Economic and Quality of Life Outcomes: Managed Care Perspectives

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A variety of economic factors have created a growing demand for health care reform and the rapid expansion of managed care plans. Absence of a clear, commonly accepted definition of managed care constitutes one of the

Introduction

Managed care has expanded beyond an experimental process that combined insurance and delivery of care to become a major component of much of the health care service delivery market. Fundamental changes in the incentives facing every participant in the health care delivery process call into question the potential impacts of managed care upon cost and quality dimensions of outcome. Even if the incentives are ignored, the new organizational forms of service delivery that arise around managed care organizations make inadvertent lapses in quality a potential.

On the other hand, many have argued just the opposite [1,2]: The integrated nature of the managed care organization makes for higher quality care. Having physicians work in a group setting with constant peer review creates the potential to identify poor quality practices more rapidly. Because providers/insurers in the managed care system have a strong incentive to "maintain health," they have an incentive to examine how care is delivered, what care is delivered, and which type of provider is "best" for providing that care.

The empirical evidence on quality of care within managed care organizations is generally favorable [3], but the results contain significant uncertainty. Managed care appears to use fewer health care resources in treating patients (primarily hospital care), to use more preventive services, and to have mixed results with regard to outcomes. There are exceptions to these generalizations in terms of special populations, and some managed care populations and entities have yet to be competently studied. The results primarily apply to commercial enrollees in health maintenance organizations (HMOs). The nonclinical aspects of quality have been particularly ignored. Patient satisfaction has received relatively little attention as an outcome until recent years. Further, quality of life outcome comparisons between managed care and fee-for-service medicine have not been made.

As managed care organizations experiment with alternative organizational forms to achieve favorable cost and quality outcomes, they impose different levels of financial incentives and managerial controls on providers. This paper examines the implications of these changes generally and briefly applies them to quality of life and cancer care. The paper will address three interrelated questions:

1. What are the economic, social, and political changes that are motivating transformation of the health care system?
2. What are the fundamental characteristics of managed care that influence the financing and delivery of health care services?
3. What are the economic and quality of life implications of managed care for the care of cancer patients?

This paper provides a background of the managed care movement, reviews the economic and political environments changing the health care delivery system, defines managed care and discusses the economic motivations causing its growth, discusses the transfer of financial risk to providers under managed care systems, and explores the impact of managed care on quality of life.

Setting the Stage

As we move into the era of managed care, it is important to understand the current health care system and how that system has contributed to the changes being proposed. This section describes selected aspects of the health care financing and delivery system that are particularly relevant to
managed care, and then briefly highlights problems or issues that we face that are motivating change in the system.

**Third-Party Payment**

The financing and delivery of health care services in the United States are characterized by a number of features that have contributed to rapid cost increases in the system. and, thus, have led to the interest in managed care as a means of controlling those costs. Figure 1 presents a simplified schematic of the relationships among consumers/patients, providers (hospitals, physicians, and others), and insurer. Unlike the relationship that exists between the consumer and provider for most goods and services, health care services are characterized by the presence of an active "third party," the insurers. The demand for and effects of insurance have been well documented. The problem with having insurance intervene between consumers and providers at the time that the decision to seek and apply care is made is that the normal discipline of the market is reduced.

From the consumer's perspective, health insurance is an important and valuable product because the need for services is highly uncertain. That lack of predictability and the financial risk consumers face yield an important benefit of insurance. However, once insurance is purchased, the price of health care services to the consumer (patient) falls and the "moral hazard" effect induces individuals to consume more services than if they had paid full price. Once heavily insured consumers become sick and need services, the cost of those services is essentially zero. Therefore, these patients have no incentive to demand an efficient quantity of services from a social perspective. As long as additional services generate some value to the consumer (no matter how small), those services are demanded.

Similarly, providers have no financial incentive to limit or manage care because they are generally paid based on the quantity of services delivered. This payment system, called fee-for-service for physicians and billed charges for hospitals, rewards providers financially for delivering more, not fewer, services. Consequently, the incentives of both providers and consumers (patients) are in line. Naturally, professional ethics prohibit totally inappropriate care, but if there is ever a question of the value of services, both providers and patients have the incentive to order more services than if they had paid full price. Once heavily insured consumers become sick and need services, the cost of those services is essentially zero. Therefore, these patients have no incentive to demand an efficient quantity of services from a social perspective. As long as additional services generate some value to the consumer (no matter how small), those services are demanded.

**Economic and Political Environment**

A variety of factors have come together to create a demand for change in the health system. Some of these are caused by the third-party-payment system described above and some have occurred for reasons outside of the system.

**Health Care Expenditures**—Rapid and persistent health care cost increases have been creating a desire for system reform for a number of years. Costs have been increasing rapidly since the 1950s and particularly since the advent of Medicare and Medicaid in the mid-1960s. Purchasers and taxpayers are concerned over escalating health care expenditures. In 1993, total health care expenditures were $884.2 billion. Health spending increased 252.1% from 1980 to 1993. While many efforts at cost control have been implemented, even from 1990 to 1993 expenditures increased 26.9% for an annualized rate of increase of 7.9%. Some of this increase can be traced to general price inflation, increasing population, and greater income, but a substantial portion stems from relative changes in the price of medical care services and greater quantity of services provided. As a consequence, health care spending represented 13.9% of the Gross Domestic Product in 1993, and that share has increased steadily for the last 20 years.

Although the overall increase in health care expenditures is important, the impact upon state and federal government budgets is an even more crucial consideration when trying to understand reasons for change in the system. In 1993, public payers in total (mostly Medicare and Medicaid) paid for 43.9% of total health expenditures, compared with 41.9% in 1980 and 24.7% in 1960. Medicaid is the largest component of most states' budgets and rose from $41.3 billion in 1985 to $117.9 billion in 1993. Further, federal expenditures on Medicare increased from $72.2 billion in 1985 to $154.2 billion in 1993.
Excess Capacity--A second economic factor that has facilitated growth of managed care and other changes in the system is excess productive capacity. Since the 1950s, there have been substantial increases in the number of physicians, hospitals and beds, and employees in the health care system. The excess can be seen in a variety of statistics. The number of physicians has increased by nearly 200,000 in the last 12 years or by nearly 40% [8]. This greatly exceeds the growth in total population; thus, the number of physicians per person has increased. Particularly large increases have been seen in certain physician specialty areas. These increases have been viewed as one of the reasons for increasing health care expenditures, but there are opposing views [9]. The number of hospitals and available hospital beds have not increased in absolute numbers in recent years. However, given dramatic changes in the technology of service delivery, the "need" for inpatient capacity has declined. Excess in productive capacity has occurred because of shifts to ambulatory and home settings for a substantial proportion of care. For example, in 1993 more than 53% of surgical procedures were performed on an outpatient basis nationwide [8]. This was up from 16% in 1980. Shorter lengths of stay associated with use of minimally or less invasive technology, changes in practice "style" and reimbursement incentives further reduced the need for hospital beds. As a result, some markets may be "overbedded" by as much as 40% to 50%.

It should be noted that the excesses in physicians, hospital beds, and workers exist despite some significant resource allocation problems. While the aggregate supply is large, resources in rural and inner city areas may be inadequate, and primary care specialists may be in short supply.

Complexity of Existing System--The third issue of concern that has motivated change in the health care delivery system is the complexity of existing coverage, eligibility, and payment systems. Many patients (as well as their health care providers) do not fully understand the insurance coverage that they have or the rules that they must follow to access care. Many individuals, especially the Medicare population, purchase multiple insurance policies that are often redundant and duplicative [10]. Special populations have common misunderstandings about coverage that cause them to purchase inappropriate levels and types of insurance. Research with a relatively affluent suburban elderly population indicated that even in the late 1980s, many were unaware that Medicare did not cover routine nursing home admissions [11]. Medicaid experiments with managed care suggest that the recipients often do not understand that they select a primary care physician and must use that physician for care [12]. Use of hospital emergency rooms for primary care in this managed care population is still a problem.

Likewise, physicians face a confusing array of contracts that impose complex rules and sometimes opposing incentives upon the practice of medicine. These constraints influence clinical and financial practice. Understanding when you can refer, when you cannot refer, and what procedural steps must be followed for referral is difficult when the physician is faced with 20 or more contracts. Until these contracts are standardized, there is no potential to lessen the physician's burden or confusion. Billing and paperwork requirements also add to the confusion, frustration, and cost. Physicians often must employ extra support staff and consultants and invest in information systems to help them through the administrative maze.

Patient-Physician Relationships--Adding to the cost, supply, and confusion factors is a weakening of the traditional patient-provider relationship. Because of increased mobility of both the general population and the total labor force, and increased specialization and fragmentation of services, long established ties with physicians are broken more regularly. These factors reduce the ties that would support continued loyalty to a provider. Early studies trying to understand the development and growth of HMOs in the United States used immigration as a predictor and found that it explained some of the variance in HMO growth [13]. The population in areas of the country with a greater portion of recent migrants had fewer ties to specific local providers. As a result, these individuals did not have to be encouraged with low premiums to break existing physician ties to select the HMO plan option that offered restricted choice of physicians. Consequently, HMO growth tended to be greater on the West Coast and in the Southwest.

Uninsured Population--On top of these factors is the problem of the uninsured. Despite our massive expenditures for health services, as many as 37 million people are uninsured at any point in time, and during a given year more than 50 million people have no insurance for some time. This causes direct and indirect problems in the system. Directly, these individuals must pay for care at the time service is delivered; thus, they may not utilize needed services and suffer the consequences of poor health and lower productivity. The indirect effects are that the services most likely to be put off may lead to even greater health expenditures in the future. In addition, the use of hospital services by the uninsured creates a financial burden on those facilities, and these expenses are transferred to all other users of hospital services.
Value of Additional Services--The value of massive expenditures for health care is in question for a wide variety of services. Economists have told us for years that because of insurance, health services have been demanded to the point where the marginal value is low. This moral hazard effect is being reflected in the evaluation of the worth of some services [5]. For example, some high technology care appears to have a very low marginal value in terms of either diagnosis or treatment. Further, evidence from the Rand health insurance experiment indicated that 23% of hospital admissions were inappropriate overall and inappropriate admissions varied from 10 to 35% across the six sites of the study [2]. More troubling, however, is that despite the large expenditures and massive availability of services, staff, and technology, our outcomes are not much better than those of other developed countries. Infant mortality and life expectancy are near the middle of the pack of 24 OECD (Organization for Economic Cooperation and Development) countries [14].

Health Care Reform

These economic factors have created a demand for health care reform in the political arena. This "politically driven" health care reform has recently lost a great deal of momentum at the federal level, but the prospect of substantial change in the system originating with government action remains. State reform, particularly of Medicaid, constitutes the source of the most innovative experiments with the system.

The political reform movement faces a set of choices, and many analysts have opinions on the relative importance of each [15-21]. A synthesis of these choices suggest the following points:

- **Universal coverage.** Should all members of society be covered under the new plan?
- **Insurance and employment link.** Should the new plan separate the individual's insurance coverage from his/her employer?
- **Who pays.** How will the payment system be developed to finance the universal coverage system?
- **Subsidies for the poor and underserved.** Similarly, how will those who are currently unable to pay receive access to services, and who will pay for that access?
- **Regulation of medical prices.** What will be the degree of regulation in the delivery system, especially in terms of health care prices?

President Clinton's health reform package addressed a number of these issues and added some elements of its own [22]. This reform mandated that a reformed health care system be universal, provide health care that cannot be taken away, result in better health and well-being, be cost saving, provide consumer choice of provider, maintain or enhance quality of care, reduce complexity and high administrative costs, and ensure that responsibility for care is shared by all.

This proposed health care reform system would have produced a number of estimated changes in cost, access, regulation, and quality [16,22]. Most analysts agreed that the cost and expenditure estimates for this plan were not believable [23]. The Clinton program overestimated financial benefits and underestimated costs of reform for a number of reasons: (1) Newly insured individuals would increase aggregate spending because there is currently substantial unmet need in this population; (2) health plans and the proposed health care "alliances" would have difficulty managing the care of this large number of individuals, thereby increasing administrative and other costs; (3) because the uninsured often reside in underserved areas, building the necessary facilities and bringing in the providers to care for them would take time and increase costs of care in the short run; (4) broader coverage would increase total spending; and (5) savings and cuts in existing programs that would be used to pay for the newly insured and the new benefits would be difficult to achieve.

The implications of such a broad reform program for the nation's health status are highly uncertain. In the short run, the effects would most likely be positive, as many individuals would gain improved access to services. In the long run, the effects are unknown. Improved access to quality care by those not currently in the system might be offset by reduced quality, choice, and access among current users.

Managed Care: Definitions and Implications

In part, the "gulf" between the purchasers'payors' and the providers' perspectives may be enlarged by the lack of specificity which characterizes the vocabulary, concepts, and underlying philosophy of managed care. Absence of clear, commonly accepted definitions, resulting, in part, from the increasing heterogeneity of these plans, impedes useful dialogue about managed care and its likely
At minimum, we believe that communication between caregivers and those who use and/or pay for their services may benefit from clarifying these terms and concepts and examining the linkages between various managed care "technologies," provider behavior and resulting impact on quality of care and quality of life.

Historically, "managed care" was synonymous with Health Maintenance Organizations (HMOs), traditionally described as health benefit financing systems that provide a defined set of services to a defined population for a fee that is determined in advance and is independent of the quantity of services delivered. HMOs, however, are only one of many organizational delivery and financing forms that may be referred to as "managed care." Thus, one approach to better understanding "managed care" is to enumerate the various genera of plans which comprise the managed care species. This approach would include defining HMOs, PPOs, POS plans, managed indemnity plans, etc. Unfortunately, the variations within each managed care "genus" is often as great as between the genera [26,27]. For example, even for the oldest and most commonly recognized category of managed care plans, "HMOs," now incorporate a variety of organization models, reimbursement methods, provider network variants with perhaps differing cost or quality outcomes, are the same for these "HMO" variants [3]. Therefore, Enthoven's observation that HMOs integrate the insurance function and the delivery of care to link the premium paid to the ability to organize and deliver care efficiently may be an oversimplification [4].

In any event, the growth of managed care has moved this organizational form from an alternative to the mainstream in recent years. HMO enrollment exceeded 46 million in mid-1993 [28]. This represented a penetration rate of 18.5% of the total US population, up from 15.9% in 1991. If you add over 58 million workers eligible for Preferred Provider Organization care, a substantial portion of the population is now in managed care [29]. Accordingly, rather than focusing on whether a particular managed care plan is a PPO vs a Point-of-Service plan, it seems more important to examine the characteristics that differentiate "managed care" from traditional (indemnity) models and to understand what impacts these characteristics may have on providers and patients.

Quite simply, managed care encompasses any health benefits plan in which the financing entity attempts to systematically influence where and/or how much and/or who delivers covered services. (The emphasis on "covered" services distinguishes managed care plans from indemnity plans that influence service use through simple benefit exclusions or limits.) The mechanisms employed by managed care plans run the gamut from incorporating external utilization management to shifting most, if not all, financial risk to provider entities. These mechanisms, however, generally fall into two broad categories: Access Management Techniques and Provider Reimbursement Techniques.

Access Management Techniques

These include Utilization Management (UM)--UM requires the patient or the physician to seek authorization from the payer prior to initiating certain elective services. Payors generally focus UM on the potential reduction of "unnecessary" inpatient hospital care, and sometimes also on a select range of other costly outpatient procedures (eg, ambulatory surgery, MRIs, CT Scans, etc). In addition, for admitted patients, UM attempts to reduce inpatient lengths of stay. By requiring pre-authorization or continuing authorization, UM techniques are designed to either directly, or as a result of the sentinel effect, eliminate the utilization of marginally appropriate or inappropriate services. (Note: From a UM perspective, the term "inappropriate" may refer to a service that is not clinically justifiable or that is justifiable but not in the setting in which it is proposed to be delivered.)

The managed care plans least distinguishable from traditional health insurance plans are often referred to as "Managed Indemnity Plans." Essentially, these are traditional health insurance plans which incorporate utilization management techniques such as precertification and concurrent review. Managed Indemnity Plans seek to externally moderate the number of high cost services utilized. Managed indemnity does not attempt to modify the specific provider selected by the patient or how patients access the broader range of specialty or diagnostic services.

Contracted Provider Panels--After utilization management, the next step in the managed care continuum attempts to influence not only what services are used, but which providers render covered services. While all types of managed care plans, with the exception of managed indemnity plans, utilize contracted provider panels, PPOs (Preferred Provider Organizations) rely most heavily on contracted provider networks for expenditure control. Patients using a PPO-contracting physician, hospital, or other provider face generally minimal deductibles and copayments, even in the case of patient self-referral for specialty care. Patients, however, who go "out-of-plan" confront significant coinsurance amounts. Contracted provider panels theoretically produce expenditure reductions as a
result of the payer's ability to select cost-effective providers. In reality, provider panels have more commonly reflected the payer's ability to extract fee concessions from providers vs the payer's ability to truly identify the most effective providers.

"Gatekeeper Models"--From the patient's perspective, Gatekeeper models represent a more dramatic departure from traditional health insurance than do managed indemnity or PPO-type plans that rely merely on contracted provider panels and/or UM. Except for true emergencies (and sometimes a few specialized services, such as mental health or annual "well-woman exams"), Gatekeeper Models restrict patient access to health services to a single point of entry, the patient's designated primary care physician (PCP). For example, HMOs provide no benefits for non-emergency services rendered by other than the patient's PCP, unless the PCP (the "Gatekeeper") provides a formal referral. Point-of-Service (POS) plans impose significant coinsurance for services not provided by or upon referral from the patient's designated PCP.

Imbedded in the Gatekeeper Model are the beliefs that: 1) patient's cannot effectively determine their own need for specialty services; 2) care becomes more cost-effective as a result of the comprehensive and historical perspective gained by the patient's PCP; and, 3) reducing "doctor shopping" will reduce redundant or "buckshot" diagnostic testing and reduce the number of false positives which result from redundant or broad spectrum diagnostic work-ups.

Provider Reimbursement Techniques
Managed care plans vary according to their use of Access Management Techniques. Managed care plans may also differ in terms of which Provider Reimbursement Techniques they employ. Provider Reimbursement Techniques manipulate the provider payment system in order to attempt to modify either the unit cost or the quantity of services rendered or ordered by providers.

Fee-for-Service--Fee-for-service reimbursement pays based on charges for the specific services rendered by a provider. Fee-for-service, as noted in Figures 2 and 3, is essentially an "a la carte" approach to paying for healthcare services. Familiarity with the fee-for-service system has bred a considerable level of comfort, but fee-for-service reimbursement is not incentive neutral. Specifically, under fee-for-service systems, providers may maximize revenue by providing and billing for more services and/or a more intense (highly priced services) mix of services.

In the worst case, fee-for-service reimbursement may motivate unscrupulous providers to render unnecessary services, often at some considerable discomfort and or risk to the patient. Even accepting (as the authors do) that most providers are ethical, fee-for-service medicine, especially when coupled with high levels of third party coverage, biases the system toward intervention, even in the absence of proven efficacy. An example of this bias is our current approach to screening for and treating prostatic cancer [30]. Screening yields a relatively high percentage of positive results. These, in turn, lead to invasive, costly, and uncomfortable biopsies. Patients with positive biopsy results frequently are referred for treatment with radical prostatectomies despite any clear evidence of the efficacy of the procedure when compared to radiotherapy or "watchful waiting." Furthermore, in addition to the significant expenditures associated with the procedure, this approach brings with it a small but not negligible incidence of surgical mortality, a substantial number of patients who require follow-up procedures as a result of surgical complications and an even larger percentage of patients who experience lifelong changes in urinary control or sexual function. This example suggests that one should not start an analysis of managed care reimbursement strategies with the assumption that the traditional "fee-for-service" system maximally supports quality of care and quality of life. Fee-for-service is simply the "devil we know." So what about the "devils" we know less well, those associated with managed care?

Discounted Fee-for-Service--As noted above, PPO-type plans and some "fee-for-service" HMOs or POS plans derive savings from redirecting patients to contracting providers who have agreed to discount charges or fees. Absent any other Access Management Techniques, the aggregate reduction in expenditures should approximate the rate at which charges are discounted; aggregate expenditure reductions are less because of the corresponding increase in service volume or change in service mix.

What does the use of discounted fee-for-service reimbursement imply for quality of care and quality of life? We would argue that discounted fee-for-service programs may actually work against quality of care and quality of life by increasing the provision of services provided which fall into the "gray zone" of clinical appropriateness and efficacy. For example, a provider challenged by declining revenues due to managed care discounts may be tempted to consider emphasizing palliative radiotherapy over palliative drug therapy for end-stage oncology patients, in part, because of the higher revenue generated. Or a facility paid on a per diem rate, may delay the patient's discharge to capture the revenue of the extended stay. While generally not permanent or life-threatening,
extended hospital stays are costly, unpleasant for most patients, and carry with them a small but real possibly of iatrogenesis.

Finally, one might argue that managed care plans that rely predominantly or exclusively on significant discounts may reduce quality of care and/or quality of life by the nature of the providers that are willing to contract with these plans. Quite simply, one could posit that the most effective providers will face a surplus of patient demand, and therefore will be able to maximize revenue while employing conservative treatment philosophies. At least initially, these providers also may be the least likely to accept heavily discounted fees from managed care plans. Therefore, in the absence of other objective mechanisms for selecting, recruiting, and rewarding high quality, conservative providers, discounted fee-for-service plans may actually suffer from negative selection bias in terms of provider network composition.

Fee-for-Service with Incentives--This reimbursement strategy combines (discounted) fee-for-service reimbursement with the possibility of earning bonuses based on the providers' ability to moderate use of costly services such as inpatient days, specialty referrals, prescription drug costs, diagnostic testing, etc. These managed care bonus programs sometimes incorporate quality, patient satisfaction, and access measures either as variables that modify the overall size of the bonus, or as variables that eliminate providers from the bonus pool that fall below certain minimum thresholds. Fee-for-service with incentives has been used primarily by HMOs and Point-of-Service Plans because the focus of the incentives is most often the PCP or Gatekeeper.

Joining fee-for-service with incentives should represent the perfect marriage. The fee-for-service component should dilute the potential incentives that capitated providers may face to "scrimp" on care. The incentive component should stimulate providers, particularly PCPs, to use other healthcare resources with optimal efficiency. The problem with this model is that we do not know how to titrate this mix to achieve the desired objectives. Plans which rely on minimal bonuses essentially are viewed as discounted fee-for-service programs by providers with all of the implications for quality of care and quality of life noted above. Plans which link substantial portions of reimbursement to incentive or bonus programs come to be viewed by providers as capitated or prepaid plans with the same incentives as discussed below.

Episode-Based Reimbursement--This category of reimbursement techniques includes fixed case rates paid to facilities (eg, DRGs) or physicians (eg, surgical fees that include surgical and post-surgical care, delivery fees that include prenatal care, or Medicare radiotherapy professional fees that are paid on a weekly basis regardless of the numbers or types of services provided that week.) Increasingly, episode-based reimbursement techniques aggregate reimbursement for multiple provider types (hospitals, physicians, therapists, etc) as in the case of all inclusive per case rates paid for open heart surgery.

Episode-based reimbursement attempts to achieve a defined outcome (a healthy birth, a successful coronary artery bypass procedure, treatment of a non-metastatic breast cancer, etc) at a predictable cost to the payer, while placing the responsibility for organizing the "units of production" on the clinicians. For example, managed care plans may pay the same global delivery fee regardless of whether the birth is by Cesarean or vaginal delivery. By creating a revenue neutral situation, this reimbursement approach strives to avoid the expense, risk, and discomfort associated with avoidable C-Sections. On the other hand, one might suggest that appropriate C-Sections may also be avoided by physicians. This argument, however, seems easily disputed by the number of countervailing forces at work. These include potential professional liability, the formalized grievance resolution procedures which managed care plans must maintain and which generally terminate appeals at the level of the State Commissioner of Insurance, the ability of large numbers of managed care plan enrollees and their employers that purchase plans to "vote with their feet," abandoning plans that market substandard care or service, and the intensity with which outcomes are monitored by managed care payors (as part of NCQA accreditation and HEDIS reporting), by hospitals as part of JCAHO mandated internal review programs, by state licensure agencies, and, in teaching hospitals, by residency review committees.

Similarly, while global hospital/physician per case rates for open heart surgery might lead to unnecessarily short lengths of stay, internal and external monitoring of readmission and post-operative morbidity and mortality temper this possible negative outcome. Also, per case rates for tertiary services such as cardiac care, neurosurgery, and oncology are usually linked by managed care plans to "centers of excellence programs." These programs redirect all elective patients and even non-elective patients who are stable for transfer to a select number of providers. Critical to a managed care plan's ability to successfully "sell" this redirection to patients, their families, referring primary care physicians and employer groups, is the ability to document quality
outcomes. Case rates and centers of excellence for cardiac care have flourished, in part because a significant provider surplus offers fertile ground for alternative reimbursement mechanisms. In addition, cardiac surgery case rates may have gained broad acceptance because risk-adjusted databases, such as the one by the Society of Thoracic Surgeons have allowed monitoring and comparisons of provider outcomes, and because outcomes can be measured over the near term, eg, 30-day and 1-year survival rates. Therefore, failure to provide quality care is likely to come back to haunt the provider in the near future.

For clinical areas such as oncology, where there is far greater heterogeneity in patient populations and accepted treatment protocols and where outcomes are measured in 5-, 10- and 15-year survival rates, both the pricing and monitoring of per episode reimbursement rates is far more challenging. At minimum, however, we can fall back on global safeguards such as certification, accreditation, licensure, liability history, provider reputation, and contractual agreements to adhere to certain commonly accepted treatment protocols.

Prepayment or Capitation—While episode based-reimbursement mechanisms seek to affect the cost of a particular episode of care or illness, providers may still maximize revenue by producing more units (episodes) of care, although at a prefixed, and generally lower, reimbursement rate per episode. Accordingly, many HMOs and POS plans utilize a reimbursement mechanism which shifts risk for both the quantity of units, as well as the unit cost, to provider entities. Specifically, these reimbursement techniques prepay providers a fixed amount ("capitation") per-member-per-month in return for assuming responsibility for providing a defined set of services to a designated population. Managed care plans employ numerous capitation variants; these include "Primary Care Capitation" in which PCPs are capitated only for the services they directly provide, but generally participate in a bonus pool for specialty, inpatient, and other services. "Partial Capitation" refers to models that capitate physicians, medical groups or other entities for all (inpatient and outpatient) physician services, and most, if not all, outpatient services (eg, lab, imaging, outpatient rehabilitation therapies, chemotherapy, radiation therapy, etc). Again, most "Partial Capitation" systems link provider bonuses to expenditure for non-capitated services such as inpatient facility charges.

Finally, "Full or Global Capitation" essentially passes risk for the full range of covered services (with some exceptions or "carve-outs") to a capitated provider entity, a medical group, IPA, PHO, hospital, or integrated delivery system.

Undertreatment vs Overtreatment
As managed care plans move along this capitation continuum, there is concern that providers will be motivated to withhold necessary and efficacious services in order to survive or even profit within the capitation limits. While this possibility clearly exists, if we again assume that providers are largely ethical, we must question whether capitated systems will generate more "undertreatment" than fee-for-service plans will generate "overtreatment." Further, we can speculate whether the negative impacts on quality of care and quality of life which result from systematic undertreatment will be greater or less than the negative impacts which might result from systematic overtreatment. Given that the costliest services are often associated with the last 6 months of life, capitated physicians may be most motivated to withhold those services which have the least positive impact on survival or quality of care. Furthermore, unlike "fee-for-service" systems, capitation potentially compensates providers for investing in patient education, prevention, and health promotion activities by reducing the liability for services associated with future episodes of illness. Under fee-for-service systems, these educational and health promotion services generally are uncompensated and further reduce the potential for future billable services. Following this logic, capitated providers, as compared to fee-for-service providers should be equally if not more motivated to assure that patients receive Pap smears and mammograms, immunizations, routine screening for hypertension, etc.

Nonetheless, we should be concerned about capitation incentives and their influence on the quality of care provided. For capitated plans, once again, a number of forces counteract the potential for providers to systematically withhold appropriate care. These countervailing forces include "stop-loss provisions" which insulate capitated providers from inordinate losses for catastrophic or other costly cases. Also, as previously noted, NCOA, JCAHO, residency review standards, grievance procedures, malpractice liability, and state insurance regulation operate to prevent abuses under capitated systems. Further, market forces both at the patient-level and the employer group level should diminish a provider's ability to systematically withhold necessary care.

Managed Care as an Opportunity
Many providers continue to bemoan the advent of managed care, and in particular the
disappearance of "pure" fee-for-service medicine. A growing percentage of providers, however, view this change as a painful, and yet exciting opportunity to restructure service delivery in a way that may potentially improve the health and the quality of the lives of covered populations. Furthermore, while the concept of assuming large amounts of financial risk is new and realistically of concern to many providers, risk assumption also has rewards. Managed care plans that do not shift substantial financial risk to providers, eg, managed indemnity, PPOs, and even fee-for-service HMOs and POS plans, rely heavily on external UM techniques and/or restrict or control who can provide referral services. With risk assumption, however, comes greater rewards and greater internal control. Providers may be rewarded (both financially and professionally) for becoming effective producers of improved health status, as opposed to providers of a la carte "sickness care." The internal control comes from allowing providers to make clinical decisions in the best interest of patients without external reviewers getting in the way.

Despite the alleged incentives to undertreat that managed care and provider capitation introduce, traditional measures of clinical quality and patient satisfaction are, for the most part, the same for managed care and fee-for-service delivery systems. More detailed analysis, however, reveals that there are some issues that could work against the notion that managed care will provide comparable quality of life. The growth of managed care changes the incentives faced by purchasers and providers. Whether the market evolves toward the provider accepting risk, as defined above, or not, the movement will certainly be toward seeking and adopting care strategies that are more cost-effective from the point of view of the payor. This option of cost-effectiveness encompasses the most commonly accepted outcome measures of clinical quality, survival, and perhaps patient satisfaction. As a general rule, managed care plans will have an incentive to adopt more "conservative" treatment protocols. These conservative strategies are generally less likely to involve surgery if nonsurgical intervention is possible. It also may imply not including "experimental" therapies for cancer unless forced to do so. The aggressive interventions, commonly associated with traditional fee-for-service medicine, occur because of the desire to treat if any benefits are possible but are perhaps facilitated by the absence of financial constraints on the patient or payer side and a positive financial incentive for the provider.

**Conservative vs Aggressive Treatment**

The question of what effect conservative vs aggressive treatment has on quality of life is not fully researched. It appears that the effect may depend upon the disease. As a matter of speculation, conservative managed care treatment protocols may spare patients the adverse side effects associated with aggressive treatments of unknown efficacy. Many of those treatments have substantial negative impacts upon quality of life. For example, the well-documented and high incidence of operative complications, including incontinence and impotence resulting from radical prostatectomy may reduce quality of life for men receiving the surgical intervention with little or no proven corresponding gain in survival [30]. Admittedly, perhaps no generalization beyond the specific clinical problems studied may be possible at this time. Hopefully, research will slowly reveal much more about quality of life interventions for many more clinical issues.

The problem with this analysis is that we also do not know if there are mechanisms in place to assure that the treatment protocols that emerge in managed care plans will be optimal with respect to quality of life. There are no government regulations that require plans to collect and report quality of life information. Most importantly, the measurement of quality of life is not as well-defined as is clinical quality or patient satisfaction (see Cella, Wiklund, and Shumaker 1993 [31] for a presentation of the difficulties in applying the tool in alternative settings). The consequence of this lack of definition is that plans will not readily compete on this dimension. If a managed care plan sacrifices quality of life for patients, there is no readily available mechanism to determine and respond to this failing.

Once again, we believe that any examination of the fundamental changes represented by managed care must acknowledge that we cannot evaluate managed care in a vacuum. At present, providers compare managed care to the traditional fee-for-service system. In doing so, we must ask how does managed care effect quality of care and quality of life? But, we must also ask, does the traditional fee-for-service system, with its bias toward providing services of questionable or unknown effectiveness, necessarily enhance quality of life, or even quality of care?

Finally, we suggest that clinicians concerned about the impact of managed care on quality of care and quality of life, actively support development and collection of measures which can be used to monitor and compare these outcomes not only across plans, but across providers and treatment philosophies.

In summary, managed care is probably a permanent component in our healthcare delivery system. It
is important to assure that the way these plans are structured maximizes the control by high quality
providers. As hospitals and physicians struggle to adapt to the evolving healthcare environment, we
may lose sight of the most important aspect of care delivery—the patient. Quality of life can only be
maintained by involving the best providers and delivery systems into the care process and by
explicitly including patient-determined measures of quality of life, in what has traditionally been
narrow and technical definitions of "quality care" and "quality outcomes."

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