

**ACEI Prescribed at Discharge for Heart Failure –
Achieving the Standard of Care**

**Tools and Resources for Hospital Performance Measurement
Improvement Activities**

Seventh in a series of targeted quality improvement articles

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Illinois Hospital Association

ACEI Prescribed at Discharge for Heart Failure – Achieving the Standard of Care

Tools and Resources for Hospital Performance Measurement Improvement Activities

Achieving the Highest Standard of Care

Angiotensin-converting enzyme inhibitor (ACEI) Prescribed at Discharge examines whether patients with heart failure complicated by left ventricular systolic dysfunction (LVSD) are prescribed ACEI at hospital discharge. A nearly identical measure was described earlier in the Acute Myocardial Infarction (AMI) articles.

Illinois hospitals in the 4th quarter of 2003 achieved 78.7% compliance compared to 76.3% for nationally reported Joint Commission on Accreditation of Healthcare Organizations (JCAHO) measurement data for the same time period. Comparing AMI and HF for ACEI, Illinois hospitals achieved higher compliance with ACEI Prescribed at Discharge for AMI patients (84.1%) than with ACEI Prescribed at Discharge for HF patients (78.7%). Finally, among the seven heart-related measures in the Ten Measurement Starter set reported in this series, ACEI Prescribed at Discharge for HF provides our greatest opportunity for improvement! The goal for all Illinois hospitals is **100% compliance** with the core measurements.

ACEI Prescribed at Discharge for HF Measurement Description

Heart failure, a chronic and progressive disease, is the inability of the heart to supply the body's need for oxygenated blood. Heart failure characterized by left ventricular systolic dysfunction (LVSD) can be determined through left ventricular function (LVF) assessment tests, the core measure discussed in the previous article. Evidence-based medicine has demonstrated that ACE may benefit patients with moderate or severe left ventricular systolic dysfunction (LVSD) by lowering blood pressure, reducing the workload of the heart, and improving patient symptoms.

Calculating the Measure's Performance. ACEI prescribed at discharge for HF is reported as a percent, based on:

- . • Numerator includes HF patients who are prescribed an ACEI at hospital discharge.
- . • Denominator includes HF patients with LVSD and without ACEI contraindications.
 - o Chart documentation left ventricular ejection fraction (LVEF) <40% or a narrative description of left ventricular function (LVF) consistent with moderate or severe systolic dysfunction.

The Impact of Medical Record Documentation on Measure Calculation

ACEI prescribed at discharge measure is sensitive to medical record documentation practices as proper documentation is required with medications, contraindications to medications, and LVSD.

Documenting LVSD

When LVSD is present but is inadequately documented or not documented at all in the current medical record, the denominator is not populated and the case is grouped into “missing data”. This results in a “smaller sample size” and affects the validity of the measure. Among the core measures, missing data rates are highest with ACEI. Many hospitals report documentation as one important barrier to their improvement efforts.

Documenting Contradictions to ACEI

When ACEI is not prescribed at discharge, the contraindications or reasons for not prescribing ACEI must be documented in the medical record otherwise the numerator is not populated and this will result in a “lower” compliance rate as the denominator will be populated. When contradictions or reasons for not prescribing ACEI are documented in the medical record, the denominator is not populated and the patient is not included in the measure.

The *Technical Specifications* manuals are a resource for the measure description, rationale, the numerator and denominator, inclusions and exclusions, contraindications, and how data is processed including what results in *missing data* and *not in measure populations*. To view, click on the links below and follow the additional steps.

- For JCAHO, go to:

www.jcaho.org/

Click on “Performance Measurement”, click on “Core Measure Information”, click on “Specifications Manual...,” scroll down to “Measure Information Forms”, select the Core Measurement of interest.

- For the Center for Medicare and Medicaid Services (CMS), go to:

www.qnetexchange.org/

Click on “HDC”, Scroll down to “Related Resources”, click on “Topic-Specific Resources, Zip Files.”

Successful Quality Improvement and Compliance Experiences Shared by Illinois Hospitals

The experiences and successes for achieving compliance with ACEI prescribed at discharge for HF are presented below from hospitals representing a variety of characteristics and locations throughout Illinois. The Illinois Hospital Association appreciates the efforts of these hospitals in sharing their experiences with others and also the sharing of contact names at each hospital for additional follow up questions or discussions.

Some common and unique success factors or strategies include:

- . • Use clinical pathways
- . • Computerized physician order entry
- . • Impact of “champions” on the change and improvement process
- . • Formalized education and training of managers to lead process improvement efforts

Northwestern Memorial Hospital

At Northwestern Memorial Hospital, one of Chicago's academic medical centers, a quality improvement project focusing on congestive heart failure (CHF) has delivered measurable results consistent with the hospital's goal to provide the safest and most effective patient care.

The opportunity for improvement, according to Sally Szumlas, RN MS, Director of Clinical Quality, was identified when Northwestern Memorial evaluated its performance on the heart failure "core measures" defined by the federal Centers for Medicare and Medicaid Services (CMS) and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). "Performance was good, but not good enough," Szumlas said. "Our goal of the *Best Patient Experience* means that we intend to achieve optimal results, not just good results."

The hospital chartered an interdisciplinary process improvement team to focus exclusively on heart failure with a specific objective to improve CHF care toward 100 percent compliance with evidence-based best practices as incorporated into the core measures. Using the hospital's Define, Measure, Analyze, Improve and Control (DMAIC) process improvement model, the team examined the admitting, inpatient care, and discharge processes and is implementing redesigned systems to improve patient care.

"Northwestern Memorial made the heart failure improvement project a high priority," said Szumlas. "There is an abundance of clinical evidence that outline best medical practices in this area."

A fundamental commitment to evidence-based care at Northwestern Memorial, along with the recognition that public reporting and accountability for performance is important to the community provided strong internal support for the project. Another key element, Szumlas observed, was the ongoing emphasis on feedback from CHF patients who provided information about their own unique hospital experience. "Northwestern Memorial is committed to providing the best care possible from the patient's perspective," said Szumlas. "That means optimizing how well CHF patients feel every day, reducing hospitalization time with the right interventions and eliminating unnecessary readmissions."

As the primary teaching affiliate for Northwestern University's Feinberg School of Medicine, Northwestern Memorial is committed to improving clinical care by applying evidence based research. William Cotts, MD, assistant professor of Internal Medicine at the Feinberg School, is the clinical physician sponsor for the CHF project. He observed that while Northwestern Memorial has had a heart failure program in place for more than a decade, there has been recent significant change.

"We have become more focused on specific care improvements as the clinical evidence to support them has evolved," said Dr. Cotts. He added that the academic environment at Northwestern Memorial has supported research and educational programs for physicians and staff who deliver care to heart failure patients. Such programs, he said, drive

improved clinical decision making among residents and physicians on the medical staff, as well as their nursing and allied health colleagues.

Dr. Cotts noted that in addition to the academic benefits and improved teaching of tomorrow's physicians, the CHF project has brought clinical process improvement directly to the bedside, resulting in improved care. "Clinicians are better aware of how to manage CHF and questions and problems are addressed through good communication and reliable, supportive hospital systems."

The success of the project depends on an effective methodology and a systematic approach to eliminating barriers to delivering optimal and timely care to each patient.

One barrier to improvement was simply that of identifying patients with heart failure early in the course of their hospitalization. CHF patients can present on a variety of inpatient units, with a wide range of symptoms and needs. A multidisciplinary approach to staff and physician education was one important mechanism to overcome this barrier and enhance staff recognition of the patient with potential congestive heart failure.

Another barrier was the challenge of delivering consistent and accurate information to all CHF patients. "We needed tools that could be used on any unit, as soon as the CHF patient is identified," said Erin Anderson, RN, BSN, Quality Management Coordinator. "For example, we developed a special education packet that contains all the critical points of care that a heart failure patient needs to understand. This tool is accessible electronically for staff across the hospital and it helps us make sure that all patients receive the same information on heart failure, medications, and self-care." The implementation of electronic documentation at Northwestern Memorial makes it possible for providers to document this educational information in one place in the patient's electronic medical record. Future enhancements will allow caregivers to be prompted by the system as a double-check if this documentation is lacking.

The DMAIC model (Define, Measure, Analyze, Improve and Control) for process improvement used in the CHF project has been embraced by the entire Northwestern Memorial organization. "Over the past year we've have trained 98% of our management staff in DMAIC, the five-step methodology that is part of Six Sigma," explained Ken Hedley, Quality Leader.

Hedley highlighted the usefulness of the DMAIC approach in building a process change to improve the timely and consistent prescribing of ACE inhibitors, a medication indicated for CHF patients at discharge. "The team recognized in the "analyze" phase of DMAIC that our systems relied on memory and vigilance of the physician to get compliance with this practice. We made changes to our heart failure order sets and documentation systems that prompt physicians to prescribe the ACE inhibitors timely, or to record the patient's contraindications to these medications, consistent with core measure requirements."

Northwestern Memorial launched Computerized Provider Order (CPOE) for physicians in 2004, an online system that offers more opportunities to support safe and effective care through technology. Using CPOE, the physician orders medications, tests and interventions online. The system will facilitate immediate access to evidence-based standard order sets for physicians, and its logic and decision-support tools will flag potential medication contraindications and interactions.

Hedley described Northwestern Memorial's work to customize CPOE "intelligence" in the CHF project. For example, the team has evaluated the use of provider prompts that are specific to critical decisions on medication management, discharge instructions and follow-up care for heart failure patients. "The electronic medical record will ultimately help us to align care with the clinical evidence, have a lasting impact on this patient population, and sustain compliance with the core measures," he concludes.

Goal setting and administrative support are key elements in Northwestern Memorial's improvement efforts. Daniel Derman, MD, Vice President of Operations and senior leader of the Heart Failure Improvement Project, recognized the value of raising these improvement efforts to the level of organizational goals. "Senior management is committed to getting things done," says Dr. Derman. "When we set goals, we expect to reach them." Dr. Derman also notes that Northwestern Memorial is applying DMAIC process improvement technology throughout the hospital to implement care improvements for other patient populations as well.

Results from the Heart Failure project, along with myriad of significant clinical and service improvement efforts, are assembled in a rigorous quarterly dashboard for discussion with the hospital's board of directors. "Projects of this scope require resources, focus, discipline and a passionate commitment to the best and safest care," says Dr. Derman. "Steady involvement of the board and senior management, including medical staff leaders, means that these goals are established as priorities for all members of the hospital community."

Szumlas describes the physicians, residents and nurses as day-to-day "champions" in the care of CHF patients. Both she and Dr. Derman note that with improved systems of care delivery, the role of nurses is both expanded and more rewarding, as they become empowered to make a measurable difference in patient care and recovery. Contact: Sally Szumlas, RN MS, Director of Clinical Quality at sszumlas@nmh.org.

Crawford Memorial Hospital

Crawford Memorial Hospital, designated as a small, rural, public hospital, is located on the southern Illinois-Indiana border in Robinson, Illinois. Darra Beard, R.N., M.S.N., Quality Resource Coordinator, relates Crawford Memorial Hospital's high compliance with the core measures is attributed to the "small number of patients and physicians." Being responsible for Utilization Review, Beard monitors daily admissions and is aware when patients with pneumonia or heart failure are admitted to the hospital. "We are tracking these two groups and are able to make contact with the physicians and

discuss the care of the patients.”

Clinical pathways, an electronic patient record, and computerized physician order entry (CPOE) all contribute to Crawford Memorial Hospital’s high compliance with core measures. “Clinical pathways exist for both the nursing and physician side,” states Beard, and the core measures are reflected into the pathways. Nurses following the clinical pathway would be alerted at the time of patient discharge about the option for an ACEI to be prescribed or to the need for justification (documentation) against prescribing. With clinical pathways integrated into CPOE, physicians have the option to select or deselect care options. This integration enhances compliance with the standards of care.

Reporting is an important aspect of Crawford Memorial Hospital’s quality activities. “Clinical pathway and core measure performance is shared at the Physician Quality Committee, relates Beard. “Physicians also receive specific data for their own patients.”

Crawford Memorial Hospital also employs tools provided by the Illinois Foundation for Quality Health Care (IFQHC) such as posters and reminders to promote compliance with the standards of care. Contact: Darra Beard, R.N., M.S.N., Quality Resource Coordinator at darra.beard@crawfordmh.org.

ACEI Prescribed at Discharge for HF Web Based Resources

See Appendix I. for additional resources for ACEI prescribed at discharge for HF.

Future Series

September 24 Pneumococcal Screening and/or Vaccination (CAP-2)

October 15 Antibiotic Timing (CAP-5)

November 05 Oxygenation Assessment at Arrival (CAP-1)

For additional information about ACEI prescribed at discharge for HF, the Ten Measurement Starter Set, or to comment on this series, please contact Tim Philipp, Director, Quality Improvement at tphilipp@ihastaff.org.

APPENDIX I. ACEI Specific Web Based Resources

A common set of web based resources identified for the Heart Failure (HF) core measures can be reviewed in document HF - Web Based Resources on the IHA web site. This document outlines web resources addressing clinical guidelines, educational materials, evidence-based materials, intervention tools, and includes direct links to these resources. For a general description of the web sites used, see the document “Generic Sources of Information for All Measures” on the IHA web site.

New or updated materials specific to ACEI are listed below. To access the materials below, click on the web address and follow the additional steps.

• Clinical FACT Sheet: ACE Inhibitors or ARBs in Heart Failure and AMI (January 2004) at:

• Clinical FACT Sheet: Use of ACE Inhibitors in Heart Failure Patients with Renal Insufficiency (January 2004) at:

• National Heart Care Annotated Bibliography (July 2004) lists 33 citations for ACEI and LVSD for Heart Failure (page 8).

www.medqic.org/ Locate on top and click on “Heart Failure”, locate on sidebar under Project Support, click on Supporting Materials, scroll down and locate title of interest.

• ACE Inhibitor Drugs Underused in Heart Failure Patients. (For the expanded article see Masoudi, F., *Circulation*, August 10, 2004.) Go to: www.americanheart.org/ Scroll to bottom, in the section: “What’s New,” locate title of interest.

• For a discussion of clinical trials, ACEI and ARBs and performance measures, see Implications of Recent Clinical Trials for Heart Failure Performance Measures (2004) at: www.hfsa.org/ In Search box (upper right), enter “angiotensin” then click Search icon and locate title of interest.

Frequently Asked Questions – (FAQs) FAQs often reflect the insights and concerns of hospital staff involved in clinical care and data collection. Use FAQs as your first source to answer clinical and data related questions. FAQs are also an important educational tool for novice & expert. A search of:

• *ACE and HF* returns 29 results and *ACEI and HF* returns 87 results addressing clinical situations about different drugs, contraindications, and documentation concerns. (ACE and ACEI produced minor overlap of citations.)

• *ARB and HF* returns 14 results addressing clinical situations about different drugs, contraindications, and documentation concerns.

• *LVSD and HF* returns 69 results addressing medical terminology consistent with “moderate or severe systolic dysfunction,” ejection fractions, and other documentation issues.

To review FAQs or to ask a new question, go to: www.medqic.org, locate on top and click on “Heart Failure”, click on “FAQs”.

American Health Quality Association – (AHQA)

The AHQA web site lists two hospital projects related to ACEI prescribed at discharge for HF. Contact names are provided. To view, go to: www.ahqa.org, locate “Quality Improvement in Action”, click on “state” then locate the states Iowa and Tennessee.