



Quality Enhancement Research Initiative

Ischemic Heart Disease  
Seattle, WA

QUERI Fact Sheet

December 2008

## QUERI currently focuses on nine conditions that are prevalent and high-risk among veterans: Chronic Heart Failure, Diabetes, HIV/Hepatitis, Ischemic Heart Disease, Mental Health, Polytrauma and Blast-Related Injuries, Spinal Cord Injury, Stroke, and Substance Use Disorders.

Ischemic heart disease (IHD) is the leading cause of morbidity and mortality in the United States for both men and women, with \$156 billion in direct and indirect costs. It is also one of the most frequent indications for hospitalization within the VA healthcare system. However, despite the availability of nationally developed, evidence-based clinical guidelines, many patients with IHD are not receiving optimal therapy.

### Ischemic Heart Disease Quality Enhancement Research Initiative

The Ischemic Heart Disease Quality Enhancement Research Initiative (IHD-QUERI) uses the QUERI process (see back page) to reduce the gap between guideline recommended therapies and actual VA practice, thus improving the quality of care and health outcomes of veterans with ischemic heart disease. IHD-QUERI is focused on several clinical problems within the broad scope of IHD that are characterized by both high risk and high volume. Currently, IHD-QUERI is working to implement best practice recommendations and research findings for optimal ischemic heart disease care in acute care, chronic illness care, and secondary prevention.

IHD-QUERI has invested substantial effort into forging partnerships with VA leaders to support interventions that both improve care and foster implementation

research, including direct collaboration with Patient Care Services, the Office of Quality and Performance, and the Office of Information. Through these collaborations, IHD-QUERI has initiated a series of efforts to increase our understanding of care for patients with acute and chronic coronary diseases.

### IHD-QUERI Projects and Findings

Following are some examples of current IHD-QUERI projects that focus on health issues of critical importance to veterans with IHD.

#### Improvement of care for veterans with acute coronary syndrome

A primary goal for IHD-QUERI is to improve quality of care as well as quality of life for veteran patients suffering from acute coronary syndrome (ACS). IHD-QUERI has implemented several projects to this end:

In response to the 2003 Cardiac Care Initiative—a national effort to improve cardiac care in VHA—the Cardiovascular Assessment, Reporting and Tracking System for Cardiac Catheterization Laboratories (CART-CL) was developed to address the critical need for a systematic, national method for tracking the use of diagnostic and interventional catheterization procedures, including percutaneous coronary intervention (PCI). The mission of CART-CL is to develop and implement a national VA reporting system, data repository, and quality improvement program for procedures performed in VA cardiac catheterization laboratories. A VHA national directive mandates CART-CL installation and use for all VA catheterization laboratories.

The database structure of CART allows for expansion to other clinical areas, and CART for Cardiopulmonary Resuscitation (CART-CPR) is under development. CART-CPR will provide standardized data capture

### The IHD-QUERI Executive Committee

Each QUERI Executive Committee is co-chaired by a research expert and a clinician. The research coordinator for IHD-QUERI is **Stephan Fihn, MD, MPH**, and the clinical coordinator is **John Rumsfeld, MD, PhD**. This Executive Committee includes other experts in the field of ischemic heart disease, including: Jeroan Allison, MD, MS; T. Bruce Ferguson, MD; Ross Fletcher, MD; Mary K. Goldstein, MD, MSc; **Christian Helfrich, PhD, MPH** (Implementation Research Coordinator); Paul Heidenreich, MD, MS; Robert L. Jesse, MD, PhD; Harlan Krumholz, MD, SM; Greg Larsen, MD; Laura Petersen, MD, MPH; Eric Peterson, MD, MPH; Anne E. Sales, MSN, PhD; and John Spertus, MD, MPH, FACC.

and reporting of in-hospital CPR across all VA hospitals and will automatically create reports within the patient record for documentation of the cardiopulmonary resuscitation event. CART-CPR will help VHA to identify opportunities for quality improvement through monitoring of key process of care variables.

To assess mortality, symptom control, physical function and quality of life, the ACS project conducted a detailed, prospective evaluation of clinical characteristics and process of care for cardiac patients at nine VA Medical Centers. 832 patients were followed for one year. Of these, 327 (39.3%) had a discharge diagnosis of unstable angina (UA), 425 (51%) had a discharge diagnosis of non-ST segment elevation myocardial infarction (NSTEMI), and 80 (9.6%) had a discharge diagnosis of ST segment elevation MI (STEMI). Mortality at one year was 2.8% for UA, 6.3% for STEMI, and 10.6% for NSTEMI. The ACS project also examined in-hospital mortality of 564 non-ACS patients with positive troponins, and found that it was nearly 4 times higher than those with MI.

Cardiac Care Follow-up Clinical Study (CCFCS) investigator Dr. Michael Ho (Denver VA) recently published work showing that clopidogrel discontinuation was associated with higher all-cause mortality (hazard ratio [HR] 2.40, 95% confidence interval [CI] 1.61-3.58). The findings were consistent for patients receiving bare metal stents (HR 2.65, 95% CI 1.59-4.42) or drug eluting stents (HR 2.00, 95% CI 1.06-3.75) and for the outcomes of acute myocardial infarction (AMI) and AMI or mortality. When follow-up was divided into 6-month intervals, the association between clopidogrel discontinuation and higher mortality was consistent up to 18 months post discharge (Am Heart J 2007; 154:846-851).

In a second analysis, Dr. Ho observed a clustering of adverse events (death and AMI) in the 90 days after stopping clopidogrel among both medically treated patients and patients treated with

percutaneous coronary intervention (PCI). The first 90-day interval after stopping treatment with clopidogrel was associated with a significantly higher risk of adverse events among medically treated patients (incidence rate ratio [IRR], 1.98; 95% confidence interval [CI], 1.46-2.69 vs. the interval of 91-180 days). For PCI treated patients, the first 90-day interval after stopping clopidogrel treatment was also associated with a significantly higher risk of adverse events (IRR, 1.82; 95% CI, 1.17-2.83 vs. the interval of 91-180 days). Results support the possibility of a clopidogrel rebound effect and emphasize the need for research to examine reasons for stopping clopidogrel and strategies to reduce early adverse events (JAMA 2008; 299(5):532-539).

#### Patient Centered Disease Management (PCDM) for Heart Failure Trial

Dr. John Rumsfeld (IHD QUERI Clinical Coordinator) and Dr. Paul Heidenreich (Congestive Heart Failure [CHF] QUERI Research Coordinator) are Co-Principal Investigators for the recently funded PCDM trial, a 3-year, multi-site randomized study of VA patients with CHF from 4 VA Medical Centers. Disease management is a promising strategy to improve care and outcomes, but evidence supporting CHF disease management is inconsistent, and open questions remain. Prior studies have not evaluated a multi-modal intervention combining multidisciplinary collaborative care, telemonitoring, promotion of patient self-care, and an explicit intervention for comorbid depression, which is a barrier to optimal CHF care and outcomes. Moreover, effectiveness of CHF disease management has not been evaluated in the VA. The objective of the study is to evaluate a PCDM intervention that includes case finding, collaborative care management for both CHF and comorbid depression, and home telemonitoring. The primary aim is to ascertain whether the PCDM intervention results in better patient health status (i.e. symptom burden, functional status, and quality of life) than usual care.

## THE QUERI PROCESS

QUERI utilizes a six-step process to diagnose gaps in performance and identify and implement interventions to address them:

- 1) Identify high-risk/high volume diseases or problems;
- 2) Identify best practices;
- 3) Define existing practice patterns and outcomes across VA and current variation from best practices;
- 4) Identify and implement interventions to promote best practices;
- 5) Document that best practices improve outcomes; and
- 6) Document that outcomes are associated with improved health-related quality of life.

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For more information about the QUERI program in general, and to link to all of the individual QUERI Centers, please go to [www.queri.research.va.gov](http://www.queri.research.va.gov)