

Overview of QUERI Theme Issue

Cheryl B. Stetler^{1§}, Brian S. Mittman,² Joseph Francis³

§Corresponding author

¹Independent Consultant, Amherst, Massachusetts, USA

²VA Center for the Study of Healthcare Provider Behavior, Veterans Affairs Greater Los Angeles Healthcare System, Los Angeles, California, USA

³Office of Research and Development, Department of Veterans Affairs, Washington, DC, USA

Email addresses:

CBS Cheryl.Stetler@comcast.net

BSM: Brian.Mittman@va.gov

JF: Joe.Franics@va.gov

Abstract

Background

Continuing challenges and barriers to timely implementation of evidence-based practice (EBP) in healthcare delivery have motivated intensive interest in research efforts to apply and develop new theories, methods, and innovative roles and relationships in the field of implementation science. Recognizing the potential policy, practice and research value of a large-scale, stable implementation research program, the Veterans Health Administration (VHA) established the Quality Enhancement Research Initiative (QUERI) in 1998 to apply research-based approaches to improve the VHA healthcare system by implementing EBP. Simultaneously, QUERI focused on contributing to the evolving field of implementation science.

The results of QUERI efforts to study and improve VHA healthcare delivery practices are documented in a growing body of journal articles and reports. The research frameworks and tools developed and employed by QUERI, however, have not been similarly documented. Describing these is important for the field of implementation science, as well as for healthcare delivery systems and researchers interested in replicating QUERI's approaches and accomplishments.

Method

This article introduces a series of articles comprising a *QUERI Theme Issue of Implementation Science*. It describes a compilation of papers documenting a series of implementation research frameworks and tools employed by QUERI Centers in achieving

their dual mission: i.e., evidence-based patient care improvement through implementation of EBPs and, simultaneously, development of new scientific knowledge about implementation processes.

Conclusion

VHA and QUERI are not unique in their efforts to employ research-based approaches to accelerate routine implementation of evidence into practice within an integrated delivery system. However, QUERI's simultaneous pursuit of improvement and research goals within a large program is unique. The articles described in this introduction to the *QUERI Theme Issue* offer richly detailed descriptions of this still-evolving effort and its framework, tools, enabling processes and illustrative examples. The *Theme Issue* is offered as a resource for other implementation research programs and researchers pursuing common goals in improving care and developing the field of implementation science.

Background

Improving the quality and performance of healthcare delivery systems represents one of the most significant challenges facing the public and private sectors in the US and abroad. A central goal for improving the quality and effectiveness of healthcare services is rapid implementation of new research findings known to generate better outcomes than prevailing practices. However, barriers to implementation are considerable and not fully understood; and reliable, effective strategies to facilitate implementation remain scarce.

The field of implementation science endeavors to contribute to the goal of more rapid implementation through “all aspects of research relevant to the scientific study of methods to promote the uptake of research findings into routine settings in clinical, community and policy contexts.”[1] Implementation research (also labeled as *knowledge translation, research utilization, technology transfer* research) is an active field of study, as evidenced by the continued creation of new research funding programs, the launch of *Implementation Science*, and publication of special thematic issues of several key health research journals. In one such special issue of the journal *Evaluation and the Health Professions*, Sussman et al [2] discuss problems, improvement barriers, and related recommendations for moving this field forward. These include the need for a spectrum of roles, transdisciplinary collaboration and communication, and deliberate assessment of the complexities of implementation challenges. They call for new “study designs, methods, or instruments” [p. 27] [2] and for “substantial malleability among researchers, practitioners, gatekeepers, and policy makers; most particularly among researchers” [p. 21] [2]. Other researchers [3] echo these needs and concerns, stating “...implementation

work is highly complex, and while there are several theoretical or conceptual models to pursue for guidance, there remains a need for the literature to document the field-level successes and failures of these models and the components inspired by them” [p. 173] [3].

The Veterans Health Administration (VHA) established the Quality Enhancement Research Initiative (QUERI) in 1998 to apply research-based approaches to improve the VHA healthcare system by implementing evidence-based practice (EBP), and, simultaneously, to contribute to the continuing development of implementation science. The nature of QUERI, its mission, and related examples of promising progress have been described in-depth in previous publications [4-8]. Table 1 provides a summary of the evolving but consistent purposes/aims of the QUERI Program since its inception. QUERI Centers, a total of 9 as of August 2006, are the operational structures responsible for operationalizing QUERI’s mission. Table 2 provides a brief overview, while McQueen et al, [5] and Francis et al [7] detail elsewhere the nature of these Centers and their responsibilities. The results of QUERI efforts to study and improve VA healthcare delivery practices are documented in a growing body of journal articles and reports. The research frameworks and tools developed and employed by QUERI have not however been similarly documented. Describing these is important for the field of implementation science as well as for other healthcare delivery systems and researchers interested in replicating QUERI’s efforts and accomplishments.

The *QUERI Theme Issue of Implementation Science* documents implementation research approaches employed by QUERI in achieving its dual purposes/aims. The articles in the

Theme Issue describe how QUERI conceptualizes, designs, enables, and conducts implementation research to improve care; and, consequently, how it develops new insights into implementation science. This includes insights regarding the QUERI framework and tools as well as evolving concepts, interventions, theories, methods, and related supporting factors and processes. Additional, sample VHA publications that highlight specific progress to date as QUERI Centers move through the systematic steps of the QUERI framework [7] are provided in Table 3.

In summary, this QUERI Theme Issue is constructed to provide both a conceptual and operational understanding of QUERI frameworks and tools for implementation of evidence into practice within a health care system. Throughout the Issue, an effort has been made to use common definitions of key implementation terms (Table 4). These definitions come from a QUERI Glossary, initially developed in 2001, to enhance consistency and communication among VHA researchers and other stakeholders due to the lack of standard definitions in the field. Apart from the *Overview*, the QUERI Theme Issue (QTI) consists of 13 papers, one protocol, and 4 commentaries. The papers are being published in three segments. The first two segments describe a range of QUERI implementation research tools; implementation study issues and needs; illustrative cases demonstrating use of various tools; and enabling factors. The last segment contains a protocol and final illustrative case, and ends with a set of commentaries. These commentaries provide reflections on the value of QUERI from non-QUERI VHA and non-VHA stakeholders. The remainder of this QTI *Overview* describes the individual papers per three inter-related *Issue* themes: i.e., research frameworks and tools,

illustrative cases and focused examples, and organizational/support factors. Table 5 provides a *Table of Contents* for the full QTI, with a brief synopsis regarding each paper.

QUERI Research Frameworks and Tools

Mittman [9] presents QUERI's overarching frameworks for the design and conduct of a program of implementation research. This includes the basic Six-Step QUERI Process Model [4] as well as a frame of reference for the design of a phased, integrated program of action-oriented implementation research — with the ultimate goal of national, system-wide implementation of evidence-based practices. Other “tool” papers address key adoption, measurement, and maintenance issues encountered during phased QUERI studies, providing insights and potential solutions to related challenges. This includes Bowman et al's discussion of sustainability of implementation efforts and related measurement issues [10]; Smith and Barnett's review of gaps in traditional cost effectiveness analyses given the unique features of implementation projects, as well as their recommendations for more useful economic analyses [11]; Luck et al's theoretical- and evaluation-based description of a systematic marketing strategy for engaging health care managers [12]; and Curran et al's exploration of site-diagnosis, per formative evaluation, in developing tailored but evidence-grounded implementation interventions. [13] Authors suggest conceptual approaches for dealing with implementation and related study issues, and all link reported concepts and recommendations to experience from QUERI projects. One additional QTI “tool” paper generates from a VHA program indirectly related to QUERI that focuses on organizational leadership and management. [14] This paper, by VanDeusen Lukas et al., is a protocol outlining use and the related

challenges of an action research design to enhance and study implementation at the organizational level. [15]

Illustrative Cases and Other Examples

Four papers describe field-work in the Mental Health, HIV, Diabetes, and Spinal Cord Injury QUERI Centers as they initiated and explored various QUERI frameworks, tools and related implementation science concepts. Brown, et al [16] illustrate the evolution of a project to improve care for patients with schizophrenia that began roughly when QUERI and implementation science emerged and has now been transformed at its second phase to more explicitly reflect QUERI-related implementation science expectations; Goetz et al. [17] demonstrate early success with application of the QUERI six-step process to development of an intervention to improve HIV testing rates; while Krein et al.[18] describe a series of projects, guided by the QUERI framework, to assess and improve eye care for Veterans with diabetes that had mixed results. All of the illustrative cases cite challenges and iterative learning along the way. The last and more narrow “case” paper in the QTI is by Wallace & Legro, [19] who illustrate an early application of multi-stage formative evaluation within a national vaccination project across 23 clinical sites.

Organizational Factors and Other Enablers

Another set of papers in the QTI characterize an organizational theme. Stetler et al [20] provide an overview of QUERI’s systematic approach to enabling a shift in the focus of traditional health services research (HSR) portfolios, with researchers in QUERI Centers

as the primary target of change. They discuss the need for an approach similar to that required in changing major systems in clinical settings and then provide examples as well as the underlying rationale for specific strategies, concepts and tools.

The Smith et al [21] and Chaney et al [22] papers focus on the need to engage the support and participation of both operational line and staff at the local and national levels in order to spread and sustain evidence-based practices across the system. Both sets of authors describe emerging challenges and recommendations as they build and leverage support for a major national rollout. Those interested in dealing with broad national dissemination will be interested in the former, while those dealing with increasingly challenging IRB issues will find the latter of particular importance. Yano, with a broader viewpoint, describes the role of organizational research in advancing implementation of EBP in routine care settings within an organizational research framework consistent with the QUERI process [23]. As with other papers, these authors suggest conceptual approaches for dealing with implementation and related study issues, and all link reported concepts and recommendations to experience from QUERI projects.

Commentaries

The QTI ends with a diverse mix of viewpoints regarding the Issue's content and the QUERI program in general. It is divided into four components:

- The viewpoint of QUERI from within the VHA:

In the first commentary of this segment, Petzel provides the perspective of a VHA VISN director who has had direct experience over time with both a QUERI steering

committee and QUERI Center activity within his own VHA network [24]. In the second segment, Fleming et al provide the viewpoint of a VHA Central Office department critical to the system-wide quality of VHA patient care [25].

- The viewpoint of QUERI from outside the VHA:

To provide the viewpoint of leaders aware of QUERI but based in other parts of the US healthcare delivery system, Solberg examines QUERI from the viewpoint of one well versed in both the practical implications and science of system-level implementation [26]; while Donaldson, with wide experience in quality-focused work of the Institute of Medicine and the NIH, is well placed to provide a national policy and research perspective [27].

- The viewpoint of an implementation scientist: Graham, actively engaged in exploring models and frameworks in the field, provides the perspective of an international, non-VA implementation researcher [28].

The QTI closes with a commentary by the Acting Deputy Chief Research and Development Officer, Office of Research and Development, Department of Veterans Affairs. Francis focuses primarily on the future and envisioned evolution of QUERI, in light of insights gained to date and implications for other healthcare systems [29].

Summary

VHA and QUERI are not unique in their efforts to employ research-based approaches to accelerate routine implementation of evidence into practice within an integrated delivery

system. However, QUERI's simultaneous pursuit of improvement and research goals within a large program is unique. The articles described in this introduction to the *QUERI Theme Issue* offer richly detailed descriptions of this still-evolving effort and its framework, tools and enabling processes, as well as a series of illustrative examples. Development and use of these frameworks and tools have generated excitement as well as frustration; enjoyed successes and encountered barriers; and, over time, have resulted in progress in the understanding and clarification of implementation concepts and strategies. Publications describing QUERI are increasing, with many focused on the initial steps in the QUERI framework. Findings from early QUERI improvement projects are now emerging and will continue to emerge. Insights gained to date regarding implementation science and strategies are now being incorporated into the next phases of QUERI Center programmatic research. The full potential and influence of QUERI, however, will emerge only over the next few years both as Centers move beyond early pilots and demonstration projects and as the organizational template for national roll-out, being developed and initiated by the Mental Health QUERI, [21,22] is evaluated and replicated by other QUERI Centers.

With this Issue, as well as publications appearing elsewhere and considerable work-in-progress, QUERI is pleased to share selected evidence-based implementation experiences and evolving conceptual knowledge with colleagues also engaged in the journey to closing both clinical practice gaps and our gaps in implementation knowledge.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

CBS drafted the initial form and all revisions of this manuscript. All other authors (BSM, JF) have read drafted components of the manuscript, provided substantial input into initial and evolving refinements of the manuscript, and agreed to the final manuscript.

Acknowledgments

The views expressed in this article are those of the authors and do not necessarily represent the views of the Department of Veterans Affairs.

References

1. Eccles M, Mittman B: **Welcome to Implementation Science.** *Implementation Science* 2006, **1**: 1.
2. Sussman S, Valente TW, Rohrbach LA, Skara S, Pentz MA: **Translation in the health professions: converting science into action.** *Eval Health Prof* 2006, **29**: 7-32.
3. Phillips SD, Allred CA: **Organizational management: what service providers are doing while researchers are disseminating interventions.** *J Behav Health Serv Res* 2006, **33**: 156-175.
4. Demakis JG, McQueen L, Kizer KW, Feussner JR: **Quality Enhancement Research Initiative (QUERI): A collaboration between research and clinical practice.** *Med Care* 2000, **38**: I17-I25.
5. McQueen L, Mittman BS, Demakis JG: **Overview of the Veterans Health Administration (VHA) Quality Enhancement Research Initiative (QUERI).** *J Am Med Inform Assoc* 2004, **11**: 339-343.
6. Feussner JR, Kizer KW, Demakis JG: **The Quality Enhancement Research Initiative (QUERI): from evidence to action.** *Med Care* 2000, **38**: I1-I6.
7. Francis J, Perlin JB: **Improving performance through knowledge translation in the Veterans Health Administration.** *J Contin Educ Health Prof* 2006, **26**: 63-71.
8. Fihn SD: **Moving implementation science forward.** *J Gen Intern Med* 2006, **21 Suppl 2**: S65-S66.
9. Mittman BS. Frameworks for the design and conduct of implementation research programs. 2006.
10. Bowman C, Sobo EJ, Gifford A. Measuring implementation sustainability. 2006.
11. Smith M, Barnett P, Shane A. Implementation costs in VA: Strategies, methods, and early results. 2006.
12. Luck J. Marketing: An essential component for effectively implementing evidence-based interventions in VA. 2006.
13. Curran G, Mukherjee S, Allee ME, Owen RR. A process for developing implementation interventions: Site diagnosis and the use of multidisciplinary teams of local clinicians and implementation/clinical experts. 2006.

14. Center for Organization, Leadership & Management Research (COLMR). <http://www.colmr.research.va.gov/> . 2006. 8-12-2006.
15. VanDeusen Lukas C. An example of action research at the organizational level. 2006.
16. Brown AH, Cohen AN, Chinman MJ, Mintz J, Young AS. EQUIP: Application of implementation research methods to improve care for schizophrenia. 2006.
17. Goetz M, Bowman C, Hoang T, Anaya HD, Osborn T, Gifford A *et al.*. Implementing and evaluating a regional strategy to improve testing rates in VA patients at risk for HIV utilizing the QUERI process as a guiding framework. 2006.
18. Krein SL, Bernstein SJ, Fletcher CE, Makki F, Goldzweig CL, Watts B *et al.*. Improving eye care for Veterans with diabetes: From evidence to implementation. 2006.
19. Wallace CM, Legro MW. A QUERI approach to formative evaluation. 2006.
20. Stetler CB, Legro MW, Rycroft-Malone J, Bowman C, Curran G, Guihan M *et al.*. The role of "facilitation" in implementation of research findings: A qualitative evaluation of facilitation experiences in the Veterans Health Administration. (Under review)..
21. Smith J, Williams JW, Owen RR, Rubenstein LV, Chaney E. A QUERI research-clinical partnership to disseminate collaborative care for depression. 2006.
22. Chaney E, Ritchie M, Simon B, Mittman D, Rubenstein LV. Strategies and tools for partnering with IRBs. 2006.
23. Yano EM. The role of organizational research in routine care implementation of evidence-based practice: Case studies in QUERI. 2006.
24. Petzel R. QUERI Contributions to VA. Part I. 2006.
25. Fleming B, Craig T, Ordin D. QUERI Contributions to VA. Part II. 2006.
26. Solberg L. QUERI Contributions to QI Practice/Policy. Part I. 2006.
27. Donaldson M. QUERI Contributions to QI Practice/Policy. Part II. 2006.
28. Graham I. QUERI Contributions to Implementation Science. 2006.
29. Francis J. Commentary (Capstone Piece). 2006.
30. Rubenstein LV, Mittman BS, Yano EM, Mulrow CD: **From understanding health care provider behavior to improving health care: the QUERI framework for**

quality improvement. Quality Enhancement Research Initiative. *Med Care* 2000, **38: I129-I141.**

31. MDRC Organizational Change Primer. 2000. Boston, MA, Veterans Health Administration.
32. NHS Centre for Reviews and Dissemination: **Getting evidence into practice.** *Eff Health Care* 1999, **5**: 1-15.

Table 1
QUERI highlights
<p>QUERI purpose (2000) [6]:</p> <ul style="list-style-type: none"> • <i>“establish a national system to translate research discoveries and innovations into patient care and health systems improvements.”</i> • <i>“redefine, or at least refine, the interdependent relationships among clinicians, managers, policy makers, and researchers.”</i>
<p>QUERI framework (2000) [4]:</p> <ul style="list-style-type: none"> • <i>“designed to ensure the systematic translation of findings and products (quality tools that promote use of research findings) to promote optimal patient outcomes and system-wide improvements.”</i>
<p>QUERI aim (2000) [30]:</p> <ul style="list-style-type: none"> • <i>“generate interventions to improve health care for veterans; it is thus critically important ...[to] support new research on provider behavior and integrate current knowledge about it at every opportunity.”</i>
<p>QUERI CENTERS(2004),[5] engaged in activities to both:</p> <ul style="list-style-type: none"> • <i>“identify and correct gaps in clinical quality and performance”</i> • <i>develop “generalizable, scientifically valid knowledge regarding improvement strategies and organizational change processes</i>

Table 1 continued

QUERI aims (2006) [8]:

- *“accelerate the implementation of new research findings into clinical care by creating a bridge between those performing research and those responsible for health system operations.”*
- *“expand the scientific basis of implementing proven medical advances into clinical practice.”*

Table 2

Description of a QUERI Center per 2004 Solicitation for a new Center

1. Responsibilities:

- *Facilitating improvements in the quality, outcomes and efficiency of VHA healthcare services by supporting the implementation of evidence-based clinical practices and translation of clinical research findings and recommendations into routine clinical practice. QUERI promotes use of evidence as the basis for clinical decision-making and measures outcomes to enhance system-wide quality, outcomes and efficiency. QUERI is a data-driven, outcomes-based effort that links research to practice using a defined, systematic process.*
- *Per a [Center's] Strategic Plan, specifying details for identifying gaps in clinical evidence and practice, comparing ideal to existing VHA clinical policies and practices, and promoting use of the best available evidence by clinicians, managers, policymakers, patients and others to close these gaps.*

2. Key required activities:

- *Enriching VHA's... contributions in health services and implementation research.*
- *Developing, testing and refining tools and products specifically designed to promote clinical quality and outcome improvement, such as automated clinical decision tools, educational materials, policy reports and others*

2. Key Structures:

- a. Core Roles: Research Coordinator; Clinical Coordinator; Implementation Research Coordinator
- b. Executive Committee, with key stakeholders including VHA and non-VHA clinicians, policy makers, and researchers

Table 3

Additional, sample QUERI-related publications

- Anaya HD, Yano EM, Asch SM. Early adoption of human immunodeficiency virus quality improvement in Veterans Affairs medical centers: use of organizational surveys to measure readiness to change and adapt interventions to local priorities. *Am J Med Qual.* 2004 Jul-Aug;19(4):137-44
- Bradley, K.A., Williams, E.C., Achtmeyer, C.E., Collins, B., Volpp, B., Kivlahan, D.R. (in press). Implementation of evidence-based alcohol screening and counseling in the Veterans Affairs Healthcare System. *American Journal of Managed Care.*
- Curran GM, Thrush CR, Smith JL, et al. Implementing research findings into practice using clinical opinion leaders: barriers and lessons learned. *Jt Comm J Qual Patient Saf.* 2005 Dec;31(12):700-7.
- Goetz LL, Nelson AL, Guihan M, et al. Provider adherence to implementation of clinical practice guidelines for neurogenic bowel in adults with spinal cord injury. *J Spinal Cord Med.* 2005;28(5):394-406
- Ho PM, Prochazka AV, Magid DJ, et al. The association between processes, structures and outcomes of secondary prevention care among VA ischemic heart disease patients. *BMC Cardiovasc Disord.* 2006 Feb 9;6:6

Table 3 continued

- Patterson ES, Nguyen AD, Halloran JP, Asch SM. Human factors barriers to the effective use of ten HIV clinical reminders. *J Am Med Inform Assoc.* 2004 Jan-Feb;11(1):50-9. Epub 2003 Oct 5
- Pogach L, Charns MP, Wrobel JS, et al. Impact of policies and performance measurement on development of organizational coordinating strategies for chronic care delivery. : *Am J Manag Care.* 2004 Feb;10(2 Pt 2):171-80.
- See Table 5, Additional QUERI-related journal supplement publications in Stetler et al, this Issue for Medical Care Supplement; JAMIA issue; and JGIM Supplement.
- Stetler C, Legro M, Rycroft-Malone J, Bowman C, Curran G, Guihan M, Hagedorn H, Pineros S, Wallace C. The role of “facilitation” in implementation of research findings: a qualitative evaluation of facilitation experiences in the Veterans Health Administration. (Under review)
- Willenbring, M.L., Postier, A.C., Kenny, M. & Hagedorn, H. (2006). Innovative approaches to measuring outcomes and providing feedback: The Opioid Agonist Therapy Effectiveness (OpiATE) Initiative. *Journal of Maintenance in the Addictions*, 3(1), 13-32.
- Yano EM, Asch SM, Phillips B, et al. Organization and management of care for military Veterans with human immunodeficiency virus/acquired immunodeficiency syndrome in Department of Veterans Affairs Medical Centers. *Mil Med.* 2005 Nov;170(11):952-9
- Weaver FM, Goldstein B, Hammond M. Improving respiratory vaccination rates in Veterans with spinal cord injury/disorders: lessons learned. *SCI Nurs.* 2004

Table 4

Sample QUERI definitions

Clinical best practice intervention*:

- The specific, evidence-based clinical/therapeutic practice or delivery system/organizational arrangement to be implemented to improve clinical outcomes, and for which current adherence and quality/performance are inadequate.
- Examples are a new drug, behavioral intervention or a new clinical role or delivery system arrangement such as case management or the chronic care model.

Dissemination[31,32]:

- An active, versus passive, effort to communicate tailored information to target audiences with the goal of engagement and information use. Dissemination is integral to implementation and is not seen as an isolated activity separate from an implementation initiative.

Facilitation [20]:

- “Within an implementation study, a deliberate process of interactive problem solving and support that occurs in the context of a recognized need for improvement and a supportive interpersonal relationship.”

Formative evaluation^{&(Stetler et al., 2006)}

- “A rigorous assessment process designed to identify potential and actual influences on the progress and effectiveness of implementation efforts.” Its progressive, integrated stages are defined as developmental/diagnostic FE, implementation-focused FE, progress-related FE and interpretive FE.

Table 4 continued

Implementation*:

- Efforts designed to get best practice findings and related products into use via effective change/uptake/adoption interventions.
- Implementation typically follows dissemination and:
 - Includes identification of barriers and actions steps to reduce or overcome them
 - In the presence of multiple barriers may include multiple interventions
 - Includes identification of facilitating factors and action steps to foster success.

Implementation intervention*:

- A single method or technique to facilitate change and thereby adoption of best practice recommendations. For example, an opinion leader, electronic clinical reminder, or interactive education program.
- Also referred to as “uptake” or “adoption” or “change” interventions.

Implementation strategy or program*:

- An integrated set (bundle, package) of implementation interventions. Implementation studies typically evaluate implementation strategies or programs, rather than individual interventions in that individual interventions are rarely sufficient to achieve implementation in complex clinical settings.

Table 4 continued

Implementation toolkit*:

- A package of implementation interventions that is developed, tested, and refined by implementation researchers for dissemination to health care facilities for use in spreading a targeted best practice intervention.
- Toolkits often include educational material, data collection tools, pocket reference guides, decision-making algorithms, etc. Increasingly, additional elements essential for effective replication and sustained implementation are being considered for inclusion, e.g., methods for engaging stakeholders or assessing readiness; descriptions of the need for and role of a facilitator; barriers to/solutions for sustainability; and the approaches to and usefulness of formative evaluation during implementation.

Translation*:

- The structural link between research and clinical practice.
- The rigorous process through which best practice research findings are:
 - systematically converted into specific recommendations and/or clinical tools and products
 - disseminated to relevant target audiences
 - implemented in appropriate levels throughout the system
 - evaluated in relation to improvement goals as well as the translation process
 - integrated through the organization. and incorporated into ongoing monitoring and feedback mechanisms as appropriate

Table 4 continued

**From internal QUERI documents, 2000-2001*

[‡] Stetler CB, Legro MW, Wallace CM, Bowman C, Guihan M, Hagedorn H *et al.*: **The role of formative evaluation in implementation research and the QUERI experience.** *J Gen Intern Med* 2006, **21 Suppl 2**: S1-S8.

Table 5

QUERI THEME ISSUE (QTI): Section 1 Table of contents

<p>1. Overview of QTI, Stetler et al.</p>	<p>Provides an outline of this compilation of papers representing the development process and products of the Veterans Health Administration’s QUERI program to meet its dual purpose; i.e., of evidence-based patient care improvement through knowledge translation and, simultaneously, development of related scientific knowledge about that process.</p>
<p>2. Enabling a Focus on Implementation & Related Science through QUERI: Refining Culture, Capacity, and Infrastructure, Stetler et al.</p>	<p>Provides a case description regarding the challenge of re-focusing traditional HSR researchers on an implementation trajectory; and describes organizational efforts undertaken to refine and adapt traditional HSR and its context.</p>
<p>3. QUERI Frameworks for the Design and Conduct of Implementation Research Programs, Mittman</p>	<p>Presents key QUERI frameworks for the design and conduct of a program of implementation research, including the Annotated Six-Step QUERI Process model and the Four-Phase Implementation Research framework. Explains the motivation and foundations of the frameworks and their role and use in increasing the efficiency and success of implementation research.</p>

Table 5 continued

<p>4. A QUERI research-clinical partnership to disseminate collaborative care for depression, Smith et al</p>	<p>Describes the Mental Health (MH) QUERI’s planning processes for national dissemination (NDP) that identifies specific goals pertaining to organizational policy and structural factors expected to impact sustainability of collaborative care once disseminated. Includes a formative evaluation framework and related tools to document and assess MH QUERI activities and success in accomplishing NDP goals.</p>
<p>5. Site-Diagnosis and the Use of Multidisciplinary Teams of Local Clinicians and Clinical Experts: A QUERI-Related Process for Developing Implementation Interventions, Curran et al</p>	<p>Describes the process used in developing an implementation intervention to assist VHA substance abuse clinics in adopting guideline-based practices for treating depression. The study, a QUERI Phase 2 multi-site demonstration project, was a collaborative effort between the Mental Health and Substance Use Disorder QUERI groups.</p>
<p>6. Implementing and evaluating a regional strategy to improve testing rates in VHA patients at risk for HIV utilizing the QUERI process as a guiding framework, Goetz et al.</p>	<p>Presents an illustrative case study that demonstrates application of the QUERI 6-step/4-phase framework to the development and implementation of a program to improve rates of HIV diagnostic testing. Based on findings from Steps 1-3, the team describes a QUERI action-oriented Step 4/phase 1 two-site pilot project and the subsequent refinement for a phase 2 small-scale, regional multi-site project — as preparation for extension to other geographically dispersed sites throughout the VHA.</p>

Table 5 continued	
QUERI THEME ISSUE (QTI): Section 2 Table of contents	
<p>1. Human Subjects Protection Issues in QUERI Implementation Research, Chaney et al.</p>	<p>Uses a set of IRB-related experiences to discuss the challenges, in both human and economic terms, confronted in carrying out action-oriented implementation studies. It then provides methods and tools identified for optimizing the IRB process in implementation research. The approach is designed to support development of improvements in IRB and quality improvement processes that will enhance research/clinical partnerships.</p>
<p>2. Social Marketing: An Essential QUERI Component for Effectively Implementing Evidence-based Practice in the VHA, Luck et al</p>	<p>Explicates development of a systematic marketing effort within VHA to support preparation for a national rollout of the TIDES (Translating Initiatives for Depression into Effective Solutions) depression care manager program (Mental Health QUERI). It presents the marketing theory underlying that effort and describes the related implementation plan as a potential model for efforts to market other evidence-based interventions in VHA, as well as in other integrated healthcare organizations.</p>

Table 5 continued	
<p>3. QUERI and the Economics of Implementation Studies, Smith & Barnett</p>	<p>Offers guidance to those undertaking economic evaluation of implementation programs, given that implementing interventions raises issues beyond those encountered in standard cost effective analysis (CEA). It enumerates additional costs of implementation; describes the business case analysis (BCA), and offers recommendations for those embarking on a CEA or BCA of an implementation research project. Related QUERI examples are provided.</p>
<p>4. The Role of Organizational Research in Implementation of Evidence-based Practice: QUERI Examples and Applications, Yano</p>	<p>Using the six-step QUERI process as a foundation, outlines an organizational research framework designed to improve and accelerate implementation of EBP into routine care. Specific QUERI-related organizational research applications are reviewed, with discussion of measures/methods used to apply them. Describes applications in the context of a QUERI-related continuum of organizational research activities</p>
<p>5. Measuring sustainability: Design considerations for taking the longer view of implementation Bowman et al.</p>	<p>Explores the variety of conceptualizations of implementation sustainability as well as behavioral and organizational factors that influence it, highlighting the finer points of design considerations. Recommendations are made for designing such analyses, drawing on QUERI-related experience with measuring sustainability framed within the rich theoretical and empirical contributions of others.</p>

Table 5 continued

<p>6. A QUERI approach to formative evaluation: How formative evaluation informed an implementation project to increase vaccination rates in high-risk veterans, Wallace & Legro</p>	<p>VA QUERI research teams include formative evaluations (FE) in implementation projects to identify critical information about the processes of implementation that can guide adjustments to project activities in order to better meet project goals. This paper describes, within the context of an FE framework developed by QUERI, several examples relative to the Spinal Cord Injury implementation project to improve delivery of respiratory vaccines.</p>
<p>7. Improving eye care for veterans with diabetes: an example of using the QUERI steps to move from evidence to implementation, Krein et al.</p>	<p>Presents an illustrative case study to demonstrate QUERI's systematic approach for moving along the research to practice continuum. It describes a series of projects using the six-step framework to illustrate how this process guided work by the diabetes QUERI to assess and improve eye care for veterans with diabetes. It demonstrates the promise of the QUERI model in facilitating more rapid implementation of evidence into practice as well as related challenges.</p>

QUERI THEME ISSUE (QTI): Section 3 Table of contents

<p>1. Strengthening organizations to implement evidence-based clinical practice: A protocol and early lessons for QUERI from an action research framework, VanDeusen Lukas, et al</p>	<p>Details the study protocol for a project that uses an action-research design to achieve the following aims: test the effectiveness of a model of organizational change in comparison with a more limited data-feedback model in improving system use of a selected evidence-based clinical practice (hand hygiene); identify and analyze organizational factors that affect model implementation; and test the feasibility of intervention activities used to introduce and support the organizational change model. It also addresses two early challenges in conducting action research to introduce and test a complex organizational model in multiple health care delivery systems such as the VHA.</p>
<p>2. A QUERI Service-Directed Project: Implementing chronic care principles to improve care for schizophrenia, Brown, et al.</p>	<p>Presents an illustrative case study to demonstrate evolution of a project on “Enhancing Quality-of-care In Psychosis” (EQUIP) that began roughly when QUERI and implementation science were emerging and was subsequently transformed, through continued funding and QUERI tools, into an EQUIP-2 protocol. The protocol provides explicit examples of QUERI expectations for hands-on, action-oriented Service-Directed Projects grounded in more current implementation science. Authors reflect on the utility of QUERI frameworks and tools, challenges encountered, and insights gained that influenced their phase 2 protocol.</p>

Table 5 continued

<p>3. Commentary: QUERI Contributions to VA, Petzel & Fleming et al</p>	<p>Part 1: Comments on QUERI from the perspective of a VHA VISN director, examining QUERI's success in conducting implementation research with minimal adverse impacts on the VHA's healthcare delivery needs and priorities, and commenting on the benefits of QUERI for participating facilities and for VHA overall.</p> <p>Part 2: Comments on QUERI from the perspective of a VA Central Office "staff function" (vs. "line") leaders, commenting on the contributions of QUERI to the Office of Quality Performance's mission and activities (e.g., Guideline Council, performance measurement) and to VHA overall.</p>
<p>4. Commentary: QUERI Contributions to QI Practice/Policy, Solberg & Donaldson</p>	<p>Part 1: Comments on QUERI from the perspective of a non-VA healthcare delivery system leader, examining QUERI's relevance, value and contributions to delivery systems outside VA.</p> <p>Part 2: Comments on QUERI and its value and contributions and role as a national model from the perspective of a national policy/research leader, reflecting IoM, NIH and other public/policy experience.</p>

Table 5 continued

<p>5. Commentary: QUERI Contributions to Implementation Science, Graham</p>	<p>Comments on QUERI from the perspective of a non-VA implementation researcher, focusing specifically on QUERI tools and frameworks and their (a) degree of uniqueness and contributions to the "state of the art" in implementation research, and (b) their relevance, applicability and value to non-VA researchers.</p>
<p>6. Commentary: A QUERI Capstone, Francis</p>	<p>Summarizes lessons learned and identifies key themes/challenges for the future, such as implementing evidence in areas that go beyond traditional guidelines (e.g., polytrauma, patients with co-morbidity, or issues of care-giving) as well as managing the new Veterans population and the challenges of OIF/OEF. Finally, describes potential lessons for other health care systems.</p>