

Clinical Practice Guidelines

Primer

Management Decision and Research Center
Health Services Research and Development Service
Office of Research and Development
Department of Veterans Affairs

In collaboration with
Association for Health Services Research

The Health Services Research and Development Service (HSR&D) is a program within the Veterans Health Administration's Office of Research and Development. HSR&D provides expertise in health services research, a field that examines the effects of organization, financing and management on a wide range of problems in health care delivery – quality of care, access, cost and patient outcomes. Its programs span the continuum of health care research and delivery, from basic research to the dissemination of research results, and ultimately to the application of these findings to clinical, managerial and policy decisions.

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Purpose of primer series: to help bridge the gap among health services researchers, policy makers, managers and clinicians in an effort to improve the quality and cost effectiveness of health care for veterans. The primer series is part of a larger set of dissemination initiatives developed by VHA's Office of Research and Development through its Management Decision and Research Center and in collaboration with the Association for Health Services Research.

Purpose of *Clinical Practice Guidelines*: to provide an introduction to clinical practice guidelines as a tool to support clinical decision making and quality health care delivery in the Veterans Health Administration. The primer provides a basic framework for understanding clinical practice guidelines and discusses a number of issues regarding implementing guidelines. More in depth readings and other resources are listed in the appendices.

Suggested audience: professionals involved in health care delivery and decision making, including managers working in clinical care, quality management, administration and strategic planning at VA Headquarters, Veterans Integrated Service Networks and within VA facilities.

Suggested uses: individual study, orientation for health care providers, management training programs in Veterans Integrated Service Networks and medical centers, as a resource for guideline implementation planning, continuing medical education courses and other medical and health professional training programs.

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Introduction

As health care organizations throughout the country have learned, developing guidelines is relatively easy compared to implementing them.

During the 1970s and 1980s, health services researchers uncovered evidence of substantial practice variations, suggesting that medicine was often more art than science. Those findings, combined with rapidly rising health care costs, supplied the impetus for developing practice guidelines. By synthesizing the best available research evidence on various conditions and procedures, good practice guidelines supply health care professionals with needed support. Used properly, guidelines can improve health care quality and encourage more efficient use of limited health care resources.

Over time, practice guidelines have gained wide acceptance. Hospitals, health plans, medical specialty groups, the federal government, and others have used various approaches to develop thousands of guidelines. *But, as health care organizations throughout the country have learned, developing guidelines is relatively easy compared to implementing them.* Numerous questions remain about how best to implement practice guidelines and whether different guidelines, treatment settings, and patient populations require different implementation strategies. Unless guidelines are implemented effectively, they may not live up to their potential.

VA is committed to implementing nationally developed, evidence-based practice guidelines that can improve health care outcomes and efficiency for our patient population. Ultimately, VA hopes to see increasingly more of the care it provides supported by guidelines, and is funding research to improve implementation at the national, network, and facility levels. In addition, guidelines form a core component of VA's evolving performance measurement system for Veterans Integrated Service Networks (VISNs). Thus, evidence-based practice guidelines figure prominently in VA's goals to promote excellence and accountability in health care. "Practice guidelines are clinical decision-making tools that can help VA improve the quality of care it provides," notes VA Under Secretary for Health Kenneth W. Kizer, M.D., M.P.H. "Although they are only one element in VHA's overall quality management strategy, they are an especially important element."¹

This primer was developed to help a broad audience, including clinicians, health care managers, and policy makers – both within and outside VA – use guidelines more effectively by answering some basic questions about the challenges of guideline implementation and the lessons gleaned from current research. A question-and-answer format is used for easier reading and accessibility. Because of VA's considerable work in developing, evaluating, and implementing guidelines, several VA research products are highlighted. Resources for additional information, including appendices of resources in and outside VA and references for more in-depth reading, are provided as well.

What are clinical practice guidelines? Why do we need evidence-based clinical practice guidelines, and how do they contrast with consensus-based guidelines?

VA defines clinical practice guidelines as “recommendations for the performance or exclusion of specific procedures or services derived through a rigorous methodological approach that includes the following:

- determination of appropriate criteria, such as effectiveness, efficacy, population benefit, or patient satisfaction; and
- literature review to determine the strength of the evidence (based in part on study design) in relation to these criteria.”²

Evidence-based guidelines represent a systematic rational approach to medicine because they are more rigorously grounded in science.

VA has been active in the development and implementation of evidence-based guidelines, which make explicit links between practice recommendations and the quality of supporting evidence. Guidelines help optimize management of a given condition, problem, or patient population by identifying best care practices. Evidence-based guidelines represent a systematic, rational approach to medicine because they are more rigorously grounded in science – not expert opinion or anecdotal evidence.

Most national guidelines are developed through a consensus process that involves a group of experts who are convened for the specific purpose of constructing a guideline on a given condition or procedure. Such a group may formally consider scientific evidence or it may rely on position statements or the expertise of its members.

So, although many evidence-based guidelines are developed through a consensus process, many consensus guidelines are not evidence-based. The difference is that evidence-based guidelines are produced through systematic reviews that assess the quality of relevant clinical trials and studies and weight them accordingly (e.g., randomized versus nonrandomized, controlled versus uncontrolled, blinded versus unblinded, etc).³

To ensure scientific rigor in its guideline activities, VA is developing a weighting system that will be used to evaluate the quality of evidence behind VA practice guidelines.

Are clinical practice guidelines the same as algorithms? As clinical pathways?

An algorithm is a set of rules for solving a problem or accomplishing a task. Clinical algorithms provide guidance for a specific patient care problem. Typically, a clinical algorithm diagrams a practice guideline into a step-by-step flow chart, which provides a visual display of the algorithm’s branching logic.⁴

A clinical pathway organizes, specifies, and sequences the major patient care activities and interventions of an entire interdisciplinary team for a particular diagnosis or procedure. It is a management plan that defines key processes and events in the day-to-day delivery of care. The difference between guidelines and pathways is that pathways focus on the quality and efficiency of care *after* deci-

sions have been made about what procedures or services to perform. Thus, a guideline may be viewed as a decision support tool, whereas a pathway may be viewed as a quality assurance tool.

Under VA policy, VA facilities use nationally developed, evidence-based practice guidelines. However, clinical pathways should be developed or customized locally.

Why are guidelines important to VA managers and clinicians?

“No matter how [guidelines] are used, the goal is the same: To improve patient care.”

VA Under Secretary for Health Kenneth W. Kizer, M.D., M.P.H., notes that, “no matter how [guidelines] are used, the goal is the same: To improve patient care.”⁵ Better patient outcomes often go hand in hand with improvements in efficiency and cost-effectiveness, “but achieving savings is not the primary motivation for implementing practice guidelines,” Dr. Kizer states.

At VA, clinical quality is “critically dependent on organizational systems and structures that minimize the chances for mistakes to occur, improve efficiency, promote accountability, and encourage continuous improvement,” Dr. Kizer writes in *Prescription for Change*.⁶ Practice guidelines can help VA put those systems and structures into place by identifying and implementing best practices that ultimately will benefit VA patients.

In addition, guideline implementation has been incorporated into performance agreements between network directors and the Under Secretary for Health. Guidelines or specific elements of guidelines supported by strong or conclusive evidence have been used to develop national performance measures for conditions like ischemic heart disease, major depressive disorder, hypertension, smoking cessation, and diabetes. The list of mandated guidelines and performance measures will be updated annually. (For more information on mandated guidelines and performance measures, see Appendix E.)

How do guidelines relate to quality improvement?

Better patient care means better patient outcomes. This is what clinical quality is all about.

Better patient care means better patient outcomes. This is what clinical quality is all about. At VA, quality improvement focuses on “prospectively building into the delivery system those processes and techniques that optimize access, coordination of services, use of best practices, and patient participation in clinical decision-making,” Dr. Kizer writes.⁷ Guidelines are one of several tactics for implementing this strategy.

As noted, VA is incorporating guidelines into quality improvement and performance measurement activities at the national and network levels. A bold new program of VA’s Health Services Research and Development Service, the Quality Enhancement Research Initiative (QUERI), will create and implement a national system to translate the latest information on evidence-based medicine and best practices into patient care in several ways, including implementation of guidelines. VA is already using practice guidelines to improve care

at the local level. For example, the use of practice guidelines on pressure ulcer care has led to a 25 percent reduction in pressure ulcer development among long-term care patients studied.⁸ In another local VA project, locally adapted national practice guidelines for the treatment of chronic obstructive pulmonary disease, asthma, and sexually transmitted diseases had positive impacts on local practice.⁹ The study also provided a valuable model for changing health care practice that is being applied in other initiatives. (See Appendix C for more details.)

What are the limitations of clinical practice guidelines?

Guidelines are dynamic and evolving; they must change to keep pace with new scientific knowledge and technologies.

There are several limitations to practice guidelines. First, guidelines are only as good as the evidence on which they are based. Unfortunately, science does not always provide clear answers to questions surrounding clinical care. In addition, studies used to support guideline recommendations may be poorly designed or of limited applicability. These factors explain why it is so important to take an evidence-based approach to guideline development. It is wise to keep in mind that guidelines are dynamic and evolving; they must change to keep pace with new scientific knowledge and technologies.

Second, guidelines should be viewed as a tool for health care decision-making – not a dictate. It is not reasonable to expect 100 percent compliance with any guideline, since there may be perfectly valid reasons for not complying with a guideline in a given clinical situation. These reasons could include patient comorbidities, age, or other complicating factors. Quality, as reflected in patient outcomes – not rigid compliance – should be the basis for professional accountability. In addition, there must always be room for clinical judgment and patient preference in medical decision-making. Thus, health care professionals should view guidelines as a resource – not as pronouncements from on high.

Third, guidelines are useless unless they are implemented properly, so that they make a positive impact on clinical practice patterns and patient outcomes.

What do we know about issues related to guideline implementation?

Research on guideline implementation has tended to focus on issues related to changing health care practice. These issues include lack of awareness, lack of agreement or “buy-in” regarding a guideline, inability to implement a guideline, and inability to remember it. Recently, attention has started to shift to system barriers to guideline implementation, such as inadequate staffing, lack of technology, facility design, and conflicting financial incentives. However, evidence on the impact of these barriers – and strategies for overcoming them — is not in yet.

Many types of health care professionals may be involved in guideline implementation, including physicians, nurses, medical directors, case managers, quality directors, patient educators and others. Implementation issues related to changing professional practice may be classified into four types:

- *Knowledge*: The provider must be aware of and understand the guideline.
- *Attitude*: The provider must agree with the guideline's recommendations.
- *Behavior*: The provider must be able – and encouraged – to use the guideline. Relevant factors include time and resources, financial incentives, appropriate skill mix, guideline complexity, patient acceptance, etc. Some of these factors reflect system barriers.
- *Maintenance*: Without reinforcement, practice changes tend to decay over time.¹⁰ Again, system issues often play a role in this area.

System characteristics can have a significant impact on guideline implementation. For example, VA facilities may benefit from being part of a large organization that has its own culture and a clearly stated mission. However, it is often difficult to implement guidelines within large, complex organizations like VA. This is especially true during times of great change when organizational goals and strategies are being realigned. Other challenges stem from the complexity of VA patients, who tend to be older and sicker, with multiple diagnoses.¹¹ VA is working to install state-of-the-art computer technology that will support guideline implementation.

What are the different types of implementation strategies?

A generic approach to guideline implementation won't change clinical practice.

No single implementation strategy works across the board. Targeted dissemination is the critical first step. *However, one thing is clear: Dissemination alone makes little impact on clinical practice.* Most current implementation strategies are geared toward changing the practice of health care professionals. A multi-faceted approach that combines several methods – such as education, opinion leaders and clinical audit and feedback – in a package, appears to be most effective in this regard. Types of strategies for changing professional practice include:

- *Knowledge-based*: systematic reviews, evidence summaries, continuing medical education, dissemination
- *Attitude-based*: local adaptation of guidelines, opinion leaders, academic detailing, specialty society endorsements, peer review
- *Behavior-based*: time and scheduling, skill-building, equipment and personnel, total quality management interventions, decision support tools, patient compliance
- *Maintenance-based*: computerized reminder systems, standing orders, audits, feedback, follow-up programs¹²

Experience shows that a generic approach to guideline implementation won't change clinical practice. Each case is unique and depends on the type of guideline and the type of facility or setting where it is being implemented. While there may be cross-cutting issues, VA managers and clinicians need to identify unique challenges to implementing each guideline that they undertake and develop a strategy or a set of strategies for addressing those problems.

What does research tell us about successful implementation of guidelines?

Research on guideline implementation is sparse, especially when it comes to identifying which strategies work in specific practice settings, such as ambulatory care centers or nursing homes. In addition, studies are often small, use inadequate analysis techniques, or fail to evaluate sustainability of effects. VA's newly established Center of Excellence, called the Veterans Evidence-Based Research, Dissemination and Implementation Center (VERDICT), compiled the synopsis of findings on guideline implementation strategies presented in the table on the next page. The most effective strategies appear at the top of the table. Multi-faceted approaches appear to hold the most promise. "Simple Dissemination" and "Traditional Continuing Education" appear less effective. It should be noted that these strategies were specifically designed to change professional practice; they do not explicitly address system barriers to guideline implementation. Hopefully, further research will provide evidence on how those types of barriers may be overcome. (For more information on VERDICT, see Appendix A.) The Cochrane Collaboration, an international organization that produces and disseminates systematic reviews on the effects of health care interventions, is doing some work in this area. (See Appendix D for more information.)

What the Research Says About Guideline Implementation Strategies for Health Care Professionals

Strategy/Description	Results
<p>Multi-Faceted Approaches Combining strategies to change provider behavior. Especially using more than one strategy proven to impact behavior at least modestly.</p>	<p>While results were mixed, 31 of 39 studies of multi-faceted interventions (e.g., using three or more educational strategies) were found to have positive effects. In addition to appearing more effective, multi-faceted approaches demonstrated positive changes in health care outcomes. While it wasn't clear which combinations of approaches worked best, and in which settings, multi-faceted approaches appear, at present, to hold the most promise. Davis, <i>Journal of the American Medical Association</i>, 274 (9): 700-05.</p>
<p>Local Opinion Leaders Use of providers who are highly respected by their colleagues to promote guidelines and educate their colleagues on them.</p>	<p>Five studies showed positive effects on some process-of-care outcomes. Only three described patient outcomes; one of these was positive. Thomson. <i>Cochrane Library</i>. September 1997.</p>
<p>Outreach Visits A trained person meets with health care professionals in their practice settings to provide information (also known as detailing).</p>	<p>Outreach worked, particularly in changing drug prescription practices, but evidence was insufficient to identify the key characteristics of successful outreach. Social marketing techniques that target and identify barriers to change hold great potential. Davis, <i>Journal of the American Medical Association</i>, 274 (9): 700-05. Thomson. <i>Cochrane Library</i>. September 1997.</p>
<p>Audit and Feedback Retrospective summaries of clinical performance of health care that may include recommendations for clinical action.</p>	<p>Provider prescribing and test ordering behavior improved modestly. It was not clear whether complicated audit methods improved general medical management. Thomson (Part 1). <i>Cochrane Library</i>. March 1998.</p>
<p>Computerized Tools Prompts/reminders, computerized algorithms, provider feedback, computerized medical record access, computer-assisted diagnosis.</p>	<p>Reminders aimed at triggering periodic preventive tests such as mammograms, sigmoidoscopies, and vaccinations changed both professional and patient behavior. Computerized drug algorithms were effective in helping physicians improve drug-prescribing patterns. Balas, <i>Archives of Family Medicine</i>, 1996, 5 (5): 271-8. Shea, <i>Journal of the American Medical Informatics Association</i>, 1996, 3: 399-409.</p>
<p>Training Interactive conferences that involve health care professionals in discussion, role-playing, or skill-building.</p>	<p>Training had a measurable impact on professional performance (e.g., offering counseling, setting smoking cessation dates). Training in history-taking and verbal skills reduced patients' emotional distress. Silagy, <i>Quality in Health Care</i>, 1994, 3: 193-8. Stewart, <i>Canadian Medical Association Journal</i>, 1995, 152 (9): 1432-33. Smith, <i>Journal of General Internal Medicine</i>, 1994, 9: 390-6.</p>
<p>Traditional Continuing Education Participation of health care professionals in lecture-style conferences of a day or less.</p>	<p>No positive effects were seen on professional practice outcomes. Small effects that surfaced after followup ended may have been missed. Davis, <i>Journal of the American Medical Association</i>, 274 (9): 700-05</p>
<p>Simple Dissemination Distribution via journals or other publications, hand delivery, mail, or electronic media.</p>	<p>No statistically significant effects were shown in changing either provider behavior or patient outcomes. Combination strategies increased the success of print materials.</p>

The information in this table was compiled by the Veterans Evidence-Based Research Dissemination and Implementation Center, an HSR&D Center of Excellence based in San Antonio and Charleston. *Verdict Brief, Biannual Newsletter*, Spring 1998, pp. 2-3.

What do managers need to know about implementation of guidelines?

Guideline implementation takes time and commitment. It can be frustrating – but when it succeeds, it can also be very rewarding.

Following is a compilation of advice from investigators at the Cochrane Collaboration and other experts.¹³ (For more information on the Cochrane Collaboration, see Appendices A and D.) Again, most of these recommendations are geared toward changing provider practice – not changing or removing system barriers to guideline implementation, for which there is scant evidence at this point. The most important advice for managers is to remember that guideline implementation is hard work. It takes time and commitment. It can be frustrating – but when it succeeds, it can also be very rewarding.

- **Focus on what’s important.** Choose your guidelines carefully and make sure that they address areas of clinical importance to health care professionals. For example, VA is focusing its guideline activities on those conditions that most commonly affect veterans, such as heart disease, hypertension, diabetes and depression.
- **Show them the evidence.** To increase acceptance, establish the credibility of your guidelines. For example, at Cedars-Sinai Health System in Los Angeles, guidelines are reviewed and rated according to the scientific evidence on which they are based. Randomized clinical trials get the highest grades and studies that involve samples of more than 200 patients are valued more highly than those with patient samples of less than 200.
- **Consider what type of behavior you are trying to change.** To make changes in simple, periodic behavior, such as test ordering or immunization, computerized reminders work well. But to change behavior in a more complex process, such as disease management, reminders alone won’t work. Try breaking the process into components and develop strategies that work well for each component. For example, failure to provide smoking cessation counseling often stems from physicians’ perceptions that they lack necessary skills. In that case, skill-building or increasing staff support may be appropriate implementation strategies.
- **Be willing to change the system.** Implementation strategies need to be supported by appropriate system changes and enhancements if they are to succeed. Among the factors to be considered: nursing support, lab turnaround, computerized information systems, equipment maintenance, and organizational structures.
- **Try different approaches.** Three strategies showed good results for changing prescription patterns: reminders, outreach visits, and audit and feedback.
- **Prevent mistakes.** Use decision aids, such as computer algorithms or pre-printed prescription forms for medication selection and dosing situations to prevent common errors.
- **Support decisions at the point of care.** Feedback and computerized reminders are particularly effective when they are readily available to physicians at the point of care.
- **Choose strategies carefully.** Don’t rely solely on relatively unproven expensive strategies to optimize practice.

- **Update continuing education.** Incorporate approaches that show positive impacts in changing behavior (e.g., outreach visits and intensive workshops) into continuing professional development programs.
- **Keep it simple.** Break the guideline down to its simplest and most important components; key in on decision points that affect patient outcomes.
- **Narrow your target audience.** Try to involve only those people necessary to put a guideline into practice (e.g., pharmacists might be a good audience for hypertension management guidelines).
- **Keep your guidelines up to date.** This helps maintain credibility. VA plans to routinely review guidelines to maintain their scientific base.

What are the implications of guideline implementation for health care professionals and patients?

It must be clear to providers and patients alike that the primary objective to implementing guidelines is improving patient outcomes.

Health care professionals and patients need to know that guidelines are a tool for enhancing medical decision-making and achieving optimal outcomes. They are not rigid dictates from on high; nor are they intended to usurp professional judgment or patient preference. As the Institute of Medicine notes, guidelines are developed to “assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.”¹⁴ To that end, guidelines should inform discussions between health care professionals and their patients and even increase patient participation in decision-making. It must also be clear to health care professionals and patients alike that the primary objective to implementing guidelines is improving patient outcomes – not controlling or reducing health care costs.

Health care professionals are most interested in knowing the evidence on which a guideline is based. They want to be assured that using a guideline will have a positive impact on their patients’ outcomes. In other words, they need to know that using a particular guideline is the right thing to do for their patients. Beyond that, they need to know that the system in which they are working is set up to support the guideline. There must be adequate time, equipment, skilled personnel, and coordination across departments to make the guideline work properly.

Patients also want to know that health care professionals are doing the right thing for them. They want to be assured that their providers are being guided by the weight of scientific evidence and their own professional judgment – not pressured to reduce costs. To that end, educational materials that explain patients’ conditions and the options available to them, along with their relative benefits and risks, should be distributed to patients, so that they can discuss these issues in an informed way with their providers. This type of informed, shared decision-making between health care professionals and patients promotes more patient-centered care. In other words, it reflects patients’ preferences and values. In addition, it can lead to better outcomes and greater patient satisfaction.

How is VA implementing clinical practice guidelines?

The treatment team level is the most important level of implementation – it’s where the rubber meets the road.

Under VA policy, VA facilities are implementing nationally developed, evidence-based guidelines. The National Clinical Guideline Advisory Council for the Adaptation, Development, Implementation and Evaluation of Clinical Practice Guidelines provides the overarching framework for these activities. VA’s philosophy for implementing practice guidelines is a flexible one allowing for discovery of new knowledge about guideline implementation strategies. A subcommittee on education and implementation is considering issues like the role of information technology in guideline implementation, the effectiveness of traditional education models, and the link between process and structure in changing clinician behavior.

Different VISNs are taking different approaches to guideline implementation. For example, in VISN 12, a task force for implementing clinical guidelines identified four basic steps for successful implementation:

- Develop an efficient and effective communication process.
- Determine operational requirements.
- Design and recommend a framework for guideline monitoring.
- Identify barriers to implementation and recommend actions to remove them.

After identifying various implementation activities at each VISN facility and achieving consensus on definitions of guidelines, algorithms, and pathways, the task force focused on common barriers to implementation and recommended actions to remove them. At each medical center in VISN 12, a local steering committee provides direct oversight of guideline implementation, monitoring the various program guideline teams and providing feedback to management and front-line providers.

In VISN 5, the VA Maryland Health Care System is moving ahead with a model for implementing behavioral health care guidelines based on three levels of implementation: the network level, the facility level, and the treatment team level.¹⁵ At each level, clinical managers and guideline implementation committees work together on such details as data collection and analysis, goal-setting, program evaluation, and professional education.

The treatment team level is the most important level of implementation – it’s where the rubber meets the road. At this level, education must be combined with implementation strategies that recognize the realities of everyday practice. The treatment environment must be evaluated to determine what components of the system need to be adjusted, replaced, enhanced, re-engineered, or removed in order to make the guideline work. For example, it may be necessary to train staff in new skills, establish new lines of communication within the treatment team, develop new standing order forms or referral protocols, or purchase equipment.

“It’s been hard work,” says Christine M. LaGana, Ph.D., deputy director of the Maryland Health Care System’s Mental Health Clinical Center. But the system is already seeing improvement: In just one month, documentation of depression screens in primary settings jumped from 0 to 60 percent, according to Dr. LaGana.

What do we still need to learn about successful implementation of clinical practice guidelines?

We need to better understand how to target implementation strategies...

Much remains to be learned about guideline implementation. Very little is known about what really works. Specifically, we need to better understand how to target implementation strategies to different care settings, types of behavior and barriers. The effectiveness of continuous quality improvement programs that use practice guidelines also needs to be studied in greater depth. In addition, researchers are just beginning to scratch the surface of another critical area: system barriers to implementation and how they can be overcome.

VA is committed to supporting research that will advance guideline implementation within VA. Four Health Services Research & Development Service (HSR&D) Centers of Excellence focus research on guideline implementation (see Appendix A for a listing of these Centers). In addition to the broad-based Quality Enhancement Research Initiative, HSR&D also has a solicitation inviting researchers to evaluate strategies for implementing evidence-based practice guidelines within VA and to identify approaches that may be replicated systemwide.

For example, the Bedford VAMC is evaluating different strategies for implementing pressure ulcer care guidelines in long-term care settings. The results are being used to develop quality improvement interventions. Another study underway at the Cleveland VAMC is investigating the nuances of implementing guidelines for patients with dual diagnoses — in this case, patients who have both serious psychosis and substance abuse addiction. And, in a groundbreaking study coordinated by the Hines Cooperative Studies Program Coordinating Center involving 12 VA hospitals, researchers are investigating the effectiveness of computerized reminders in increasing resident physicians' compliance with ambulatory care guidelines. The results, which are undergoing final analysis, could have national implications. A more detailed description of some of these funded projects may be found in Appendix C.

In addition, the Cochrane Collaboration, in which the VA participates through the San Antonio VA Cochrane Center at the Audie L. Murphy Memorial Veterans Hospital, is conducting more reviews of research on guideline implementation, including issues related to system barriers. (See Appendix D for a description of the Cochrane Collaboration's research projects.)

Concluding remarks

*In order for guidelines
to make positive impact
on patient care, they
must be implemented.*

Evidence-based practice guidelines promote rational, informed health care decision-making that reflects the best available scientific knowledge and insights. VA recognizes the value of guidelines in improving health care quality, increasing efficiency, measuring provider performance, and encouraging more productive dialogue between health care professionals and patients. Accordingly, VA has embarked on a policy of adopting nationally developed, evidence-based practice guidelines to help manage the health care services provided to VA patients.

Developing and adopting good guidelines is not enough. In order for guidelines to make a positive impact on patient care, they must be implemented. A guideline may be painstakingly researched and rigorously crafted, but if is not incorporated effectively into everyday clinical practice, where it can make a difference in patient outcomes, all the work lavished on development will have been for nothing. Because guidelines are such valuable tools for improving health care quality and efficiency, VA will continue to investigate and identify effective strategies for putting guidelines into action and using them to their maximum advantage to improve patient health outcomes. This is the ultimate test of clinical guidelines.

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Appendix A: Where can VA managers turn for additional information about successful guideline implementation strategies?

Listed below are some organizations within and outside VA that may provide useful information about guideline implementation. This list is not exhaustive.

Within VA

■ Office of Research and Development

*John R. Feussner, M.D., Chief Research and Development Officer
VA Headquarters*

Phone and FTS: 202/273-8284

Fax: 202/273-6526

The Office of Research and Development oversees the full range of health services research, medical research, multi-site cooperative studies, and rehabilitation research in VA. A number of VA research efforts focus on identifying and evaluating successful strategies for implementing evidence-based clinical practice guidelines. Some of those efforts are described in the following section, in the text of the primer, and in Appendix C.

Health Services Research and Development Service (HSR&D)

*John G. Demakis, M.D., Director
VA Headquarters*

Phone and FTS: 202/273-8287

Fax: 202/273-9007

Within the Office of Research and Development, the Health Services Research and Development Service provides expertise in health services research, a field that examines the effects of health care organization, financing and management on a wide range of delivery issues including quality of care, access, cost and patient outcomes. In addition to the HSR&D research activities relating to implementation strategies described elsewhere in the document (see the discussion of the Quality Enhancement Research Initiative on page 4 and the studies of implementation strategies in Appendix C), four of HSR&D's eleven Centers of Excellence focus on guideline implementation.

Center for the Study of Healthcare Provider Behavior

Lisa V. Rubenstein, M.D., M.S.P.H.

*Sepulveda Campus/Southern California System of Clinics,
Sepulveda, California*

Telephone: 818/895-9449 or 700/996-9449

Fax: 818/895-5838

E-mail: lisar@rand.org

Researchers specifically focus on provider behavior and practice patterns, health care quality and outcomes, quality improvement, clinical practice guideline implementation, and primary care/managed care evaluation. Providing technical assistance as well as training and education opportunities are also high priorities.

Veterans Evidence-Based Research, Dissemination and Implementation Center (VERDICT)

Jacqueline Pugh, M.D.

VA South Texas Health Care System, San Antonio, Texas

Telephone: 210/617-5314

Fax: 210/567-4423

E-mail: PUGH.JACQUELINE_A+@San-Antonio.va.gov

Research efforts of this Center aim to link research evidence with clinical practice by summarizing and translating the evidence into a useful document for various consumers, such as providers, patients, managers and policymakers.

Center for Health Quality, Outcomes, & Economic Research (CHQOER)

Mark Prashker, M.D., M.P.H.

Edith Nourse Rogers Memorial Veterans Hospital, Bedford, Massachusetts

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Fax: 781/687-3106

E-mail: Prashker.Mark@Bedford.va.gov

Investigators here focus on research to improve both the quality of care that veterans receive and the efficiency with which the care is provided. Primary research areas include: health economics, productivity measurement, quality assessment in ambulatory and long term care, health outcomes measurement, case-mix measurement, cost effectiveness analysis, and decision analysis.

Center for Practice Management and Outcomes Research

Rodney A. Hayward, M.D.

VA Medical Center, Ann Arbor, Michigan

Telephone: COM & FTS 734/930-5100

Fax: 734/930-5159

E-mail: rhayward@umich.edu

Researchers at this Center conduct research that promotes optimal management of resource-intensive care for America's veterans. Specific research priority areas include: quality monitoring and improvement, outcome evaluation of alternative treatments, practice and outcomes variations, resource allocation, and shared decision-making.

■ VHA Headquarters Offices of Patient Care Services and Performance and Quality are jointly responsible for recommending the adoption of non-VHA guidelines and for the adapting of guidelines for use within the VHA. Recommendations from these two Offices will be based on the advice of the Advisory Council for Adoption, Development and Implementation of Clinical Practice Guidelines.

Office of Patient Care Services (112)

Ronald Gebhart, M.D., Chief Consultant, Primary Care

VA Headquarters

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E-mail: gebhart.ron@mail.va.gov

Office of Performance and Quality (105A)

*Debby Walder, R.N., M.S.N., Performance Management Facilitator
VA Headquarters
Phone: 202/273-8336
Email: debby.walder@mail.va.gov.*

Advisory Council for Adoption, Development and Implementation of Clinical Practice Guidelines

*Margaret Baumann, M.D.
Associate Chief of Staff for Geriatrics and Extended Care (181)
Hines VA Medical Center
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Adoption and Adaptation Work Group

*Chairperson: Everett Jones, M.D.
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Revision Work Group

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Implementation and Education

*Chairperson: Mike Davies, M.D.
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Measurement

*Chairperson: Reginald Penniston, M.D.
VAMC, Tampa
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Information Management

*Chairperson: Greg Larson, M.D.
VAMC, Portland
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Research and Evaluation

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■ **Employee Education System (EES)**

Donna Schoonover, R.N., M.S.N., Program Manager

Phone: 314/894-5735

Fax: 314/894-6506

E-mail: schoonoverdon@lrn.va.gov

The mission of the Employee Education System is to provide educational services which are customer focused, accessible, performance based, cost effective and which lead to the accomplishment of VHA's organizational goals and objectives. The EES plays a key role in VHA's efforts to implement clinical practice guidelines. Among EES activities to support the implementation of clinical practice guidelines is the Clinical Pathways InfoNet which can be accessed on the VHA intranet at <http://vaww.lrn.va.gov/ees/ClinicalPathways/SourcesOfClinPractGuide.asp>

Mentor Visit Program The Mentor Visit Program provides an opportunity for VISNs and facilities to have consultation/peer visit by content experts and implementers of specific VHA-developed guidelines. Based on needs identified by the requesting facility, mentors can provide content review of specific guidelines and assistance in integration of the guidelines with local practices. They can address issues for successful implementation of the guidelines. Mentors can also discuss outcomes and process measures to evaluate implementation of the guideline and practice.

Web-based information resources on the VHA Intranet The following links were accurate at the time of publication. However, the information available on the intranet changes frequently, so resources listed below may no longer be available. For new intranet resources since the publication of this primer, try using the intranet search tool to search for some relevant phrases (e.g., "guideline implementation," "practice guideline," "clinical guideline").

Employee Education System: ClinPath InfoNet

<http://vaww.lrn.va.gov/ees/ClinicalPathways/SourcesOfClinPractGuide.asp>

Office of Patient Care Services

<http://vaww.va.gov/med/patientcare>

Office of Performance and Quality

<http://vaww.va.gov/stratinit/105a/clin/clinprac.htm>

Pharmacy Benefits Management Strategic Health Group: Treatment Guidelines

<http://www.dppm.med.va.gov/#guidelines>

VHA Intranet Hot Issues: Clinical Guidelines

<http://vaww.va.gov/med/hotissues/clinical.asp>

VHA Virtual Learning Center: Links

<http://vaww.va.gov/med/osp/cgi-bin/links.asp>

Outside VA

The following organizations outside VA are active in work related to guideline implementation – sometimes in collaboration with VA centers. This list is not exhaustive.

■ Agency for Health Care Policy and Research (AHCPR)

Douglas B. Kamerow, M.D., M.P.H.

Director, Practice and Technology Assessment

6000 Executive Blvd.

Rockville, MD 20720

Phone: 301/594-4015

Fax: 301/594-4027

E-mail: dkamerow@ahcpr.gov

World Wide Web: <http://www.ahcpr.gov/>

AHCPR, a long-standing leader in the development and promotion of clinical practice guidelines has published 19 guidelines on a variety of conditions and procedures. In 1996, AHCPR got out of the business of guideline development to focus on research in support of evidence-based medicine. Evidence-based practice centers supported by AHCPR produce comprehensive reviews and rigorous analyses that can be used to develop guidelines, performance measures, educational materials, and implementation strategies. In addition, AHCPR, the American Medical Association, and the American Association of Health Plans are jointly developing a National Guideline Clearinghouse to provide online access to a wide array of clinical guidelines and syntheses of guidelines. The Clearinghouse is expected to be operational by the fall of 1998 at the following Web site: <http://www.guidelines.gov>.

■ The Cochrane Collaboration

Cochrane Collaboration Secretariat

PO Box 726

Oxford, OX2 7UX

United Kingdom

Phone: 44/1865-310138

Fax: 44/1865-516311

E-mail: secretariat@cochrane.co.uk

World Wide Web: <http://www.cochrane.co.uk>

The Cochrane Collaboration is an international organization that produces and disseminates systematic reviews on the effects of health care interventions. The Cochrane Library provides rapid access to regularly updated reviews, structured abstracts on quality, previously published reviews, references to controlled clinical trials and to articles on the science of research review, and other sources of information. It is published quarterly on CD-Rom and on the Internet.

■ Center for Clinical Effectiveness

Henry Ford Health System

Jennifer Elston Lafata, Ph.D.

Acting Director

1 Ford Place – 3C

Detroit, MI 48202

Phone: 313/874-1882

World Wide Web: <http://hfhs-ccce.org/>

The Center for Clinical Effectiveness serves to coordinate and improve the research, development, and implementation of clinical

policies and guidelines for the health care community at large and for Henry Ford Health System in particular. Methods under evaluation through its clinical policy implementation trials include: application of CQI techniques, data feedback to physicians, information technology, patient education, and practice models that use physician extenders or nurses for service delivery.

■ **Clinical Practice Enhancement Project (CPEP)**

Robert Haywood, M.D., M.P.H.

Co-principal Investigator

Health Information Research Unit

McMaster University Medical Centre

1200 Main Street West

HSC 3H7C

Hamilton, Ontario Canada

L8N 3Z5

Phone: 905/525-9140, ext. 22060

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E-mail: haywardr@fhs.mcmaster.ca

World Wide Web: <http://hiru.mcmaster.ca/cpep/default.htm>

CPEP promotes the implementation of clinical practice guidelines through the development, evaluation, and dissemination of clinical information tools, with emphasis on the collection, analysis, and application of patient-reported health data. It is directed by investigators at McMaster University, the University of Chicago, and Johns Hopkins University.

■ **Institute for Clinical System Integration (ICSI)**

Gordon Mosser, M.D.

Executive Director

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Bloomington, MN 55425

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Fax: 612/858-9675

ICSI is a clinical quality improvement organization that develops, disseminates, and implements clinical guidelines for common conditions with its member medical groups. Created in 1992 by Park Nicollet Clinic HealthSystem Minnesota, Mayo Clinic, and Health Partners, ICSI provides a mechanism for health care providers and purchasers to work together on clinical quality improvement. Guideline implementation is a key component of ICSI's activities.

■ **Cedars-Sinai Medical Center**

Department of Health Services Research

Scott Weingarten, M.D.

200 North Robertson Boulevard

Beverly Hills, CA 90211

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Fax: 310/724-0746

E-mail: iweingarten@csmc.edu

The Department of Health Services Research at Cedars-Sinai develops and implements clinical practice guidelines that are used to support disease management programs to improve the care of patients with chronic illnesses. Dr. Weingarten has conducted extensive research on the implementation of practice guidelines, particularly on the use of computerized reminders to support guideline implementation.

Collaboration of VA with External Organizations

■ Agency for Health Care Policy and Research — Evidence-based Practice Centers

Douglas B. Kamerow, M.D., M.P.H.

Director, Practice and Technology Assessment

(see *Outside VA Sources*, above, for contact information)

VA is collaborating with the Agency for Health Care Policy and Research (AHCPR) in a national effort to gather scientific evidence for local guideline development efforts. Evidence-based practice centers supported by AHCPR produce comprehensive reviews and rigorous analyses that can be used to develop guidelines, performance measures, educational materials, and implementation strategies. The following VA facilities are participating in AHCPR's evidence-based practice initiative:

The Philadelphia VAMC is collaborating with MetaWorks, Inc., and the Leonard Davis Institute to develop an evidence report on the diagnosis of sleep apnea.

The Northwest Network and the Portland VAMC are collaborating with Oregon Health Sciences University and Northwest Kaiser Permanente to review the evidence on rehabilitation of persons with traumatic brain injury.

The VA Cochrane Center at San Antonio is collaborating with the University of Texas at San Antonio, The San Francisco Cochrane Center, and the American College of Physicians on a project to evaluate the treatment of depression with new drugs.

VAMCs in California are conducting an evidence review on the prevention and management of urinary complications in paralyzed persons, with Rand, the University of California at Los Angeles and San Diego, the University of Southern California, Cedars-Sinai Health System, and Value Health Sciences.

The San Francisco, Palo Alto, and Menlo Park VAMCs are working with the University of California at San Francisco, Stanford University, the San Francisco Cochrane Center, and Kaiser Permanente to review evidence on the management of stable angina.

■ **VA Cochrane Center at San Antonio**

Cynthia Mulrow, M.D.

Director

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E-mail: cochrane@merece.uthscsa.edu

VA participates in the Cochrane Collaboration, an international organization that produces and disseminates systematic reviews on the effects of health care interventions, through the San Antonio VA Cochrane Center at the Audie L. Murphy Memorial Veterans Hospital.

Appendix B: What reading materials are available to provide more in-depth information on the implementation of clinical practice guidelines?

Conroy, M., and Shannon, W. "Clinical Guidelines: Their Implementation in General Practice." *British Journal of General Practice*, 45 (396): 371-5, July 1995.

Davis, D.A., Thomson, M.A., et al. "Changing Physician Performance. A Systematic Review of the Effect of Continuing Medical Education Strategies." *Journal of the American Medical Association*, 274 (9): 700-05, Sept. 6, 1995.

Davis, D.A., and Taylor-Vaisey, A. "Translating Guidelines into Practice: A Systematic Review of Theoretic Concepts, Practical Experience and Research Evidence in the Adoption of Clinical Practice Guidelines." *Canadian Medical Association Journal*, 157 (4): 408-16, Aug. 15, 1997.

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Grimshaw, J., Eccles, M., and Russell, I. "Developing Clinically Valid Practice Guidelines." *Journal of Evaluation in Clinical Practice*, 1(1), 37-48, Sept. 1995.

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Grol, R. "Personal Paper. Beliefs and Evidence in Changing Clinical Practice." *British Medical Journal*, 315 (7105): 418-21, Aug. 16, 1997.

Hutchinson, A. "The Philosophy of Clinical Practice Guidelines: Purposes, Problems, Practicality and Implementation." *Journal of Quality in Clinical Practice*, 18 (1): 63-73, March 1998.

Mittman, B.S., Tonesk, X., and Jacobson, P.D. "Implementing Clinical Practice Guidelines: Social Influence Strategies and Practitioner Behavior Change." *Quality Review Bulletin*, 18 (12): 413-23, Dec. 1992.

Mosser, G. "Clinical Process Improvement: Engage First, Measure Later." *Quality Management in Health Care*, 4 (4): 11-20, 1996.

Oxman, A.D., Thomson, M.A., et al. "No Magic Bullets: A Systematic Review of 102 Trials of Interventions to Improve Professional Practice." *Canadian Medical Association Journal*, 153 (10): 1423-31, Nov. 15, 1995.

Soumerai, S.B., McLaughlin, T.J., et al. "Effect of Local Medical Opinion Leaders on Quality of Care for Acute Myocardial Infarction: A Randomized Controlled Trial." *Journal of the American Medical Association*, 279 (17): 1358-63, May 6, 1998.

Thomson, R., Lavender, M., and Madhok, R. "How to Ensure that Guidelines are Effective." *British Medical Journal*, 311 (6999): 237-42, July 25, 1995.

Thomson, R., McElroy, H., and Sudlow, M. "Guidelines on Anticoagulant Treatment in Atrial Fibrillation in Great Britain: Variation in Content and Implications for Treatment." *British Medical Journal*, 316 (7130): 509-13, Feb. 14, 1998.

Weingarten, S., and Ellrodt, A.G. "The Case for Intensive Dissemination: Adoption of Practice Guidelines in the Coronary Care Unit." *Quality Review Bulletin*, 18 (12): 449-55, Dec. 1992.

Wise, C.G., and Billi, J.E. "A Model for Practice Guideline Adaptation and Implementation: Empowerment of the Physician." *Journal on Quality Improvement*, 21 (9): 465-76. Sept. 1995.

Appendix C: What research is VA conducting on guideline implementation strategies?

VA's Health Services Research & Development Service (HSR&D) has long recognized the importance of investigating promising strategies for guideline implementation. More recently, a solicitation invited researchers to evaluate strategies for implementing evidence-based practice guidelines within VA and to identify approaches that may be replicated systemwide. Listed below is a sampling of guideline implementation projects within VA, with contact information and a brief description of relevant activities. This list is not exhaustive.

Implementing AHCPR's Smoking Cessation Guideline

Ann Joseph, M.D., M.P.H.

Minneapolis VAMC

Phone: 612/725-2158

Fax: 612/725-2118

National guidelines for smoking cessation urge identification of all smokers in the patient record, a minimum of brief counseling for all smokers, and liberal use of nicotine replacement therapy. However, data suggest a low rate of compliance with these recommendations among VA facilities. This study is exploring whether an organizational support strategy that provides training and follow-up consultation for key personnel on smoking cessation interventions can improve provider adherence to the guidelines and increase smoking cessation rates.

Drug Therapy for Hypertension

Brian Hoffman, M.D.

Palo Alto VAMC

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E-mail: Bhoffmann@leland.stanford.edu

Evidence-based clinical practice guidelines recommend the use of thiazide diuretics and beta receptor antagonists to reduce hypertension, but newer, heavily marketed, and more expensive drugs, such as angiotensin converting enzyme inhibitors and calcium channel antagonists, are gaining favor among physicians. In this study, investigators are exploring how an automated reminder system can optimize cost-effective drug selection for hypertension in a manner that is sensitive to individual patient outcomes. This new system, called ATHENA, will be evaluated to determine its impact on clinician adherence to practice guidelines and on blood pressure control, quality of life, and drug costs for antihypertensive agents. The long-term objective of this project is to help VA respond flexibly to evolving medical knowledge by establishing a system for implementing guidelines that can be used throughout VA.

Using Expert Consultants to Implement Smoking Cessation Guidelines

Scott Sherman, M.D.

Sepulveda VAMC

Phone: 818/891-7711, ext. 9909

Fax: 818/895-9509

E-mail: sherman.scott@sepulveda.va.gov

This study, which involves the primary care practices of 20 VAMCs, is testing the effectiveness of evidence-based quality improvement (QI) as an implementation strategy for national guidelines on smoking cessation. Using survey, administrative, and medical record data, the investigators will determine whether evidence-based QI methods improve provider compliance, increase smoking cessation rates, and achieve better patient outcomes. The long-term goal of this study is to develop and disseminate effective strategies for implementing practice guidelines and improving the quality and outcomes of VA services related to smoking behavior and other health care problems.

Educating Providers on Substance Abuse Treatment Guidelines

Richard McCormick, Ph.D.

Cleveland VAMC

Phone: 216/526-3030, ext. 6904

Fax: 440/546-2762

E-Mail: McCormick.Richard@cleveland.va.gov

Up to 52 percent of the seriously mentally ill have comorbid substance abuse problems that complicate treatment and produce negative outcomes. General mental health specialists who treat the dually diagnosed psychotic often have limited training in substance abuse treatment. This study is investigating the impact of provider education on compliance with newly developed practice guidelines for dually diagnosed patients. Investigators are also measuring the guidelines' effects on patient outcomes, resource utilization, treatment compliance, and patient satisfaction.

Pressure Ulcer Care in Nursing Homes

Dan Berlowitz, M.D., M.P.H.

Bedford VAMC

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Little is known about successful strategies for implementing practice guidelines in long-term care settings. Project investigators believe that there are distinct organizational features, including culture, quality improvement practices, employee control systems, and hospital policies that may promote successful implementation. This study is using data from 36 VA nursing homes to identify relationships between these features and adherence to pressure ulcer care guidelines and risk-adjusted patient outcomes. The results will be used to develop specific strategies for improving guideline implementation and patient outcomes. These findings may have implications for guidelines on other conditions that are common among nursing home patients.

Clinical Effects of Enhanced Computerized Guidelines

William Tierney, M.D.

Indianapolis VAMC

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In this project, investigators are using national guidelines for treating heart failure to develop a computerized reminder system that can be triggered both by administrative data and by subjective data collected directly from patients on symptoms, history, and behavior. Without these data, the investigators believe, computerized guideline

reminders cannot support critical care decisions. This study will determine whether the reminder system being developed is valid, so that it may be tested further in a randomized, controlled trial. The results of this study have system-wide implications for VA.

Strategies for Implementing Schizophrenia Guidelines

Richard Owen, M.D.

Little Rock VAMC

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Antipsychotic medication is an essential component of treatment for nearly all patients with schizophrenia – yet data indicate that it frequently is not prescribed. This project is examining the effectiveness of two strategies for implementing guidelines on schizophrenia: (1) mentor visits to educate VISN and facility leaders, and (2) identification and training of opinion leaders at VAMCs to promote implementation. The study, which involves eight VA sites, will also evaluate the impact of the implementation strategies on patient outcomes, service utilization, and providers' knowledge of and attitude toward the guidelines. The researchers hope to apply what they learn from this study to the implementation of guidelines for other psychiatric disorders as well.

Implementing Guidelines in the Emergency Department

Paul G. Shekelle, M.D.

West Los Angeles VAMC

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In this project, investigators are using a computerized expert charting system to implement guidelines for the treatment of urethritis and obstructive airway disease in the emergency department of a VA teaching hospital. So far, they have identified significant deficiencies in care provided to these patients, compared with optimal care as defined in the guidelines. They are using health status measures to evaluate the impact of guideline implementation on patients.

Computerized Reminders for Ambulatory Care Guidelines

Charles Beauchamp, M.D., Ph.D.

Durham VAMC

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E-mail: Beauchamp@Durham.va.gov

John G. Demakis, MD

Hines VAMC

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Fax: 202/273-9007

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The primary objective of this study is to determine whether computer-generated reminders can improve resident physicians' compliance with guidelines for ambulatory care. Investigators evaluated the effectiveness of computerized reminders in a prospective, randomized trial involving 275 residents and 13 well-accepted sets of guidelines. Improvements in adherence resulting from the computer prompts will have a direct and important impact on the quality of care provided to patients at VA ambulatory care clinics.

Appendix D: Ongoing Research by the Cochrane Collaboration

The Cochrane Effective Practice and Organization of Care Review Group (EPOC) is conducting a series of evidence reviews, continuing its examination of strategies for improving health care practice and outcomes. Some of these reviews will shed light on questions surrounding system barriers to implementing practice guidelines and changing health care practice.

To contact EPOC:

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Institute for Health Policy Studies
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1388 Sutter St., 11th Floor
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Fax: 415/476-0705
E-mail: bero@cardio.ucsf.edu*

Following is a description of some of EPOCs ongoing reviews.

The effectiveness of reminders in improving health care practice and patient outcomes. Reminders can help health care professionals recall important information from practice guidelines at the time that it's needed. Several studies have found that reminders can promote change in professional practice across a variety of clinical conditions and settings. This series of reviews examines three types of reminders – paper, computer-generated, and on-screen — and considers a number of other factors likely to have an impact on their effectiveness.

Interventions for applying prevention in primary care. The primary care setting offers a unique opportunity to deliver preventive services, but that opportunity may be missed if health care professionals lack a “preventive attitude.” This review critically analyzes the effectiveness of different methods of improving professional preventive behavior in primary care.

The impact of educational meetings, workshops, and preceptorships on health care practice. Although recent evidence suggests that some continuing education interventions may improve health care practice, traditional activities such as workshops or seminars may not be the most effective. This review will determine the effectiveness of

educational meetings, workshops, lectures, symposia, courses, traineeships, and other educational interventions in improving health care practice and outcomes.

Computerized advice on drug dosage. Monitoring drug therapy to optimize effects and minimize adverse events can be very time-consuming and require meticulous attention to detail. Computers, however, are very good at collecting information and performing repetitive calculations; there are a number of drugs for which computer advice might be helpful. This review is examining the effectiveness of computerized drug dosage advice in improving prescribing practices.

Guidelines in professions allied to medicine. Most practice guidelines are geared toward physicians, even though many types of health care professionals are involved in the delivery of care. To date, there has been no evaluation of the effectiveness of implementation strategies for professionals allied to medicine. The objective of this review is to identify rigorous evaluations of clinical practice guidelines in the following professions: nursing (including midwifery and health visiting), chiropody, speech and language therapy, physiotherapy, occupational therapy, dietetics, clinical psychology, pharmacy, and radiography.

Interventions to improve immunization rates. A number of interventions – including audit and feedback, reminders, financial incentives, and practice policy changes – have been devised to improve the delivery of immunizations. Even though immunization is a cost-effective and widely accepted means of preventing disease worldwide, the percentage of children and adults immunized falls below targeted rates. The objective of this review is to assess the effectiveness of interventions designed to improve immunization delivery.

Appendix E: How is the VA Measuring Guideline Implementation?

VA has incorporated guideline implementation into performance agreements between network directors and the Under Secretary for Health. Following is a list of the 1998 mandated performance measures, which were developed from practice guidelines. (These measures are in addition to measures included in VA's Chronic Disease Care Index, Prevention Index, and Palliative Care Index. Some of those measures are also derived from practice guidelines.) The list of guidelines and performance measures will be updated annually. Recommended guidelines for FY 1999 include: chronic heart failure, chronic obstructive pulmonary disease, and psychoses medication use for schizophrenia and bipolar disorder.

For more information on mandated guidelines and performance measures, contact:

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Guideline	FY 98 Measure	Additional Data Collection
Ischemic Heart Disease		
Modules 1 & 5. Patients ER with non-traumatic chest pain.	ASA in 24 hours	
Module 2. Early treatment.	All patients with AMI considered for thrombolytic therapy or PTCA	Door-to-needle time of administration of thrombolytic therapy
Module 8. Ambulatory care follow-up.	Use of aspirin Plan for reduction of cardiac risk factors: lifestyle changes, exercise, nutritional modifications, smoking cessation, cholesterol management as appropriate	Percentage of patients with left ventricular dysfunction treated with ACE inhibitors Percentage of patients who currently smoke Percentage of patients with LDL > 130

Continued on next page

<i>Guideline</i>	<i>FY 98 Measure</i>	<i>Additional Data Collection</i>
Diabetes Mellitus		
Module G. Glycemic control.	Annual HBA1c Percentage of patients with HBA1c greater than 10	
Module F. Foot care.	Annual foot inspection Check of pedal pulses Foot sensory exam	Percentage of patients with at-risk foot referred to foot care specialist Amputation rates
Module E. Eye care.	Annual retinal exam	
Module R. Renal.	Annual serum creatinine and urine protein (if urine protein is negative or trace, micro albuminuria test)	
Module H. Hypertension.	BP checked at each visit	Distribution of hypertension grade, i.e., 1, 2, 3, 4
Module L. Lipid Control.	Annual lipid profile	Percentage of patients with LDL > 130
Hypertension		
	BP checked at two of three visits	Distribution of hypertension grade, i.e., 1, 2, 3, 4
Major Depressive Disorder		
Module A.	Patients seen in general medicine, primary care, and the women's clinic screened for MDD	Percentage screened for alcohol use using a standardized instrument Percentage screened for PTSD
Module C. Inpatient Mental Health.	Patients with acute psychiatric admission have one GAF rating	
Smoking Cessation		
	Percentage of patients screened for tobacco use If current smoker, advised of health risks of smoking and offered smoking cessation counseling. If counseling not offered, reason must be documented.	Percentage of patients who currently smoke

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General comments _____

Suggestions for future primer topics _____

Clinical Practice Guidelines is available in electronic and printed formats. Additional copies may be obtained from the sources listed below.

Electronic copies (PDF format) can be downloaded from the VA home page on the world wide web.

Point your browser to
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