Implementation Science in VA: The Quality Enhancement Research Initiative (QUERI)

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Outline

Part 1: Overview of VA's quality transformation

Part 2: The role of QUERI and implementation science

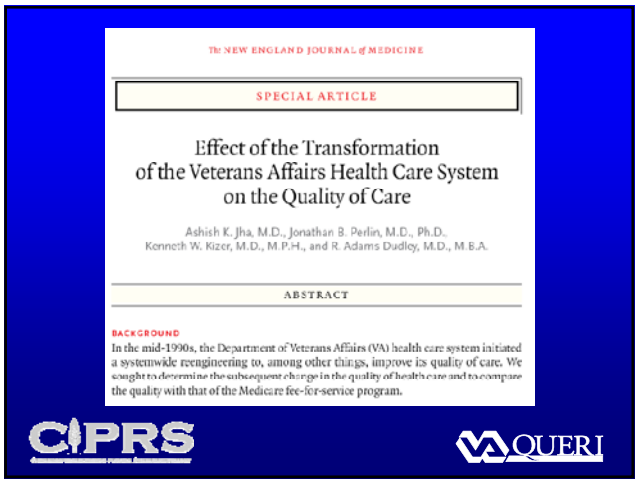
Part 3: QUERI frameworks

The Veterans Health Administration (VHA)

- VHA is the US Dept of Veterans Affairs' integrated healthcare delivery system
- Budget > $25 billion; 5.2 million unique patients
- Staff: 200,000 FTEs (>10,000 MDs; >50,000 nurses)
- Total sites >1,300: ~ 150 medical centers, 1,000 clinics, 200 counseling centers, 130 nursing homes
- Patients are older (49% over 65), sicker, poorer (70% annual incomes < $26,000), predominantly male

VHA's transformation

- VHA's quality, safety, access and value (efficiency) have improved dramatically since the early 1990s
  - doubling of patient population
  - decrease in staffing and cost per patient
  - industry-leading quality, safety, technology, care management



The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

Effect of the Transformation of the Veterans Affairs Health Care System on the Quality of Care

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ABSTRACT

BACKGROUND

In the mid-1990s, the Department of Veterans Affairs (VA) health care system initiated a systemwide reengineering to, among other things, improve its quality of care. We sought to determine the subsequent change in the quality of health care and to compare the quality with that of the Medicare fee-for-service program.

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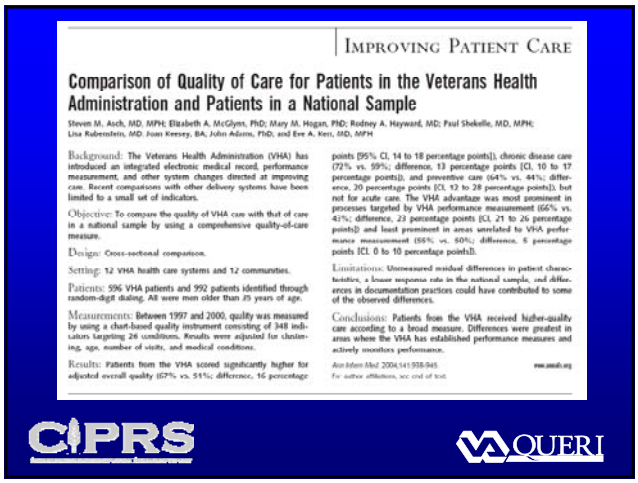

IMPROVING PATIENT CARE

Comparison of Quality of Care for Patients in the Veterans Health Administration and Patients in a National Sample

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Background: The Veterans Health Administration (VHA) has introduced an integrated electronic medical record, performance measurement, and other system changes directed at improving care. Recent comparisons with other delivery systems have been limited to a small set of indicators.

Objective: To compare the quality of VHA care with that of care in a national sample by using a comprehensive quality-of-care measure.

Design: Cross-sectional comparison.

Setting: 12 VHA health care systems and 12 communities.

Patients: 596 VHA patients and 992 patients identified through random-digit dialing. All were men older than 35 years of age.

Measurements: Between 1997 and 2000, quality was measured by using a chart-based quality instrument consisting of 348 indicators targeting 26 conditions. Results were adjusted for clustering, age, number of visits, and medical conditions.

Results: Patients from the VHA scored significantly higher for adjusted overall quality (67% vs. 51%; difference, 16 percentage points [95% CI, 14 to 18 percentage points]), chronic disease care (72% vs. 59%; difference, 13 percentage points [CI, 10 to 17 percentage points]), and preventive care (64% vs. 44%; difference, 20 percentage points [CI, 12 to 28 percentage points]), but not for acute care. The VHA advantage was most prominent in processes targeted by VHA performance measurement (66% vs. 43%; difference, 23 percentage points [CI, 21 to 26 percentage points]) and least prominent in areas unrelated to VHA performance measurement (66% vs. 60%; difference, 6 percentage points [CI, 0 to 10 percentage points]).

Limitations: Unmeasured residual differences in patient characteristics, a lower response rate in the national sample, and differences in documentation practices could have contributed to some of the observed differences.

Conclusions: Patients from the VHA received higher-quality care according to a broad measure. Differences were greatest in areas where the VHA has established performance measures and actively monitors performance.

Ann Intern Med. 2004;141:938-945. www.annals.org

For author affiliations, see end of text.

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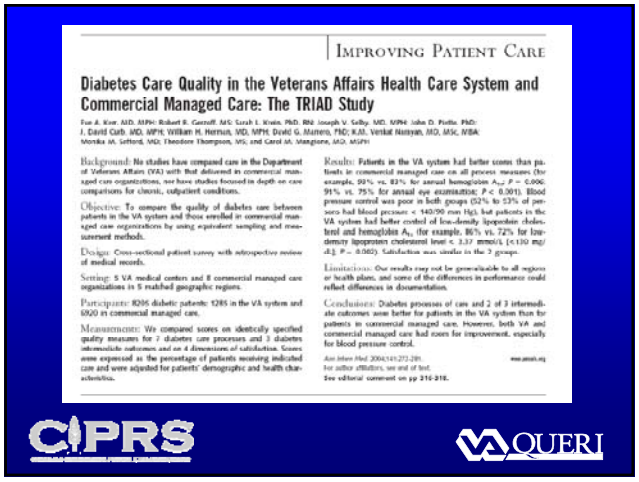

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Diabetes Care Quality in the Veterans Affairs Health Care System and Commercial Managed Care: The TRIAD Study

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Background: No studies have compared care in the Department of Veterans Affairs (VA) with that delivered in commercial managed care organizations, nor have studies focused in depth on care comparisons for chronic, outpatient conditions.

Objective: To compare the quality of diabetes care between patients in the VA system and those enrolled in commercial managed care organizations by using equivalent sampling and measurement methods.

Design: Cross-sectional patient survey with retrospective review of medical records.

Setting: 5 VA medical centers and 8 commercial managed care organizations in 5 matched geographic regions.

Participants: 8206 diabetic patients: 1285 in the VA system and 6920 in commercial managed care.

Measurements: We compared scores on identically specified quality measures for 7 diabetes care processes and 3 diabetes intermediate outcomes and on 4 dimensions of satisfaction. Scores were expressed as the percentage of patients receiving indicated care and were adjusted for patients' demographic and health characteristics.

Results: Patients in the VA system had better scores than patients in commercial managed care on all process measures (for example, 90% vs. 83% for annual hemoglobin A_{1c}; $P = 0.006$; 91% vs. 75% for annual eye examination; $P < 0.001$). Blood pressure control was poor in both groups (52% to 53% of persons had blood pressure < 140/90 mm Hg), but patients in the VA system had better control of low-density lipoprotein cholesterol and hemoglobin A_{1c} (for example, 86% vs. 72% for low-density lipoprotein cholesterol level < 3.37 mmol/L [< 130 mg/dL]; $P = 0.040$). Satisfaction was similar in the 2 groups.

Limitations: Our results may not be generalizable to all regions or health plans, and some of the differences in performance could reflect differences in documentation.

Conclusions: Diabetes processes of care and 2 of 3 intermediate outcomes were better for patients in the VA system than for patients in commercial managed care. However, both VA and commercial managed care had room for improvement, especially for blood pressure control.

Ann Intern Med. 2004;141:272-281. www.annals.org

For author affiliations, see end of text.

See editorial comment on pp 316-318.

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Key factors underlying VHA transformation

- US national healthcare reform, VHA "near-death" experience
- Visionary, committed, creative leadership
- Taxpayer support
- Active and trusting (generally speaking) stakeholders (VSOs, Congress, medical schools)
- Coordinated, comprehensive strategy for change
- Active engagement of health services researchers in developing and compiling evidence, measurement, technical assistance

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Outline

Part 1: Overview of VA's quality transformation

Part 2: The role of QUERI and implementation science

Part 3: QUERI frameworks

US Department of Veterans Affairs Quality Enhancement Research Initiative (QUERI)

QUERI Mission

To enhance the quality, outcomes and efficiency of VA health care by systematically implementing evidence-based clinical guidelines and innovations into routine clinical practice

Nine QUERI coordinating centers

- Chronic Heart Failure
- Diabetes
- HIV/AIDS
- Ischemic Heart Disease
- Mental Health
- Polytrauma/Blast-Related Injuries
- Spinal Cord Injury
- Stroke
- Substance Use Disorders

QUERI and VHA infrastructure

- Disease-specific, "virtual" QUERI Centers
- Dedicated funding, review mechanisms
- Large integrated delivery system; national clinical policies
- IT (EMRs, clinical reminders)
- Performance measurement, incentive program
- Conducive leadership orientation and culture (progressive, assessment- and improvement-oriented, research- and education-oriented)
- Extensive QUERI/operations partnerships (program, center and project steering committees and collaborators; joint leadership)

QUERI contributions to VHA reform

Indirect

- VA/DoD CPG Council, Performance Measures Workgroup
- Acute Coronary Syndrome initiative
- Overlapping QUERI/clinical program staff (DM, SCI)

Direct *(via implementation studies)*

- SCI vaccine initiative
- MH TIDES/WAVES initiative

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Implementation research in health

Implementation research is the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services. It includes the study of influences on healthcare professional and organizational behavior.

-- Eccles and Mittman, *Implementation Science* 2006

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Implementation science in QUERI: policy and practice foundations

- *Translational roadblocks*

  barriers to rapid, efficient progression of innovations from basic science to clinical application to routine use (implementation)
- *Quality chasm*

  gaps in the quality, safety, equity, efficiency, timeliness and patient-centeredness of health care delivery (due to insufficient use of evidence-based practices)

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Implementation research: Policy/practice goals

- Produce reliable strategies for improving health-related processes and outcomes; facilitate widespread adoption of these strategies
- Improve health-related processes and outcomes within participating study sites, settings

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Implementation research: Research goals

- Generate new insights and generalizable knowledge regarding dissemination / implementation *processes*, *barriers*, *facilitators*, *strategies*
- Develop, test and refine implementation theories, hypotheses, models and principles

Implementation research challenges

Quality
- Planning: timing, sequencing of implementation and related studies
- Research approaches, designs, methods, reporting

Quantity
- Researchers
- Projects
- Funding opportunities
- Training programs

Outline

Part 1: Overview of VA's quality transformation

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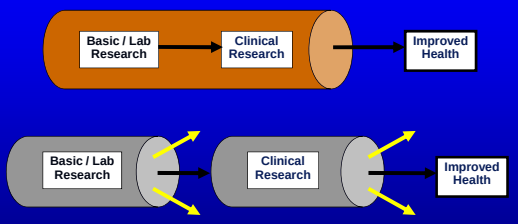
Implementation research challenges and frameworks

- Planning: sequencing, timing of implementation and related studies
  1. *Research-Implementation Pipeline*
  2. *QUERI Six-Step Process*
  3. *4-Phase Implementation Research Framework*
- Design, conduct and reporting: research approaches; study designs, methods and components; documentation
  4. *QUERI Service-Directed Project Template*

Translational roadblocks and inefficiency in health research: simplified depiction



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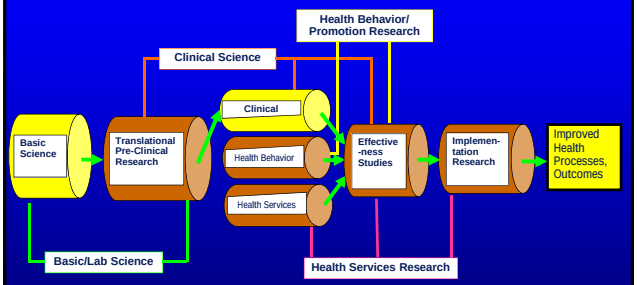
1. Refined research-implementation pipeline: *Implementation research* and *clinical research*



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2. The *Classic* Six-Step QUERI Process

1. Identify high risk/high burden conditions
2. Identify best practices
3. Define existing practice patterns in VA and variations from best practices
4. Identify (or develop) and implement programs to promote best practices
5. Document outcome and system improvements
6. Document improvements in health related quality of life

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Expanded QUERI Six-Step Process

Step 3: Measure and Diagnose Quality/Performance Gaps

- 3A. Measure existing practice patterns and outcomes across VHA and identify variations from evidence-based practices and benchmark outcomes (*quality, outcome and performance gaps*)
- 3B. Identify determinants of current practices
- 3C. Diagnose quality gaps
- 3D. Identify barriers and facilitators to improvement

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Expanded QUERI Six-Step Process

Step 4: Implement Improvement Programs

- 4A. Identify quality improvement strategies, programs and program components or tools to address quality gaps (e.g., via literature reviews)
- 4B. Develop or adapt quality improvement strategies, programs, program components or tools (e.g., educational resources, decision support tools)
- 4C. Implement quality improvement strategies and programs

Step 5/6: Evaluate Improvement Programs

5. Assess improvement program feasibility, implementation and impacts on patient, family and system outcomes
6. Assess improvement program impacts on health related quality of life (HRQOL)

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Additional QUERI steps

Step M: Develop measures, methods and data resources

Step C: Develop clinical evidence, effective practices

Step E: Effectiveness studies

Step O: Observational studies of implementation processes

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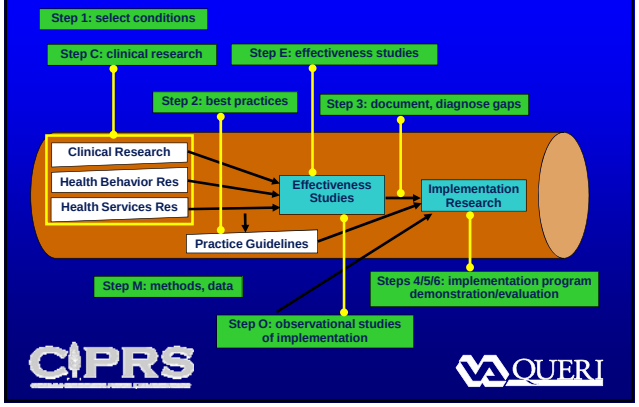
QUERI research-implementation pipeline



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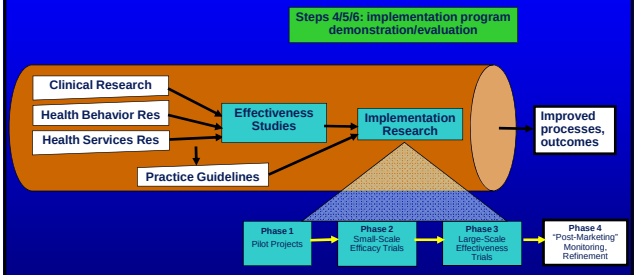
QUERI Research-Implementation Pipeline



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3. QUERI Four-Phase Implementation Research Framework

Phase	Study Type	Form of Evaluation
Pre-trial	Program	Conceptual design of implementation program and underlying design (logic) model from theory, prior empirical research
Phase 1	Pilot / Formative	Pilot test, assess feasibility, formative evaluation and refinement, develop intervention/evaluation protocols
Phase 2	Efficacy	Small-scale rigorous trial in controlled settings with ongoing intervention support; emphasis on internal validity
Phase 3	Effectiveness	Large-scale rigorous trial under routine conditions in varied settings; emphasis on external validity
Phase 4	Monitoring	Ongoing monitoring and feedback

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Resources

www.queri.research.va.gov

www.queri.research.va.gov/ciprs

www.implementationscience.com/series/1748-5908-Que

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