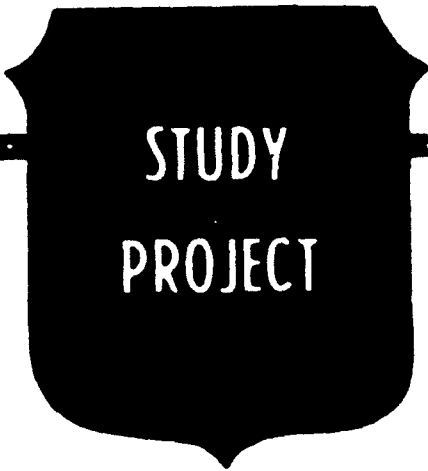


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**PATIENT CARE OUTCOMES:  
IMPLICATIONS FOR THE MILITARY HEALTH SERVICES SYSTEM**

BY

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MAY 30 1991  
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**PATIENT CARE OUTCOMES:  
IMPLICATIONS FOR THE MILITARY HEALTH SERVICES SYSTEM**

**CHAPTER I**

**BACKGROUND TO THE PROBLEM**

The health care community is known for its battles against disease. In more recent years, health care providers have faced a different kind of battle; one provoked by constant tensions and crises related to the cost and quality of health care. The Military Health Services System (MHSS) is not immune to these concerns. The MHSS is also not immune to the effects of health policies developed by civilian agencies to combat problems related to the cost and quality of care.

At present, rising health care costs are attributed, in part, to the lack of data verifying the appropriateness, effectiveness, and outcomes of many medical treatments. The possible ramifications for the military of the current emphasis on patient outcomes are considerable. To respond to the interest in patient outcomes in a positive, proactive way, it is essential to understand the events in health care economics that preceded the emphasis on outcomes.

A major reform in health care financing was initiated in fiscal year (FY) 1984. Medicare, the federal health insurance program enacted in 1965 as Title XVIII of the Social Security Act, was central to this reform. In 1966 health care costs comprised about 6% of the Gross National Product (GNP); in 1981 they represented about 10% of the GNP, or \$287 billion.<sup>1</sup> Not only was health care spending escalating, but it was increasing out of proportion to the rest



of the economy. For example, in 1983 the general inflation rate dropped to 3.9%, but inflation related to health care alone rose 12.6%.

Most of the rising cost of health care was attributed to the Medicare program.<sup>2</sup> Medicare supports the medical expenses of a designated group of beneficiaries: individuals with end-stage renal disease, the disabled, and the elderly. The age qualifier for this latter group of beneficiaries is 65. The Medicare program is administered by the Health Care Financing Administration (HCFA), one of four major components of the Department of Health and Human Services (DHHS). HCFA, and thus the government, became the largest third party payer among insurers due to the costs incurred through the Medicare program.

A brief understanding of Medicare benefits is necessary to appreciate the change in financing that occurred in the 1980s as well as impending changes that may occur in the 1990s. Simply stated, there are two components to Medicare insurance coverage, known as Part A and Part B. Part A benefits cover the institutional costs of care for hospitals, skilled nursing facilities, home health care, and hospice. The specific provisions for each type of institution vary, but in general Part A coverage includes charges for rooms and meals, nursing services, medications, supplies, diagnostic tests, and operating room costs. Part B benefits cover physician charges. Physician charges are evaluated to determine whether the services rendered were necessary and reasonable. Medicare reimburses physicians for 80% of the approved charge.<sup>3</sup>

Also inherent to understanding the crisis in health care costs is a sense of the effects of the aging population in the United States on the health care system. People are living longer. Consequently, the time over which people

qualify for health care coverage under Medicare has also increased. Not surprisingly, the increased life span has two concomitant health care implications. First, people are more likely to develop and live with chronic diseases that necessitate ongoing health care. In the past, people would have died from these same diseases. Second, advances in health care technology have made it possible to treat conditions that were previously irreversible. Technology, however, is costly. The increased number of elderly people along with an increased incidence of chronic disease and the use of costly technological advances have all contributed to increasing health care costs in general and Medicare costs in particular.<sup>4</sup>

When Medicare was first enacted, a retrospective system was used to reimburse institutions for costs incurred under Part A. There was little incentive to use resources efficiently under retrospective payment because hospitals were reimbursed for the total amount spent to provide patient care. A belief prevailed that hospital costs were more expensive than they needed to be because neither patients nor providers prudently examined the cost of the services.

By the 1980s this belief was substantiated. Medicare expenses were exceeding tax revenues, and insolvency of the Medicare system was predicted by 1990. To preclude this event, a radical change in health care financing was implemented to curb escalating Medicare costs. The retrospective payment system switched to a prospective payment system (PPS).

Heated debate surrounded decisions regarding the basis of payment under prospective payment. Finally, diagnosis was selected as a major criterion for grouping clinically similar patients who use similar resources. Hence, the Medicare prospective payment system became known as diagnosis related groups

(DRGs). Other factors, such as coexisting diseases, complications, surgical procedures, and age were also considered to set DRG reimbursement rates. In this way, more complicated and thus more costly problems would be reimbursed at a higher rate. In all cases, reimbursement was set at admission on a per-case basis. Therefore, hospitals would receive similar reimbursement for similar patients. Facilities that contained cost would realize a profit; those that overspent would not be compensated for the excess expenditures. The system was designed to reward facilities that delivered efficient, cost effective care.

President Reagan signed Public Law 98-21 on April 20, 1983, as part of the Social Security Amendments. Under Title VI of this law, Medicare reimbursement was based on DRGs. Hospitals were targeted to experience the major effects of the prospective payment reform. In this way, it was possible to limit the rate of increase of hospital costs and the rate of growth for inpatient care for Medicare beneficiaries. This dramatic change was phased in over three years beginning in FY 1984. Implementation was completed in FY 1987.<sup>5-7</sup> The importance of this Medicare change is underscored by the fact that Medicare is a pace setter for other third-party payers. Therefore, changes that occur in Medicare are likely to filter into other health insurance systems.

However, "The quality and cost of health care services are as tightly intertwined as fibers of fine silk."<sup>8(p91)</sup> Because cost and quality are inseparable, reimbursement under PPS was designed to sustain quality care. Nevertheless, the quality of care was earmarked for ongoing evaluation to limit undesirable effects of per-case reimbursement.

It is not surprising to note a parallel between the increase in health care spending for the civilian sector and the military. Considering the growing federal deficit and because DRGs were expected to succeed in controlling civilian health care costs, the National Defense Appropriations Act for FY 1987 (S. 2638) dated November 14, 1986 mandated the use of DRGs as the primary criterion for allocating resources to military health care facilities. Subsequent to that directive, the DRGs were adjusted to take unique aspects of the military into account. Regardless of the age of the beneficiary, resource allocation in the MHSS is expected to comply with a PPS.

In October, 1988, the MHSS began implementing a performance measurement system that embraced DRGs as the basis for inpatient reimbursement. A similar cost-based measure for outpatients was instituted in October, 1989. The effects of these changes are difficult to evaluate because each of the services has taken a different approach to implementation. Although it is too early to detect the impact of DRGs in the military, the cost of health care in the military continues to rise. In FY 1990, Department of Defense (DoD) health care costs for the more than nine million beneficiaries in the MHSS exceeded \$13 billion. In response, a managed care program for DoD called Coordinated Care is being instituted to control costs. Commitment to providing quality care is a goal of Coordinated Care.<sup>9,10</sup>

Despite the move to prospective payment, the cost of health care has also continued to climb in the civilian sector. In 1988, one year following full implementation of the DRG payment system, health care costs were almost \$540 billion, or 10.4% higher than in 1987. Although hospital costs did not decline appreciably under DRGs, they did plateau. There were, however, large

increases in the health care costs spent for ambulatory care and home health care, both of which are currently exempt from prospective reimbursement.<sup>11</sup>

Similarly, physician fees, which are covered in Part B of Medicare and therefore are not subject to DRG rates, also rose.<sup>12</sup> In fact, in 1987, "Medicare outlays to physicians were growing at double-digit rates."<sup>13</sup>(p1) The issue of physician reimbursement, while of considerable importance, is not only beyond the scope of this paper but also relevant to the military only through the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). Suffice it to note that under the Omnibus Budget Reconciliation Act (OBRA) of 1986, the Physician Payment Review Commission (PPRC) was established to evaluate physician reimbursement.

Overall, the continued increase in health care costs has been attributed to multiple reasons. Some of these have been already mentioned. For example, the impact of the elderly population on health care costs will be profound. In 1970, 9.8% of the population was age 65 or older; by 2000 it is expected that 13% of the population will be in the elderly age group.<sup>14</sup> This proportion will continue to rise as more individuals live longer. The gravity of this phenomenon is heightened when juxtaposed with the reduction in birth rate which means that fewer young people will be contributing to Social Security and thus supporting the needs of the older population. The issue of the aging population has particular relevance to the military. Not only will the MHSS experience the effects of the increasing number of people age 65 and over, but health care delivered in military facilities to this age group is not reimbursed by Medicare.

Concerns regarding health care costs have also generated interest in patient outcomes. The Federal government is look at the possibility of basing

reimbursement for medical care on outcomes. Consequently, the emphasis on patient outcomes appears destined to have an impact on health care in the 1990s commensurate with the impact that DRGs had in the 1980s. The MHSS was not insulated from the effects of DRGs. Similarly, it is highly improbable that the MHSS will escape becoming involved with the emphasis on patient outcomes. To respond proactively to possible changes in health care based upon the outcomes initiatives, it is essential that the MHSS have a solid understanding of this new emphasis. In this way, the MHSS can carve its future in the outcomes arena rather than having its role dictated by external agencies.

The purpose of this paper, therefore, is threefold. First, an overview will be provided regarding the emphasis on patient outcomes. Second, conceptual and methodologic issues relevant to evaluating patient outcomes will then be considered. Finally, five points concerning patient outcomes in the MHSS will be addressed.

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## CHAPTER II

### AN OVERVIEW OF THE EMPHASIS ON PATIENT OUTCOMES

#### The Quality Assurance Perspective

Donabedian<sup>1-3</sup> developed what has become the classic framework for evaluating patient care. The framework, commonly known as quality assurance, is comprised of three elements--structure, process, and outcomes. Structure refers to the characteristics of the health care setting systems such as physical facilities and staffing. Process refers to evaluating what the careprovider does to, for, or with the patient; it is how care is delivered, or the means to the ends. Process, then, is the part of the quality model that encompasses interventions and treatments. Outcomes refer to the result or effects of care. Whereas structure and process may influence the patient, evaluating structure and process does not mandate examining the patient. Outcomes, conversely, are entirely patient focused. Outcomes concern the result of care as manifested by the patient.

During the early years of quality assurance, the focus was on structure and process indicators. The more recent quality assurance orientation concerns outcomes of care. This shift occurred in the late 1980s, and was provoked by two occurrences. First, the Joint Commission on the Accreditation of Hospital Organizations (JCAHO), a civilian agency that evaluates and accredits hospitals, including military hospitals, found that consumers and third-party payers expected hospitals to conform to an industrial model of quality assurance; one that demonstrates a good ratio of quality and cost. By conducting a hospital-by-hospital analysis of outcomes, JCAHO believes that comparisons can be made among institutions regarding the results or outcomes



of health care. In this way, consumers and insurers can make more informed decisions about where they choose to receive health care.<sup>4</sup>

There are two caveats that must be heeded to assure that JCAHOs efforts provide a meaningful view of outcomes. First, institutional assessments must be conducted so as not to lose sight of the patient per se when patient data are aggregated to provide a facility-based analysis. Second, an institutional focus may obscure the effect of nursing care as a measure of quality. This would be inadvisable based on the assertion that the major reason for most hospitalizations is the patient's need for nursing care.<sup>5,6</sup> As Lang and Marek have underscored, ". . . inclusion of indicators that are sensitive to the effect of nursing care must be included if the indicators are to be valid measures of the quality of hospital care".<sup>7</sup>(p162)

Second, the quality assurance model itself was undergoing reform. It became evident that quality assurance was insufficient. Instead, quality management, or total quality management (TQM) as it is presently known, was identified as a higher order purpose. The relevance of TQM to the MHSS transcends simply becoming a part of what is currently in vogue. TQM is important to the MHSS because Executive Order 12637 established TQM as a government wide program to improve quality. Volumes have been written about TQM. The essence of the concept will be synopsised here.

The move to TQM was spearheaded by the work of Deming who revolutionized quality and productivity in Japanese industries. The essence of Deming's TQM approach is that quality is improved by doing things right the first time, in other words preventing problems from occurring, which in turn improves productivity. Deming contends that management bears the onus to create and sustain the quality culture; a culture in which quality is viewed as a process

of continuous improvement not an absolute endpoint. He proposed 14 points of management as the basis for transforming American industry, both service and manufacturing, into a TQM-based industry. Optimism, a positive attitude, mutual respect and a team approach pervade the TQM philosophy and principles. The customer is at the crux of TQM.<sup>8-10</sup> Although the customer in health care may be the patient, everyone in the system can be viewed as a customer. Physicians and nurses, for example, are customers of the laboratory services. The laboratory staff is a customer of the logistical services.<sup>11</sup>

TQM clearly expands the quality assurance framework. TQM also supports the need to evaluate outcomes. However, isolating outcomes as the sole focus appears to run counter to the TQM philosophy. Because TQM is process-oriented, TQM provides a basis for integrating the structure, process, outcome components of the traditional quality assurance model. From a TQM perspective, these various components would be evaluated collectively to ascertain how they can best work synchronously for the overall purpose of continuously improving quality. This point will be further expanded in Chapter Three when issues in evaluating patient outcomes are addressed.

#### The Health Care Economics Perspective

Concurrent with the shift in the quality assurance perspective, the focus of health care economics was adjusted to take into account the outcomes of health care as a means to contain costs. A series of landmark papers, published in the 1980s, identified an appreciable variation among medical interventions used to treat similar clinical conditions.<sup>12-14</sup> It was noted that medical diagnoses and interventions were greatly influenced by where and when physicians were educated as well as the habits and customs of the locale in which they practiced rather than rigorous, scientific data. Thus, the

variations in medical practice gave impetus to objectively examining the effectiveness of different interventions relative to costs and patient outcomes. HCFA, therefore, proposed reimbursing for care according to whether desired outcomes were achieved as a possible mechanism to curtail escalating health care costs.

Countless examples exist in the literature depicting variations in medical practice. Only a few will be mentioned to demonstrate the lack of scientific data to guide medical practice. The examples will be grouped to illustrate variations among clinical procedures and variations among clinical populations.

The hallmark among the effectiveness studies and a catalyst in the outcome arena, is the outcome for prostatectomy. The risk of readmission and death after prostatectomy were higher than expected. Furthermore, mortality was higher for patients who underwent Transurethral Prostatectomies (TURPs) as compared with patients who underwent open prostatectomies. The findings also suggested that when symptoms were mild, life expectancy was better for men who did not undergo surgery than for those who had a prostatectomy.<sup>15-19</sup>

Carotid endarterectomy is another procedure that was studied. Rather than comparing it with other procedures, it was examined from the perspective of geographic variation because of the increase in incidence of doing the procedure.<sup>20</sup> Using a panel of national experts, the procedures were rated for appropriateness. Regardless of location, it was determined that about one-third of the procedures were done for inappropriate reasons.

Perhaps more dramatic because of their universal relevance are studies that examined the use of routine diagnostic tests. It appears that the use of routine laboratory tests and routine chest radiographs are based on tradition

rather than medical necessity. In one study, for example, routine urinalysis and hematology tests contributed to less than 1% of all diagnoses.<sup>21</sup> In a similar study, although 12% of the routine tests were abnormal, only 0.5% lead to changes in patient treatment.<sup>22</sup> Routine chest radiographs also demonstrated little contribution to diagnosis or treatment.<sup>23,24</sup> The cost of these traditional practices must be weighed against their benefits.

Outcomes have been studied in a broad spectrum of clinical populations. The rate of hospitalization for children in Boston, Rochester, and New Haven was compared in one report.<sup>25</sup> Although it was determined that children in Boston were hospitalized at more than twice the rate of children in Rochester, there was no attempt to identify the reasons for these variations in practice. Nevertheless, the authors believe the differences have implications for the cost and quality of pediatric care. In another study, the cost of care for all inpatients in the Boston and New Haven areas were compared.<sup>26</sup> The cost of care in Boston was almost twice that in New Haven.

Consumers are also aware of the variations in medical practice because of reports in the media. For example, in an article in Time it was stated, "Treatment patterns can vary among communities because doctors in different places have different methods. . . . A major reason that medical practices vary so widely is that doctors suffer from a shortage of certain essential information."<sup>27(p71)</sup> The cost of health care, the uncertainty about the outcomes of care, and the confusion about which procedures are needed and effective has heightened policymakers' desire for ". . . knowledge about what works and what does not work in medical care--and at what price."<sup>28(p2)</sup>

The aforementioned reports represent only a microcosm of the massive literature that exists concerning patient outcomes. The studies were

mentioned without a critical analysis of the rigor of the investigations. Nevertheless, these studies are representative of the information that has caught the attention of the health care providers, consumers, and Congress. Although some individuals may argue whether the variations in practice are as worrisome as has been suggested, the momentum to examine patient outcomes is not likely to subside.

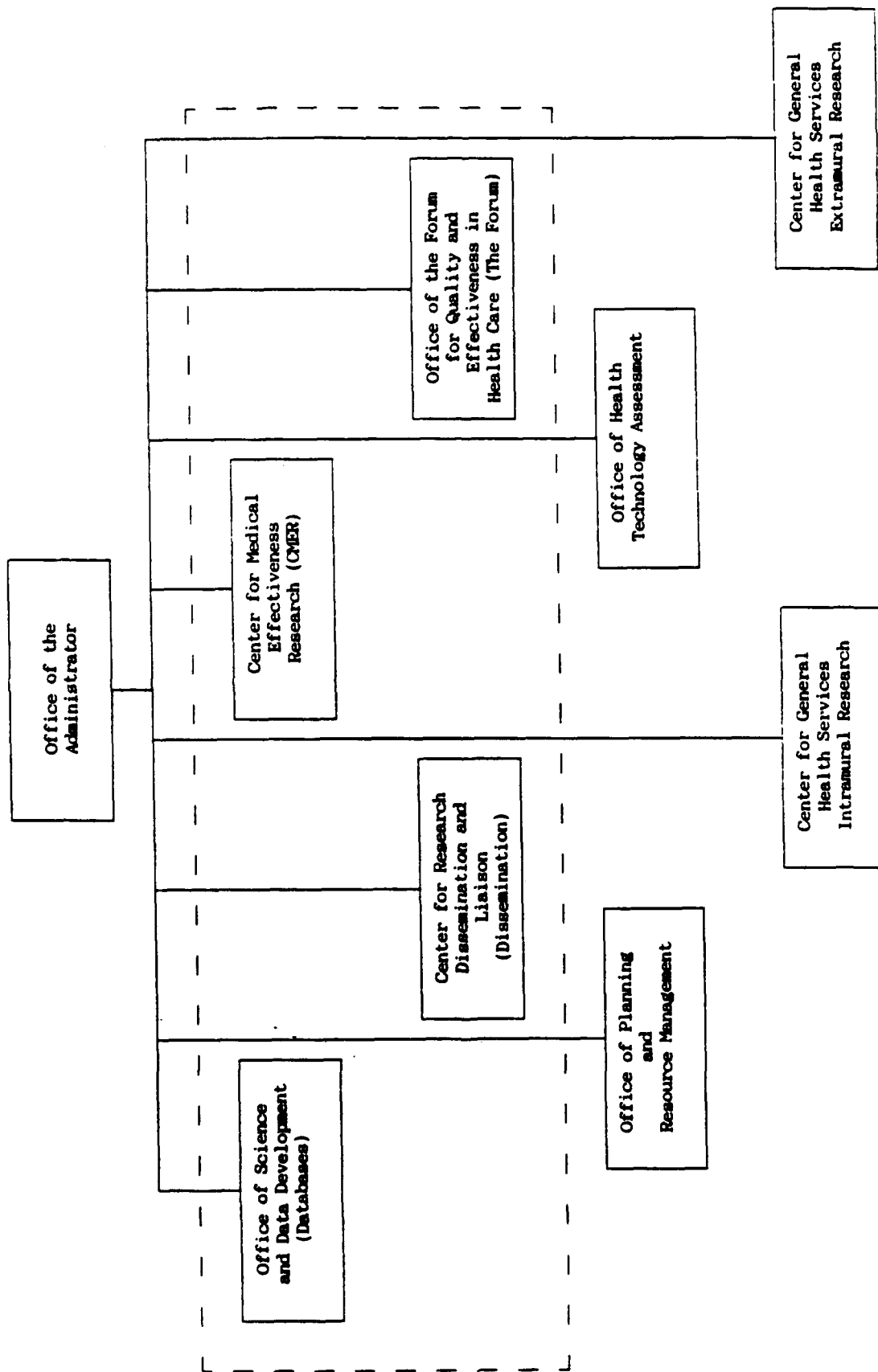
#### The Agency for Health Care Policy and Research

In December, 1989, the charge to examine outcomes was shifted from HCFA to the Agency for Health Care Policy Research (AHCPR). AHCPR was created through Public Law 101-239, OBRA of 1989, which amended the Public Health Service and Social Security Acts. Through the Medical Treatment Effectiveness Program (MEDTEP), AHCPR is developing practice guidelines and emphasizing research in three areas--medical effectiveness and patient outcomes, database development, and dissemination methods. A diagram of the elements of AHCPR is at Figure 1. The elements comprising the MEDTEP are located within the broken-line rectangle. The goal of research conducted within the MEDTEP is to verify what difference medical care makes.<sup>29-33</sup>

All of the elements of the MEDTEP are essential to patient outcomes. For example, evaluation and decision-making will be inhibited or facilitated to the extent that databases contain retrievable information relevant to patient outcomes. Likewise, effective dissemination of information derived from evaluating outcomes is at the crux of assuring that knowledge is widely dispersed in a fashion that is useful to patients and providers.

At present, though, the most visible elements of the MEDTEP are the Office of the Forum for Quality and Effectiveness in Health Care (The Forum) and the Center for Medical Effectiveness Research (CMER). The Forum is

Figure 1. A diagram of the elements of the Agency for Health Care Policy and Research (AHCPR). [The elements of the Medical Treatment Effectiveness Program (METEP) are located within the broken-line rectangle.]



responsible for developing clinical practice guidelines and quality standards. The purpose of practice guidelines is to provide a systematic basis for practitioners and patients to make decisions. The decision-making focus of guidelines is different from review criteria, quality standards, and performance measures, the purpose of which is to evaluate practice.<sup>34</sup>

This definition of guidelines explicitly indicates that guidelines are intended to be a patient management tool. Clinical practice guidelines are intended to serve as a source of information regarding acceptable methods for treating the stated conditions. They will not dictate one right way to practice. Rather, they will indicate all interventions for a particular problem that are based on scientific rationale and thus help practitioners with decision-making. The purpose of guidelines is to provide choices based upon the best available evidence to achieve acceptable patient outcomes.

Nevertheless, practitioners have expressed concern that guidelines will be overly prescriptive and lead to cookbook medicine. As Robert Brook, MD, a corporate fellow at the RAND Corporation, remarked, "Good cooks start from a cookbook. Then they modify the recipe. In a very complex world, we shouldn't back away from starting with a certain protocol."<sup>35(p71)</sup>

The positive potential in guidelines remains overshadowed by a perceived threat that they will not only dictate practice but also regulate reimbursement based upon outcomes. Concerns have also been voiced about the influence of guidelines and outcomes on litigation and rationing. The former Chief of HCFA indicated that, "We would prefer to avoid such controversy, . . . A sounder approach, in our view, would be to give physicians better information about what works".<sup>36(p97)</sup> A series of papers by Eddy are helpful in illustrating the useful aspects of guidelines.<sup>37-41</sup>

An understanding of the involved, lengthy, and expensive process of guideline development that is currently followed might reduce the likelihood of viewing guidelines and outcomes with dread and distaste. Guideline topics are based on clinical conditions, a term that was used rather than diagnosis to address various signs and symptoms, such as pain, that crosscut diseases. Numerous factors are considered in selecting guideline topics such as cost of the condition, relevance of the condition to Medicare populations, and sufficiency of existing scientific data on the topic. The actual guidelines development is done by panels. A chairperson is selected for each panel based on stringent criteria to assure that the individual is a subject matter expert and can provide adequate leadership in guideline development. The panel members are comprised of a multidisciplinary array of health careproviders and consumers.<sup>42-44</sup>

The guideline development process is based on an extensive literature search. Along with evaluating the rigor of the science used in the various studies related to the guideline, the panels also identify the gaps in information. The goal is to determine the strength of the scientific evidence for practice decisions. The guidelines are written based on knowledge derived from a critical review of the literature (or meta-analyses where possible), they are pilot tested to evaluate their usefulness in the clinical setting, and then they will be distributed. Guideline development is therefore an iterative process. As further research is done, it will add to the new literature that will be used for guideline revision.<sup>45</sup> Because they are not federally mandated at present, AHCPR is seeking sponsorship of the guidelines through professional organizations.



Since December of 1989 when AHCPR was established, seven panels have been convened: (a) visual impairment due to cataracts in the aging eye; (b) diagnosis and treatment of benign prostatic hyperplasia; (c) pain management; (d) diagnosis and treatment of depressed outpatients in primary care settings; (e) delivery of comprehensive care in sickle cell disease; (f) prediction, prevention, and early treatment of pressure sores in adults; and (g) urinary incontinence in the adult. Physicians chair four of the panels, a nurse chairs one of the panels, and a physician and nurse team cochair two of the panels.<sup>46</sup>

CMER, the final element of the MEDTEP, as well as agencies external to AHCPR, is involved in funding ongoing research to advance the scientific knowledge regarding patient outcomes. These findings will then be used to revise the clinical guidelines. To support studies of patient outcomes, CMER is funding two types of extramural research projects. First, Patient Outcome Research Teams (PORTs) are conducting large-scale studies to evaluate costs and patient outcomes of alternate practice patterns for select health conditions. As of September 1990, 11 PORT projects were funded by AHCPR to address topics such as back pain, total knee replacements, and acute myocardial infarction. Second, smaller-scale projects are examining variations in practice and outcomes; comparing condition or procedure-specific treatment effectiveness; developing methods, data, or measures for effectiveness research; and synthesizing and disseminating outcomes data.<sup>47</sup>

Although other health careproviders are making important contributions to AHCPRs research program, it focuses primarily on the relationship between medical care and patient outcomes. This is understandable given the medical thrust of the studies that brought the variations in practice to the attention

of consumers, careproviders, and Congress. Nonetheless, if the patient is truly intended to be the focal point of the current emphasis on outcomes, then it is imperative that evaluations of patient outcomes be conducted from a multidisciplinary perspective. It is the collective effort of careproviders that influences patient outcomes even though physician orders may have a prevailing influence.

The good intentions of AHCPR guideline developers and outcomes researchers must be balanced with additional realities. Even though it is reasonable and important to assure that all health care practices are derived from scientific underpinnings, the structures and relationships in the clinical settings where patient outcomes must be examined are highly complex. The reality is, therefore, that research designs other than experimental studies may be better suited to examining patient outcomes. Furthermore, using the current procedure, guideline development takes about 1 1/2 years for each clinical condition. The expense and time of this method will quickly grow prohibitive considering the endless number of clinical conditions as well as the need to constantly update the guidelines.

And finally, the reality is that policymakers are looking at using guidelines for purposes other than decision-making. Louis Sullivan, M.D., current Secretary of the DHHS, was quoted as saying, "I would envision that if we find that a procedure is not effective, we will not reimburse [for it]."48(p15) Likewise, in a television newscast on 21 April, 1991, it was reported that the state of Maine, the home of Senate majority leader George Mitchell, was seriously contemplating using outcomes for reimbursement. Even in the absence of legislative dictates, the analysis of patient outcomes will provide powerfully persuasive evidence regarding what works and what does not.

Considering the economic impetus to examine the effectiveness of treatments and patient outcomes, it is highly desirable for the MHSS assume a proactive stance in this important initiative. The cost of health care is too high to ignore possible mechanisms of cost containment. More importantly, patients are vulnerable to the weaknesses of outcomes evaluation. For both reasons, patient outcomes must be evaluated with full acknowledgment of the numerous factors that must be taken into account. Findings will not be defensible unless patient outcomes are examined with a full appreciation of the conceptual and methodologic complexity inherent in such evaluations.

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## CHAPTER III

### ISSUES IN EVALUATING OUTCOMES

There is an intuitive appeal about evaluating patient care from the perspective of outcomes. As Watts<sup>1(p329)</sup> stated, "After all, in a football game, the final outcome on the scoreboard is a clear measure of a team's success or failure." Despite its appeal, or perhaps because of it, the subject of patient outcomes must be approached with an understanding of its complexity.

Without an appreciation of patient outcomes issues in their fullest sense, the evaluation of patient outcomes may be badly distorted. Therefore, the following discussion will present two sets of issues relevant to evaluating patient outcomes: One concerns conceptual issues and the other concerns methodologic issues. These issues represent cautions that must be heeded if the potential of the patient outcomes emphasis is to be realized. These issues are relevant both to prospective planning of patient outcomes studies and retrospective analysis of investigations that have already been conducted.

#### Conceptual Issues

Initially, the conceptual model involved in examining patient outcomes appears to be comprised of three components: (a) a clinical condition or diagnosis, (b) an intervention or treatment, and (c) a patient outcome. This model is deceptive in its simplicity; it is also inaccurate and will contribute to spurious conclusions. All variables that influence patient outcomes can neither be measured nor controlled. Nevertheless, models guiding evaluations of patient outcomes must be sufficiently complex to assure that

these important questions are examined comprehensively. To this end, considerations relevant to model clarity will be addressed.

Conceptual definitions. Outcome and interventions are two terms germane to patient outcomes evaluation. Outcome has been used with considerable consistency, and refers to the result of care. The focus, then, of patient outcomes research is to evaluate the patient. Outcome studies are patient driven, not provider driven. It is important to consider, nonetheless, whether patient outcomes are best viewed as the only outcomes, or whether it would be advisable to consider other outcomes as well. For example, system outcomes such as the cost of care and careprovider outcomes such as job satisfaction might actually have a reciprocal relationship with patient outcomes.<sup>2,3</sup>

Intervention or treatment refers to actions or techniques used in particular situations to elicit desired outcomes. Interventions, then, are usually considered by careprovider group. Medical interventions tend to be primarily derived from the physical sciences, while nursing interventions are a blend of physical, social, and behavioral sciences. Other careproviders such as physical therapists, respiratory therapists, dietitians, and social workers also institute a broad array of interventions that effect patient outcomes.

Interventions must be conceptualized based upon a multiplicity of careproviders. It is difficult to conceive of interventions that would be protected from the effects of other careproviders. In other words, it is highly probable that there may be some overlap or interaction with other careproviders insofar as the efficacy of interventions is concerned. Consequently, the evaluation of patient outcomes must be approached from a



broad, multidisciplinary perspective that crosscuts careprovider groups. The importance of a team approach to outcomes is underscored in Watts scoreboard analogy.<sup>4</sup> A multidisciplinary approach also supports the team concept that is inherent to TQM.

Relationships among quality components. Fundamental to evaluating patient outcomes is the decision of whether outcomes should be isolated from or integrated with structure and process, the other components of the quality assurance (or quality management) framework. Some evaluations focus exclusively on outcomes or the results of care delivery.<sup>5</sup> Although isolating a specific component of quality can be useful in addressing particular questions, distinguishing among structure, process, and outcome is basically an abstraction.<sup>6,7</sup> An integrated model that examines the relationships among quality assurance components might be better suited to the complex reality of patient care. An integrated model also fits nicely with TQM and would enable evaluating how a system of managed care effects patient outcomes.

Bloch<sup>8</sup>, for example, proposed a model in which both process and outcome could be examined. This model might be expanded to also assess the effects of structure or the care delivery environment on patient outcomes. For instance, how does the physical plant influence patient outcomes; how does the nursing practice model used to organize care delivery effect patient outcomes; or how does the use of nonnursing personnel to assist nurses' contribute to improved patient outcomes? Such an approach would require a sophisticated approach to evaluation. But a model that incorporates all components of quality would assure more thorough answers to important patient care questions.

The outcome continuum. Another conceptual challenge in evaluating patient outcomes concerns the longitudinal nature of outcome. Donabedian<sup>9</sup>

was among the first to discuss the outcome continuum. Some have referred to this continuum as the timing of measurement,<sup>10,11</sup> while others have addressed short-term versus long-term results.<sup>12</sup> Not only do outcomes change over the course of hospitalization, but they change throughout the illness episode after discharge. A study of men following prostatectomy, for example, revealed that one-year mortality rates were as high as 6%, a surprising finding in that mortality had not previously been evaluated postdischarge.<sup>13</sup>

By considering outcomes over the course of illness episodes rather than through discrete hospital encounters, patient outcomes can be more accurately portrayed. "A given illness may span several hospital admissions and require large amounts of outpatient care."<sup>14(p93)</sup> Therefore the totality of an illness episode must be considered as reflected by short-term, intermediate, and long-term outcomes. The current emphasis on case management as a way to organize patient care may afford considerable opportunity to evaluate outcomes over the course of an entire illness experience. Similarly, TQM emphasizes care delivery as a process. Patient outcomes evaluation mandates consideration of when outcomes should be evaluated over the course of an illness.

It is suggested then, that the model used to guide the evaluation of patient outcomes be a carefully conceived blend of comprehensiveness and parsimony. All careproviders must work collaboratively to develop and use multidisciplinary, multidimensional models that take into account the many complex conceptual issues that surround patient outcomes. Likewise, evaluating patient outcomes must be approached with a firm grasp of an assortment of methodologic issues.

## Methodologic Issues

Measuring outcomes. Although outcomes are conceptualized as the result of care, three methodologic issues exist regarding outcomes. First is perception; outcomes according to whom? There may be incongruous expectations regarding acceptable patient outcomes among careproviders. There also may be incongruities between patient outcomes as defined by careproviders and those defined by the patients themselves. Families and significant others may have an even different set of perceptions regarding outcomes. As Lohr noted, ". . . the desirability of one outcome rather than another in any given clinical situation (e.g., palliation rather than extension of life in the terminally ill patient) may differ markedly according to the values and preferences of patients."<sup>15(p38)</sup> Who determines which patient outcomes are acceptable?

Second is the indicators; outcomes as reflected by what? It is important to consider the vast number of indicators that can be used to reflect outcomes, as they portray different aspects of the result of care. Watts clearly conveys the situation in stating, ". . . measuring death rates as outcomes in patient care misses the mark. . . . it can only turn out to be yet another unduly simplistic approach to a very complex problem."<sup>16(p330)</sup>

Early indicators of outcomes were known as the "five Ds": death, disease, disability, discomfort, and dissatisfaction.<sup>17</sup> Other commonly suggested outcomes indicators include readmission and incidence of complications.<sup>18-20</sup> More recent suggestions of indicators that reflect outcomes are not only more positive in perspective (e.g., behavioral knowledge, physiological, and psychosocial,)<sup>21-24</sup> but also broader in scope (e.g., rehabilitation potential, function status, quality of life).<sup>25-27</sup> With the aging population and

increased incidence of chronic disease, the selection of appropriate outcome indicators becomes even more complicated. Without accounting for an array of possible outcome indicators, it is conceivable that the understanding of patient outcomes could be very fragmented and thus lacking in meaning.

Finally is the degree; outcomes to what extent? A simplistic assessment of outcome might be to ascertain whether the desired outcome was achieved. In this case, the variable could be dichotomized into achieved or not achieved. In reality, patient outcomes range from acceptable and good to not acceptable and bad with countless variations and permutations inbetween. To capture outcomes in their fullest sense requires a careful approach to measurement, one that at least uses Likert scales (e.g., always, sometimes, never). Similarly, measuring differences in outcomes within and between groups will provide another important dimension to evaluating patient outcomes.

Measuring careproviders. There are two aspects of careproviders that must be considered when evaluating patient outcomes. One concerns variations within careprovider groups, and the other concerns interactions among careproviders. Rather than focusing on what the careprovider does, the focus of within careprovider issues is how the careprovider performs. For example, the competence of the careprovider may well influence outcomes. It is possible that differences in care delivery between novice and expert practitioners is related to differences in outcomes. Intertwined with competence is the therapeutic use of self, a provider effect that transcends interventions themselves. Specific to nurses is the need to address possible differences in the educational preparation of the provider. This would enable detecting the impact of registered nurses (RNs), practical nurses and nursing assistants on patient outcomes. It would also allow for an assessment of the

extent to which various educational programs for RNs make a difference in outcomes. These aspects may be particularly salient because nursing care is provided by a variety of practitioners rather than by a single provider.

Second, it will be important to examine interactions among careproviders. It may be difficult to pinpoint the effects of a particular group of careproviders: Careprovider interactions may influence the amount of variance in outcomes attributable to any specific group. This important possibility was raised in a study of perioperative teaching.<sup>28</sup> Depending on the patient outcome examined, the investigators were able to account for only 5 to 14 percent of the variance. It was suggested that the low variance could be due to model specification error, measurement error, extraneous variables, or the actual influence of perioperative nursing care. The latter explanation is based on the belief that the explained variance could remain low in outcomes studies because of the number of careproviders involved with patients during any clinical experience. If that is the case, what degree of variance is then sufficient to retain variables in models of patient outcomes?

Measuring the care environment. If a comprehensive model is used to examine patient outcomes, then the care environment must be considered from at least two perspectives. First, it will be important to discern if outcomes vary depending on the setting in which care is delivered. This evaluation could establish similarities and differences among patients in like care settings: Patients in hospital A compared with patients in hospital B, for example. This evaluation could also determine whether patient outcomes differ if care is delivered in different settings: an acute care facility versus outpatient care, for instance.

Second, it has already been demonstrated that dynamics within the care setting make a difference in outcomes. For example, it was found that postoperative patient outcomes were more strongly correlated with the hospital setting within which care was delivered than with a preoperative nursing intervention.<sup>29</sup> Similarly, outcomes for intensive care patients were more strongly related to staff interaction than other factors.<sup>30</sup> In an ambitious effort, the Medical Outcome Study (MOS) collected data from chronically ill patients over two years to assess how aspects of the care delivery system affect patient outcomes.<sup>31</sup> Reports from this study will continue to be forthcoming. They will address, for instance, the relationships among the structure of care as depicted by system, provider, and patient characteristics and multiple patient outcomes.

Design. Because causality is implied in evaluations of patient outcomes, thoughts are evoked of quantitative investigations based on the classic experimental design, particularly clinical trials. However, "Patient care outcomes reflect a number of uncontrolled variables--such as the client's state of health, his coping ability, . . . and the client's value system."<sup>32(p365)</sup>

Outcome data may be misrepresented if they are considered independent of other patient attributes such as coexisting illnesses, severity of illness and age.<sup>33-35</sup> They may also be inaccurate if the patient's preference for information and participation in the care process are not considered. Fries<sup>36</sup>, a physician, underscores the countless nonbiologic influences on patient outcome. Furthermore, the variability that is normative among patients must be taken into account when measuring outcomes. Even if all

possible confounding variables are controlled, variation among people is the rule.

Given the dynamics of the clinical setting and the context within which outcomes will be evaluated, it is important to question whether clinical trials are the sine qua non of patient outcomes evaluation. The prestige of this design must be balanced with a respect for the clinical complexity and all its attendant uncontrollable variables, a strong sense of the research questions being pursued, and an understanding of alternate designs that may be less regarded but actually more appropriate to the setting and the question. This view is espoused by careproviders who come from backgrounds in physical, social, and behavioral sciences. Even more physical science oriented practitioners acknowledge that ". . . the concept of long term outcome resulting from multiple health influences takes one away from the traditional experimental setting. . . . Accepting a broader concept of disease . . . mandates developing clinical knowledge within a more complicated framework."<sup>37</sup>(p700)

Without benefiting from the full design repertoire that covers the qualitative/quantitative spectrum, patient outcomes evaluation will be impeded. Qualitative methods, for example, might be useful to capture the reality of patient outcomes from an inductive perspective. Although qualitative techniques beg the issue of causality, they may provide a clearer sense of the dynamics of patient outcomes. This, in turn, would provide scientific rationale for model specification and testing. Furthermore, certain parameters such as age, coexisting disease, severity of illness, while important outcomes predictors, are beyond the influence of health

careproviders. Hence, qualitative studies might help to target the key variables influencing patient outcomes that can be altered by careproviders.

A variety of quantitative designs, other than randomized clinical trials, would also be useful in examining patient outcomes. For example, quasi-experimental, causal modeling was used to test the effects of perioperative teaching on a variety of patient outcomes.<sup>38</sup> An important point raised in the study was that indirect processes must be explicated and studied because they may be as important as direct relationships. Others have also cautioned against fitting clinical practice into a simple linear model; a multivariate model is more appropriate to capture the complex relationships inherent in the clinical setting.<sup>39,40</sup> Evaluations based upon epidemiologic techniques may also be more relevant to patient outcomes than the traditional scientific gold standard; the experimental design. As Caper noted, "Medical care epidemiology is a powerful approach for posing the right questions about the use and effectiveness of medical services . . ."41(p670)

Pervading any quantitative study must be the understanding that statistical significance becomes meaningless when the design does not assure an appraisal of the clinical realities. Many if not most clinical practices evade quantification. In the memorable words of Boulding, ". . . the real world consists not of numbers but of shapes and sizes. . . . Quantification is a prosthetic device of the human mind, though certainly a very useful one."42(p833)

Data sets and instrument development. Paramount among patient outcomes evaluation issues is that of data sets and the kinds of variables that are retrievable to reflect outcomes. Developing meaningful data sets from which information can be retrieved is the quintessence of patient outcomes



measurement challenges. Data bases must include indicators that reflect a reasonable scope of desirable outcomes.

Because data in existing data bases are inadequate for comprehensively studying patient outcomes, variables must be identified that better reflect the scope of patient outcomes, particularly the less traditional outcomes such as quality of life and functional status. Another aspect of data sets concerns the need for both a standard way to organize the data and a common data language. Achieving consensus about these data elements, however, will take considerable effort. Consensus, nevertheless, must be achieved with some immediacy to put the data sets in place so that the evaluations can be conducted.

Instrumentation is also fundamental to measurement. As Fries points out, discussions of validity and reliability may be unfamiliar to physicians.<sup>43</sup> Such discussions, nevertheless, are important to assure that tests are measuring what they are intended to measure, and whether they do so consistently. This is an area in which the expertise of behavioral and social scientists can make dramatic and desirable contributions. Concerns about the psychometric properties of measurement tools, whether they are sophisticated physiologic instruments, commonplace laboratory tests, or paper and pencil questionnaires, are indispensable to having confidence in findings from evaluations of patient outcomes.

Measurement error must be reduced to the greatest extent possible. And yet, the armamentarium of instruments that measure constructs relevant to outcomes is limited both in number and in psychometric precision. Therefore, along with the evaluations themselves, an important contribution to patient outcomes is the development of instruments with strong reliability and

validity. These instruments must measure those characteristics deemed to be important indicators of patient outcomes. The complex and ambiguous nature of many of the outcome indicators will make instrument development particularly challenging.

Despite the appeal of examining patient outcomes, it is essential to approach such evaluations with knowledge of the numerous factors that must be considered and an understanding of their limitations. Findings will be weakened if evaluations are not based on sophisticated conceptual models that reflect a comprehensive assessment of patient outcomes. Results will be vacuous if the methodology guiding patient outcomes studies is not grounded in a strong understanding of the complex clinical realities that must be considered in outcomes evaluations.

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## CHAPTER IV

### PATIENT OUTCOMES AND THE MHSS

Just as a DRG system of resource allocation was mandated by Congress for the military, so various uses of patient outcomes data could be prescribed for the MHSS. To assure that unique aspects of the military are taken into account and that the military's response is positive and proactive, five interrelated points will be addressed regarding patient outcomes and the MHSS. It is important that members of the MHSS view patient outcomes from an informed position to allow the best features of patient outcomes to be applied in the MHSS. It is also important that the MHSS team of health careproviders view patient outcomes as an opportunity rather than a threat.

#### The Patient as the Centerpiece of Care

The MHSS can be the vanguard of patient outcomes by demonstrating the dynamic aspects of valuing the patient as the centerpiece of health care. The most beneficial aspect of the emphasis on patient outcomes is that patients assume their rightful place as the centerpiece of care.<sup>1</sup> Patients are purportedly the *raison d'être* for health care systems. Emphasizing patient outcomes affords the opportunity to actualize that belief and to clearly articulate the values of the MHSS.

This is not merely a semantical technicality. The work of Deal and Kennedy underscores that "Values are the bedrock of any corporate culture."<sup>2</sup>(p21) Shared values that pervade both philosophy and actions are inherent to successful corporations. By considering patient outcomes as the first and foremost concern of the MHSS, a common focus and therefore direction can be shared by all members of the system.

The benefits of valuing the patient as the centerpiece of care remain to be substantiated by formal evaluation, but the hypotheses derivable from such a premise are countless. Patients and families are likely to benefit as the system of care and the process of care are designed and implemented to assure achieving the best possible patient outcomes; outcomes that are congruent with patients' desires. The careproviders are likely to benefit by enjoying the success of working together toward mutually supported goals; quality patient outcomes. The military health care system is also likely to benefit; by sustaining a positive work environment the TQM process becomes a reality. Quality improves along with productivity, and both contribute to the cost effective delivery of care.

#### A Vehicle for Integration

The MHSS can also be at the forefront of capitalizing on the opportunities afforded by the emphasis on patient outcomes to integrate various elements of the military health care system. An integrative approach would not only benefit the MHSS, but it would also enhance the ability of the MHSS to contribute to the civilian health care community. The benefits of an integrated approach to patient outcomes will be illustrated with four examples.

First, the preponderance of current research and evaluations regarding patient outcomes is discipline specific. In other words, physicians, nurses, physical therapists and other individual groups of careproviders have studied patient outcomes. This approach is necessary but not sufficient. And yet, multidisciplinary evaluations of patient outcomes are infrequent at best. The complexity of patient outcomes can, nevertheless, best be addressed by using the diverse array of skills and perspectives found among the full compliment

of health careproviders rather than relying upon any one group or splintering into competing factions. Together, a more comprehensive understanding of patient outcomes can be derived. The whole is indeed greater than the sum of its parts.

The MHSS must take the initiative to capitalize on the existing interplay among its health careproviders to develop a prototype for using an integrated approach to patient outcomes. Such a prototype is achievable within the MHSS because of the proficiency and experiences of military clinical practitioners. The MHSS can take the lead in developing an integrated prototype for examining patient outcomes from a broad, comprehensive, multidimensional, multidisciplinary perspective.

Second, an integrated team approach is essential to deal effectively with the shift in clinical problems that will be manifest by the aging population. As the aging population expands, the challenge of treating chronic illness will escalate. Inherent to aging and chronic illness is adjusting the expectations of careproviders and consumers from a cure-oriented model to an approach that blends both cure and care. The care-oriented elements of health delivery may be better understood initially by nonphysician providers whose education is comprised of behavioral and social sciences as well as physical sciences.

A health care team that integrates care and cure will better meet the needs of patients. Along with improving patient outcomes, the integration of care and cure will also yield better outcomes for the health care delivery system itself. For example, cure-oriented systems might focus on mortality data as a reflection of system outcomes. The use of mortality as an outcome indicator is questionable in all cases. But with the increased aging

population, mortality will also increase. If systems focus on mortality statistics as a reflection of the quality of their care, the analysis would be distorted as well as very discouraging. If, however, a more care-oriented indicator such as quality of life was examined, the system could have a more accurate analysis of its effectiveness.

Third, good clinical practice that contributes to good and desirable outcomes will be relevant across the MHSS. In this regard, it would be possible to share resources among the services to support patient outcomes efforts that would benefit all military health care beneficiaries. Furthermore, interservice integration precludes the crippling effects from the considerable time and cost involved in creating guidelines and evaluating outcomes. Here too, the patient as the centerpiece would facilitate setting aside interservice differences while focusing on patients, a point all services have in common. Good practice transcends individual services.

The existing DoD quality assurance program could be used as the basis of an integrated approach to patient outcomes among the services. At present, the quality of medical care throughout the 165 DoD Medical Treatment Facilities (MTFs) is scrutinized in a stringent peer review process known as the Civilian External Peer Review Program (CEPRP). The evaluation is intended to serve as the basis of ongoing education with the goal being to continuously move to higher levels of quality. Findings from the CEPRP are analyzed at three levels: (a) the entire MHSS; (b) each service; and (c) each MTF. In the aggregate, findings have demonstrated only small variations in the rate of specific occurrences by branch of service.<sup>3-5</sup> Although the current MHSS quality assurance program has a strong medical bent,<sup>6</sup> it nevertheless provides a framework for integrating patient outcomes efforts among the services.



The fourth and final example of using patient outcomes as a vehicle to integration concerns two aspects of the TQM program. TQM represents a way to expand the existing MHSS quality assurance program to all health careproviders. By definition, TQM is based on the concept of teamwork. The integration inherent in teamwork provides an excellent opportunity for examining the contributions of all careproviders to achieve desired or quality patient outcomes. The enormity of such an undertaking is considerable. Nevertheless, the challenge does not obviate the need to examine the contributions of all careproviders to patient outcomes.

TQM also represents a way to integrate the three components of the traditional quality assurance framework--structure, process, and outcome--to provide a comprehensive assessment of quality. In this regard, the MHSS could become the standard-bearer for the health care community. Rather than viewing outcomes in isolation of the other quality components, the MHSS could demonstrate the value of integrating all components of the quality assurance framework. In return, the MHSS would benefit by having a comprehensive analysis of the clinical effects of the Coordinated Care approach to organizing care delivery.

#### The Good in Guidelines

The negative reactions to developing and using guidelines are derived from realistic concerns. Nevertheless, there are positive aspects of practice guidelines, and the MHSS is in an excellent position to demonstrate the positive implications of evaluating outcomes and using clinical guidelines. Because of the military's tradition of using information about the quality of care to educate providers to improve care, the foundation is in place to demonstrate the promising aspects of outcomes. A natural offshoot of

education would be the value in knowing which treatments for the same condition yield better outcomes. Such information, in turn, can be very useful in guiding decisions about which interventions to choose, with an eye on cost effectiveness.

Another positive aspect of outcomes represents a note of caution to the military. It relates to the idea that good practice is good practice regardless of the setting in which it occurs. Therefore, the military need not develop guidelines specific to the military. Efficiency and practicality dictate that the MHSS adopt the guidelines developed by civilian agencies. The guideline process is lengthy, costly, and iterative. To duplicate the civilian-based efforts in guideline development would be unwise. Such a practice would be too costly as well as unnecessary. In this regard, guidelines need not be viewed as another monumental task for the MHSS to undertake. Guidelines can be used by the military without committing extensive resources to their development and constant updating.

At the same time, it is important to strive for military representation in groups that are currently developing guidelines, studying outcomes, and creating policy. Whether these are federally sponsored agencies or professional organizations, the wealth of talent and experience among military health careproviders would make a valuable contribution to guideline development, patient outcomes research, or policy formulation. In this way, the military can have a voice in guideline development without duplicating the work.

A possible role for the military in preparing guidelines concerns those clinical conditions that are commonly seen in the population of military beneficiaries. Because there are countless clinical conditions, it is

impossible to predict when guidelines will exist for each clinical problem. Although it is inadvisable, overall, for the military to independently devise guidelines, such efforts would be justifiable for conditions effecting a large portion of the military population. If such efforts are initiated, it is imperative that the guidelines be designed using multidisciplinary teams for their development.

#### Data Driven Decisions

The scientific underpinnings of outcomes and guidelines bring a mechanism for more objective decision-making to the clinical arena. Clinical decisions can be complicated because of their impact on human beings. When human life is involved, decisions can be clouded by emotions. It is possible that the desire to provide the best care becomes confused with trying everything conceivable in the hope that something will work to preserve the preciousness of life itself. The MHSS must embrace the value of basing decisions on solid evidence rather than tradition, provider preference, or emotion. The importance of data driven decisions will be addressed by considering four points.

First, rather than reinforcing the emotion-laden term rationing, evidence from patient outcomes studies provides solid data for making informed decisions. For example, if outcomes for two treatments are comparable but one procedure is less costly, providers and patients can join together in making informed choices. In this way, the system could work within itself to limit cost rather than waiting for an external agency to establish outcome criteria for reimbursement purposes. Similarly, in the state of Oregon, data driven decisions are behind a courageous effort in deciding how limited health resources will be used. But rather than approaching these difficult choices

from the negative perspective of rationing, the choices can be framed in a positive light of using the best evidence to make decisions.

A second aspect of data driven decisions concerns designating specific facilities as specialized treatment and referral centers. Although the MHSS has already initiated this concept, it is important to view regionalization as a data driven decision. There is a growing body of information that supports the use of regionalization.<sup>7-13</sup> Overall, higher volume is associated with better outcomes; concentrating certain types of patients in designated facilities can reduce undesirable results. There is debate as to whether the benefits of specialized treatment and referral centers is due to provider or hospital characteristics. Nevertheless, decisions to regionalize care are supported by defensible data. The issue of distinguishing provider effects from hospital effects at specialized centers simply lends support to examining based on all aspects of quality assurance.

Third, the value of data for decision-making is also supported by examining the quality of care currently delivered within the MHSS. Military health care suffers from a tarnished image. Various undesirable clinical outcomes that occur within the MHSS receive considerable publicity. These situations are unfortunate and undesirable. These situations, however, also represent outliers; they are isolated cases that, when viewed individually, misrepresent the quality of care within the MHSS. By looking at the data in their entirety it is evident that, contrary to the image that is often conveyed through the press, the quality of health care in the military is very good.

Data on the quality of military health care can be used to polish the tarnished image of military health care delivery system. For example,

findings from the previously mentioned CEPRP indicate that civilian physicians agree with decisions made by military physicians in 97.9% of the cases. Stated differently, of the 79,896 tasks reviewed, the review panel disagreed with only 1650 tasks, or 2.1%.<sup>14</sup> It is important to underscore that agreement and disagreement do not represent desirable and undesirable outcomes. Rather, they reflect whether civilian physician peers concur with decisions made by military physicians.

Another impressive, data-based indicator of the success of military health care concerns infant mortality rate. Infant mortality is a regrettable problem in the United States. And yet, in the MHSS, the infant mortality rate is currently 3.8/1000 which is less than the national average. This rate is also well below the national goal set for the year 2000 of 7 infant deaths per 1000 births.<sup>15</sup> The value of such data should not be underestimated. It is important to provide the MHSS beneficiaries with an understanding of the good in military health care to counter some of the negative images that prevail. By understanding the data, consumers of military health care can have confidence in their medical benefits. Consumers of military health care can use data to make informed decisions regarding where they choose to receive their health care. Such information is inherent to the Coordinated Care delivery system.

A final point related to data for decision-making concerns the kind of data that are available. This necessarily taps into issues regarding data elements and data bases. The MHSS both uses and is developing a variety of automated information systems. The Defense Medical Information System (DMIS), for example, is comprised of several automated subsystems such as the Automated Quality of Care Evaluation Support System (AQCESS) and the Composite

Health Care System (CHCS). It is essential that data elements reflecting pertinent outcome indicators be added to these systems so that they can be retrieved to assess patient outcomes.

The enormity of this task is considerable. There must be consensus among health care providers regarding which outcomes indicators should be included in the data bases. There must be a balance between including the easier to capture indicators such as mortality and the more difficult to quantify measures such as quality of life. There must be a mechanism to capture outcomes as a continuum; to follow patients throughout the course of their illnesses, over a series of admissions and outpatient visits, rather than evaluating discrete patient encounters.

It may be attractive to augment the existing MHSS information systems with existing data bases from the civilian sector. For example, the JCAHO is developing a data base to be used for outcomes analysis.<sup>16,17</sup> The HCFA already has an electronic clinical system that captures data that could be used for outcome analysis.<sup>18,19</sup> Such decisions must be guided with a clear understanding of the complexity of evaluating patient outcomes. The HCFA data base, for instance, focuses on physician providers rather than a composite of the many care providers who effect patient outcomes. The focus, therefore, is provider specific rather than patient oriented. The latter approach is more desirable. Furthermore, the HCFA data elements are also limited. They reflect morbidity, mortality, disability, and cost. Such indicators preclude a more comprehensive understanding of outcomes.

The issue of data elements and data bases, while complicated, is inextricable from meaningful evaluations of patient outcomes. The MHSS is challenged to develop a system that will support a true reflection of patient

outcomes. Civilian groups are struggling with this same challenge. Here too, the MHSS can be at the forefront of the emphasis on patient outcomes by developing a parsimonious but comprehensive set of outcome indicators that can be used in an automated information system.

#### Patient Responsibility for Health

The fifth and final point regarding patient outcomes in the MHSS circles back to the patient. The emphasis on patient outcomes not only allows but demands that patients take responsibility for their health and become active participants in their care. This point will be addressed from three aspects, patient involvement in the plan of care, patient education, and health promotion.

First, patients must be active participants in developing their plan of care. It is not possible to target patient outcomes that are meaningful for the patient without patient input. In addition, it has been demonstrated that when patients and practitioners agree on outcomes, patients are more satisfied with care.<sup>20</sup> Furthermore, patients not only expressed a preference for participating in making decisions about their health care, but patient involvement in care also reduce perceived disease-related limitations.<sup>21</sup>

Second, patient education has long been espoused as important to recovery, but the cost effectiveness of such instruction may not have been clear. Without addressing the variations in learning and variations in the amount of information people prefer, there is evidence that patient education is related to outcomes. In surgical patients, for example, patient education reduced length of stay, postoperative pain, and complications.<sup>22,23</sup> The MHSS has been sensitized to the importance of patient education for some time. The challenge remains to verify the impact patient education has on patient

outcomes. The challenge also remains to make those elements of patient education that are more effective a more prominent component of the MHSS.

Finally, individual responsibility for health is a critical element in programs that emphasize health promotion. On April 16, 1991, William Roper, M.D., former director of HCFA and current director of the Center for Disease Control, provided testimony to the House Ways and Means Committee. The thrust of his remarks concerned disease prevention, which translates to health promotion. By shifting the focus from treatment to prevention, health care costs may be reduced. Rather than treating the effects of unhealthy lifestyles, health promotion efforts help to thwart the development of costly chronic conditions.

The MHSS has been an advocate of health promotion for several years. DoD Directive 1010.10, issued in 1986, established the MHSS health promotion program. This program targeted six areas: (a) smoking cessation and prevention, (b) physical fitness, (c) nutrition, (d) stress management, (e) alcohol and drug abuse prevention, and (f) early identification and treatment of hypertension. The problems that arise from inattention to these six areas are universal rather than specific to the military. Nevertheless, the MHSS concerns about health promotion represents strong corporate interest in sustaining health.

The military has instituted and enforced several programs to help its health care beneficiaries develop more healthy lifestyles. The effects of such programs must be examined longitudinally. The real impact of such programs will not be immediately evident as their effects are intentionally longterm. But once again, the MHSS is pioneering health promotion efforts that can be examined in relation to patient outcomes. These efforts can also



be held up to the civilian community as models that can be used in other settings. But for health promotion to work in any arena, the patient must clearly be a responsible partner in health.

Although the ramifications of the emphasis on patient outcomes are considerable, the MHSS is in an excellent position to respond to concerns about the effectiveness of treatments and outcomes of care positively and proactively. Many of the programs that already exist in the MHSS provide substantial support for focusing on patient outcomes. And where new programs need to be instituted, the MHSS has a unique collection of highly skilled staff who can assume leadership in demonstrating the value of verifying what works and what does not.

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## CHAPTER V

### CONCLUSION

The fanfare surrounding patient outcomes must neither obscure the salient points that led to the emphasis on outcomes nor ignore the positive potential in the focus on outcomes. The cost of health care, both in the civilian sector and in the military, is disproportionately rising relative to the rest of the economy. Patients and providers have not previously examined health care purchases with a prudent eye to cost. But as careproviders, consumers and Congress gain a heightened awareness the cost of care, various practices have come under scrutiny. One of these, the assessment of effectiveness and outcomes, is currently in the spotlight. Prodded by Congress, the health care community is struggling to curb spiraling health care costs through evaluating patient outcomes.

The MHSS is susceptible to policy decisions made in the civilian sector. If evaluations of patient outcomes demonstrate success in containing health care costs, it is highly probable that the military will be expected to base decisions on patient outcomes as well. It would be advantageous for the MHSS to respond proactively rather than wait for a mandate to be generated regarding cost and patient outcomes. A proactive response derives from an informed position and a thoughtful analysis of the issues. Outcomes are irrefutably an important factor in the quality equation. Along with the healthy skepticism that is appropriate to any new initiative, it is important to embrace the positive aspects of patient outcomes for the benefit of patients, families, careproviders, and the MHSS.

Inherent to discussions of patient outcomes is an understanding of the complex conceptual and methodologic issues that influence evaluations of patient outcomes. These issues are not simply esoteric, erudite points to ponder. Rather, they are fundamental to the scientific rigor and pragmatic significance of the evaluations. The conceptual and methodologic issues are central to assuring that the evaluations are meaningful and that conclusions are accurately derived.

The MHSS is comprised of a committed group of careproviders who are more alike than different. The commonalties among MHSS personnel contribute to a sense of unity; the unity provides a fertile seedbed for demonstrating the success of patient outcomes and guidelines in curbing the cost of health care while sustaining or better yet improving quality. The civilian sector does not, overall, enjoy this same sense of unity. Responsible leadership for the larger health care community mandates that the MHSS take advantage of the opportunities posed by the patient outcomes emphasis.

By critically examining the tenets of guidelines and patient outcomes, the MHSS can pose cogent concerns. The MHSS can also move forward in demonstrating the value and strengths of making the patient the centerpiece of care, the use of outcomes as a vehicle to integration, the good in guidelines, the usefulness of outcomes data as the basis of making informed decisions, and the role of increasing the patients' responsibility for their health as a natural sequela of outcomes. The military has already made substantial progress in many of these areas. Ongoing attention to these areas is warranted to assure that the military maximizes the positive aspects of the emphasis on patient outcomes. In addition, the contributions to the health care of America will be substantial.

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