Technology Assessment Program

Office of Patient Care Services

UPDATED INFORMATION FOR VA TECHNOLOGY ASSESSMENT PROGRAM (VATAP) REPORTS

In June 2000, VATAP was relocated within the Veterans Health Administration from the Office of Research & Development to the Office of Patient Care Services. The following report was produced prior to the relocation of VATAP.

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Technology Assessment Program

Report No. 2

Transferring Managed Care Principles to VHA

A Summary and Discussion of the Evidence
for the
Effectiveness of Managed Care
and Managed Care Practices

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MDRC
MANAGEMENT DECISION AND RESEARCH CENTER
HSR&D
Health Services Research & Development Service

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

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Transferring Managed Care Principles to VHA: A Summary and Discussion of the Evidence for the Effectiveness of Managed Care and Managed Care Practices

EXECUTIVE SUMMARY

Purpose

The Under Secretary for Health asked the Health Services Research and Development (HSR&D) Service to identify the managed care principles that would enable VA to most improve its efficiency and effectiveness while retaining its unique mission. In response to this request, HSR&D's Management Decision and Research Center (MDRC) prepared this document.

Approach and assumptions

The MDRC used an approach typical of health care technology assessment. This approach synthesizes published research findings and other immediately accessible information to determine whether such information meets policy makers' needs. If policy makers' needs are not met by available information, the synthesis helps to define gaps in knowledge and the questions to be addressed by new research.

We identified managed care principles through the published literature and through contacts with managed care organizations. Managed care principles have not generally been tested for efficiency and effectiveness. Therefore, we assumed that managed care principles are represented by managed care practices. The efficiency and effectiveness of some managed care practices have been tested by analytic research; only descriptive studies are available for other practices.

To efficiently focus on managed care practices supported by rigorous evidence, this synthesis relied on existing reviews of the analytic literature that can be classified as systematic reviews. A systematic review is a more rigorous alternative to the traditional narrative review of the literature. It addresses a focused question, uses appropriate criteria to select studies for inclusion, conducts a comprehensive search, and appraises the validity of the individual studies in a reproducible fashion.

We identified published, high quality systematic reviews for three critical issues in managed care:

- the overall performance of managed care organizations;
- the effectiveness of practices for changing physician behavior;
- interventions to increase the quality and efficiency of primary care.

This document synthesizes the existing systematic reviews in the areas listed above and in two additional areas addressed in less rigorously conducted reviews: the organizational structures that support primary care within managed care; and the potential reductions in health care costs associated with health promotion and disease prevention.

We were unable to identify empirical research in support of the efficiency and effectiveness of some important managed care principles and practices. Accordingly, issues such as the potential ethical concerns of managed care practices, providing population-based health care, supporting an organization through the major cultural and functional changes associated with carrying out managed care principles, and implementing total quality management as a vehicle for resource management, will be addressed in a discussion section. Finally, potential areas for further work by the MDRC will be outlined.

Principles of managed care

The following managed care principles represent those used by mission-driven, nonprofit HMOs that provide appropriate managed care models to VA:

- primary care should be a focus;
- the goal of the organization should be improving the health of the enrolled population;
- care should be integrated throughout the management of quality, (i.e., the management of variation);
- incentives should be aligned to the well-being of the enrolled population;
- a high value should be placed on evidence-based clinical practice (i.e., integrating the best available evidence with individual clinical expertise);
- the ethical impact of a population-based approach to health care decision making and delivery should be addressed through technology assessment and evidence-based decisions.

Managed care practices

The following practices are among those used by managed care organizations to carry out their principles:

- careful selection of the numbers and types of physicians in plan panels in relation to the needs of the population served;
- primary care physicians act as gatekeepers, ensuring adequate access to primary care and the maintenance of full schedules for specialists;
- various types of utilization review and management, which can include physician profiling and care managers to coordinate care in expensive cases;
- influencing physician behavior through education, feedback, participation by physicians in efforts to bring about change, administrative rules, and financial incentives and penalties.

The results of available, high quality systematic reviews addressing three critical issues for managed care are summarized below and on the next pages.

Managed Care Plan Performance Since 1980

Measure	Number of Observations	Results of Comparison with Indemnity Plans
Utilization		
Hospital admission rates	11 (from 7 studies)	• generally lower rates, although some differences small • admission rate differences not consistent across types of HMOs
Hospital length of stay	16 (from 13 studies)	• HMOs general had 1-20% shorter LOS • PGP or staff HMOs did not perform better than IPAs or networks
Hospital days per enrollee	8 (from 6 studies)	• HMOs consistently lower • small number of observations made it difficult to detect differences among types of HMOs
Physician office visits per enrollee	14 (10 studies); some analyses included only 10 observations from most recent data	• most recent data showed either little difference or higher rates for HMOs • fewer mental health visits in HMOs • no consistent evidence that substantially lower HMO enrollee hospital use accompanied by substantially higher use of physician services
Use of services that are expensive and/or have less costly alternatives	20 (from 9 studies)	• HMOs used average of 22% fewer procedures, tests, or treatments in childbirth, heart disease, colon and colorectal cancer, cardiovascular accident • 15/18 reductions statistically significant
Charge, expenditure, and premium performance		
Hospital charges per stay	8 (from 7 studies)	• mostly small nonsignificantly lower hospital charges per stay in HMOs • usefulness of data questionable (charges billed differ from those paid)
Hospital expenditures per enrollee	4 (from 3 studies)	• HMO observations had limited usefulness
Physician/outpatient charges or expenditures per enrollee	3 (from 3 studies)	• mixed statistically significant results (1 HMO higher, 2 lower)
Total expenditures per enrollee	2 (from 2 studies)	• general lower expenditures (11-13%) for HMOs
HMO plan market penetration impact on hospital costs	No peer reviewed data available	• mixed results in data before 1985 • impact of HMOs greatest in areas with substantial hospital market competition; effect due to reduction in growth rate of indemnity plan hospital expenditures
Premium levels	No peer reviewed data available	• other data showed that when employer offered HMO, family premiums rose due to adverse selection
Prevention, quality of care, and enrollee satisfaction		
Prevention and health promotion	7 (from 6 studies)	• HMO enrollees consistently received more preventive tests, procedures, and examination or health promotion activities.
Quality of care	17 (from 16 studies)	• Roughly comparable quality of care using process or outcomes measures
Enrollee satisfaction	8 (from 5 studies)	• fewer HMO enrollees were as satisfied with, or evaluated as highly, perceived quality of care and patient-physician, interactions • HMO enrollees very satisfied with, or rated highly, most aspects of care • HMO enrollees more satisfied with, or rated more highly, financial aspects of health plan

Adapted from Miller and Luft (1994)

Changing Physicians' Practices

Specific Intervention	Results/Comments
Education	
Continuing medical education	• most studies of traditional forms of CME have not looked for changes in patient outcomes or have not found that programs succeeded in improving outcomes • changes in practices can occur following CME if curriculum is designed to change specific types of behaviors
Clinical practice guidelines	• guidelines have been unsuccessful in changing physicians' practices • lack of successful attributed to: - guidelines are not written for practicing physicians, but rather focus on current state of scientific knowledge; physicians have difficulty applying guidelines to specific patients - physicians may disagree with or distrust guidelines written by "national experts"; many physicians rely primarily on their own or colleagues experiences in deciding whether to adopt new interventions or techniques - physicians may choose to ignore guidelines for nonclinical reasons: financial incentives or fear of malpractice litigation.
Providing guidelines to opinion leaders	• may offer great promise for changing physicians' practices • several studies have documented changes in practice lasting at least two years • labor-intensive and expensive; effectiveness outside research setting unclear
Academic detailing (targeting individual physicians for education)	• effective in virtually every study in which it was used • can be directed toward specific physicians whose practices most need to change • labor-intensive and expensive; effectiveness outside research setting unclear
Feedback	
Giving physicians information about how their practices or patient outcomes compare with those of other physicians or with external standard	• not yet known whether feedback can affect patient outcomes • studies have demonstrated reductions in LOS, number of medications prescribed or tests ordered for outpatients, increased compliance with cancer screening guidelines • some studies have demonstrated that reminders at time of patient visit are more effective than feedback • other studies have shown little or no effect for feedback; failures useful in defining necessary conditions for feedback to succeed: - physicians must recognize that current practices need improvement - person receiving feedback must be able to act on it - physicians may not respond to feedback if they are unable to do so immediately
Participation by physicians in efforts to change	
Give physicians role in setting standards against which their performance will be judged	• published evaluations not promising, but difficult to interpret due to methodologic problems
Continuous quality improvement	• involuntary may be attractive to physicians because focus is on improving quality of care (via improvements in complex processes of care rather than physician practices per se) • uncontrolled evaluations suggest that CQI can improve processes of care • randomized trials comparing CQI to traditional QA program under way
Administrative interventions	
Review of prescriptions	• effective in reducing expenditures on drugs • require dedicated personnel • must be maintained indefinitely to achieve results
Altering order forms to reflect preferred dosing or to eliminate certain diagnostic tests	• generally successful
Requiring second opinion before surgery	• not studied in randomized trials to date • effect on overall costs and outcomes unknown
Utilization review	• successful in reducing amount of resources used in inpatient care • effect on overall utilization and costs not clearly beneficial
Potential adverse effects of administrative interventions	• reducing one kind of care (e.g., prescription drug use) may be associated with increases in another (e.g., increased rates of admission to nursing homes) • contribution to "hassle factor" for physicians
Financial Incentives	
Different methods of payment to physicians	• may result in different styles of practice • fee-for-service payment for outpatient visits associated with physicians seeing more patients • physicians in HMOs less likely to hospitalize patient if paid by salary or capitation, or if at personal financial risk for treatment decisions • physicians respond to financial incentives direct at hospitals

Adapted from Greco and Eisenberg (1993)

Interventions for Improving the Quality and Economy of Primary Care

Primary care goal	Interventions achieving goals
Improving quality	
Access	• academic group practices with expanded clinic and telephone coverage • network of clinics across geographic areas with traditionally poor access
Preventive care	• computerized reminders • monthly summary feedback to MDs • smoking counseling chart reminders, free nicotine gum, or both • committee chart audit and feedback • ambulatory care rotation with education, feedback, checklists • RN-administered screening protocol
Technical Process	• multidisciplinary team geriatric assessment • MDs notified of patients on ≥ 10 medications
Management/coordination	• nurse clinician shift coordination, completion of screening protocols • intensive follow up of post-discharge patients • interdisciplinary geriatric assessment team • develop and improve hospital group practices
Patient function	• multiple telephone contacts instead of clinic visit for elderly patients
Patient satisfaction	• high profile development of ambulatory care
Continuity, comprehensiveness Humanistic approach Physical environment Patient morbidity/mortality	None
Improving economy	
Reduce MD-ordered services	• computer feedback of previous lab test results, number of tests ordered • computer prompts re likelihood of positive test for condition of interest • computer display of individual and total test charges • academic detailing by clinical pharmacists or specially trained physicians • MDs notified of patients on ≥ 10 medications • feedback on prescription charges • feedback on rank order among peers re number of tests ordered
Increase appropriate use of services	• postdischarge nurse telephone follow-up • network of primary care clinics • patient education on appropriate use of ambulatory care visits • multiple telephone contacts instead of routine office visits
Shift care from inpatient to outpatient	• postdischarge nurse telephone follow-up
Reduce costs/charges	• practice teams coordinate inpatient/outpatient care
Improve efficiency	• multiple telephone contacts instead of routine office visits • decentralized patient registration with single receptionist • practice teams coordinate inpatient/outpatient care

Adapted from Yano et al. 1974

Cautions when implementing research results on managed care

Interpretation of the published evidence is complicated by several factors:

- Untangling the specific contributions of individual managed care principles or practices from the effects of other, concurrent "interventions," environmental changes, or changed over time is problematic.

- There are many definitions of "managed care," and a corresponding number of types of organization to which the term is applied. All of these organizations are complex health care systems whose structures and practices are evolving rapidly. In this context, empirical research may be rapidly outdated.

VA has already begun to adopt managed care practices, but would benefit from explicitly addressing several additional principles

Managed care practices have been adopted by most health care organizations in the United States, including VA. However, VA would benefit from explicit attention to specific areas that have been addressed by exemplary managed care organizations:

- the ethical dilemmas that may be associated with managed care should be addressed through population health advocacy;

- effective health care services and delivery mechanisms should be defined through technology assessment;

- explicit change management strategies (mobilizing leadership to take ownership of the change; creating roles and work processes that are aligned with strategic and structural changes; and developing human resource strategies to support culture change) are required to implement population health, evidence-based decision making, and other managed care practices;

- quality management should be used throughout the VA system to manage resource use.

Meeting further information needs

Areas in which further syntheses of the literature could be performed by the MDRC include:

- the effectiveness of case management programs, particularly those associated with substance abuse, geriatrics, and psychiatry;

- effectiveness and economic impacts of disease prevention and health promotion programs pertinent to VHA's population;

- analysis of the quality and validity of existing clinical practice guidelines;

- "benchmark" practices or innovations by managed care organizations;

- the effectiveness of efforts to reduce utilization by patients (e.g. co-payments).

TABLE OF CONTENTS

I. INTRODUCTION 1

II. METHODS 1

III. STRUCTURE OF THIS DOCUMENT 2

IV. CHARACTERISTICS OF MANAGED CARE 3

V. PRINCIPLES OF MANAGED CARE 4

VI. OVERALL PERFORMANCE OF MANAGED CARE 5

VII. MANAGED CARE PRACTICES 7

VIII. ORGANIZATIONAL STRUCTURE AND MANAGED PRIMARY CARE 9

IX. CHARACTERISTICS OF PROGRAMS THAT ENHANCE THE QUALITY AND ECONOMY OF PRIMARY CARE 10

X. HEALTH PROMOTION, SELF MANAGEMENT, AND DISEASE PREVENTION 11

XI. DISCUSSION 12
- A. Avoiding potential conflicts of interest in managed care by providing optimal care for populations 13
- B. Population-based clinical practice 14
- C. Optimal care for populations should be based on evidence and formal technology assessment 14
- D. Managing organizational and behavioral change 15
- E. Total quality management 16

XII. AREAS FOR FURTHER RESEARCH 17

XIII. REFERENCES 18

LIST OF TABLES AND FIGURES

Table 1: Managed Care Plan Performance Since 1980 6
Table 2: Changing Physicians' Practice 8
Table 3: What we know and what we do not yet know about organizational structure and the quality of care in managed primary care settings 9
Table 4: Interventions for improving the quality and economy of primary care 10
Table 5: Potential effects of health promotions and disease prevention programs 12

I. INTRODUCTION

The Under Secretary for Health asked the Health Services Research and Development (HSR&D) Service to identify the managed care principles that would enable VA to most improve its efficiency and effectiveness while retaining its unique mission. In response to this request, HSR&D's Management Decision and Research Center (MDRC) prepared this document.

This document is an overview and synthesis of existing literature. It represents the initial work done by the MDRC to determine the extent to which readily available published evidence on implementing managed care principles meets the Under Secretary's information needs, and to outline potential areas for further work. The document was prepared by the MDRC Technology Assessment Program (which took responsibility because of its expertise in systematic reviews and syntheses of the literature), with contributions from the MDRC's programs in Information Dissemination and Management Research.

II. METHODS

In preparing this document, the MDRC used an approach typical of health care technology assessment. This approach incorporates a synthesis of research findings and other information to determine whether readily available (i.e., published or otherwise accessible in the public domain) information meets policy makers' needs. If policy makers' needs are not met by available information, the synthesis helps to define knowledge deficiencies and the questions to be addressed by new research.

Core principles of managed care were first identified through the published literature and through contacts with staff- and group-model health maintenance organizations (HMOs) that, because of their non-profit status and missions, were felt to provide models appropriate to VA's mission. Currently, VA resembles a staff-model HMO. However, many HMOs are beginning to emphasize their group-model components and VA should recognize this trend as it designs future managed care structures.

Managed care principles have not generally been tested for efficiency and effectiveness. Therefore, for the purposes of this synthesis, we assumed that managed care principles are represented by managed care practices. We then identified empirical research studies on the efficiency and effectiveness of managed care practices.

To identify empirical research, the MDRC conducted searches of its own data bases and those maintained by the National Library of Medicine and other sources for literature addressing the effectiveness of managed care, specific managed care practices, and managed primary care. These searches indicated that a very large and widely diffused literature on managed care is available, much of which is descriptive rather than analytic. Most of the analytic research aggregates data from staff and group-model HMOs; relatively little research specific to other models of managed care was identified.

To efficiently focus on topics supported by rigorous evidence, this document relies on existing reviews of the analytic literature that can be classified as systematic reviews. A systematic review addresses a focused question, uses appropriate criteria to select studies for inclusion, conducts a comprehensive search, and appraises the validity of the individual studies in a reproducible fashion. Three high quality systematic reviews and two of slightly lesser rigor (rather than the original research papers that are cited in the reviews) will be the major source of information for this document.

III. STRUCTURE OF THIS DOCUMENT

Existing reviews defined five major, related areas of research relevant to VA's attempts to implement effective managed care principles and practices in concert with its efforts to emphasize primary care. This review will be organized around these areas:

- the overall performance of managed care;
- the effectiveness of specific interventions to change or manage physicians' practices (managing clinical practice is a central tenet of managed care);
- interventions that enhance the quality and efficiency of primary care;
- organizational structures that enhance primary care within managed care;
- the possible reductions in needs for services or in costs that are associated with health promotion and disease prevention programs.

Some managed care principles and practices have not been the subjects of published systematic reviews of the literature but are important to VA and will be addressed in a discussion section:

- Managed care principles and practices should be implemented with concern for potential conflicts of interest. The literature on the ethics of managed care indicates that managed care practices are justified if the cost-savings achieved by managing care are used to allocate resources equitably on behalf of a community's or a population's health.
- A population-based approach to health care is grounded in identifying clinically important subgroups in a delivery system's population, defining and assuring proven interventions for all members of each subgroup, and regularly monitoring progress (Mullen and Kalter, 1988; Voelker, 1994). Some staff- and group-model HMOs have explicitly adopted this approach (Payne et al. 1995), and HMO enrollees consistently receive more preventive tests and procedures and more health promotion activities than do enrollees of fee-for-service plans (Miller and Luft, 1994).
- Evidence-based clinical and policy decision making that explicitly recognizes opportunity costs (i.e., technology assessment and critical analysis) is essential to delivery of high-quality, cost-effective care to populations.
- Adoption of population- and evidence-based approaches to care will require significant changes in training and culture for VA clinicians and managers. Managing cultural and organizational change should be a focus for VA.
- Total quality management is one potential vehicle for distributing authority, for encouraging an analytic, evidence-based approach to decisions at all levels of VA, and for managing resource use.

The final section of this document will list areas in which the MDRC could produce further syntheses of the literature.

IV. CHARACTERISTICS OF MANAGED CARE

Various definitions and characterizations of managed care are available in the literature; these include:

> "… the term managed care is most typically used synonymously with prepaid care…A distinguishing characteristic of managed care arrangements is their emphasis on the role of the primary care provider as gatekeeper and coordinator for all health care services. This feature is believed to contribute to the potential for managed care to control costs while maintaining quality." (Safran et al. 1994)

> "…an integrated system of health care providers and facilities designed to care for a group of people in a geographically defined area who are in all phases of health, through activities ranging from health promotion for working adults to hospice care for the terminally ill." (Rogers et al. 1994)

> "… a system that integrates the financing and delivery of appropriate medical care by means of the following features: contracts with selected physicians and hospitals that furnish a comprehensive set of health care services to enrolled members, usually for a predetermined monthly premium; utilization and quality controls that contracting providers agree to accept; financial incentives for patients to use the providers and facilities associated with the plan; and the assumption of some financial risk by doctors, thus fundamentally altering their role from serving as agent for the patient's welfare to balancing the patient's needs against the need for cost control…" (Iglehart, 1992)

> "Managed care changes traditional indemnity insurance and fee-for-service practice by integrating the financing and delivery of medical services, with the aim of controlling costs and improving quality. Both the patient and the physician are managed through policies that restrict the patient's choice of providers and medical options and that limit the clinical autonomy of physicians." (Rodwin, 1995)

> "Managed-care organizations contract with or employ more primary care doctors and fewer specialists than now serve the general population, and primary care physicians assume broader roles in these systems." (Iglehart, 1994)

> "…Added to the traditional 1:1 obligations toward individual patients will be a whole new set of 1:n obligations toward a relevant overall population. This transformation has already occurred among physicians of the more "mature" staff and group model HMOs." (Greenlick, 1995)

> "The traditional health maintenance organization (HMO), as defined by Donabedian (1983), remains an attractive paradigm for the provision of cost-effective health care. Prepayment imposes the discipline of a fixed budget, and responsibility for the full complement of services ensures a degree of balance between primary and specialty care. The presence of a defined population whose members have specific sources of primary care clarifies accountability, which permits epidemiologically based planning and management of primary and preventive care services…" (Wagner, 1992)

V. PRINCIPLES OF MANAGED CARE

In a keynote address to the recent annual meeting of the International Society for Technology Assessment in Health Care, the chief executive officer of Kaiser Permanente (Lawrence, 1996) outlined the principles that support his organization's actions. These principles are confirmed in the literature on staff- and group-model HMOs, and provide models to VA:

- the organization should be mission-driven and non-profit;
- primary care should be a focus;
- the goal of the organization should be improving the health of the enrolled population;
- care should be integrated throughout disease processes;
- resource use should be managed through the management of quality, i.e., by the management of variation;
- incentives should be aligned to the well-being of the enrolled population, not to the punishment of physicians for individual clinical decisions;
- the ethical impact of a population-based approach to health care decision making and delivery should be addressed through technology assessment;
- a high value should be placed on physician management of clinical care: when only inconclusive evidence regarding "what works" is available, physicians still need to rely on judgment (i.e., evidence-based medicine, which integrates the best available evidence with individual clinical expertise (Sackett et al. 1996), should be the model for clinical practice).

VI. OVERALL PERFORMANCE OF MANAGED CARE

Miller and Luft (1994) provide the most comprehensive review of managed care performance since 1980; they include publications resulting from the Rand Health Insurance Experiment. These authors found very few data on preferred provider plans or point of service plans that met their selection criteria. Accordingly, they restricted their analyses and generalizations to HMOs of several types: prepaid group practice, network, staff individual practice association (IPA), and mixed-model.

The review found that, in comparison with indemnity plans, HMOs had somewhat lower hospital admission rates, 1% to 20% shorter length of stay, the same or more physician office visits per enrollee, less use of expensive procedures, greater use of preventive procedures, mixed results on outcomes, and somewhat lower enrollee satisfaction with services but higher satisfaction with costs. Prepaid group practice or staff model HMOs doe not appear to be more effective in controlling costs and enhancing quality than IPAs or network HMOs. Miller and Luft suggest caution in generalizing from their findings, due to unmeasured selection bias, diverse and rapidly changing health plans and local market conditions, and relatively few research results.

Miller and Luft note that the recent literature on managed care plan performance does not provide policy makers with adequate bottom-line estimates of actual expenditure differences per enrollee compared with indemnity plans. However, inpatient services account for a higher percentage of total expenditures than do outpatient services, HMOs used fewer services that are expensive and/or have less costly alternatives, and HMOs provided more comprehensive coverage than did indemnity plans. Miller and Luft therefore conclude that the literature suggests that HMOs provide care at lower cost than do indemnity plans.

Finally, Miller and Luft advocate continued research, much of which would be necessary to answer definitively many questions regarding the transfer of managed care practices to VA. They note that:

> "…There are not many results for most dimensions of performance, and there are few or no results for key summary measures of performance, including total health plan and system-level expenditures, out-of-pocket costs per enrollee, and the level and rate of growth of premiums. There is a particularly pressing need for more comprehensive studies that produce use, expenditure, and premium performance results side by side with physiology-, pathology-, and mortality-based outcomes, as well as functional health –related quality of life and enrollee satisfaction outcomes. Such studies also need to determine what "works" in managed care (as opposed to whether managed care "works")…"

A Summary of the review by Miller and Luft (1994) is provided in Table 1.

Table 1: Managed Care Plan Performance Since 1980

Measure	Number of Observations	Results of Comparison with Indemnity Plans
Utilization		
Hospital admission rates	11 (from 7 studies)	• generally lower rates, although some differences small • admission rate differences not consistent across types of HMOs
Hospital length of stay	16 (from 13 studies)	• HMOs generally had 1-20% short LOS • PGP or staff HMOs did not perform better than IPAs or networks
Hospital days per enrollee	8 (from 6 studies)	• HMOs consistently lower • small number of observations made it difficult to detect differences among types of HMOs
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Use of services that are expensive and/or have less costly alternatives	20 (from 9 studies)	• HMOs used average of 22% fewer procedures, tests, or treatments in childbirth, heart disease, colon and colorectal cancer, cardiovascular accident • 15/18 reductions statistically significant
Charge, expenditure, and premium performance		
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Hospital expenditures per enrollee	4 (from 3 studies)	• HMO observations had limited usefulness
Physician/outpatient charges or expenditures per enrollee	3 (from 3 studies)	• mixed statistically significant results (1 HMO higher, 2 lower)
Total expenditures per enrollee	2 (from 2 studies)	• generally lower expenditures (11-13%) for HMOs
HMO plan market penetration impact on hospital costs	no peer reviewed data available	• mixed results in data prior to 1985 • impact of HMOs greatest in areas with substantial hospital market competition; effect due to reduction in growth rate of indemnity plan hospital expenditures
Premium levels	no peer reviewed data available	• other data showed that when employer offered HMO, family premiums rose (HMO premiums more expensive) and indemnity premiums rose due to adverse selection
Prevention, quality of care, and enrollee satisfaction		
Prevention and health promotion	7 (from 6 studies)	• HMO enrollee consistently received more prevention tests, procedures and examination or health promotion activities
Quality of care	17 (from 16 studies)	• Roughly comparable quality of care using process or outcome measures
Enrollee satisfaction	8 (from 5 studies)	• Fewer HMO enrollees were as satisfied with, or elevated as highly, perceived quality of care and patient-physician interactions • HMO enrollees very satisfied with, or rated highly, most aspects of care • HMO enrollees more satisfied with, or rated more highly, financial aspects of health plan

Adapted from Miller and Luft (1994)

VII. MANAGED CARE PRACTICES
(methods for managing or changing physicians' behavior)

Miller and Luft (1994) note that physician practice is what is "managed" in managed care. Other characterizations of managed care include patient access restrictions. Since VA currently has little capacity to manage patient access, this document emphasizes managed care approaches to changing physicians' practices. However, the management of patient demand and need for health care services will be addressed as part of the discussion of health promotion and disease prevention.

Iglehart (1991) defines the basic challenge of managed care as creating systems in which physicians are delegated the responsibility for managing care and then held accountable for their performance. This is an ideal situation, which is not always realized: regulatory, rule-based practices are also employed. There are four main categories of practices used to manage physician behavior; within these categories, specific practices may be quite variable and unique to the managed care setting in which they are used:

- careful selection of the number and types of physicians in plan panels in relation to the needs of the population served (Iglehart, 1992; Miller and Luft, 1994);

- primary care physicians act as gatekeepers, ensuring adequate access to primary care and the maintenance of full schedules for specialists (Rodwin, 1995; Iglehart, 1992);

- various types of utilization review and management, which can include physician profiling (Iglehart, 1992) and case managers to coordinate care in expensive cases (Rodwin, 1995);

- influencing physician behavior through education, feedback, participation by physicians in efforts to bring about change, administrative rules, and financial incentives and penalties (Greco and Eisenberg, 1993).

Greco and Eisenberg (1993) review the available randomized clinical trial literature on methods to change physicians' practices; their results are summarized in Table 2. These authors conclude that no particular type of intervention is inherently effective, particularly when used in isolation; combinations of methods are generally superior to single methods.

Greco and Eisenberg recommend that interventions be appropriate to the desired changes in practice. Accordingly, successful interventions require an understanding of the motivations underlying current practice. Physicians also need to support proposed changes in practice, and to perceive the changes as opportunities for improvement rather than as threats.

Table 2: Changing Physicians' Practice

Specific Intervention	Results/Comments
Education	
Continuing medical education	• most studies of traditional forms of CME have not looked for changes in patient outcomes or have not found that programs succeeded in improving outcomes • changes in practice can occur following CME if curriculum is designed to change specific types of behaviors
Clinical practice guidelines	• guidelines have been unsuccessful in changing physicians' practices • lack of success attributed to: - guidelines are not written for practicing physicians, but rather focus on current state of scientific knowledge; physicians have difficulty applying guidelines to specific patients - physicians may disagree with or distrust guidelines written by "national experts"; many physicians rely primarily on their own or colleagues' experiences in deciding whether to adopt new interventions or techniques - physicians may choose to ignore guidelines for nonclinical reasons: financial incentives or fear of malpractice litigation
Providing guidelines to opinion leaders	• may offer great promise for changing physicians' practices • several studies have documented changes in practice lasting at least two years • labor-intensive and expensive; effectiveness outside research setting unclear
Academic detailing (targeting individual physicians for education)	• effective in virtually every study in which it was used • can be directed toward specific physicians whose practices most need to change • labor-intensive and expensive; effectiveness outside research setting unclear
Feedback	
Giving physicians information about how their practices or patient outcomes compare with those of other physicians or with external standard	• not yet known whether feedback can affect patient outcomes • studies have demonstrated reductions in LOS, number of medications prescribed or test ordered for outpatients, increased compliance with cancer screening guidelines • some studies have demonstrated that reminders at time of patient visit are more effective than feedback • other studies have shown little or no effect for feedback; failures useful in defining necessary conditions for feedback to succeed: - physicians must recognize that current practices need improvement - person receiving feedback must be able to act on it - physicians may not respond to feedback if they are unable to do so immediately
Participation by physicians in efforts to change	
Give physicians role in setting standards against which their performance will be judged	• published evaluations not promising, but difficult to interpret due to methodologic problems
Continuous quality improvement	• involvement may be attractive to physicians because focus is on improving quality of care (via improvements in complex processes of care rather than physician practices per se) • uncontrolled evaluations suggest that CQI can improve processes of care • randomized trials comparing CQI to traditional QA program under way
Administrative interventions	
Review of prescriptions	• effective in reducing expenditures on drugs • require dedicated personnel • must be maintained indefinitely to achieve results
Altering order forms to reflect preferred dosing or to eliminate certain diagnostic tests	• generally successful
Requiring second opinion before surgery	• not studied in randomized trials to date • effect on overall costs and outcomes unknown
Utilization review	• successful in reducing amount of resources used in inpatient care • effect on overall utilization and costs not clearly beneficial
Potential adverse effects of administrative interventions	• reducing one kind of care (e.g. prescription drug use) may be associated with increases in another (e.g. increased rates of admissions to nursing homes) • contribution to "hassle factor" for physicians
Financial incentives	
Different methods and payment to physicians	• may result in different styles of practice • fee-for-service payments for outpatient visits associated with physicians seeing more patients • physicians in HMOs less likely to hospitalize patient if paid by salary or capitation, or if at personal financial risk for treatment decision • physicians respond to financial incentives directed at hospitals

Adapted from Greco and Eisenberg (1993)

VIII. ORGANIZATIONAL STRUCTURE AND MANAGED PRIMARY CARE

Starfield et al. (1995), note that primary care and managed care are not the same. A comprehensive discussion of primary care is beyond the scope of this review and is readily available elsewhere [Primary Care in VA (Starfield et al. 1995) provides a succinct overview and useful reference list, and has been widely distributed within the VA]. However, HMOs are generally based on primary care networks, and VA's current focus on primary care indicated that VA managed care would be built on a primary care infrastructure.

Under managed care, large organizations rather than individual or small group practices provide primary care (Barr, 1995). Increasing health care organization size is associated with decreasing patient satisfaction with primary care (due to a trade-off between service and efficiency), and patient and provider satisfaction are strongly correlated. The effect of organizational characteristics of managed primary care systems such as size, complexity, and professional autonomy on patient satisfaction, physician satisfaction, and cost should be considered as VA implements managed care structures and practices.

Barr (1995) reviewed the literature on organizational structure and managed primary care; a summary is provided in Table 3. Staff-and group-model HMOs have recognized many of the organizational structure considerations noted by Barr. For example, many large HMOs have subunits (e.g. smaller group practices within the large organization) that recognize the size constraints on large organizations that attempt to deliver primary care.

Table 3: What we know and what we do not yet know about organizational structure and the quality of care in managed primary care settings.

Available data suggest that...	• larger health care organizations tend to be more complex, more fragmented, more impersonal • patients and physicians tend to be less satisfied with larger practice settings • factors that promote a high quality primary care encounter include accessibility, continuity, and open physician-patient interaction • autonomy is a principal determinant of physician satisfaction • relation between size of primary care group and cost of providing care is probably U-shaped
Further research is needed to define...	• the size at which a primary group achieves optimal cost-effectiveness in providing patient care • the practice group size at which patient satisfaction begins to become a problem • the size or structure of primary care groups that best promotes physician and other employee satisfaction

Adapted from Barr (1995)

IX. CHARACTERISTICS OF PROGRAMS THAT ENHANCE THE QUALITY AND ECONOMY OF PRIMARY CARE

Yano et al. (1995) conducted a systematic review of evaluations of programs to enhance the quality and economy of primary care. The definition of "economy" used by these authors includes the concept of "efficiency." Yano et al. included published evaluations of programs in HMOs and VA Medical Centers, as well as office-based practices, teaching hospitals, and community health centers. Interventions were evaluated critically and categorized according to their success in achieving primary care goals. The results of the review are summarized in Table 4, and provide guidance to VA as it implements both managed care and primary care. The original citations should be consulted for full descriptions of the interventions.

Table 4: Interventions for improving the quality and economy of primary care

Primary care goal	Interventions achieving goals
Improving quality	
Access	• academic group practices with expanded clinic and telephone coverage • network of clinics across geographic areas with traditionally poor access
Preventive Care	• computerized reminders • monthly summary feedbacks to MDs • smoking counseling chart reminders, free nicotine gum, or both • committee chart audit and feedback • ambulatory care rotation with education, feedback, checklists • RN-administered screening protocol
Technical process	• multidisciplinary team geriatric assessment • MDs notified of patients on ≥ 10 medications
Management/coordination	• nurse clinician shift coordination, completion of screening protocols • intensive follow up of post-discharge patients • academic group practices dedicated to panel of patients • interdisciplinary geriatric assessment team • develop and improve hospital group practices
Patient function	• multiple telephone contacts instead of clinic visit for elderly patients
Patient satisfaction	• high profile development of ambulatory care
Continuity, comprehensiveness Humanistic process Physical environment Patient morbidity/mortality	None
Improving economy	
Reduce MD-ordered services	• computer feedback of previous lab test results, number of tests ordered, time frame • computer prompts re likelihood of positive test for condition of interest • computer display of individual and total test charges • academic detailing by clinical pharmacists or specially trained physicians • MDs notified of patient on ≥ 10 medications • feedback on prescription charges • feedback on rank order among peers re number of tests ordered
Increase appropriate use of services	• postdischarge nurse telephone follow-up • network of primary care clinics • patient education on appropriate use of ambulatory care visits • multiple telephone contacts instead of routine office visits
Shift care from inpatient to outpatient	• postdischarge nurse telephone follow-up
Reduce costs/charges	• practice teams coordinate inpatient/outpatient care
Improve efficiency	• multiple telephone contacts instead of routine office visits • decentralized patient registration with single receptionist • practice teams coordinate inpatient/outpatient care

Adapted from Yano et al. 1994

X. HEALTH PROMOTION, SELF MANAGEMENT, AND DISEASE PREVENTION

Fries et al. (1993) argue that reducing the burden of illness and thus the need and demand for medical services would also decrease costs. HMOs generally subscribe to this belief, and provide more disease prevention and health promotion services to their enrollees than do other types of health care insurance (Miller and Luft, 1994).

A comprehensive review of the effectiveness of all available preventive services is beyond the scope of this review; additional information is available from the Guide to Clinical Preventive Services (U.S. Preventive Services Task Force, 1989) or systematic review on specific topics can be conducted on request by the MDRC Technology Assessment Program. Fries et al. provide a useful overview of the evidence on the potential of categories of preventive services and health promotion programs to reduce costs, summarized in Table 5.

Table 5: Potential effects of health promotions and disease prevention programs

Intervention category	Evidence supporting potential effects
Programs to reduce high-risk behavior	• lifetime medical costs for smokers are approximately 33% higher than those for nonsmokers • increased physical activity is associated with fewer physician visits • overall morbidity is 60% higher among smokers • 3 risk factors (smoking, obesity, hypertension, hypercholesterolemia, diabetes) associated with claims twice those of people without risk factors
Health care consumer education	• more informed decision decrease frequency with which certain procedures are performed • patients who are given information about alternatives tend to select less invasive/less expensive procedures
Self- management programs offer objective guidelines to help in deciding whether medical assistance is required and provide home treatment when appropriate	• rates of service use can be lowered by 7-17% by modest interventions • costs of long-term care, including in chronic disease, can be reduced
Decrease overly intensive services in terminal illness by increasing rate of use of living wills/advance directives and enhancing physician-patient communication	• 18% of lifetime medical costs occur in last year of life • 30% of Medicare/Medicaid payments for those over 65 occur in last year of life
Health promotion in the work place	• associated with substantial decreases in number of sick days, outpatient costs, and hospitalization costs • high returns on investment in programs: 3-to-1 to 10-to-1

Adapted from Fries et al. 1993

XI. DISCUSSION

This document has identified existing systematic reviews of empirical evidence on the performance of managed care compared to other forms of health care financing and delivery, and on specific interventions to modify provider behavior and to provide primary care within managed care. It should be noted that interpretation of the available published evidence is complicated by several factors, as is its generalization to VA and estimating the impact on VA of managed care practices and principles:

- Untangling the specific contributions of individual managed care principles or practices from the effects of other, concurrent "interventions," environmental changes, or changes over time is problematic.

- There are many definitions of "managed care," and a corresponding number of types of organization to which the term is applied. All of these organizations are complex health care systems whose structures and practices are evolving rapidly. In this context, empirical research may be rapidly outdated.

- Finally, managed care practices that were once confined to the staff- and group-model HMOs have been adopted by most health care organizations in the United States, including VA.

When published descriptions of managed care organizations and their practices are compared to the Prescriptions for Change, it is evident that VHA already has begun to implement structural and functional changes that are analogous to those of managed care organizations. These changes are presumably grounded in many of the same principles, and have already begun to effect the VA health care system.

Practices associated with both managed care and the new VA (Kizer, 1996) include: an emphasis on primary care and ambulatory care; health promotion and disease prevention; capitation-based financing; managing care through utilization review, case management, clinical "Center of Excellence," disease management, standardization of care processes using clinical guidelines and critical pathways, expanding the roles of non-physician providers, telephone triage or advice programs, and physician profiling; and tracking and comparing outcomes through data available in sophisticated information systems and the use of NCQA/HEDIS or similar system performance indicators.

VA has already implemented, or plans to implement, a significant number of managed care practices, and has taken steps toward implementing others. This document concludes with a discussion of areas where its authors see further benefit to VA from explicit adoption of managed care principles.

A. Avoiding Potential Conflicts Of Interest In Managed Care By Providing Optimal Care For Populations

As a public sector agency, VA has an interest in the public good, as well as in efficiency (the public good and efficiency should be, but in practice are not necessarily, synonymous). In this context, VA will seek to avoid ethical concerns as it adopts private-sector practices, particularly regarding the financing of care and provider incentives. Rodwin (1995) reviews potential conflicts of interest in managed care, most of which relate to tensions among the sometimes diverse objectives of managed care (e.g. improving quality and containing costs), and suggests mechanisms for dealing with them:

- Financial incentives for physicians to control costs may compromise the interests of patients. To avoid such compromises, public policy should reduce (or in the case of VA, not introduce) physician risk-sharing and manage care in other ways.

- Public policy should preserve meaningful choice for patients: physicians should disclose restrictions on choice at the point of service; and physicians' role as a "double agent" should be minimized.

- Public policy should encourage the development of professional norms, codes of conduct, and legal obligations for case managers. Allowing patients to share in the choice of case managers would also limit potential conflicts of interest by increasing the accountability of case managers to patients.

Povar and Moreno (1988) concur with these suggestions, arguing that HMOs' incentive systems are justified if the cost-savings reflect an obligation to equitable allocation of resources on behalf of a community (the HMO's enrollees). The conflict between individual and group claims on the HMO can be resolved if the organization maintains quality of care and optimal population outcomes.

B. Population-Based Clinical Practice

A population-based approach to health care is grounded in identifying clinically important subgroups in a delivery system's population, defining and assuring proven interventions for all members of each subgroup, and regularly monitoring progress (Mullan and Kalter, 1988; Voelker, 1994). Greenlick (1995) charges HMOs with testing the hypothesis that organized care systems can turn their size and complexity into an advantage by using the resources of the system to create individualized links between patients and their medical care systems, or at least their primary care systems, by:

- using new applications of information technology to ensure that relevant aspects of each participant's health and functional status are available for developing and updating an individualized profile;
- using protocols that determine how each individual is to receive medical and supportive services based on the individualized profile;
- ensuring that protocols are accepted by the full range of relevant providers and that the system access points are tailored to the needs of the individuals in the system;
- making case-management resources available to deal with the more complex and difficult individual situations;
- evaluating the effect of the system on individuals and on the overall population;
- including in physicians' obligations several components: individual patients; economic and resource allocation; epidemiologic nature of clinical practice; and population members who do not access the system or who have needs that are not addressed by the system.

C. Optimal Care For Populations Should Be Based On Evidence And Formal Technology Assessment

High quality individual and population health care implies the efficient delivery of effective health care services. The Health Care Financing Administration, many HMOs (Luce and Brown, 1995), and many countries with nationally planned and financed health care systems rely on health care technology assessment and evidence-based health care information when making policy decisions regarding the relative effectiveness and cost-effectiveness of services to be offered.

VA has recently initiated structures and processes for national-level technology assessment (VA HSR&D, 1996). The commitment implied by these structures and processes is confirmed by the experiences of other large systems accountable for the health of defined populations, which include national health systems in other countries as well as U.S. HMOs.

In a paper commissioned for the recent HSR&D State of the Art Conference, Leading Organizational Transformation, Muir Gray (1996) notes that, in a resource-constrained health care system, allocations bust be based on effectiveness, safety, and efficiency. In this context, the United Kingdom's National Health Service (NHS) explicitly uses evidence-based health care and technology assessment (i.e., close links between service and research) to support the managed introduction of effective interventions, the prevention of introduction of ineffective interventions, the promotion of trials of interventions of unknown efficacy, and the eradication of interventions of proven ineffectiveness.

The focus of evidence-based clinical and policy decisions requires that the NHS identify knowledge requirements, commission research to produce the necessary new knowledge, ensure the availability of research-based information, promote the use of research findings, promote an evaluative culture, and evaluate its research strategy. Like U.S. managed care organizations, the NHS stresses the importance of behavioral change. Optimal health care delivery and value do not result from structural changes to the system only; equal attention to changes in clinical practices is required.

D. Managing organizational and behavorial change

Adoption of a population- and evidence-based approach to care will require significant changes in training and culture for VA clinicians (Greenlick, 1995) and managers, as will changing the distribution of authority. Accordingly, managing cultural and organizational change should be a focus for VA.

In a paper commissioned for the recent HSR&D State of the Art Conference on Leading Organizational Transformation, Vestal et al. (1996) defined organizational culture as an organization's values, decision-making processes, allocation of resources, division of power, the behaviors it requires, and the level of risk that is allowed and encouraged. VA will need to align all of these cultural elements with its new organizational structure, work processes, and human resource strategies. This will require a move from VA's historic command and control culture to one with more speed and flexibility. To ensure success, there must be an agreement on what the new culture needs to be and how much change is required to get there.

Give the size and scope of VA, it is not surprising that the culture looks and feels differently, depending on where one stands in the organization. Subcultures exist and will need to continue to a degree. For example, VA Headquarters and some support offices need to be highly organized, predictable and functional while the new Networks will need to develop a more flexible, pioneering and adaptable culture, and the facilities will need to be more customer focused. Vestal et al. (1996) note that integration of these various subcultures is one of the critical issues VA faces. These authors further note that to be successful, VA must aggressively and carefully plan its approach to culture change and link it to all other changes taking place. In order for the culture change to be effective, it must include:

- the mobilization of leadership to take ownership of the change;
- the crease of roles and work processes that are aligned with the strategic and structural changes;

- the development of human resource strategies to support the culture change.

Despite the governmental and bureaucratic nature of VA, if the culture change is properly addressed, VHA has a chance of successfully transforming itself into a viable health care organization.

E. Total Quality Management

Total quality management (TQM) has been explicitly included in the mission and value statements of exemplary HMOs. TQM is one potential vehicle for effective handling of distributed authority, and for encouraging an analytic, evidence-based approach to decisions at all levels of VA. It is also a potentially important management concept for supporting resource management and a primary care initiative within a managed care setting.

TQM represents both a philosophy and a set of practices for managing service quality. As such, TQM promotes distributed authority throughout an organization. Under TQM, employees at all levels of the organization have the knowledge and authority to identify quality problems and to develop solutions to those problems.

TQM principles also emphasize the role of team, particularly teams whose composition cuts across functional departments and professional disciplines. This orientation is highly consistent with managed care, the effectiveness of which depends on the continuity and coordination of clinical services across departments and treatment settings. Also central to TQM is managing quality through an analytic, evidence-based framework. TQM requires that employees be trained to collect and analyze data to understand and improve the work processes that underlie the provision of services. Employees work in teams to:

- explicate underlying processes;
- collect data related to the efficiency and effectiveness of these processes;
- identify strategies for improving the processes.

Empirical evidence addressing the effectiveness of TQM in health care settings is sparse. Most published papers are descriptive or prescriptive in nature. Some case study data also exist. Shortell et al. (1995) published one of the few systematic studies on TQM relative to health care organizations. These authors found that TQM implementation has a positive impact on quality improvement. However, the specific relationship between TQM and managed care has not been studied systematically.

XII. AREAS FOR FURTHER RESEARCH

This document provides an overview of managed care based on existing, published systematic reviews. Areas in which further, more focused syntheses of the literature are possible, and could be performed by the MDRC Technology Assessment Program, include:

- the effectiveness of case management programs, particularly those associated with substance abuse, geriatrics, and psychiatry;

- effectiveness and economic impacts of disease prevention and health promotion programs pertinent to VHA's population;
- analysis of the quality and validity of existing clinical practice guidelines;
- "benchmark" practices or innovations by managed care organization;
- the effectiveness of efforts to reduce utilization by patients (e.g. co-payments).

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