Disease management: definitions, difficulties and future directions

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Abstract The last decade has seen a wide range of experiments in health care reform intended to contain costs and promote effectiveness. In the USA, managed care and disease management have been major strategies in this endeavour. It has been argued that their apparent success has strong implications for reform in other countries. However, in this paper we ask whether they are so easily exportable. We explain the concepts involved and set the development of managed care and disease management programmes in the context of the USA. The constituent elements of disease management are identified and discussed. Disease management is considered from the perspectives of the major stakeholders in the United Kingdom, and the differences between the models of health care in the United Kingdom's National Health Service and the USA are noted. A review is presented of evaluations of disease management programmes and of the weaknesses they highlight. The prospects for disease management in Europe are also discussed.

Keywords Managed care programs/organization and administration; Health care reform; Drug industry; Physician's role; Pharmacists; Patient freedom of choice laws; National health programs; Comparative study; Evaluation studies;United States; United Kingdom (*source: MeSH*).

Mots clés Programme soins organisés/organisation et administration; Réforme domaine santé; Industrie pharmaceutique; Rôle médecin; Pharmacien; Lois liberté de choix du patient; Programme national santé; Etude comparative; Etude évaluation; Etats-Unis; Royaume-Uni (*source: INSERM*).

Palabras clave Programas controlados de atención en salud/organización y administración; Reforma en atención de la salud; Industria farmacéutica; Rol del médico; Farmacéuticos; Libre elección del paciente; Programas nacionales de salud; Estudio comparativo; Estudios de evaluación; Estados Unidos; Reino Unido (*fuente: BIREME*).

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Introduction

Public policy initiatives aimed at containing costs are redefining the boundaries and economics of medical care in most member countries of the Organisation for Economic Cooperation and Development (OECD). The specific reforms differ from country to country but their underlying thrust requires health care systems to come to grips with essential market realities and the need to justify medical intervention on grounds of both efficacy and efficiency (*1*). Managed care has entered the lexicon of health care reform but confusion and ignorance surround its meaning and purpose (*2*).

The USA and most of Europe, including the United Kingdom, have introduced wide-ranging health care reforms during the last ten years. In the USA, managed care has been a central strategy in the reform programme. Disease management is one of the key tools that managed care organizations (MCOs)[a] have used in attempting to control costs and assure quality. Its apparent success has been promoted as a basis for further reform in the United Kingdom and the rest of Europe. The present paper questions whether this is justifiable. We clarify the concept of disease management, setting it in the context of managed care as developed in the USA. By reviewing the perspectives of those likely to be the major stakeholders in any such developments in the United Kingdom, we consider the problems of

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[a] An organized system, integrating management and financing to deliver health care services through contracts with providers with incentives to deliver cost-effective care to a defined enrolled population (*39*).

exporting this model. Discussed is the relevance of the model to developments in Europe and the extent to which the approach is only appropriate to the particular institutional configuration of health care in the USA or to systems organized in a very similar way.

Disease management in the context of managed care

"Managed care" is a generic term for a variety of attempts to alter or restrict the treatment behaviours of health care professionals in order to produce both clinically effective and cost-effective outcomes (*2*, *3*). At its simplest, managed care is the management of medicines and treatment (*4*). Traditionally, physicians in the USA were paid a fee per item of service. This created incentives for overtreatment and cost inflation and presented payers with an open-ended financial commitment. MCOs, the majority of which in the USA are either health maintenance organizations (HMOs)[b] or preferred provider organizations (PPOs)[c], change these incentives, limiting the financial commitment of payers by paying clinicians a periodic fee per life covered and making them share the risk of costs for excessive or expensive treatment. MCO payers may be employers, insurers, the state, or, more rarely, individual clients (*5*).

In practice, MCO organizational models vary considerably in detail and fee-for-service providers have also adopted some features, such as the use of restricted drug formularies, blurring the distinction between the various types (*3*). However, the MCOs' economic incentives are usually reinforced by a range of direct interventions. These typically include controls on clinical autonomy, controls on patient choice and a degree of vertical integration (*3*). Controls on clinical autonomy include restricting the physicians' choice of drugs to those included in a formulary or requiring disease treatments to follow specified protocols. These controls are intended to change doctors' prescribing behaviour in line with measures of efficacy and cost efficiency. They may be enforced either by individual case reviews or profiling, where doctors' performance indicators are compared with a standard and deviations from it are investigated or sanctioned. Controls on patient choice include restrictions on the providers who may be consulted, whether for primary or secondary care, to those employed by, or holding contracts with, the MCO in question. Vertical integration may take a number of forms, varying from mergers between primary and secondary care providers to contractual arrangements where specialist or secondary care providers offer MCOs preferred partner arrangements, including discounted fees. As a result of such restriction and standardization, whereby patients relinquish some freedom of choice, MCOs can offer care more cheaply than traditional fee-for-service schemes (*6*).

A key tool used by MCOs is disease management, the process by which all those responsible for prevention, diagnosis and treatment of a disease agree on the standards, personnel, and costs that should be involved in providing care (*5*). Both doctors and patients give up choice of treatment, and of specialist referral, to a disease management provider, often a pharmaceutical company operating as a subcontractor to the MCO concerned. By standardizing treatment packages the provider expects to reduce the total cost of health care provided without loss of quality. The prerequisites for a disease management programme are as follows: a knowledge base that quantifies the economic structure of the disease and specifies care guidelines; a delivery system that coordinates carers; and a quality improvement system that can feed back into the specified care guidelines to refine protocols and the delivery of care (*6*).

The ultimate goal is to produce optimal health care outcomes through enhancements in the quality of care and effective cost control (*7*). This requires a coordinated approach at the systems level. The following criteria often guide the selection of diseases for disease management programmes: high expenditure on drug therapy; measurable outcomes; potential for rapid return on investments; and large variations in practice and treatment.

These factors, where they exist, provide considerable scope for reducing the cost of treatment, for standardization, and for demonstrating treatment efficacy. However, the criteria are only satisfied in a limited number of conditions to which disease management has generally been restricted, such as asthma, diabetes, coronary heart disease, cystic fibrosis and HIV/AIDS.

Disease management programmes recognize that patient care can suffer if patients are moved between providers; as a result they aim at both the standardization of care protocols and at integration and comprehensiveness. The reimbursement of providers is based on a package of care that identifies costs and manages all the likely interactions between individuals with particular diseases and the health care system. Since the guidelines and protocols are based on pharmacoeconomic evidence, it is claimed that they result in high quality care that is patient-focused rather than event-focused (*8*).

[b] An organization that contracts and supplies medical care on the basis of a fixed periodic payment. Standing to gain if treatment costs fall below this level, it actively involves itself in the service delivery process so as to drive costs down. Savings are achieved through an emphasis on primary care and hence a decrease in hospitalization, and through large-scale protocol design and the standardization of service provision.

[c] A preferred provider organization has contracts with physicians and hospitals to form a network. Unlike a health maintenance organization it does not assume risk itself but collaborates with an insurance company or employer. Preferred rates are arranged with providers in the network. However, additional facilities are available at a premium and patient choice is therefore greater (*39*).

Evaluation of disease management programmes

Despite the need for rigorous assessment of disease management programmes, few studies of this have been published other than those dealing with simple statistical evaluations of resource use by patient groups (*9*). It has been suggested that the effectiveness of disease management initiatives has gone largely untested (*10*). Disease management is outcome-led (*11*). In the short term it has the weakness of an incomplete knowledge base; in the long term its weakness lies in failing to demonstrate efficiency and efficacy. Outcome measures are stressed in the reporting of disease management protocols; however, it is difficult to demonstrate the benefits of disease management without comprehensive assessment, which, in the USA, is complicated by a fragmented informational infrastructure (*12*). In the United Kingdom the National Health Service (NHS) also has problems of access to information, but as an integrated system it has the ability, in theory at least, to tackle them. The reactive nature of the health care system in the USA is partly attributable to its short-term orientation (*12*). The management of disease requires a long-term view, since the effects of a treatment may only be realized after many years. Pressure for short-term results or benefits can lead to the rejection of better alternatives that do not yield quick returns.

Concern has been expressed that the evidence behind some outcome measures, and their validation procedures, may be poor (*13*). Many of these measures were developed for use in clinical trials rather than with individual patients. Clinical outcomes are not related in simple ways to patient satisfaction or the use of system resources. The evaluation of disease management requires extensive data-gathering (*14*) without the imposition of undue and costly burdens on the normal activities of physicians (*15*).

Effectiveness studies have given mixed results. A self-management programme for people with asthma produced a 78% decrease in the number of days spent in hospital as a result of asthma and a reduction of 49% in emergency room visits associated with the disease (*16*). However, only 43% of HMOs with diabetes management programmes reported cost savings as a result, and for asthma programmes the corresponding figure was only 27% (*16*). Clearly, there is a need for a more rigorous, long-term programme of evaluation in this area.

Perspectives on disease management: the stakeholders

A large number of parties have a stake in managed care, and, therefore, a direct interest in disease management, including the following: pharmaceutical companies; MCOs/purchasers; clinicians; pharmacists; patients; insurance companies/employers; government agencies; and purchasing coalitions.

In order to illustrate the issues involved in the potential exportation of this model, we discuss below the approaches of the most important stakeholders in the United Kingdom and compare them with their nearest equivalents in the USA.

The pharmaceutical industry

The drug industry in the United Kingdom is a powerful economic force. It is the country's second biggest exporter, selling drugs valued at more than £ 4 billion (US$ 6 billion) to the NHS each year (*8*). Its fundamental aim is to grow financially and be profitable. As pointed out by Boscheck, it is an obvious target for health care reformers (*1*). Drugs are an easily identifiable commodity in a complex process, and there is an increasing view that drug prices are high and that profits made by pharmaceutical companies are excessive. In consequence there has been little policy resistance to drug budget containment through price controls, generic prescribing, and substitution. The emphasis on generic rather than branded drugs is significant, since it has forced manufacturers to reconsider their strategies and focus on products with therapeutic as well as novelty value.

In the United Kingdom, as in other countries, the pharmaceutical industry is also affected by other developments. Clinical trial costs have increased, as has the demand for safety and efficacy. Patent life has shortened on branded drugs, freeing companies to develop generic alternatives. Pharmaceutical companies therefore have to counteract declining research productivity and growing market pressure. A number of possible strategic responses have been identified, including attempts to obtain leverage across the entire health care chain through control over inputs, distribution, and approved listings of medication (*1*).

In the USA, MCOs have been offered disease-oriented packages by pharmaceutical companies as a means of reducing the total cost of health care, while maintaining assurances of quality (*17*). These packages involve the use of branded and generic drugs, prevention, detection and treatment guidelines, in combination with delivery, rehabilitation and educational services. This has been described as pharmaceutical producers taking ownership of illnesses and treatment methods (*4*). The use of treatment guidelines and specified drug protocols for particular diseases, backed up with appropriate clinical and pharmacotherapeutic evidence, provides standardization of care at a level intended to be both optimal and cost-effective.

Disease management programmes could have clear advantages for the pharmaceutical industry in the United Kingdom. By extending their business into health care provision, companies could not only have a guaranteed share of the drug budget of the NHS, but could also gain a share of the previously inaccessible budget for service provision (*8*). The potential advantages for purchasers are also clear, through the

implementation of evidence-based, effective and cost-efficient treatment. Nevertheless, there is considerable unease about such arrangements in the United Kingdom. There seems to be a fundamental suspicion about whether pharmaceutical companies can be trusted to act in the best interests of patients. Furthermore, there is a belief that disease management is not, or should not be, limited to pharmaceuticals. It is necessary to identify and understand all the factors determining costs in the treatment of particular diseases. Many of these factors can be expected to point to the importance of prevention. Thus in type II diabetes and coronary heart disease the initial management involves dietary and lifestyle changes but not pharmaceutical intervention. If drug companies make little profit from the preventive aspects of disease management, are they likely to give these matters sufficient prominence in prescribed regimes? Risk-sharing agreements may go some way towards a solution but conflicts of interest may remain.

An additional problem may be the importance of continuous quality assurance and feedback to effective disease management programmes in order to ensure that providers are complying with their contracts and to enable the continuation of improvement. For commercial organizations, this implies the costly collection and analysis of data on a confidential and secure basis. Significant conflicts of interest may arise as purchasers and patients seek information on performance that could be of value to competitors.

Purchasers

If the effectiveness of conventional business planning in the pharmaceutical industry has declined, this may reflect the instability of the market. In particular, there has been a shift of influence on treatment behaviour from doctors to health care purchasers (HMOs and PPOs in the USA; NHS managers in the United Kingdom) (*18*). Like most health care systems, the NHS is currently contending with increasing budget deficits and an ageing population, increasingly expensive treatments, a lack of clinical differentiation between many pharmaceuticals, and a general slowing of economic growth. The substantial increases in spending announced in March 2000 are unlikely to produce fundamental solutions to these problems because of a continuing need for structural reform, cost-effective treatment, and service delivery. Cost, as much as therapeutic innovation, can be expected to continue to dominate purchasing decisions. Disease management programmes may still seem valuable to the NHS, as part of a structured centrally driven response to its fragmented arrangements for health care delivery through locally organized primary and secondary care.

On closer examination the issue is less simple. Many features of disease management programmes, for example the use of generic prescribing, formulary management, protocols and continuous audit, are already commonplace in the NHS. Purchasing coalitions, moreover, are giving general practitioners increased leverage in dealing with the pharmaceutical industry. This trend seems likely to be reinforced by the establishment of primary care trusts and the stronger collective voice that they can be expected to give general practitioners in negotiations over drug costs. Purchasers, therefore, are concerned whether any added value is obtainable from formal disease management programmes. The NHS Executive has expressed strong reservations about entering into sole supply agreements with pharmaceutical companies. Clinicians, however, seem to be the most vociferous opponents.

Clinicians

"The concept of managed care makes the historical role of the physician as a member of a learned profession obsolete. The idea that medical care should be managed by someone other than a physician is antithetical to the very essence of the profession" (*19*). *"Managed care raises fundamental issues of patient confidentiality and the ethical responsibilities of doctors, which makes it anathema for the medical profession, but it also reduces choice both for patient and doctor"* (*20*).

For clinicians, there appear to be three core issues at the heart of objections to disease management programmes: professional autonomy, clinical freedom, and the doctor/patient relationship. The financial sanctions and incentives of managed care potentially challenge patients' trust in physicians by restricting choice of doctor, limiting individually responsive clinical decision-making through the control of prescribing, and constraining open communication (*21*). Doctors may be selectively recruited to disease management programmes on the ground that they are considered likely to maintain a low level of drug expenditure rather than a particular quality of treatment (*22*). Inevitably, concern has arisen among physicians that priority is given to cost reduction rather than care. In the USA the Department of Health and Human Services has received allegations of insufficient patient care under managed care programmes (*23*) and there is recent evidence of this (*24*). Despite vocal opposition, however, by 1993 a total of 75% of physicians had some level of contract with managed care plans (*22*). Perhaps through a lack of feasible alternatives rather than tacit agreement, physicians' criticisms have failed to prevent both managed care and disease management becoming established parts of health care in the USA.

Clinicians' perceptions of reduced status and increased supervision in circumstances where treatments may need to be justified or may even be vetoed by an MCO, together with fears of a conflict of interest, can be expected to affect the doctor/patient relationship. It has been suggested that there are six prerequisites for this relationship to be ideal: choice, competence, compassion, communication, continuity, and no conflict of interest (*25*). All these factors may be impaired under managed care where disease management programmes are implemented. Choice can be restricted by MCOs. Competence may be

questionable if poor quality or short-term indicators are used as outcome measures. Compassion is not an economically viable commodity, so it is affected by pressure of time and productivity requirements, as is communication. Changing from one programme to another for reasons of cost decreases continuity. Salary incentives have the potential to introduce conflicts of interest.

This rather negative picture is, however, offset by some positive professional aspects of disease management. The wider use of evidence-based protocols should help to reduce irrational prescribing and to obtain an optimal standard of care. The increased emphasis on primary care provides a greater role for physicians in this sector. Nevertheless, the message from the medical literature appears to be that a majority of physicians remain opposed to the practices, even if they accept the philosophies, underlying managed care and disease management. In addition, some physicians reject disease management entirely on the basis of their claims to clinical autonomy.

Pharmacists

The attitude of pharmacists to managed care and disease management contrasts sharply with that of physicians, particularly in the United Kingdom. Pharmacists have embraced these approaches wholeheartedly, to the extent that managed care has been described as the greatest challenge facing pharmacy today (*26*). It is seen as an opportunity rather than a threat. This may be partly explained by recent developments in the profession of pharmacy.

The increased utilization of ready-prepared drugs and computerized labelling systems has led to a declining demand for pharmacists' traditional skills: much routine dispensing work can now be undertaken by less qualified personnel. This is a particular concern for community pharmacists, but similar developments in the hospital sector, such as the move towards the checking of prescriptions by technicians and the emergence of regional compounding centres, have brought comparable changes. Pharmacists have responded by seeking to extend hitherto marginal aspects of their work, particularly by stressing their ability to act as advisers on the use of medicines to both patients and health care professionals. In the United Kingdom, pharmacists are involved in many of the key elements of disease management programmes, e.g. advising on generic substitution, the development and use of formularies, and the auditing of prescribing practice.

In the USA the introduction of disease management programmes has been greeted with slightly more scepticism, largely because of the legal framework. The existence of mail-order pharmacies, for example, which are able to provide dispensing services at reduced cost but without personal advice or monitoring, has led some community pharmacists to be concerned that they will be entirely excluded from the process of health care. Alternatively, pharmacy benefit management companies[d] may directly employ pharmacists to provide pharmacy services or, more often, subcontract with chains of retail pharmacies (*27*). Many of the key players have merged with major pharmaceutical manufacturers and are integrated into the wider development of disease management programmes. Networks of pharmacies are thus available for use by members of plans. Claims are processed electronically when a prescription is written, so that a database, available for audit purposes, is maintained on drug use and cost. Pharmacists can also check prescriptions for the use of generic products and adherence to formularies. Problems of patient compliance, administration, and side-effects can be quickly identified.

Pilot studies have been conducted in the USA to assess the economic impact of increased involvement by pharmacists in disease management programmes. For example, community interventions of specially trained pharmacists with groups of patients suffering from hypertension, diabetes, asthma and/or hypercholesterolaemia have been reported (*28*). These pharmacists worked on patient education, systematic monitoring (e.g. of blood glucose levels, peak flow meter readings) and behaviour modification, and regularly communicated their findings to the patients' physicians. Estimated savings are put at US$ 144–293 per patient per month. Other workers have noted that the expertise, and, importantly, the accessibility, of pharmacists makes them an important resource, placing them in a position to enter into agreements for service provision with MCOs (*29*). If pharmacists do not wish to be excluded from the process of health care, they will have to demonstrate the importance of their services.

However, this scenario is unlikely to occur in the United Kingdom. British legislation does not allow mail order pharmacies to be established, although this matter is currently the subject of a test case. At present it is impossible for pharmacists to be excluded from the treatment process in the way feared in the USA. Moreover, the United Kingdom's Department of Health does not appear to see a need for pharmacy benefit management companies, since the pharmaceutical price regulation scheme does not provide the type of gross margin that would allow them to find a niche (*26*). Nevertheless, if the basis of disease management is drug management, pharmacists are likely to be important players in the development and implementation of any new programmes.

[d] A pharmacy benefit management company contracts with employers, insurers and others to provide accessible and cost-effective benefits to these groups' members (*27*). It is a specialist organization ensuring the cost-effective use of medicines through the implementation of controls such as formularies and drug utilization reviews. It may provide pharmacy services, e.g. mail-order prescriptions, or may subcontract with retail pharmacists. It may receive a fixed amount for which all pharmacy services are provided. The demand for pharmacoeconomic research and information by purchasers of health care has led to the growth of pharmacy benefit management companies and to the acquisition of some of them by the pharmaceutical industry (*40*).

Patients

A patient's choice is always limited by referral and the available resources. In the USA, however, choice has been further eroded by managed care and, specifically, by disease management. The selective recruitment of physicians and the incentive structures of MCOs have already been discussed. Physicians experience incentives to practice two styles of medicine for two different groups of patients: those enrolled in managed care plans and those obtaining medical attention on a traditional fee-for-service basis (*30*). The lower resource use with MCO patients as opposed to fee-for-service patients suggests that physicians perform a "wallet biopsy" before providing care.

The structural differences in health care between the two countries preclude a direct repetition of this practice in the United Kingdom. Of course, clinicians have always been required to make rudimentary cost–benefit analyses in the course of routine practice and professional activity. Nevertheless, there seems to be some foundation for the fear that there is reduced choice for patients in managed care programmes in the USA. Similar reductions in patient choice would be likely in the United Kingdom, depending on the extent to which the same models and incentives were introduced (*31*).

Prospects for disease management and managed care in the United Kingdom's National Health Service

The health care systems of the United Kingdom and the USA differ not only in structure and in access to secondary care, but also in cost. In 1996 the proportions of gross domestic product spent on health care were 6.5% and 13%, respectively, in the United Kingdom and the USA (*4*). In the USA the direct access of patients to secondary specialist care, the strength of consumerism, and the relatively loose regulation of drug advertising offer greater prospects for cost containment through the rationalization or standardization of prescribing behaviour. In fact, some commentators have suggested that, since managed care aims to deliver health care in a systematic, cost-effective way, the NHS might already be conceptualized as a network of managed care organizations directed by government and operated on a national basis (*3*, *26*).

While health care in the USA might be described as high-cost, lightly regulated, hospital-oriented and overprovided, creating an obvious role for disease management, that in the United Kingdom is low-cost, heavily regulated, oriented towards primary care, and, arguably, underprovided. This does not mean that there is no role for disease management in the United Kingdom, where fundholding general practitioners have demonstrated an ability to manage resources, have enhanced their role as gatekeepers to secondary care, and have encouraged negotiations between the two sectors to promote efficient and effective treatments (*5*). The purchaser/provider split has increased flexibility within the system for the movement of resources. The development of primary care trusts may be seen as creating organizations of the MCO type for disease management. However, a wholly integrated disease management programme would require the full development of a single budget for primary and secondary care and a compatible series of information technology systems to follow patients through their treatment. Both these requirements have only recently been introduced into the NHS.

Clearly, disease management has to demonstrate that it can provide both clinical and organizational benefits. Many of its principles are already employed in the NHS, although protocols, formularies and utilization reviews currently rest on professional consensus rather than on regulation or contract. If pharmaceutical companies wish to market disease management programmes in the United Kingdom they will have to show how they can add further value to the initiatives in place.

Possible futures

What are the possible futures for disease management programmes outside the USA? It seems unlikely that the short-term savings obtained there can be sustained (*32*). Neither managed care nor disease management programmes contribute to teaching, publicly disseminated research, or care of the poor. State and Federal regulations have begun to specify minimum lengths of stay in hospital for particular procedures in order to prevent what is perceived as unnecessary cost-cutting. It has been suggested that the growth rate of enrolment in managed care programmes is likely to decrease and that governments could not remain passive if teaching and research began to suffer (*33*). Moreover, the view has been expressed that, without incentives to sustain innovation in health care in the USA, short-term cost savings would soon be overwhelmed by the desire to widen access, the growing health needs of an ageing population, and the unwillingness of US citizens to accept anything less than the best treatments available (*34*). Incentives are needed to improve health for a given level of resources, rather than merely to increase, streamline or make more efficient use of health services.

The 1994 NHS Executive Letter warned that deals between NHS purchasers and commercial disease management providers were not possible since they might infringe European Union competition law and breach the confidentiality of patients' data (*41*). Such concerns would apply to all health care systems in the European Union and in accession countries. There are some precedents for private sector involvement in providing care services under contract. In the short term, however, it is more likely that the NHS will extend its current use of disease

management techniques by professional agreement between providers, possibly as a dimension of the clinical governance movement, rather than by contracting out to pharmaceutical or other companies.

There are, however, structural limitations. It has been suggested that budgeting divisions have led to a lack of incentives for integrated care, an argument that becomes weaker as the divisions are reduced (*10*). Nevertheless, health authorities face weaker incentives for managed care initiatives than do general practitioners or the pharmaceutical industry, since they do not have to compete for members. As a result, any development of managed care and disease management may not be consistent across the United Kingdom. If the pharmaceutical industry is not to dominate, the NHS must support the efforts of providers to develop protocols, integrate care, and improve quality (*6*).

In primary care, contracting for services has made so little progress that it is difficult to envisage the effect that disease management would have on this market, although the advent of primary care trusts is likely to be significant in this connection. The strong focus on primary care in the United Kingdom means that the general practitioner is the patient's ultimate disease manager (*8*). If a patient has a single disease the general practitioner may be willing to hand over responsibility for its management. However, if a patient's asthma is to be managed in one programme, his or her diabetes in another, and heart problems by an NHS consultant, the aim of achieving integration is defeated (*8*). Yet there may be an opportunity for general practitioners to serve as coordinators/managers of emergent health care networks. Depending on the influence of national treatment coordinators for cancer, heart disease and so on, long-term service agreements between primary and secondary care providers may well develop in accord with national protocols that look remarkably like internalized disease management programmes (*3*).

Overall, it seems that the disease management programmes most likely to succeed in the United Kingdom will be evidence-based, will minimize the extent to which patients fall into gaps between providers, and will be led by the NHS rather than commercial interests. Whether further elements of disease management will be incorporated into the purchaser/provider system depends on what happens to this system. If the pharmaceutical industry is to become more involved it will have to demonstrate that it can provide a sound knowledge base, reliable and valid outcomes research, and sufficient information technology support for the programmes it offers, while maintaining a clear view of patients' interests. This means balancing the goals of building market share and contributing to the public good. Clinicians need to be reassured that such programmes are concerned with adopting the *best* rather than the *cheapest* practice and therefore with increasing professionalism. Only if all these conditions are met can disease management be expected to become acceptable to the critical stakeholders.

It appears that disease management as developed in the USA may not be an easily transferable model, since its implementation has hinged on specific characteristics of that country's health care system. Health care delivery in the USA is highly fragmented. Many of the advantages of disease management programmes identified in that setting, such as rational prescribing and formulary development, can be introduced into more coordinated delivery systems without adopting the whole package. Recent reforms in France illustrate the possible use of state power in a country with a tradition of more centralized government and relatively weak medical associations. In 1994, mandatory practice guidelines began to be introduced, setting out protocols for the routine management of a growing range of conditions and defining redundant or harmful treatments. Doctors who consistently breach the protocols may be fined up FF 22 000 (ca. US$ 3000). The rate of increase in pharmacy expenditure in France slowed from 7.4% in 1993 to 1.3% in 1994 (*35*).

The possibilities of successfully importing disease management may be greater in insurance-based systems such as those in Germany or the Netherlands. Even in these settings, however, wholesale acceptance and utilization seem unlikely. It is more probable that elements of programmes will be absorbed into established health care arrangements. In the Netherlands, for example, which has the lowest drug expenditure per person per year in the European Union, doctors are required to register with a local pharmacy and are paid to attend meetings with the pharmacist to discuss cost-effective prescribing, rational drug use, and advances in therapeutics. Furthermore, the reimbursement system for patients is structured to encourage economies. Patients are reimbursed for expenditure on medicines only up to a reference price for each major therapeutic group of drugs. If a doctor prescribes a more expensive drug, patients cannot claim reimbursement above that price. The quantity of a drug that a doctor can prescribe is directly limited: for most categories it is equivalent to a 90-day supply. Pharmacists are encouraged to substitute generic medicines and parallel imports by being allowed to retain part of the difference between the cost of these drugs and the reference price. There has been an extensive development of electronic networking between doctors and pharmacists, facilitating the creation of shared medication records (*36*, *37*). Rather than adopting the centrally directed model of disease management, Dutch policy-makers have constructed a range of market incentives for the various actors in the system, thus achieving comparable results while retaining an appearance of autonomy and choice. Doctors, pharmacists and patients have a mutual interest in cost containment, rather than this being imposed by one group on another.

The implementation of disease management in the USA looks increasingly like a particularly US solution to a US problem. It involves the containment of costs and the promotion of effectiveness in a health care system with a strong tradition of medical independence and weak political authority. Managed care tries to use market mechanisms to promote a planned result. Although European health care systems have not been unsympathetic to the idea of using market mechanisms, they are much more open to state direction or, at least, active coordination, of the elements of the health sector. Consequently, the future of disease management based on the US model seems quite limited, although many of the elements may be taken up individually. Indeed, even in the USA, managed care has come to be seen as unduly elaborate. There is growing interest in adopting European systems of cost control, such as capitation and primary care gatekeeping, so as to reduce the overheads arising from detailed regulatory systems such as that of disease management (*38*). The way forward for disease management outside the USA may not be through outsourcing to commercial interests but through building on the strengths of the primary care physician. Health care systems such as the NHS would be well placed to adopt such interventions (*16*).

The pharmaceutical industry may need to look elsewhere to restore its margins, at least as far as the United Kingdom and other European countries are concerned. There are probably going to be few opportunities to extend the value chain and obtain payment for the management of medication as well as for the product itself. It is worth noting, however, that developers of new genetic tests in the USA have been using their control of the technology to require users to purchase whole packages of testing materials, laboratory services, and patient counselling. This is meeting with resistance from European health care systems. At least in relation to highly innovative products, however, a new strategy may be available to the industry, which may be disinclined to relinquish opportunities to capture more value quite as readily as in the past. ■

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Résumé

Prise en charge de la maladie : définitions, difficultés et orientations futures

Au cours des dix dernières années, des expériences très variées ont été tentées dans le domaine de la réforme des soins de santé pour endiguer les coûts et renforcer l'efficacité des soins. Aux Etats-Unis d'Amérique, la gestion des soins et la prise en charge de la maladie ont constitué à cet égard des stratégies de premier plan : on a prétendu que les bons résultats obtenus avaient eu un profond retentissement sur la réforme des soins de santé dans d'autres pays ; mais dans le présent article, les auteurs se demandent s'il est réellement si facile d'exporter ces stratégies. Ils décrivent les concepts en jeu et l'élaboration des programmes de gestion des soins et de prise en charge de la maladie dans le contexte des Etats-Unis. Ils identifient, puis étudient les éléments inhérents à la prise en charge de la maladie qu'ils examinent du point de vue des principales parties prenantes au Royaume-Uni, signalant les différences entre les modèles de soins de santé du National Health Service du Royaume-Uni et de celui des Etats-Unis. Les évaluations des programmes de prise en charge de la maladie et des faiblesses qu'ils soulignent sont analysées, de même que les perspectives de prise en charge de la maladie en Europe.

Resumen

Gestión de las enfermedades: definiciones, dificultades y futuras orientaciones

La última década ha sido testigo de una amplia gama de experimentos de reforma de la atención sanitaria encaminados a frenar los costos y promover la eficacia. En los Estados Unidos, la atención gestionada y la gestión de las enfermedades han sido importantes estrategias al servicio de ese empeño, y se ha alegado que de su evidente éxito se derivan grandes repercusiones para la reforma en otros países, pero en este artículo nos preguntamos si esas estrategias son en efecto tan fácilmente exportables. Describimos los conceptos implicados y el desarrollo de los programas de atención gestionada y gestión de las enfermedades en el entorno de los Estados Unidos. Se identifican y discuten los componentes de la gestión de las enfermedades, y se examina ésta desde la perspectiva de las principales partes interesadas en el Reino Unido, señalándose las diferencias entre los modelos de atención sanitaria del Servicio Nacional de Salud británico y de los Estados Unidos. Se hace un análisis de las evaluaciones de los programas de gestión de las enfermedades y de las deficiencias que han puesto de manifiesto. Por último, se examinan también las perspectivas de la gestión de las enfermedades en Europa.

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