

## **Purchasing to promote population health**

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### **Introduction**

While there may still be considerable controversy about how to measure them, there is a growing consensus that the goals of health systems include improvement in population health, responsiveness to legitimate public expectations, and fairness of financing (World Health Organization, 2000). This chapter examines the first of these goals, improvement in population health, and the contribution that strategic purchasing of health care can make to achieve it.

At the outset it is necessary to recognize, as previous chapters have indicated, that the concept of *strategic* purchasing to improve health is still far from the agenda of health policy makers in many countries. The two limbs of the triple agency relationship, linking purchasers with public and providers, are often well established, especially in countries with funding through social insurance, but the role of purchasers in these relationships has largely been confined to acting as a means of collecting, pooling and paying the funds required to provide health care (Busse *et al.*, 2002). The question of what that health care should consist of has largely been defined by a combination of aggregate popular demand (in other words, the sum of thousands of individual decisions to seek care) and opinions of health care providers about what to offer and to whom. Traditionally, purchasers may have taken a view on the total amount that they spend, or on the general boundaries of the package that they fund, such as what is considered health and what social care, or what is considered mainstream and what alternative care, but with a few exceptions they have been content to take a passive role.

This is not entirely surprising. Until the twentieth century, health care could offer little apart from a place of sanctuary. The risk of infection made surgery an intervention of last choice (Porter, 1997). Consequently, many of the organizations that we now consider as potential purchasers of care would, at that time,

have placed a much greater priority on their other tasks such as the provision of financial support for the afflicted and their families. Clearly this situation has now changed beyond recognition. Modern health care can cure many previously fatal disorders and, where cure is impossible, allow those with chronic diseases to lead a normal life (McKee, 1999a). For example, the discovery of insulin transformed juvenile-onset diabetes from an acute, rapidly fatal disease of childhood into a chronic, lifelong disorder affecting many body systems whose management requires the integrated skills of a broad range of specialists. With diabetes, as with many chronic diseases, the issue of integration is crucial, as can be seen from the much worse outcomes in the fragmented American health care system compared with the more integrated models in some European countries (Leggetter *et al.*, 2002).

Advances in health care account for about half of the improvement in life expectancy in Western Europe in the past three decades (Mackenbach *et al.*, 1988), but these advances have not benefited everyone to the same extent. There are still many people who die unnecessarily, either from conditions that are treatable or from the adverse effects of treatment. Although less easy to identify, it seems likely that there are also many people with non-fatal disease who are being treated inappropriately so that the benefits they achieve from treatment are less than optimal. Importantly, these differences are not random. Wherever it has been looked for, death from causes that are preventable with timely and effective health care is more common among the poor and among marginalized populations (Marshall *et al.*, 1993). In the next section we examine why this is so, and what implications it holds for strategic purchasing.

## **Need or demand?**

The traditional model of health care provision, based on a principal-agent relationship between the public and providers, with purchasers simply acting as financial intermediaries, is based on the concept that providers should respond to demand for health care, voiced by individual members of the public and their families.

But what happens when those in need are unable to express their need as demand? Traditionally there are two areas where this has been an issue, and, in both, governments have felt it necessary to put in place alternative arrangements. These are communicable disease and mental health. Leaving aside any spirit of altruism (Dowie, 1985), in both cases society has an interest in ensuring that those in need are treated (or if treatment is not possible, then confined). In the first case this is because of the risk of contagion. In the second it is the risk to the orderly conduct of society. Yet in both cases there will be people in need of care who are either unable or unwilling to demand it. Indeed, they may demand *not* to be treated. Consequently, health care systems have traditionally created separate systems to deal with these issues, often in adjacent facilities, such as the large fever and psychiatric hospitals on the outskirts of many European cities (Lomax, 1994; Freeman, 1995). These facilities often have had, and in some cases still have, separate funding streams. Where mainstream care has been funded from social insurance, local or central government has typically paid for such facilities.

There are many other situations in which individuals are unable effectively to express their need for health care as demand. In some cases they will be unaware of their need. This is especially true in relation to screening programmes. Simply making a service available does not ensure that it is taken up. Indeed, it may widen health inequalities as those in most need are often least likely to use it as they face a variety of real and perceived barriers. This is especially likely with cervical cancer, which is more common among the poor but who are least likely to use screening services, even when provided free at point of use (Gillam, 1991). However, it is also true for many other conditions that individuals may have difficulty distinguishing from the normal ageing process (Sarkisian *et al.*, 2001). Again this is often socially patterned, with the least well off least likely to seek help. In other cases they will recognize their need but be unable to express it as demand. This is especially likely among those from minority populations (Shaukat *et al.*, 1993; Stronks *et al.*, 2001), and especially illegal migrants, but it is also true of many other groups whose marginalization is less but is still present, such as the disabled. Yet even when need can be expressed as demand it does not necessarily mean that the demand will be met.

A second question is whether health care providers respond to need. There are many factors that motivate health professionals to provide services. One is financial, but this is not the only factor. Health care is more likely to be provided if it is interesting and involves interactions that are perceived as emotionally rewarding by the provider. As the technical challenges increase, so the willingness to spend time on the routine diminishes. It is therefore unsurprising that waiting times for established procedures tend to be greater than for those introduced more recently (Pope *et al.*, 1991). Similarly, all else being equal, there is likely to be a reluctance to work in settings that are perceived as especially difficult, such as deprived inner city areas.

Furthermore, even if need is met, it cannot be assumed that it is met in the most appropriate way. The relationship between the patient and the health professional is characterized by asymmetry of information. The patient is certainly able to judge the quality of many non-clinical aspects of care, but he or she is disadvantaged in relation to many clinical matters. Clearly, the growth in access to information via the Internet can redress this imbalance to some extent, at least in relation to choice of treatment, but it does little to ensure that those providing treatment have adequate knowledge and skills and are using them effectively. It also does little to ensure that full opportunity is being taken to go beyond meeting the immediate need of the individual patient during an episode of illness, in particular to anticipate their future needs by means of health promotion.

Thus, a major justification for strategic purchasing is that the traditional principal-agent relationship between the public and providers fails. Specifically, in addition to the widely recognized asymmetry of information between citizens and providers, there is also an asymmetry of information between providers and purchasers. Each has information not available to the other. The providers have additional knowledge of the patients seeking their help. The purchasers have knowledge of the broader population, including those who do not seek help. The next section explores this issue in more detail, focusing on the propensity of providers to respond to expressed demand for care.

## The implications for purchasing

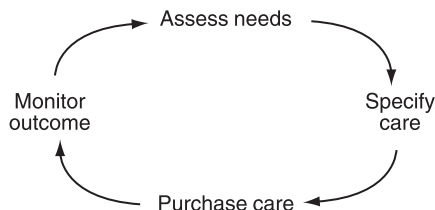
The issues raised in the preceding paragraphs effectively determine a framework for action by organizations that are engaged in strategic purchasing and seek to enhance the health of their populations. This framework is cyclical, reflecting the standard model used widely in quality assurance within provider organizations, where the goal is also to ensure that optimal care is provided (Figure 7.1).

Ideally they would engage in a series of linked activities, each embedded within an overall strategy to improve health. The first step is to assess health needs, and in particular those that are less likely to be voiced as demand. The second is to determine how those needs might best be met, drawing on evidence of effectiveness, not just in relation to individual interventions but also in relation to organizational structures and configurations that are most likely to deliver effective care. The third is to purchase care that complies with this specification, employing the model of contracting appropriate for their situation. The fourth is to monitor the impact of this process, seeking to ensure that effective care is now in place. Finally, as health needs are continually changing, the assessment of health needs would be revisited.

The reality is, inevitably, far from the ideal. Each of the steps involves complex and often difficult processes. These will be examined below. However, it is necessary to emphasize that this stylized model rests on one fundamental assumption. This is that the purchasing of health care is taking place as part of an agreed strategy, in which the key stakeholders in the health system (and beyond it) have signed up to programmes that have clearly defined objectives to improve health. Thus, health strategies are one manifestation of the third limb of the triple agency relationship underpinning this book. It might be expected that such strategies would be common, given that all countries have signed up to initiatives such as the WHO 'Health 21' strategy and, before that, to 'Health for All (HFA) by the Year 2000' (WHO Regional Office for Europe, 1985). But what has happened in practice? The next section reviews the current state of health strategies within Europe.

## Health strategies

One of the most extensive sources of information on national health strategies in Europe is that looking at the use of health targets conducted by Van Herten and Van de Water. It reflects the situation in 1998 (Van Herten & Van de Water,



**Figure 7.1** Schematic overview of the purchasing process.

2000), although the situation in individual countries with strategies has been updated in a subsequent publication in 2002 (Marinker, 2002). While many countries have a written policy document promoting health, most 'express the desirable rather than the actual situation'. Most policies are inspirational rather than managerial or technical tools to achieve change, indicated by the relative paucity of quantitative health targets or specification of ways to achieve them.

A national health policy produced by Sweden, in 2000, illustrates the inspirational nature of many targets, which in this case included 'strong solidarity and communal spirit', 'good working conditions', 'safe sex' and 'improved health orientation in health care' (Örtendahl, 2002). Yet the situation is changing, in part as a consequence of the active exchange of experiences within Europe. Several countries, and regions within countries, have recently gone beyond the inspirational to develop quantitative health targets. In 1998, Italy published a national health plan containing five priority areas with 100 targets. Many were still inspirational, such as to 'improve quality of life', but others defined the extent of change aimed at, such as reducing mortality from heart disease and stroke by at least 10% (France, 2002). In 2001, Finland adopted a new intersectoral health programme, building on its earlier ones. It had previously rejected the concept of health targets, citing its experience in the 1980s when targets had failed to stimulate effective action. This time, drawing on a careful analysis of successes and failures elsewhere, it has included eight main targets, such as a decrease in accidental and violent deaths of one-third among young adult men, by 2015 (Koskinen & Melkas, 2002). Also in 2001, Ireland adopted a detailed health strategy encompassing a wide range of issues, with clearly defined targets linked to timescales and designation of responsibilities for action (Department of Health and Children, 2001).

Yet the impact of many of these strategies has been disappointing, for several reasons. Few have achieved a sense of ownership among key stakeholders. Krasnik has noted how an attempt to develop a health strategy in Denmark elicited the response from the medical profession that 'health for all should be left to Africans and to nurses' (Krasnik, 2000). The Italian strategy has been weakened by the inability to engage the regions, which are increasingly important players in the health sector. In some countries, such as Spain, progress towards agreed health strategies has been complicated by political changes (Alvarez Dardet, 2002). Yet there are exceptions, although these have often emerged at subnational level.

Since 1991 the regional health department in Catalonia has published a series of health plans, developed through a process of wide consultation and disseminated extensively among key stakeholders. These have fed into a further consultative process involving health providers and professionals, the pharmaceutical industry, and non-governmental organizations that had sought to generate a consensus on effective interventions to meet the needs identified in the plans (Tresserras *et al.*, 2000). The results were used to develop guidance of models of care, including strengthening of preventive activities, which were then incorporated into contracts with providers.

Also in Spain, a strategy developed in the Canary Islands achieved wide public participation. In Sweden, the county of Östergötland worked closely with

municipal authorities and professional associations to develop policies based on widespread consensus and which formed the basis for effective partnerships (Hansson, 2000). In North-Rhine-Westphalia, initially in the face of the traditional German opposition to an extension of the role of government in the health care system, a State Health Conference has been established bringing together a wide range of stakeholders, including the sickness funds, chambers of physicians and other professions, employers and trade unions (Weihrauch, 2002). This has progressively refined a regional health strategy incorporating quantitative health targets. Ireland's health strategy sets broad national targets but establishes a system by which regional health boards can adapt them to local circumstances.

Another reason explaining the limited success has been the weak evidence base on which many strategies are established, both in terms of defining targets (determining what is achievable but challenging) and establishing what interventions are likely to be effective in particular circumstances. Again there are exceptions. For example, each of the Finnish targets is based on a detailed epidemiological analysis and supported by a series of intermediate goals and by evidence-based policy guidance on how these might be achieved.

Often this weak technical base reflects inadequacies in systems of health monitoring. Recent European Union initiatives have highlighted the many barriers that exist to assessing the health of the population of Europe. As a consequence, health strategies in many countries have been accompanied by measures to enhance health information systems. In the United Kingdom each of the constituent parts of the country (England, Scotland, Wales and Northern Ireland) has developed its own strategy, although all are broadly similar. The earlier English strategy 'Health of the Nation' is one of the few to have been subject to a comprehensive evaluation (Fulop *et al.*, 2000), a process that has provided important insights into the challenges of implementing a comprehensive health strategy. To set these insights in context it may be helpful to provide some brief details of what the British strategies involved, using the English 'Health of the Nation' strategy as an example.

The strategy was based on five key areas: coronary heart disease and stroke, cancers, mental health, sexual health and accidents. These were chosen on the grounds that they were major causes of premature death and disability, effective policies existed that could reduce them, and measurable targets could be set. Each key area generated a series of specific, time-defined targets, such as 'to reduce the death rate from lung cancer by at least 30% in men and 15% in women by 2010'. While recognizing that progress required action in many sectors, local health authorities, which were responsible for purchasing health care as well as for wider public health activities, were designated as the focal point for coordination and implementation. Action was supported by detailed guidance on the effectiveness of potential local policies and a regular national health survey was established to track progress towards achieving the targets. Importantly, the evaluation of the strategy found evidence that many elements were being incorporated into purchasing contracts.

This experience yields important lessons. Strategies should not conflict with existing systems of accountability. Although England has a well-developed

system of performance management, at all levels of the National Health Service, managers were judged on the basis of their ability to meet financial and waiting list targets rather than those relating to health attainment, which, as a consequence, was often given a low priority. The corollary of this is that performance can only be achieved if necessary resources are made available. Second, targets should be credible and should reflect both national and local issues. One target, a reduction in suicides, was widely criticized because it was far from clear how it might be achieved. Third, the policies of those involved in delivering the strategy should be consistent and credible. Commitment to the Health of the Nation strategy, launched by a Conservative government, was diminished because of the refusal by government to address, or even to mention, the term 'health inequalities', preferring the euphemism 'health variations'. The subsequent Labour government's 'Our Healthier Nation' strategy was similarly tarnished by controversy involving a political donation linked to tobacco advertising.

While these findings are important, a note of caution is required. England is among the most centralized of the industrialized countries. In particular, there is a clear chain of accountability from the Secretary of State (Minister) for Health to individual physicians that simply does not exist in most other European countries. Health authorities, as both purchasers of care and bodies accountable for implementing the health strategy, were uniquely well positioned to bring the two strands together. This is also the case in Spain, where Catalonia was able to adopt a similar approach. In contrast, in Germany, North-Rhine-Westphalia established a new body, bringing together the key stakeholders, to try to achieve the same goals. The implication is that, where responsibilities for purchasing care and implementing health strategies are not combined, mechanisms are needed that will bring them together.

However, the limitations of existing health strategies have important implications for strategic purchasing. Effective purchasing for health gain requires that the third limb of the triple agency relationship, between the state and purchasers, should be underpinned by such a strategy. In practice this relationship is often dominated by concerns about containing costs, as part of the state's responsibility to ensure macro-economic stability. Yet in the absence of an agreed health strategy, regardless of who has developed it, it is difficult to envisage how strategic purchasing can take place.

## **Assessing health needs**

Health strategies provide a broad framework within which purchasing can take place, but strategic purchasers must also be informed by the health needs of the populations for which they are responsible if they are to act effectively on their behalf. For the reasons stated earlier, need does not simply equate to demand. It is not sufficient to wait for all those in need of care to turn up at the door of a health facility. Instead it is necessary to take active steps to assess needs (Gillam, 1991), defined as the ability to benefit from health care and in particular where need is least likely to be voiced as demand. It is also important to look not only where need is not being met, but also where it is inappropriately met,

for example where individuals are receiving interventions that are inappropriate for them and so do not gain health benefits. Assessing need is therefore inextricably linked with the issue of clinical effectiveness.

At the very least, information should be obtained, where possible, from the growing number of national and local health reports (<http://www.eva-phr.nrw.de/>), describing patterns of mortality, morbidity and other health-related measures. For example, successive health plans in Catalonia have been linked closely to the process of purchasing, as have the new regional health plans in France. In addition, the French Health Ministry has begun to produce annual health reports (*Haut Comité de la Santé Publique*, 2002), which, by highlighting issues that have otherwise received little attention, are having a gradual impact on regional strategies.

Perhaps the best known model of needs assessment is that developed by Stevens and Raftery (Box 7.1), which overlaps with the next section, on specifying care models. This has been used as a framework to bring together the evidence required for comprehensive assessments of need for a large number of common conditions. The subjects covered include diabetes, coronary heart disease, stroke, and various cancers, as well as most common surgical procedures.

**Box 7.1** Framework for assessing need

1. Statement of the context of the problem.
2. Subcategories.
3. Prevalence and incidence.
4. Services available.
5. Effectiveness and cost-effectiveness of services.
6. Models of care.
7. Outcomes and targets.

Source: Stevens & Raftery (1994).

Health needs assessment is, *prima facie*, a means of increasing the probability that the health gain achieved for a given investment of resources will be maximized. Although the principles of assessing need are now well understood there is little evidence that purchasers (except in the United Kingdom and in some parts of Spain) have, to any significant extent, developed explicit mechanisms that involve links to purchasing.

It is always difficult to say why something does not happen. However, a few observations concerning the United Kingdom may be pertinent. The prominence given to needs assessment is a direct consequence of the establishment of a purchaser–provider split in 1990 when health authorities were made responsible for the health (and not just the health care) of a defined population. This degree of responsibility is rare in Europe, especially in systems with social insurance where there is no geographically defined population. The scope to assess need was considerable because of the extensive data on population health, and in particular on inequalities in health and access



to health care by social class and ethnicity, as well as data from a virtually monopolistic provider of care, again a situation that did not apply in many other countries. Finally, the United Kingdom has a very strong public health community, with many public health professionals employed in the National Health Service. It was almost inevitable that they would be called upon to use their epidemiological skills once the idea of a purchaser-provider split was conceived.

The corollary is that several of these factors are not present in some other systems, so even if the intention to develop needs assessment linked to purchasing exists, it may be more difficult to implement.

### **Specifying care models**

Having assessed the health needs of the population on whose behalf care is being purchased, the next, and inextricably linked, step is to define the models of care that should be provided. This activity has its origins in the technology assessment and evidence-based health care movements. In the 1960s and 1970s it became clear that the effectiveness of many health interventions had been inadequately evaluated. Researchers identified numerous examples of variation in use of interventions that were attributed to uncertainty about the indications for using them (McPherson *et al.*, 1982). At the same time, the growth in medical technology and concerns about the safety of ever more powerful drugs were stimulating a reassessment of the ability of existing evaluative and regulatory regimes to both ensure safety and reduce unnecessary costs.

In part these problems reflected weaknesses in the evidence base on which decision makers could draw. They also reflected weaknesses in the decision-making process.

Initiatives such as the Cochrane Collaboration contributed to major methodological advances (Sheldon & Chalmers, 1994), in particular the principles of systematic literature review and meta-analysis. This work has highlighted issues such as publication bias, lack of internal and external validity in many of the studies used to inform policy (Britton *et al.*, 1999), and simply a shortage of evaluative research.

At the same time, governments have established mechanisms that can draw on this evidence to decide on what interventions are effective, and in what circumstances. Most Western European countries now have some form of technology assessment programme (Banta, 1994), although the situation in CEE is less well developed and capacity is almost non-existent in most parts of CIS.

In many cases programmes were established primarily to decide on whether complex and expensive interventions should be funded, with the primary goal of containing health care costs. Indeed, in many books, technology assessment is listed as a means of cost containment, despite the considerable evidence that, when the appropriate questions are asked, it often uncovers unmet need. However, the main issue is that discrete interventions, such as a particular type of scan or a surgical procedure, are only one part of the integrated package of care that an individual will receive. Fewer technology assessment programmes have

taken the next step, to look at these entire packages, including both the interventions and the organization of services to deliver them.

There is, however, a growing volume of research on the effectiveness of different models of organization. In what can seem like an echo of the past, when the early work on technology assessment identified wide variations in outcomes from different interventions, it is now becoming clear that the way in which services are organized can also be important. For example, the outcome of treatment of many cancers is better in specialized centres (Karjalainen, 1990; Kehoe *et al.*, 1994). Hospitals that have supportive organizational cultures achieve lower inpatient mortality (Aiken *et al.*, 1994). Thirty-day mortality in AIDS units is lower where there are specialized physicians and a high nurse-to-patient ratio (Aiken *et al.*, 1999). Yet research findings are often context dependent. For example, trauma centres achieve improved outcomes in the United States, with its very high level of firearms injuries, but much less so in the United Kingdom (Nicholl & Turner, 1997). Helicopter ambulances are cost-effective among the fjords of northern Norway but not in London (Snooks *et al.*, 1996).

In other cases, differences in outcomes are recognized but inadequately understood. Cancer survival varies considerably within Europe (Sant *et al.*, 2001). Some of this variation can be explained by differences in resources but it is also likely that factors influencing speed of referral and intensity and nature of treatment play a part. These are largely determined by how cancer care is organized. Survival of young diabetics is very much higher in the United Kingdom and Finland than in the United States or Japan, which is also likely to reflect differences in how care is organized (Matsushima *et al.*, 1997; Laing *et al.*, 1999).

Unfortunately, there is still very little research that can provide the information that is needed by purchasers when deciding what type of care they wish to buy. As this information is a classic public good, it will be underproduced if not paid for by governments but few governments seem to have made it a priority. Two rare exceptions are the Institute of Health Services and Policy Research in the Canadian Institutes of Health Research and the Health Service Delivery and Organization Programme, within the United Kingdom National Health Service Research and Development Programme (<http://www.lshtm.ac.uk/php/hsru/sdo/>).

While the outputs of research on health care interventions and organizational structures are an important prerequisite, a further step is necessary to create models of care. Again there are relatively few examples. An exception is the series of National Service Frameworks (NSFs) produced by the English National Institute for Clinical Excellence (<http://www.doh.gov.uk/nsf/about.htm>). At the time of writing, eight have been published (and it is planned to produce approximately one each year, while updating those already prepared): Cancer, Coronary Heart Disease, Diabetes, Mental Health, Older People, Paediatric Intensive Care, Renal Services and Children (see Box 7.2).

As well as combining research evidence on both interventions and methods of service delivery, NSFs take account of existing practice, the potential for, and likely timescale of change, and the resources required, both in terms of money and other inputs, such as staff and equipment. They take a broad view of health improvement, encompassing primary and secondary prevention, diagnosis and

treatment, and rehabilitation. For example, the coronary heart disease NSF identifies as immediate priorities the establishment of smoking cessation clinics, rapid access diagnostic facilities for patients with chest pain, quantified improvements in the speed of thrombolysis for those with myocardial infarctions, and enhanced use of drugs such as beta-blockers and statins in those recovering from an infarction.

**Box 7.2** National Health Service Frameworks (United Kingdom)

- Cancer
- Coronary Heart Disease
- Diabetes
- Mental Health
- Older People
- Paediatric Intensive Care
- Renal Services
- Children

The NSF model appears to have much strength as a basis for purchasing for health gain, in particular its breadth of coverage, drawing together the various elements of care in an integrated fashion and linking aspirations to quantifiable goals.

A caveat is, however, required. The intrinsic uncertainty in much clinical practice means that it is unwise to be overprescriptive (McKee & Clarke, 1995). It is important that this process does not undermine legitimate clinical judgement and lead to deprofessionalization of health care professionals, with long-term adverse consequences for the provision of health care.

Finally, it is important to recognize that purchasing can contribute to population health by encouraging health care providers to place more emphasis on health promotion. Health care settings offer many opportunities to promote health (McKee, 1999b). Thus, on average one of every 35 people advised by a physician to stop smoking will do so, a success rate that is doubled if linked to use of nicotine replacement therapy. Making health facilities smoke free sends out a powerful message about the dangers of second-hand smoke. And health facilities are also major employers, so creation of a healthy environment for their staff will have wider population benefits.

Consideration of the process of specifying care models raises many questions, the answers to which are likely to be highly contextual. Who should develop the evidence? To what extent can evidence developed in one setting be applied in another? How can this evidence best be incorporated into purchasing? The existence of these unanswered questions highlights once again the importance of developing national programmes of research on the organization and delivery of health care.

## Purchasing care

Having defined the health needs for which care is to be purchased and the models of care that are sought, the next step is to purchase it. As this activity is examined in detail in other parts of this book it is not necessary to repeat it here, although an important issue affecting the ability of purchasers to focus on health gain is whether they are allowed to contract selectively. Thus, in the Netherlands, sickness funds must contract with all accredited institutions. In Germany, contracts for disease management programmes have been developed within a regional framework, involving negotiations between associations of sickness funds, physicians and hospitals, that made it impossible to deviate from rather general conditions and, in particular, to develop contracts that span different levels in the system, such as inpatient and ambulatory care. Although such contracts became possible in 2000, they are only now being used. Where they have been employed, they have, however, made possible a range of innovative developments, including integrated care pathways. These developments will be of increasing importance in the future with the growth of chronic diseases that, coupled with the potential offered by new technology and research on innovative organizational responses, will demand ever more complex models of care. This will create very considerable challenges for many existing purchasing arrangements that are often based on an increasingly outdated model of care being provided in the framework of an isolated encounter between an individual patient and an individual physician.

For the present purposes, the key issue is that purchasing, if it is to ensure optimal health care, and thus maximize health gain, should be embedded within a broader strategy to ensure availability of high quality inputs. Thus, there appear to be benefits from having systems where planning, contracting and capital funding are at least coordinated. Since 1998, the newly created regional hospital agencies (ARH) in France have assumed much of the responsibility for purchasing previously undertaken by the sickness funds. Their position is strengthened as they combine planning, contracting and, for public hospitals, funding responsibilities. Although experience is still quite limited, several have shown how they can combine these functions effectively to bring about changes in the configuration of, and working of, hospitals that align them much more closely with population health needs (McKee & Healy, 2002). This model is of particular interest because it is so different from that in many other countries with funding through social insurance, such as Germany, where hospital planning and revenue funding are quite separate. It is, however, somewhat similar to the model adopted for the regional health authorities in Italy, in 1999, working within a tax-financed system (Donatini *et al.*, 2001).

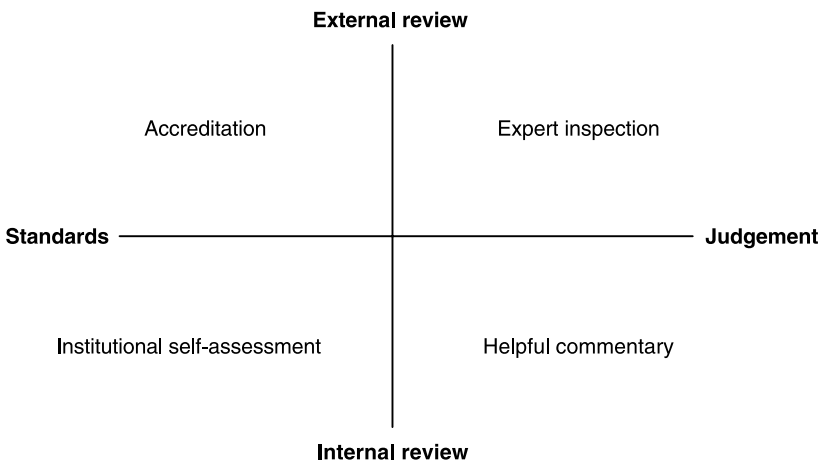
The key issue is that purchasing can only work if there is something to purchase, yet the failings of the market are all too apparent. As noted above, many of the inputs to health services, such as research on effectiveness, are public goods and will be underproduced in the absence of action by the state or those acting on its behalf. With some inputs, such as trained staff, the process of production is long, over 10 years in the case of a specialist physician. Thus, any signals generated by the market cannot possibly produce an effective response within a reasonable timeframe. For others, such as health facilities, the return

on investment available in the cash-limited public sector may be lower than can be achieved in other sectors, thus leading to underinvestment.

For these and other reasons an ideal strategy will therefore address production of the major inputs necessary to provide health care: people, facilities and knowledge. This is clearly a task that goes well beyond purchasers. Governments have a key role to play, but so do universities, professional associations, industry and many others.

Yet high quality inputs are not, in themselves, sufficient. Purchasing must also be embedded in a system to ensure that quality is maintained. Again this should take account of people, facilities and knowledge. In many cases an individual provider will have relationships with multiple purchasers. Consequently there is a strong case for having national or regional mechanisms that can ensure that agreed minimum standards are met. Of course, some such mechanisms are already ubiquitous, such as the maintenance of a register of physicians, membership of which implies completion of a specified training programme. Similarly, pharmaceuticals are everywhere subject to licensing regimes that are designed to ensure product safety. However, when one goes beyond these universal systems it becomes clear that there is widespread variation in the approaches that countries have taken. These have been described in detail by Scrivens (2002). While there are many terms used to describe these activities, they can be thought of as falling at different points on two dimensions (Figure 7.2).

Perhaps the best known review mechanism is the American Joint Commission on Accreditation of Health-care Organizations (JCAHO), although similar organizations also exist in Canada and Australia. These models have often attracted interest in Europe, although this has usually been short-lived or on a small scale. Thus, from time to time, small groups of hospitals have participated in a process of accreditation, but on a voluntary basis. In part this is because of



**Figure 7.2** Mechanisms to ensure quality.

Source: Scrivens (2002).

the very different situation in the United States, where there were many small private hospitals subject to none of the checks and balances that have existed in more regulated European systems.

The few examples of established accreditation systems in Europe have mostly arisen in settings where many of the hospitals are privately owned. Thus, in 1987, Belgium introduced a system of certification of hospitals. This had the immediate effect of reclassifying many small hospitals as nursing homes and so absolving sickness funds of the requirement to contract with them for hospital services. In 1996, France established the *Agence Nationale d'Accréditation et d'Evaluation en Santé* (ANAES) to develop and implement standards for health care facilities (ANAES, 1999). The United Kingdom has established the Commission on Health Improvement, a body that sets standards and combines regular inspections with publication of measures of performance, such as waiting times ([http:// www.chi.nhs.uk/](http://www.chi.nhs.uk/)).

Other countries have rejected the model based on external inspection, instead requiring health care providers to demonstrate that they are engaged in internal quality assurance activities. Examples include Germany, in 1991, and the Netherlands in 1997. The United Kingdom has also adopted this system, in a series of activities termed 'clinical governance', which make continued registration as a physician contingent on having participated in such activities. Of course there are many quality assurance activities in other countries but most involve enthusiastic groups of individuals acting on their own initiative.

It is not easy to get these mechanisms right, and there are many pitfalls. They often fall outside the triple agency relationship, as the bodies often depend for their credibility on being independent of government and purchasers yet they are required to reflect the priorities of both. This is a difficult balancing act. While explicit standards have the benefit of promoting consistency they may also stifle initiative, deflect efforts to meeting measurable standards rather than less visible, but more important goals, and promote opportunistic behaviour. Even when failings are identified it may not be clear who is responsible. Is it the provider management or is it the purchaser, who has provided inadequate funding? There is also a delicate balance between allocating blame and providing support to change practices. They are, however, an important element of strategic purchasing to improve health.

Purchasing need not, of course, be limited to health care. It is also possible to purchase interventions that are aimed at promoting health by other means. Thus, in the United Kingdom, some health authorities have purchased smoke alarms or cycle helmets to be distributed in poorer areas. Clearly, whether this is appropriate will depend to a considerable extent on the organizational features of the purchasing structure.

## Monitoring outcomes

While appropriate structures and processes are important prerequisites for high quality care, it is also necessary for strategic purchasers to assure themselves that the care they are purchasing is leading to optimal outcomes. This task is

extremely challenging and, at present, there are no perfect solutions. There are several fundamental problems. One is the difficulty in attributing health outcomes to specific health interventions. Outcomes reflect not only the technical quality of care but also the initial condition of the patient, the choices that the patient makes in relation to his or her treatment and, when small numbers of events are considered, the play of chance (McKee & Hunter, 1995). A second is the possibility that a focus on outcomes that are measurable may deflect attention from others that are less easily identifiable, but perhaps more important for the patient (Smith, 1995).

So far, attention has focused most on measures of performance based on routinely collected data, either from existing data systems or, increasingly, enhanced systems providing additional information on, for example, severity of illness. Most experience has been obtained from the United States, where several states publish the mortality rates achieved by individual hospitals, or in some cases, by individual surgeons (Hannan *et al.*, 1994).

Clearly the provision of health care involves many different activities, and some will be more amenable to performance measurement than others. Wilson has produced a useful framework (Figure 7.3) within which to think about the potential strategies that can be used for different activities (Wilson, 1991). A hospital laboratory might be considered as one of his production organizations where standard output measures are easily quantifiable; although it is important to be aware that quality may be less easy to measure. However, most of the work of health care providers will fall into his category of procedural organizations, which implies that emphasis is likely to be on having clear operating rules and a strong professional focus. For this reason, monitoring of process measures is likely to be especially informative. For example, the largest French sickness fund

		Activities observable?	
		Yes	No
Results	Yes	<b>Production organizations</b>  Postal service  Tax collection	<b>Craft organizations</b>  Army at war
	No	<b>Procedural organizations</b>  Army in peacetime	<b>Coping organizations</b>  Police work

**Figure 7.3** A framework for understanding performance management in the public sector.

Source: Wilson (1991).

made imaginative use of process data to study adherence to the guidelines for care of diabetes, developed by ANAES (Weill *et al.*, 2000). It identified widespread variations in the care provided and, as a consequence, it developed a programme to improve adherence.

There is now an extensive body of research on the use of performance measures, not only in the health sector but also in areas such as education, the environment and policing (Fitz-Gibbon, 1996; Goddard *et al.*, 2000). These experiences have been described in detail elsewhere. In brief, the key findings from research on this topic are as follows. First, except in some highly specialized areas, such as intensive care, where large amounts of very detailed data are routinely collected, it is extremely difficult to adjust adequately for differences in severity of patients, and thus to be certain that observed differences are really due to variations in quality of care. Second, it is often only possible to know the outcome of care a long time after that care was given. For example, cancer survival is typically measured at five years post-treatment, which, allowing for delays in collecting and processing data, means that data are likely to relate to care provided at least seven years previously. Third, for many conditions the number of cases that an individual provider will treat will be few so results will be subject to considerable random fluctuation. Fourth, publication of performance measures will often lead to unintended behaviour, such as an aversion to operate on patients at especially high risk (Green & Wintfeld, 1995). An important additional caveat in some European countries, such as Germany and Spain, is that laws on data protection and privacy may preclude the use of some techniques developed elsewhere. Thus, the requirement to obtain consent from patients whose diseases were recorded by the Hamburg cancer registry reduced its coverage by 70%, effectively precluding its use for public health purposes (Verity & Nicoll, 2002).

The implication of this analysis is that monitoring performance by health care providers in respect of health improvement is extremely complex. It is likely to involve an iterative approach combining different methods. Thus, concerns raised in analysis of routine data might be investigated further using more detailed examination of case records or site visits. This, in turn, implies a need for high-level evaluative skills within purchaser organizations.

The English performance management framework provides an example of how this might be done (<http://www.doh.gov.uk/nhsperformanceindicators/2002/index.html>). Routinely collected data are used to create a series of performance indicators, based on six key issues: fair access, effective delivery of appropriate care, health improvement, patient/carer experience, efficiency, and health outcomes. For example, measures of health outcomes include deaths in hospital following emergency surgery, or following a fractured hip or myocardial infarction. Unexpected results on these measures should generate further investigation and the findings are used to inform both the regular inspections by the Commission for Health Improvement and purchasers during the contracting process.

The initial choice of measures in England was criticized on a number of grounds, including the quality of the data used to generate them, the difficulty in attributing results to aspects of health care, and in some cases the use of composite indicators whose interpretation is not especially meaningful (McKee &



Sheldon, 1998). They have, however, undergone a process of refinement, and while there is little evidence of public interest in them, they do provide an opportunity to begin to explore otherwise unexplained variations. However, caution is required. They have also provided a wealth of empirical evidence on the unintended consequences of performance monitoring (Chapman, 2002). As the English experience shows, intelligent use of information can be valuable but an oversimplistic approach is not only useless but frequently harmful.

### **Screening: a litmus test?**

The fundamental arguments underpinning this chapter are that strategic purchasing is necessary because, in its absence, health needs that are not expressed as demand may not be met and appropriateness of the care provided cannot be ensured. The examples cited have drawn predominantly on a few countries that have been especially active in developing the institutional components of a strategic purchasing policy. However, it is possible that other countries have not needed to develop these components, as their routine systems are adequate to identify unmet need and develop integrated care packages. This is a hypothesis that can easily be tested by looking at population screening. For some types of screening, such as mammography and cervical screening, there is a consensus that need exists but it may not always be expressed. In particular, there is considerable evidence that uptake is systematically lower among disadvantaged populations, even when services are free at the point of use (Sutton *et al.*, 1994). There is also good evidence that outcomes are better where screening is seen not as an end in itself but as part of an integrated system of early diagnosis and treatment, which includes ensuring the quality of all stages of the screening process as well as mechanisms for referral for further investigation, treatment and follow-up (Hakama *et al.*, 1985). There is also evidence, for breast screening, that radiologists who read most films have higher detection rates (Esserman *et al.*, 2002) and that large screening centres obtain better results than smaller ones (Blanks *et al.*, 2002), both arguments for organizing specialized programmes. An ideal purchaser would wish to pay for integrated programmes that monitored uptake among different groups in the population and provided a coordinated package of care. For other types of screening, such as routine ultrasonography in pregnancy or prostate-specific antigen (PSA) testing, there is either no evidence of effectiveness or evidence of ineffectiveness. In these cases an ideal purchaser would not, at present, pay for these interventions.

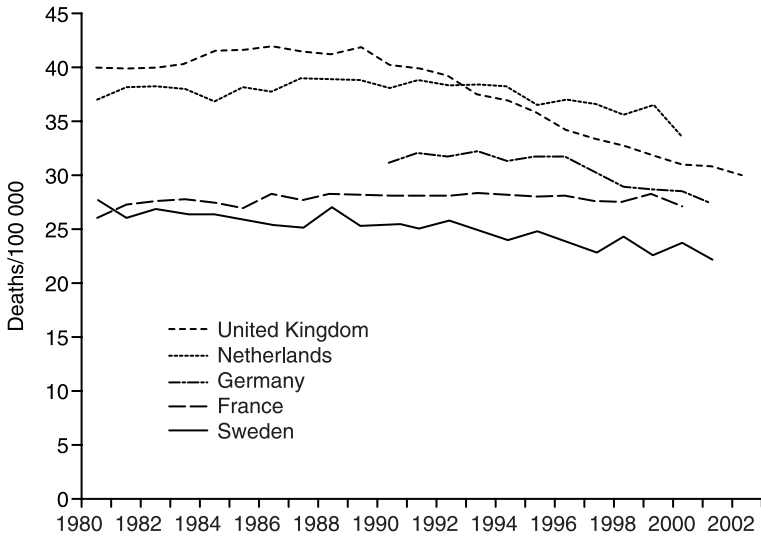
An important source of information on these issues is a recent volume of the *International Journal of Technology Assessment in Health Care*, which brings together a series of national case studies examining the operation of mammography, PSA screening, and ultrasonography in pregnancy in selected Western European countries. For the present purposes these have been supplemented by other published papers, including material from the International Breast Cancer Screening Network (<http://appliedresearch.cancer.gov/ibsn/>), the European Network of Reference Centres for Breast Cancer Screening (<http://home.hetnet.nl/%7Emartinth/index.html>) as well as by a survey of key informants in selected countries undertaken to inform this chapter. The case studies confirm

that there is wide variation between countries (Klabunde *et al.*, 2001). Taking breast cancer screening (the choice of words is deliberate as mammography is only one element of a screening programme) as an example, a few countries, such as the United Kingdom (<http://www.doh.gov.uk/public/sb0201.htm>), the Netherlands, Luxembourg (Autier *et al.*, 2002), Iceland (Sigfusson & Hallgrimsson, 1990) and Finland (Dean & Pamilo, 1999) have managed to develop integrated policies based on population registers and overseen by quality assurance systems. Similar local programmes have been implemented, with varying degrees of success, in some parts of other countries, such as the Flemish community in Belgium (Vermeulen *et al.*, 2001), the cantons of Geneva, Valais and Vaud in Switzerland (Faisst *et al.*, 2001), the city of Vienna, and in several regions of France, Italy, Spain and Sweden. There are, however, only a few published evaluations of these subnational programmes and those that exist often report low levels of uptake (Ganry *et al.*, 1999) and give little information on other measures such as recall rates or stage at diagnosis.

Where successful, programmes have involved creation of new institutional entities, which can take various forms. Thus, in the United Kingdom, breast cancer screening is undertaken within the National Health Service but as a separately managed programme. It manages the population registers on which invitations are based (derived from lists of women registered with general practitioners), monitors uptake (and takes action where this is low, either in general or in particular groups within the population), provides purpose-built screening centres (both fixed and mobile), and monitors a range of performance measures. It also maintains close links with other parts of the National Health Service, in particular surgical facilities and general practitioners, to ensure that the process of care is integrated.

Other solutions are required in more pluralistic systems. For example, the Dutch system is based on a network of regional cooperatives involving municipal public health offices and cancer centres. Luxembourg, which has also achieved good results within a social insurance system, also established a separate programme backed up by the refusal by sickness funds to reimburse screening mammograms outside the screening programme (Autier *et al.*, 2002).

Elsewhere, however, screening is largely opportunistic. The challenges are especially great in countries with multiple sickness funds. In these countries, state health authorities have often taken responsibility for the other common collective intervention, immunization, as it has proved difficult to achieve high uptake rates simply by reimbursing private physicians. In Germany, for example, it is not even possible to obtain timely information on uptake, which is only obtained at school entry at age six. Immunization is, however, a fairly straightforward, discrete intervention. The problems are even greater for the much more complex process of cancer screening, with its requirement for integration of a population-based element, including monitoring of equity of uptake, with rapid referral to curative care where appropriate. For example, in Germany, although large numbers of mammograms are undertaken, the reduction in breast cancer mortality seen in countries such as the United Kingdom has not occurred (Figure 7.4). The challenges of implementing such programmes in countries where purchasers serve populations that are not defined



**Figure 7.4** Trends in death from breast cancer in selected countries.

by geography are explored in more detail in a companion volume in the European Observatory series (Saltman *et al.*, 2004).

Taking PSA screening as an example of a test that has not been shown to be effective, the United Kingdom was the only one where guidance that it should not be offered has both been produced and been relatively effective. In conclusion, if the nature of screening activities can be considered a tool to assess the scope and nature of strategic purchasing in Europe, it would appear that developments have been extremely uneven.

## Conclusions

This chapter suggests a major contradiction between the health system goal to improve health, set out in the *World Health Report 2000* and endorsed by all European governments, and the reality in most European health systems. The evidence presented suggests that the third limb of the triple agency relationship is frequently very limited, at least with regard to improving health. One response is that we have failed to recognize a vast amount of work that takes place routinely but, as it is so commonplace, it is not recorded. We dispute this. In preparation for writing this chapter the initial review of published and unpublished literature, as well as the relevant sections of the Health Systems in Transition reports ([www.observatory.dk](http://www.observatory.dk)) was supplemented by a detailed questionnaire that was sent to key informants in most Western European countries and the conclusions were supported by the participants at the workshop during which the chapters of this book were discussed.

If we do believe that achieving health gain should be a central goal of health purchasing, what are the implications? Perhaps the most important one, which

is often overlooked, is that purchasing must take account of the changing nature of disease and the responses to it. As we have noted above, in many health systems the organizational and financing structures imply that health care consists of brief, clearly defined interactions between patients and providers. A typical example might be an acute respiratory infection or a cataract extraction. Yet a combination of ageing populations and new therapeutic opportunities means that an increasingly large volume of health care will be for chronic disorders, requiring coordinated interventions by different professionals and specialists over a prolonged period of time. However, many reforms of health services, such as the introduction of diagnosis-related groups, go in the opposite direction, seeking to package health care into isolated, homogeneous interventions. In reality, it is becoming increasingly difficult to define precisely what the product of health care really is.

The information asymmetry between informed purchasers and providers, with the former knowing more about unmet need, means that, unless purchasers intervene actively, treatment will often be suboptimal, especially for those already disadvantaged.

This chapter has identified a series of functions that should take place if improvements in population health are to be achieved. They are development of a health strategy, assessment of needs, design of effective packages of interventions, ensuring that the elements required to deliver these packages are available, and monitoring outcome. The question is then, who should do these things? Specifically, which functions fall within the purchasing role, undertaken by health authorities and sickness funds, and which fall within the stewardship role (see Chapter 8), undertaken by government or agencies acting on its behalf?

In some cases the answer is relatively clear but for others it will depend on the context. Effective health strategies combine both technical and political elements, with the latter including the need for ownership and accountability. They are an intrinsic part of the concept of stewardship and, as such, will inevitably require a major role by government. Stewardship also includes many of the elements required to provide a high quality service, such as regulation of professionals, design standards for facilities, ensuring safety of drugs and equipment, and the generation of knowledge through targeted research programmes. While some of these can be delegated to para-state bodies, they remain the responsibility of governments. Indeed, within the European Union, competition law may preclude purchasers from developing a regulatory role in some circumstances (Mossialos & McKee, 2002).

On the other hand, tasks such as assessment of need, negotiation of contracts for appropriate models of care, and assessment of outcome are more appropriately the rules of purchasers, as they will usually be closer to their populations. However, a note of caution is required. In countries with multiple social insurance funds it may be difficult to know who the population is, as is illustrated by the earlier example of screening.

For other functions, such as the definition of packages of care, the most appropriate location will depend on several circumstances. In many cases there will be economies of scale so that it will be more efficient for guidance to be developed nationally or even internationally. While recognizing the need to

respect national differences, there is considerable scope for shared learning here. For example, the Spanish Ministry of Health has adapted and translated some of the English National Service Frameworks.

There is, however, one important message that transcends all of these issues. It is the need for a major investment in the skills available to governments, acting as stewards, and purchasing organizations. Health care purchasing is different from purchasing in many other sectors. The needs are less obvious and the services purchased are more complex. Furthermore, without active involvement by purchasers to support coordination by providers, it is unlikely that the services required will be available for purchase. This means that both governments and purchasers must enhance their skills in the many disciplines that fall within the remit of public health and health service research. It seems likely that it is the relative lack of this expertise that will be the main constraint on the development of effective strategic purchasing in many countries.

## References

- Agence Nationale d'Accreditation et d'Evaluation en Santé (1999) *Préparer et conduire votre Démarche d'Accreditation*. Paris, ANAES.
- Aiken, L.H., Smith, H.L. and Lake, E.T. (1994) Lower medicare mortality among a set of hospitals known for good nursing care. *Medical care*, **32**: 771–787.
- Aiken, L.H. *et al.* (1999) Organization and outcomes of inpatient AIDS care. *Medical care*, **37**: 760–772.
- Alvarez Dardet, C. (2002) Spain. In: Marinka, M., ed. *Health targets in Europe: polity, progress and promise*. London, BMJ Publications.
- Autier, P. *et al.* (2002) A breast cancer screening programme operating in a liberal health care system: the Luxembourg Mammography Programme, 1992–1997, *International journal of cancer*, **97**: 828–832.
- Banta, H.D. (1994) Health care technology as a policy issue. *Health policy*, **30**: 1–21.
- Blanks, R.G. *et al.* (2002) Does individual programme size affect screening performance? Results from the United Kingdom NHS breast screening programme. *Journal of medical screening*, **9**: 11–14.
- Britton, A. *et al.* (1999) Threats to applicability of randomised trials: exclusions and selective participation. *Journal of health services research and policy*, **4**: 112–121.
- Busse, R., Van der Grinten, T. and Svensson, P.-G. (2002) Regulating entrepreneurial behaviour in hospitals: theory and practice. In: Saltman, B.R. and Mossialos, E., eds. *Regulating entrepreneurial behaviour in European health care systems*. Buckingham, Open University Press.
- Chapman, J. (2002) *System failure*. London: Demos.
- Dean, P.B. and Pamilo, M. (1999) Screening mammography in Finland – 1.5 million examinations with 97 percent specificity. Mammography Working Group, Radiological Society of Finland, *Acta oncologica*, **38**(Suppl. 13): 47–54.
- Department of Health and Children (2001) *Quality and fairness: a health system for you*. Dublin, Department of Health and Children.
- Donatini, A. *et al.* (2001) *Health care systems in transition: Italy*. Copenhagen, European Observatory on Health Care Systems.
- Dowie, J. (1985) The political economy of the NHS: individualist justifications of collective action, *Social science and medicine*, **20**: 1041–1048.
- Esserman, L. *et al.* (2002) Improving the accuracy of mammography: volume and outcome relationships, *Journal of the National Cancer Institute*, **94**: 369–375.

- Faisst, K., Schilling, J. and Koch, P. (2001) Health technology assessment of three screening methods in Switzerland. *International journal of technological assessment in health care*, **17**: 389–399.
- Fitz-Gibbon, C.T. (1996) *Monitoring education: indicators, quality and effectiveness*. London, Cassell.
- France, G. (2002) Italy. In: Marinker, M., ed. *Health targets in Europe: polity, progress and promise*. London, BMJ Publications.
- Freeman, H.L. (1995) The general hospital and mental health care: a British perspective. *Milbank quarterly*, **73**: 653–676.
- Fulop, N. et al. (2000) Lessons for health strategies in Europe: the evaluation of a national health strategy in England. *European journal of public health*, **10**: 11–17.
- Ganry, O., Peng, J. and Dubreuil, A. (1999) Evaluation of mass screening for breast cancer in the Somme district (France) between 1990 and 1996. *Revue d'épidémiologie et de santé publique*, **47**: 335–341.
- Gillam, S.J. (1991) Understanding the uptake of cervical cancer screening: the contribution of the health belief model. *British journal of general practice*, **41**: 510–513.
- Goddard, M., Mannion, R. and Smith, P. (2000) Enhancing performance in health care: a theoretical perspective on agency and the role of information. *Health economics*, **9**: 95–107.
- Green, J. and Wintfeld, N. (1995) Report cards on cardiac surgeons. Assessing New York State's approach. *New England journal of medicine*, **332**: 1229–1232.
- Hakama, M. et al. (1985) Evaluation of screening programmes for gynaecological cancer. *British journal of cancer*, **52**: 669–673.
- Hannan, E.L. et al. (1994) New York state's cardiac surgery reporting system: four years later. *Annals of thoracic surgery*, **58**: 1852–1857.
- Hansson, L.R. (2000) Targets for health: a regional participatory approach in Sweden. *European journal of public health*, **10**: 30–33.
- Haute Comité de la Santé Publique (2002) *La santé en France*. Paris, Haute Comité de la Santé Publique.
- Karjalainen, S. (1990) Geographical variation in cancer patient survival in Finland: chance, confounding, or effect of treatment? *Journal of epidemiology and community health*, **44**: 210–214.
- Kehoe, S. et al. (1994) The influence of the operating surgeon's specialization on patient survival in ovarian carcinoma. *British journal of cancer*, **70**: 1014–1017.
- Klabunde, C. et al. (2001) Quality assurance for screening mammography: an international comparison. *Journal of epidemiology and community health*, **55**: 204–212.
- Koskinen, S.V. and Melkas, T.A. (2002) Finland. In: Marinker, M., ed. *Health targets in Europe: polity, progress and promise*. London, BMJ Publications.
- Krasnik, A. (2000) Targets for health: the learning curve. *European journal of public health*, **10**(4S): 17–19.
- Laing, S.P. et al. (1999) The British Diabetic Association cohort study, I: all-cause mortality in patients with insulin-treated diabetes mellitus. *Diabetic medicine*, **16**: 459–465.
- Leggetter, S. et al. (2002) Ethnicity and risk of diabetes-related lower extremity amputation: a population-based, case-control study of African Caribbeans and Europeans in the United Kingdom. *Archives of internal medicine*, **162**: 73–78.
- Lomax, E. (1994) The control of contagious disease in nineteenth-century British paediatric hospitals. *Social history of medicine*, **7**: 383–400.
- Mackenbach, J.P. et al. (1988) Post-1950 mortality trends and medical care: gains in life expectancy due to declines in mortality from conditions amenable to medical intervention in the Netherlands. *Social science and medicine*, **27**: 889–894.
- Marinker, M. (2002) *Health targets in Europe: polity, progress and promise*. London, BMJ Books.

- Marshall, S.W. *et al.* (1993) Social class differences in mortality from diseases amenable to medical intervention in New Zealand. *International journal of epidemiology*, **22**: 255–261.
- Matsushima, M. *et al.* (1997) Geographic variation in mortality among individuals with youth-onset diabetes mellitus across the world. DERI Mortality Study Group, Diabetes Epidemiology Research International. *Diabetologia*, **40**: 212–216.
- McKee, M. (1999a) For debate – does health care save lives? *Croatian medical journal*, **40**: 123–128.
- McKee, M. (1999b) Settings 3: health promotion in the health care sector. *In*: European Commission *The evidence of health promotion effectiveness: shaping public health in a new Europe*. Luxembourg, European Commission.
- McKee, M. and Clarke, A. (1995) Guidelines, enthusiasms, uncertainty, and the limits to purchasing. *BMJ*, **310**: 101–104.
- McKee, M. and Healy, J. (2002) Réorganisation des systèmes hospitaliers: leçons tirées de l'Europe de l'Ouest. *Revue médicale de l'assurance maladie*, **33**: 31–36.
- McKee, M. and Hunter, D. (1995) Mortality league tables: do they inform or mislead? *Quality in health care*, **4**: 5–12.
- McKee, M. and Sheldon, T. (1998) Measuring performance in the NHS: good that it's moved beyond money and activity but many problems remain. *BMJ*, **316**: 322.
- McPherson, K. *et al.* (1982) Small-area variations in the use of common surgical procedures: an international comparison of New England, England, and Norway. *New England journal of medicine*, **307**: 1310–1314.
- Mossialos, E. and McKee, M. (2002) *EU Law and the social character of health care*. Brussels, Peter Lang.
- Nicholl, J. and Turner, J. (1997) Effectiveness of a regional trauma system in reducing mortality from major trauma: before and after study. *BMJ*, **315**: 1349–1354.
- Örtendahl, C. (2002) Sweden. *In*: Marinker, M., ed. *Health targets in Europe: polity, progress and promise*. London, BMJ Publications.
- Pope, C.J., Roberts, J.A. and Black, N.A. (1991) Dissecting a waiting list. *Health services management research*, **4**: 112–119.
- Porter, R. (1997) *The greatest benefit to mankind*. London: HarperCollins.
- Saltman, R., Busse, R. and Figueras, J., eds. (2004) *Social health insurance systems in Western Europe*. European Observatory on Health Systems and Policies Series. Maidenhead, Open University Press.
- Sant, M. *et al.* (2001) Cancer survival increases in Europe, but international differences remain wide. *European journal of cancer*, **37**: 1659–1667.
- Sarkisian, C.A. *et al.* (2001) Expectations regarding ageing among older adults and physicians who care for older adults. *Medical care*, **39**: 1025–1036.
- Scrivens, E. (2002) Accreditation and the regulation of quality in health services. *In*: Saltman, R.B., Busse, R. and Mossialos E., eds. *Regulating entrepreneurial behaviour in European health care systems*. Buckingham, Open University Press.
- Shaukat, N., De Bono, D.P. and Cruikshank, J.K. (1993) Clinical features, risk factors, and referral delay in British patients of Indian and European origin with angina matched for age and extent of coronary atheroma. *BMJ*, **307**: 717–718.
- Sheldon, T. and Chalmers, I. (1994) The United Kingdom Cochrane Centre and the NHS Centre for reviews and dissemination: respective roles within the information systems strategy of the NHS RandD programme, coordination and principles underlying collaboration. *Health economics*, **3**: 201–203.
- Sigfusson, B.F. and Hallgrímsson, P. (1990) Breast cancer screening in Iceland: preliminary results. *Recent results in cancer research*, **119**: 94–99.
- Smith, P. (1995) On the unintended consequences of publishing performance data in the public sector. *International journal of public administration*, **18**: 277–310.

- Snooks, H.A. *et al.* (1996) The costs and benefits of helicopter emergency ambulance services in England and Wales. *Journal of public health medicine*, **18**: 67–77.
- Stevens, A. and Raftery, J. (1994) *Health care needs assessment: volume 1*. Oxford, Radcliffe Medical Press.
- Stronks, K., Ravelli, A.C. and Reijneveld, S.A. (2001) Immigrants in the Netherlands: equal access for equal needs? *Journal of epidemiology and community health*, **55**: 701–707.
- Sutton, S. *et al.* (1994) Prospective study of predictors of attendance for breast screening in inner London. *Journal of epidemiology and community health*, **48**: 65–73.
- Tresserras, R. *et al.* (2000) Health targets and priorities in Catalonia, Spain. *European journal of public health*, **10**(4S): 51–56.
- Van Hertem, L.M. and Van de Water, H.P.A. (2000) Health policies on target? Review on health target setting in 18 countries, *European journal of public health*, **10**(4S): 11–16.
- Verity, C. and Nicoll, A. (2002) Consent, confidentiality, and the threat to public health surveillance. *BMJ*, **324**: 1210–1213.
- Vermeulen, V., Coppens, K. and Kesteloot, K. (2001) Impact of health technology assessment on preventive screening in Belgium: case studies of mammography in breast cancer, PSA screening in prostate cancer, and ultrasound in normal pregnancy. *International journal of technological assessment in health care*, **17**: 316–328.
- Weihrauch, B. (2002) North-Rhine-Westphalia. In: Marinker, M., ed. *Health targets in Europe: polity, progress and promise*. London, BMJ Publications.
- Weill, A., *et al.* (2000) Modalities of follow-up on non-insulin treated diabetics treated in metropolitan France in 1998. *Diabetes metabolism research and reviews*, **26**(Suppl. 6): 39–48.
- Wilson, J.Q. (1991) *Bureaucracy*. New York, Basic Books.
- World Health Organization (2000) *The world health report 2000. Health systems: improving performance*. Geneva, WHO.
- World Health Organization Regional Office for Europe (1985) *Targets for health for all: targets in support of the European strategy for health for all*. Copenhagen, WHO.