# Managed care: the US experience

Neelam K. Sekhri[1]

This article provides an overview of managed health care in the USA — what has been achieved and what has not — and some lessons for policy-makers in other parts of the world. Although the backlash by consumers and providers makes the future of managed care in the USA uncertain, the evidence shows that it has had a positive effect on stemming the rate of growth of health care spending, without a negative effect on quality. More importantly, it has spawned innovative technologies that are not dependent on the US market environment, but can be applied in public and private systems globally. Active purchasing tools that incorporate disease management programmes, performance measurement report cards, and alignment of incentives between purchasers and providers respond to key issues facing health care reform in many countries. Selective adoption of these tools may be even more relevant in single payer systems than in the fragmented, voluntary US insurance market where they can be applied more systematically with lower transaction costs and where their effects can be measured more precisely.

**Keywords:** managed care programmes; quality of health care; review literature; United States.

*Voir page 841 le résumé en français. En la página 842 figura un resumen en español.*

## Introduction

Managed health care as it has developed in the USA,[a] and the current backlash against it, must be viewed in the context of the traditional US health care system. This system of employer-based, indemnity insurance and fee-for-service health care conditioned both providers' and patients' expectations of unlimited resources and unrestrained choice. As Uwe Reinhardt has aptly stated, it was the "fairyland tale of the proverbial free lunch" (*1*). Not surprisingly, the constraints and controls imposed by managed care have resulted in outrage by doctors and their patients (and by doctors *through* their patients).

Although the response is predictable given the limits on provider compensation and consumer expectations of unrationed care, the methods used by managed care organizations have undoubtedly contributed to the furor. That the US Administration is now being asked by the public to step in and "regulate" the health care market is an irony which Hillary Clinton, who led the last ill-fated government attempt to reform the US health care market, must find particularly amusing. Managed care in the USA finds itself under attack from all sides. Consumers complain vocally about denials of care; and they and their lawyers claim that managed care organizations provide substandard quality of care for the sake of cutting costs, citing anecdotal evidence of negligence on the part of health plans. As a result, several US states have passed laws allowing health plans to be sued for malpractice, and the team of lawyers that successfully brought the tobacco industry to its knees has now turned its attention to managed care.

Providers complain about unsustainable reductions in compensation, unfair labour practices that can dismiss physicians if they provide care that is too expensive in the view of the health plan, and unethical intrusion by health plans into the practice of medicine. Physicians are ready to unionize and the American Medical Association, in an unprecedented move, supports this. Many US states have passed "any willing provider" laws requiring a health plan to contract with any and all physicians who are willing to accept its contract. This runs counter to the fundamental managed care tenet of selective contracting and protects the system's excess supply of physicians, particularly specialists.

The managed care industry might be able to withstand these criticisms if it were actually making huge profits, a charge levelled by providers and the public. In fact, although managed care enrolment has continued to grow, the net income of most managed care organizations has plummeted. In 1997, for example, they reported collective losses of almost US$ 1 billion (*2*). As a result, health plans have posted significant employer premium increases for the third year in a row, and now find their previous allies, the funders of care, frustrated and antagonistic (*3, 4*). Despite provider reactions, "horror" stories in the media, and government rhetoric, neither US employers nor government funders are willing to return to double-digit annual percentage increases in health care costs (*3*). Medicare, the largest government funder, which provides coverage to those aged over 65 years, is required by the Balanced Budget Act of 1997 to significantly reduce spending and extend the life of the Medicare trust fund. Employers, still protected by the

[1] Founding Partner, Healthcare Redesign International, 875-A Island Drive #381, Alameda, CA 94502, USA (email: nsekhiri@hcredesign.com).

[a] Unless otherwise specified, the terms health plan and managed care organization are used interchangeably in this article to refer to an entity providing or arranging for coverage of health services needed by members of a plan for a fixed, prepaid premium.

Ref. No. **00-0607**

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booming US economy, have been able to absorb rising health care premiums so far, but foresee a day fast approaching when increases in premiums will be passed down to employees or will force employers to stop providing health care coverage (*5*). This can only lead to a further swelling of the ranks of the 44 million uninsured people in the USA (*6*).

What is the truth behind the complaints about managed care? What is the evidence that US health care quality is suffering due to an overemphasis on cost containment? This article provides an overview of the state of managed care in the USA today, what it has achieved and what it has not; and some lessons for policy-makers in the USA and elsewhere.

## Brief overview of the US health care system

The US health care system is unique among wealthy industrialized countries in the extent of its reliance on the private sector for the financing, purchasing and delivery of health care services. Public expenditures — through federal, state and local governments — total 45% (Fig. 1) of overall health spending, primarily for purchasing health services for specific populations (e.g. the elderly, disabled, veterans, and the poor). The large majority of US residents receives health insurance benefits through their employers and accesses services delivered by the private sector. Employers receive a significant tax subsidy for providing private insurance to employees and their families, and employees often share in the cost of benefits. However, almost 44 million people are not covered by any continuous public or private health insurance scheme and have limited access to private medical resources. They receive care through publicly operated clinics and hospitals or pay out of pocket for services to private providers (*7*).

At 13.5%, the USA devotes a higher percentage of its gross domestic product (GDP) to health care than any other country. This percentage has remained essentially flat since 1992 (*8*), which is attributable to the strong US economy, the Balanced Budget Act of 1997, and the dramatic shift away from indemnity insurance into managed care plans. Although annual per capita health expenditures in 1998 of US$ 4094 (*9, 10*) were still well above those of other OECD countries, they are growing at a much slower rate than in the past.

Fig. 2 provides an overview of the US health care system: the funders, purchasers and providers of care are generally distinct entities. Some managed care organizations, however, serve as both purchasers (pooling the risk) and providers of care; 89% of employees are now enrolled in plans with some form of managed care (*11*). Provision of health services is predominately through private providers, including hospitals,[b] integrated health care organizations (which link physicians, hospitals and other providers), and physicians. Almost 70% of US hospitals are community-based, non-profit institutions.

Most physicians in the USA, both primary care practitioners and specialists, are in some form of private practice; 39% operate single practices and 61% are in group practices of two or more physicians (*12*).[c] The USA has a higher ratio of specialists to primary care physicians than most OECD countries. With the rapid spread of managed care, the demand for primary care providers[d] has grown; today, they account for almost 40% of the physician supply in the USA.

## What is managed care?

Under traditional indemnity insurance, the money follows the patient. Patients select health care providers and visit them as they choose. Providers then bill the private insurer or public payer and are reimbursed on a fee-for-service or per case basis. Most indemnity plans attempt to limit demand through financial barriers to the patient, such as deductibles and co-insurance, rather than constraints on the provider. Many also require the patient to pay the provider directly and seek reimbursement from the insurer, often with payments less than charges. This form of insurance is rapidly disappearing, with only 11% of employees currently enrolled in indemnity plans (*11*).

***Traditional managed care.*** In traditional managed care plans (e.g. Health Maintenance Organizations (HMOs)) the money follows the "member", whether ill or not. Although there are many definitions of managed care, generally the term describes a continuum of arrangements that integrate the financing and delivery of health care. Purchasers contract with (or "own") selected providers to deliver a defined set of services at an agreed per-capita or per-service price. In practice, managed care encompasses a wide range of arrangements, some of which resemble discounted fee-for-service (e.g. preferred provider organizations, in which the member receives better benefits with lower co-payments by using contracted providers rather than "non-preferred" providers) and others (e.g. some HMOs) using capitation and "gatekeepers" — primary care physicians serving as patients' initial contacts for medical care and referrals — to manage patient care and authorize referrals.[e] Most managed care organizations offer a wide array of benefit designs that include HMO products, preferred provider organizations, and direct access products that allow patients to self-refer to specialists. This variety of arrangements and payment mechanisms makes it difficult to draw

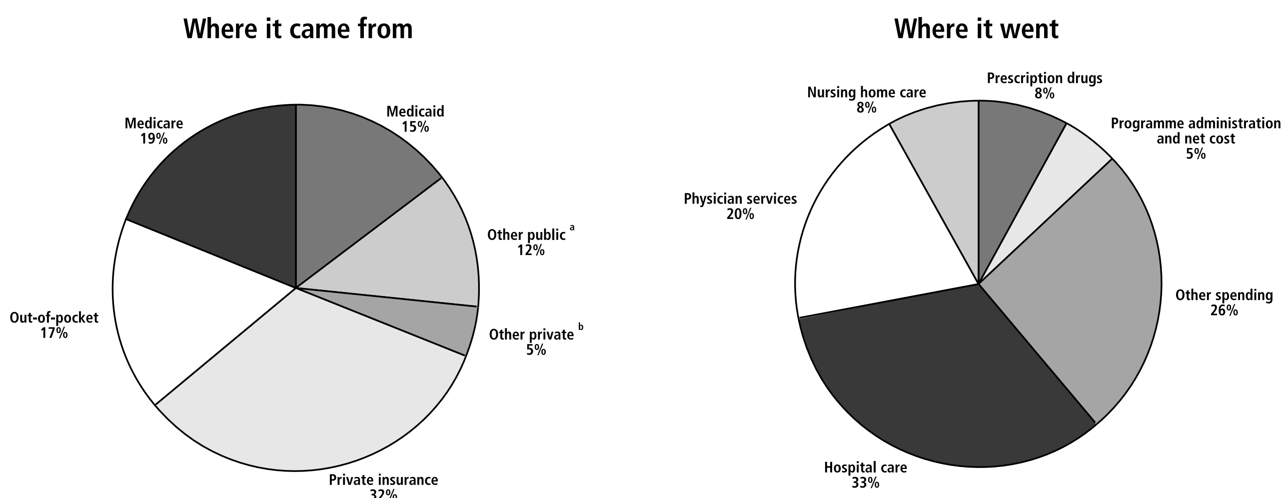
[b] The designation ''private'' for hospitals can sometimes be misleading since many US hospitals are non-profit community organizations. These hospitals, however, are generally not controlled and managed through government agencies.

[c] 1995 figures for non-federal physicians.

[d] Primary care providers usually include general practitioners, family practitioners, internists, and paediatricians; sometimes also obstetricians/gynaecologists and nurse practitioners.

[e] With the recent backlash, many health plans are eliminating the ''gatekeeper'' model, even in their more managed HMO products.

Fig. 1. **Breakdown of health costs in USA, 1998**

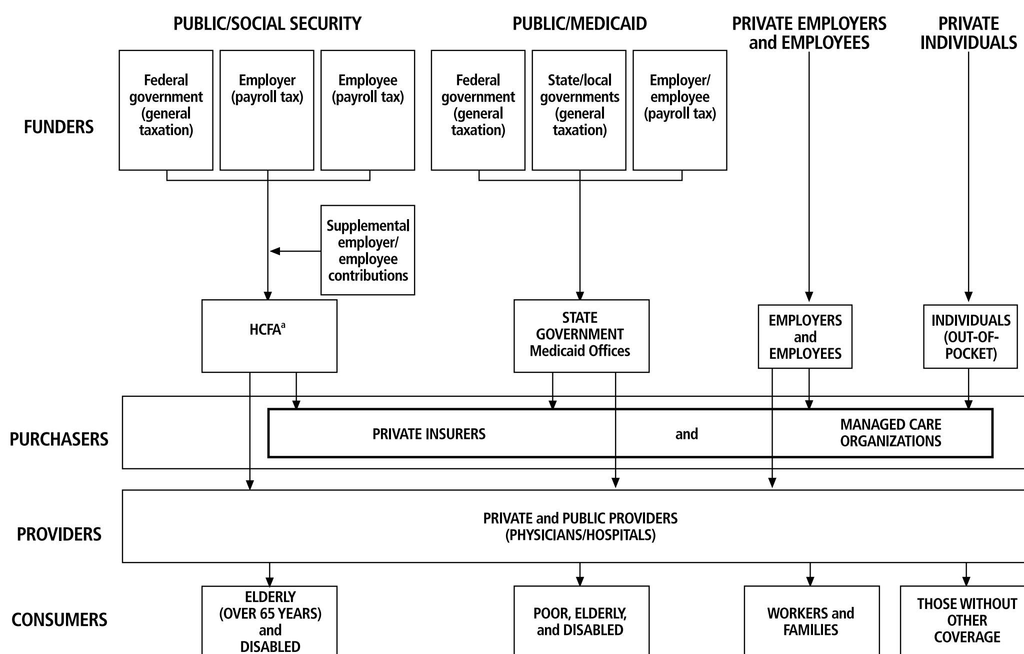



[a] Includes programmes such as workers' compensation, public health activities, Department of Defense, Department of Veterans Affairs, Indian health services, and state and local hospital and school health.

[b] Includes industrial inplant, privately funded construction, and non-patient revenues including philanthropy.

Source: Health Care Financing Administration, Office of the Actuary, National Health Statistics Group, 1999. WHO 00182

Fig. 2. **Flowchart illustrating organization of the US health care system**




[a] Health Care Financing Administration, an arm of the federal government.

Source: Sekhri N, *Cross border health insurance,* California Health Care Foundation and Healthcare Redesign International, 1999. WHO 00183

conclusions about the effectiveness of managed care. As the saying goes, "if you have seen one managed care plan, you have seen one managed care plan".

***Managed care principles.*** Managed care in its current forms has evolved in response to purchaser demands to control costs. However, the principles behind this system are intended to provide high-quality, cost-effective health care to a population (*13*). These principles represent the vision of its proponents to change fundamentally the fragmented

delivery system in the USA. In this vision, a managed care organization is responsible for managing the care of a population through a health care system that:

– monitors and coordinates care through the entire range of services (primary care through tertiary services);
– emphasizes prevention and health education;
– encourages the provision of care in the most appropriate setting and by the most appropriate provider (e.g. outpatient clinics versus hospitals, primary care physicians versus specialists);
– promotes the cost-effective use of services through aligning incentives (e.g. by capitation of providers, cost-sharing by consumers).

Most health plans in the USA have implemented this vision only partially. Such "managed cost" plans have concentrated on negotiating price discounts with providers (*5*), and using restrictive pre-authorization procedures rather than employing the more sophisticated managed care tools such as disease management, aligning incentives, prevention, health education. It is important to distinguish these managed care *tools* from managed care *systems* in which competing insurers use some managed care practices.[f] It is these tools that have the greatest potential for use in both public and private systems globally.

## From uncontrolled fragmentation to managed complexity

### Traditional model

Most people envision a managed care organization as the traditional staff/group model HMO epitomized by Kaiser Permanente or Harvard Community Health Plan. In this model the risk-pooling or insurance function (the "health plan") is linked to an integrated system of hospitals and physicians, covering the continuum of health care services.[g]

The physicians in such a system are either employees of the health plan or members of a medical group that contracts exclusively with the health plan. The health plan, in turn, contracts with purchasers of care (public or private) to provide a defined set of services at a prepaid per capita price (capitation) on a per member, per month (pmpm) basis. Mutual exclusivity between the physicians and health plan is a key feature that distinguishes this model from the network models described below. In this type of plan, the system as a whole receives a capitation payment from the funder, but providers are paid in a variety of ways. The physicians, as a group, may receive a capitated payment, while individual physicians receive either a salary or a combination of salary and incentive payment. Physician specialties and hospitals may receive a global budget; or hospitals may be paid on a per case, per diem or even fee-for-service basis. Governance in this model is most often shared between physicians and administrators and decision-making is collaborative, with physicians managing the clinical aspects of care and the health plan managing the information, administrative and insurance functions. As straightforward as this model appears, it is the least common organizational form in the USA. The reasons for this can be traced to the historically fragmented health care system, in which there were multiple private insurers, over 6000 independent community hospitals, and physicians practising primarily as single practitioners or in small groups of a single specialty. As managed care became popular, this fragmented system found ways to create linkages without incurring the costs or making the fundamental changes needed for vertical integration.

### Network models

The most common managed care model is for independent health insurers to contract with horizontally integrated (*14*), often loosely affiliated provider networks on a non-exclusive basis. The most popular version of a provider network is the Independent Practice Association, in which physicians join together for the sole purpose of contracting with health plans (Fig. 3). Physicians continue to practise in their independent settings, but are paid through the association's structure. Such associations usually establish Management Services Organizations to perform the administrative functions of contracting and managing payments; some form linkages with hospitals resulting in further horizontal integration. The provider environment is made more fluid by the fact that an individual physician may belong to several independent practice associations, because a single one may not have enough health plan contracts (and, therefore, members) to sustain the physician's practice. In most cases, the physician will also have direct contracts with health plans, as well as receive fee-for-service payments. The associations receive a capitation payment, but each individual physician is paid in a variety of ways. Although capitation is at the heart of aligning incentives between providers and purchasers, it is not the predominant means of reimbursing physicians in managed care. It is particularly rare for individual physicians to receive a capitation payment for services other than those they directly provide. The predominant form of payment is still discounted fee-for-service; although more mature organizations have found that payments based on a blend of capitation and fee-for-service are more effective in creating targeted incentives for cost-effectiveness and quality (Fig. 4). A common model, which is also widely used in the United Kingdom to pay general practitioners, is to give the GP a capitation payment for curative services and a fee-for-service payment

[f] Competing systems are at the centre of "managed competition", a concept distinct from "managed care".

[g] Even in these generally vertically integrated organizations, some services such as hospital care may be provided through contractual relationships rather than direct ownership.

Fig. 3. **Flow-chart illustrating horizontally integrated managed care systems**

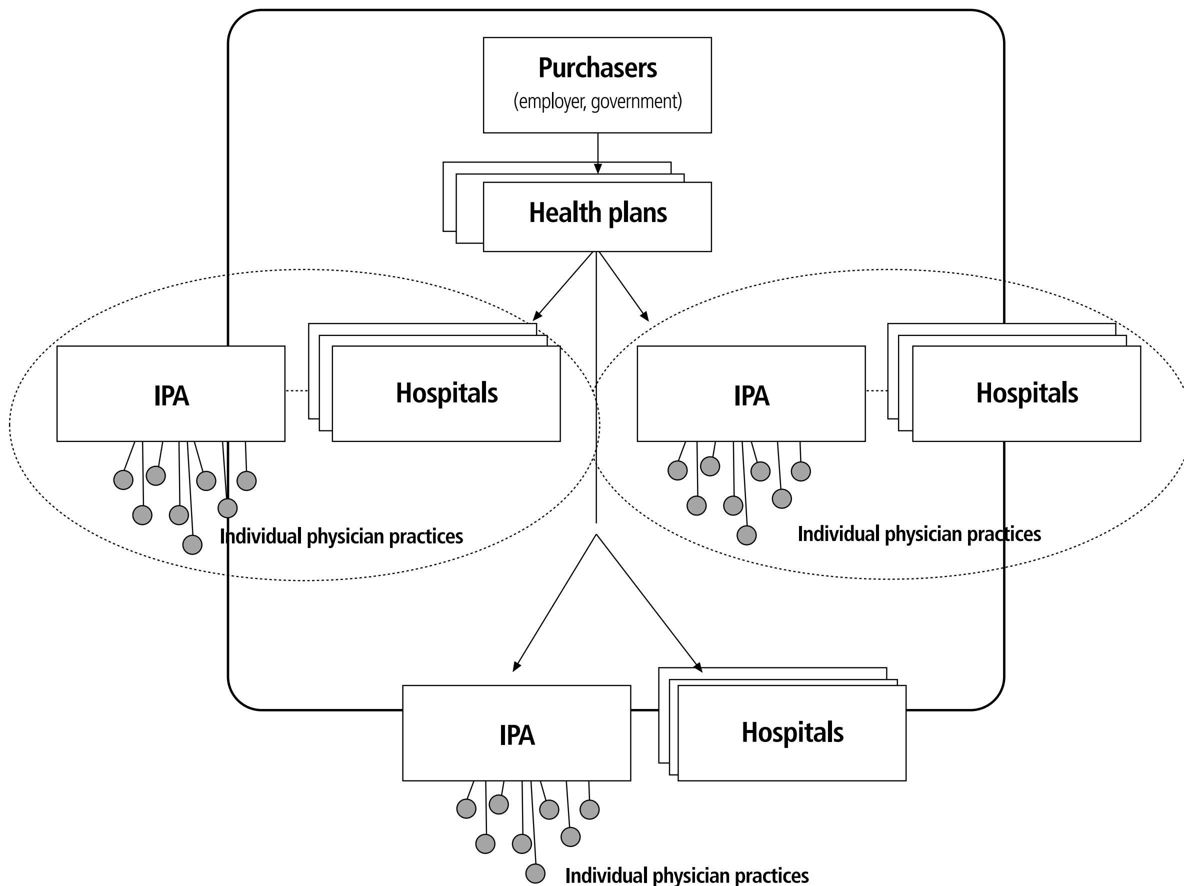
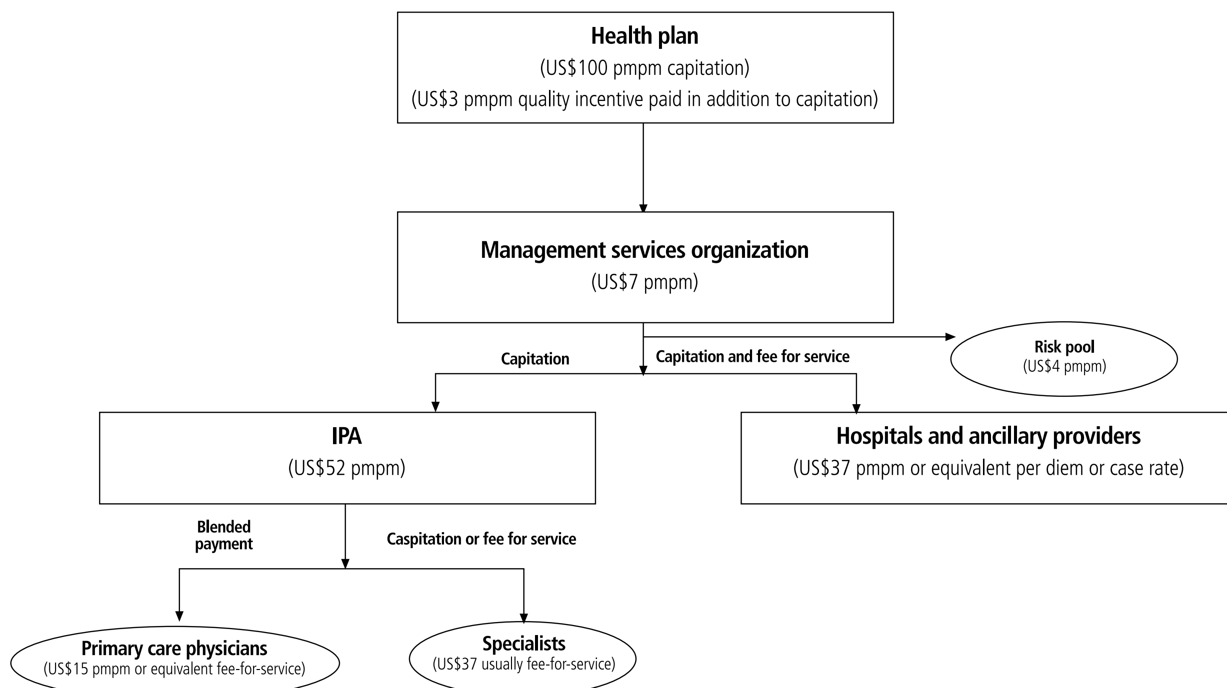



Fig. 4. **Flow-chart illustrating how the monies flow in a well-developed, horizontally integrated system**




pmpm = per member, per month

for screening, immunizations and other preventive services that the system wishes to encourage. Physicians may also share in a "risk pool" for referrals to specialists and hospital admissions, in which money is set aside from the capitation payment to provide an incentive to control utilization. There are many variations in structuring compensation for physicians and hospitals and there is much on-the-ground experimentation in this area (*15*).

In markets with high managed care enrolment, most physicians contract with most health plans,[h] either through physician networks or directly, and it is not difficult for an individual to change health plans every year, but retain the same primary care provider. This enhances patient choice, but adds to the cost and complexity of selective contracting and provides a disincentive to health plans to invest in prevention. This year's healthy member may belong to another plan next year, or, put another way, the population whose health the plan is seeking to manage is constantly changing.

### Proliferation of products

New products offered by health plans to respond to complaints about restrictive referral practices and limited choice add further complexity to this scene. There is an "alphabet soup" of these products (such as triple option plans offering employees a choice between an HMO, preferred provider organization or indemnity plan, and point of service plans, which allow those covered by them to receive services from participating or non-participating providers), each with differing levels of patient co-payments depending on whether the patient sees a physician in the primary network, outside of the primary network, is self-referred, or is referred by her primary care provider. For the physician in a network, each type of product may involve a different payment mechanism and amount. So, for example, a physician may receive US$ 50 for a routine office visit when treating a patient who has chosen the restrictive HMO product from Health Plan X, US$ 65 for the patient who is covered through Health Plan X's point of service plan, or she may receive a US$ 15 pmpm capitation for each member in Health Plan Y. For the individual physician this can create a very complicated web of rules and payment schemes. Far from the clear incentives to reduce treatment and generate a surplus through "less care", as the detractors of managed care claim, the real economic impact to the physician is confusing and the administrative burden is substantial. In addition to multiple revenue sources with different incentives, each health plan also has various procedures for authorizing treatments and determining to whom the physician can make referrals (depending on the specific contracted network of physicians), as well as the drugs that can be prescribed (health plans each have separate drug formularies).

The resulting transaction costs of all this complexity and choice are significant. A typical health plan spends between 12–20% of its premiums on administration; a typical IPA spends 6–8% of the capitated amount it receives on administration; individual physicians' offices hire staff to manage authorizations and referrals; and hospitals have entire departments devoted to contracting with health plans and contesting denials of payment. The fact that, despite this, managed care has saved money is reflective of the high costs of the previous indemnity insurance system in which patient and provider could freely spend what they thought was someone else's money — the insurer's and the employer's.[i]

## What has managed care achieved?

In attempting to understand what can be borrowed from the US experience, it is useful to examine the complaints against managed care organizations and practices. The most commonly expressed complaints can be grouped into the general categories shown below.

*Complaint 1. Cost savings*. Cost savings claimed by managed care are either not real, or are unsustainable.

*Complaint 2. Provider reimbursement*. Hospital reimbursement and physician compensation levels are too low to provide adequate health care.

*Complaint 3. Quality of care*. The quality of care provided by managed care organizations is substandard. This category includes denials of care, restricted access to specialists, and limits on the length of stay in hospital.

The available evidence is examined below to determine whether it supports these complaints, although the complexity of models makes it difficult to distinguish reality from myth. Irrespective of whether the data justify the anti-managed care backlash or not, as with most complaints there is often a germ of underlying truth that constitutes the "the real problem".

### Complaint 1. Cost savings

"Structural changes centered around the expansion of managed care have been the major transformative force in health markets in recent years and have played a major role in restraining growth in health spending" (*16*).

In a recent survey of consumers, 60% said that managed care had either not made a difference in health care cost containment or had actually been responsible for increasing health care costs (*13*). Providers claim there has been an overemphasis on cost containment which threatens the quality of medical care in the USA. What is the truth behind these seemingly contradictory views held by two key constituencies?

[h] In California, a typical physician contracts with 15 different health plans (*20*).

[i] In reality, of course, the employee ultimately pays for this through reduced wages (*20*).

***Health expenditures.*** Between 1995 and 1998, the Consumer Price Index (CPI) for medical services showed the lowest rate of increase in medical costs on record, rising at an average of 3.3% annually (*17*).[j] This was part of a 5-year trend during which overall growth in health spending increased by 31%, less than half the increase during the previous period, 1988–92 (67%) (*18*).[k] The producer price index (PPI) for health services, a more accurate reflection of medical inflation,[l] grew at an even lower rate (<2%) per year from 1995 to 1998 (*17*). Personal health care expenditures,[m] as a percentage of GDP, remained steady between 1992 and 1998, actually falling from 13.7% to 13.5% (*8*).

For the three largest components of health expenditures (hospital care, physician services, and drugs), both hospital services and physician services have shown significant reductions in rates of growth (Table 1). Spending for drugs, on the other hand, has not shown similar trends. Since 1992 the annual rates of growth have ranged from a low of 7.0% in 1994, to a high of 12.3% in 1998 (*19*). Despite tough negotiations with drug companies and the use of formularies, increases in drug spending have, ironically, been fuelled by generous drug benefit coverage and low out-of-pocket co-payments offered by managed care plans (*8*). At the same time, pharmaceutical manufacturers have significantly increased spending on direct-to-consumer advertising; for example, in 1998 a total of US$ 1.3 billion was spent on direct advertising, an increase of 55% over the previous year. There is clear evidence that this advertising has been effective, with the ten most heavily advertised drugs accounting for more than 20% of the increase in prescription drug spending between 1993 and 1998 (*8*). In response to greater consumer pressure for drugs, health plans are moving towards tiered pharmacy benefit programmes which impose higher co-payments for brand drugs and drugs that are not on the health plan's formulary.

Table 1. **Personal health care expenditures in the USA, by type of service[a]**

| | Expenditures in 1997 (US$ x $10^9$) | Cumulative % change | | | |
|---|---|---|---|---|---|
| | | 1975–82 | 1983–87 | 1988–92 | 1993–97 |
| **Hospital care** | 371.1 | 98 | 43 | 57 | 22 |
| **Physician's services** | 217.6 | 84 | 81 | 69 | 24 |
| **Drugs and other medical non-durables** | 108.9 | 81 | 62 | 59 | 53 |

[a] Personal health expenditures do not include costs for research, construction, prepayment, and administration and government health activities.

Source: US Health Care Financing Administration, Office of National Health Statistics, 1998.

***Health care premiums.*** Trends in health care spending can also be measured through the cost to employers of purchasing private health benefits. Since 1993, health insurance premiums — the amounts paid to a carrier to provide coverage under a contract — have stopped their double-digit annual percentage increases and premiums have remained almost flat for several years. Premiums increased <2% between 1994 and 1996 (*11*). In California, for example, premiums for large purchasers and groups doubled between 1987 and 1992, but remained flat between 1992 and 1998 (*20*). In fact, when adjusted for inflation, one of the largest purchasing groups in California experienced a 13% decrease in premiums between 1992 and 1997 (*20*).

The trend has recently reversed, however, with costs of health benefits increasing by 7.3% in 1999, almost three times the rate of general inflation (*4*). Projections show health expenditures increasing from the current US$ 1200 billion to over US$ 2000 billion in 2007, which will represent an estimated 14.9% of the US GDP (*18*). Despite these increases, the effects of managed care are still evident, particularly in areas with high managed care penetration. In California, HMO premiums remain 17% below the national average despite one of the highest costs of living in the USA. (*20*). Case-adjusted hospital costs in California are 25% less than the national average (*21*), and the State's 2.4 hospital beds per 1000 population are well below the national average (*22*).

***The real problem.*** The evidence shows that managed care has had an impact on stemming the escalating growth of US health care costs. There are also indications that rates of growth may once again be climbing. Experts disagree on whether the fact that health care costs and premiums are again on the rise indicates that managed care has outlived its usefulness or whether this is a market correction that may lead to organizations using more sophisticated population health management tools.

In this first phase of managed care, employers have relied on moving employees from indemnity plans to less expensive managed care plans as their primary method for controlling the costs of health benefits. Health plans have relied on exploiting the systems' over-capacity through selectively contracting and controlling use of specialists and hospitals. In many markets they have shifted risk to providers through full capitation arrangements.

Almost 90% of employees now belong to a managed care plan and, although there is little likelihood that the old indemnity system will return,

[j] The units of service change with managed care, which is not captured in the CPI or PPI.

[k] During this same period, the CPI minus medical care rose by an average of 2.3%.

[l] The PPI measures transaction prices (prices paid by third party purchasers), whereas the CPI measures retail prices which are often undiscounted.

[m] Personal health expenditures do not include investments for research and construction, or expenses for prepayment, administration and government health activities

there is clearly a trend towards indemnity-in-drag — plans which provide greater freedom of choice for patients and reimburse providers on a fee-for-service basis. With the disintegration of physician groups (see below), the ability of providers to take risk through capitation is also in question. It may be that the old techniques have generated the cost savings of which they are capable.

Sustainable cost containment in the USA is unlikely without structural changes in the health care financing and delivery system, which requires confronting difficult issues of consumer and provider expectations. US consumers have not yet understood the effects of unrestrained spending on affordability of health insurance and on other aspects of the economy. In a recent survey, 62% of US residents strongly agreed that health plans should pay for medical treatment even if it were to involve costs of US$ 1 million per person (*13*). With the recent backlash, providers anxiously anticipate a return to the autonomy of fee-for-service medicine and are unprepared to grapple with the realities of constrained resources. Funders, purchasers and providers can explore innovative ways to deliver cost-effective care but, ultimately, they must make the consequences of spending more transparent to the public.

## Complaint 2. Provider reimbursement

This complaint has two dimensions: hospital profitability, and physician compensation. As far as hospitals are concerned, administrators are worried about profitability or surplus for reinvestment, and consumers are worried about the threat of hospital closures. Few things stir as much public outcry as the prospect of closing a community hospital. Yet excess capacity in a system is a natural cost driver and most single-payer systems have used capacity constraints to restrain growth in health spending. Managed care organizations have attempted to create capacity constraints indirectly through pre-authorization and utilization reviews and have been successful in reducing hospital utilization, although actual facility closures have been rare.

The USA has witnessed a modest decrease in overall bed capacity[n] during the past 20 years, but this shift may be attributable more to Medicare's implementation of case rates[o] than to managed care; however, in California's most highly penetrated managed care markets, the number of hospitals decreased by 19% between 1983 and 1993 (*23*). As shown in the previous section, growth in hospital costs has slowed since 1992. Inpatient surgical procedures decreased 33% between 1983 and 1993, but these decreases were offset by a 168% increase in outpatient surgical procedures (*24, 25*); in many cases this simply marked a shift from one part of the hospital to the other, since most hospitals now provide ambulatory surgery and other outpatient services. Although ambulatory services have lower profit margins than hospital days, hospital profit margins have continued to climb over the past decade, reaching 6.9% in 1998, at the height of managed care.

Physician compensation, the other major bone of contention, is growing at a slower rate than in the past. In 1996 the mean net income for US physicians was US$ 199 000[p] (*22*). Although this income continues to be the envy of most of the world's doctors, the rate of growth has slowed considerably, and inflation-adjusted mean net income remained flat between 1993 and 1997 (*8*). Incomes for primary care physicians have increased, however, rising by 27% between 1994 and 1996 to an average annual salary of US$ 140 000 (*22*).[q]

***The real problem***. Managed care has had an impact on slowing rates of growth in the costs of two major health care producers: hospitals and specialist physicians. There is little evidence to suggest, however, that current levels of reimbursement are inadequate to provide care.

Although it is difficult to accept limits on growth in compensation after years of significant increases, what ultimately drives the outrage by providers may have less to do with total reimbursement and more to do with what the hospital and physician must undertake for this reimbursement. For both hospitals and doctors, sources of revenue have shifted dramatically since 1960: in 1960, over 20% of hospital charges were paid for out of pocket, whereas in 1996, almost 97% of hospital payments came through third parties (over 60% from government payers) (*25*) who demand complex accounting of charges, have pre-authorization processes, and can review retrospectively and deny claims for reimbursement.

For physicians, the situation can be even more frustrating. Physicians derive over 50% of their income from private insurers (*26*); with the demise of indemnity insurance, these insurers carefully scrutinize all claims. By layering managed care processes on a disintegrated system, physicians are required to comply with multiple authorization procedures, prescribe from multiple formularies, refer to multiple networks of physicians, and manage a complex revenue stream from multiple sources, based on multiple formulae. This has significantly increased the physician's administrative burden and requires management and financial skills for which few physicians are trained. In 1996 over 20% of the costs of running a physician's practice were for "other services", including administrative structures for joint contracting, complying with authorizations and referral processes, and billing and collections (*26, 27*). The business complexity of managed care and capitation has led to the demise of many

[n] Between 1983 and 1993, the number of community hospitals in the USA decreased by 9%.

[o] The prospective payment system enacted in 1983 introduced payment through diagnostic related groups.

[p] Mean net income is the income after expenses and before taxes.

[q] Includes general practice, family practice and paediatrics (1996 figures).

independent practice associations and other loosely configured networks. In California, several major physician networks are facing insolvency.

Whether this implies that provider compensation levels are unsustainable is a question for debate. It is clear, however, that the assumption of risk through capitation requires sophisticated business skills for which physicians are ill prepared. It also suggests that loose affiliations of physicians for the purposes of collective contracting, rather than clinical management, like traditional medical groups, has not been successful. If providers are to regain control of the health care system, network models such as independent practice associations must evolve into stronger medical group organizations that not only accept risk but can also assume the financial and clinical accountability for managing the care of the population they serve.

## Complaint 3. Quality of care

Much recent legislation and many legal reforms have been aimed at preventing managed care's perceived quality abuses. The Patient Bill of Rights, which has been heavily debated in Congress, defines, among other things, the rights of consumers with complex conditions to access directly a qualified specialist, continuity of provider for patients who are under regular treatment, and self-referral to certain types of specialists (e.g. obstetricians–gynaecologists) (*20, 28*). Many US states have passed legislation that overrides health plan guidelines by recommending specific lengths of stay for certain procedures, such as caesarian sections and normal deliveries (*29*). In California, over 90 managed care bills were considered in 1997, many of them seeking increased access to specialists and less restrictive length-of-stay practices (*20, 28*). A 1998 survey found that 7 out of 10 doctors were against managed care. Almost one-third of the physicians responding to this survey said that they were "being pressured to withhold specific patient services that could improve care" (*30*).[r]

Denials of care by health plans serve as red flags to providers and consumers because they imply that a "corporate entity" is second-guessing what the doctor feels is best for his patient, intruding on the sacrosanct doctor–patient relationship. In fact, although the pre-authorization process is cumbersome and limits physician and patient autonomy, denials of care are not common, and are made by physicians in the medical management departments of health plans. United Health Care, which recently eliminated its prior authorization process for referrals (a process of obtaining prior approval of the appropriateness of a service or medication) says that only 1% of medical decisions are overturned, yet they cost the company over US$ 128 million annually in utilization review staff (*31*).

Although denials of care capture media attention, there is a growing body of evidence that the quality of care in managed care organizations is as good as that provided in traditional fee-for-service settings (*32*). In a rigorous review of the literature, Miller & Luft (*33*) reported that 14 out of 20 studies that measured quality of care showed either better or similar results for HMO patients, compared with fee-for-service patients.[s] The authors concluded that, "The evidence shows no pattern of worse HMO quality of care" (*33*). A analysis of the literature on managed care performance since 1980 cites six studies which show that HMO plan enrollees receive more preventive tests, examinations, and health promotion services than indemnity plan enrollees (*34*). Managed care's coverage of preventive visits and screening may be particularly beneficial to vulnerable populations; as part of the RAND Health Insurance experiment, researchers found that children assigned to an HMO had a 40% greater number of routine preventive visits and 50% more office visits than a control group assigned to a fee-for-service plan (*32*). Some surveys, however, have shown that vulnerable populations are less satisfied with the care they receive through HMOs (*33*).

Several studies suggest that managed care may also be effective in preventing over-treatment which can have a negative effect on health. For example, a 1998 study comparing clogged artery treatment decisions for three groups (Medicaid patients, those covered in fee-for-service plans, and those covered by HMOs) showed that fee-for-service patients were 2.3 times more likely to have coronary bypass surgery or angioplasty than Medicaid patients. HMO patients were 1.5 times more likely than Medicaid patients to have these procedures, but their mortality rates were lower than the fee-for-service group. The authors suggest that this indicates "a more appropriate use of procedures in HMOs" (*35*).

Despite the vocal backlash by consumers, enrollees' satisfaction with managed care tends to be high. A survey of over 3000 Medicare patients found that 87% would recommend their HMO for standard care (*36*). A survey, commissioned by California's Managed Care Health Care Improvement Task Force in 1997, found that although 42% of respondents reported one or more problems with their health plan in the past year, over 75% were actually satisfied or very satisfied with their health plan (*20*). Other surveys of California residents confirm these findings. A survey of disabled Medicare patients showed high rates of satisfaction with their HMO; 41% reported that the care they received was excellent; almost 53% said it was good or very good; and only 6% rated the care as fair or poor (*37*).

***The real problem.*** Measurement of quality in health care is a highly debated issue, and both proponents of managed care and its critics can find evidence to support their views (*38–44*). Although managed care models differ, there is little evidence to suggest that overall, managed care systems provide

[r] The MEDSTAT Group and JD Power & Associates conducted this survey on 30 000 physicians in 150 health plans in 22 areas.

[s] "Similar" results also include those studies which showed mixed (both better and worse) results.

substandard quality. In most areas, the same physicians who treat fee-for-service patients treat managed care patients. With the exception of denials of necessary care by a health plan's medical manager that resulted in a bad outcome (of which there are few documented cases), the quality of care of a health plan should reflect the quality of care of the general provider community. For example, a study by the Agency for Health Care Policy and Research reported that managed care patients spent two fewer days in the intensive care unit than patients with fee-for-service insurance, with the average stay for managed care costing US$ 8000 less and with no difference in mortality between the two groups. Patients were cared for by the same intensive care specialists (*45*).

Physician concerns about quality of care in managed care organizations may more accurately reflect the loss of professional autonomy through rigidly applied pre-authorization procedures by non-physicians, and the imposition of medical practice guidelines which have not been developed in consensus with treating physicians. The most widely used guidelines, developed by Milliman & Robertson Inc., recommend what many doctors and patients consider unreasonable rules, e.g. a one day stay for a normal delivery, two days for a caesarian section, and for procedures such as certain mastectomies to be performed on an outpatient basis (*29*).

Although these guidelines were developed in collaboration with and by physicians, they were not developed by the physicians who use them and may not reflect local practice norms and consumer expectations. To the public, which is often uneducated about variations in practice patterns, because their doctors find guidelines restrictive, they serve to undermine confidence in the managed care system. When asked how they felt about managed care plans requiring doctors to follow guidelines, 56% of consumers said that they thought this was a bad practice because they believe that decisions about treatment should be made exclusively by the doctor (*13*).

At the heart of the public's concerns about managed care tools, such as guidelines and pre-authorization procedures, is that these approaches create fear that patients will not be taken care of by their health plan when they are sick (*13*). A recent survey found that the most important criterion for choosing a heath plan was the consumer's perception of how well the plan takes care of sick members (*13*), and not its prevention programmes, screenings or health education components. The growth of for-profit health plans adds to concerns that the customer being served is the shareholder, not the patient.

By not adequately recognizing the importance of providing a sense of "security" in the minds of consumers, health plans have ignored a basic precept of insurance. It must come as an unhappy realization to health plan executives that the public rates them below oil companies and only slightly above tobacco companies in how well they serve consumers (*13*).

## What have we learned from managed care?

The evidence on managed care shows that overall it has had a positive impact on controlling growth in health care costs without a negative effect on quality. Some of the methods that it has used, however, have rankled providers and consumers and generated a backlash that will be difficult to manage without promoting another round of medical cost escalation.

Managed care is clearly at a crossroads in the USA today. How this version of managed care will metamorphose, and whether the USA will gradually see a shift towards a single payer system[t] will become apparent in the coming years. What is clear, however, is that there are many innovations and lessons from the managed care experiment which will better inform the future health policy debate in the USA and may have relevance for other countries as they undertake their own health care reforms.

Managed care as it has been implemented in the USA is a product of the market. What it has done well and what it has failed to do reflect, to a certain extent, what markets (particularly real life, imperfect markets) do well and what they do poorly. Markets are not particularly good at providing for social goods such as universal health coverage, and the growing number of uninsured individuals in the USA attests to this. Markets are good, however, at innovation and experimentation and managed care has spawned considerable innovation in how medical care can be delivered, how quality can be measured and improved, and how incentives can be aligned at all levels of the health care system.

The tools that managed care has developed have applicability for both public and private systems. Many publicly funded systems are in the process of separating funding from purchasing of health care services, and these systems could benefit from the active purchasing techniques employed in the USA. Many of the practices described below will have better acceptability in publicly funded systems in which consumers have accepted the reality of health care rationing. Waiting times for specialists and elective admissions in most managed care plans compare very favourably with public systems in the United Kingdom and other OECD countries. Within the limits imposed by constrained resources, managed care has been able to implement practices that improve hospital and physician efficiency to serve consumers who have been raised on a diet of unlimited choice and personalized service.

## Disease management

Managing disease through the continuum of care has been an exciting area of development in the USA.

[t] President Clinton's State of the Union message in February 2000 proposed significant expansion of public programmes that would increase the public sector's coverage of large groups of Americans.

Shifting from fee-for-service in which providers are paid for sickness, to capitation in which they make money when they keep people well, has generated innovative practices focused on better managing the quality and costs of the chronically ill. Valuable evidence has accumulated on the most effective treatment protocols, how to involve patients and families in the care of chronic illnesses, and how to promote compliance with drug and treatment regimens. Senior citizens and the poor have benefited as niche managed care organizations have specialized in improving ways to care for them. Other major targets for disease management programmes have included paediatric asthma, diabetes, spinal cord injury, lower back pain, chronic renal disease and mental health. It can be argued that many of these programmes lead the world in providing high quality and comprehensive care for difficult chronic syndromes at a reasonable cost (*46*).

## Quality measurement

Several techniques used by managed care firms, such as guidelines based on clinical best practices, quality report cards that provide information on provider and health plan performance, and evidence-based medicine that incorporates the latest clinical findings and cost-effectiveness data, are steps towards improving the quality of health care services. Although to individual physicians the application of guidelines may be intrusive, wide variations in treatment patterns for the same diseases between geographical areas and physician practices (*29, 47*) indicate the need for sharing best practices on how to treat particular illnesses. Clinical protocols developed by providers in integrated HMOs have had a positive effect on reducing variation and improving quality (*47*). Evidence-based medicine requires this type of guidance to promote quality of care, and both physicians and patients can be brought into the discussion of the benefits of information in improving treatment decisions.

The Health Plan Employer Data and Information Set (HEDIS) has created a core set of performance measures to assist purchasers in measuring the value of the services they are buying. This permits comparison of health plan and provider

Table 2. **Selected performance areas in a quality report card**[a]

| Performance area | What is measured? | Why is it important? |
|---|---|---|
| **Childhood immunization** | Are 2-year-olds up to date on all recommended vaccinations? | Prevents measles, mumps, poliomyelitis, and other debilitating diseases |
| **Adolescent immunization** | Did children receive recommended shots by the age of 13 years? | Prevents serious diseases such as mumps, measles, and rubella |
| **Breast cancer screening** | Did women aged 52–69 years have a Pap smear test within the last 3 years? | Detects breast cancer in its early stages when it is easier to treat |
| **Antenatal care** | Did antenatal care start within the first 3 months of pregnancy? | Reduces the risk of pregnancy complications and illness in babies |
| **Check-ups after delivery** | Did women who delivered a baby receive a check-up within 8 weeks after delivery? | Evaluates progress of mother and allows for assistance to be provided, if necessary |
| **Cholesterol management after acute cardiovascular events** | Did adults who had a heart attack, bypass surgery, or coronary angioplasty have their cholesterol level tested between 2 months and one year after the event? | Reduces the risk for future heart problems by identifying and treating those with high cholesterol |
| **Anti-depressant medication management** | Did adults with a new diagnosis of depression and who were treated with antidepressants:<br>Have at least three follow-up contacts with a health care provider during the 12 weeks following diagnosis?<br>Remain on an anti-depressants during the12 weeks following diagnosis?<br>Remain on anti-depressants for at least 6 months following diagnosis? | Reduces the likelihood of a recurrence of depression by appropriate treatment with anti-depressants |
| **Advising smokers to quit** | Did smokers aged $\geqslant$ 18 years receive advice to stop smoking when they visited their provider during the past year? | Reduces the risks of smoking, including cancer, heart disease, and early death |

[a] Source: Pacific Business Group on Health, Quality Report Card, 1999 at http://www.calpers.com

group performance on quality, access and satisfaction measures. Many purchasers have refined this data set to develop quality report cards that report on preventive measures such as childhood immunization rates, breast and cervical cancer screening rates, and care of those with chronic conditions (Table 2). These data are combined with patient satisfaction surveys and shared publicly. Although data gathering and comparison methodologies still need to be refined, they have served as a catalyst for population health management and measurement programmes.

## Aligning incentives

Managed care has generated a variety of experimental approaches in how best to pay providers and structure incentives for cost-effectiveness, productivity and quality. Of particular global interest are structures that contain costs by limiting unnecessary or inappropriate use of the health care system. Internationally, there have been three main approaches to this problem:

– creating queues or waiting lists through limiting supply;
– putting providers at risk through some form of capitation or prepayment for services;
– cost-sharing with patients through co-payments or co-insurance.

In the USA, the queuing mechanism is not politically acceptable, but much evidence has been gathered on the other two approaches mentioned above (*15, 48, 49*). For example, a recent study on the impact of financial incentives on the use and cost of prescription drugs found that the introduction of a US$ 10 co-payment was "almost as effective at controlling drug spending as is switching physician payment from fee-for-service to a capitated risk payment" (*48*).

## Conclusion

The US health care system is continuously internalizing the lessons from both the positive and the negative experiences of managed care. The politically charged managed care backlash may slow progress in a number of areas in the country, but innovation and experimentation will remain strong.

From an international perspective, managed care may have more to offer than has been recognized. Ten years ago, the US health care system was often used by health policy-makers from other countries when they became seriously ill, but one which did not hold much appeal as a model to be emulated in their own countries. The system appeared to be grossly expensive, uncontrollable, and lacking any expression of social solidarity or equity; values which are important in the health care debates of many countries, but not in the USA.

Today, many managed care practices have relevance for reforms in a wide variety of circumstances. Active purchasing and selective contracting which exploits overcapacity can be powerful tools in many parts of the world. These experiences are relevant and applicable across a wide range of health care systems in countries of the European Union, Eastern Europe and Latin America. In addition, the emerging economies of Asia, with their implementation of private health insurance, could do well by introducing managed care practices which limit unnecessary demand through provider and patient incentives.

Regrettably, in some countries, managed care has come to be associated with a completely private, competitive, profit-driven model. Even in the USA, however, government payers (e.g. Medicare) are adopting managed care methods to provide quality, cost-effective health care for their beneficiaries. It can be argued that selective adoption of managed care technologies is even more relevant and more easily applied in single-payer systems than in the fragmented, voluntary insurance market of the USA. These tools can be applied more systematically, with lower transaction costs, and their effects can be measured more precisely when implemented in countries that finance health care for the total population.

Performance monitoring, outcomes measurement, reducing clinical variation, managing chronic disease, and aligning incentives have become ubiquitous components of health policy debates in many countries. These innovations are not dependent on the US market environment and were not all pioneered in the USA. However, in the last decade this country has provided and will continue to provide a laboratory for experimentation from which the rest of the world will wish to benefit. ■


## Résumé

### Gestion des soins de santé : l'expérience des Etats-Unis d'Amérique

Les principes qui sous-tendent la gestion d'un système de soins visent à fournir à une population des soins de santé de qualité, ayant un bon rapport coût/efficacité. Cet article donne un aperçu de la gestion des soins de santé aux Etats-Unis d'Amérique – de ce qui a été réalisé et de ce qui n'a pu l'être – et précise les enseignements que peuvent en tirer les décideurs de ce pays et d'autres parties du monde. Cependant, dans la pratique, la gestion des soins englobe un large éventail de dispositions qui font qu'il est difficile d'en tirer des conclusions sur le plan de l'efficacité.

Il est important de faire la distinction entre les *outils* de gestion des soins et les *systèmes* de gestion des soins, dans lesquels ce sont des organismes privés qui se font concurrence pour attirer des adhérents. Les outils ont toutes les chances d'être utilisés aussi bien dans les

systèmes publics que privés partout dans le monde. Nous examinons ici les principales critiques formulées et les faits dont on dispose pour mieux comprendre ce que l'on peut emprunter à l'expérience américaine. Si les faits montrent que la gestion des soins a permis de mettre fin à l'escalade des dépenses de santé aux Etats-Unis d'Amérique, il y a peu de chance qu'on puisse parvenir à endiguer les coûts de façon durable sans procéder à des modifications structurelles du financement et de la fourniture des soins de santé, pour lesquelles il va falloir faire face à la question difficile des aspirations des consommateurs comme à celles des dispensateurs.

Les organismes de gestion de soins ont limité les moyens d'action par le biais d'un système d'agrément préalable et d'une analyse de la consommation des soins et ils ont réussi à réduire la consommation des soins hospitaliers, mais les fermetures d'établissements de santé ont été rares. Rien ne permet de penser que les systèmes de remboursement actuels soient insuffisants pour la fourniture des soins. Toutefois, l'évaluation des risques à laquelle procède un dispensateur de soins de santé par le biais de la capitation – c'est-à-dire du système dans lequel on paie une somme donnée par adhérent, en général de façon mensuelle, au dispensateur afin de couvrir le coût de tous les services de santé fournis à la personne couverte par le contrat – exige des compétences gestionnaires sophistiquées auxquelles les médecins et les hôpitaux sont mal préparés.

Tout porte à croire que la qualité des soins de santé offerts par les organismes de gestion de soins est aussi bonne que celle offerte dans les institutions traditionnelles de rémunération à l'acte. Dans la plupart des régions, ce sont les mêmes médecins qui traitent les patients soumis au paiement à l'acte et ceux adhérant à un système de soins gérés. Malgré les tempêtes de protestations des consommateurs, avec les soins gérés, la satisfaction des clients a tendance à être élevée. Chez les médecins, les préoccupations relatives à la qualité des soins sont peut-être le reflet de la manière dont ils ressentent leur perte d'autonomie professionnelle, due aux procédures rigoureuses d'agrément préalable appliquées par des non-médecins, et à l'élaboration de directives relatives à la pratique médicale qu'on leur impose sans avoir recueilli de consensus chez les médecins traitants.

De nombreuses innovations et enseignements de l'expérience américaine de la gestion des soins sont applicables à d'autres pays. En dehors des outils qui peuvent être appliqués aussi bien dans le système public que dans le système privé, il y a des enseignements précieux à tirer des protocoles de traitement les plus efficaces, de la façon de faire participer les patients et les familles aux soins des maladies chroniques, et de la façon de promouvoir l'observance de la prise des médicaments et des schémas thérapeutiques. Les principaux programmes de prise en charge thérapeutique sont les suivants : asthme pédiatrique, diabète, lésions de la moelle épinière, lombalgies basses, maladie rénale chronique et santé mentale.

Plusieurs techniques, par exemple directives basées sur les meilleures pratiques cliniques, cartes d'information qualitative fournissant des renseignements sur les résultats obtenus par le dispensateur et la planification sanitaire, et médecine factuelle incorporant les dernières percées cliniques et données ayant un bon rapport coût/efficacité, sont autant de progrès pour améliorer la qualité des services de soins de santé. La gestion des soins a généré beaucoup d'expérimentations quant à la façon de rémunérer au mieux les dispensateurs et de structurer les mesures d'incitation en faveur d'un bon rapport coût/efficacité, de la productivité et de la qualité. Toutefois, beaucoup des pratiques utilisées dans la gestion des soins seront davantage acceptables dans des systèmes financés par des fonds publics et dans des situations où les consommateurs ont accepté la réalité du rationnement des soins. Au Royaume-Uni et dans d'autres pays de l'OCDE, dans la plupart des plans de soins gérés, les délais d'attente pour consulter les spécialistes et pour les admissions non urgentes soutiennent très bien la comparaison avec ceux des systèmes publics.

## Resumen

### Atención de salud gestionada: la experiencia de los Estados Unidos

Los principios en que se basa la atención de salud gestionada están orientados a prestar a la población una asistencia sanitaria eficiente y de calidad. Este artículo ofrece una visión general de la atención sanitaria gestionada en los Estados Unidos – lo que se ha logrado y lo que no –, así como algunas lecciones válidas para instancias normativas de los Estados Unidos y de otros lugares del mundo. Sin embargo, la atención sanitaria gestionada abarca en la práctica una gran variedad de arreglos, por lo que es difícil extraer conclusiones sobre su eficacia.

Es importante diferenciar los *instrumentos* de atención gestionada y los *sistemas* de atención gestionada en que intervienen organizaciones privadas competidoras. Los instrumentos son potencialmente más útiles para los sectores público y privado en todo el mundo. En el presente informe se estudian los principales motivos de queja y los datos disponibles para poder discernir qué parte de la experiencia de los Estados Unidos puede aprovecharse. Si bien hay indicios de que la atención gestionada contribuyó a contener el continuo crecimiento de los gastos de atención sanitaria en los Estados Unidos, difícilmente se conseguirá frenar de forma sostenible esos gastos si no se introducen cambios estructurales en la financiación y la prestación de asistencia, para lo cual hay que afrontar los complejos problemas planteados por las expectativas de los consumidores y los proveedores.

Las organizaciones de atención gestionada han impuesto límites a la capacidad mediante la preautorización y los estudios de la utilización, y han logrado reducir el uso de los hospitales, pero el cierre de centros

sanitarios ha sido excepcional. Apenas hay pruebas de que los reembolsos actuales sean insuficientes para prestar atención sanitaria. Sin embargo, la aceptación de los riesgos por parte de un proveedor de atención sanitaria mediante la capitación (procedimiento por el que se paga al proveedor una suma per cápita, por lo general mensualmente, para cubrir los costos de prestación de todos los servicios sanitarios que recibe el beneficiario conforme a las condiciones estipuladas en el contrato del proveedor) requiere aptitudes comerciales complejas, de las que suelen carecer los médicos y hospitales.

Cada vez hay más pruebas de que las organizaciones de atención sanitaria gestionada prestan una atención sanitaria de calidad comparable a la proporcionada en las instituciones tradicionales que cobran honorarios por servicios prestados. En la mayoría de los sectores, los mismos médicos que tratan a pacientes que se acogen a este último sistema tratan también a pacientes del sistema de atención gestionada. A pesar de las protestas de los consumidores, los clientes suelen estar bastante satisfechos de los servicios de atención gestionada. La preocupación de los médicos por la calidad de la asistencia puede obedecer a la sensación de pérdida de autonomía profesional que se deriva de los estrictos procedimientos de preautorización aplicados por personal no médico, así como a la elaboración e imposición de directrices de práctica médica no consensuadas con los médicos tratantes.

Muchas de las innovaciones y las lecciones que cabe extraer de la experiencia de los Estados Unidos en el ámbito de la atención de salud gestionada revisten importancia para otros países. Además de los instrumentos que pueden aplicarse en sistemas tanto públicos como privados, pueden extraerse lecciones valiosas sobre los protocolos terapéuticos más eficaces, sobre la manera de implicar a los pacientes y las familias en la atención prestada a los enfermos crónicos, y sobre cómo fomentar la observancia de la medicación y los tratamientos prescritos. Entre los principales programas de manejo de enfermedades cabe citar los dedicados al asma infantil, la diabetes, los traumatismos de la columna vertebral, la lumbalgia, la nefropatía crónica y los trastornos mentales.

Técnicas que representan un avance en la mejora de la calidad de los servicios asistenciales son por ejemplo las directrices basadas en las prácticas clínicas óptimas, las fichas de seguimiento de la calidad, que proporcionan información sobre el desempeño de los proveedores y del plan de salud, y la medicina basada en pruebas científicas que incorpora los últimos datos aportados por las investigaciones clínicas y los análisis de costo-eficacia. La atención gestionada ha propiciado numerosos experimentos encaminados a hallar la fórmula idónea para pagar a los proveedores y estructurar los incentivos que potencien la eficacia en relación con los costos, la productividad y la calidad. Sin embargo, muchas de las prácticas utilizadas en el ámbito de la atención gestionada serán más aceptables en los sistemas financiados con fondos públicos cuando los consumidores hayan aceptado la necesidad de racionar la atención sanitaria. En la mayoría de los planes de atención gestionada, los tiempos de espera para las visitas a especialistas o los ingresos hospitalarios son mucho menores que en los sistemas de salud pública del Reino Unido y de otros países de la OCDE.

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