ARROYO CENTER CENTER FOR MILITARY HEALTH POLICY RESEARCH

Putting Practice Guidelines to Work in the Department of Defense Medical System

A Guide for Action

Will Nicholas
Donna O. Farley
Mary E. Vaiana
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PREFACE

The DoD and the VA have placed a priority on the standardization of care in the military and VA health systems to achieve greater consistency, quality, and cost-effectiveness in the delivery of health care services for active duty personnel, dependents, and retirees. In this context, the Army Medical Department (AMEDD) has been working in partnership with RAND to implement DoD/VA clinical practice guidelines proactively across the Army health system.

One of the key products of this AMEDD/RAND partnership is an Implementation Guide designed to assist Army medical treatment facilities (MTFs) in guideline implementation. The response to the guide was so enthusiastic within the Army that it was decided the guide should be adapted for use across the DoD.

This Implementation Guide is designed as a resource for those key staff members charged with carrying out the guideline implementation effort within an MTF. The guide contains information, instructions, and examples for each of the major steps in implementing a practice guideline: establishing supportive conditions and an implementation structure, building an effective Implementation Action Team, developing and executing an implementation action plan, and monitoring and feedback on implementation progress. In preparing the guide, RAND has drawn upon current knowledge from both research and field experiences, including many valuable lessons learned from the field in the AMEDD/RAND Guideline Implementation Project (see Introduction for a description).

This project is being sponsored by the U.S. Army Medical Department and is being conducted jointly by the Arroyo Center's Manpower and Training Program and RAND's Center for Military Health Policy Research. The Arroyo Center is a federally funded research and development center sponsored by the United States Army.

For more information on the RAND Arroyo Center, contact the Director of Operations, (310) 393-0411, extension 6500, or visit the Arroyo Center's Web site at http://www.rand.org/organization/ard/

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ACKNOWLEDGMENTS

The preparation of this Implementation Guide has drawn upon theory, published literature, and field experience in the AMEDD/RAND demonstrations for guideline implementation. We have used the theory and published literature to ensure that the guide is evidence-based, but we believe the most important contribution to this document has been the valuable information the AMEDD/RAND Guideline Implementation Project (see Introduction) has generated on implementation practices in the military environment. We extend our appreciation to the numerous individuals, from commanders to front-line clinic staff, who have put forth an extraordinary amount of commitment and hard work in the AMEDD demonstrations.

We are particularly pleased to be able to distribute this guide to MTFs across the DoD. The content of the guide has benefited from the hands-on experiences of front-line guideline implementers at Army MTFs and we are confident that the implementation process described will be readily applicable to MTFs in the other DoD services.

Many individuals have been involved in the production of the Implementation Guide, helping to make it a more useful product. We wish to thank Dr. Jill Yanchick, LTC Kathryn Dolter, MAJ Geralyn Cherry, and other AMEDD personnel for their helpful feedback in reviews of an earlier draft. We also acknowledge the efforts of the leadership team at MEDCOM who have guided this project and have worked in active partnership with RAND in conducting the demonstrations and developing tools to assist the MTFs in their implementation activities. Their collective commitment to effective application of guidelines to daily practice has created an environment that encourages participants to think and work creatively; this guide is one product of that environment.

1. INTRODUCTION

THE PURPOSE OF THIS GUIDE

This guide describes a process that will help your MTF successfully achieve evidence-based practice, a major priority of the DoD. The guide is designed as a resource for those key staff members charged with carrying out DoD/VA guideline implementation efforts within an MTF. These key staff members include the

- **Guideline champion:** The primary care clinical opinion leader with expertise in the content of the guideline who acts as the primary clinical consultant and advocate for implementation—and
- **Implementation team facilitator:** The clinical or administrative manager who coordinates the activities of the guideline implementation team (See Section 4).

Although this guide is not designed for use by the MTF command, the ultimate success of the guideline implementation strategies it describes will depend in large part on the strength of leadership support for the implementation effort. Key elements of this support are described in Appendix A, which "speaks to" the MTF Commander and his/her command team. To facilitate its use, Appendix A is also available as a separate document.

BACKGROUND

In 1998, the Army Medical Department initiated a comprehensive effort to implement clinical practice guidelines developed by the DoD/VA across all Army MTFs. This Implementation Guide, originally designed for use by Army MTFs, has been revised and expanded to facilitate the implementation of the DoD/VA guidelines at MTFs across the DoD. It has been prepared to help you implement the DoD guidelines at your MTF by providing you with tested methods and tools for designing and carrying out an effective implementation action strategy.

The guideline implementation work that you are undertaking is part of an extensive, systemwide effort by the Department of Defense (DoD) and the Veterans Health Administration (VA). This section of the guide summarizes these systemwide activities, including the DoD/VA guideline initiative and the Army Medical Department (AMEDD)/RAND guideline implementation project. It then describes the purpose and organization of this guide.

THE DOD/VA GUIDELINE ADAPTATION PROCESS

In early 1998, the DoD and VA began a collaborative project to establish a single standard of care in the military and VA health systems. This project is led by a Working Group consisting of two representatives from each of the three military services and from the VA. The goals of this project are:

- Adaptation of existing clinical practice guidelines for selected conditions;
- Selection of two to four indicators for each guideline to benchmark and monitor implementation;
- Integration of DoD/VA prevention, pharmaceutical and informatics efforts.

The DoD/VA Working Group designates an expert panel for each practice guideline, consisting of representatives from the three military services and the VA, with a mix of clinical backgrounds relevant to the health condition of interest. The expert panel is charged to review existing national guidelines for that condition, examine and update the scientific evidence supporting the guidelines, and adapt one or more of the guidelines to establish one for use in the military and veteran health systems. Each panel is also asked to develop recommendations to the DoD/VA Guideline Working Group for 2 to 4 metrics to be used by the military services and VA to monitor progress in guideline implementation.

THE AMEDD/RAND GUIDELINE IMPLEMENTATION PROJECT

The goal of the AMEDD/RAND project is to establish a system for implementing selected practice guidelines throughout the Army Medical Department and for monitoring the impacts of those guidelines on clinical care and outcomes. Through three sequential demonstrations, AMEDD, RAND, and the participating MTFs have been testing and refining guideline implementation methods in a "continuous improvement" cycle leading up to systemwide adoption.

As a result of the demonstrations, the Army Medical Command (MEDCOM) and RAND have defined a general process for implementing practice guidelines across the AMEDD that can be readily adapted to efforts to implement the guidelines across the DoD. This process (shown in Figure 1.1) includes the following components:

- **Evidence-based practice guideline and metrics.** The official DoD/VA practice guideline and monitoring metrics are provided to the MTFs. These include a summary list of the key elements of the guideline and additional metrics identified by the guideline expert panel as important or useful for monitoring.

- **Guideline toolkit.** MEDCOM and the Center for Health Promotion and Preventive Medicine (CHPPM) collaborate in developing a toolkit of materials (e.g., documentation forms, provider training videos, patient education materials, reminder cards) to support the MTFs' guideline implementation activities.

  Toolkits have already been developed for several of the DoD/VA guidelines and MTFs across the DoD are encouraged to use them (see the end of this section for information on how to obtain them).

- **Off-site planning conference.** The MTF's guideline implementation team holds a one-day planning meeting at a location away from the facility to plan its implementation strategy and develop an action plan.

- **MTF implementation activities.** The MTF teams carry out their action plans. They prepare periodic reports to the Program central office that summarize their recent activities, successes, challenges, and assistance needed to support their work.
- **Information exchange.** The MTF implementation teams are encouraged to share their experiences and build on each others' successes.

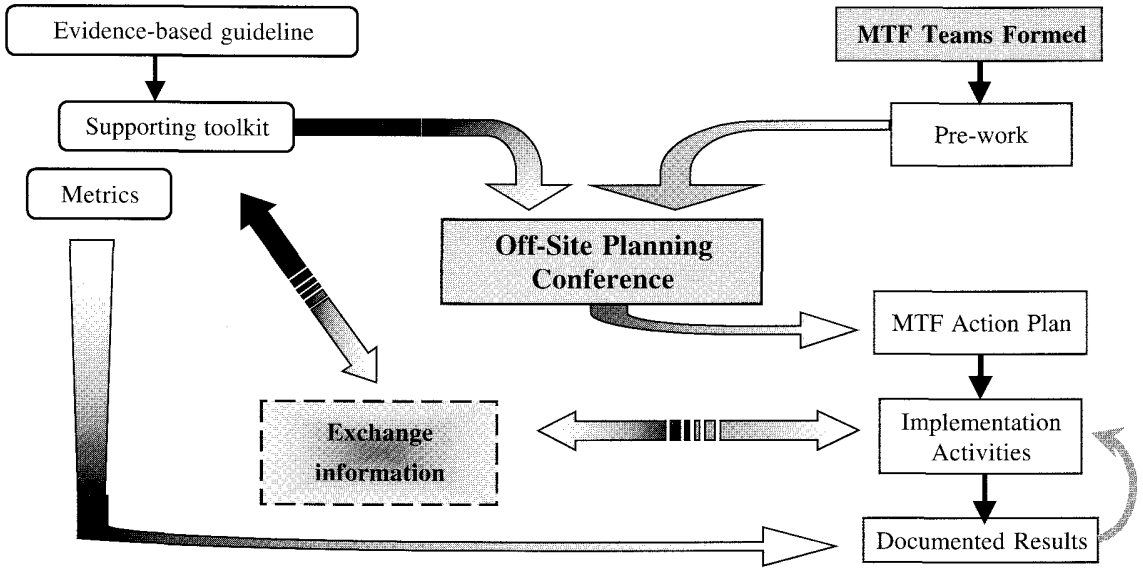


Figure 1.1—AMEDD/RAND Guideline Implementation Process

- **Monitoring progress.** Both the Program central office and the participating MTFs monitor implementation progress, using metrics that have been developed in either the DoD/VA guideline process or by the MTFs themselves. The MTFs are encouraged to establish measures for their key action strategies so they can assess their progress in making the clinical process changes they intended.

HOW THIS GUIDE IS ORGANIZED

This guide is organized as follows:

- **Section 2: Overview.** Begins with an overview of the stages of guideline use and of the guideline implementation process model that provides the structure for the remaining sections of the guide, and ends with a focus on two keys to success that apply to each stage of the implementation process.
- **Section 3: Building an Effective Team.** Provides guidance on how to organize and lead an effective implementation team.
- **Section 4: The Action Plan.** Takes you through a step by step process for creating an implementation action plan.
- **Section 5: Making Change Happen.** Provides effective strategies for implementing the changes outlined in your implementation action plan.
- **Section 6: Measuring Effects.** Helps you with the important task of monitoring the changes implemented and measuring the effects of your implementation strategies.

The guide incorporates some of the important lessons learned from hands-on field experience at Army MTFs participating in the AMEDD/RAND Guideline Implementation Project. These lessons, called "Field Notes," are included in Sections 2 through 6.

ADDITIONAL RESOURCES

Many of the tools and forms described in this manual, as well as other useful information on practice guidelines in the Army Medical Department, can be found at the quality management directorate Web site:

http://www.cs.amedd.army.mil/Qmo.

In addition, staff members at the demonstration sites of the AMEDD/RAND Guideline Implementation Project may be able to answer specific questions and/or provide you with valuable insights based on their hands-on experiences. The demonstration sites are listed below for your convenience.

Low Back Pain Demonstration Sites

- William Beaumont AMC at Fort Bliss
- Evans ACH at Fort Carson
- Darnall ACH at Fort Hood
- Reynolds ACH at Fort Sill

Asthma Demonstration Sites

- Blanchfield AMC at Fort Campbell
- Martin ACH at Fort Benning
- Eisenhower AMC at Fort Gordon
- Moncreif AMC at Fort Jackson

Western Region Demonstration Sites

- Bassett ACH at Fort Wainwright (diabetes)
- Madigan AMC at Fort Lewis (diabetes)
- Weed ACH at Fort Irwin (low back pain)

2. OVERVIEW OF GUIDELINE IMPLEMENTATION AND KEYS TO SUCCESS

THE STAGES OF GUIDELINE USE

Adoption

The decision to adopt a guideline is the first step in implementation.

The decision to adopt a clinical practice guideline is usually made by the leadership of a healthcare organization. For the Army MTFs, the adoption decisions for many guidelines have already been made by the DoD and VA. The choice of guidelines established by the DoD/VA Working Group was based on careful consideration of the readiness needs of the military health care system as well as the high-volume, high-cost health conditions treated in the MTFs. Therefore, for the DoD/VA guidelines, your efforts will focus on educating providers and clinic staff about each guideline and building local ownership of the guideline logic and standards (see discussion below).

In addition to implementing the DoD/VA guidelines, your MTF may decide to adopt other guidelines relevant to your patient population. This guideline implementation guide is designed to help you with adopting and implementing these guidelines as well.

Implementation

Implementing guidelines requires planning, resources, and staff commitment.

Putting an adopted guideline into practice is hard work. Implementation is the process of ensuring that patient care follows the recommendations and algorithms presented in the guideline as closely as possible. The complete guideline documents are quite lengthy and detailed, which makes it difficult to identify the most important clinical aspects of the guideline. To help focus your approach to implementation, a list of key elements have been developed for each guideline. In developing your Implementation Action Plan (see Section 4) you will assess your MTF's performance in relation to each of these key guideline elements.

When a practice guideline is introduced, it is essential to:

- assess how your current clinical processes compare to what the guideline recommends,
- prepare an implementation action plan to close gaps between the guideline and current practice, and
- dedicate the necessary resources and staff commitment to make those changes happen.

Unless these steps are taken, a new guideline will probably end up collecting dust on a reference shelf, having had no effect on clinical practices.

Institutionalization

Successful implementation incorporates guidelines into routine clinical practice.

The ultimate goal of implementation is to fully incorporate the guideline recommendations into the routine clinical practices at your MTF. In other words, the contents of the guideline should become part of the standard of care or "the way things are done." At this point, local ownership and appropriate changes in clinical and administrative systems should have been achieved, and you can begin a maintenance phase consisting of monitoring key guideline indicators (see Section 6).

THE GUIDELINE IMPLEMENTATION PROCESS

Guideline implementation is a multistage process

Implementation is the second of three stages in guideline use, which begins with adoption and ends with institutionalization. Figure 2.1 places implementation in context and provides an overview of the guideline implementation process. We introduce the steps in this process here, then describe them in more detail in following sections.

As we noted above, *leadership support* is essential to guideline implementation. The discussion of this important topic appears in Appendix A, which is intended for MTF commanders.[1] We encourage you to discuss the Appendix with your Commander, Deputy Commanders, and Chief Nurses, and to seek their support for key policy changes or other actions.

[1]Appendix A is also available as an independent document for MTF Commanders.

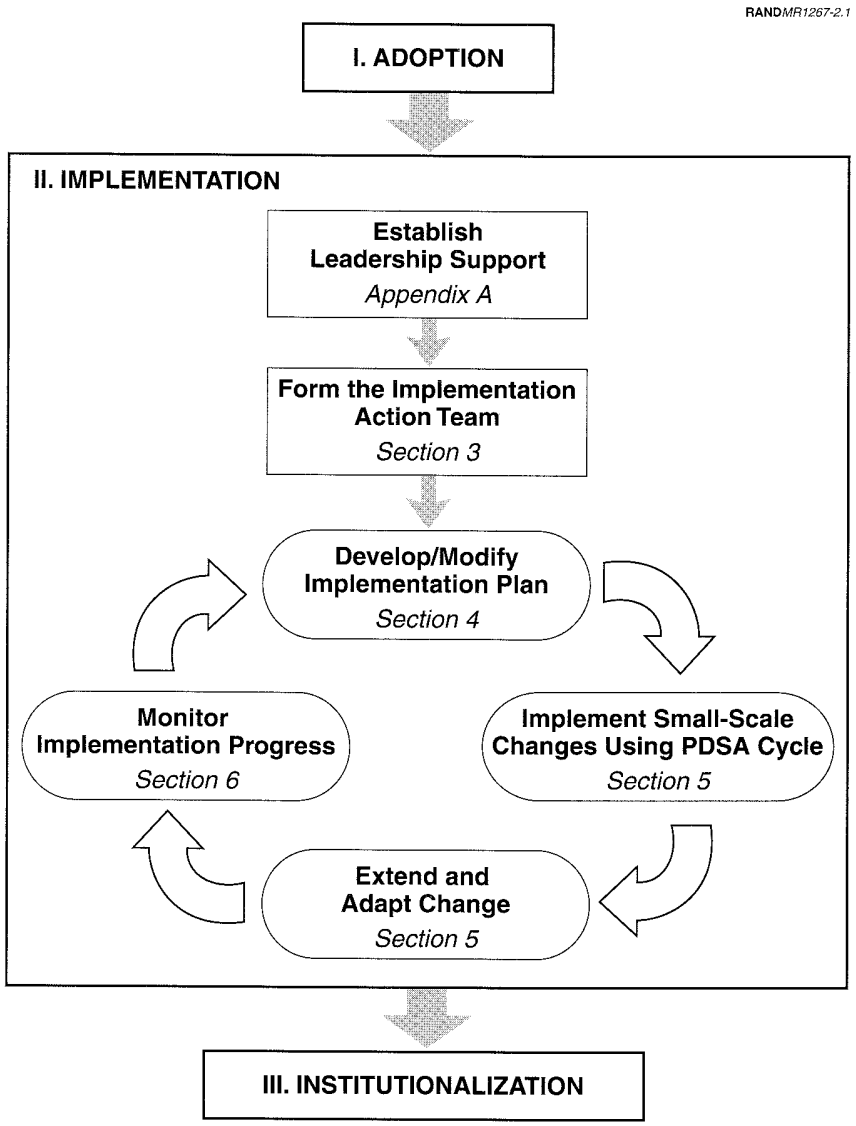


Figure 2.1—The Guideline Implementation Process

Forming the *implementation action team* is the next step in the implementation process. Key elements of an effective team include team leadership and membership, teamwork strategies, and communication skills. We discuss each of these in Section 3.

The development of the *Implementation Action Plan* takes place before and during the off-site planning conference.

This plan, which is based on the careful assessment of administrative and clinical processes, provides a blueprint for the implementation actions to follow. The necessary prework and the steps involved in developing the action plan are discussed in Section 4.

Once the action plan is drawn up, the changes specified must be implemented. Although *implementing change* in a health care organization is a challenging task, it can be facilitated through the use of the *Plan, Do, Study, Act* (PDSA) methodology. Once small-scale changes have been tested, they can be extended and adapted for full-scale implementation. Implementing change is discussed in Section 5.

The final stage in the implementation process is *monitoring progress.* In addition to the DoD/VA guideline metrics, your MTF may decide to use measures that are unique to your implementation effort. Section 6 provides guidance on choosing metrics, collecting and analyzing data, and using data as feedback for change.

KEYS TO SUCCESS

To ensure successful guideline implementation at your MTF, you should address two main issues: (1) building local ownership or "buy-in" from the staff responsible for implementing the guideline, and (2) ensuring that clinical and administrative systems are in place to facilitate staff adherence to the guideline.

Successful implementation requires both staff buy-in and system changes.

Figure 2.2 shows how staff buy-in and system changes interact to produce different implementation outcomes. Having *both* local ownership and systems support produces the optimal result, leading to likely implementation success. System support without local ownership produces providers who are resistant to implementation, despite having clinic procedures and systems equipped to support the process. Provider ownership without systems support produces willing providers who are frustrated at their inability to overcome barriers in the MTF systems that hamper their ability to change practices. Finally, with *neither* local ownership nor systems support, implementation will fail.

	Local Ownership	No Local Ownership
Systems **DO** support recommended practices	☆	Provider Resistance
Systems **DO NOT** support recommended practices	Frustrated Providers	✘

Figure 2.2—Matrix of Implementation Outcomes

Build Local Ownership/Buy-In

Staff affected by guideline implementation must be committed to its success. This is especially important when a guideline is received from an external source. Ways to foster commitment include:

Effective communication will foster staff buy-in to the implementation process.

- **Use opinion leaders:** Communication with MTF staff regarding guideline implementation should be spearheaded by a respected opinion leader—usually, the guideline champion (see Section 3).
- **Educate staff:** The first step toward accepting a guideline is to become familiar with it. Educational seminars, running cases through the guideline logic, or small group discussions among providers can make staff comfortable with the guideline.
- **Focus on local implications:** Show the implementing staff how the guideline fits into the clinical context of your MTF. Work with providers and clinic staff to identify what areas of clinical care will be most positively or negatively affected by the guideline.
- **Include all levels of staff:** Education and training should include all levels of staff involved in implementation, including primary care physicians, nurses, specialists, nurse practitioners, pharmacists, physical therapists, occupational therapists, nutritionists, support staff, etc.
- **Focus on improving patient outcomes:** Emphasize improving the quality of patient care and how the guideline will help you achieve that goal.

- **Use data when possible:** You can build a better case for the local relevance of the guideline when you have local data to support your claims.

In the remaining sections of this guide, we provide specific examples that focus on this first key to successful guideline implementation.

Field Note

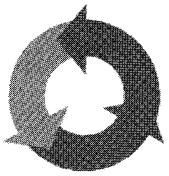
Low Back Pain (LBP) Demonstration: An MTF with many outlying clinics took the time to educate clinicians in all the TMCs and to identify a LBP guideline leader for every TMC. This time investment paid off in active participation by clinicians across the clinics.

Field Note

Low Back Pain (LBP) Demonstration: None of the MTFs held formal training sessions for nurses and other support staff. This limited attention to staff that are integral to guideline implementation resulted in delayed and uneven implementation of the LBP guideline.

Change Clinical and Administrative Systems

Implementing guidelines requires appropriate systems changes achieved through careful planning.



Implementing clinical guidelines requires more than the enthusiasm and commitment of individual MTF staff members. To achieve lasting improvements in clinical practices and patient outcomes, a wide array of staff resources and administrative and clinical systems need to be coordinated. For guideline implementation to be successful, existing systems must be modified and/or new systems must be put into place to facilitate desired practice changes. This can be accomplished in several ways:

- **Emphasize systems over individual behavior.** When communicating with providers and clinic staff, stress that guideline implementation is more about modifying and/or creating systems to support clinical behaviors than about policing the actions of individual clinicians.
- **Understand current processes.** Use flow charts to map out all clinical and administrative processes relevant to

the guideline. You will gain a clearer understanding of exactly where you stand in relation to the guideline recommendations.

- **Identify needed changes.** Use your understanding of the current practices in the MTF clinics to identify the system changes that need to be made to accommodate the guidelines. Where you do not yet have enough information to identify needed changes, work with the clinic staff to gather that information (which also helps build staff buy-in).
- **Involve a variety of staff members in changing systems.** Clinical systems often involve multiple levels of staff. Involve representatives from each of these levels (e.g. physicians, nurses, ancillary and support staff) in designing and carrying out changes. You will get better results while also building staff support.
- **Use process data to measure change.** Measure changes in the care processes targeted by your new or modified systems so you can track your progress and respond quickly to unexpected results.

As you develop and carry out your action plan (Sections 4 and 5), you should focus on developing or modifying systems to support guideline implementation. We provide helpful examples in the discussion below.

Field Note

All Three Demonstrations: Many clinicians abandoned guideline-specific encounter forms when patients presented with multiple diagnoses. If this situation is not explicitly addressed on a policy level from the outset, attempts to facilitate guideline implementation with new encounter forms may backfire.

Field Note

LBP Demonstration: An Army Medical Center (AMC) was having trouble with inappropriate referrals of LBP patients to its neurosurgery clinic. The physical medicine and rehabilitation clinic took on a gatekeeper role for LBP referrals. This system change increased appropriateness of referrals and reduced the neurosurgery backlog from 10 weeks to 2 weeks.

3. EFFECTIVE TEAMWORK FOR GUIDELINE IMPLEMENTATION

CHOOSE THE TEAM LEADER

The implementation team is led by a respected opinion leader and facilitated by an experienced group manager.

The *guideline champion* acts as the clinical leader of the implementation team. This person should be a primary care clinician and a respected opinion leader at the MTF with expertise in the content of the guideline and a strong commitment to its successful implementation. This person reports to the MTF leadership on team progress and has overall responsibility for implementation activities. The guideline champion participates in all team meetings and provides technical assistance to the team during the development and execution of the Guideline Implementation Action Plan (see Section 4).

The *implementation team facilitator* coordinates and manages team operations. This person should have experience using group process techniques and managing group dynamics. The facilitator should also have experience working with quantitative data and be able to provide the technical and administrative support necessary to help the team meet its goals.

Field Note

All Three Demonstrations: In cases where the guideline champion was not granted dedicated time to his/her responsibilities as champion the resulting lack in leadership slowed the pace of implementation considerably. Granting dedicated time to champions is vital to the success of guideline implementation.

Field Note

All Three Demonstrations: Reassignment of guideline champions and implementation team facilitators often left a vacuum that put guideline implementation on extended hold. Planning ahead for potential reassignment of implementation leadership is essential to successful guideline implementation.

CHOOSE THE TEAM MEMBERS

Team membership should reflect the variety of clinical and support staff involved in implementation.

Implementing clinical guidelines requires the cooperation of a variety of clinical and support staff. By using a multidisciplinary team to lead the implementation effort, you will help ensure that representatives from different aspects of the patient care process will develop commitment to the implementation effort and contribute their respective content areas of expertise to that process.

Determine who should be on the team by asking:

- Who will have the most important roles in making needed changes for implementing the guideline?
- Who else is affected by implementing this guideline?
- Who can influence the success or failure of implementation?
- Who has special skills that our implementation team may require, such as an intimate knowledge of a part of the process of care affected by the guideline, or the ability to help with measurement?

An optimal team will consist of 8 to 10 members representing the actual mix of clinical and support staff who will be involved in implementing the guideline. This team size provides enough members for diversity of opinion without having too many to achieve consensus.

Field Note

LBP Demonstration: After the off-site planning process, two MTFs made their implementation action teams smaller, and changed the team membership to include occupational medicine, health education, and clinic administration. Both MTFs felt it was important for the team to represent all involved in making system changes.

USE EFFECTIVE TEAMWORK STRATEGIES

The team needs appropriate training and effective management tools.

Strategies for effective teamwork can be grouped into four categories:

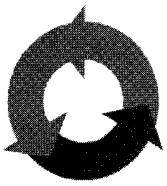
Train Your Team

All team members should receive basic training in the planning and process improvement strategies presented in Sections 4 and 5. Providing this training before the team begins its work gives members a better understanding of the methods they will be using and increases their sense of involvement in the team process. It will also give them some of the skills necessary for working effectively in groups.

Use Management Tools

Effective teams will use the following management tools:

- **Timelines:** Timelines (e.g., Gantt chart—see page 93) should be used to mark progress through time-limited stages in the implementation process.
- **Structured Meetings:** Team meetings should follow an agreed upon format and written agenda and have specific objectives. Someone should be assigned to take minutes and keep time. Action items assigned to particular team members should be noted and tracked.
- **Storyboards/Flowcharts:**



These tools help the team to focus on the systems approach to guideline implementation and the process approach to improvement strategies (see Section 5 for a description of the PDSA process).

- **Baseline Data:** Baseline data on the patient population and on current practices will assist the team in its planning efforts.

Build Team Consensus

The team must agree about its goals and objectives.

Team members may have a variety of ideas about how to implement guidelines. However, it is vital that members reach consensus about goals and objectives. In developing the Implementation Action Plan, allow sufficient time for discussion to ensure that all team members can contribute their ideas and stand behind the final plan. Also, make sure

that the team maintains consensus as issues arise during implementation that require troubleshooting or revising the plan.

Field Note

Diabetes Demonstration: Careful teamwork before the off-site planning meeting helped a team gain a clear understanding of the MTF's patient population and clinical practices. This work also built team cohesiveness and consensus on issues to be addressed.

Promote Participation

Staff who participate in the team process are more likely to support it.

Effective teams foster participation of all members. Some ways to promote participation include:

- **Involve team in developing management tools:**

Including all team members in decisions about managing the team's work will encourage commitment to team processes.

- **Involve team in the delegation of tasks:** If team members are involved in the process of assigning tasks, they will be more likely to volunteer their services and will be more committed to the tasks they take on.
- **Solicit the input of the most reticent team members:** Make an extra effort to include team members who don't speak up frequently at team meetings. These people may be vital to your implementation efforts, and their input should be valued and encouraged.

COMMUNICATE EFFECTIVELY

The team fosters staff buy-in by communicating key messages to clinicians.

The leaders and members of the implementation team act as the spokespersons for guideline implementation at your MTF. They are responsible for communicating the value of the guideline and the implementation effort to the rest of the MTF staff (see Appendix A for the role of MTF leadership). The team can help build

local ownership/buy-in by communicating the following messages:

- **Guidelines help clinicians do what they know is best:** Guidelines are about streamlining systems of care so that medicine can be practiced in the way that clinicians know is best. Clinical guidelines will focus your MTF on putting the necessary elements—staff, information systems, and clinical and administrative processes—in place so that patients receive high-quality, evidence-based care.
- **Implementing guidelines does not imply clinician incompetence:** When clinicians are told that they must follow guidelines, what they often hear is "you are incompetent and you need to follow rules to correct your mistakes." This provider reaction to so-called "cookbook medicine" is widespread and must be acknowledged. A good way to respond to this sentiment is by emphasizing the message in the previous bullet point.

Field Note

Diabetes and Asthma Demonstration: Several MTFs chose specialists as their implementation champions when the guidelines were designed to target primary care practice. This disconnect between leadership and front-line implementers sometimes led to a lack of sensitivity to clinical realities of guideline implementation.

TEAM DYNAMICS

Most teams go through four developmental stages.

The facilitator needs special knowledge about effective team functioning. However, all team members should know something about team dynamics. Most teams go through typical stages of development, which have been characterized as *forming, storming, norming,* and *performing.* In each stage, members are apt to have certain feelings and exhibit certain behaviors. In reality, teams cycle back and forth through various stages. Adding new members, failing to meet for several weeks or running up against a seemingly insurmountable barrier can set teams back.

- **Forming Stage:** Initially, team members often feel excitement, anticipation, optimism, and pride in being chosen for the project. They have an initial, tentative attachment to the team. Team members are also likely to be suspicious, fearful, and anxious about the job ahead, but they may be reluctant to express these feelings. Teams in the forming stage are often characterized by politeness and lack of overt disagreement.
- **Storming Stage:** In this stage, team members begin to challenge each other more openly. They may resist the task and be uncomfortable with any new approach. They are likely to experience "mood swings" about the team's ability and chance for success. Members may feel uncertain about their own role and their ability to contribute to or control the team's work. They may suspect that others have ulterior motives or hidden agendas.
- **Norming Stage:** This is when things start to come together. In this stage, the team develops norms for resolving conflicts, managing work assignments, and running meetings. Members will be more comfortable about being on the team and be more able to take constructive criticism and have positions questioned. They will also begin to believe that the team can succeed.
- **Performing Stage:** Effective teams are those that reach this stage. Members will feel satisfied about their personal contributions, growth, and learning. They will understand the strengths and weaknesses of other team members, as well as their own, and be more comfortable with the team's methods. The team will feel pride in its progress.

Field Note

Asthma Demonstration: After the off-site planning meeting, all participating MTFs required some lead time before starting full implementation activities. They spent the early weeks building their teams and finalizing preparations to educate clinicians. Such development work paid off in stronger, more cohesive efforts to make necessary system changes.

4. PLANNING FOR ACTION

OVERVIEW

An assessment of current clinical practices provides the foundation for the implementation action plan.

The implementation team's first task is to prepare a "game plan" for turning a practice guideline into actual clinical practice. To identify gaps in desired practice, you will compare your current practices to what the guideline recommends. Then you will prepare an Action Plan that sets priorities and defines actions for closing these gaps. Your Action Plan will serve as a blueprint for all the implementation activities. We recommend that you schedule a full day of planning time at an off-site location for your team to develop its action plan. Taking the team off-site communicates the importance of the task at hand and gives the team a "neutral zone" for reflecting objectively on patient care processes at your MTF.

To guide your planning, you will need to do some homework regarding your patient population and current practices. This section describes processes and methods you can use for this purpose.

- Preparation and data collection for planning (on-site):
  - — Become familiar with the key guideline elements and algorithm.
  - — Describe the patient population and current practices at your MTF.
  - — Assess current practices in relation to key guideline elements.
- Developing an implementation action plan (off-site):
  - — Analyze the gaps between the guideline and current practice.
  - — Identify barriers to successful implementation.
  - — Develop an overall strategy and specific actions.
  - — Develop metrics for monitoring implementation.

Familiarity with the guideline and the current state of patient care at your MTF prepares your team to develop an effective implementation plan. In effect, in developing the action plan, the team adapts the DoD/VA guideline to the clinical circumstances of your MTF.

PREPARATION AND DATA COLLECTION FOR PLANNING

Become Familiar with the Key Guideline Elements and Algorithm

All team members need to know the key guideline elements.

The guideline champion must be familiar with every detail of the guideline; other team members will use it as a reference. But all team members need to know the *key guideline elements*. They represent the "essence" of the practice guideline recommendations that, if successfully implemented, would put the MTF in compliance with the guideline. An AMEDD expert panel has defined the key elements of the first three guidelines chosen for Army-wide implementation (see Appendix B). As more DoD/VA guidelines are released, AMEDD will continue to perform this function.

A useful exercise for familiarizing the team with the guideline algorithm is to run hypothetical cases through it. In this process, a team member plays the role of a patient presenting with symptoms, and another member plays the role of the primary care physician. The team works together to determine how to manage the patient, based on the guideline algorithm. For sample low back pain cases, refer to the quality management directorate Web site:

http://www.cs.amedd.army.mil/Qmo.

Describe the Patient Population and Current Practices

A description of current practices helps focus implementation efforts.

The first step toward understanding current practices is to collect some baseline information on the patients your clinic serves and on current clinical care processes. This will help you define priorities for action. You should determine who your patients are, how many you treat, where and how you treat them, and any other information that will help you plan for successful guideline implementation. When possible, you should use your existing clinical and

administrative databases to collect this data (see Appendix C for sample baseline data form).

Some of the patient characteristics and care processes that you measure at baseline may also serve as the metrics you use to monitor the progress of implementation. In fact, if potentially useful data are not available at baseline you may decide to collect the data as part of your monitoring effort. Choosing metrics for monitoring is part of developing your Action Plan and is discussed below. A more detailed discussion of metrics can be found in Section 6.

Another useful way to document the current process of care at your MTF is to develop a flowchart that describes the clinical pathways your patients currently follow (see Appendix C for a sample clinic flow diagram). You can begin to compare your flowchart with the guideline algorithm to see where you need to focus your implementation efforts. To get a good understanding of practices across the MTF clinics, team members also should talk with other physicians, nurses, and clinical and administrative staff who are directly involved delivering care.

Field Note

Asthma Demonstration: Before the off-site planning meeting, an MTF developed comprehensive data about its asthma patient populations and the MTF clinics they used. The MTF used this information to identify the clinics where they should focus system change activities.

Assess Current Practices in Relation to the Key Guideline Elements

You are now ready to explicitly compare the practices at your MTF with the recommendations of the key guideline elements. Summarize current clinical practices for each key element (see Appendix C for a sample form). Begin to assess the key elements (1) for which you already are practicing according to the guideline standards, and (2) where current practices differ from the guideline standards. This information will become part of your strategy and action plan, which will set priorities and define actions for changing practices.

Field Note

Diabetes Demonstration: An MTF had data on its performance for the Diabetes Quality Improvement Project (DQIP) measures, as well as similar data for other health care facilities in its area. These measures "map" to guideline elements, so the MTF used the data in deciding which key elements to focus on in its implementation action plan.

PREPARE AN ACTION PLAN FOR GUIDELINE IMPLEMENTATION

An action plan should contain both an overall strategy and specific actions for changing practice.

The planning process you undertake during the off-site working session is designed to help your implementation team

- Evaluate the current status of practice at your MTF,
- Set priorities for actions to change practices to become more consistent with guideline standards, within constraints of available resources, and
- Document your overall implementation strategy and related actions in a *written guideline implementation plan.*

What follows is a format and process for developing a Guideline Implementation Action Plan (a sample action plan prepared using this format and process is provided in Appendix G). Of course, your Action Plan will be unique to your MTF and to the particular guideline you are implementing. As your team works through this planning process, be guided by the following principles:

- Develop an overall strategy that focuses on areas where practice changes are needed most.
- Use strategies that build upon your existing capabilities and programs.
- Keep your action plan realistic, recognizing competing demands for finite resources.
- Be proactive in two important areas:
  - — Educate both clinical and support staff and build ownership in the guideline standards.
  - — Modify the MTF's structures and processes to achieve new practices as "an easier way" to care for patients effectively.

- Monitor progress in carrying out the implementation plan, and document how the guideline affects MTF practices and outcomes.

Field Note

LBP Demonstration: The 4 MTFs in the demonstration used a variety of action strategies to implement the guideline. One MTF focused on patient education; another worked on TMC services and PEB/MEB. The other MTFs used broader service strategies, with one focusing on the acute patient and the other on both acute and chronic patients.

Use Tools for Guideline Implementation

AMEDD tools can help you implement the guidelines.

AMEDD has developed a number of tools to help you carry out your implementation action plans. Implementation toolkits are currently available for the Low Back Pain, Asthma, and Diabetes guidelines. A listing of these tools is provided in Appendix F.

Follow Planning Steps

The planning process consists of four basic steps, listed below. Perform each step, in turn, as described in the remainder of this section. Worksheets for each step can be found in Appendix D.

Planning Step	***Planning Tool (Appendix D)***
1. Analyze gaps between the practice guideline and current practice	Worksheet 1
2. Identify barriers to successful implementation	
3. Develop an overall strategy and specific actions	Worksheets 1, 2, 3
4. Establish metrics and monitoring progress	Worksheet 4

Planning Step 1:
ANALYZE GAPS BETWEEN THE GUIDELINE AND CURRENT PRACTICE

What This Task Does

Analyzing the gaps between the guideline and current clinical practice helps the guideline team identify the components of the guideline on which they should focus their efforts. For each of the key guideline elements, the team compares what they know about their MTF's existing clinical practices to the standards specified in the guideline.

Products Generated

- A set of statements for each key guideline element identifying areas where changes are needed and what types of changes are needed to bring clinical practices closer to guideline standards,
- Priorities for implementing process changes and a description of whatever other information is needed to guide changes.

The facilitator leads the implementation team through the gap analysis, either in an informal discussion or in a more structured nominal group process. The process we describe below is less structured than the process described in Appendix E. The facilitator should use the process most likely to encourage participation so that the team will benefit from the diversity of clinical and administrative perspectives.

- **Guideline elements.** The facilitator first reviews the standards and recommended practices contained in each of the key guideline elements (e.g., items to check in a history and physical examination, patient education on self-care, medications). The facilitator solicits reactions and discussion of issues from the team members. Guideline issues should be recorded to report out at the general meeting session.
- **Current practices.** For each guideline element, the team members list the current practices at their MTF. Take care to consider any differences in practices among your MTF clinics or departments. Continue discussion of the guideline element until the team reaches agreement on what your current practices are, any limitations to your knowledge of current practices, and additional information you need to gather to resolve questions.

- **Gaps identified.** Working with *Worksheet 1* (see page 76), "Implementation Strategy," the team uses the middle column of the worksheet to record its conclusions regarding gaps between practice and the guideline standards. Note your assessments of the adequacy of the information that guided these conclusions. (The last column of Worksheet 1 will be completed in planning step 3 as implementation strategies are developed.)

Planning Step 2:
IDENTIFY BARRIERS TO SUCCESSFUL IMPLEMENTATION

What This Task Does

The guideline team identifies those aspects of the MTF's organizational structures, process of care, or administrative policies and procedures that need to be changed to bring current practice closer to the guideline standards.

Products Generated

- A list of barriers or challenges that need to be managed so the MTF can successfully implement each key guideline element.
- List of broader system issues or barriers that cut across key guideline elements.

Once the guideline team has determined where gaps exist between guideline standards and actual practices, the team identifies barriers that may prevent or hinder changes designed to close the gaps. This analysis is not necessary for guideline elements where the team has identified no gaps in practice. However, it should be done for guideline elements where there is not enough information to assess gaps: inadequate information may result from barriers that can be reduced or removed. Like the gap analysis, these discussions may be facilitated informally or formally. (Appendix E describes a formal process.)

Identifying barriers. Repeat the following process for each key guideline element:

- The facilitator asks each team member to identify barriers that will prevent them from implementing clinical changes for the guideline element. The facilitator lists the barriers on a flip chart or other presentation medium until no more suggestions are raised.
- The team members discuss the barriers, removing duplicates or consolidating barriers until they agree on the barriers that need to be addressed. Identify all barriers relevant to each guideline element, even if some of them are also identified for other guideline elements.

Identifying cross-cutting issues. After barriers for each guideline element have been identified, the team groups the barriers into categories of cross-cut-

ting issues. For example, unclear rules for staff roles in educating patients could affect both compliance with medications and appropriateness of emergency room use. This process may be facilitated informally or using a more formal process, such as Affinity Grouping. (Refer to Appendix E for instructions for an affinity grouping process.)

Planning Step 3:
DEVELOP AN OVERALL STRATEGY AND SPECIFIC ACTIONS

What This Task Does

In this planning step, the team identifies the basic elements of the MTF's guideline implementation plan. Using information developed in the previous planning steps, the team defines an overall implementation strategy as well as a strategy for each guideline element. Within each strategy, the team defines specific actions to close gaps in practice.

Products Generated

- An overall implementation approach plus action strategies for each guideline element.
- For each guideline element, a list of actions to be undertaken, tools to be used, and a timeline for completion.

In this planning step, the guideline team draws upon the information it has developed in the gap and barrier analysis to construct its implementation plan. The plan consists of

- A *cohesive and feasible strategy* that focuses on the most important changes needed, and
- A *set of specific actions* and a ***schedule*** to carry out this strategy.

Overall Strategy

Action priorities for the guideline elements. The implementation team defines action priorities for each key guideline element, taking into consideration the gaps in current practice and the adequacy of information available to identify gaps. Decide by consensus which key guideline elements or leverage points the team will work with first. In the third (right) column in *Worksheet 1* (see page 76), briefly describe how the team plans to approach each guideline element. Choose from the following priorities or use others that the team decides are important:

- High priority for action to close gaps in current practice

- Moderate priority for actions that add to or build upon strategies for other elements
- No action because there are few or no gaps in current practice.
- No action for change yet - gather more information to assess gaps in current practice.
- Other (list) _____

Overall implementation strategy. An overall strategy is the "centerpiece" of any action plan because the strategy should drive all the actions designed to incorporate practice guidelines into an MTF's health care processes. A well-defined strategy will reflect the population served by the MTF as well as the sizes and configurations of its clinics, and will focus efforts on the areas in which change is most needed. Working as a group, review the issues already identified in the gap and barrier analyses for each guideline element, as recorded on *Worksheet 1.* Brainstorm ideas for an overall strategy that encompasses these elements. The facilitator guides the team discussion to reach consensus on a strategy. Consider using ranking methods when necessary to help the team consolidate views. Record the overall strategy that team develops in the space provided at the top of *Worksheet 1.*

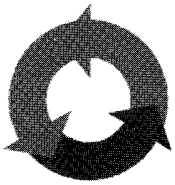
Planned Actions and Schedules

The guideline team develops plans for two categories of actions, both of which are necessary for effective guideline implementation. These are:

1. Guideline introduction and education.

An important first step in making guideline standards a part of an MTF's routine practices is building knowledge about the guideline and commitment by providers and other clinic staff to achieving the guideline standards. This step requires not only a scientifically credible guideline, but also substantial efforts by the guideline champion and the implementation team to actively involve the MTF clinic staff.

2. Changing clinical care processes.



As the guideline is introduced and MTF staff are being educated, the guideline team will begin the process of changing existing practices to close gaps from the guideline standards. Therefore, define actions only for those key guideline elements that the team has identified as priorities.

Using the toolkit. While the team is considering possible actions, review the contents of the AMEDD guideline implementation toolkit (see Appendix F). Identify the tools you will use to introduce the guideline and establish new clinical and administrative practices. Record these tools, along with other resources to be used, on *Worksheet 2A or 2B* (see pages 77 and 78), depending on the strategy, in the column "Identify the tools and resources for the action."

Developing the action plan. Using *Worksheets 2 and 3*, record actions in each category of guideline introduction and changes to clinical practices. (Worksheet 2A is for introducing guidelines and Worksheet 2B is for changing clinical practices.) In *Worksheet 2*, summarize each action to be taken, tools, and resources ("*what*"); the staff responsible ("*who*"); and the action schedule and completion target ("*when*"). In *Worksheet 3* (see page 79), display the action schedules graphically in a Gantt chart format. Timelines for all actions (introduction/education and clinical practice changes) should be displayed together on the Gantt chart to test feasibility and timing of the actions as a group.

Depending on the size of the guideline team and the number of actions to be developed, the team may decide to break into smaller working groups. Each working group is asked to develop actions and complete worksheets for one or more of the action plan components. For example, one group might plan the actions for guideline introduction and staff education and complete Worksheets 2A and 3, while other groups would have responsibility for actions to change practices under one or more of the guideline elements. (Refer to Appendix E for instructions about using working groups.)

Planning Step 4:
GUIDELINE METRICS AND MONITORING

What This Task Does

The feedback loop developed in this planning step is a crucial element of any clinical improvement cycle. The monitoring process established by the team will inform the team which of the actions in their plan are working well and which are not. The team will use this information over time to correct, revise, add, or delete implementation actions.

Products Generated

- Metrics to monitor and planned monitoring and reporting schedule.
- Identification of issues related to data availability or collection that affect monitoring.

A commitment to regular monitoring is essential to achieving desired changes in practices under a practice guideline. The MTF staff need to be able to observe the impacts of the actions they are taking. They can use this information to determine where to modify actions or initiate new action strategies. In this step, the guideline team selects metrics (indicators) to monitor, and it begins to design a data collection and reporting process to generate regular data on those indicators.

Identification and Selection of Indicators. During the initial phase of implementation, the team probably will want to focus on monitoring process-of-care measures to check whether planned changes actually are occurring. At the same time, identify short-term and long-term outcome measures to measure, starting as soon in the process as possible. Establish at least one measure for each guideline element that has been identified as a priority. Also monitor metrics where no gaps in current practices appear to exist, which will allow the team to track these areas and identify any future changes that may merit attention. Select a limited number of metrics judiciously to get needed information but avoid burdensome data collection. Record each metric identified on *Worksheet 4* (see page 80), along with identification of its data sources and monitoring schedule.

Select at least some of the metrics developed by the DoD/VA guideline team to use as your MTF's metrics. The DoD/VA metrics include a limited number of measures that will be monitored by all services and the VA as well as additional

measures that were determined to be important for the condition being managed under this guideline. The team may choose to select some measures that address unique aspects of care for the team's MTF, in addition to the DoD/VA metrics. Be sure that all metrics are measurable and focus on the desired changes identified in the plan.

Identification of Data Collection Issues. During discussion of the proposed metrics, the team will raise a number of issues and questions that have implications for successful data collection and measurement. Prepare a list of these issues and identify which of them relate to the MTF's data capabilities or other factors, and which of them need to be addressed by MEDCOM. Where possible, offer suggestions for how some of the issues may be resolved.

5. MAKING CHANGE HAPPEN

OVERVIEW

The plan, do, study, act *cycle is an effective way to implement change.*

Once your team has developed a Guideline Implementation Action Plan, the next step is to implement the plan in your MTF's clinical environment. This section describes an effective method for implementing change that is based on the Plan Do Study Act (PDSA) process improvement cycle.[1] In this section, we

- describe the PDSA cycle
- review its strengths:
  - — Testing changes on a small scale
  - — Testing multiple changes through multiple cycles
- Provide examples of using the PDSA approach to implement the DoD Low Back Pain and Asthma guidelines

THE PLAN DO STUDY ACT (PDSA) CYCLE

PDSA cycles consist of small-scale tests of planned actions, followed by assessment and improvement of the initial plan.

The PDSA cycle is a process model for quality improvement that has been used extensively in the health care field, especially for working with clinical practice guidelines. Figure 5.1 shows the four stages of the PDSA cycle. As you carry out your action plan, treat each action item as material for a PDSA cycle. Although the cycle may appear more readily applicable to *Practice Change* actions than to *introduction and education* actions (see Appendix D, worksheets 2A and 2B), educational interventions can be also be improved by testing them through PDSA cycles.

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[1]The PDSA cycle was initially developed by Tom Nolan and colleagues at Associates in Process Improvement as a framework for accelerating improvement in a variety of business contexts. See C. Langley, K. Nolan, T. Nolan, C. Norman, and L. Provost, *The Improvement Guide: A Practical Approach to Improving Organizational Performance.* San Francisco: Jossey-Bass Publishers, 1996.

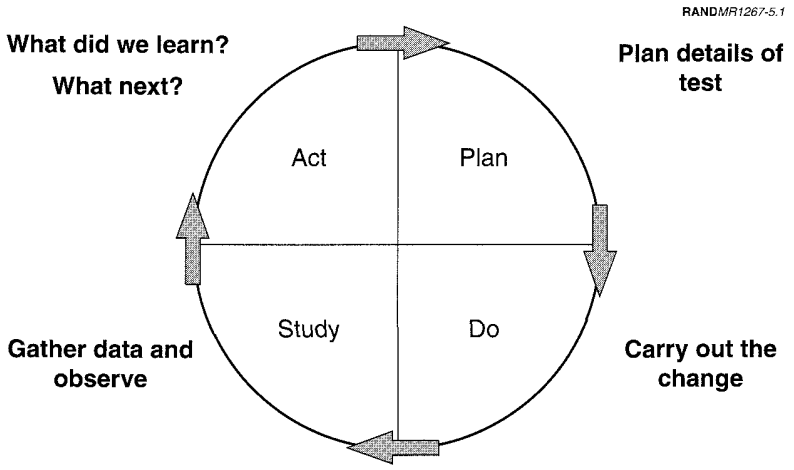


Figure 5.1—The PDSA Cycle

The *Plan* stage occurs at your off-site planning meeting described in Section 4. During the *Do* stage, you carry out a small-scale test of the planned action. You can test almost any type of action, ranging from small (such as a training class) to large (such as redesign of patient flow procedures). During this test, you observe and document any problems or unexpected events and collect data that will help you determine the impact of your test. During the *Study* stage, you analyze the data you have collected and the observations you have made. Compare what you find to what you expected to happen and summarize what you learned from testing the action item. During the *Act* stage, you use what you have learned to improve your planned action. At this point you may decide either to test the change again with the modifications, or to proceed to full-scale implementation.

When you use PDSA cycles to carry out your action plan, remember to keep the tests as simple and straight forward as possible. What is most important is that your team move quickly through each stage of the cycle to apply what you learn with little delay.

Field Note

Diabetes and Asthma Demonstrations: Some of the larger MTFs launched into large scale changes to their clinical procedures but spent so much time trying to perfect the new procedures that it took months to implement them for the first time. Had these MTFs tested some of their strategies on a smaller scale, they could have discovered more quickly what works and what doesn't.

STRENGTHS OF THE PDSA APPROACH TO GUIDELINE IMPLEMENTATION

Testing Changes on a Small Scale

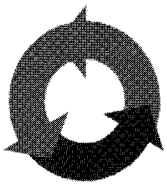
Testing changes on a small scale improves staff buy-in and focuses attention on changing clinical processes.

To see if the change strategies in your action plan will achieve their specified objectives, it is important to test them on a small scale—in effect, implementing a change on a temporary basis. Testing on a small scale has several advantages.

- **Big learning payoff at small expense:** Testing changes on a small scale can be accomplished quickly with a minimal expenditure of resources. At the same time, small scale tests provide a good indication of problems and/or successes to expect from full-scale implementation.
- **Allows for early and effective changes to the action plan:** The experience and feedback gained from small scale tests can be used to modify and improve the original Implementation Action Plan.
- **Improves staff buy-in:**

Your MTF staff is more likely to buy in to guideline implementation if change strategies are tested on a small scale. Staff members resistant to large-scale changes will be more receptive if they can provide input during a small trial run of the change strategy. Tailoring the strategy to the needs and concerns of the implementing staff will increase staff acceptance of guideline implementation.

- **Focuses on changing clinical processes:**



Since the PDSA cycle is specifically designed as a tool for improving organizational processes, using this approach encourages your team to conceptualize the action items in the implementation plan as changes in clinical processes. This orientation will increase the likelihood of effective process change.

Testing Multiple Changes Through Multiple Cycles

Some actions may require more than one PDSA cycle.

Another advantage of the PDSA cycle is that it allows you to take multiple change strategies through multiple improvement cycles, as illustrated in Figure 5.2. Each of the arrows represents an action item from your Action Plan. Each item is tested on a small scale and moves through successive cycles until the desired change is achieved.

Not all action items will require more than one PDSA cycle, but it is advisable to test every item with at least one PDSA cycle.

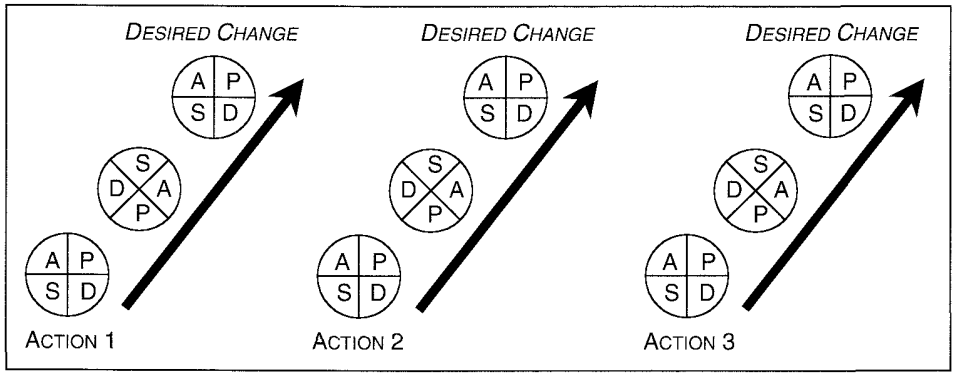


Figure 5.2—Multiple Changes, Multiple Cycles

EXTENDING AND ADAPTING CHANGES

With evidence from the small-scale tests that your planned actions have the potential to create desired changes in clinical processes, it is time to move forward with broader implementation of those actions. Responsibilities for im-

plementing the actions should be clearly defined and compatible with each individual's skills and functions in the clinic or MTF. Similar to the approach for the small-scale tests, work incrementally in cooperation with staff and patients who are involved or affected by the changes. Be alert to both positive and negative feedback, both of which can improve your strategies. To extend and adapt your small-scale changes, consider the following actions:

- Extend the change to other areas in your MTF
- Adapt the change to each area
- Make the change routine in each area
- Share the adaptations among all areas

A process for monitoring your progress in achieving your aims also should be initiated. Section 6 discusses monitoring approaches, measures, and issues. Monitoring serves the important functions of providing feedback for the implementation cycle, creating accountability for guideline implementation, and assessing the effects of the guideline on quality of care.

Example 1: IMPLEMENTING THE DoD LOW BACK PAIN GUIDELINE

Plan	An MTF participating in the AMEDD/RAND low back pain (LBP) guideline demonstration planned to use the Army MEDCOM Test Form 695-R (a two-page LBP documentation form for the medical chart) as a process change to facilitate guideline implementation. It was believed that this form would make it easy for clinicians to follow the guideline recommendations for their LBP patients.
Do	When the implementation team brought the new form to their MTF, the primary care physicians voiced concerns that the form would increase their workload within the already limited time available for each clinic visit. In response to these concerns the team asked two providers in one clinic to test the form on a small scale.
Study	After the test period, the providers using the new form reported that the form was easy to use and that it shortened the time it took to process LBP patients.
Act	Based on these findings, the action team implemented the documentation form in all of the MTF clinics.

Example 2: IMPLEMENTING THE ASTHMA GUIDELINE

Plan	One facility decided to try forming a support and education group for families who had frequent ER visits and hospitalizations in the previous 6 months. The first test was to have the asthma educator call 15 families and see if they would be interested in participating. When 13 of the families expressed interest, an initial support group was planned, including location, time and frequency of meetings, format, and content for both parents and children.
Do	Invitations to participate were extended to 32 "high risk" families. The initial meetings of the support group consistently had 18 to 20 families present. Brief asthma knowledge, symptoms and behavior surveys were administered at the beginning of each session.
Study	After three months, the educator observed that families with adolescent children had dropped out of the program, while those with young children had continued to participate, with evidence of improved knowledge and behaviors in the families who continued.
Act	Based on these findings, the original support program was redesigned to target families with children under 10. A review of those families from the original 32 invitees who never participated revealed that a large fraction of these families had teenage children. A decision was made to develop and test an adolescent support group specifically aimed at preteens and teenagers.

6. MEASURING EFFECTS

OVERVIEW

Assessing your implementation efforts requires appropriate data and careful interpretation.

In Section 4, we provided an overview of how to select metrics for monitoring implementation progress. This section provides additional detail on metric selection and offers some guidance about setting up monitoring systems at your MTF.

To monitor and assess the effect of your guideline implementation efforts you need to:

- choose appropriate metrics,
- collect data, and
- interpret your results.

Each of these topics is covered in general terms. Then two specific examples of metric selection and use are presented to help make these methods more concrete for you to use on an ongoing basis.

CHOOSE APPROPRIATE METRICS

The DoD/VA Guideline Metrics

When selecting metrics, consider the type and importance of the outcome, and the feasibility and interpretability of the measure.

The DoD and VA already have in place a process for developing guideline metrics. The DoD/VA metrics are selected by an expert panel of clinicians using a Delphi consensus development process. High-priority indicators have been selected to be monitored on a service-wide basis. The expert panels also have identified additional metrics that they suggest for use by individual services or MTFs.

The guideline metrics developed by the DoD/VA expert panels for low back pain, asthma, and diabetes are provided in Appendix H. You are strongly encouraged to select from among the other metrics provided for monitoring guideline implementation at your MTF. Doing so will make

metric selection easier for you and give you confidence that you are using valid measures.

Selection Criteria

The following criteria will help you choose your metrics:

- **Processes, utilization, and outcomes:** Process measures (e.g., document form in chart, new patient education encounters) are particularly useful in the early stages of implementation to assess whether the actions specified in the Action Plan are actually taking place. Utilization measures (e.g., referrals, diagnostics, procedures, etc.) are useful for charting changes in access to care and costs of care. Finally, changes in patient outcomes (e.g., duty days lost, blood pressure levels) are excellent measures of the impact of guidelines on quality of care.
- **Importance of factor being measured:** The measures you choose must capture the key elements of the guideline, particularly those for which you have defined specific actions in your implementation plan.
- **Ability to interpret and act on findings:** It is sometimes difficult to determine if an increase or decrease in a certain indicator (e.g., trend in referrals, imaging studies, or drug use) is a result of successful guideline implementation or an undesired outcome. This ambiguity often results from insufficient information about whether such changes are "appropriate" from a clinical perspective. We explore this issue below under "Interpreting results."
- **Feasibility of measurement:** The easiest and least costly ways of collecting data are to use data from existing automated information systems or to add new data elements to these systems. If needed data are not available from these sources, then chart abstractions, surveys, new administrative forms, or special outcomes studies can be used. However, such studies are more resource intensive and are often more vulnerable to incomplete documentation.

- **Identifiable and measurable denominators:** It is important to have complete counts of relevant patient populations (e.g., all adult type-2 diabetic patients) in order to produce accurate reports of chosen indicators (e.g., % type-2 diabetics with adequate glycemic control).

Field Note

Diabetes Demonstration: Several MTFs defined measures to check whether they were actually making the system changes they intended. For example, one MTF has a measure to monitor whether providers are checking patients' feet as indicated, and another is monitoring the completeness of patient education activities.

Field Note

LBP Demonstration: One MTF is monitoring closely the impact of the LBP guideline on use of MRIs. Because the MTF does not have MRI, it must pay for each procedure. There was concern that MRI use (and cost) might increase.

Field Note

Asthma Demonstration: One MTF used pharmacy data to monitor asthmatics use of bronchodilators and anti-inflammatory medications. Patients who were relying on quick relief medications, rather than regularly using anti-inflammatory meds, were good candidates for further patient education.

COLLECT DATA

Methods for Monitoring Implementation

Once you have chosen your metrics, the next task is to put implementation monitoring systems in place at your MTF. There are two basic methods for collecting data to monitor your chosen metrics.

Monitoring relies on the results of special studies and data from automated systems.

- **Routine monitoring of administrative data,** which usually come from an MTFs' automated information systems, include enrollment records, encounter records for outpatient visits, inpatient stays, prescription drugs, and use of ancillary services (such as laboratory, radiology, physical therapy, and other diagnostic or therapeutic services). Encounter data provide timely feedback for

treatment facilities to guide implementation actions and for monitoring performance systemwide. However, these data are less useful for measuring outcomes of care because they do not contain information about a patient's clinical status. Moreover, measures of the quantity and timing of services based on these data may be interpreted incorrectly if not used in conjunction with data on patient status or clinical judgments made when care is delivered.

- **Special studies of clinical data,** which collect information recorded in patients' medical charts or reported by patients in surveys, produce rich detail about the patients' clinical status (such as level of back pain or physical function) and clinicians' assessments of required interventions. However, because these studies are time consuming and costly, they cannot be used to generate data on a routine basis (e.g., monthly or quarterly). Therefore, they are not very useful for timely monitoring of compliance with the guideline and its effects on service delivery profiles.

Given their respective strengths and weaknesses, these two monitoring techniques complement each other well, and should be used in combination. It is important to note that despite the more labor-intensive nature of special studies, these studies will vary in scope and complexity depending on the objective at hand. You may decide to manually pull 10-20 charts to answer a few specific questions about the process of implementation at your MTF. More elaborate special studies may be conducted by analyzing data from administrative data systems.

Field Note

All Three Demonstrations: Several MTFs found it hard to gain the buy-in of clinical staff because they had not collected simple data on MTF performance relative to the contents of the guideline. Unless you can produce hard data to the contrary, clinicians will often assume that the guideline represents current practice at the MTF.

Data Sources

Useful data sources include: patient charts and documentation forms, surveys, and administrative and enrollment information.

A number of data sources are available for both special studies and routine monitoring. Each source has strengths and weaknesses, which we summarize in Table 6.1 and describe below.

- **Encounter data (e.g., CHCS, ADS):** These computerized data are easy and inexpensive to obtain. Administrative data on service utilization usually contain diagnosis and procedure codes. However, different codes can be used to describe the same event and the accuracy and completeness of coding are not always consistent. Using administrative data also limits you to the information that the computerized systems already collect, unless you can add desired data elements to the systems.
- **Enrollment data (e.g., DEERS):** Enrollment data have the advantage of providing information about the entire population of patients served by your MTF. These data can be particularly useful for determining the incidence or prevalence of health conditions and service use rates in the patient population at a whole, or in subgroups. However, enrollment data may be missing information on particular factors of interest (e.g. health status, chronic health conditions), and these data may not be routinely updated.
- **Patient management/documentation forms:** These forms provide patient-level data specific to the guideline(s) being implemented. In addition to being a good source of data on implementation, they also act as a reminder for clinicians. However, unless clinic staff believe that the benefits of documentation forms outweigh the added time burden of filling them out, staff will resist using them.

Table 6.1: Advantages and Disadvantages of Data Collection Methods

Data Collection Method	*Advantages*	*Disadvantages*
Administrative data:		
Encounter data	Low cost; readily available	Inconsistent coding, data not available for many measures
Enrollment data	Provide data on entire patient population	Data not available for many measures of interest; data may not be regularly updated
Special study data:		
Patient management sheet (documentation form)	Guideline-specific data; provider reminder	Incomplete data if forms not completed for all patients
Chart abstraction	Detailed clinical data on appropriateness and outcomes of care	Costly; time intensive
Patient surveys	Capture patient perceptions of guideline implementation and health status	Costly; time intensive; one point in time; uncertainty about patient perceptions

- **Chart abstraction:** Because the patient chart contains detailed diagnostic information, it can be used to determine the appropriateness of care, the quality of care, clinical outcomes, and the access of certain groups to specific types of care. Abstracting data from medical charts is time consuming and costly. Missing charts can make results inaccurate because available charts may not be representative of the total patient population. Because chart data lacks a standard format, some information may be missing. In addition, the way data are recorded may vary (e.g., no mention of smoking may mean that the patient does not smoke or that the physician did not ask whether the patient smokes). You should consider these limitations when interpreting the data (see below).

- **Patient surveys:** Patient surveys can be used to collect data on patient satisfaction with care, functional and health status, quality of life and health habits. Patient surveys can also capture patients' perceptions of guideline implementation. If you cannot survey all of the patients you are interested in, you can use random samples of those patients to obtain information that is representative of the population. Low response rates or poor recall by respondents can make data difficult to interpret. Also, surveys only capture one point in time, and they must be repeated periodically to provide trend data.

Field Note

Diabetes Demonstration: One MTF, with MEDCOM support, established an automated information retrieval mechanism to assist in disease management and metrics monitoring.

Field Note

All Three Demonstrations: The MTFs and MEDCOM agreed to use the same diagnostic code(s) on ADS sheets to identify patients treated under each guideline, so that monitoring can be done consistently. Standard codes have been identified for LBP and asthma. Work on diabetes codes is in progress. Multiple codes still must be used to identify patients for historical service use.

Frequency of Data Collection

Collect process data early and frequently; monitor administrative data monthly; conduct special studies strategically.

Deciding how frequently to collect data is an important component of your monitoring strategy. Your action team should consider three aspects of the monitoring process:

- Early monitoring of changes to clinical practices
- Monitoring administrative data
- Conducting special studies

During the early weeks of implementation, it will be useful to collect data on a small scale for indicators that show whether the changes in practice that you intend to make are actually occurring. For example, you could pull a sample of 10-15 charts for asthma patients in one or more

clinics to check what percentage of those charts document asthma severity. These checks should be carried out relatively frequently at first, phasing out to longer term monitoring over the first year.

Because administrative data are usually readily accessible, we suggest that your action team monitor these measures on a monthly basis, checking the data for desired or undesired changes in utilization. This schedule will allow the team to respond quickly to refine your implementation strategy as needed. Quarterly reports can be made to Command on implementation progress, impacts on service use, and resulting changes made to your implementation strategy.

Special studies, by their very nature, provide retrospective data, rather than "real time" data on measures of interest. Because of the cost of special studies, they are performed infrequently, so you will be able to observe trends only after several years of data collection. For these reasons, special studies must be carefully designed so that each will yield as much data as possible on multiple measures. For example, a patient survey will provide data on many aspects of care. However, you might conduct the survey only once every year or two.

INTERPRET YOUR RESULTS

When interpreting results, pay attention to the direction of cause, and to the effects of subjective or missing data.

To turn the data you have collected into information about implementation progress, you must analyze and report the data in a way that is useful to MTF leadership and to clinical staff.

Data Analysis

There are several issues to keep in mind when you analyze your data.

- **Causal direction:** Guideline implementation can lead to either increases or decreases in rates of referrals, prescription, etc. For example, an expected decline in referral rates due to better primary care management of a disease may actually increase referrals because of better

diagnostics. An increase or a decrease in a measure should not be considered either good or bad until you have thoroughly considered alternative interpretations.

- **Subjectivity:** Raw numbers of procedures, prescriptions, referrals, etc. will not tell you whether these were "appropriate" courses of action. Such determinations will require the judgment of experienced clinicians.
- **Missing data:** Missing data can lead to erroneous conclusions in many ways. For example, if you are calculating rates or percentages, and you do not have counts of the whole population of interest, your rates will be inflated. If you conduct a survey and you are missing data because many subjects did not respond, your results may not reflect your original population of interest. If you rely on patient management sheets for much of your monitoring data and these sheet are used inconsistently, your measures will be invalid.

Data Reporting

To report findings, use simple graphics, brief summaries, and specific recommendations.

The "best" methods to display monitoring data are the ones that work for your implementation team, MTF leadership, and other users. Some people find tables to be an effective way to communicate information; others prefer graphs. However, two principles apply to all methods of data display:

- Display only the most important information from your analyses to succinctly "tell the story" that emerged, and
- Keep each table or graphic simple so users can find the important information easily.

Report formats should reflect users' needs.

Although you are reporting the same results to all users of the monitoring information, each type of user will be interested in different aspects of the information. We use MTF leadership and individual physicians as examples for this discussion because they are two of the most important groups of users. However, you may use different reporting formats for other groups, such as front-line nurses, other clinical staff, or support staff.

- **Reports for MTF Command:** Monitoring reports prepared for the MTF leadership should follow the same principles used for other management reports—a succinct presentation that summarizes the key findings, highlights the implications of those findings, and discusses recommendations for action. Additional detail can be provided upon request. Data display issues (discussed above) are especially pertinent for management reports. Use of graphics can present comparative information on indicator performance quite effectively, either across MTFs or over time.
- **Reporting to physicians:** Reports to physicians should emphasize collaboration and educational feedback, and where appropriate, should encourage physicians to change practices. In addition, written documents need to protect the confidentiality of individual physicians. One approach is to prepare a separate, confidential report for each physician comparing his/her performance to that of all other physicians in the clinic or MTF. The data should be presented at a level of detail that shows the physician clearly which practices should be changed to improve performance on the monitoring indicators.

Example 1: MONITORING IMPLEMENTATION OF THE LOW BACK PAIN GUIDELINE

Metrics	An MTF decides to monitor the percentage of new LBP patients receiving a neurological exam during the initial clinic visit.
Data Collection	If Army MEDCOM Test Form 695-R (a two-page LBP documentation form for the medical chart) is completed for all patients and always included in the chart, then this is a valid source of data for this metric. Special care must be taken to ensure that all clinicians are familiar with the form and agree to use it. Periodic spot checks should be made to ensure that Form 695-R is placed in all LBP charts. In order to determine the entire population of new LBP patients at the MTF, standardized coding of the condition must be agreed upon for the CHCS database. Once the population of new LBP patients is determined, all of the charts, or a random sample of them must be pulled to determine those who received a neurological exam. Missing charts can bias results, so care must be taken to find all of them.
Results	Results should be reported for a specific time period (i.e., new patients in first six months since introduction of the guideline). Also, choose a benchmark against which you will measure your progress. Present a report of your findings to the MTF leadership and physicians. If you fall short of your benchmark, recommend actions for improvement. If you meet your benchmark, state your plan for continued periodic monitoring.

Example 2: MONITORING IMPLEMENTATION OF THE ASTHMA GUIDELINE

Metrics	During their planning process, an MTF discovered they are inconsistent in prescribing long term controllers for patients with persistent asthma. They develop a planned action in this area. To monitor their progress, they decide to measure the percentage of patients for whom controllers are prescribed.
Data Collection	The only way to collect truly valid data for this metric is through special studies. To determine the denominator for the percentage estimate, you must first define "persistent asthma." Then you need to pull all the charts (or a random sample of them) for patients with asthma to determine persistent cases. Prescriptions for long-term controllers are probably noted in the chart, but may need to be verified with more consistent formulary data.
Results	When reporting prescription rates, be sure that the population of patients with persistent asthma has been properly identified and that your data on prescriptions is valid and complete. Choose a benchmark against which you will measure your progress. Present a report of your findings to the MTF leadership and physicians. If you fall short of your benchmark, recommend actions for improvement. If you meet your benchmark, state your plan for continued periodic monitoring.

Appendix A
GUIDELINE IMPLEMENTATION STRATEGIES FOR MTF COMMANDERS

Practice guidelines cannot be successfully implemented in health care organizations without strong support and active involvement of leadership. This document is designed to give you, as MTF commander, practical guidance about how to promote successful guideline implementation at your MTF. The strategies described here are drawn from research in health care management as well from early lessons learned from the AMEDD/RAND demonstration that implemented the DoD/VA Low Back Pain Guideline.

Your participation in the implementation of clinical practice guidelines puts you in full compliance with JCAHO standards regarding leadership for guideline use. By following the recommendations outlined below your MTF will receive the highest score for this category.

The successful implementation of new practice guidelines requires staff time and other resources that typically are in short supply in health care facilities, including military ones. As Commander, you will make the final judgments about what resources are to be applied to improve clinical practices at your MTF. For some guidelines, through careful analysis of current practices and data, you may conclude that your current practices are consistent with the guideline recommendations. In those cases, it would be wasteful to use staff resources for activities that would yield little improvement in clinical care. Resources should be preserved for implementing guidelines where you find that your current practices could be improved.

The MTF Action Plan for guideline implementation, which we discuss below, is one vehicle for making these resource decisions. By first identifying gaps in practice and then defining strategy and actions to close those gaps, your MTF team can apply resources where they are most needed and can potentially generate the greatest payoff in quality and efficiency. You can ensure that your team is setting priorities appropriately by providing policy direction and feedback during the planning process.

STEP 1: ORGANIZE FOR GUIDELINE IMPLEMENTATION

A. Secure buy-in from executive staff

Clinical practice guidelines, despite their name, address the administrative as well as the clinical aspects of health care. It is thus important to foster owner-

ship of the guideline implementation process from both the clinical and administrative aspects of your MTF. By including the executive teams of both the clinical and administrative staffs in initial meetings, you will help to ensure adequate commitment of time and resources to guideline implementation. Continued support from clinical and administrative leaders can be maintained by having the implementation team (described below) report periodically to the clinical and administrative leadership.

B. Make guideline implementation an organizational priority

Assigning guideline implementation a high priority sends the message to your staff that MTF leadership believes in the value of practice guidelines and that guidelines represent "the way things should be done here." Approaches to prioritizing guideline implementation at your MTF include the following:

- **Issue a command memorandum.** To express your support of practice guidelines, you can issue a memorandum in the form of a "Command Policy" to the MTF staff. The memorandum should convey your belief in the importance of guidelines and request the staff's cooperation in all implementation efforts.
- **Use guideline implementation as a public relations tool.** Your MTF's implementation activities can demonstrate to external customers your facility's commitment to providing high-quality, cost-effective health care to beneficiaries. Involving your public relations officer and patient representatives can help ensure that a consistent message is delivered to the public.
- **Make guideline implementation a regular agenda item at command team meetings.** These meetings will provide an opportunity for updates on the status of the work and serve as a forum for discussing how the command team might eliminate barriers to implementation that may arise.

C. Create a standing committee for guideline implementation

Because your MTF will be involved in implementing several guidelines over the course of a given year, you should consider creating an institutional body to support all guideline implementation activities at your MTF. This body, which could be called the *Standing Committee for Evidence-Based Practice*, would be headed by the chief of the medical staff. Its members would include primary care physicians, nurses, QM staff, administrative staff and ancillary support staff. The committee would coordinate and monitor implementation of all guidelines, and make recommendations to the MTF command regarding staff and resource allocations and other specific guideline-related issues.

With your oversight, the Standing Committee would also appoint a champion for each guideline. This champion would lead a guideline-specific implementation team through the development and implementation of an action plan. The **guideline champion** should have the following qualifications:

- **Opinion leader:** The champion should be a primary care clinician who commands particular respect for his/her knowledge and experience and strongly influences the opinions or other staff.
- **Personal Commitment:** The champion should believe in the value of clinical practice guidelines and have a particular interest in taking on this role.
- **Rank:** The champion should be of sufficient rank to facilitate authoritative actions on his/her part. For example, at a smaller Army or Air Force MTF, a captain may be sufficient, but at a larger MTF, a lieutenant colonel or colonel is desirable.

The implementation team will also need a facilitator to coordinate and manage team operations. The **implementation team facilitator** should have the following qualifications:

- **Training and experience in group planning:** The facilitator should be experienced in working with group process tools and dynamics and should be able to provide the technical and administrative support necessary to move the team toward meeting its goals.
- **Training and experience in collecting and using data:** The facilitator should have experience working with quantitative data and using data to measure progress toward objectives.

STEP 2: SUPPORT THE IMPLEMENTATION PLANNING PROCESS

For each clinical guideline adopted by your MTF, the designated implementation team will participate in an organized planning process detailed in *Putting Clinical Practice Guidelines to Work in the Department of Defense Medical System: A Guide for Action.* The final product of this process is the Implementation Action Plan, which is the essential planning document that sets the stage for all guideline implementation activities at the MTF. Because this planning document is key to the implementation effort, it is vital that the MTF command support its development and provide policy guidance on the content.

A. Revise the implementation Action Plan as needed

The Action Plan proposes strategies for overcoming key barriers to guideline implementation identified during the planning process. The command team

should review a draft of the Action Plan for consistency with MTF priorities and acceptability of proposed actions. Based on that review, revisions should be incorporated in the plan before you approve it.

B. Hold the implementation team accountable for the implementation Action Plan

The implementation team's accountability for carrying out the approved Action Plan can be established by creating expectations for the team's performance and for reporting its progress in implementing the planned actions.

C. Follow-up on implementation actions requiring command-level support

Some of the planned actions may require specific decisions or actions by you, as Commander, or by other members of the command team. Timely action by Command on those items will provide impetus for the implementation team to carry out the Action Plan effectively.

STEP 3: FACILITATE ACTION

Getting any large organization to implement change is difficult. Although the implementation team is responsible for day-to-day management of the implementation effort, your active involvement is vital to its success. In particular, you can lead the effort to foster a favorable climate for implementation and motivate staff to change.

A. Foster a favorable implementation climate

A favorable implementation climate contributes to successful guideline implementation by ensuring that:

- MTF staff acquire the necessary skills,
- supportive administrative and clinical processes are in place, and
- barriers to implementation are removed.

The MTF Command has the primary responsibility for ensuring a favorable implementation climate. As the implementation team works to implement the Action Plan, there are two mechanisms you can use to support their work by addressing the implementation climate:

- **Communicate regularly with the MTF staff throughout the implementation process.** By maintaining an active presence during the entire implementation process through direct communication with the staff (for example, using memoranda, meetings, newsletters, etc.), you will confirm for the staff

your commitment to the guideline effort. Your sustained presence will strongly promote a favorable implementation climate.

- **Commit necessary resources.** The implementation team will not be able to carry out their duties without the necessary resources, including allocation of their own time. While you are operating your MTF with a limited set of resources, it is important that resources be allocated specifically to the guideline implementation effort.
- **Troubleshoot implementation problems presented to the Standing Committee for Guideline Implementation.** Over the course of the implementation effort, conflicts inevitably will arise involving work responsibilities, the chain of command among implementation team members, and a number of unforeseen issues. You can lead resolution of the conflicts and ensure that implementation continues smoothly and steadily.

B. Motivate staff to change

Despite well designed support strategies to facilitate guideline implementation, some MTF staff will be ambivalent about or even resistant to implementation because it disrupts their normal way of doing things or conflicts with their values. This kind of staff resistance is common when organizations attempt to implement major changes.

Your leadership is probably the most powerful tool for motivating staff. Once you have made it clear that "this is the way we will be doing things," you can motivate staff commitment to change by conveying the following messages:

- **It is difficult to give up old ways of doing things.** Your staff will inevitably have mixed feelings about changing the way care is delivered at your MTF. Changes in roles and responsibilities and new tasks can be difficult for anyone. Your acknowledging and validating any reluctance toward change among your staff will help them to overcome it.
- **Guidelines help clinicians do what they know is best.** You can help clinicians realize that guidelines are about streamlining systems of care so that medicine can be practiced in the way they already know is best. Clinical guidelines can focus health care organization on putting the necessary elements—staff, information systems, and clinical and administrative processes—in place so that patients receive high quality, evidence-based care.
- **Implementing guidelines does not imply clinician incompetence.** When clinicians are told that they must follow guidelines, what they hear is "you are incompetent and you need to follow rules to correct your mistakes." This provider reaction to so-called "cook-book medicine" is widespread and must be acknowledged and addressed.

STEP 4: MONITOR PROGRESS

Although last in this list of steps, monitoring the progress of implementation must be planned from the beginning of the implementation process. It takes time to identify appropriate measures for monitoring progress and to put measurement systems in place. The only way for you to know how well implementation is working at your MTF is to measure it.

A. Ensure that the DoD/VA guideline metrics are in place

For each DoD/VA guideline that is being implemented, a DoD/VA expert panel has been charged with developing a set of indicators for monitoring guideline implementation. It is planned that these indicators will be monitored by all services and the VA to provide system-wide performance benchmarks. As Commander, you need to ensure that your MTF has systems in place to collect and report data on the DoD/VA metrics.

B. Provide oversight for development of additional guideline metrics

Although the broad-based DoD/VA metrics are useful for comparisons across MTFs, your MTF will no doubt need to develop additional metrics that are suited to your particular implementation plan. These metrics will be the most tangible way you have for monitoring the progress of guideline implementation.

You will thus need to oversee the choice of additional metrics and require the implementation team to submit the metrics to you for approval. *Putting Practice Guidelines to Work in the Department of Defense Medical System: A Guide for Action* provides details for the implementation team about how to choose metrics and collect and analyze data. Some important considerations in choosing metrics include the following:

- **Process, service utilization and patient outcome measures.** Process measures (e.g., document form in chart, new patient education encounters) are particularly useful in the early stages to assess whether the actions specified in the Action Plan are taking place. Utilization measures (e.g., referrals, diagnostics, procedures, etc.) are useful for charting changes in access to care and costs of care. Finally, changes in patient outcomes (e.g., duty days lost, blood pressure levels) are excellent measures of quality, but they take a long time to measure. Therefore, process and utilization measures are often good short-term proxy measures of quality.
- **Data availability, cost and ease of administration.** Using data from existing automated information systems or adding new data elements to these systems are the easiest and least costly ways of collecting data. If needed data are not available from these sources, chart abstractions, surveys, new

administrative forms or special outcomes studies can be used. However, they are more resource-intensive and are often more vulnerable to incomplete documentation.

- **Identifiable and measurable denominators.** It is important to have complete counts of relevant patient populations (e.g., all adult type-2 diabetic patients) to produce accurate reports of chosen indicators (e.g., percentage of type-2 diabetics with adequate glycemic control).

C. Establish accountability for the progress of implementation

Just as the implementation team must be held accountable for their Action Plan and choice of metrics, they should also report to the command team regularly about their progress on the metrics, including any data collected and analyzed. As commander, you should note important trends and oversee decisions about what changes need to be made, based on the findings. Both DoD/VA and locally developed metrics should be reported quarterly to the command team.

Appendix B
DoD/VA GUIDELINE KEY ELEMENTS

DoD/VA Practice Guideline for Primary Care Management of Low Back Pain

Evaluation for Serious Health Problems

The first step for a new patient is the accurate and timely identification of clinical conditions for which low back pain is a symptom, which should be managed appropriately with consultation or referred for specialty care. When examining the patient, (1) the primary care practitioner should look for red flags that indicate the presence of one of these conditions. (2) If red flags are found, patients who are emergent or urgent cases should be identified for immediate consultation or referral. (3) For non-emergent cases with red flags, appropriate diagnostic tests should be ordered to assess whether the patient has a condition that requires referral.

Symptom Control for Acute Low Back Pain Patients

For low back pain patients who do not have another identifiable health problem, symptom control should be the first line treatment. Depending on the patient, (1) treatment may include appropriate use of activity modification, bed rest, conservative medication, progressive ROM and exercise, manipulative treatment, and education. (2) Such treatment should be used for 4–6 weeks before performing additional evaluation or diagnostic tests, unless the patient gets worse. (3) Contact with the patient should be maintained to monitor progress and adjust treatment as indicated.

Evaluation of Patients Whose Condition Gets Worse

Low back patients whose condition gets worse during the time their symptoms are treated should be identified and re-evaluated quickly, with consultation or referral as appropriate. (1) During periodic contacts with the patient, questions should be asked to identify any deterioration in the patient's condition, including new neurological symptoms, increase in pain, new radiation of pain, or other symptoms. (2) When such problems are found, the patient should be re-evaluated for other emergent or non-emergent health problems, with consults or referral when indicated.

Evaluation of Patients Who Do Not Improve

Patients whose low back pain does not improve after 4-6 weeks should be further evaluated for evidence of an underlying medical condition or symptoms of psychosocial problems. These patients are considered to have chronic low back pain or sciatica. (1) A history and physical examination should be performed to rule out other serious problems, and (2) psychosocial distress and risk factors should be explored using self-report questionnaires.

Management of Chronic Low Back Pain or Sciatica

Different diagnostic tests and management strategies should be used for patients with chronic low back pain and patients with chronic sciatica. (1) A patient with pain radiating past the knee should be classified as having chronic sciatica, with diagnostic tests performed to inform decisions regarding surgical consult or referral. (2) A patient with no radiating pain should be classified as having chronic low back pain, with diagnostic tests performed to inform decisions regarding medical management, including consultation or referral to medical specialists. (3) Active duty personnel with chronic low back pain or sciatica that has not improved in 4 to 6 months should be assessed for referral to the Medical Evaluation Board for possible reclassification or discharge from service.

DoD/VA ASTHMA GUIDELINE KEY ELEMENTS

Initial diagnosis:

- **Establish asthma diagnosis**
  - — Consider asthma in the differential diagnosis
    - A. Use spirometry
  - — Use trials of medication

Follow-up visits:

- **Classify severity using NHLBI standards**
  - B. Use objective measures (spirometry or peak flow)
  - C. Use patient report of symptoms
- **Treat based on severity using the step-care approach**
  - — Provide/adjust quick relievers and long term controllers to attain optimal functioning
- **Educate patients to manage their own care**
  - D. Understand role of quick relievers and long term controllers
  - E. Self-monitor using peak flow meter
  - F. Recognize signs/symptoms of worsening asthma
  - G. Know when to call the primary care provider
- **Provide a written action plan for patient**
- **Preventive maintenance and trigger avoidance**
  - H. Assess triggers and plan environmental controls with patient
  - I. Vaccinate for influenza
  - J. Smoking cessation counseling for patient and family
- **Follow up on a regular schedule**

Emergency management of asthma exacerbations:

- **Initial objective assessment using:**
  - — Pulse oximetry
  - — PEF or FEV_1
- **Treat promptly using**
  - A. Corticosteroids
  - B. $Beta_2$ agonists
- **Assess response to therapy using objective measures**
- **Discharge patient with appropriate education, including:**
  - — Written instructions
  - — Appropriate follow-up plan

Telephone Triage

- **Assess the severity of the exacerbation**
- **Review action plan with patient**

Key Elements in the Care of Patients with Diabetes

Core Primary Care (Module D)

- If <18 years or pregnant, refer to specialist.
- Establish diagnosis:
  - — Determine and document if must use insulin.
  - — Identify co-morbid conditions.
  - — Assess physical and emotional stability.
- At ***every visit***, assess and manage:
  - — Glycemic control
  - — Hypertension
  - — Need for education
- Perform complete evaluation ***annually*** including eye, foot, lipid, and renal assessments.

Glycemic Control (Module G)

- Assess glycemic control and set HbA_{1c} target level at ***every visit*** based on risk:

Major Comorbidities or Advanced Physiologic Age	Microvascular Complications		
	Absent/Mild	Moderate	Advanced
Absent	7%	8%	9%
Present	8%	8%	8%
Marked	9%	9%	9%

- If high risk, consider for aggressive management or referral.
- Initiate/adjust therapy as indicated for Type 1 or 2 DM.

Self-Management & Education (Module M)

- Educate new patient with diabetes on basic concepts and core competencies:
  - — Management of acute complications
  - — Medication education
  - — Basic dietary guidelines
  - — Sick day management
  - — When to seek further treatment/medical advice
- Determine any deficit in self-management skill or knowledge.
- Refer for comprehensive education.
- Refer for risk-focused intervention if patient needs or desires.

Hypertension (Module H)

- If secondary cause of hypertension is suspected, treat or refer.
- Assess blood pressure at ***every visit***.
- Initiate/adjust drug therapy and/or lifestyle modification as appropriate.
- Treat with drugs if systolic BP $\geq$ 180 and diastolic $\geq$ 110.

Eye Care (Module E)

- Immediately refer for eye care if ocular risk factor is present.
- Assess timing for routine eye exam and refer as needed:
  - — Eye exam every 2 years for patients with no risk factors and $HbA_{1c} \leq 8$ for over a year.
  - — Annual eye exam for other patients.

Foot Care (Module F)

- Annually perform foot risk assessment—prior history of ulcers/amputations/foot deformities.
- Assess protective sensation with 5.07 monofilament test.
- Palpate pedal pulses to evaluate for LE arterial disease.
- If problems identified, refer to appropriate level of care.

Lipid Control (Module L)

- Annually obtain fasting lipid profile; exclude secondary causes for high levels.
- Initiate or adjust diet and/or therapy as appropriate for lipid control for LDL $\geq$ 130mg/dL and triglycerides $\geq$ 400mg/dL.

Renal Disease (Module R)

- Annual urine dipstick. If protein > 1 on screen:
  - — Assess severity of albuminuria and creatinine level.
- Treat if urine protein/creatinine ratio $\geq$ 300 mg/gm or if 24-hour urine protein $\geq$ 300 mg/dL.
- If renal problems are present, refer to specialist.

Appendix C
PLANNING PREPARATION WORKSHEETS

(Low Back Pain Example)

SAMPLE BASELINE DATA FORM FOR LOW BACK PAIN GUIDELINE

Measure	Clinic 1	Clinic 2	Clinic 3	Clinic 4	Clinic 5	Clinic 6	ER	Other
# primary care visits low back pain per year • active duty personnel • other beneficiaries								
# specialty visits for low back pain per year • active duty personnel • other beneficiaries								
# imaging studies for low back pain per year • active duty personnel • other beneficiaries								
# physical therapy sessions for low back pain per year • active duty personnel • other beneficiaries								
Other:								

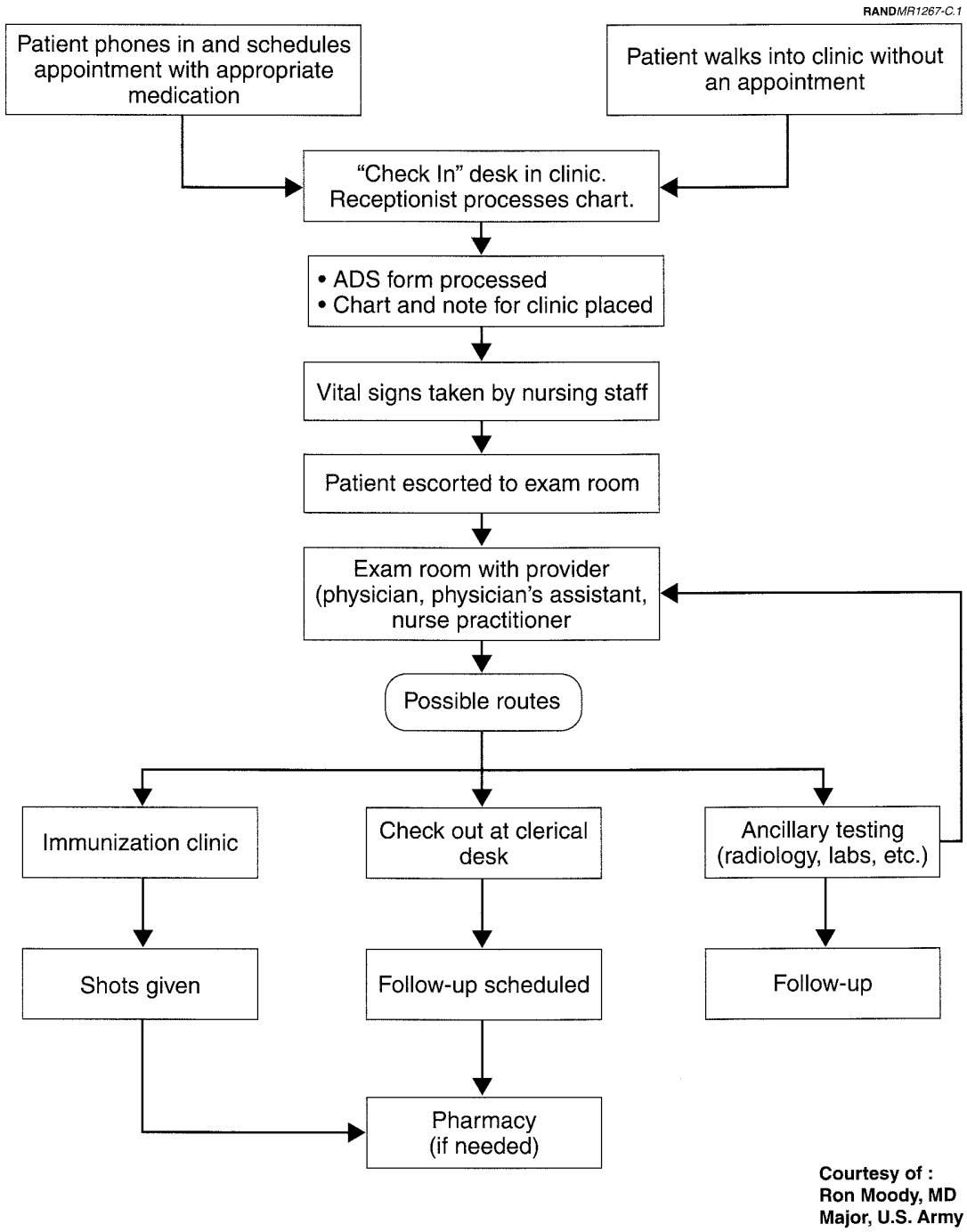


Figure C.1—Sample of Family Practice Clinic Flow Diagram

SAMPLE FORM FOR COMPARING CURRENT PRACTICES TO LOW BACK PAIN GUIDELINE KEY ELEMENTS

Identify serious problems

What are we currently doing?

Conservative treatment of acute low back pain patients

What are we currently doing?

Evaluate patients who get worse

What are we currently doing?

Evaluate patients who do not get better

What are we currently doing?

Manage chronic low back pain or sciatica

What are we currently doing?

Appendix D
ACTION PLAN WORKSHEETS

Worksheet 1. IMPLEMENTATION STRATEGY

Guideline: Low Back Pain Example

Overall Implementation Strategy/Focus:

Key Guideline Element	**Gaps in Current Practices (Planning Step 1)**	**Action Strategy (Planning Step 3)**
Identify serious problems		
Conservative treatment of acute LBP patients		
Evaluate patients who get worse		
Evaluate patients who do not get better		
Manage chronic LBP or sciatica		
Other leverage point _____		

Worksheet 2A. ACTION PLAN FOR GUIDELINE INTRODUCTION AND STAFF EDUCATION

Guideline: _____

Identify actions for guideline introduction and education. (I&E)	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #I&E.__	**Lead**:	**Other Staff**:		**Start** **Complete**
Action #I&E.__	**Lead**:	**Other Staff**:		**Start** **Complete**
Action #I&E.__	**Lead**:	**Other Staff**:		**Start** **Complete**
Action #I&E.__	**Lead**:	**Other Staff**:		**Start** **Complete**

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION

Guideline: _____

Key Guideline Element: _____

Identify actions in the strategy for this guideline element.	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #___	**Lead**:	**Other Staff**:		**Start** **Complete**
Action #___	**Lead**:	**Other Staff**:		**Start** **Complete**
Action #___	**Lead**:	**Other Staff**:		**Start** **Complete**
Action #___	**Lead**:	**Other Staff**:		**Start** **Complete**
Action #___	**Lead**:	**Other Staff**:		**Start** **Complete**

Worksheet 3. GANTT CHART OF TIMELINE FOR GUIDELINE IMPLEMENTATION

Guideline: _____

Actions	MONTH OF WORK											
	1	2	3	4	5	6	7	8	9	10	11	12
Introduction & Education												
#I&E.__												
#I&E.__												
#I&E.__												
#I&E.__												
Practice Changes												
#___												
#___												
#___												
#___												
#___												
#___												
#___												
#___												

Worksheet 4. METRICS AND MONITORING

Guideline: Low Back Pain Example

Key Guideline Element	Metric	Data Sources	Monitoring Schedule
Identify serious problems			
Conservative treatment of acute LBP patients			
Evaluate patients who get worse			
Evaluate patients who do not get better			
Manage chronic LBP or sciatica			
Other leverage point _____			

Appendix E
GROUP PROCESS METHODS

NOMINAL GROUP PROCESS
A Technique To Ensure Full Involvement in Identification of Issues or Options

The purpose of the Nominal Group Process is to provide structure for a group discussion when the group is facing the challenge of reaching agreement on complex topics. In the absence of some form of structure and formal process, the decisionmaking process is at risk of "spinning wheels" or being dominated by a few individuals who are more vocal than the rest of the group members. The facilitator has an active role in taking the group through the steps in this process, but the facilitator does not participate in the substantive debate on the topics being considered. The group is asked to agree to follow the step-by-step "rules of the road" for the Nominal Group Process, so that all group members will have an opportunity to contribute ideas and agreement can be reached efficiently on the issues at hand. These steps are as follows:

1. Each team member, in turn, makes a suggestion for one of the items of interest (e.g., a barrier to implementation or a possible metric to monitor). The facilitator gives all members a chance to offer suggestions before discussion on any of the proposed items.

2. Then rank the items in order of priority. To do this, the facilitator asks each team member to identify the 3 to 5 items that he/she thinks are most important. Tally the counts of votes as each member reports their candidates.

3. After the ranking is completed, the team members identify items where they disagree and discuss the merits of each item.

   NOTE: An alternative approach is to reverse the order of steps 2 and 3, so that the group discusses the items briefly before ranking them, discarding any that the team agrees are not appropriate. This discussion should be limited in length, serving to identify issues that team members should consider as they do their rankings.

4. The team reviews the priority list to assess how acceptable it is to the group and to identify any break-off points where a "cluster" of items clearly are rated more highly than the remaining items. If these results are not acceptable to the team, repeat the ranking process (steps 2 and 3).

AFFINITY GROUPING
A Technique to Synthesize or Group Individual Items from a Gap Analysis

When performing a gap and barrier analysis, a planning team will identify a potentially large number of barriers to desired clinical practices, and many of these barriers may be problems for more than one guideline element. Affinity Grouping is a technique that the team can use to reach consensus on how individual barriers can be grouped into categories of related barriers. Then actions can be defined to make changes for a group of barriers, which can make guideline implementation more effective and efficient.

The following outline of Affinity Grouping assumes that, during the gap analysis, the team wrote each barrier to desired practices on a separate card or self-stick note, and those cards or notes are displayed on a wall of the meeting room. To perform Affinity grouping, take the following steps:

1. Without talking, each person on the team takes a turn to look for cards/notes that seem to be related (regardless of the guideline element they address) and places these together, off to one side. Other team members can add additional cards/notes to a group as it forms or they can reform existing groups. Set aside any items that become contentious.

2. Continue until all the items have been grouped or set aside. Consolidate groups where possible to obtain fewer than 10 groupings.

3. Now discuss the groupings as a team. Generate short, descriptive sentences that describe each group and use these as title cards or notes. Avoid very short titles.

4. Items can be moved from one group to another if a consensus emerges during the discussion.

5. Consider additional brainstorming to capture new ideas using the group titles to stimulate thinking.

SUB-GROUP PLANNING METHOD
A Technique To Accomplish Several Similar Tasks at One Time

A larger planning group can perform multiple tasks simultaneously by breaking out into smaller sub-groups, with each group being assigned a portion of the planning tasks. For a guideline implementation plan, this technique may be useful for developing the specific actions the guideline team will undertake to carry out its implementation strategy. Not only does this approach allow for efficient planning, but it also ensures active involvement by all team members in the establishment of the plan they will be asked to help implement. Take the following steps:

1. Working with the team members, the facilitator establishes teams of 2 to 3 people and assigns one or more actions to each team to develop the details for carrying out the actions. Include in these actions any planned data collection activity to document current practice for guideline elements where the team has insufficient information to determine gaps in practice.

2. The small teams complete the planning tasks and worksheets for each action they are assigned. Describe the action itself and specify the tools and other resources that will be used to carry out the action, the staff responsibilities, and the timeline for completion.

3. The full implementation team reconvenes and consolidates the action plans into one implementation schedule. The team reviews the planned tools, staff assignments, timeline, and monitoring strategy to (1) identify overlaps that can be worked on together and (2) adjust time lines to make the plan feasible to implement. Evaluate the action priorities to be sure the most important actions are given a priority for timing and resources. Less important actions may be delayed or dropped from the plan.

Appendix F
AMEDD GUIDELINE IMPLEMENTATION TOOLKITS

TOOLS FOR THE LOW BACK PAIN GUIDELINE:

Documentation Form for Clinic Visit
Model Back Class Instructions and Materials
Patient Education Video: A Healthy Back for Life
Provider Education Video: Back Pain Lecture and Exam
Low Back Pain Patient Education Pamphlets (in English, Spanish, Korean, German)
3" × 5" Laminated Pocket Card — Key Elements of the DoD/VA Practice Guidelines for Primary Care Management of Low Back Pain
8 1/2" × 11" Laminated Card — Diagnosis and Management of Low Back Pain
Comparative Pricing Table for Pain Medications
Standard Profile for Active Duty Personnel with Acute Low Back Pain

TOOLS FOR THE ASTHMA GUIDELINE:

Documentation Form for Asthma Clinic Visit
Patient Action Plan
Master Problem List
Key Points Pocket Card
Desktop Reference Card
Peak Flow Meter
Spirometer and Pulse Oximeter
Patient Education Brochures: *Asthma Basics*: American Red Cross
Managing Your Asthma: A Patient Guide
Patient Reminder Card
CD-ROMs: Breathing Freely (Patient Education); TABS (Provider Education)
Videos: *"Sesame Street"* (English and Spanish), by the American Lung Association
"Environmental Control," (English and Spanish), by GlaxoWellcome
"Taking Charge of Asthma," by GlaxoWellcome
"Roxy to the Rescue," by AwareCareResources for Health AstraZeneca

TOOLS FOR THE DIABETES GUIDELINE:

Documentation Form for Diabetes Clinic Visit
Diabetes Flow Sheet
Patient Self-Management Action Plan
Booklet — Managing Your Diabetes
American Association of Diabetes Educators Videos:
Introduction to Diabetes: The Game Plan
Basic Skills for Controlling Diabetes, American Association of Diabetes Educators
3" × 5" Laminated Card — Key Elements in the Care of Patients with Diabetes
8 1/2" × 11" Laminated Card — Key Elements in the Care of Patients with Diabetes
CD-ROM - Starbright Foundation
Novo Nordisk Pharmaceuticals brochures/booklets (English and Spanish)

Appendix G
SAMPLE IMPLEMENTATION ACTION PLAN:

DoD/VA Low Back Pain Guideline

Worksheet 1. IMPLEMENTATION STRATEGY

Guideline: Primary Care Management of Low Back Pain

Overall Implementation Strategy/Focus: Will focus on ensuring that primary care clinics are using appropriate conservative treatment for acute low back pain patients, and that changes in patients' functional and pain status are monitored and the results are used to guide care processes. Special attention will be given to the two TMCs that are farthest from the guideline standards.

Key Guideline Element	Gaps in Current Practices (Planning Step 1)	Action Strategy (Planning Step 3)
1. Identify serious problems	About 90 percent of their patients are assessed for red flag conditions at the initial visit.	***Low priority for actions***; will rely on monitoring of red flag assessments using the documentation form.
2. Conservative treatment of acute LBP patients	Pain ratings or disability measures are documented on only 25% of patients at the initial visit. Providers in 2 TMCs are not consistently educating patients on self-care and exercise; other clinics are okay.	***High priority for actions*** to ensure that all aspects of conservative treatment are being used in all clinics. Focus on the TMCs that appear to be farthest from the guideline standards.
3. Evaluate patients who get worse	Patients who get worse by 3 weeks are routinely referred to Neurosurgery after the initial visit, without primary care re-evaluation.	***High priority for actions*** to ensure appropriate role for primary care providers in managing care for acute low back pain patients.
4. Evaluate patients who do not get better	From primary care provider reports, there appear to be inconsistencies in how acute back pain patients are managed after the initial visit, especially at 2 TMCs.	***Moderate priority for actions.*** Will pursue additional data collection on practices for ongoing management of acute low back pain patients after initial visit.
5. Manage chronic LBP or sciatica	It is not known how patients with continuing back pain > 6 weeks after first visit are being managed. MRIs are ordered for 70% of chronic($\geq$ 6 weeks duration) sciatica patients, and 100% of those with positive findings are referred to Neurosurgery.	***Low priority for actions***; will build upon actions for guideline element 3 for management of acute back pain patients who get worse. Will pursue additional data collection on management of chronic back pain patients.

Worksheet 2A. ACTION PLAN FOR GUIDELINE INTRODUCTION AND STAFF EDUCATION

Guideline: Primary Care Management of Low Back Pain

Identify actions for **guideline introduction & education.** (I&E)	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #I&E.1 Hold working meeting with clinic leaders to run cases through guideline and build strategy to introduce new practices at the clinics.	**Lead**: Guideline champion	**Other Staff**: Command (introduce) Clinic leaders QM/UM staff	CME video on the DoD/VA low back pain guideline Documentation form Patient education pamphlet	**Start** Month 1 **Complete** Month 1
Action #I&E.2 Conduct CME briefings for all clinic physicians, each to be held at the clinic sites. Train on documentation form and patient education methods.	**Lead**: Guideline champion	**Other Staff**: Clinic leaders QM/UM staff Physical therapy	CME video on the DoD/VA low back pain guideline Documentation form Patient education pamphlet	**Start** Month 1 **Complete** Month 3
Action #I&E.3 Conduct training sessions for other clinic staff on practices called for by the guideline. Introduce to tools.	**Lead**: QM/UM staff Clinic leaders	**Other Staff**: Nursing command Physical therapy	One-sheet guideline key elements and algorithm Documentation form Patient education pamphlet Patient video	**Start** Month 1 **Complete** Month 2
Action #I&E.4 Conduct CME briefings for physicians in the specialty clinics and the ER, highlighting management of patients whose pain continues.	**Lead**: Guideline champion	**Other Staff**: Command (introduce) QM/UM staff	One-sheet guideline key elements and algorithm Documentation form Patient education pamphlet	**Start** Month 2 **Complete** Month 3

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION

Guideline: Primary Care Management of Low Back Pain

Key Guideline Element: 2. Conservative treatment of acute LBP patients

Identify actions in the strategy for this guideline element.	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #2.1 Test use of the low back pain documentation form (695-R) in one clinic to see its effects on length of visits.	**Lead**: Guideline champion	**Other Staff**: Clinic leaders Facilitator QM/UM staff	Documentation form	**Start** Month 1 **Complete** Month 2
Action #2.2 If #2.1 positive, establish new procedures and staff roles to complete documentation form for each primary care visit.	**Lead**: Dep. commanders	**Other Staff**: Clinic leaders QM/UM staff	Documentation form Clinic procedure manual	**Start** Month 2 **Complete** Month 3
Action #2.3 Define and enact procedures to educate patients about self-care and exercise and train all clinic staff to use them.	**Lead**: Clinic leaders	**Other Staff**: QM/UM staff	Patient education pamphlet Model back class	**Start** Month 2 **Complete** Month 3
Action #2.4 Establish standard profiling criteria for active duty personnel with low back pain, to be used by all TMCs.	**Lead**: Dep. commanders	**Other Staff**: Clinic leaders QM/UM staff	Standard profile form	**Start** Month 3 **Complete** Month 4

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION

Guideline: Primary Care Management of Low Back Pain

Key Guideline Element: 3. Evaluate patients who get worse

Identify actions in the strategy for this guideline element.	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #3.1 In the primary care clinics, enact a process to instruct patients on follow-up calls during conservative treatment if their pain gets worse, to handle calls when received, and to make follow-up appointments.	**Lead**: Dep. Commander Clinic leader	**Other Staff**: Clinic teams Guideline champion	Appointment system Nursing and support staff time	**Start** Month 3 **Complete** Month 5
Action #3.2 Create a triage function in the neurosurgery clinic to assist primary care providers in determining when to refer both acute back pain patients whose pain is getting worse and chronic patients.	**Lead**: Guideline champion Neurosurgery chief	**Other Staff**:	Written criteria for referrals	**Start** Month 3 **Complete** Month 3

Worksheet 2B. PLANNING WORKSHEET FOR PRACTICE CHANGE IMPLEMENTATION

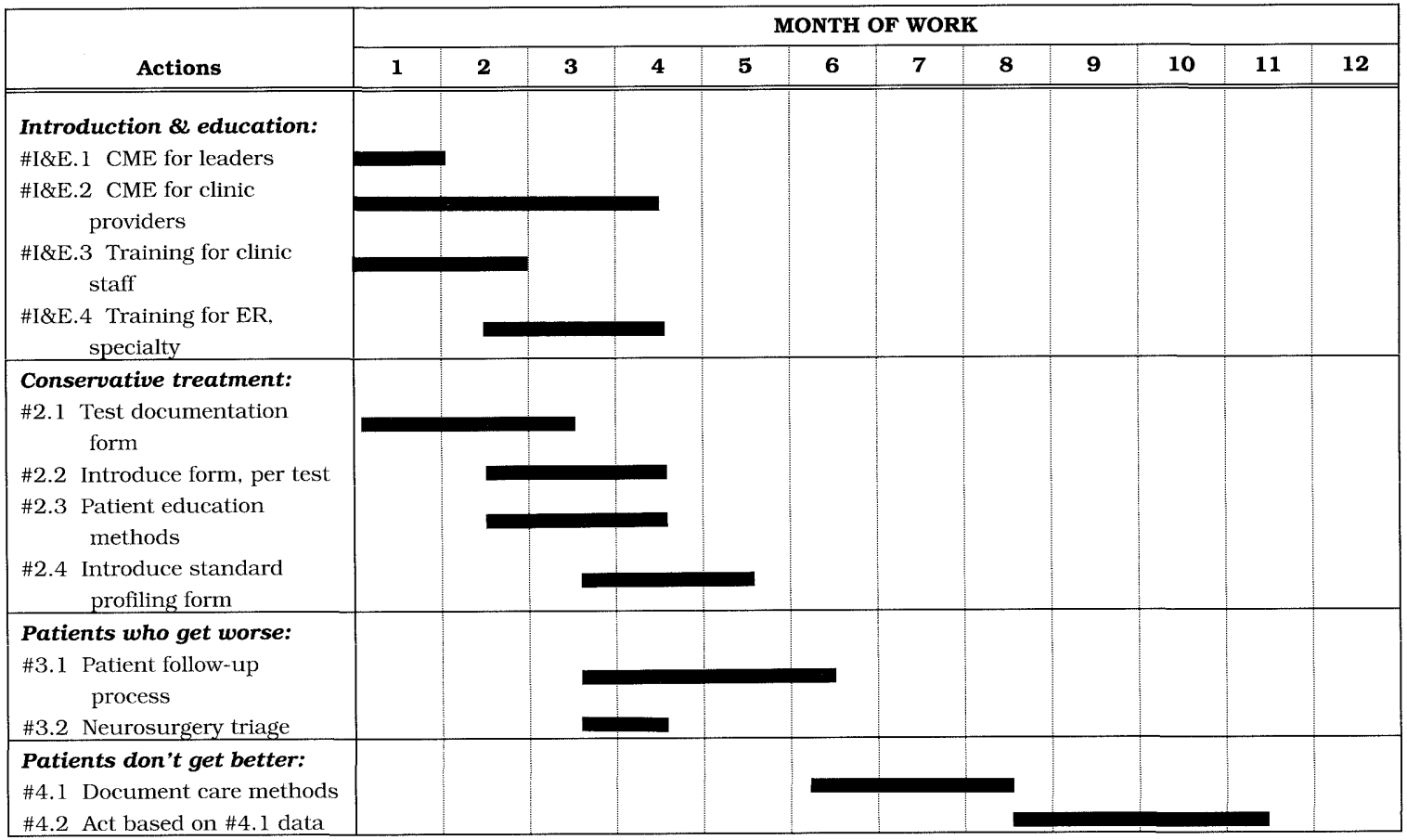
Guideline: Primary Care Management of Low Back Pain

Key Guideline Element: 4. Evaluate patients who do not get better

Identify actions in the strategy for this guideline element.	Designate someone to serve as **lead** for the action and **other staff** to be involved.		Identify the **tools** and **resources** for the action.	Specify the action timeline.
Action #4.1 Document the current methods used by primary care providers to manage care for acute back patients following the initial visit, focusing on tracking of patients who do not get better.	**Lead**: Guideline champion QM/UM leader	**Other Staff**: Clinic leaders Nursing leaders	Checklist of steps to document Staff to perform research Data on visits and services	**Start** Month 5 **Complete** Month 7
Action #4.2 Based on results of action #4.1, determine what actions (if any) to take to improve ongoing management of acute back pain patients.	**Lead**: (to be determined)	**Other Staff**: (to be determined)	(to be determined)	**Start** **Complete** (to be determined)

Worksheet 3A. GANTT CHART OF TIMELINE FOR GUIDELINE IMPLEMENTATION

Guideline: Primary Care Management of Low Back Pain



Worksheet 4. METRICS AND MONITORING

Guideline: Primary Care Management of Low Back Pain

Key Guideline Element	Metric	Data Sources	Monitoring Schedule
Identify serious problems	Percent of initial visits documented to check for all "red flag" conditions	Documentation form	Quarterly
Conservative treatment of acute LBP patients	Percent of acute patients with "before and after" pain scale information	Documentation form,	Quarterly
	Average change in functional status based on Oswestry scale	Oswestry form (perhaps on documentation form)	Quarterly
Evaluate patients who get worse	Percent of acute patients referred to Neurology with <6 weeks duration	ADS, CHCS	Monthly
Evaluate patients who do not get better	Percent of patients instructed on follow-up procedures if pain does not get better	Documentation form, medical charts	Quarterly
	Of patients who call for follow-up, percent who have subsequent visits.	Appointment records	Monthly
Manage chronic LBP or sciatica	Percent of chronic sciatica patients and positive imaging who are referred to surgical specialist	ADS, medical chart	Quarterly
	Percent of chronic back pain patients who are referred to back school	Documentation form, medical chart	Quarterly

Appendix H
DOD/VA GUIDELINE METRICS

Low Back Pain Metrics

Highest Priority Indicators Recommended for Special Study Monitoring

Guideline Element	Indicator	Indicator Type	Monitoring Method	Average Score
Identify red flag conditions	***Percentage of new LBP patients who are evaluated appropriately for red flag conditions in the initial visit, including history and focused physical examination***	Process of Care	Special Study	8.5 *
Conservative treatment; Patients who do not improve	Average improvement in disability for acute low back pain/sciatica patients, as measured by Oswestry LBP instrument	Clinical Outcome	Special Study	8.3
Conservative Treatment	Level of patient satisfaction with amount of education and instruction provided for LBP care	Patient Satisfaction	Patient Survey	8.2
Treatment of Chronic sciatica	***Percentage of LBP patients with radicular pain at 6 weeks duration, and a positive imaging study, who are referred to a surgical specialist***	Process of Care	Special Study	Not scored

NOTE: indicators established by the DoD/VA Working Group are highlighted.

*This score was given to an indicator for performance of a neurological examination at the initial visit for low back pain patients, which was replaced with the more comprehensive metric presented here.

Other Priority Indicators Recommended for Routine Monitoring

Guideline Element	Indicator	Indicator Type	Monitoring Method	Average Score
Conservative Treatment; Patients who do not improve	Percentage of acute LBP patients who are referred for physical therapy or manipulation	Process of Care	Routine	7.1
Conservative Treatment; Patients who do not improve	Average time from initial LBP visit until referral for physical therapy or manipulation for those who are referred	Process of Care	Routine	7.1
Conservative Treatment; Patients who get worse	Percentage of acute LBP patients for whom plain x-rays are obtained	Process of Care	Routine	7.0
Conservative Treatment; Patients who get worse	Percentage of acute LBP patients for whom CT scan or MRI are obtained	Process of Care	Routine	6.8

Indicators Suggested for Use by Individual Services or Health Care Facilities

Guideline Element	Indicator	Monitoring Method	Average Score
PROCESS OF CARE			
All	Percentage of clinicians who received the low back pain guideline	Routine	6.8
Conservative Treatment	Percentage of LBP patient charts that document patient education	Special Study	6.6
All	Percentage of LBP patient charts that contain a documentation form	Special Study	6.2
Conservative treatment; Patients who do not improve	Average time between first low back pain visit to first record of plain x-rays obtained	Routine	6.1
Conservative treatment; Patients who do not improve	Average time between first low back pain visit to first record of CT scan or MRI obtained	Routine	6.1
CLINICAL OUTCOMES			
Conservative treatment; Patients who do not improve	Percentage of acute low back pain/sciatica patients who progress to chronic, as measured by outpatient visits >6 weeks following initial visit for LBP	Routine	7.8
Conservative treatment; Patients who do not improve	Average number of days to full return to duty status for military personnel with low back pain/sciatica that results in restricted duty status	Special Study	7.5
Conservative treatment; Patients who do not improve	Percentage of military personnel with low back pain/ sciatica who return to full duty work within 6 weeks	Special Study	7.2
Conservative treatment; Patients who do not improve	Average improvement in Fear Avoidance Behavior Questionnaire (FABQ) score for acute low back pain/sciatica patients	Special Study	6.8
Treatment of Chronic Low Back Pain or Sciatica	Percentage of lost acute LBP patients with continuing disability >6 weeks after first visit, based on Oswestry score	Special Study	6.7
PATIENT SATISFACTION			
Conservative Treatment	General satisfaction with treatment for acute low back pain/sciatica	Patient Survey	8.0
Conservative Treatment	Satisfaction with extent of pain alleviation for acute low back pain/sciatica	Patient Survey	7.8

Asthma Metrics

Highest Priority Indicators

Indicator Type	Indicator
INITIAL MANAGEMENT (MAY BE MORE THAN ONE VISIT)	
Process	% asthmatics 6 and over with spirometry within **6** months of initial diagnosis
BOTH INITIAL MANAGEMENT AND TREATMENT FOLLOW-UP	
Process	% asthma patients with documented asthma severity level
Process	**% asthma f/u visits with documented asthma severity level**
Process	**% patients with persistent asthma who are prescribed long term controllers**
Process	% asthmatics with prescription for beta-2 agonist inhaler for exacerbations as needed
Process	% asthmatics with written action plan documented in past 12 months
Process	**% persistent asthmatics with written action plan documented in past 12 months**
Process	% asthmatics who have identified PCP
Process	**% asthmatics 6 and over with spirometry in past 12 months**
TREATMENT FOLLOW-UP	
Process	% asthmatics with MDI prescribed with documented assessment of MDI technique
Process	% asthmatics 12 and over with documented smoking status
Process	% asthmatics under 18 with documentation of parents', siblings' and other housemates' smoking status
Intermed. Outcome	% asthmatics with MDI prescribed with demonstrated adequate MDI technique
Outcome	Annual ER Visits/1000 asthmatics
Outcome	Annual hospitalizations/1000 asthmatics
EMERGENCY MANAGEMENT	
Process	% ER/urgent office visits for asthma with PEF or FEV1 for children 6 and over
Process	% patients given beta2-agonists in ER/urgent office visit with **repeat** FEV1 or PEF prior to discharge
Process	% asthma hospitalizations followed up within 14 days with an outpatient visit
Process	% patients presenting with acute asthma who are prescribed a course of oral corticosteroids
Outcome	Readmission rate within 12 months following asthma hospitalization
Outcome	% of patients with repeat ER/urgent office visit within 3 months of ER/urgent office visit

Asthma Metrics

Highly Rated—Routine

Indicator Type	Indicator
INITIAL MANAGEMENT (MAY BE MORE THAN ONE VISIT)	
	None
BOTH INITIAL MANAGEMENT AND TREATMENT FOLLOW-UP	
Process	Bronchodilator vs anti-inflammatory ratio
Process	Bronchodilator medication raw numbers
Process	Anti-inflammatory medication raw numbers
Intermed. Outcome	% patients hospitalized for asthma with no prior prescription for corticosteroids
TREATMENT FOLLOW-UP	
Process	% asthmatics 6 and over with spirometry in past 2 years
Process	% asthma f/u visits with peak flow or FEV1 recorded for patients 6 and over
Outcome	% of ER/urgent office visits within 2 months of a scheduled asthma office visit
EMERGENCY MANAGEMENT	
Process	% ER/urgent office visits for asthma with PEF or FEV1 for children 6 and over
Intermed. Outcome	% of patients revisiting ER within 6 months of index visit
Clinical outcome	Mortality rate for patients with asthma
TELEPHONE TRIAGE	
	None

Asthma Metrics

Highly Rated—Special Study

Indicator Type	Indicator
INITIAL MANAGEMENT (MAY BE MORE THAN ONE VISIT)	
	Missed Pediatric Asthma Diagnoses:
Clinical outcome	% patients between 6 and 15 with **2** visits with diagnosis of pneumonia w/o fever AND no record of peak flow/FEV1
Clinical outcome	% patients between 6 and 15 with **2** visits with diagnosis of bronchitis/ bronchitis AND no record of peak flow/FEV1
BOTH INITIAL MANAGEMENT AND TREATMENT FOLLOW-UP	
Process	% asthma f/u visits with documentation of action plan
Process	% **persistent** asthmatics referred for asthma education within **6** months of initial diagnosis
Intermed. outcome	% **persistent or moderate to severe** asthmatics who report having an action plan
Intermed. outcome	% **persistent** asthmatics who know when to contact PCP about signs and sx
Intermed. outcome	% asthmatics who know • basic disease information • difference between long term control and quick relief medications
Intermed. outcome	% asthma f/u visits for patients **with persistent or moderate to severe asthma** 6 and over with record of home peak flow monitoring
Outcome	Restricted activity days due to asthma in past month/asthmatic
Outcome	School days missed in past year/asthmatic under 18
Outcome	Work days (or duty days) lost in past year/asthmatic 18 or over
TREATMENT FOLLOW-UP	
Process	% asthmatics with documentation of asthma trigger assessment
Process	% **persistent** asthmatics with documented flu vaccination in previous September-January
Intermed. outcome	% asthmatics with knowledge of asthma triggers
Intermed. outcome	% asthmatics 12 and over who smoke
Intermed. outcome	% asthmatics under 18 who live in house with a smoker
Outcome	Annual unscheduled clinic visits/1000 asthmatics
EMERGENCY MANAGEMENT	
Process	% patients presenting to ER/urgent office visit with pulse oximetry
Process	% patients presenting to ER/urgent office visit with FEV1 or PEF less than 70% of baseline who are given beta2-agonists
TELEPHONE TRIAGE	
Process	% of asthma patients with action plan who call in to telephone triage
Intermed. outcome	% of asthma patients who call in to telephone triage that are able to initiate additional action
Patient satisfaction	% of asthma patients or caregivers who are satisfied with telephone advice at follow-up
Clinical outcome	% of asthma patients who seek emergency treatment or are admitted to the hospital within 10 days of calling in to telephone triage for advice

Diabetes Metrics*

Accountability Set	Quality Improvement Set
1. Percentage of patients receiving ≥ 1 glycohemoglobin (HbA1c) test/year	1. HbA1c levels of all patients reported in six categories (i.e., <7.0%, 7.0%–7.9%, 8.0%–8.9%, 9.0%–9.9%, ≥10.0%, no value documented)
2. Percentage of patients with the highestrisk HbA1c level (i.e., HbA1c > 9.5%)	
3. Percentage of patients assessed for nephropathy	
4. Percentage of patients receiving a lipid profile once in 2 years	
5. Percentage of patients with a low-density lipoprotein (LDL)** < 130 mg/dL	2. Distribution of LDL values** (i.e., <100, 100–129, 130–159, >159 mg/dL, no value documented)
6. Percentage of patients with blood pressure** < 140/90 mm Hg	3. Distribution of blood pressure values** (i.e., <140, 140–159, 160–179, 180–209, >209 mm Hg systolic; <90, 90–99, 100–109, 110–119, >119 mm Hg diastolic; no value documented)
7. Percentage of patients receiving a dilated eye exam (see description for frequency)	4. Proportion of patients receiving a well-documented foot exam to include a risk assessment

*Some of the measures have exclusions based on co-morbidity or based on the results from a previous examination. All measures apply to people with diabetes between 18 and 75 years of age, regardless of type of diabetes, and measures 1, 2, and 7 can be applied to children 10–17 years old as well.

**For all measures requiring a value (e.g., LDL-C, blood pressure), the most recent test result will be used.

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