. Your team will find it easier to improve performance on the individual measures first, and you should start your efforts there. If the baseline measures for perfect CHF care are low, do not be discouraged as this is not uncommon. Continue to measure on a regular basis. Once the individual measures reach high levels of performance, the perfect care measure should increase as well, and your team will then be ready to apply new principles (such as reliability science) to increasing the results for perfect care.

Outcome Measures for CHF

Our ultimate goal is to reduce harm from CHF, as reflected primarily in hospital readmissions. In addition to the process measures for each of the seven key components of CHF care and the overall “all-or-none” measure of perfect care for CHF, organizations should track an important outcome measure, Percent of Congestive Heart Failure Patient Discharges with Readmission Within 30 Days. (See Appendix A for detailed information about the measures for this intervention.)

Appendix A: Recommended Intervention-Level Measures

The following measures are relevant for this intervention. The Campaign recommends that you use some or all of them, as appropriate, to track the progress of your work in this area. In selecting your measures, we offer the following advice:

1. Whenever possible, use measures you are already collecting for other programs.
2. Evaluate your choice of measures in terms of the usefulness of the results they provide and the resources required to obtain those results; try to maximize the former while minimizing the latter.
3. Try to include both process and outcome measures in your measurement scheme.
4. You may use measures not listed here, and, similarly, you may modify the measures described below to make them more appropriate and/or useful to your particular setting; however, be aware that modifying measures may limit the comparability of your results to others'. (Note that hospitals using different or modified measures should not submit those measure data to IHI.)
5. Remember that posting your measure results within your hospital is a great way to keep your teams motivated and aware of progress. Try to include measures that your team will find meaningful, and that they would be excited to see.

Process Measure(s):

Discharge Instructions
Owner: JCAHO / CMS Owner Measure ID: HF-1 Measure Information: [NHQM Specifications Manual with Appendices] Comments: <ul style="list-style-type: none">• From the link above, scroll down to find the link for HF-1

Evaluation of LVS Function
Owner: JCAHO / CMS Owner Measure ID: HF-2 Measure Information: [NHQM Specifications Manual with Appendices] Comments: <ul style="list-style-type: none">• From the link above, scroll down to find the link for HF-2

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ACEI or ARB for LVSD
Owner: JCAHO / CMS Owner Measure ID: HF-3 Measure Information: [NHQM Specifications Manual with Appendices] Comments: <ul style="list-style-type: none">• From the link above, scroll down to find the link for HF-3

Adult Smoking Cessation Advice/Counseling
Owner: JCAHO / CMS Owner Measure ID: HF-4 Measure Information: [NHQM Specifications Manual with Appendices] Comments: <ul style="list-style-type: none">• From the link above, scroll down to find the link for HF-4

Pneumococcal Vaccination
Owner: JCAHO / CMS Owner Measure ID: PN-2 Measure Information: [NHQM Specifications Manual with Appendices] Comments: <ul style="list-style-type: none">• From the link above, scroll down to find the link for PN-2

Influenza Vaccination
Owner: JCAHO / CMS Owner Measure ID: PN-7 Measure Information: [NHQM Specifications Manual with Appendices] Comments: <ul style="list-style-type: none">• From the link above, scroll down to find the link for PN-7

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Anticoagulant at Discharge for HF Patients with Atrial Fibrillation
Owner: ACC / AHA Owner Measure ID: N/A Measure Information: [ACC/AHA Clinical Performance Measures for Adults with Chronic Heart Failure] Comments: <ul style="list-style-type: none">• From the link above, scroll down to page 1158 to find the measure definition

Percent of Congestive Heart Failure Patients Receiving Perfect Care
Owner: IHI Owner Measure ID: N/A Measure Information: [Campaign MIF] Comments:

Outcome Measure(s):

Percent of Congestive Heart Failure Patient Discharges with Readmission Within 30 Days
Owner: IHI Owner Measure ID: N/A Measure Information: [Campaign MIF] Comments:

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Alignment with Other Measure Sets:

Measure Name	JCAHO	CMS	ACC/AHA	NQF
Discharge Instructions	√ ¹	√ ²	√ ³	
Evaluation of LVS Function	√ ¹	√ ²	√ ³	√ ⁴
ACEI or ARB for LVSD	√ ¹	√ ²	√ ³	√ ⁴
Adult Smoking Cessation Advice/Counseling	√ ¹	√ ²	√ ³	√ ⁴
Pneumococcal Vaccination	√ ²	√ ²		
Influenza Vaccination	√ ²	√ ²		
Anticoagulant at Discharge for HF Patients with Atrial Fibrillation			√ ³	

¹ Matches a measure in the JCAHO National Hospital Quality Measures Heart Failure Core Measure Set

² Matches a measure in the JCAHO National Hospital Quality Measures Pneumonia Core Measure Set

³ Matches a measure in the American College of Cardiology (ACC) / American Heart Association (AHA) Clinical Performance Measures for Adults with Chronic Heart Failure include

⁴ This measure is endorsed by the NQF