

Ischemic Heart Disease

SEATTLE, WASHINGTON

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Background

Ischemic heart disease (IHD) is the result of narrowed or clogged arteries that cannot carry sufficient amounts of blood to the heart, which can result in angina, heart attack, and death. Despite the development of better treatments for IHD over the last three decades, it remains the leading cause of death among men and women in the United States. It also is one of the most frequent indications for hospitalization within the VA healthcare system.

Ischemic Heart Disease Quality Enhancement Research Initiative

The overall mission of the Ischemic Heart Disease Quality Enhancement Research Initiative (IHD-QUERI) is to improve the quality of care and health outcomes of Veterans with IHD by working collaboratively with operational units and other QUERI groups to enable implementation of best practices 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 VA's Patient Care Services, the Office of Quality and Performance, the Office of Information, Employee Education Services, and the National Clinical Practice Guidelines Council.

In 2010, IHD-QUERI revised its Strategic Plan to respond to several trends that are critical to achieving its mission. Further, IHD-QUERI's new major goals and objectives correspond to two of VA Secretary

Shinseki's transformational initiatives ("Transformation 21") and underscore its commitment to working closely with clinical operations.

Goal #1. Leverage data stored in new and existing information systems to improve the quality and safety of care for Veterans with IHD at point-of-care, including:

- Improving the availability of timely clinical information at point of decision making;
- Tracking changes in quality of care and outcomes for acute myocardial infarction (AMI);
- Developing implementation tools and interventions at program level to facilitate care and improve efficiency; and
- Identifying organizational factors associated with the use of clinical data.

Goal #2. Improve cardiovascular risk factor management by integrating new programs into evolving systems of care, including:

- Identifying and understanding differences in risk-factor management and their causes;
- Identifying organizational and contextual factors that influence risk-factor management; and
- Developing implementation tools and interventions at program level to facilitate care and improve efficiency.

IHD-QUERI is currently conducting a range of studies that leverage VA systems to improve quality and safety, and integrate cardiovascular risk factor management into care systems. In many cases, these projects exploit platforms that IHD-QUERI investigators have spent the last decade helping to create.

About QUERI

VA/HSR&D's Quality Enhancement Research Initiative (QUERI) currently focuses on ten areas of great importance related to healthcare for Veterans: Chronic Heart Failure, Diabetes, eHealth, HIV/Hepatitis, Ischemic Heart Disease, Mental Health, Polytrauma and Blast-Related Injuries, Spinal Cord Injury, Stroke, and Substance Use Disorder.

Working with health system partners to develop research that speeds improvements in Veterans' healthcare, QUERI utilizes a six-step process to diagnose gaps in performance and identify and implement interventions to address them.

- Identify priority conditions and opportunities for improving the health of Veterans.
- Identify effective practices for improving outcomes for priority conditions.
- Examine variations in existing practices, the sources of variation, and their relation to health outcomes.
- Identify and test interventions to improve the delivery of best practices.
- Evaluate the feasibility, adoption, and impact of coordinated improvement programs to spread best practices.
- Evaluate the effects of improvement programs on Veterans' health outcomes, including quality of life.

IHD-QUERI Projects and Findings

Pilot Intervention to Improve Clopidogrel Adherence after DES Implant

In 2011, IHD-QUERI successfully developed and piloted a computerized alert to improve clopidogrel adherence among Veterans undergoing percutaneous coronary intervention (PCI). The alert leverages the Clinical Assessment Reporting and Tracking – Cath Lab (CART-CL) system, which IHD-QUERI developed, to identify patients who delay filling their clopidogrel prescription at hospital discharge following a PCI. During follow-up, automated telephone calls are sent to patients to remind them of the importance of medication adherence and to refill their clopidogrel prescription. Using CART, past analyses demonstrated that patients who delay filling clopidogrel at hospital discharge had higher rates of AMI or death within 90 days. Further, there was significant variation at the hospital level in terms of the proportion of patients who delayed filling clopidogrel at hospital discharge following PCI – ranging from 0% to 25%. However, at two sites participating in the pilot study, 94% of patients filled their prescriptions at discharge. QUERI recently funded another study that will build on these results: “Hybrid effectiveness-implementation study of a multi-faceted intervention to improve adherence to clopidogrel and outcomes following PCI.”

Veteran Exposure to Radiation in the Cardiac Catheterization Laboratory

In 2011, an IHD-QUERI pilot study assessed factors associated with the radiation dose for Veterans in the catheterization laboratory. Using CART-CL to examine fluoroscopy times in the cardiac catheterization laboratory, investigators found that times Veterans were exposed to associated radiation varied by procedure and were significantly associated with patient, provider, and hospital factors. After multivariable adjustment, factors associated with the highest quartile of fluoroscopy time for coronary angiography included increasing patient age, history of peripheral vascular disease and congestive heart failure, alternative arterial access (other than right femoral), and patients presenting in cardiogenic shock. Teaching versus non-teaching hospitals and higher volume operators also were associated with the highest quartile of fluoroscopy time. The next step will be to identify potentially modifiable factors that could be addressed to decrease fluoroscopy times, and thus radiation exposure for our Veterans.

Contact information for IHD-QUERI:

G. Blake Wood, M.S.
Administrative Coordinator
Tel: (206) 277-4167
E-mail: Gordon.Wood@va.gov

Contact for general QUERI information:

Linda McIvor, M.H.S., M.S.
QUERI Program Manager
Tel: (202) 443-5740
E-mail: Linda.McIvor@va.gov

The IHD-QUERI Executive Committee

Each QUERI Executive Committee is co-chaired by a research expert and a clinician. The Director for IHD-QUERI is **Christopher Bryson, M.D., M.S.**, and the Clinical Coordinator is **Michael Ho, M.D., Ph.D.** The Implementation Research Coordinator is **Christian Helfrich, Ph.D., M.P.H.** The Executive Committee includes other experts in the field of ischemic heart disease including: Steven Bradley, M.D.; T. Bruce Ferguson, M.D.; Stephan Fihn, M.D, M.P.H.; Mary K. Goldstein, M.D., M.Sc.; Paul Heidenreich, M.D., M.S.; Cynthia Jackevicius, Pharm.D., M.Sc.; Robert L. Jesse, M.D., Ph.D.; Harlan Krumholz, M.D., S.M.; Brahmajee Nallamouthu, M.D., M.P.H.; Laura Petersen, M.D., M.P.H.; Eric Peterson, M.D., M.P.H.; John Rumsfeld, M.D, Ph.D.; Anne E. Sales, M.S.N., Ph.D.; John Spertus, M.D., M.P.H., FACC; and **G. Blake Wood, M.S.**, (co-Implementation Research Coordinator).

QUERI web link:
www.hsrd.research.va.gov/queri