INTRODUCTION

Deployment of forces in hostile or unfamiliar environments is inherently risky. The changing missions and increasing use of U.S. forces around the globe in operations other than war call for greater attention to threats of non-battle-related health problems—including infections, pathogen- and vector-borne diseases, exposure to toxicants, and psychological and physical stress—all of which must be avoided or treated differently from battle causalities (IOM, 2000). The health consequences of physical and psychological stress, by themselves or through interaction with other threats, are also increasingly recognized.

Although symptoms and health concerns after a deployment may be indistinguishable from those reported in routine primary health care settings, deployment presents unique and often difficult challenges for military members, veterans, and their families. The military members may experience physical or psychological trauma resulting from a variety of factors, such as combat, environmental extremes, illness or infectious disease, injury, weapons of mass destruction, and potential environmental threats. Deployment may create or exacerbate existing family problems and strain already fragile family relationships and coping mechanisms.

The DoD and VHA have expended a great deal of time and effort since the Gulf War in developing and implementing diagnostic programs for Gulf War veterans. Opportunities for change and improvement have emerged as a result of lessons learned through CCEP and PGR implementation, research studies, and feedback from veterans (IOM, 1998). Change is part of a natural evolutionary process and is important in developing good screening instruments for diagnosis. In evaluating the adequacy of the CCEP, UCAP, and PGR, the IOM concluded that CPGs for the evaluation and management of deployed forces health issues should be developed (IOM, 1998).

GUIDELINE DEVELOPMENT PROCESS

Overview

In early 1999, the Assistant Secretary of Defense for Health Affairs and the Under Secretary for Health for Veterans Affairs initiated development of the *Clinical Practice Guideline For Post-Deployment Health Evaluation and Management* for evaluating armed forces personnel and veterans returning from deployment. The following objectives were established:

- Achieve satisfaction and positive attitudes regarding post-deployment medical care
- Identify and support decision-making for elements of care essential to all post-deployment evaluations
- Support patient education and communication
- Optimize data collection
- Focus on prevention in subsequent deployments
- Support provider education

The DoD and VHA define CPGs as:

"Recommendations for the performance or exclusion of specific procedures or services derived through a rigorous methodological approach that includes the following:

1. Determination of appropriate criteria, such as effectiveness, efficacy, population benefit, or patient satisfaction
2. Literature review to determine the strength of the evidence (based in part on study design) in relation to these criteria."

The Guideline was developed to assist clinicians in primary care settings in determining specific diagnoses for individuals seeking care for potentially deployment related experiences or exposures. The Guideline provides a structure, clinical tools, and linked resources allowing clinicians to evaluate and manage patients with deployment related health concerns. The Guideline also applies to non-deployed individuals who are

experiencing health concerns which they relate to a deployment; e.g., family members of recently deployed personnel.

The development process for the Guideline is evidence-based whenever possible. Evidence-based practice integrates clinical expertise with the best available clinical evidence derived from systematic research. Where evidence is ambiguous or conflicting, or scientific data are lacking, the clinical experience within the multidisciplinary group guides the development of consensus-based recommendations.

The Guideline is not intended to provide strict indications or contraindications to health care because multiple other considerations may be relevant for an individual patient, including past medical history, family setting, occupational needs, and lifestyle preferences. The reader is reminded that the Guideline does not supersede the clinical judgment of the clinician.

Guideline Development

The Guideline and algorithms are designed to be adapted to an individual facility's needs and resources. They will be updated periodically, or when relevant research results become available and user feedback is obtained through DoD and VHA field trials. The Guideline should be used as a starting point for innovative plans that improve collaborative efforts and focus on key aspects of care. The system wide goal is to improve local management of patients with post-deployment health concerns, thereby improving patient outcomes.

The Guideline is the product of many months of diligent effort on the part of clinical experts from the DoD, VHA, academia, a team of guideline development specialists, and an experienced moderator who facilitated the multidisciplinary panel. Internal Medicine, Family Practice, Preventive and Occupational Health, Public Health, Sports Medicine, Primary Care Physicians, Epidemiologists, Surgeons, Psychologists, Psychiatrists, Nurses, Nurse Practitioners, Physician Assistants, Quality and Risk Managers, Risk Communicators, and expert consultants in the field of algorithm and guideline development contributed to the Guideline. Policy-makers and civilian practitioners joined these experts from the DoD and VHA.

The clinical experts subjected all decision points in the algorithm to simulation exercises. Hypothetical "patients" were run through the algorithm to test whether it was likely to work in a real clinical situation. If an irregularity was encountered, changes were made. Therefore, the clinical experts are reasonably confident that the algorithm will prove to be useful and valid in real clinical encounters.

The Guideline will be integrated with other existing evidence-based CPGs for the evaluation of more readily apparent and clinically defined diagnoses that include stress-related psychological conditions, such as depression, anxiety, and tension headache, and musculoskeletal disorders. Work also continues within the DoD and VHA to develop supporting CPGs for management of specific deployment related illnesses among armed forces personnel and veterans. Guidelines are available on-line on the Internet.

Literature Search

The literature supporting the decision points and directives in the Guideline is referenced throughout the document. Prior to a review of the literature, the work group leaders provided input on focal issues.

A search was carried out using the National Library of Medicine's (NLM) MEDLINE database. Boolean "AND" expressions were used in conjunction with the targeted MEDLINE Medical Subject Headings (MeSH) "descriptor" categories, including but not limited to, those listed below:

- Anxiety
- Mental disorders, including anxiety and depression
- Pharmacotherapies
- Fatigue syndrome

- Fibromyalgia
- Medically unexplained symptoms
- Multiple chemical sensitivities
- Post-Traumatic Stress Syndrome
- Post War Risk Factors

MeSH "qualifiers" (e.g., meta-analysis), were also utilized to request specific types of publications, such as peer reviewed journals and tutorials, using two discreet query delimiters:

- Articles published between 1996 and 1999, with some exceptions
- English language only

Each work group participant received a reference package of relevant literature, including journal abstracts/articles, texts, and publications and several sample health evaluation screening tools.

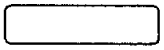
Format

The Guideline is presented in an algorithmic format. There are indications that this format improves data collection and clinical decision-making and helps to change patterns of resource use. A clinical algorithm is a set of rules for solving a clinical problem in a finite number of steps. It allows the clinician to follow a linear approach to critical clinical information needed at the major decision points in the disease management process and stepwise evaluation and management strategies that include the following:

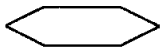
- Ordered sequence of steps of care
- Required observations to be made
- Decisions to be considered
- Actions to be taken

It is recognized, however, that clinical practice often requires a nonlinear approach and must always reflect the unique clinical issues in an individual patient-clinician situation. The use of guidelines must always be considered as a recommendation within the context of a clinician's medical judgment in the care for an individual patient.

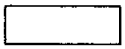
A clinical algorithm diagrams a guideline into a step-by-step decision tree. Standardized symbols are used to display each step in the algorithm (Society for Medical Decision Making Committee on Standardization of Clinical Algorithms, 1992).



Rounded rectangles represent a clinical state or condition.



Hexagons represent a decision point in the guideline, formulated as a question that can be answered Yes or No.



Rectangles represent an action in the process of care.

Ovals represent a link to another section within the guideline.

Annotations

A letter within a box of an algorithm refers the reader to the corresponding annotation. The annotations elaborate on the recommendations and statements that are found within each box of the algorithm. These annotations include a reference, when required, and evidence-grading for each recommendation, when available. The strength of the recommendation (SR) and the quality of the evidence (QE) are both noted and followed by a brief discussion of the underlying rationale.

The reference list at the end of each annotation includes all the sources used—directly or indirectly—in the development of the annotation text. A complete bibliography is provided at the end of the document.

Evidence Rating

The work group reviews the articles for relevance and grades the evidence using the rating scheme published by the U.S. Preventive Services Task Force (U.S. PSTF, 1996). The experts themselves, after an orientation and tutorial on the evidence-grading process, formulate QE and SR ratings. Each reference is appraised for scientific merit, clinical relevance, and applicability to the populations served by the Federal health care system. Recommendations are based on consensus of expert opinions and clinical experience, only when scientific evidence is unavailable. Table I includes the Evidence Grading Table, which is based on the U.S. Preventive Services Rating Scheme, U.S. PSTF, 1996.

Table I: Evidence Grading Table

Quality of Evidence (QE)

Grade	Description
I	Evidence is obtained from at least one properly randomized controlled trial.
II-1	Evidence is obtained from well-designed controlled trials without randomization.
II-2	Evidence is obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.
II-3	Evidence is obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments could also be regarded as this type of evidence.
III	Opinions of respected authorities are based on clinical experience, descriptive studies in case reports, or reports of expert committees.

Strength of Recommendation (SR)

Grade	Description
A	There is *good* evidence to support the recommendation that the condition be specifically *considered.*
B	There is *fair* evidence to support the recommendation that the condition be specifically *considered*
C	There is *insufficient* evidence to recommend for or against the inclusion of the condition, but a recommendation may be based on other grounds.
D	There is *fair* evidence to support the recommendation that the condition be *excluded* from consideration
E	There is *good* evidence to support the recommendation that the condition be *excluded* from consideration

The Guideline for the management of post deployment health is a novel effort. There are very limited research studies for this topic in the literature. Often, the most basic patient management questions and well-accepted care strategies have not been tested in randomized control trials. For example, no randomized clinical trials are likely to be conducted to evaluate the importance of a medical history and physical examination in management of patients after deployment. For many recommendations, there is insufficient evidence to determine whether or not routine interventions will improve clinical outcomes. Lack of evidence of effectiveness does not mean that there is evidence of ineffectiveness. Therefore, the recommendations for these well-accepted care strategies do not include grading of the strength of the evidence. The specific language used to formulate each recommendation conveys panel opinion of both the clinical importance attributed to the topic and strength of available evidence. It is expected that this Guideline will encourage future research that will generate practice-based evidence for inclusion in future versions of the Guideline.

The assembled experts were an invaluable source of additional information and suggested numerous references that were distributed to participants on an as-needed basis. It must be noted that this document does not, however, include reference to any publications dated after December 1999. More recent information will be included in future Guideline updates.

Guideline Content

The *Clinical Practice Guideline For Post-Deployment Health Evaluation and Management* is a single module consisting of three parts that address three aspects of related care:

- A1: Assessment of Post-Deployment Health Concern
- A2: Decision and Triage of the Patient With Unexplained Symptoms
- A3: Management of the Patient with an Established Diagnosis

The Guideline also contains appendices that provide more information on the work group participants, the CCEP and the PGR, and standard health assessment tools. In addition, a bibliography and list of acronyms are included.

REFERENCES

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