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Health Maintenance Organizations: Strategies and Orientations of the American Health Care System

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The objective of the paper is to appraise of US experience of Managed Care according to the WHO evaluation grid. In the mid 1990s, HMOs organizations gained an increasing share of the US health care market by recruiting a growing number of US citizens. After a short review of history, Managed Care will be evaluated according to the WHO evaluation grid that uses criteria such as equity, quality, efficiency, and relevancy. Quality and efficiency appear unchanged under Managed Care. Health care priorities are better defined, but fairness and equity have not improved. Variations in empirical surveys across US States limit the validity of the research. Quality, efficiency and fairness vary depending on location and time of the survey. Results are limited to the US. Specific mechanisms should be adopted to improve fairness. Market mechanisms have difficulties addressing population health care needs. Mixed outcomes in terms of efficiency and quality provide little reasons for other countries to adopt US Managed Care.

Field of Research: Public Health Policy

1. Historical perspective

United States' health authorities encouraged the development of Managed Care Organizations in front of an increase in health care expenditures resulting from progress of medical technologies, the aging population and the extension of health care coverage, provided either by a private employer or by the Federal government (through the Social Security Act of 1965 that set up Medicare and Medicaid programs). In 1973, the Health Maintenance Organizations (HMO) Act granted fiscal advantages to HMOs that offered care to a predefined population in exchange for a fixed sum paid in advance to the insurer. Among other measures, Federal law also obliges every employer with more than 25 employees to propose to its staff an HMO coverage in addition to conventional insurance (Redin 1989). HMOs cover consultations (with physicians and specialists), diagnostic services, hospitalizations and certain types of care or services at the discretion of the HMO. Premiums are paid in a periodic way, generally monthly, and independently of the actual use of the services by the insured.

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Since then, Managed Care organizations' costs reduction strategies have attracted various large employers such as universities (Pearson 1975) and major companies: Ford (Shelton 1979), General Mills (Parkers 1979), Caterpillar (Hurst 1980) and later, the Federal government which entrusted to them the management of army veterans' health. During the years 1985-95, membership growth rate was 10 % a year. In 1997, HMOs covered 72.1m individuals compared with 63.3m in 1996, 47.1m in 1994 and 38.8m in 1992. (See Table 1: HMO membership growth 1992-2001.)

Table 1

HMO membership growth 1992-2001

Year	Insurees (in millions)	Growth rate (in %)
1992	38.8	6.3
1993	42.1	8.5
1994	47.1	11.9
1995	53.4	13.4
1996	63.3	18.5
1997	72.1	13.9
1998	78.6	8.9
1999	80.5	2.6
2000	78.9	-2.0
2001	78.0	-1.1

Source : HMO Industry Report 12.1. Part II. InterStudy Competitive Edge Series. July 1st, 2001.

2. Practitioners under Managed Care

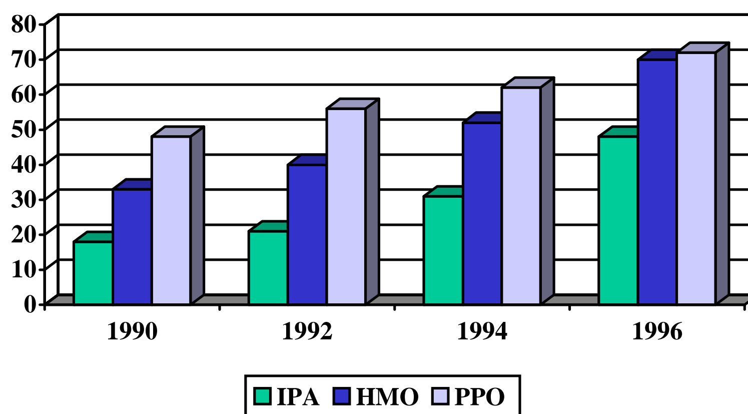
2.1 Membership

Managed Care organizations' development also resulted from the affiliation of an increasing number of practitioners to whom the former offered advantageous employment conditions: already-established clientele, higher salaries, possibility of working in an independent medical practice while being a partner of an HMO, fee collection from employers, regularity of medical practice (stable working hours) (Liner 1997). Finally, practitioners who at the beginning of the 1990s experienced growing under-employment, could not ignore the outlets that Managed Care organization offered. By early 2000 almost 9 out of 10 physicians were currently participating in one form or another of Managed Care organization, be it a Health Maintenance Organization (HMO), a Preferred Provider Organization (PPO) or an Independent Practice Association (IPA), compared with one out of 10 in 1990. (See Figure1: percentage of physicians participating in managed care.) This was a trend in urban zones rather than in rural areas, the latter supporting fewer Managed Care organizations. At the beginning of the 1990s PPOs dominated the market, but were

quickly caught up by HMOs (Roussel 1999) which, although more restrictive regarding the choice of a practitioner, are less expensive for the insurant.

Fig. 1

Percentage of physicians participating in Managed Care



Source: American Medical Association (1996). *Socioeconomics of Medical Practice, and Physician Marketplace Statistics*.

2.2 Medical Practice under Managed Care

Unlike a Fee For Service (FFS) payment, a care provider (hospital, physician) under contract with an HMO is paid at a fixed rate ("capitation") and receives a fixed sum per patient, whatever the duration and intensity of care (Perneger et al 1996). The physician is given incentives (premiums but also financial penalties) to adapt the provision of care to the real needs of the patients (Bledsoe et al 1995). For instance, under an HMO withholding contract, the HMO retains, at the beginning of the contract, a fraction (15% to 25 %) of the fees normally paid to the provider, be it a solo practitioner or a physician practice. At the end of the withholding contract, comparisons are made with an initial cap on health care spendings or consumption (of hospital care, tests, medical prescriptions). If these are lower than the cap, the sum that had been withheld is then returned to the care provider. Should the opposite occur, the HMO keeps the remaining sum for itself. On the whole, this formed a strong incentive to conform to a prescription objective. To this add the obligation for the practitioner to seek a preliminary authorization from the HMO before ordering sophisticated or expensive medical procedures or tests (Kerr et al 1995).

The physician-induced demand theory has legitimized those interventions in medical practice. According to its authors, R.G. Evans (1974) and R.V. Fuchs (1986), the medical profession has the capacity to steer demand for care to secure an income,

as indicated by rates and consumption of care being higher in areas that support many practitioners (Cromwell & Mitchelle 1989). Another aggravating factor is that patients are more aware that care is available (because of increased publicity for medical products and growing media attention on medical issues) and demand more care, which the physician can barely refuse or risk losing income. Health care is often compared to a luxury good, with demand for care increasingly driven by media interest, particularly in cities with their higher density of health care professionals. Capitation contracts and preliminary authorizations are aimed at stemming this, as well as conversion to for-profit status, which urge practitioners to be thriftier (Pauly et al 1990).

The financial responsibility of an HMO insurant is also a factor: the insurant may have to pay a co-payment every time he or she appears at emergency services (Selby et al 1996) or consults a specialist. In psychiatry, for instance, setting up a $20 patient contribution per consultation sparked a decrease of 16 % in the consumption of psychiatric care in ambulatory settings (Simon et al 1996). Two concepts, often associated in health care economics, have justified these limits: moral risk is defined as the attitude of those who hide information regarding their health status from their insurer, or those who adopt risky behaviours because they are fully insured (i.e. they know their medical fees will be paid in case of an accident). These two categories tend to consume more health services. Consequently, increasing patient co-payments should increase patient responsibility. Adverse selection refers to individuals who have “bad” risks and will have to bear the costs of higher premiums. Those who know they are very likely to fall ill (referred to as “bad” risk individuals) usually purchase medical insurance. Those who believe their risk of illness is low tend not to purchase insurance coverage. Consequently, as basic insurance rates increase, the incidence of low-risk individuals purchasing insurance decreases (Dionne 1981). Thus the “bad” risk individuals carry an ever-increasing financial burden. If adverse selection legitimizes the existence of public coverage but also the adoption of group contracts with fixed rates that are easier to manage for the insurer than individual contracts, moral risk leads to transferring a higher financial burden to patients (through co-payment and deductibles). This explains why assurance is partial.

It is also possible to understand the existence of Managed Care organizations in light of the Williamson contract theory (1975). Indeed, settling an optimal contract between Fee For Service (FFS) insurers, patients and practitioners is impossible: it supposes the absence of information asymmetry between practitioners, insurants and insurers. An optimal contract is a contract that envisages in priori all the possible strategies, their results and the compensations in case of physicians’ or patients’ opportunistic behaviors. Patient’s opportunistic behavior refers to a patient who, according to the moral risk theory, engages in risky behaviors. Physician’s opportunistic behavior refers to a physician who willfully ignores contractual commitments as the control of his prescription patterns is difficult. Supervision mechanisms for these agents are necessary. It is this role of an arbitrator that these Managed Care organizations embody because, unlike traditional insurers, they intervene directly in the provision and follow-up of care, and exert their influence on

insurants (through increased patient's contribution or co-payments, incentives to offer prevention programs to patients) as well as on practitioners (through clinical recommendations, financial envelopes, bonuses to thrifty practitioners).

3. The rising opposition of patients and practitioners

However, there has been a significant loss of confidence from consumers (Blendon et al 1992) and health care professionals in HMOs (Taylor 1994; Patterson 1994), even in the early days of Managed Care when it represented only a small fraction of the insurance market. According to a Harvard and Kaiser Family Foundation survey (1997), 76 % of individuals below 65 years under a Fee For Service regime perceived their insurer favorably, whereas only 66 % of Managed Care patients shared the same view. The most often reported elements of dissatisfaction were time spent with the physicians, availability of specialists and quality of care. Only 30 % of Managed Care patients trusted their insurer (55 % for FFS patients). Most supported an intensification of state control to prevent Managed Care spillover effects (such as exclusion of high-risk patients, and denial of certain expensive procedures). In 1999, an inquiry, published in the article « A right to sue » in *The Economist* (16 October, 16 1999) (p. 62-63) by the Washington Post/ABC revealed that 30 % of interviewees had a good opinion of HMOs and 52 % had a bad opinion; 43 % thought that HMOs did not treat patients fairly. Media contributed to this stigmatization: according to the Kaiser Family Foundation, while two-thirds of the 2100 elements of information diffused in newspapers or on the television gave a neutral image of Managed Care, one quarter criticized it (Brodie et al 1998). A possible reason for such media backlash is that HMOs have never been able to communicate to the public some achievements they took part in.

Practitioners have also become wary of HMOs: an increasing number of them have joined trade unions (Thompson 2000; Luepke 1999) or created specialty groups and even their own networks (Ganz 1997; Krohn 1997) to improve their bargaining power with HMOs and to propose their services directly to employers. These initiatives have received support from major employers (such as Motorola), which were willing to reduce their costs by contracting directly with health care providers without resorting to Managed Care organizations (Kennedy & Jennings 1998; Coile 1996; Tillinghast 1998). Physician practices have been banding together (Bazzoli et al 2000) and others have been acquired by hospitals: independent physicians act as intermediaries, referring patients directly to hospitals. These then form a captive clientele. This flow of cases is independent of the HMO (Burns et al 2000), thereby suppressing the HMO role as a middleman.

Practitioners' discontent also results from research difficulties under the Managed Care regime: indeed, in front of a decrease in HMO payments, university hospitals worry about their capacity to pursue their research effort (Levitt 1997) and education mission (while the cost of training physicians is still very high). Medical students' limited – and essentially, voluntary - exposure to Managed Care (mostly through inadequate training in medical economics) has not been sufficient to prevent suspicion towards HMOs. Other shortcomings have appeared: insurer insolvency,

practitioners' exclusion from HMOs (Ellis 1997; Liner 1997), worsening of employment conditions, tense relations with patients, and professional dissatisfaction (Warren et al 1999).

4. More vulnerable HMOs

Despite an increase in the number of insurants, HMOs' financial situation strongly degraded during the second half of the 1990s (Benko 2000; Charatan 2000). With the economic upturn in the US, major employers became more demanding when choosing coverage for their employees. Many grouped together during calls for tender to cover employees' health, which allowed them to increase their market power against insurers (Myers 1996; Castles et al 1999) and thus to negotiate very favorable contracting terms and premium rates in exchange for a stable volume of patients. Furthermore, a sign of the maturity of the sector is that expansion opportunities for HMOs have slowed down: in the US, employees of most of the big American companies are already linked to a Managed Care organization, with only limited adoption of certain Managed Care features (such as gatekeeping) in Europe and Canada. To this add an increase in administrative expenses and patients' complaints. HMOs withdrew from certain segments of the market considered little profitable rural zones[i], elderly persons [Medicare Managed Care]), a withdrawal that was observed in New York, New Jersey, Colorado, Connecticut, and Delaware. As a consequence, consolidation of the HMO sector accelerated, with the number of HMOs shrinking from 659 in 1988 (Levy 1999) to 643 in 1999, and from 560 in 2000 to 531 in 2001 (Interstudy 2001). To achieve economies of scale or scope, HMO concentration has risen (Given 1996; Wholey et al 1996).

5. Framework of Managed Care analysis

In its definition of a health system, the WHO includes four founding values:

1) Efficiency, which considers the costs of the services and their outcomes, thus measuring the capacity of a health care system to make the optimal use of scarce available resources.

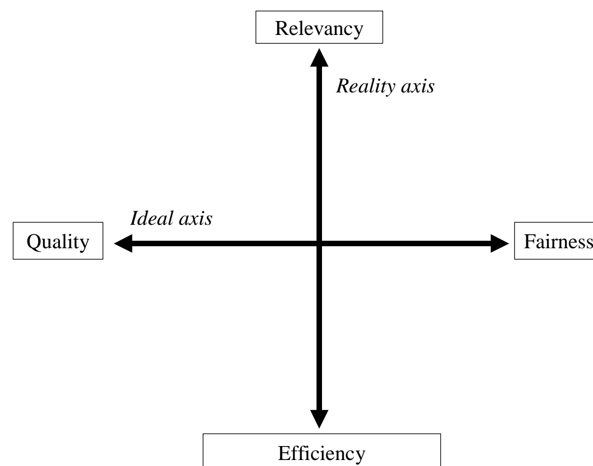
2) Quality, which defines the capacity of the system to give satisfactory care to an individual, rather than to a group of persons. From health care professionals' view, it corresponds to services that are up to certain standards that are constantly redefined by medical progress.

3) Relevancy, which defines the capacity to detect and meet certain prime health care needs (certain pathologies or certain groups of persons whose care needs are higher) and follows the choices of a society at a given time.

4) Equity (or Fairness) defines the capacity of a health care system to guarantee access to care to every individual without discrimination based on age, gender, income, or race. It rests on assurance, financed by

employers (Germany, France); by individuals who pay a premium proportional to their medical risks to which is added an employer contribution (US); or by the State responsible for national solidarity in return for the payment of a general tax (the United Kingdom). Equity, corresponding to a collective optimum, acts partially in a direction opposite to Quality (which corresponds to an individual optimum). Therefore, the first two values of Efficiency and Relevancy play intermediaries' roles and have to find a compromise between those partially conflicting objectives. (See Figure 2: Relationship between founding values in health care systems.)

Fig. 2 Relationship between founding values in health care systems



5.1 The quest for efficiency: uncertain results

HMOs have tried to improve the cost/efficiency ratio of treatments. To achieve this they have implemented, in cooperation with hospitals, various tools designed at helping practitioners to make choices between therapies available to them. These have included clinical recommendations known as quality standards; prescription formulary (Shepherd & Salzman 1994); outcome studies; disease management programs; follow-up of prescription patterns; prescription profiling (Krentz & Miller 1998); and comparisons between care providers. Other devices include consulting a limited network of providers[ii] so as to avoid “medical nomadism” or physician-hopping; utilization review programs which allow reexamining care provided to patients to make sure that it is necessary and appropriate; coordination (Stano 1997); and integration of care (Moak 2000; Monaco & Goldschmidt 1997); and finally, a prime role given to primary care: for instance, the gatekeeper (Reagan 1987) plays the role of medical counsellor and decides if the patient should consult a specialist or needs additional nonroutine care[iii]. Indeed, certain sophisticated procedures (for example, 25% to 35 % of coronary angiographies and endarteriectomies) would bring little to the insured or would be inappropriate (Brook

1993, 1994). Finally, these measures should also homogenize medical practices and maybe reduce the gaps in pathology costs that can be observed from one US state to another (Evans & Kitzmann 1998).

However, after almost 30 years of experimentation, it is difficult to say if care providers have become more efficient under Managed Care: indeed, on a microeconomic level, if practitioners that manage many HMO patients appear more efficient in the use of hospital resources, they compensate for the low level of HMO patient reimbursements with an increase in hospital care consumption (higher number of examinations and consultations) for non-HMO patients (Van Horn et al 1997). In cardiac surgery, Managed Care organizations, when selecting a care provider, appear less sensitive than other third-party payers (such as Medicare) to provider value (Shahian 2000). On the macroeconomic level, initial studies on the West Coast (where Managed Care was first developed), credited the regime with a slowdown of health care expenditure growth (Anderson 1997). Managed Care's ability to cut costs legitimized its adoption by other States: between 1983 and 1993, HMOs slowed down the consumption of hospital services (Robinson 1996). In particular, the increase in health care expenditure was slower in markets characterized by strong Managed Care penetration compared with markets that supported fewer HMOs (Gaskin & Hadley 1997). Also, while hospital expenses increased by 54 % in the US between 1980 and 1991, this growth was only 27 % in California where Managed Care knew a steady development (Melnick & Zwanziger 1991). As regards expenses for consultations and medical drugs, they increased nationally by 82 % and 65 % respectively, compared with 58 % and 41 % for California (Melnick & Zwanziger 1991). Competition between HMOs would also have slowed down the increase of premiums paid by insurants (Wickizer & Feldstein 1995). However, recent research (Stano 1997), (Sullivan 2001) is mixed on these issues: besides adverse selection (Leibowitz 1992), the 1990-91 recession, along with a wave of mergers especially among hospitals, would also explain the slowdown of health care cost growth in the mid 1990s. Finally, HMOs' and providers' administrative expenditures were often under-estimated and strongly increased in the late 1990s and early 2000s (Sullivan 2001).

5.2 Uncertain quality results

As for care quality, results were also mixed. HMOs have strengthened prevention efforts[iv] with children (Frye 1998) and the elderly in cancer screening (Malin et al 2000; Gerbet et al 1997; Trock et al 1993; Rimer et al 1993); immunization (Hirano 1998); and coordination of care and case management (Lindstrom et al 1995) in treating complex cases[v]. A synthesis (Miller & Luft 1997) of a sample of 15 studies (too small, however, to allow a generalization), compares care quality under HMO and Fee For Service regimes and reveals an equivalent number of improvements and worsening of patients' healt in varied pathologies. In psychiatry, for example, Managed Care came with a degradation of care quality (Rogers et al 1993); with regard to patients who stayed in the traditional Fee For Service regime, most seriously-ill patients fared worse after their transfer to Managed Care. In oncology, post-survival rate for patients suffering from breast cancer were reduced after their

operation in an HMO hospital (Lee-Feldstein et al 1994). In dermatology (Gerbert et al 1996; Solomon et al 1996) and cardiology (Jollis et al 1996), gatekeeping appears risky for patients. Finally, HMO management of emergencies has flaws, such as a lack of specific guidelines or definition of emergency care (Uva, 1996).

Uncertainties on care quality under HMO regimes led the Federal government as well as States to intervene firmly by legislation. For instance, the Consumer Bill of Rights[vi] restored the right for patients to consult a specialist outside the health plan if the latter does not have one in the considered specialty, and to appeal in the case of a treatment denial. Certain restrictive practices were pushed aside, such as the "Drive-through Delivery": in the mid 1990s, 24-hour stays in the maternity ward following delivery became increasingly frequent (Volpp & Bundorf 1999), notably on the West Coast. To reduce costs, Managed Care organizations had supported this practice, which worried practitioners and patients. A law, officially known as the Figueroa Bill (AB38), obliges HMOs to finance a minimum 48-hour stay in a maternity ward (although its impact on the quality of care remains unknown). Also abandoned in almost all States is the HMO gag clause, which forbids a practitioner to discuss possible treatments with a patient or to inform the latter about limits enforced by the health plan. Other laws, although not respected nor thoroughly enforced (Seaberg et al 2000; Irvin & Fox 2000), softened the limitations that HMOs had adopted to dissuade insurants from seeking treatment at emergency departments (Tintinalli 2000).

More worrying, HMOs are reluctant to finance expensive medical treatments and sophisticated operations. As regards the former, HMOs tend not to recommend prescription of drugs that, although beneficial in the long term, are expensive, as the patient can easily switch HMOs (Stano 1997). For example, statins are effective drugs to decrease cholesterol to prevent coronary syndromes. Several years are necessary, however, to see a significant decline in hospitalizations and thus a drop in associated costs. So why should an HMO spend a lot by prescribing this drug? Customer loyalty is low so, in the end, another insurer may simply reap the savings made possible by this expensive preventive drug. In surgery, HMOs have tried to impose a rationing on care to achieve savings. So, for patients suffering from coronary infarction and who had been looked after, for some by an HMO, and for others, by a traditional insurer with FFS payment, the likelihood of receiving coronary angiography was 1.5 times higher for FFS patients (Every et al 1995). Also, the probability for FFS patients receiving a coronary revascularisation was twice as high. Another study (Langa & Sussman 1993) compared care[vii] under three insurance models: Medicaid program, an FFS insurer and an HMO. While from 1983 to 1988, revascularisation operations increased under every insurer, the increase was fastest among FFS patients compared with HMO and Medicaid patients. Similar results were also found for eye surgery for Medicare patients under FFS or HMO or IPO Managed Care (Goldzweig et al 1997): the probability of receiving a cataract extraction was twice as high for FFS patients. The results were similar in cancer research with spinal cord transplantation (Mitchell et al 1997). One of the consequences of HMO hesitation in financing complex but expensive operations

would be a slowdown in the introduction of sophisticated procedures or technologies and may, eventually, put a curb on medical progress.

5.3 Relevancy: new priorities?

With emphasis under managed care on quality and efficiency (through clinical paths, care protocols, patient satisfaction measurements), health care priorities may have turned to wealthy patients and the middle class. The system is at risk of catering not to the needs of the most vulnerable populations but to those of the first two categories, considered as the only relevant ones. Young and healthy patients appear not to suffer from a worsening of their health under HMO (Miller & Luft 1997). On the other hand, the quality of care for elderly patients with chronic illnesses (Medicare) with lower incomes (Miller & Luft 1997; Ware et al 1996); deprived patients (Ware et al 1986); and severely ill patients (Mechanic et al 1995) appears lower under Managed Care. These concerns have extended to Medicaid patients: a study (Lillie-Blanton & Lyons 1998) on two groups of Managed Care patients (the first comprising Medicaid patients and the other comprising deprived patients not covered by Medicaid) reported that Medicaid Managed Care patients suffered from more health problems, had more difficult access to care and were less satisfied than FFS patients. According to other studies, however, the quality of care for Medicaid patients is comparable under Managed Care (Freund et al 1989). Medicaid Managed Care programs were cost-effective compared to what would have been spent to care for enrolled beneficiaries under the traditional Medicaid program (GAO 1993).

5.4 More unfairness?

Finally, the health care system remains unable to provide the entire population with access to a minimum set of medical services. Exclusion of patients at risk[viii] (Morgan et al 1997) or vulnerable patients is higher under Managed Care organizations, as such groups recruit first and foremost patients who present a lower risk while excluding the fragile (Robinson & Gardner 1995). Other studies also underline the difficulties of the destitute (Lillie-Blanton & Lyons 1998) and the elderly (Brown et al 1997) under Managed Care regarding access to care. Furthermore, physicians who practice in areas with intense HMO competition dedicate less of their time to provide free care to the deprived (Weissman et al 1999). To ease these shortcomings, rates of payment for capitation contracts should consider the severity of the pathology, as has already been proposed for chronic patients (Krop et al 1998). Finally, insurance is still partial, a relatively old characteristic of the American health care system: in 2001, 41.2m individuals (compared to 39.7m in 1993[ix]) had no health care coverage, the majority of whom were too poor to finance their medical coverage but whose income was too high to be eligible for Medicaid programs (two-thirds of this group were employed).

6. Managed Care, ethics and market mechanisms

These shortcomings illustrate the difficulties of the market to regulate the health care sector and the inseparable character of economics and ethics. Indeed, health is and remains a nontradable good. Because health care professionals rather than patients create the demand for care (Arrow 1963), market mechanisms apply with difficulty. Furthermore, if consumers pay a low price for care services with regard to their real costs, they can hardly compare their quality. The diversity of services, information asymmetries, oligopolies (drug manufacturing firms, hospitals) or virtual monopolies, and the size of entry barriers (investment needed to build a hospital) also make market regulation difficult. Finally, allocating scare resources to different groups of patients, and thus to competing purposes, raises ethical questions that the market cannot address. These concepts, ethics and market regulation, complement more than oppose each other, however: efficiency, an economic criterion, has to make savings possible. These savings can subsequently be reinvested for other purposes within the health care sector (for example, to treat another group of patients) or even outside the sector (pensions for the elderly, professional education for adults, rehabilitation programs for various subgroups of population such as the unemployed...). Those purposes, even though they are not health-related, are as equally important and justifiable because they also meet and fulfill an ideal of justice (CCNE 1998). With the progress of medical evaluation under Managed Care (quality measurement, calculation of the number of dollars per saved life – sometimes adjusted by quality of life criteria), the American health care system should become more transparent. This transparency is a fundamental ethical principle (Puel 2001): because health spending is not unlimited, the transparent allocation of resources is indispensable to the optimal use of production factors.

7. Conclusion

Despite results being below expectations, Managed Care, an insurance model that rests on private financing (insurance paid by employers and private individuals) and private provision of care, has inspired many foreign health policies, notably in Europe and the United Kingdom. It not only succeeded in inspiring the Beveridge model (the British National Health Service [NHS] in particular), under which social welfare is universal and financed by national tax and where the control of production factors is public, but also the Bismarck model (France, Germany) characterized by compulsory social welfare and a simultaneous presence of public and private playors. Under these models, the responsibility of physicians is stressed (for instance, through Fundholding practices[x]) with the added aim of introducing more competition between insurers: in France, for example, insurants can freely choose their insurer, the latter fixing their own premium rates, thereby stirring competition on prices and services. In front of information asymmetries (Arrow 1963), European health care systems are striving to achieve greater transparency and quantification. In particular, the coding of acts and pathologies (Diagnostic Related Groups) is enabling insurers to closely adopt and monitor thriftier medical practices. Innovations have also appeared with Managed Care: case management, computerized registries for immunization, HMO evaluation. Coordination of hospitals

and Managed Care organizations should also improve. But, the insurant has lost power: the HMO is now supposed to be better informed about quality and costs of services than the patient. With medical progress and a greater sophistication of equipment and training of practitioners, the insurant, as an individual, cannot decide on an optimal use of the resources chosen for medical care. To the relationship existing between the practitioner and patient and that plays a central role in the physician-induced demand theory, add a second agency relation between the medical profession and the insurer: the payer (the "principal") requires the practitioner's intervention (the secondary agent) to achieve its costs control objective. By creating rules (prescription of generic drugs, second opinions, clinical paths), the HMO tries to impose its authority on therapeutic decisions. Nevertheless, Managed Care organizations' abilities to achieve savings, thus their efficiency, remain difficult to estimate.

Finally, has the nature of competition in health care markets changed? Because of insurance coverage, competition between hospitals is based more on the quality of their equipment and their staff than on prices. This is an "arms race" (Bartlett Foote S, 1992) that targets insurants and physicians (who refer patients to hospitals). Now, with Managed Care, hospitals are prompted by HMOs to lower service fees. Consequently, price competition has intensified. This may announce the end of the "medical arms race" (Cutler et al 1998; Gift et al 2002). For others (James 2002; Hanys 1999), the arms race will not disappear: on one hand, technological progress continues; on the other, providers, hospitals in particular, now know how to strengthen their bargaining power in front of HMOs (mainly by acquisitions and alliances) and have refined their strategies. Thus, they have become more expensive due to niche strategies on certain pathologies that require sophisticated equipment (cardiac surgery, cancer research) with the use of more sophisticated medical devices. Consequences may be dire: following the physician-induced demand theory, health costs would grow further, and hospitals with low capacity may find themselves with a lack of equipment that may threaten treatment quality. To limit these drifts, a planning of medical technologies is required at the state level. Regarding hospitals, health authorities[xi] should closely monitor strategies that may lead to anticompetitive practices. Finally, to limit the inflationary role of assurance, the share of medical costs charged to the insurant (deductibles, co-payment) should increase. Thus there is a need to improve patient information so that patients can make a financially sound choice of an insurer.

Glossary[xii]

Capitation: Contract with fixed rate covering any care needed, whatever its duration and intensity.

Case Management: Follow-up of a patient whose care needs are particular, with the aim of offering an optimal cost/effectiveness ratio. These programs concern vulnerable patients (chronic patients, severely-ill patients). The case manager (physician, nurse) is the person responsible for the care of the patient.

Disease Management: Management of a disease to improve the cost/effectiveness ratio. These programs sometimes include patient satisfaction. They especially concern chronic diseases. Patients at risk often join these programs where they receive particular service (better follow-up, specialized practitioners). Hospitals and, more often, Managed Care organizations, implement these programs.

Formulary: Restrictive list of drugs, the prescription of which is a priority.

Gatekeeper: A primary-care physician who decides if it's necessary to refer the patient to a specialist or a hospital for additional care or supplementary tests. The aim is to deliver optimal care without generating higher costs for the insurer. This device has not given the expected results in certain specialities where it was enforced (such as dermatology). At present, the gatekeeper role resembles more that of a coordinator of care.

Health Maintenance Organization (HMO): HMOs are Managed Care organizations that employ practitioners to offer care for a fixed sum. In return, and it is partially what has prompted health care professionals to join Managed Care organizations, they can benefit from a guaranteed volume of patients. The American health care market supports Staff model HMOs (in this case, physicians are employed by the HMO) and Group model HMOs (physicians contract with the HMO but are not its employees). In Independent Practice Association (IPA) or Network HMOs, physicians are independent of the HMO, free to contract simultaneously with one or more HMO, benefit from a Fee For Service payment (but at a preferential rate) and continue to receive patients covered by traditional insurance. IPAs are increasingly popular as they are less expensive than FFS insurers. The freedom of choice for a regular physician is higher than in Group model HMOs. Also, there are nonprofit and for-profit HMOs, the capital of the latter being constituted by shares.

Managed Care: This term encompasses every organization and care management tool supposed to offer the best cost/quality to the insured.

Medicaid: Federal US program, managed by each State, that concerns essentially the poor; the blind and certain categories of disabled persons. Costs are shared between the Federal government (55 %) and States (45 %). While Medicaid follows the Fee For Service regime, with payments to care providers made according to the medical procedure undertaken, Medicaid Managed Care programs have appeared recently. Care is then managed by a Managed Care organization paid under a capitation contract.

Medicare: Federally-managed program that addresses the needs of pensioners and certain handicapped persons (39m individuals in 1999, among whom 5m had disabilities). It is divided into two parts: Medicare Part A covers hospital care; Medicare Part B covers ambulatory care. In 1997, Medicare spending represented $214bn (2.7 % of GDP).

Preferred Provider Organization (PPO): a PPO contract is made with practitioners and hospitals, with payment made on a Fee For Service basis but at a preferential rate. Patients can consult a practitioner outside the network after paying deductibles.

Utilization Review: Device that aims to estimate efficiency and appropriateness of care. It is a formal evaluation that concerns quality and costs. It can be retrospective, concurrent, or prospective. However, these reviews were often blamed for rationing care.

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[i] « Despite Medicare+Choice changes, rural providers cautious about risk », *Public Sector Contracting Report*, 4 October 1998, 4(10), p. 149-152.
[ii] The insurant must consult a practitioner of the HMO network. In return, the latter will ask for fees that are lower than those paid by unaffiliated HMO patients. The patient can also consult the practitioner of his choice in return for a financial participation.
[iii] Source: Alpha Center (Washington, DC), *Health Care Delivery and Financing Terms*; United Health care Corporation (Minnetonka, MN), Glossary of Terms.
[iv] Public Sector Contracting Report. Focus on proactive care management to improve quality, produce savings in Medicaid risk, 4 April 1998, 4(4), pp. 57-61.
[v] Source: Alpha Center (Washington, DC), *Health Care Delivery and Financing Terms*, United Health care Corporation (Minnetonka, MN), Glossary of Terms.
[vi] Passed by US Senate in July 1999.
[vii] In 1983, 1985 and 1988
[viii] Report finds Medicare *HMO* members are younger, healthier and lower cost than *FFS* seniors. Public Sector Contracting Report, 3 November 1997, 3(11), pp. 174-5.
[ix] Source: US Census Bureau.
[x] The NHS pays the physician through a capitation contract: the physician receives a payment which depends on the number and type of patients (for example, the sum is higher if the physician looks after elderly persons and pregnant women) and is used to purchase hospital care, prescriptions, and finance medical practice operating costs. To this are added other payments (depending on the physician's training, complexity of medical treatment, night visits, participation in public health programs like immunization) as well as incentives aimed at encouraging group practice or the installation in traditionally medically under-served areas. This system has reduced physician-hopping: unlike France, a patient cannot consult several practitioners; only visits to the designated physician are free.
[xi] Center for Studying Health System Change, 2002.
[xii] Source: American Association of Health Plans; National Center for Quality Assessment; Tufts Managed Care Institute.