

**COUNCIL ON GRADUATE MEDICAL EDUCATION**

# **Resource Paper**

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**Preparing  
Learners for Practice  
in a Managed  
Care Environment**

**SEPTEMBER 1997**

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## **Preparing Learners for Practice in a Managed Care Environment**

**SEPTEMBER 1997**

**U.S. Department of Health & Human Services  
Public Health Service  
Health Resources and Services Administration  
Bureau of Health Professions**

The views expressed in this document are solely those of the Council on Graduate Medical Education and do not necessarily represent the views of the Health Resources and Services Administration nor the U.S. Government.

## **The Council on Graduate Medical Education**

**The Council on Graduate Medical Education (COGME)** was authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends and to recommend appropriate federal and private sector efforts to address identified needs. The legislation calls for COGME to serve in an advisory capacity to the Secretary of the Department of Health and Human Services (DHHS), the Senate Committee on Labor and Human Resources, and the House of Representatives Committee on Commerce. By statute, the Council was to terminate on September 30, 1995. It has been extended under appropriations legislation.

The legislation specifies that the Council is to comprise 17 members. Appointed individuals are to include representatives of practicing primary care physicians, national and specialty physician organizations, international medical graduates, medical student and house staff associations, schools of medicine and osteopathy, public and private teaching hospitals, health insurers, business, and labor. Federal representation includes the Assistant Secretary for Health, DHHS; the Administrator of the Health Care Financing Administration, DHHS; and the Chief Medical Director of the Veterans Administration.

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The charge to COGME is broader than the name would imply. Title VII of the Public Health Service Act, as amended by Public Law 99-272 as amended by Title III of the Health Professions Extension Amendments of 1992, required COGME to provide advice and make recommendations to the Secretary and Congress on a wide variety of issues:

1. The supply and distribution of physicians in the United States
2. Current and future shortages or excesses of physicians in medical and surgical specialties and subspecialties
3. Issues relating to international medical school graduates
4. Appropriate federal policies with respect to the matters specified in items 1-3, including policies concerning changes in the financing of undergraduate and graduate medical education (GME) programs and changes in the types of medical education training in GME programs

5. Appropriate efforts to be carried out by hospitals, schools of medicine, schools of osteopathy, and accrediting bodies with respect to the matters specified in items 1-3, including efforts for changes in undergraduate and GME programs
6. Deficiencies and needs for improvements in existing data bases concerning the supply and distribution of, and postgraduate training programs for, physicians in the United States and steps that should be taken to eliminate those deficiencies

In addition, the Council is to encourage entities providing graduate medical to conduct activities to voluntarily achieve the recommendations of this Council specified in item 5.

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Since its establishment, COGME has submitted the following reports to the DHHS Secretary and Congress:

- First Report of the Council, Volume I and Volume II (1988)
- Second Report: The Financial Status of Teaching Hospitals and the Underrepresentation of Minorities in Medicine (1990)
- Scholar in Residence Report: Reform in Medical Education and Medical Education in the Ambulatory Setting (1991)
- Third Report: Improving Access to Health Care Through Physician Workforce Reform: Directions for the 21st Century (1992)
- Fourth Report: Recommendations to Improve Access to Health Care Through Physician Workforce Reform (1994)
- Fifth Report: Women and Medicine (1995)
- Sixth Report: Managed Health Care: Implications for the Physician Workforce and Medical Education (1995)
- Seventh Report: Physician Workforce Funding Recommendations for Department of Health and Human Services' Programs (1995)
- Eighth Report: Patient Care Physician Supply and Requirements: Testing COGME Recommendations (1996)
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## Introduction

Physician competency issues are centrally related to the content of medical education. These issues received increased attention and concern in recent years from both managed care administrators and physicians. Surveys have indicated perceptions of deficiencies in the competency levels of physicians to provide care in the newly emerging health care environment. The Council on Graduate Medical Education (COGME) determined that the perception of these deficiencies was an important emerging issue that needed to be addressed by the Council.

Nicole Lurie, MD, MSPH developed a paper for COGME entitled "Preparing Learners for Practice in a Managed Care Environment" which identifies "Core Competencies" needed for practice in managed care settings. Cynthia Orbovich, PhD, assisted with the paper being offered as a resource document for managed care administrators, medical educators and physicians. The paper acknowledges that the competencies identified are not only needed in managed care settings, but should be useful in a variety of practice settings. The emerging practice setting that many physicians are expected to find themselves in will involve some type of managed care setting. The concept of managing care through companies with provider contracts has been increasing at such a rapid rate in the past few years that it is expected that more than two thirds of the covered lives in the U.S. will be through managed care by the end of this century.

Most physicians expect substantial changes in their practice environment over the next few years and new physicians currently in the medical education system may never experience a fee-for-service practice. These system changes from predominantly fee for service to a predominantly managed care system requires the physician to recognize the need to care for his/her patients using a population based systems approach.

The population-based systems approach requires the physician to look at patients as part of the population they come from, as well as the cultural diversity of the patient's background. Practice in a managed care environment requires

the physician to consider how he/she fits into a system of health care as a provider, as well as how to maintain a relation with the employer and the beneficiary population. The physician also must learn how to work with other health professionals and how the physician assumes the role of team leader.

These new skills must become part of the physicians repertoire in managing his/her new environment. Recent studies show that many graduates feel uncomfortable and least prepared from their undergraduate medical school experience to work in private practice settings. Further, Graduate Medical Education (GME) does not fill in the competencies gap before the physician is looking for a practice position. The Association of American Medical Colleges (AAMC) report from the "Medical School Graduate Questionnaire" indicates that graduates feel inadequately trained in the areas of nutrition, practice management, medical socioeconomics, medical care cost control, cost-effective medical practice, and law in medicine. The lack of comfort in these areas could effect the physician relationship with his/her employer and service to the beneficiary population.

Dr. Lurie identifies core competencies as those skills that the learners should be exposed to over the course of the medical educational experience. This paper identifies the "What" of the proposed core competencies; however, it does not identify "How," "When," or "Where" these core competencies should be attained. This paper was intended not to be prescriptive, but to identify a need for new physician competencies in a changing health care environment.

The COGME Work Group "Physician Competencies Needed in a Changing Environment" is currently developing specific recommendations to make the ideas and concepts identified useful in private practice settings. The Work Group report will identify "How," "When," and "Where" physicians should be trained to more fully participate in a changing environment and life long learning to maintain those skills.



## Background

Medical educators are under considerable pressure to reform the training of their students for what is needed and desired in the health care marketplace. With a physician surplus building, the graduates of residency programs are having increasing difficulty finding jobs, especially in their desired locations, and are finding themselves queried and evaluated on their preparedness and attitudes toward practice in a managed care environment.

A further set of challenges derives from the rapid shifts in the medical marketplace and the commensurate shifts in the sites of care and training from the inpatient hospital to the outpatient community setting. These shifts require changes in the types of clinical teaching and their training, as well as in the content and timing of clinical teaching.

Managed care systems have achieved impressive growth in recent years. Membership is rising more than 11 percent per year, and is projected to approach 65 million persons by the end of 1996 (Group Health Association of America, 1995; Johnson, 1996). There has also been substantial growth in enrollment in managed care Medicaid and Medicare. The growth in size, number, and variety of managed care systems, and increased competition, has further increased pressure on the medical education system to produce physicians better prepared for working in and collaborating with managed care organizations.

COGME's *Sixth* and *Eighth* Reports (Council on Graduate Medical Education, 1995, 1996) reviewed the current and projected shifts in the marketplace and their workforce implications for the future. The *Sixth Report* in particular reviewed the implications for training for the future and presented one listing of desired physician competencies. The purpose of this report is to review the current and developing state of knowledge in the area of needed Physician Competencies, and to present findings and recommendations to the medical education and the managed care communities. The report should be of comparable importance to

health care policy makers; health care providers; business, labor, third-party payers; and the community at large.

We used a variety of methods in preparing this report. First, we conducted literature searches and reviewed the prepared bibliographies of others regarding skills needed by physicians who practice in managed care dominated environments. Second, we collected and reviewed information from training programs that have implemented innovative curriculum or curricular segments related to managed care. Third, we contacted and interviewed experts in education in managed care and in key skill areas, defined below. Finally, we asked local and national experts to review and suggest revision to a draft of this document. Two key findings emerged from this process. First, numerous groups and organizations have engaged in similar work, often citing the same literature and arriving at similar conclusions. Second, although there has been tremendous energy and thought given to this area in many residencies and academic health centers, little has been implemented. It was the rule that "experts" we called would tell us that "nothing has been written yet" or that the curriculum is "still in my head."

This report is divided into five sections. Section 1 defines managed care and its potential contributions and threats to improving the health of the public. Section 2 synthesizes the opinions of authors regarding the desired competencies of physicians and presents content recommendations in each area. Section 3 presents a more global set of recommendations for residencies with regard to integrating these skill areas for faculty development in these areas. Section 4 presents brief descriptions of a few sentinel programs that have implemented innovative programs for learners in managed care. The final section presents selected bibliographic materials for those wishing to construct curriculum in the areas discussed above.

## What is Managed Care?

Managed care encompasses a variety of different financial and organizational arrangements. Simply put, however, managed care merely links the responsibility for the delivery of care for a defined population (the enrollees of the managed care plan) with the insurance or financing mechanism, or the assumption of financial risk (Iglehart, 1992). The practice of managed care consists of "the body of clinical, financial and organizational activities designed to ensure the provision of appropriate health care services in a cost-efficient manner" (Alpha Center, 1996). Managed care plans are in different stages of evolution in different areas of the country. At their onset, most managed care plans focus on managing cost, usually through utilization control mechanisms. However, the increasing development of vertically integrated systems has emphasized managing care by linking outpatient, inpatient, home and long-term care in a single, coordinated system. In doing so, many plans, often through case management and care management programs, attempt to "manage" the health of individuals by assuring that they receive appropriate preventive care and that the care they receive for chronic medical conditions is both coordinated and efficacious, maximizing their chances for good outcomes.

More mature plans often view their enrollees as a "population," and see their role as manager and promoter of the health of their "populations." This implies not only managing health of an individual through the one-on-one doctor-patient encounter, but the implementation of population-based strategies to improve the health of their enrollees. In contrast to more traditional public health approaches, the population-based strategies are defined by and targeted to an enrolled population, rather than a community. Nonetheless, these strategies include monitoring for preventive care among an eligible population (e.g., the proportion of female enrollees over age 50 who have had mammograms or the proportion of diabetics who have had a retinal exam), using educational interventions (mailings, reminders) and offering group sessions (e.g., smoking cessation, coping with arthritis, stress reduction). Finally, in some areas in which managed care systems have significant market penetration, plans are beginning to see that it is in their interests to promote the health of the communities from which their enrollees are drawn, thus moving beyond

managing the health of enrollees to managing the health of their communities.

It should be stressed that not all plans have evolved to this somewhat idealized description. Many still focus solely on controlling costs and utilization, and do so via a variety of mechanisms ranging from utilization review to financial arrangements with physicians that put them "at risk" for the utilization of their enrollees. These are well summarized in Section III of the *Sixth Report*.

What are the implications of this evolution for medical education? First, learners will need to conceptualize their roles as physicians not only for individuals but for populations. Doctors of the future will need to evaluate and balance both the needs of the patient (who presents for care in a one-on-one encounter) with the needs of a population for whom they have responsibility. This implies caring for those who visit a health care provider, as well as for those who may not present for care (Greenlick, 1992). Doctors will need to learn non-office based approaches to keeping their patients healthy. They will also need to be equipped to address the variety of financial and organizational arrangements with which they are confronted, and have the skills to fulfill their responsibilities to individual patients and populations in the face of sometimes conflicting incentives.

Many of the skills required to practice sound medicine in a managed care context are also those required for being a capable and responsible physician, regardless of whether that physician is a generalist or a specialist. However, primary care training programs have been active in addressing many of these areas over the past decade, and in fact, have developed model curricula for primary care physicians that overlap with model curricula for practice in managed care environments (Bureau of Health Professionals, 1995; Gorrell & Morrison, 1995; Bureau of Health Professionals, no date; Association of Teachers of Preventive Medicine, 1996). Thus, the skills for an excellent clinician of the future include capabilities in most of the areas presented below, regardless of the specialty of the physician or organizational and financial environment in which s/he practices.

## **Competencies for Practice in a Managed Care Dominated Environment**

It has long been recognized that effective medical education must address more than content: it must attend to the "who," or the kinds of patients and populations our students are exposed to; the "what," or the core knowledge, skill and competency they acquire; the "when," or timing the delivery of curricula at different levels of training; and the "where," or types of settings they are exposed to. Explicit decisions about the "when" and "where" will need to be made by each program. This report addresses the "what." In doing so, we acknowledge that learning occurs across a continuum, ranging from pre-medical education through post-residency continuing medical education. Further, because the relationship between medical school and residency training varies widely across schools, individual programs will need to decide about the proper placement of different content and experiences within their training programs.

Regardless of when the training occurs, it is critical to realize that simply sending students to

rotations at community sites and exposing them to more common problems in medicine will be insufficient to provide the needed competencies. "Learning managed care" will not happen by osmosis. Numerous authors and expert bodies have listed desired domains of expertise which learners should achieve. While many have different labels, or use different terminology, most have core elements in common or contain substantial overlap. These are synthesized in Table 1 and the resultant learning objectives can be grouped in the following domains: Health systems finance, economics, organization and delivery; Evidence-based and epidemiologically-sound practice; Ethics; Physician-Patient relationships; Leadership and the promotion of teamwork and organizational change; Systems-based Care; Quality measurement and improvement; Informatics. In addition, students must understand how to choose an appropriate practice environment and understand basic issues related to practice management.

**Table 1**

**Synthesis and Reorganization of Core Competencies  
in Managed Care Settings\***

Proposed Competencies	Competencies as Discussed in the Literature	Sources
<p>Health Systems Finance, Economics, Organization &amp; Delivery</p>	<ul style="list-style-type: none"> <li>○ develop understanding of new economics of managed care; principles of cost effective care; risk management</li> <li>○ demonstrate skills for resource allocation</li> <li>○ cost effective use of wide range of diagnostic/treatment services</li> <li>○ understanding of evolving system within its historical context</li> </ul>	<p>Pew (1995), Jacobs &amp; Mott (1987), Moore (1993), Rivo (1993)</p> <p>GHAA (1994)</p> <p>Jacobs &amp; Mott (1987), Moore (1993)</p> <p>Pew (1995)</p>
<p>Evidence-Based Epidemiologically-Based Medicine</p>	<ul style="list-style-type: none"> <li>○ community public health</li> <li>○ emphasize population based care/clinical medicine</li> <li>○ understand the health related needs of a defined population (particularly social and behavioral, biostatistics)</li> <li>○ epidemiology of illness</li> <li>○ emphasize principles/practice that foster health promotion and deliver disease prevention services</li> <li>○ emphasize primary care</li> <li>○ detect, understand and managed health risk problems of the home and workplace</li> </ul>	<p>Rivo (1993)</p> <p>Pew (1995), GHAA (1994), Greenlick (1992)</p> <p>GHAA (1994), Pew (1995), GHAA (1994), Greenlick (1992)</p> <p>Rivo (1993), COGME (1995)</p> <p>Pew (1995), GHAA (1994)</p> <p>Pew (1995)</p> <p>GHAA (1994)</p>

Proposed Competencies	Competencies as Discussed in the Literature	Sources
Ethics	<ul style="list-style-type: none"> <li>○ values/ethics in changing health care system</li> <li>○ medical ethics</li> <li>○ death &amp; dying counseling</li> <li>○ providers understanding multiple roles/responsibilities at multiple levels in the health care system</li> </ul>	<p>Pew (1995)</p> <p>Rivo (1993)</p> <p>Rivo (1993)</p> <p>Pew (1995)</p>
Development of Patient-Provider Relationships	<ul style="list-style-type: none"> <li>○ patient education</li> <li>○ ongoing treatment of common behavioral problems</li> <li>○ communicate effectively with patients</li> <li>○ comfortable with teamwork and oversight that comes with managed care; emphasize knowledge, skills, values needed for effective teamwork</li> <li>○ engage in participatory decisionmaking with patients, families, and other providers</li> </ul>	<p>Rivo (1993)</p> <p>Rivo (1993), COGME (1995)</p> <p>GHAA (1994)</p> <p>Pew (1995), HRSA (1993-94)</p> <p>GHAA (1994)</p>
Leadership: Promoting Teamwork and Organizational Change	<ul style="list-style-type: none"> <li>○ demonstrate leadership and team building skills for effective practice management in an organizational care system</li> </ul>	<p>GHAA (1994), Pew (1995)</p>
Quality Measurement & Improvement	<ul style="list-style-type: none"> <li>○ understand and practice principles of effective quality improvement/continuous quality improvement</li> <li>○ understanding of utilization review/quality assurance</li> </ul>	<p>GHAA (1994), Pew (1995)</p> <p>Jacobs &amp; Mott (1987)</p>
Medical Informatics	<ul style="list-style-type: none"> <li>○ use of computer-based clinical and management information systems to analyze and improve practice and practice patterns</li> <li>○ medical informatics/computer training</li> <li>○ critical medical literature appraisal</li> </ul>	<p>Pew (1995), GHAA (1994)</p> <p>Rivo (1993)</p> <p>Rivo (1993)</p>

Proposed Competencies	Competencies as Discussed in the Literature	Sources
Systems Based Care	<ul style="list-style-type: none"> <li>○ use of community resources</li> <li>○ continuity of care with assigned patients</li> <li>○ refer appropriately to other specialists for needed health care services and coordinate all aspects of care, including technology</li> <li>○ emphasize knowledge and skills needed for comprehensive primary care</li> <li>○ apply a general knowledge of managed care systems in evaluating the relevant medical literature</li> <li>○ health care system structure</li> </ul>	<p>Rivo (1993)</p> <p>Rivo (1993)</p> <p>GHAA (1994)</p> <p>Pew (1995)</p> <p>GHAA (1994)</p> <p>Jacobs &amp; Mott (1987), Moore (1993)</p>
Competencies Relevant to Primary Care (not specific to managed care)	<ul style="list-style-type: none"> <li>○ competencies related to common prevailing conditions/diagnoses: categories of prenatal care, acute illness, on-going treatment of common chronic conditions</li> <li>○ manage common acute and chronic medical conditions, including musculoskeletal and mental health conditions, and perform ambulatory diagnostic procedures and simple surgery</li> <li>○ evaluation of undifferentiated problems</li> <li>○ comprehensive assessment</li> <li>○ interdisciplinary training</li> <li>○ evaluation of occupational/school health related illness</li> <li>○ detect, diagnose and manage common symptoms/physical signs</li> <li>○ care of patients in multiple settings</li> <li>○ care of the population</li> </ul>	<p>Rivo (1993)</p> <p>GHAA (1994)</p> <p>Rivo (1993)</p> <p>Rivo (1993)</p> <p>Rivo (1993)</p> <p>Rivo (1993)</p> <p>GHAA (1994)</p> <p>Rivo (1993), COGME (1995)</p> <p>Rivo (1993), COGME (1995)</p>

\* This synthesis of recommended competencies for practice in a managed care setting is based on a review of the following articles and reports most often cited in the literature. These competencies identified in the literature are "sorted" using the eight domains proposed by Lurie in this paper.

# Health Systems Finance, Economics, Organization and Delivery

*Learning Objective One: Learners will understand the basics of how health care in the United States is organized and financed.*

Concerns about escalating health care costs and lack of adequate insurance and access to care for millions of Americans dominate the health policy agenda. Both public and private payers have attempted to address these dilemmas through various economic and organizational changes designed to curb the growth of health care expenditures. Because the financing and organization of the health care system so significantly impact on the practice of medicine and the delivery of quality care, learners must understand the context in which they will practice. This learning objective, therefore, includes the following:

## *Evolution of health care financing and economics in the U.S.*

- **How health care is paid for.** Understanding the principles and forces which are shaping the current environment, including how health care financed through a combination of public and private payers including out-of-pocket payments, individual health insurance, employer-based health insurance, and government financing has fueled the rise of health care costs.
- **Knowledge of key actors and organizations.** Familiarity with the roles played by key payers in the system including indemnity plans, the Blues, Medicare, Medicaid, employers, and the broad array of organizations that fall under the rubric of managed care.
- **Types of reimbursement.** Understanding how various methods of reimbursing health care providers (ranging from fee-for-service to highly bundled units of payment) are changing and how the incentives associated with different types of reimbursement may influence physician and patient decision making, and the overall growth rate of health care costs.

## *Implications of managed care delivery models on the daily practice of medicine.*

The curriculum should provide information on the spectrum of managed care delivery models and the implications of these organizational arrangements for the daily practice of medicine.

- **Familiarity with financial arrangements and practice structures of MCOs.** The nature of the practice setting, methods of provider payment, and the type of provider panel will vary across managed care organizations. PPOs, IPAs, group and staff model HMOs use different types and mixes of such arrangements (Wagner, 1995; Kongstvedt, 1995; Bodenheimer & Grumbach, 1996) which have implications for physician responsibilities, workload, opportunities for advancement, and physician decision making.
- **Practice management, contracting and management of risk.** The curriculum should prepare physicians to choose a practice site, including the process of interviewing and making the initial transition to the new organization (Davis & Hartman, 1994).

## *Approaches to cost control and quality management*

It is important to be aware that most managed care organizations use a mix of the following strategies to manage the utilization of health services and costs.

- **Changing the unit of payment.** Methods of payment ranging along a continuum from the least aggregated (fee for service reimbursement) to the more highly bundled unit of payment (e.g., per diem to hospital, capitation, or salary) and how they are likely to impact on costs and utilization.

- **Patient cost sharing.** Implications of requiring patients to pay a share of the costs at the point of receiving health care services as a strategy for reducing patients' demand for services.
- **Utilization management.** The potential contributions and pitfalls of various approaches to utilization management such as case-by-case utilization review, practice profiling, and utilization of a primary care gatekeeper to coordinate a patient's care.
- **Controlling Supply.** Strategies to limit the number of physicians and other care givers, as well as access to specific material resources, for reduction of physician services and health care costs and their implications. Impact of efforts to regulate types of physicians practicing (e.g., specialists relative to generalists or primary care physicians).
- **Shifting financial risk and responsibility.** In linking the responsibility for the delivery of care for the enrollees of the managed care plan with the payment for care of those enrollees, providers are often required to assume financial risk. For example, many plans provide capitated payments to primary care providers, who agree to assume the risk for resource utilization. Therefore, it is necessary to acquire skills to understand and make appraisals of the financial and care provision responsibilities and to learn how to share financial risk and patient care responsibilities with specialists, hospitals, and managed care plans (Popiel & Kreofsky, forthcoming 1997).
- **Awareness of non-financial barriers to care.** Understanding that membership in a managed care plan does not guarantee access for enrollees. Clinic locations and hours may not meet patient needs. Health plan staff may lack the linguistic and cultural skills important for helping the population they are supposed to serve. Enrollees may lack the ability or interest in "negotiating" the managed care system, and, as a result, delay seeking care.
- **Potential impact of managed care on access barriers.** Understanding how the presence of managed care may simply shift the types of access barriers. When managed care is more prevalent in a community, there may be fewer opportunities for cost-shifting, which may result in larger numbers of uninsured or underinsured people who cannot access care via the "safety net." Conversely, managed care organizations that target the general population through, for example, prevention-focused efforts, may improve access to some services for the uninsured, such as immunization or cancer screening. With regard to financial barriers, copayments may also inhibit low income people from seeking care when needed (Shapiro, Ware, & Sherbourne, 1986).

While physicians in a managed care environment are working to appropriately manage the health of patients and produce positive outcomes, they also have to manage the resources used to achieve those outcomes. Knowledge of the financing, organization, and delivery of health care will allow them to better understand the implications of their clinical decisions in the face of continually rising health care costs, pressures from payers, and difficult choices about the allocation of resources. This understanding is an important step in the process of motivating physicians to consider both the needs of the patient who presents for a one-on-one encounter as well as the needs of the broader population for whom they have responsibility in a managed care setting.

### ***Impact of financial and organizational arrangements for access***

Different ways of financing and organizing the delivery of health services can positively or negatively affect the availability of resources for a defined population and the health status of a community.

- **Awareness of financial barriers to health care.** Understanding the implications of lack of insurance copayments and deductibles, or other financial disincentives, for the health status and outcomes of the population or community.

# Practice of Evidence-Based, Epidemiologically-Sound Medicine

*Learning Objective Two: Physicians will be prepared and able to practice evidence-based, epidemiologically-sound medicine.*

Awareness of the need to provide evidence-based, epidemiologically sound care has grown dramatically with the advent of managed care. This is in large part because of pressures to control cost and utilization in a responsible manner, and the commensurate recognition that the practice of evidence-based medicine may be the most desirable way to do so. Evidence-based medicine is the rigorous use of current best evidence in making decisions about the care of individuals and groups of patients. One way in which it is postulated to reduce costs is by identifying unnecessary or inappropriate care. Evidence-based medicine involves using principles of statistics and epidemiology, learning how to search efficiently for "current best evidence," knowing the relative value of different types of evidence, and knowing when and how to apply evidence to the care of an individual or patient group. These are discussed below.

## ***Principles of statistics and epidemiology***

Trainees first need to explore basic questions: "how do we know what is 'truth' in medicine?", and "how do we use evidence in that regard?"

- **Statistics.** Several key statistical concepts that must be incorporated in any curriculum have been outlined by nearly all experts in this field: probability, variation, and measurement error; hypothesis testing and the null hypothesis, alternate ways for assessing significance ( $p$ -values and confidence intervals, non-parametric methods) and the role of sample size; and how to evaluate the differences between clinical and statistical significance.
- **Epidemiology.** Excellent curricula in clinical epidemiology (Sackett, Haynes, & Tugwell, 1991; Samet, no date) include understanding common study designs: case series, case-control, cohort studies, and randomized clinical trials. They introduce learners to Bayesian statistics and concepts of sensitivity, specificity and predictive value, the measurement of risk

(relative and absolute) and risk reducing and the concept of effect sizes.

- **Basic concepts in clinical decision-making.** Evaluation and use of clinical decision rules, as well as the use of ROC curves are introduced in many curricula.
- **Managing uncertainty in decision making.** Despite the current emphasis on evidence-based medicine, the fact is that there is often insufficient evidence to guide decisionmaking in patient care. This objective should address how the way a given individual handles uncertainty leads to rational or irrational diagnostic or treatment strategies.

Many curricula build on the well-known McMaster curriculum, which includes key articles on evaluating study design, searching for evidence, evaluating a diagnostic test, deciding whether study findings are applicable to the clinical situation at hand, evaluating harm or benefit of a treatment or test, evaluating studies of prognosis, using practice guidelines and pathways (Oxman, Sackett, & Guyatt, 1993; Guyatt, Sackett, & Cook, 1993; Jaeschke, Guyatt, Sackett, 1994a; Jaeschke, Guyatt, Sackett, 1994b; Laupacis, Wells, Richardson, & Tugwell, 1994). In a case-based fashion, either using articles from the literature or a specific patient as the "case", teaching programs should address the following concepts which are key to the decisionmaking process:

1) *Use of prior probability and test characteristics to guide diagnostic testing strategies.* This is in significant contradistinction to the traditional approach of enumerating the differential diagnosis and choosing a test or procedure to "eliminate" potential diagnoses on the list.

2) *The process of assigning prior probabilities and tailoring them to the specific subpopulation from which a patient is drawn.* This approach contrasts with practicing "on the basis of the last case" and is also a key element of cultural competence (Lavizzo-Mourey & Mackenzie, 1996).

3) *Using knowledge of the natural history of disease to influence clinical decision making.*

4) *Knowing when to adopt a "watch and wait" policy and when an empirical therapeutic trial is indicated.*

5) *Knowing how to determine when therapy has failed or succeeded and when change course or stop therapy.*

### **Population-based perspectives**

Epidemiologically-sound practice also requires a population-based perspective. This learning objective requires that trainers learn to gather and use information about the community in which they work--about its demographics, sociocultural beliefs and practices that affect the manifestations of health and disease, and the natural history and epidemiology of major health problems in the population. Population-based care also involves using population- or community-wide approaches to primary, secondary and tertiary prevention. Managed care organizations can provide a unique opportunity to gather sound information about populations.

Because a physician's panel of patients is often drawn from the population of health plan enrollees,

the data bases of health plans can be exploited to provide information about risk factors or prevalence of specific diseases in subpopulations, with which a physician can begin to tailor estimates of prior probability to a situation at hand. Physicians must learn to exploit such data bases, and to use them to improve knowledge of and care for their patients (see informatics, below). Such interventions go beyond the one-on-one office encounter to include group interventions, strategies for reaching those that do not present for care on their own, and community-based approaches.

Such strategies for care of individuals and groups will need to consider social and cultural aspects of the population, as these factors affect not only the prevalence of certain health conditions but the propensity to seek care, belief systems that affect treatment choices and adherence to treatment, use of alternative health providers, and efficacy of certain treatments (Lavizzo-Mourey & Mackenzie, 1996). Additionally, doctors need to examine the epidemiology of their own practice (Inui, 1992), to develop mechanisms to monitor their lifetime clinical experience, and to incorporate such data into their clinical decision-making rather than simply practicing on the basis of their last case.

## **Ethics**

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*Learning Objective Three: Learners will be able to identify and address ethical issues unique to the practice of medicine in a managed care context.*

Although ethics has always been central to the practice of medicine, managed care's goals of delivering quality health care, containing costs, and providing equality of access raise special ethical considerations for physicians who now have special responsibilities to organizations and the population of enrollees in the managed care plan, as well as to their individual patients. Awareness of the ethical foundations of managed care can help prepare learners for the difficult resource allocation decisions they will confront as clinicians practicing in managed care settings. Exposure to cases or scenarios which demonstrate ethical issues likely to arise in the managed care environment such as dual responsibilities, financial conflicts of interest, gaming the system to gain

access to treatment for patients, and balancing the allocation of resources between individual patients with immediate needs and the needs of a broader population is a necessary component of this learning objective (LaPuma & Hickey, forthcoming 1997).

### **Dual responsibilities**

Consideration of the dual responsibilities of serving as an advocate for the most appropriate treatment for each of their individual patients as well as a group advocate for the "population" served by the health plan or the broader community has important implications for the practice of medicine in a managed care environment.

- Understanding how being an advocate for allocation decisions which focus on population-based needs may actually serve the interests of individual patients in the long run through the devotion of resources to prevention of illness.
- Defining their responsibilities to enrolled members who do not present for care and how their allocation decisions impact on that population segment. Effectively communicating their dual roles to patients.
- Awareness of the potential risks managed care poses to people who are often unable to advocate for their own interests in the current health system including the poor, minority groups, chronically ill, or dying persons (Miles, Weber, & Koepp, 1995). Consideration of the responsibilities of physicians to people whose needs and interests are often in direct economic conflict with the managed care system.
- Developing the skills to be strong advocates for both the care of their patients and the broader community, rather than be passive followers of practice guidelines regardless of their quality (Lurie, 1996).
- Recognizing conflicts of interest in themselves and their peers.
- Determining when and how a clinician should speak up (e.g., to the patient or the managed care organization) when conflicts of interest arise. Becoming familiar with appropriate strategies that are most likely to benefit the interests of the various parties involved in conflicts.
- Deciding whether to sign or abide by contracts (often referred to as "gag orders") that attempt to limit what patients can be told about treatment options or available services.
- Evaluating the physician's professional responsibility if s/he disagrees with a practice guideline.

### ***Gaming the system***

In the interest of gaining access to treatment for patients and avoiding conflict, a physician may be less than truthful when making referrals or other clinical decisions. The implications of this type of "gaming" for the physician, patient, and others in the health care system (LaPuma & Hickey, forthcoming 1997) involves consideration of the following types of questions:

### ***Conflicts of interest***

Because of the types of financing arrangements and economic incentives associated with managed care, both patients and physicians are concerned that the financial interests of the clinician or the managed care organization may be pitted against the best interests of the patient. An objective of managed care is to control costs by providing needed and appropriate care. However, various risk and capitation arrangements may create incentives to limit care or provide less care than is needed, particularly when the additional care is financially costly. Understanding their professional responsibilities and the importance of maintaining that professionalism in the process of differentiating medically marginal treatment from financially marginal treatment will enhance the quality of care for both individuals and populations. Teaching programs should provide regular opportunities to consider the following issues related to conflict of interest which physicians confront in a managed care environment:

- Should the clinician ever lie on behalf of the individual patient? If so, under what conditions?
- What are the consequences for the overall health care system and broader population if most clinicians engage in "gaming" the system in the interest of individual patients?
- What is the physician's professional responsibility to be truthful in the explanation of his or her reasons for providing certain types of medical treatment or withholding treatments requested by the patient?
- What are the responsibilities of the physician to provide patients with information about all possible medical options or treatments?

## **Development of Patient-Provider Relationships**

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*Learning Objective Four: Physicians will be able to develop and maintain robust, highly effective relationships with patients.*

Learning to develop a robust doctor-patient relationship is a critical component of being an effective physician. Many residency programs, particularly those in primary care, already have curricular components that address the medical interview and patient-doctor interactions. The development of a maximally effective relationship, for both generalists and specialists, is even more critical in a managed care context for a variety of reasons. These include the fact that better relationships produce better outcomes, improved patient satisfaction, and more stable enrollment (Kaplan, 1996). Elements of this learning objective include:

### ***Effective use of time***

Many physicians in managed care have shorter amounts of time in which to see their patients and develop relationships with them, and will need to learn skills to focus on eliciting the patient's agenda (Frankel, Morse, Suchman, & Beckman, 1991), providing explanation and facilitating adherence to recommendations.

### ***Enhancing recognition and management of biopsychosocial mental health issues***

Up to one-third of the problems encountered in the primary care setting have unrecognized psychosocial components which are often at the root of the patient's reason for a visit or interfere with a patient's management (Haupt, Orleans, George et al., 1979). To effectively use resources and promote better outcomes, physicians must improve their ability to recognize and address common mental health issues in their patients such as anxiety, depression, abuse, and chemical dependency, as well as social stressors that impact on patient presentation and outcome.

### ***Understanding and using principles of behavior change***

Much of the illness encountered in a population is related to lifestyle factors (Adler, Boyce, Chesney et al., 1993)--smoking, dietary patterns, chemical dependency. Skills to change behavior of individuals and populations are essential.

### ***Developing appropriate and effective methods of communication***

Teaching programs should also address three additional issues unique to communication in managed care settings.

- Learning satisfactory methods of explaining to patients their rationale when they do not believe they should honor a patient request for referral or for a specific procedure.
- Honestly and responsibly addressing patient concerns regarding potential conflicts of interest that arise because of reimbursement or organizational structure.
- Learning about methods for communicating with groups of patients (e.g., patients in a practice or with a specific health need) as well as with individual patients, including those that do not present for care.

## Leadership: Promoting Teamwork and Organizational Change

*Learning Objective Five: Learners will develop leadership and management skills to enable them to function effectively in organizational arrangements found in managed care environments.*

Although most students entering medical school do not plan to become managers in clinical settings or administrators in managed care organizations, it is increasingly important for all physicians to develop their leadership and management skills in order to function effectively in the various organizational settings, including arrangements common to a managed care environment. Most physicians will practice in group settings, many in salaried positions. Yet some managed care organizations have noted the uneasiness of many new physicians as they try to settle into the organization and their practice teams, as well as problems with patient care created by poor coordination between team members (Pearson, Silverman, & Epstein, 1994). Whether caring for patients as part of a multi-disciplinary team, teaching students/residents, chairing committees within a group practice or HMO, or serving as the medical director of a managed care organization, the ability to lead a team and promote constructive organizational change are skills central to the careers of most physicians (Crosby, 1994).

Components of this learning objective include:

### ***Leadership: Team Participation and Management***

Although traditional medical education focuses on individual knowledge, achievement, and autonomy, it is important for students to learn that work gets done with others, rather than alone (Crosby, 1994). The role of the resident-manager or physician-manager is to motivate students, team members, or colleagues to be productive in the work place, to create an environment that encourages high quality performance, and to reinforce the desired behaviors which enhance quality and productivity (Crosby, 1994). To support the development of these roles, teaching programs need to include components in the following areas:

- **Group behavior.** Group processes, including knowledge of group dynamics, can help the teams engage in problem-solving, and strategies for facilitating consensus and resolving conflicts are needed for moving to closure in decision making and maintaining positive working relationships.
- **Leadership style.** An awareness of one's own leadership style relative to contemporary views of leadership will help learners develop more effective interpersonal leadership skills and assess how various approaches to leadership can best meet the needs of the team. While physician training is typically oriented toward a more autocratic management style, the current health care environment demands a more participating style, allowing team members and employees to more freely contribute to the decision making process. This fits with the current view of the manager as coach (Bradford & Cohen, 1984).
- **Cognitive styles.** The ability to interpret various cognitive styles of individuals will assist learners in effectively structuring their interactions with colleagues, students, and employees.
- **Communication skills.** The development of communication skills which allow learners to elicit and provide useful feedback in their relationships with colleagues, patients, and employees will enhance their ability to engage in participatory decision making and access a repertoire of communication practices necessary for conflict resolution.
- **Delegating.** The ability and willingness to delegate and share authority facilitates the development of more productive collaboration and helps to avoid the burn-out associated with trying to do everything.
- **Individual strategies.** Familiarity with some individual techniques for management related to performance evaluation, negotiation principles, and time management is also relevant to working in a managed care environment.

### **Leadership: Promoting Organizational Change**

With managed care's emphasis on improved quality and equal access at lower costs, physicians regularly confront the challenge of how to successfully implement change in departments, group practices, hospitals, and managed care organizations.

- **Familiarity with the concept of organizational culture.** Ability to identify opportunities and obstacles to organizational change.

Understanding how practice cultures and managed care cultures develop (Kralewski, Wingert, & Barbouche, 1996).

- **Strategies for promoting change.** Strategies for motivating others to participate in and design the process for change. Familiarity with incentives and rewards that will support the process of change in the context of varied practice cultures.

The development of skills in these areas of leadership and management will provide an important foundation for the implementation of continuous improvement discussed in the next section.

## **Quality Measurement and Improvement**

*Learning Objective Six: Learners will be able to use tools for measuring and improving the quality of care they provide to individuals and groups of patients for whom they are responsible.*

The practice of medicine is increasingly shaped by concerns about the quality of health care. As a result of rising health care costs accompanied by perceived minimal improvements in quality, patients, payers and employers are demanding greater accountability and demonstrated quality. The ability to assess the effectiveness and value of medical treatments should also be a central concern to physicians.

Medical education programs need to provide learners with opportunities to acquire an understanding of approaches to quality measurement and improvement including:

- the development and application of outcomes measurements
- the development and appropriate use of clinical practice guidelines
- the measurement of patient satisfaction
- continuous improvement

### **Outcomes measurement**

- **Familiarity with clinical outcomes measurement and clinical decision making.** Understanding the design, measurement, and analysis of outcomes data in a clinical setting and ability to apply this information in the day to day practice of medicine. Understanding variation in clinical care and outcomes, and being able to differentiate true patterns from random fluctuations in data.
- **Experience receiving and providing feedback about their care that can be used to track outcomes.** Ability to develop and use valid and reliable "measures" which capture the results of the medical therapies they are using and recommending. Familiarity with various strategies for measuring patient functioning and quality of life.

### ***Clinical practice guidelines***

Practice guidelines make specific recommendations to physicians on how to treat clinical conditions. These are usually based on a critical review of the literature and involve both national and local experts.

- **Understanding how clinical practice guidelines are developed.** Ability to identify desirable attributes of practice guidelines (Field & Lohr, 1990; Guyatt, Sackett, Sinclair et al., 1995).
- **Awareness of the limitations of practice guidelines.** Ability to identify the clinical situations to which they cannot be applied and to identify guidelines that are not based on sufficient evidence. Experience balancing the practice guidelines with the scientific data and patient desires, keeping in mind the ethical issues raised previously.

### ***Patient satisfaction***

Managed care organizations frequently use assessments of patient satisfaction as one mechanism to ensure quality and customer satisfaction.

- **Patient's role.** Understanding and appreciating the patient's role in health care and quality assessment. Understanding how patient feedback regarding the physical and psychological impact of medical therapies can be incorporated into a more comprehensive profile of the effectiveness of care.

### ***Continuous improvement***

Information on outcomes of medical interventions and the development of practice guidelines will contribute little to improving the quality of care for individual patients or a health plan's enrollees unless the information is actually used to improve performance. Continuous quality improvement is a set of concepts and principles which focuses on achieving continual improvement through application of empirical data in a systematic fashion. The objective of traditional quality assurance is to identify outliers and then take steps to improve their performance. Continuous improvement focuses on improving processes and reducing variation so that

everyone's skills and judgment will steadily improve. Most managed care organizations are using some variation of this approach to try to deliver higher quality health care at a reasonable cost.

- **Key steps in continuous improvement.** Ability to follow these primary steps (Headrick, 1996).
  - 1) Defining a clear aim.
  - 2) Forming a team that has knowledge of the system needing improvement.
  - 3) Understanding the needs of the people who are served by the system.
  - 4) Defining measures of success.
  - 5) Using data for decision making.
  - 6) Applying the scientific method to test and refine changes.
- **Skills needed to effectively engage in continuous improvement.** Ability to work productively in teams. Familiarity with collection and analysis of data on outcomes of care and processes of work. Strategies for communicating effectively with patients and lay managers. Familiarity with designing health practices and understanding of work as a process are also required (Berwick, Enthoven, & Bunker, 1992).
- **Opportunities for training in continuous improvement.** Graduate medical education provides a particularly appropriate setting because residents have considerable professional knowledge, tend to be interested in change and are motivated to work quickly, have intimate knowledge of processes of care, and have opportunities to participate in improvement activities over time (Headrick, Neuhauser, Schwab, & Stevens, 1995).

## Systems Based Care

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*Learning Objective Seven: Learners will develop an awareness of the various ways in which they fit into large systems of care.*

It is nearly impossible to discuss education for managed care with a managed care executive without hearing about "systems." Education in this area focuses on developing an awareness of the implications of practicing in a large health care organization or system of care. It also refers to the ways in which physicians work and how the clinical care they provide is influenced by and affects other components of the "system".

It requires the integration of services provided by a wide variety of providers across a continuum of care, and with other systems not related to direct provision of medical care such as housing, transportation, and other social services. Many of the requisite components of true systems-based care--resource allocation, quality management and improvement, use of information systems, organizational behavior--are discussed in more detail in other sections of this report.

## Medical Informatics

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*Learning Objective Eight: Learners will be able to use information systems to access data for clinical care, to gather and assess data about their patient populations and practice patterns, and to understand the potential of information systems to improve quality of care.*

The scope and pace of change of medical knowledge is now well beyond the ability of ordinary humans to keep up with it. At the same time, sophisticated data systems have been developed which can guide clinical practice, help keep track of one's practice, and profile individual physicians and physician groups with regard to practice behaviors ranging from utilization patterns to outcomes. Medical information systems carry great promise for improving the quality of medical care at the same time they reduce costs and, perhaps, physician time and frustration. When well done, information systems can serve as the "glue" that binds a physician to his/her patient panel, and to the managed care organization. Appropriately designed information systems facilitate the development and use of all of the other skill areas discussed in this report. This learning objective encompasses the following basic areas:

- accessing information to enhance knowledge and using information for direct care of patients.
- gathering and assessing information about one's patient population and practice patterns.

- understanding how data systems can be used to monitor and improve care.

A clear prerequisite for meeting any of these objectives is basic computer literacy, including keyboarding skills, understanding the basic functions of a computer, and using common software applications such as databases, spreadsheets, and word processing systems. Knowing basic internet applications-how to use electronic mail and accessing the worldwide web-is also a desirable skill. It is probably reasonable to expect that within a few years, most U.S. trained students will possess these skills on arrival to medical school. It is also clear that many medical school and clinical faculty do not currently have them.

### ***Accessing information to enhance knowledge***

- **How to structure and conduct quality literature searches.** Familiarity with MedLine or other similar databases. Emphasis on the term "quality" given the recent findings of the McMaster group showing that most searchers, including faculty, perform poorly when compared to an expert librarian searcher (McKibbin & Walker-Dilks, 1995). Familiarity with use of websites to search for current information and, in many cases, the practice and quality of care guidelines of a given institution or organization.

### ***Using information for direct care of patients***

- **Experience using an electronic medical record and with decision support systems.** Significant familiarity searching for information to enhance clinical decision making. A host of companies have developed prototype electronic medical records and decision support systems which provide easy access to practice guidelines or drug information. While it is not currently reasonable to expect that all residency sites use either of these, it is reasonable to expect that all learners will spend a substantial block of time working in a system with such information tools in place. Absent that, residencies can provide opportunities for learners to test prototype systems.
- **Building and using data bases.** Experience building and using data bases that reflect their own clinical experience and practice, and from which they can retrieve important information about both an individual patient and about important patient groups (e.g., what proportion of one's diabetic patients have had an eye examination in the prior year).

### ***Assessment of information about one's practice patterns***

Learners must have the experience of receiving and assessing information about their practice, whether it be their lab testing or pharmaceutical profiles, or about the satisfaction or outcomes of their patients. Preferably, some of this information should compare data to those of peers. Not every training site has the capability to do all of this. Presentations in which students are exposed to the data capabilities and uses of large managed care organizations will be an important adjunct.

Finally, it is important that physicians not simply act as passive recipients of such information. They need opportunities to assess whether it is valid, and to develop a constructive set of responses to it. Having the skills addressed in the second learning objective will be key to a physician's ability to do this.

## **Teaching Managed Care**

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One of the biggest challenges in educating the next generation of physicians for practice in a managed care environment is that there are now few ideal role models within our educational communities. This appears to be the case for teachers based in traditional academic health centers as well as those practicing in the community. We cannot simply send students and residents to clinical settings in which care is "managed" in a variety of ways and expect them to absorb the content described above. Furthermore, many of the clinical teachers they encounter are unfamiliar with and/or unprepared to teach these subjects. The faculty must reinforce the curriculum with words and deeds, or it will fail. Thus, we must begin to prepare faculty who can teach and role-model the content and practice with regard to the domains discussed above.

What is the minimum that teachers need to begin to prepare students in this area? First, they need to develop a balanced approach to managed care--to understand that managed care is not homogeneous, and that it is not all bad. Too often, students and residents harbor overly negative views of managed care, views that they say reflect those of their teachers, who promulgate messages about the "evils" of managed care. Teachers, like students, need to understand both the promises as well as the perils of managed care, and what they can do to hold the organizations in which they practice accountable for high quality care that promotes the health of their populations.

## Recommendations

Although each of the curricular areas discussed lends itself to specific recommendations, their optimal use will be as a unified, coherent curriculum. The following recommendations apply across the board as clinicians, educators, and policymakers re-think the objectives and design of medical education in a managed care environment.

1. Medical education and managed care as individual entities and as a whole must work together to assure that physicians are fully trained and accomplished in the competencies needed for practice in the future's managed care-dominated practice environment. These competencies must be systematically taught throughout the entire spectrum of medical education.
2. Physician competencies needed for a managed care environment include the following key content areas:
  - Health system financing, economics, organization, and delivery.
  - Practice of evidence-based, epidemiologically-sound medicine.
  - Ethics and the management of dual responsibilities and conflicts of interest.
  - Patient-provider relationships and communications.
  - Leadership, teamwork, and organizational change.
  - Quality measurement and improvement.
  - Care provision in a health care system.
  - Medical informatics and the obtaining, assessment, and use of medical information.
3. These key content areas should be in a unified, coherent curriculum. Rather than be introduced one at a time, they should be incorporated on an ongoing basis so as to become part of the culture of medical education.
4. The nature of these content areas requires a greater emphasis on teaching experience in managed care settings, and didactic components should be used to emphasize key themes. Combinations of lecture, seminar, problem-based learning exercises, and new resident responsibilities and projects may be the most effective approach overall.
5. Education in the key content areas should occur across the entire educational curriculum, from premedical education through practice.
6. Admissions committees should consider as additional entry requirements, basic computer and keyboarding skills and course work on the organization and financing of health care in the United States and an introduction to public health.
7. Implementation of this curriculum should be accompanied by other changes in the culture and value system of the institution and by exposure and debate among the faculty. Faculty will need to gain mastery of basic domains and model evidence, and population-based, ethical, and team- and systems-oriented approaches to care in their own teaching and practice.
8. Faculty must be given opportunities for experience in managed care settings.
9. Financing of education in these areas, including the experiential learning components, should be broad based and broadly shared by the community. Ideally, all payers, not just Medicare and Medicaid, would contribute their fair share to paying for medical education.
10. Potential barriers must be addressed and overcome, including:
  - Identification and support of faculty to take the lead.
  - Steps needed for academic and community/managed care physicians to learn to understand and respect each other's very different cultures.
  - Identification of appropriate clinical sites for experiential learning.
  - Competition among departments and disciplines for clinical training sites.
  - Identification of funding for clinical sites and teachers.
  - Creation of meaningful lengths of rotations between traditional and managed care settings.

- Maintaining friendship and peer relationships among students and residents through rotations between traditional and managed care settings.
  - Developing partnerships between residency programs and managed care sites in management and control of residents.
11. The managed care organizations in communities with health professions education programs must participate in developing learning opportunities for students, residents, and faculty in health care delivery settings.
  12. Medical schools' admissions panels should consider pre-medical education course work in ethics, management, and health systems among the criteria for admission to medical school.
  13. Medical education programs should be evaluated by graduates, patients, and health delivery organizations to assess the success of these schools in producing graduates with the content and competencies discussed in this report.

## Potential Strategies

The following section discusses the potential strategies specific to each content area.

### *Health Systems Finance, Economics, Organization and Delivery*

- 1) Much of the information (e.g., evolution of the health care system, definitions) in this component of the curriculum is appropriately presented in a lecture format.
- 2) Interactive seminars in which learners engage in point-counterpoint exchanges organized around mini-cases or vignettes may be useful. Learners could also participate in role-playing exercises assuming roles of physician-managers, medical directors of health plans, employers, public sector payers, patients and other key players in the health care system.
- 3) Current events for residents. Because managed care environments and organizations are changing so rapidly, learners will need frequent exposure to what is happening in the local health care marketplace and how it may impact on their practice. This could occur in a variety of formats, ranging from discussion during precepting in the in- or out-patient settings to more formal "grand rounds" type presentations.
- 4) A useful exercise for learners would be to trace a dollar from the purchaser of care (individual, employer, government) all the way through the system, and note at each stop along the way the incentives for each "participant".

### *Practice of Evidence-Based, Epidemiologically-Sound Medicine*

This segment of the curriculum lends itself to both a didactic series and an experiential component. Many of the basic statistical and epidemiologic components can be addressed in classroom or seminar settings, although using a problem-based or case-based approach will probably make the information more interesting. However, exposure to much of the material must be incorporated into day to day clinical practice in both the inpatient and ambulatory settings.

Other approaches to achieving this are:

- 1) Regular journal clubs which focus on critical review and appraisal.
- 2) Making each resident an evidence based expert on a given topic, and having that individual serve as a consultant to his/her peers.
- 3) Epidemiologic or evidence-based projects in which learners evaluate an aspect of their patient population or their care.

### *Ethics*

- 1) This part of the curriculum lends itself to interactive sessions in which learners have the opportunity to review and discuss cases that illustrate how these types of questions arise on a daily basis.

- 2) Ethics committees that involve or are led by residents (with a faculty mentor) could be a powerful mechanism to provide real-time experience with a number of issues discussed above, particularly if they are expanded to address some of the issues that arise in managed care contexts. Even residents who do not practice in managed-care settings or care for patients in managed-care plans have significant impacts on resource allocation decisions made in their institutions, and may benefit from considering such issues.

### ***Development of Patient-Provider Relationships***

- 1) Trainees could have a meaningful experiential learning component of the curriculum in which they:
  - Gather and review information about the satisfaction of *their* patients using a standard patient satisfaction instrument.
  - Develop and/or participate in interventions to improve patient satisfaction.
  - Try strategies to communicate with groups of patients and with those that do not present for care.
  - Explain to patients why a given test or referral is not indicated.
  - Discuss patient concerns about potential conflicts of interest, and the related ethics conflicts that arise.

The latter two can be done through role play or use of standardized patients if the clinical situations are not available to learners.

- 2) Residency programs should review their curricular segments addressing the medical interview and the patient-doctor relationship, with special attention to issues of eliciting the patient agenda, providing explanation, participatory decision-making, facilitating adherence, promoting behavior change, and addressing psychosocial concerns.

### ***Leadership: Promoting Teamwork and Organizational Change***

- 1) In addition to some didactic sessions which provide an overview of various views of some of the topics, workshops which provide learners with the opportunity to engage in role playing are particularly important (e.g. running a meeting, leading rounds, chairing a committee within a group practice).
- 2) Programs could create opportunities for learners to participate in structured self-assessments of their own leadership style, cognitive style, and conflict resolution style, and opportunities to interpret the styles of others in their current work teams. They could also sponsor workshops about management education techniques that focus on particular skills such as delegating responsibilities or sharing authority.
- 3) Another potential learning experience for teamwork would be for each learner to have a 360 degree review by her/his team (nursing, clerical, colleague, senior leader) as part of residency.

### ***Quality Measurement and Improvement***

The following exercises could provide skills in this area:

- 1) Critiquing a practice guideline for a group of colleagues.
- 2) Creating a practice guideline and having a group of colleagues review and critique it.
- 3) Receiving quality improvement feedback about one's practice compared with the practices of peers.
- 4) Work as part of a quality improvement team on a particular project.
- 5) Define, measure, and critically evaluate a commonly used procedure or approach to care.

### ***Medical Informatics***

- 1) All learners should enter medical school and residency with prerequisites in computer literacy.
- 2) Capability to be skilled at literature searching can be assured by work with a librarian and by regular requirements that search strategies be reviewed. If such learning is not yet incorporated into regular case discussion, learners can perform structured exercises designed to teach such strategies (cites, if possible).
- 3) Optimally, learners would practice in sites with electronic medical records and decision support systems in place. Absent that, trainees should have the opportunity to take clinical rotations in such sites, or at least to "test" prototype systems.
- 4) All learners should use an information system to collect and use information of some aspect of their practice. All should, at regular intervals, receive information about their practice patterns which also compares their practices (and outcomes) to those of their peers.

### ***Teaching Managed Care***

In preparing faculty in these domains, recognition of adult learning theory, and of individual differences in how adults learn, will be important.

- 1) Faculty development activities should focus first on those faculty with most clinical contact with students and residents. For example, it may not be efficient to assure that teachers of biochemistry are skilled in each of the above domains.
- 2) An array of mechanisms for learning about the domains listed above should be available to faculty. These might include traditional lecture-based CME, interactive multimedia formats, problem based learning sets, and discussion groups. Institutions should consider a program of educational credentialing, in which faculty must demonstrate they have made a given level of effort to learn about these domains in order to serve as teaching faculty. Others might be trained and supported to serve as "master

teachers" or to attend "training the trainer" programs, such as those at Stanford or McMaster.

- 3) Programs should recognize that much of the teaching of both students and residents is done by other residents. Because key opinion leaders are critical in any institution, careful attention could be paid to the choice and preparation of chief residents. Such individuals could attend special workshops designed for educational leaders.
- 4) Depending on the local environment, both core faculty and chief residents might participate in experiences or rotations with a local health plan medical director to become more familiar with the issues in, and workings of, their local health plans.
- 5) Faculty, like residents, could rotate responsibility serving on key institutional or practice committees that relate to some of the tools used in managed care settings, such as those outlined above.
- 6) Some academic health centers have actually entered partnerships with managed care organizations in order to learn to change their culture and behaviors to become more appropriate for managed care settings. Faculty groups might develop and/or hire "managed care consultants" who could shadow them in their practices and provide feedback about opportunities to improve in the domains discussed here.

## Descriptions of Sentinel Programs

The following descriptions illustrate how several teaching programs, often through collaborative arrangements, are redesigning their curriculum and experimenting with various techniques to facilitate the development of the managed care competencies discussed in this report. This section is not intended as an exhaustive list of innovative programs, but an attempt to provide some concrete examples of programs compatible with the learning objectives and recommendations set forth in the report. Contact persons are noted so that interested readers may acquire more detailed information on the development, implementation, and evaluation of these efforts.

### ***Case Western Reserve University School of Medicine and Henry Ford Health System***

Case Western Reserve University School of Medicine (CWRU), a private research-focused medical school, and Henry Ford Health System (HFHS), an integrated health system with a preponderance of managed care, have established a formal, broad affiliation that includes substantial commitments that bind the two organizations. The affiliation was facilitated by shared commitments to education, agreement on the need to adapt student education to the emerging managed care environment, a shared commitment to health services research, investment in the concept that learners add value to the health care delivery setting, and the desire to develop graduates with knowledge of practice in managed care.

The various components of the curriculum are organized around the development of several core competencies: Epidemiology, Leadership, Quality Improvement, Managed Care, Communication, Populations, Sciences of Medical Practice, Informatics, and Biostatistics. The collaboration between CWRU and HFHS recognizes that the education of the physician is a life-long learning process and that teaching should be organized in life situations, not by subject domains. In keeping with these principles, CWRU and HFHS offer programs geared to the undergraduate, graduate, and CME levels of medical education described below.

**Summer Fellowships.** Offered after the first year of medical school, the fellowship is organized around a didactic course, a health care outcomes research project, and clinical mentoring experience. Sample topics included in the course are introductions to clinical reasoning, health care reform and the changing health care environment, managed care, epidemiology, cross-cultural medicine, integrated health systems, and decision analysis. Learners conduct outcomes projects for the Center for Clinical Effectiveness, Center for Health Systems Studies, Health Alliance Plan, and Center for Medical Treatment Effectiveness Program.

**The Junior Year at CWRU.** Through clinical experiences and various forums, the third year curriculum integrates the development of an expanded list of generalist skills related to the competencies needed to practice in a managed care environment including: Clinical skills and clinical reasoning, Communication skills (clinical interview, presentation skills, synergistic skills, counseling and education skills), Management skills (time, person, resources), Self-enhancement skills (growing autonomy in learning, metacognition and reflective practice, self-appraisal and coping skills), Practice sciences (medical informatics, clinical ethics, clinical epidemiology, health economics/social sciences), Attitudes and values (adherence to the biopsychosocial approach, stress of health promotion and disease prevention, allegiance to evidence-based medicine, awareness of costs, community orientation, sensitivity to cultural issues).

**The Alpha Site.** This community-oriented primary care model provides opportunities for residents to manage the care of a defined population at a particular community site, focusing on the further development and application of their clinical skills, community skills, and public health skills, keeping in mind the principles of managed care, continuous quality improvement, and an evidence-based approach. This component of the curriculum is recently supported through a Pew Grant.

**Managed Care College.** Established in 1993, the Managed Care College is an ongoing program of CME at the Henry Ford Health System in Detroit, where senior medical staff, administrators, and nursing professionals participate in a program of collaborative learning, designed to help them better meet the needs of the managed care practice and population they serve. Most enrollees come from the Henry Ford Medical Group, the HFHS's 1000-member multidisciplinary group practice. Classes are held one afternoon each month from September through June. The primary components of the curriculum include: (1) learning about various approaches for managing care through simulation and homework exercises; (2) examining data from their own practices and benchmarks from within the health care industry to assess their own effectiveness in providing health services; (3) studying clinical guidelines, examples of best practices, and preferred systems for organizing and managing daily operations; (4) planning how to implement these improvements in their own practices; and (5) participating in a process for measuring the extent to which local care practices change as a result of their involvement with the Managed Care College curriculum.

**Contact Persons:** David C. Leach, M.D., Director of Medical Education, Henry Ford Health System (313) 876-7143; John J. Wisniewski, M.D., M.H.S.A., Director, Managed Care College (313) 874-6325.

### ***The Medical Scholars Program at the University of Delaware and Jefferson Medical College***

The Medical Scholars Program (MSP) directed by the University of Delaware (UD) and Jefferson Medical College (JMC) demonstrates important opportunities for the early development of competencies relevant to managed care in the pre-medical education of learners. Initiated in the late 1980's with support from the Longwood and Welfare Foundations, sophomore and junior students are chosen by UD faculty to interview at JMC. MSP scholars are interviewed and accepted JMC through the standard admissions process and are offered conditional acceptance into the MSP and into JMC late in the sophomore year or early in the junior year of college. JMC requires maintaining a GPA of 3.33 and earning satisfactory scores on the MCAT. There are six MSP students in the JMC class of 1998 and 10 MSP students in

the JMC class of 1999. The program was designed and initiated by Drs. Robert Blacklow, John Engel, and Joseph Gonnella.

While at the University of Delaware, MSP students are required to take courses in the four areas of the Medical Scholars curriculum: Life and Physical Sciences, Humanities and Social Sciences, Public Policy, Economics and Information Sciences, and the Medical Scholars Practicum which involves taking a minimum of two practicums in local health care settings. Students are also required to take a 1-credit lecture series in public health, developed by a team of physicians from the Delaware Department of Health and Social Services.

MSP students must also fulfill general requirements in the College of Arts and Science, as well as other University requirements in English, math, foreign language, multicultural, and writing courses.

Upon entering JMC, MSP students spend much of their first year in a special curricular "track" consisting of three major courses:

- Basic Science Problem-Based Learning -- Clinical cases developed by the JMC faculty specifically for the course serve as the starting point for reinforcement and integration of principles of physiology, biochemistry, and histology. Students identify and teach each other the scientific information requisite to addressing each medical problem. Faculty from several departments facilitate the process.
- Medical Humanities -- Small group discussions focus on the study and practice of medicine from philosophical, cultural, historical, and personal perspectives.
- Seminars and Practicum in Health Care -- This component covers fundamentals of community-oriented primary care including concepts of community assessment, health promotion and disease prevention, health policy, and health care delivery. Student activities and projects include the development and implementation of a health risk and needs assessment of a target population and placement with JMC primary care faculty at clinical sites for participation in clinical activities and project development.

Having participated in a balanced premedical curriculum, MSP students enrich the JMC learning environment with their enhanced understanding of the health care system acquired from both classroom and practicum experiences. They have started to acquire the skills needed to function effectively in an interactive learning environment.

Faculty at JMC report that the MSP experience has also served as a catalyst for change in the curriculum for all JMC students. Components of the Medical Humanities course have been incorporated into several other courses including Anatomy, Doctoring in Health and Illness, and Ethics. Enthusiasm for the problem-based learning and clinical components of the Practicum in Health Care has resulted in the implementation of a new first and second year longitudinal patient-centered curriculum. All first year students are now interviewing patients in the hospital and working with physicians in their office practices in the community. Second year students are taking an expanded physical diagnosis course with the opportunity to work with patients while they are studying pathophysiology. The Medical Scholars Program is having an important impact reaching beyond the students in the program, facilitating the development of competencies needed in a managed care environment.

**Contact Person:** Susan Rattner, M.D., Assistant Dean for Academic Affairs, Jefferson Medical College, (215) 955-0704.

***Kaiser Permanente, Northeast Region and New York Medical College***

In order to help physicians acquire the knowledge, skills, and attitudes necessary to work in managed care settings, New York Medical College and Kaiser Permanente, Westchester have joined together to develop a curriculum geared towards Internal Medicine and Pediatrics residents. The training program includes a month-long rotation for second or third year residents at a group-model HMO as well as a lecture series which spans all three years of training and includes interested faculty. The program was piloted in 1995-96 and will be fully implemented in 1996-97. The curriculum focuses on "managed care principles and competencies" with educational goals in the following areas:

- Managed Care Fundamentals -- Overview and population-based medicine.
- Systems within Managed Care -- Quality management, resource-utilization, continuity of care, coordination of physician responsibilities, referral and consultation, hospital care, performance evaluation mechanisms.
- Interpersonal Skills -- Patient-physician relationship, team work.
- Diagnosis and Treatment -- Common outpatient conditions and practice guidelines, prevention and health maintenance, patient education, telephone medicine, ambulatory care procedures.
- Professional Issues -- Ethical considerations and career decisions.
- Personal Learning Goal -- To be determined by each resident in collaboration with a faculty preceptor.

The managed care rotation in primary care provides residents with a variety of educational experiences including primary care and specialty patient-care sessions, production of a quality management project, attendance at organizational meetings, patient-education and telephone advice line sessions. These activities permit residents to observe and experience first-hand the principles of managed care such as coordination of patient care, quality management, resource management, referral mechanisms, and patient relations.

The leaders from New York Medical College and Kaiser Permanente engaged in this collaboration to provide what they view as a much needed educational program that will stimulate learning for all involved, including the staff and patients at the HMO as well as the faculty in the Residency Training Program. They are also interested in the development of more informed attitudes about managed care. The program provides residents with an additional ambulatory training site in a private practice environment with a large, established population.

Potential benefits for Kaiser Permanente include an increase in productivity, access to useful quality management projects conducted by the residents, and enhanced opportunities for physician recruitment for the HMO.

**Contact Person:** Elizabeth K. Kachur, Ph.D., Director for Primary Care Curriculum and Evaluation, NYMC--Center for Primary Care Education and Research, (914) 993-4609 or (212) 604-7316.

### ***Harvard Pilgrim Health Care***

Harvard Pilgrim Health Care (HPHC)--formerly Harvard Community Health Plan-- has developed a new residency training model to produce clinicians with superior skills for the practice of primary care medicine in managed care. HPHC launched the prototype program in June 1994. Physician trainees function within the group practice, prepaid delivery system of the managed care organization. Office practice is the heart of the resident's experience in this program.

The program is geared toward producing graduates who have competencies in the following areas:

- General internal medicine, over the continuum of care.
- Communicating effectively with patients and fellow clinicians, and engaging in participatory decision making with patients, families, and providers.
- Leadership and team building skills.
- Clinical prevention and population orientation in primary care.
- Psychotherapy and substance abuse in primary care practice.
- Clinical decision making in managed care, including resource allocation and medical ethics.
- Ameliorating social factors influencing health.
- The doctor's role in continuous improvement in the quality of care. Use of clinical and information management systems to analyze and improve practice patterns.

The general design of the residency curriculum is built around the following core concepts.

1. The first year emphasizes the acquisition of hospital skills so that trainees feel as comfortable at the end of the year as their traditional program peers in the management of hospitalized patients.
2. The second year is devoted almost full time to practice in the managed care office setting.
3. A highly structured curriculum, a carefully engineered set of outpatient clinical experiences, and direct patient care responsibility are used to create a challenging program comparable to the inpatient setting in the resident's acquisition of knowledge.
4. The third year is custom designed to fill in needed competencies based on an educational needs assessment carried out by all residents at the end of their second year. The core experience for this year is built around longitudinal primary care (rather than block rotations) in the office so the resident can provide continuity of care for his/her patients.

Seminars focused on the core competencies needed by primary care internists occur longitudinally throughout the second and third years of the program. Seminar themes include: (1) Panels and Populations: Prevention, Clinical Decisions and Epidemiology in Primary Care; (2) Substance Abuse Coaching and Psychiatry in General Practice Communication; (3) Management and Total Quality Management; (4) Communication, Social Medicine, and Doctor-Patient Relationship; (5) Ethics; (6) Care of the Geriatric Patient; and (7) Care of Patients Near the End of Life. Each seminar has as its focus patients from the resident's own practice panels that exemplify issues in these thematic areas of medical care.

**Contact Persons:** Jeannette Shorey, M.D., Director, Primary Care Residency Program, Harvard Pilgrim Health Care, (617) 421-2625 or Gordon T. Moore, M.D., Director, Teaching Programs, Harvard Pilgrim Health Plan, (617) 421-2747.

**George Washington University, Department of Health Care Sciences**

It is in the clinical experience phase of "evidence-based/population-based" teaching that much of the learning of how to practice in a managed care environment occurs. Both students and residents learn in ambulatory sites that are part of GWU's large HMO practice. All of the resident's ambulatory care experiences at GWU (family practice -- 3, 4 and 5 half days in years 1, 2 and 3 respectively, and one full time for one year in primary care pediatrics and internal medicine residencies) take place in managed care practices. In the required third year clerkship, students spend at least three of their six weeks in a managed care setting within GWU's faculty practice.

The Primary Care Clerkship is designed to teach students approaches to diagnosis and treatment of conditions commonly seen in primary care practice, and to promote an understanding of the effective use of consultants and ancillary medical, social, and community resources to optimize patient care. To develop the competencies needed to be an effective primary care physician in a managed care setting, the clerkship is structured around the following goals:

- Enhancement of interviewing and physical examination skills
- Recognition of the importance of continuity of medical care
- Emphasis on the importance of health promotion and disease prevention practices
- Emphasis on the influences of lifestyle and environmental factors on health and illness
- Emphasis on the influence of psychosocial factors on health and illness
- Recognition of the differing clinical epidemiology and ambulatory practice vs. inpatient practice
- Enhancement of clinical problem solving skills
- Enhancement of self-directed learning skills
- Introduction to alternative systems for organizing medical practice, and ethical concerns in the care of patients
- Emphasis on the appropriate and efficient use of diagnostic and therapeutic resources in the ambulatory setting
- Enhancement of skills in the critical appraisal of medical literature

The didactic component of the clerkship includes a primary care lecture series, office simulations, sessions on chronic disease care scenarios in which students are asked to provide data from patients they are working with, oral presentations on primary care topics, and simulated patient interviews which are videotaped for addition reviews.

**Contact Person:** Greg Pawlson, M.D., M.P.H., Professor and Chairman, Department of Health Care Sciences, George Washington University, (202) 994-7965 or (202) 994-9080.

***The UCLA and the UCLA-San Fernando Valley Internal Medicine Residency Program's Managed Care Curriculum***

The UCLA Medical Center (UCLA-CHS) and the UCLA-San Fernando Valley Program (UCLA-SFVP) train internal medicine residents in categorical, preliminary and primary care programs. The former is administered at a tertiary university hospital where patient care is coordinated by group model practices with fee for service (FFS) and HMO reimbursement and strong financial incentives to limit resource utilization. The latter program is university affiliated and trains at county and VA hospitals where there is no institutional or financial requirement to control subspecialty referrals for either inpatient or outpatient care. These programs developed a managed care curriculum with influences from their two approaches to patient care delivery.

The UCLA-CHS program gradually implemented managed care activities for residents. These activities evolved parallel to the growth of managed care in California. Residents were gradually introduced into the group practice managed care process over four years beginning in 1990. At each successive step, involving trainees in the care of capitated patients provided neither more burdensome on the process nor more costly. Currently, all faculty and residents are involved in weekly ambulatory UR meetings with prospective review of all requests for expensive procedures and specialty referrals. The actual UR activities at UCLA-CHS were derived from those of commercial HMO business practices. Involvement in ambulatory UR has become a "plus" at job hunt time. UR is also used as a source for CQI, and educational interventions for residents and faculty.

At the UCLA-SFVP, there was no financial incentive to institute a managed care program, yet COGME's educational recommendations to introduce managed care curricula for residents needed to be addressed. There were additional institutional needs as well. The VA and county specialty care clinics were full with one to six month appointment delays. Specialty care physicians believed that they were seeing many patients that were more appropriate for primary care clinics. In 1994, the ambulatory care center at the Sepulveda VA established a managed care working group to investigate and improve the referral process. The following year a utilization review process was established by the general internists. Confirming the specialists' perceptions, many referrals to specialists were found to be unnecessary, the questions asked were more appropriate for primary rather than specialty care providers. Consequently, faculty for the resident general medicine clinics received training in procedures and management issues appropriate for their expanded primary care roles. Currently all the program's residents attend weekly ambulatory utilization review meetings when doing VA rotations.

Although the impetus for developing managed care programs differed at these two institutions, they developed a resident managed care curriculum with shared teaching and learning strategies. These are based primarily on hands-on experiences. Resident inclusion at utilization review meetings lends itself to problem-based learning and practice of evidenced-based medicine. The two programs are beginning to profile residents, similar to how FFS and HMO physicians are, tracking individual resident patient management decisions such as ordering prescriptions, tests, and consults. Their faculty role model developing additional procedural skills to instruct residents about the need to develop expanded competencies as primary care providers. They incorporate resident experiences at staff model HMOs, involve them in CQI projects, and expose them to practice using drug formularies. These experiences are complemented by lecture/discussion sessions on various managed care topics.

Feedback is also an integral part of their managed care curriculum. With physician profiling, feedback can take the form of a practice pattern report card. They keep track of documentation scores and referral rejection rates

per resident provider during their ambulatory UR process. The resident is also given numerous opportunities to give feedback to their programs about the curriculum and its delivery. Both programs have also taken steps to evaluate the curriculum formally by sampling resident attitudes and behaviors with respect to managed care competencies. These results have been presented as abstracts for the Society of General Internal Medicine.

**Contact Person:** Arthur G. Gomez, M.D., UCLA-San Fernando Valley Department of Medicine, (818) 891-7711, extension 5129.

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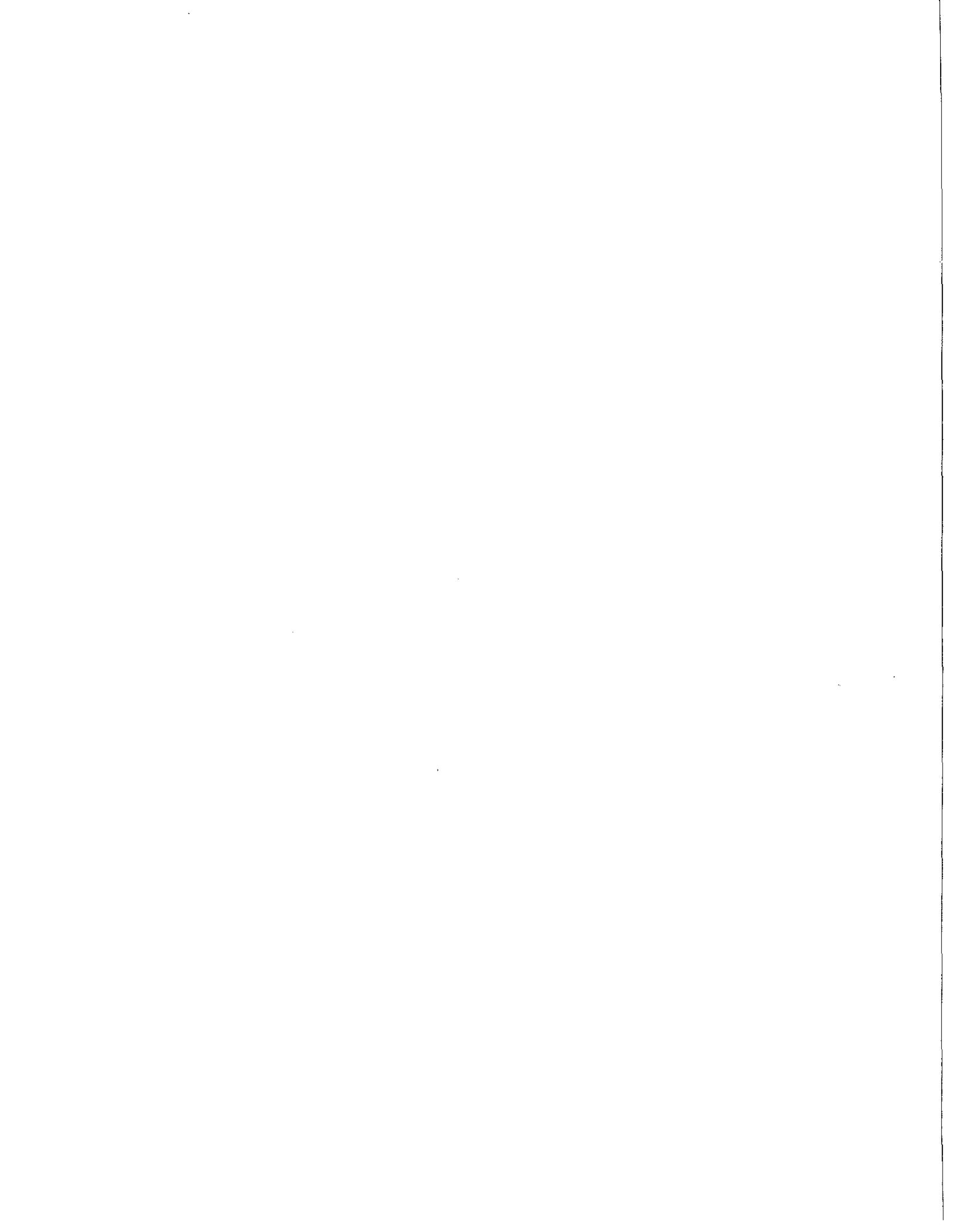
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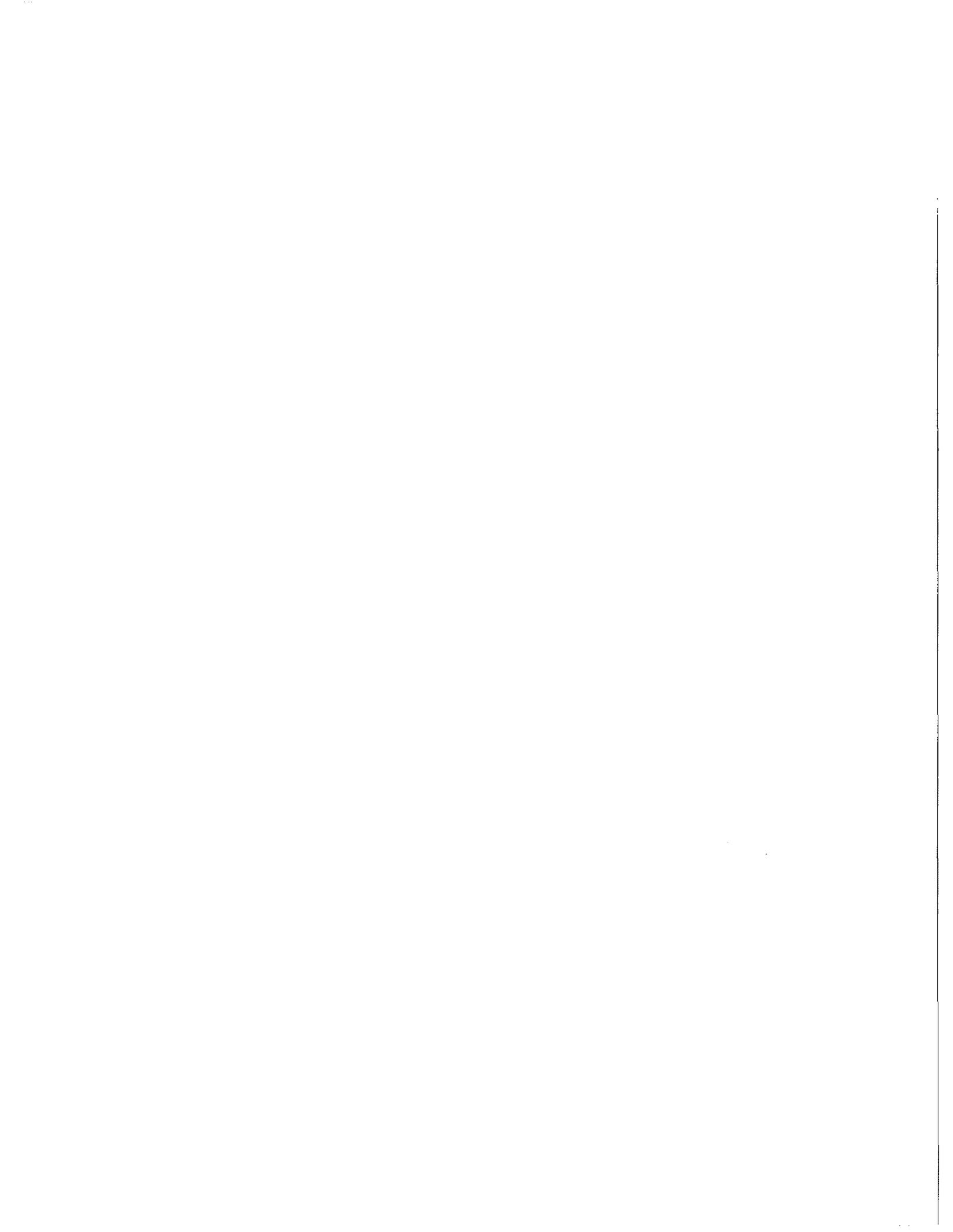
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