Chapter **73**

Strategic Management of Clinical Services

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Financial resources alone are insufficient for individuals to benefit from the opportunities presented by modern health care systems. Some countries have achieved much better levels of health than would be expected given their financial resources (Mehotra 2000); many examples of poor-quality care in countries at all levels of development reflect not only scarce resources but also inadequate management of what resources are available (see chapter 70).

Many inputs must come together at the appropriate time and in the appropriate place to achieve maximum health gain. These inputs include human resources (in particular, trained staff); physical resources (such as pharmaceuticals and technology); and intellectual resources (in the form of evidence and the ability to apply it appropriately). This congruence requires that the production, distribution, and combination of these resources be actively managed and that the relations among the various elements that contribute to health care be optimized.

The challenge of bringing these diverse inputs together is becoming increasingly complex. Until the 1950s, providing basic care at low cost to large populations was relatively straightforward, given political will and sufficient resources. Relatively few effective drugs were available; even fewer drugs were effective in managing chronic disease. The available technology was limited to simple x-ray machines and chemistry tests that required few skills to administer. Consequently, scaling up the delivery of basic health care was relatively easy.

The situation in the former Soviet Union illustrates this state of affairs. Beginning in the 1930s, the Soviet Union implemented a vast system to provide basic health care where almost none had existed. The very simple care available was sufficient to produce significant reductions in maternal and childhood mortality rates. What such a system could not do, however, was respond effectively to the possibilities opened up by the explosion in diagnostic and therapeutic knowledge that began in the mid 1960s with the availability of new and easily tolerated treatments for many common chronic disorders. As individuals became able to survive with their chronic diseases, they aged and acquired other conditions, many of which could now be treated effectively, constantly increasing the complexity of the health care required. The inability to manage this increased complexity resulted in persistently high mortality rates from treatable conditions at a time when corresponding mortality rates were falling in Western countries (Andreev and others 2003).

This situation has certain parallels with that faced by many low- and middle-income countries today. Through a variety of mechanisms, a political commitment to the health sector is manifest in the increased availability of funding, such as through the Global Fund for AIDS, Tuberculosis, and Malaria (http://www.theglobalfund.org/en/). Much discussion has focused on one of the elements of health care that these initiatives will support: the supply of drugs that target the microbiological agents responsible for these three diseases. Yet improved outcomes will be achieved only if such agents are linked to the many other elements required to diagnose and treat these patients. Most obviously, the supply of drugs such as antiretroviral agents must be coupled with those used to treat the opportunistic infections that exacerbate AIDS. Care for the acute episode of illness should be linked to general support for patients and family members as well as to activities designed to prevent further spread of the disease. Furthermore, as drugs to combat infections become more widely available, it is

probable—unless highly developed prevention systems have been put in place—that drug resistance will increase; this outcome has been evidenced with tuberculosis in those parts of the world where treatment has been available but poorly managed, such as the former Soviet Union and Peru (Farmer, Reichman, and Iseman 1999). The resulting resistant infections are much more complicated and expensive to treat. The rise in antibiotic resistance provides one of the most graphic examples of the consequence of the failure to manage the delivery of health care (see chapter 55).

Yet even where the financial resources and the political will exist to deliver effective health care, many health care systems contain numerous constraints to success (Hanson and others 2003):

- At the first level, that of the community or household, there may be inadequate demand for services or physical, financial, or social obstacles to their use. This situation calls for action to increase access and affordability, including health care financing reforms (see chapter 12). It also requires policies to ensure that services are culturally appropriate, that they address the particular needs of underserved populations, and that they provide dignity and privacy. Moreover, services should be physically accessible, both in terms of distance from population settlements and in terms of their construction—that is, facilities must be responsive to the needs of persons with disabilities.
- At the second level, the delivery of health care, there may be a shortage of resources, such as staff members, drugs, and equipment. However, to bring these resources together would require actions at the third level that anticipate future needs, as well as actions that ensure that the needed drugs and equipment are purchased at the best price possible, are subject to appropriate quality controls, and are distributed where needed.
- The third level includes health sector policy and strategic management. Effective action may be constrained by weak systems of management that are unable to take into account the changing health needs of the population and the changing demands on health care providers. Management weaknesses include inadequate pharmaceutical regulation and supply, ineffective training of health professionals, inability to engage with civil society, and a failure to put in place incentive systems to facilitate effective health care. Constraints at this level may originate outside the country, as governments are faced with demands by donors to follow paths that either undermine their policy goals or remove the flexibility needed to achieve them. Constraints acting at this level also arise when policies in other areas affect the health sector, such as when a weak, overly bureaucratic, and unreformed civil service system implements obsolete regulations; when there are inadequacies in infrastructure, such as poor communication and transportation links; or when there are weaknesses in the banking system.
- The fourth level refers to the environmental and contextual constraints on effective policies. The delivery of effective care may be affected by the physical environment, including climate and population dispersion. However, an equally important constraint is weak governance working within unsupportive policy frameworks, which may be compromised further by corruption, weak rule of law, political instability, weak public accountability, and lack of a free press. For example, de Soto (2000) has shown that, in many middle-income countries, it is almost impossible even to create a simple garment repair business because of a failure of legislative reform, in particular a lack of clearly defined property rights. As a result, much of the economic activity in those countries is informal or even marginally illegal, a response that is of particular concern in health care, given the scope for unlicensed and incompetent providers to endanger the public.

This framework underscores the importance of coordinating action at multiple levels. Health services can operate effectively only if policies are in place at the community level to ensure that those in need have access to services, and only if policies are in place at higher levels to ensure that the resources are available to provide those services.

This analysis of different levels demonstrates the importance of taking a systemwide approach to the management of health services. However, because of limited space, this chapter focuses primarily on the third level, that of strategic management. It first examines the nature of management in general and the specificities of management in the health system. It then explores some issues that arise when managing health services in different settings. It concludes with an exploration of some of the strategies used in low- and middle-income countries to optimize the delivery of care, using a framework developed by Oliveira-Cruz, Hanson, and Mills (2003).

WHAT IS MANAGEMENT?

One of the earliest definitions of management was that of French mining engineer Henri Fayol. Writing at the beginning of the 20th century, he stated, "To manage is to forecast and plan, to organise, to command, to coordinate, and to control" (Fayol 1949). Put simply, managing is about assessing probable future scenarios, deciding how best to respond to them, bringing together the resources needed for that response, and deploying them as effectively as possible. Until relatively recently, most management research was concerned with industrial production, for which outputs could be measured relatively easily. Relatively less attention was given to management of

Box 73.1

Specificities of Health Care Organizations

Health care services differ from many other organizations in many ways:

- Defining and measuring outputs is difficult.
- The work involved is more variable and more complex than in many other organizations.
- Much of the work is of an emergency nature and cannot easily be deferred.
- The consequences of error can be severe.
- Activities by different groups of staff members are highly interdependent, requiring a high level of coordination.
- The work involves a high degree of specialization.
- Workers are highly professional, with a primary loyalty to the profession rather than to the organization.
- There is limited scope for effective organizational or managerial control over clinicians, the group most responsible for generating work and expenditure.
- Dual lines of responsibility often create problems of coordination, accountability, and confusion of roles.

Source: Shortell and Kaluzny 1983.

service industries in general and health care services in particular. As Shortell and Kaluzny (1983) noted, health care services are different from many other organizations. Of course, many of the specificities shown in box 73.1 are differences of degree, with health services sharing many features with other service organizations. Yet important differences exist.

Managing Health Care Services

During the 1970s, health care services in many countries faced growing criticism for their perceived failure to articulate explicit goals or to develop the means to achieve them (Enthoven 1985; Griffiths 1984). This failure was contrasted with the perceived success of the private sector, which was seen as more capable of innovation and more responsive to demand.

These developments gave rise to what has been termed *new public management* (Hood 1991), which is characterized by the following:

- greater role for professional management in the public sector
- closer scrutiny of the work of professionals, involving performance measurement and target setting
- link between resource allocation and measurable outputs
- "unbundling" of previously integrated units, with contracting for previously integrated services
- shift to competition as a key to reducing costs and an emphasis on a private-sector management style
- careful use of resources to drive down the cost of labor and other inputs, where possible.

Recognizing the many reasons for market failure in health care (Arrow 1963), new public management builds on several concepts that arise from new institutional economics. Included in these is contestability (Baumol, Panzar, and Willig 1982), in which the benefits that competition is thought to bring can arise even when competition is absent, thus ensuring that the barriers to market entry are sufficiently low to allow other providers to emerge. User choice is given priority over most other goals, including equity.

The enthusiasm for new public management was largely ideological, reflecting the contemporary rejection of an expanded role for the state; the extent to which this model was actually able to achieve what was claimed for it remains highly contested (Le Grand and Bartlett 1993; Stewart 1998). In particular, critics drew attention to the high transaction costs involved (Evans 1997) and the lack of evidence that competition can actually bring about the intended improvements in quality of care (Maynard 1998).

One feature of the new public management is its emphasis on general management, with managers possessing skills and expertise that can be applied to any sector. These managerial attributes are considered to be of greater importance than technical or professional knowledge. As a consequence, in some countries, the balance of power has begun to shift away from health professionals and toward general managers. In many places, the initial enthusiasm has given way to disillusionment and subsequently to a more balanced view that, though the precise solution will reflect the particular circumstances of the health care system, what is needed is a partnership between these two groups.

In some countries, this development will mean that managers must assume a greater role in relation to the delivery of clinical care. Such an expanded role will extend from their traditional responsibilities, such as financial controls, hotel services, and payroll management, to active participation in

setting and monitoring standards for care delivery, linked to a responsibility for ensuring that the resources needed for care delivery are available.

In other countries, this role may involve stepping back a little. In an analysis of the British National Health Service, in which the degree of managerial control over the delivery of health care has proceeded further than in many other industrial countries, Harrison and Pollitt (1994) note how clinical decision making is increasingly driven by diagnostic and treatment protocols. Although often developed locally, working arrangements are increasingly specified, with the introduction of timetabled job plans for medical specialists and much greater measurement of outcomes. Yet Harrison and Pollitt argue that the growth of managerial control over professional activity is likely to be constrained by the increasing involvement of professionals in management, even if they do not fully adopt the managerial agenda. A further constraint is the persisting ability of professionals, because of their specialized knowledge, to resist managerial control and the related unwillingness of lay managers to extend their control into certain areas in which they do not feel competent.

Managing for Improved Quality of Care

An increasing volume of research in industrial countries has focused specifically on managerial and organizational responses to evidence that health systems often deliver suboptimal care (Institute of Medicine 2001). Quality of care is addressed in more detail in chapter 70. However, some of the key messages from this research are relevant here.

One message is that change must take place at all levels of the system. In this context, Ferlie and Shortell (2001) identify four such levels: the individual, the group or team, the organization, and the larger system or environment. They note the growing evidence that strategies that focus on individuals alone are unlikely to be successful, whereas those that are embedded within broader organizational change are more likely to be effective (Davis and others 1995). A second key message is the importance of teamwork, with evidence that well-functioning, multiprofessional teams provide better quality care (Aiken, Sochalski, and Lake 1997). However, change may be inhibited by barriers at the level of the organization, including lack of a consistent focus on quality, inadequate information, lack of physician involvement, and inadequate managerial support (Shortell, Bennett, and Byck 1998).

MANAGING CLINICAL SERVICES IN DIFFERENT SETTINGS

Clinical services are provided in a variety of settings, from the patient's home to ambulatory care facilities and hospitals providing inpatient care. They include those services that involve direct contact between a patient and a health care professional, as well as indirect contact, such as when a pathologist provides a diagnosis on a biopsy or blood sample. Reflecting the focus of much existing research, this section is structured in terms of different settings of care: ambulatory care, hospitals, and community care. Unfortunately, rather less research transcends these often artificial and arbitrary divisions to look at the more important issue of the patient's journey through the health care system, given that one of the greatest managerial challenges facing those delivering clinical services is how to ensure that the journey is efficiently navigated (McKee and Nolte 2004). Furthermore, available research that focuses on health facilities is often difficult to generalize because of the different meanings attributed to common terms such as *hospital*, *health center*, or more prosaically, *hospital bed*. For example, a major teaching hospital in a capital city, such as the Kenyatta National Hospital in Nairobi (http://www.kenyattanationalhospital.org/services.html), which offers invasive cardiology, renal transplants, and radiotherapy, is very different from a rural hospital with perhaps 100 beds and a single operating theater that provides only the most basic surgical and obstetric care.

Hospitals

Although hospitals are rarely the first places of contact between patients and health systems, and although hospitals do not provide the greatest share of health care, it is appropriate to begin with them because they often account for the largest share of public health sector expenditure (OECD 2003). They are also particularly difficult to manage for several reasons:

- One reason is the diversity of tasks that a hospital must undertake (Healy and McKee 2002b). Many hospitals fulfill roles that go beyond the delivery of patient care to provide training and research, support to community-based facilities, and even local employment or civic identity symbols.
- A second reason is the blurring of boundaries between hospitals and the rest of the health care system, which has occurred as a result of the emergence of many innovative models of care that cross the boundary between secondary and either primary or social care. A related issue is the shift taking place in many countries to managing patients through a complex combination of short inpatient stays and visits as an outpatient to specialist clinics and diagnostic facilities (McKee and Healy 2001). This approach is vastly more complicated to manage than the traditional model in which patients were admitted to wards from which they were taken to undergo investigations and treatment at a time convenient for the specialist concerned, a process managed by senior nurses. The new model requires new health worker roles, which might be termed *case*

managers. These case managers help patients to navigate the system.

- A third reason is the contrast between the rapidly changing demands on hospitals and the structural rigidities of hospitals themselves (McKee and Healy 2000). The original justification for creating hospitals as institutions was the need to concentrate equipment such as operating theaters, x-ray machines, and laboratories, and expertise such as medical specialists. Yet changes in the nature of health care are raising questions about how hospitals of the future should be configured. Many laboratory functions are being replaced by testing kits that can be used at the bedside, diagnostic equipment such as ultrasound scanners is being used in primary care, and a new generation of primary care workers are acquiring greatly augmented skills. In this rapidly changing environment, managers may be faced with aging hospital buildings that may lack sufficient electrical sockets for the greatly increased amount of equipment now available, or managers may have staff members with deeply ingrained ways of working who pose a particularly acute managerial problem.

These issues can be seen in the Kenyatta National Hospital in Nairobi, where a new managerial approach was developed but faced problems because of an unclear understanding of the kind of services to be provided, weak managerial capacity, and a lack of focus in targeting services (Collins and others 1999). In Zambia, financial management and accountability improved when the hiring of hospital staff was delinked from the national civil service, yet the process has been derailed on a wider scale because of trade unions' resistance to the changes (Hanson and others 2002).

Ambulatory Care

Ambulatory care, delivered on an outpatient basis, is the commonest form of contact between patients and health care providers. Although it often receives relatively little attention from policy makers compared with the more resource-intensive inpatient hospital care, ambulatory care contributes substantially to health care system performance (Berman 2000). Good management of ambulatory services is essential because these services are often the entry and exit points for consumers; however, these services can be difficult to manage effectively (Waghorn and McKee 2000).

Effective coordination of ambulatory and inpatient services is needed to ensure that patients are cared for in the most appropriate settings, thereby reducing inefficiencies such as the overuse of hospitals for nonemergency care. Such coordination often involves developing shared protocols for referral and management. In Benin and Guinea, for example, diagnostic and treatment decision trees were developed collaboratively with the local staff, leading to more efficient use of resources (Levy-Bruhl and others 1997). In Zambia and Tanzania, strengthening of management capacities in primary care facilities through a team-based approach to decision making that linked planning to budgeted action plans led to improved client perceptions of facilities and to a marked increase in utilization (Few and Harpham 2003). However, the challenges of management in the ambulatory care sector are great in many countries; this sector is often highly fragmented, with extensive and largely unregulated private provision and few levers to exert pressure for change.

Community and Social Care

A particular challenge is how best to link long-term management of medical conditions with community and social care in those cases in which an effective response to health needs spans the interface. Management of chronic physical or mental illness in the elderly, for example, can fall under the responsibility of home care and volunteer agencies, day centers, day hospitals, rehabilitation hospitals, and long-term care institutions, as well as community-based health teams (Bergman, Beland, and Perrault 2002). A systematic review of community-based care for elderly people in industrial countries concluded that such schemes can favorably affect rates of institutionalization and costs. However, comprehensive approaches involving program restructuring are often necessary, and cost-effectiveness depends on the characteristics of the health and social care systems. The review's authors identified as a critical challenge the expansion of those programs considered to be successful (Johri, Beland, and Bergman 2003).

Low-income countries face particular obstacles because they often lack effective alternatives to hospital care. As a result, patients are frequently cared for by their families but with little support, or they are consigned to large, poorly equipped, and poorly staffed institutions. This situation has stimulated the development of models of "community care," in which health care providers work with communities to deliver services. In the area of mental health, for example, the World Health Organization (WHO) has developed models of care that cover a range of care settings, including community centers and outreach services and residential homes, backed up by access to hospital outpatient and emergency care (WHO 2001). Similarly, the complexities of caring for people with disabilities in low-income countries have led to internationally developed guidelines that advocate a shared role for heath care providers and local communities (Helander 2000). Accordingly, effective coordination of those services clearly depends in large part on effective management. Shifting from hospital-focused care to community care introduces many managerial challenges. One element of an effective response should be to heighten the autonomy of patients in managing their diseases, but this

response requires attitudinal changes among providers, who must commit to a real shift of power to patients, supported by effective information systems and safeguards for vulnerable patients (Litwin and Lightman 1996).

Health care systems are generally poor at addressing long-term illnesses, especially when those illnesses require integrated care spanning primary, secondary, and community providers (McKee and Nolte 2004; WHO 2001). The often low status accorded to these conditions in the hierarchy of priorities, coupled with fragmentation between health and social sectors (WHO 2002), will require greater commitment to managerial reforms that can improve the delivery of appropriate services.

THE SPECIFICS: WHAT WORKS?

This section turns to those policies that are designed to enhance the resources available to deliver health care and to combine them in ways that optimize the potential benefits. It looks, in turn, at the different elements required to deliver effective care: human resources, physical resources, intellectual resources, and the organizational or social resources that bind them together. The section begins with the most important resources for health care systems: the people who provide care.

Developing Human Resources

A key element in the delivery of effective health care is how to provide staff members with the appropriate combination of skills to do their jobs effectively.

Increasing Skills. In their review undertaken to inform the Commission on Macroeconomics and Health, Oliveira-Cruz, Hanson, and Mills (2003) identified 13 studies that assessed the effects of training to enhance skills. Though the results were mixed, training programs were overall more likely to have positive rather than negative effects. Several studies focused on communication and counseling skills, which often lead to improved client satisfaction. A study from Zambia showed that training must be linked to other resources; although training was associated with improved transmission of information, there was no decline in the number of complaints from clients who remained unhappy about long waits and short contact time (Faxelid and others 1997).

Changing Skill Mix. The division of tasks among different health care workers reflects many considerations, but evidence about who would be best at doing these tasks is rarely considered. There may be regulations restricting tasks to one professional group, such as the right to prescribe, or there may be cultural norms, which while unwritten have just as great an effect. Underlying these factors is a set of issues that includes a difference in the power of different professions, itself often a reflection of gender relationships in society, with a predominantly male medical profession controlling a predominantly female nursing profession. However, increasing evidence suggests that traditional demarcations do not support the optimal ways to provide care, and there is considerable scope for changing the mix of skills involved in delivering many aspects of health care.

This topic has recently been reviewed systematically by Sibbald, Shen, and McBride (2004), who have developed a taxonomy of the types of change in skill mixes that are possible (table 73.1). Their review shows that many tasks undertaken by one professional group can yield comparable and often better results when performed by another group. In particular, they show how nurse-led clinics often achieve better outcomes than traditional doctor-led service (Connor, Wright, and Fegan 2002; Stromberg and others 2003; Vrijhoef, Diederiks, and Spreeuwenberg 2000; Vrijhoef and others 2001, 2003).

Table 73.1 A Taxonomy of Changes in Skill Mix in Health Care

Changing roles	
Enhancement	Increasing the depth of a job by extending the role or skills of a particular group of workers
Substitution	Expanding the breadth of a job, in particular by working across professional divides or exchanging one type of worker for another
Delegation	Moving a task down a traditional unidisciplinary ladder
Innovation	Creating new jobs by introducing a new type of worker
Changing the interface between services	
Transfer	Moving the provision of a service from one health care setting to another (for example, substituting community for hospital care)
Relocation	Shifting the venue from which a service is provided from one health care sector to another without changing the people who provide it (for example, running a hospital clinic in a primary care facility)
Liaison	Using specialists in one health care sector to educate and support staff members working in another (for example, hospital outreach facilitators in primary care)

Source: Sibbald, Shen, and McBride 2004.

Although Sibbald, Shen, and McBride focus their review on experience in industrial countries, by challenging many deeply held beliefs they indicate what could be done in other settings around the world, after taking into account local circumstances such as the skills and expertise of those involved, as well as any salient regulatory or training issues.

Strengthening Management

In their review of constraints to health service delivery, Oliveira-Cruz, Hanson, and Mills (2003) identified 10 studies that evaluated the effect of management strengthening. The activities in those studies included the following:

- workshops for identifying and prioritizing managerial programs
- introduction of regular planning and evaluation cycles
- quality assurance methods
- establishment of routine communication systems
- training activities.

They concluded that the results were generally positive, with more rational use of funds; greater availability of funds as a consequence of better planning; improved coordination and integration of programs; improved methods of working; better staff morale; enhanced data collection, reporting, and use; and increased community participation. WHO has developed an approach to strengthening management that has been successful in a variety of settings (Cassels and Janovsky 1995).

It is important to identify where specific managerial skills are lacking and to explore different ways of obtaining them, whether through training, recruitment, or links with related organizations. For example, improved financial management in district health teams in Ghana was made possible by integrating staff members from local government accounts offices (Kanlisi 1991); a similar initiative was successful in The Gambia (Conn, Jenkins, and Touray 1996). However, a word of caution is required. Although a management strengthening exercise undertaken in Tanzania was successful when implemented at the local level, it failed when scaled up because the same degree of involvement by the originating team was no longer possible (Barnett and Ndeki 1992).

Managing Physical Resources

Managing infrastructure and other capital assets such as hospitals and health centers requires investment planning in both the short term (for example, maintenance) and the long term (for example, new acquisitions). Historically, however, costs associated with capital consumption and maintenance have not been met through operating budgets, resulting in few incentives for public sector health planners to efficiently manage infrastructure or to respond to market demand and consumer needs (England 2000; Preker, Harding, and Travis 2000). Capital charging—requiring managers to explicitly account for the value of physical assets out of funding allocation or contract revenues—has been developed as a response, successfully heightening public sector management of capital investments in the United Kingdom and New Zealand (Heald and Scott 1996). Capital charging has been proposed as a strategy to stimulate better capital management in developing countries as well. For example, in Malaysia a corporatized hospital has been required to reimburse invested capital through dividends, with the Malaysian government recouping one-third of its original investment within five years (Hussein and Al-Junid 2003). Similarly, the Kenyatta National Hospital in Nairobi was obliged to account for all accruals (for example, property and depreciation) when it was given greater autonomy. Though changes in accounting management have experienced some shortcomings, improvements have been seen in financial transparency, timeliness of reporting, donor satisfaction, and revenue collection (Collins and others 1999).

Within the public sector, changes in line management have facilitated the incorporation of more explicit infrastructure concerns into the planning process. The central authority in Hong Kong (China) has made capital acquisition decisions jointly with hospitals during annual planning processes (Yip and Hsiao 2003). The introduction of business planning to district-level planning in Turkmenistan heightened accountability for maintaining physical infrastructure: use of a global budgeting model (that is, increased autonomy in line management as well as performance monitoring) led to reduced resource allocation to personnel and a greater than fivefold increase in maintenance expenditures (Ensor and Amannyazova 2000). Explicitly managing capital investments in both the short and the long term may facilitate efficient resource allocation.

Although capital charging is a relatively straightforward technical solution, capital investment can be particularly susceptible to political derailment (Anell and Barnum 1998). In the hospital sector, for instance, many transition economy countries have had difficulty downsizing infrastructure because those with decision rights to manage capital (that is, local governments) are different from those who have incentives to do so, such as hospital managers (Jakab and Preker 2003).

Strengthening Drug Procurement, Regulation, and Distribution

Managing pharmaceutical resources is crucial for ensuring access to essential drugs and promoting their rational use (Mossialos, Mrazek, and Walley 2004). WHO defines the goals of rational use of drugs as delivering medications effectively—appropriate to patients' clinical needs and at dose levels and durations appropriate to their individual requirements—and

at an affordable cost (WHO 1985). The public sector plays a key role in providing the framework for rational use of drugs (Quick 1997) through measures ranging from drug regulation to clinical practice guidelines.

National drug policies (NDPs) can be effective in regulating private and public sector provision of essential medicines. The Lao People's Democratic Republic's NDP has been important in improving private pharmacy service quality (Stenson, Tomson, and Syhakhang 1997). In Burkina Faso, an NDP has enhanced the performance of rural pharmacies (Krause and others 1998). At the local and facility levels, increasing accountability can also lead to a more rational use of drugs. A simulation exercise in Tunisia that required physicians to relate pharmaceutical budgeting to involvement in the procurement process improved prescribing practices by containing costs while increasing the use of essential drugs (Garraoui, Le Feuvre, and Ledoux 1999). Enhanced management information systems, with corresponding supervision, monitoring, and top-level support, have improved contraceptive management in several countries (Kinzett and Bates 2000). The introduction of standard treatment guidelines and formularies has reduced overprescribing in several countries, and educational materials for consumers in Cameroon increased compliance with antibiotic regimens (Nabiswa, Makokha, and Godfrey 1993).

A comprehensive review of interventions used in Sub-Saharan Africa, where health systems are plagued by shortages of supplies, high costs, large-scale use of proprietary drugs, waste, and theft, provided considerable evidence to suggest what works in those countries (Foster 1991). Successful interventions included the following:

- selection and precise quantification of drug needs—in particular, the creation of essential drug lists
- improved procurement, with greater use of generics, competitive bidding, and international procurement agencies
- improved storage and distribution, with better storage conditions, inventory controls, security systems, and use of prepacked kits.

At the same time, several factors constrain better management of pharmaceuticals. Considerable resources are needed to adequately monitor NDPs, and implementation can be difficult (Petrova 2002). Furthermore, much of the pharmaceutical use is outside the control of the public sector: two-thirds or more of health problems are self-medicated. Though the public sector may strive to inform consumers, patients' nonadherence remains high (Le Grand, Hogerzeil, and Haaijer-Ruskamp 1999). As in management of other inputs, political considerations can thwart managerial responses. The Republic of Korea decided to divide its prescribing and dispensing functions precisely to address high levels of pharmaceutical overuse and misuse, but it subsequently faced strikes and stiff opposition from those same stakeholders (Kwon 2003). Management of pharmaceuticals thus presents a complicated challenge, requiring significant investment and flexible responses.

Using Intellectual Resources

The process of generating, disseminating, and using knowledge is frequently imperfect. Pang and others (2003) have argued that a well-functioning health care system must have in place mechanisms that allow it to access and use research and the products of research. They highlight the weaknesses of much of the existing health care research, including fragmentation, overspecialization, and damaging competition among researchers, who are frequently isolated from other researchers and from the policy-making community. Drawing on concepts of the functions of a health system, they identify a series of four roles for a health *research* system:

- *stewardship,* which includes defining and articulating a vision for a national research system, identifying appropriate priorities, and setting and monitoring ethical standards
- *financing,* which includes obtaining research funds and allocating them accountably
- *creating and sustaining resources,* which includes the physical and human capacity to conduct, absorb, and use research
- *producing and using research,* which includes generating valid research outputs; translating research into formats that inform health policy, practices, and public opinion; and promoting the use of research to support innovation.

Such a system must be able to answer the many different questions requiring research, from basic laboratory science, such as new drug development, through health services research, such as comparisons of the cost-effectiveness of different drug regimens, to organizational research, such as the best way of delivering the most cost-effective drug regimen. Although the majority of health systems and services research continues to be undertaken in the industrial countries, a growing volume of research addresses the needs of low- and middle-income countries, such as that by the participants in the Effective Health Care Alliance Programme (EHCAP), an international research network that is undertaking systematic research within the framework of the Cochrane Collaboration (http://www.liv.ac.uk/lstm/ehcap/introduction.htm).

Establishing Relationships

The debate about the relative benefits of vertical (in which a single disorder is tackled by a program managed across levels from the Ministry of Health to the health care provider) and horizontal (in which health care for a wide range of disorders is delivered through a system that is integrated at each level)

systems of health care delivery has been examined in detail in a major review of relevant literature by Oliveira-Cruz, Kurowski, and Mills (2003). They note how many activities lie on a continuum between the two extremes, with the Global Polio Eradication Initiative more vertical than the Expanded Programme on Immunization, which in turn is more vertical than the integrated management of childhood illness approach. They identify certain features that are often associated with vertical programs and that promote success: specific objectives, clear work schedules, well-defined techniques, and frequent supervision. They also identify characteristics that are often associated with horizontal programs and that can hamper effectiveness: shortage of essential drugs, lack of adequate staff training, intermittent supervision, and limited backup. However, they note that horizontal programs have considerable potential to deliver effective services if they are adequately funded, staffed, and managed, largely because of their economies of scale and scope.

To some extent, the approach is determined by the nature of the program. Vertical programs are most effective when the technology involved is very sophisticated or when it includes procedures different from the usual tasks and thus requires specialist skills. Vertical programs may be more appropriate when there is a need to rapidly achieve major reductions in the burden of a disease, although this situation does not preclude embedding the management of the program within existing organizations. These programs are often a response to weak management capacity in the existing system, although it is argued that they can perpetuate this problem or even undermine what does exist, diverting the attention of staff members from their usual tasks. Such programs often have a short time horizon, either being absorbed into existing systems or brought to an end. In part, their duration is linked to the source of their funding, which is often from donors who themselves have a short time horizon.

Integrating previously vertical programs into mainstream systems can be successful, as with schistosomiasis programs in Saudi Arabia (Ageel and Amin 1997) and Brazil (Coura Filho and others 1992). However, a systematic review of integration failed to identify consistent benefits, largely because of the very limited extent of the evidence available and the context-specific nature of this process (Briggs, Capdegelle, and Garner 2001). The authors of that review concluded that the question facing policy makers is not whether one approach is invariably better than the other; rather, it is how best to build on the synergies among them to maximize overall benefits. They note, for example, how the many successes of the Malaria Eradication Programme in the 1950s and 1960s were not sustained because active case surveillance was not integrated into routine health services (see also Bradley 1998).

Successful vertical programs are likely to involve community participation, but not to the extent that there is overdependence and subsequent attrition of volunteers. The programs' developers will have learned lessons from other similar programs, in relation to both organizational and technical issues. Where several vertical programs coexist, the programs' developers should explore how they can share common elements.

Contracting for Services

The setting of contracts by public agencies to purchase health care services is increasingly common in a number of low- and middle-income countries. The theoretical case for contracting out identifies potential advantages from combining public finance with private provision. However, there may also be difficulties, such as ensuring that competition takes place among potential contractors, that competition leads to efficiency, and that contracts and the process of contracting are effectively managed; consequently, these advantages may not always be realized (McPake and Banda 1994).

Unfortunately, the question of whether the advantages outweigh the disadvantages has been the subject of relatively little empirical study in low- and middle-income countries, and what exists is often highly context specific. For example, in Zimbabwe, a comparison of a hospital owned by a colliery, from which services were purchased by the government, and a nearby government hospital found that the colliery hospital offered services of at least comparable quality at prices lower than the unit costs of the government hospital after capital costs were included (McPake and Hongoro 1995). However, failure to establish policies on thresholds for use meant that growth in expenditure on the colliery hospital was not controlled. The authors argue that contracted facilities can achieve powerful bargaining positions if there are no viable competitors and the government does not retain the ability to offer an alternative service. They also identify a need for specific skills to manage contracts at all levels. Where a policy of contracting is a response to crises arising from civil service retrenchment and public expenditure cuts, these skills are unlikely to be developed.

Another study examined the economic arguments for contracting for district hospital care in South Africa, by using private for-profit providers, and in Zimbabwe, by using nongovernmental (mission) providers (Mills, Hongoro, and Broomberg 1997). In the South African setting, there were no significant differences in quality among three contractor hospitals and three government-run hospitals, but the contractor hospitals provided care at significantly lower unit costs. However, the overall cost to the government was similar for the two options because of the additional cost of contracting, with the efficiency gains captured almost entirely by the contractor. In Zimbabwe, two district-designated mission hospitals delivered similar quality care at lower cost than did two government hospitals. However, the contract between the government and

the missions was implicit, rather than explicit, and was of long standing. As in the other Zimbabwean example, the authors identified the importance of developing the government's capacity to design and negotiate contracts that allow the government to derive significant efficiency gains from contractual arrangements.

Increasing Provider Autonomy

A review of cross-country experiences with enhanced autonomy of hospitals found improvements in service delivery. The most successful cases—in Hong Kong (China) and Tunisia—applied private sector management techniques and training, with appropriate performance assessment systems for staff. In countries where reforms were considered less successful, managers had been granted greater autonomy without suitable performance-oriented incentives (New Zealand) or vice versa (Indonesia) (Hawkins and Ham 2003). In the Kenyatta National Hospital, greater autonomy led to the introduction of performance appraisal linked to incentives, enabling the dismissal of poor performers and increased benefits and greater responsibilities for good performers. This change was coupled with clarification of clinical management roles. Complementing increased salaries for staff nurses, these changes helped improve the hospital's strategic management, donor accountability, and performance reporting (Collins and others 1999).

Implementing such management strategies in a coherent fashion is not an easy task. Hospital governance in several Eastern European countries, which has been transferred to local governments to improve responsiveness, has included measures such as performance-based payment mechanisms. Performance did not improve as expected because of an "inconsistent incentive environment"; rewards and sanctions were not linked to performance. Important factors in that failure to improve were weak stewardship functions and an absence of effective governance at the regional level, which made it difficult to change the initial configuration of the hospital system. Instead, increased hospital autonomy was used to ensure the survival of the institution rather than to meet the needs of the population. Thus, a continuing excess of capacity, inefficiency, and poor responsiveness to patient expectations remains (Healy and McKee 2002a). A review of experience with programs that increased autonomy in Sub-Saharan Africa also identified only modest success in achieving the stated goals (McPake 1996).

Public or Private Provision?

Although there has been considerable enthusiasm for privatizing state facilities because of the supposed efficiency gains achieved in the private sector, in reality the evidence is somewhat mixed. Thus, a study of dispensaries run by the government and by nongovernmental organizations in Tanzania found considerable variation in both sectors (Gilson 1995). This finding was consistent with another study in Tanzania of primary care providers in Dar es Salaam. In the latter, although the quality of care offered by private providers was, on average, better, much low-quality care was found in both types of facilities (Kanji and others 1995). Considerable variation in providers of both types, although with overall better quality in the private sector, was also reported in a study in Senegal (Bitran 1995). In summary, there is very little evidence to support the contention that private provision is better than public provision, and what evidence exists indicates considerable variations in both.

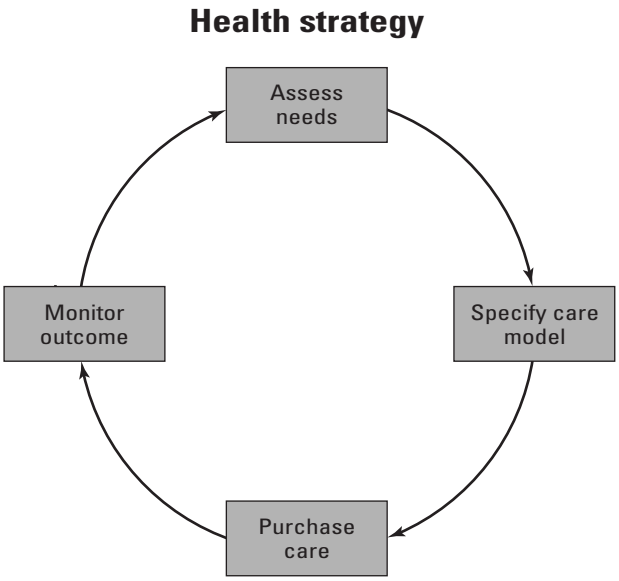
Strategic Purchasing

The quest to deliver effective health care is a dynamic process, adapting continually to changing health needs and the opportunities that arise that make it possible to respond in new and better ways. However, health systems that have failed in the past to respond to these changing circumstances face even greater problems. The pace of change is constantly increasing, with factors such as greater population mobility contributing to the reemergence of infectious diseases and with demographic changes and lifestyle changes giving rise to a new burden of chronic diseases.

Health care providers have faced difficulties in responding to this challenge on their own. Although they may possess a great deal of information about the patient sitting in front of them and, on the basis of their training and accumulated experience, about what might be done to help that patient, health care providers confront several important information gaps:

- First, they may know little about those who, despite being in need of health care, do not seek help. These people will often be the most disadvantaged in a society, with few means of making their voices heard.
- Second, they may have inadequate knowledge about newly emerging treatments or more effective ways of providing those treatments, especially if the treatments involve creating multidisciplinary teams with new sets of skills, working in ways outside their experience.
- Third, even if providers introduce changes, they may have inadequate knowledge of whether such changes have been effective.

These knowledge gaps provide the justification for action to improve the delivery of health care at several levels above that of the individual encounter between the patient and the health professional. Strategic purchasing brings together a series of interlinked activities: assessing health needs, using appropriate



Source: McKee and Brand 2005.

Figure 73.1 A Framework for Strategic Purchasing

evidence to develop models of care that meet priority needs, creating the appropriate combination of regulations and incentives to implement those models, and then evaluating the response and reassessing whether the need remains (Figure 73.1). All of these activities should take place within an overall health strategy that takes into account the goals of a health care system, such as those defined by WHO (2000), of increasing health attainment, providing services responsive to the population's needs and expectations, and financing those services equitably.

The development of a strategic purchasing function is complicated, requiring high levels of information resources, both on health needs and on effectiveness. Strategic purchasing involves using technical and political skills, determining the needs of the population, identifying evidence of the effectiveness of different care packages, and setting priorities within limited resources. The last of these components is arguably the most difficult, given the high level of need and the scarcity of resources in many places. This list of components highlights why, in addition to having skills in financial and personnel management, the effective health service manager needs at least a working knowledge of clinical epidemiology and economic evaluation.

Even in industrial countries, the strategic purchasing function is often poorly developed. Given its many interlinked components and the problem of isolating any benefits from wider changes in the health system, this function is very difficult to evaluate. Nonetheless, it is included here as a model from which concepts may be adopted in low- and middle-income settings.

SUMMARY

Health systems worldwide face unprecedented challenges in responding to the increasing complexity of health care. Systems that were capable of providing basic care to populations for whom diseases were either simple or complex but self-limiting confront a fatal struggle to keep up with the increasing opportunities that modern science has provided. The challenge is especially great for health systems in low- and middle-income countries because the global community is no longer willing to sit back while millions of people die from treatable diseases such as malaria and tuberculosis and fail to receive life-prolonging therapies for AIDS. As a consequence, some of the resources, primarily pharmaceuticals, are being made available to those who need them. However, the challenge that health systems face is not simply a lack of money to purchase pharmaceuticals; effective management systems are requisite as well to create the infrastructure to identify those in need, establish appropriate treatments, and ensure provision of these treatments as long as necessary. Emerging challenges must be identified, and the necessary resources to deal with them must be brought together and applied effectively.

Many countries have a clear need to invest in the development of human resources. Although in many cases this investment will require new and wide-ranging human resource strategies involving training, career progression, and retention, there seems to be scope for rapid gains from some shorter forms of training, particularly, in communications skills. Although the evidence for the effectiveness of current models of management strengthening is somewhat mixed, gains may be realized by identifying and filling key gaps, such as those in financial expertise. Changing the skill mix can do much to match available skills to tasks.

Much also can be done to manage the capital stock better or, in most cases, to manage it at all. For example, mechanisms such as capital charging can focus greater management attention on this issue, although this will work only if sufficient capacity can be focused. Important gains can be made from better management of pharmaceuticals, an issue of increasing importance because of the new funds made available for their purchase.

Modern health care is based on the growth of knowledge, and it is as important to manage intellectual resources as it is to manage people and equipment. Doing so means investing in a health research strategy that includes the generation, synthesis, and adoption of knowledge.

Finally, it is necessary to bring these resources together optimally, which raises issues of relationships between different levels of the system, between the public and private sectors, and between vertical and horizontal programs. Unfortunately, despite the large amount of rhetoric on these often highly ideological issues, there is surprisingly little research to inform

policy. More than ever, the issue of context specificity reemerges, leading once more to the answer "it depends."

The delivery of optimal health care requires well-developed managerial skills to apply methods that are appropriate for the setting in which they are being applied. However, it also requires governments to provide oversight of their health systems and to anticipate changes and give managers the tools with which to respond to those changes.

REFERENCES

Ageel, A. R., and M. A. Amin. 1997. "Integration of Schistosomiasis-Control Activities into the Primary-Health-Care System in the Gizan Region, Saudi Arabia." *Annals of Tropical Medicine and Parasitology* 91: 907–15.

Aiken, L., J. Sochalski, and E. Lake. 1997. "Studying Outcomes of Organizational Change in Health Services." *Medical Care* 35 (11 Suppl.): NS6–18.

Andreev, E. M., E. Nolte, V. M. Shkolnikov, E. Varavikova, and M. McKee. 2003. "The Evolving Pattern of Avoidable Mortality in Russia." *International Journal of Epidemiology* 32: 437–46.

Anell, A., and H. Barnum. 1998. "The Allocation of Capital and Health Sector Reform." In *Critical Challenges for Health Care Reform in Europe,* ed. R. B. Saltman, J. Figueras, and C. Sakellarides, 179–96. Buckingham, U.K.: Open University Press.

Arrow, K. 1963. "Uncertainty and the Welfare Economics of Medical Care." *American Economic Review* 53: 941–73.

Barnett, E., and S. Ndeki. 1992. "Action-Based Learning to Improve District Management: A Case Study from Tanzania." *International Journal of Health Plan Management* 7: 299–308.

Baumol, W., J. Panzar, and R. Willig. 1982. *Contestable Markets and the Theory of Industrial Structure.* New York: Harcourt Brace Jovanovich.

Bergman, H., F. Beland, and A. Perrault. 2002. "The Global Challenge of Understanding and Meeting the Needs of the Frail Older Population." *Aging Clinical and Experimental Research* 14: 223–25.

Berman, P. 2000. "Organization of Ambulatory Care Provision: A Critical Determinant of Health System Performance in Developing Countries." *Bulletin of the World Health Organization* 78: 791–802.

Bitran, R. 1995. "Efficiency and Quality in the Public and Private Sectors in Senegal." *Health Policy and Planning* 10: 271–83.

Bradley, D. J. 1998. "The Particular and the General: Issues of Specificity and Verticality in the History of Malaria Control." *Parassitologia* 40: 5–10.

Briggs, C. J., P. Capdegelle, and P. Garner. 2001. "Strategies for Integrating Primary Health Services in Middle- and Low-Income Countries: Effects on Performance, Costs, and Patient Outcomes." *Cochrane Database of Systematic Reviews* (4): CD003318.

Cassels, A., and K. Janovsky. 1995. *Strengthening Health Management in Districts and Provinces.* Geneva: World Health Organization.

Collins, D., G. Njeru, J. Meme, and W. Newbrander. 1999. "Hospital Autonomy: The Experience of Kenyatta National Hospital." *International Journal of Health Planning and Management* 14: 129–53.

Conn, C. P., P. Jenkins, and S. O. Touray. 1996. "Strengthening Health Management: Experience of District Teams in The Gambia." *Health Policy and Planning* 11: 64–71.

Connor, C. A., C. C. Wright, and C. D. Fegan. 2002. "The Safety and Effectiveness of a Nurse-Led Anticoagulant Service." *Journal of Advanced Nursing* 38: 407–15.

Coura Filho, P., R. S. Rocha, E. De Lima, M. F. Costa, and N. Katz. 1992. "A Municipal Level Approach to the Management of Schistosomiasis Control in Peri-Peri, MG, Brazil." *Revisto do Instituto de Medicina Tropical de São Paulo* 34: 543–48.

Davis, D., M. Thomson, A. Oxman, and R. Haynes. 1995. "Changing Physician Performance. A Systematic Review of the Effect of Continuing Medical Education Strategies." *Journal of the American Medical Association* 274: 700–05.

de Soto, H. 2000. *The Mystery of Capital: Why Capitalism Succeeds in the West and Fails Everywhere Else.* Boulder CO: Basic Books.

England, R. 2000. *Contracting and Performance Management in the Health Sector: A Guide for Low and Middle Income Countries.* London: Department for International Development Health Systems Resource Centre.

Ensor, T., and B. Amannyazova. 2000. "Use of Business Planning Methods to Monitor Global Health Budgets in Turkmenistan." *Bulletin of the World Health Organization* 78: 1045–53.

Enthoven, A. C. 1985. *Reflections on the Management of the National Health Service.* London: Nuffield Provincial Hospitals Trust.

Evans, R. G. 1997. "Health Care Reform: Who's Selling the Market, and Why?" *Journal of Public Health Medicine* 19: 45–49.

Farmer, P., L. Reichman, and M. Iseman. 1999. *The Global Impact of Drug Resistant Tuberculosis.* Boston, MA: Harvard Medical School and Open Society Institute.

Faxelid, E., B. M. Ahlberg, S. Freudenthal, J. Ndulo, and I. Krantz. 1997. "Quality of STD Care in Zambia: Impact of Training in STD Management." *International Journal for Quality in Health Care* 9: 361–66.

Fayol, H. 1949. *General and Industrial Management.* Translated from the original, *Administration Industriele et Générale,* 1916. London: Pitman.

Ferlie, E., and S. Shortell. 2001. "Improving the Quality of Health Care in the United Kingdom and the United States: A Framework for Change." *Milbank Quarterly* 79: 281–315.

Few, R., and T. Harpham. 2003. "Urban Primary Health Care in Africa: A Comparative Analysis of City-Wide Public Sector Projects in Lusaka and Dar es Salaam." *Health and Place* 9: 45–53.

Foster, S. 1991. "Supply and Use of Essential Drugs in Sub-Saharan Africa: Some Issues and Possible Solutions." *Social Science and Medicine* 32: 1201–18.

Garraoui, A., P. Le Feuvre, and M. Ledoux. 1999. "Introducing Management Principles into the Supply and Distribution of Medicines in Tunisia." *Bulletin of the World Health Organization* 77: 525–29.

Gilson, L. 1995. "Management and Health Care Reform in Sub-Saharan Africa." *Social Science and Medicine* 40: 695–710.

Griffiths, R. 1984. *National Health Service Management Inquiry Report.* London: Department of Health and Social Security.

Hanson, K., L. Atuyambe, J. Kamwanga, B. McPake, O. Mungule, and F. Ssengooba. 2002. "Towards Improving Hospital Performance in Uganda and Zambia: Reflections and Opportunities for Autonomy." *Health Policy* 61: 73–94.

Hanson, K., M. K. Ranson, V. Oliveira-Cruz, and A. Mills. 2003. "Expanding Access to Priority Health Interventions: A Framework for Understanding the Constraints to Scaling Up." *Journal of International Development* 15: 1–14.

Harrison, S., and C. Pollitt. 1994. *Controlling Health Professionals.* Buckingham, U.K.: Open University Press.

Hawkins, L., and C. Ham. 2003. "Reviewing the Case Studies: Tentative Lessons and Hypotheses for Future Testing." In *Innovations in Health Service Delivery: The Corporatization of Public Hospitals,* ed. A. S. Preker and A. L. Harding. Washington, DC: World Bank.

Heald, D., and D. Scott. 1996. "Assessing Capital Charging in the National Health Service." *Financial Accountability and Management* 12: 225–44.

Healy, J., and M. McKee. 2002a. "Implementing Hospital Reform in Central and Eastern Europe." *Health Policy* 61: 1–19.

———. "The Role and Function of Hospitals." In *Hospitals in a Changing Europe,* ed. M. McKee and J. Healy, 59–80. Buckingham, U.K.: Open University Press.

Helander, E. 2000. "25 Years of Community-Based Rehabilitation." *Asia Pacific Disability Rehabilitation Journal* 11: 4–9.

Hood, C. 1991. "A Public Management for All Seasons." *Public Administration* 69: 3–19.

Hussein, R., and S. Al-Junid. 2003. "Corporatization of a Single Facility: Reforming the Malaysian National Heart Institute." In *Innovations in Health Service Delivery: The Corporatization of Public Hospitals,* ed. A. S. Preker and A. L. Harding. Washington, DC: World Bank.

Institute of Medicine. 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: Institute of Medicine.

Jakab, M., and A. S. Preker. 2003. "The Missing Link? Hospital Reform in Transition Economies." In *Innovations in Health Service Delivery: The Corporatization of Public Hospitals,* ed. A. S. Preker and A. Harding. Washington, DC: World Bank.

Johri, M., F. Beland, and H. Bergman. 2003. "International Experiments in Integrated Care for the Elderly: A Synthesis of the Evidence." *International Journal of Geriatric Psychiatry* 18: 222–35.

Kanji, N., P. Kilima, N. Lorenz, and P. Garner. 1995. "Quality of Primary Outpatient Services in Dar-es-Salaam: A Comparison of Government and Voluntary Providers." *Health Policy and Planning* 10: 186–90.

Kanlisi, N. 1991. "Strengthening District Health Teams in Ghana: The Experience of Ejisu District." *Tropical Doctor* 21: 98–100.

Kinzett, S., and J. Bates. 2000. *Bangladesh: Contraceptive Logistics System, Review of Accomplishments and Lessons Learned.* Arlington, VA: Family Planning Logistics Management and John Snow Inc.

Krause, G., J. Benzler, R. Heinmuller, M. Borchert, E. Koob, K. Ouattara, and H. J. Diesfeld. 1998. "Performance of Village Pharmacies and Patient Compliance after Implementation of Essential Drug Programme in Rural Burkina Faso." *Health Policy and Planning* 13: 159–66.

Kwon, S. 2003. "Pharmaceutical Reform and Physician Strikes in Korea: Separation of Drug Prescribing and Dispensing." *Social Science and Medicine* 57: 529–38.

Le Grand, A., H. V. Hogerzeil, and F. M. Haaijer-Ruskamp. 1999. "Intervention Research in Rational Use of Drugs: A Review." *Health Policy and Planning* 14 (2): 89–102.

Le Grand, J., and W. Bartlett. 1993. *Quasi-Markets and Social Policy.* London: Palgrave Macmillan.

Levy-Bruhl, D., A. Soucat, R. Osseni, J. M. Ndiaye, B. Dieng, X. De Bethune, and others. 1997. "The Bamako Initiative in Benin and Guinea: Improving the Effectiveness of Primary Health Care." *International Journal of Health Planning and Management* 12 (Suppl. 1): S49–79.

Litwin, H., and E. Lightman. 1996. "The Development of Community Care Policy for the Elderly: A Comparative Perspective." *International Journal of Health Services* 26: 691–708.

Maynard, A. 1998. "Competition and Quality: Rhetoric and Reality." *International Journal for Quality in Health Care* 10: 379–84.

McKee, M., and H. Brand. 2005. "Purchasing to Promote Population Health." In *Effective Purchasing for Health Gain,* ed. J. Figueras, R. Robinson, and E. Jakubowski, 140–63. Buckingham, U.K.: Open University Press.

McKee, M., and J. Healy. 2000. "The Role of the Hospital in a Changing Environment." *Bulletin of the World Health Organization* 78: 803–10.

———. 2001. "The Changing Role of the Hospital in Europe: Causes and Consequences." *Clinical Medicine,* 1: 299–304.

McKee, M., and E. Nolte. 2004. "Responding to the Challenge of Chronic Disease: Ideas from Europe." *Clinical Medicine* 4: 336–42.

McPake, B. 1996. "Public Autonomous Hospitals in Sub-Saharan Africa: Trends and Issues." *Health Policy* 35: 155–77.

McPake, B., and E. E. Banda. 1994. "Contracting Out of Health Services in Developing Countries." *Health Policy and Planning* 9: 25–30.

McPake, B., and C. Hongoro. 1995. "Contracting Out of Clinical Services in Zimbabwe." *Social Science and Medicine* 41: 13–24.

Mehotra, S. 2000. "Integrating Economic and Social Policy: Good Practices from High Achieving Countries." Innocenti Working Paper 80, UNICEF Innocenti Research Centre, Florence, Italy.

Mills, A., C. Hongoro, and J. Broomberg. 1997. "Improving the Efficiency of District Hospitals: Is Contracting an Option?" *Tropical Medicine and International Health* 2: 116–26.

Mossialos, E., M. Mrazek, and T. Walley. 2004. *Regulating Pharmaceuticals in Europe: Striving for Efficiency, Equity, and Quality.* Buckingham, U.K.: Open University Press.

Nabiswa, A. K., J. D. Makokha, and R. C. Godfrey. 1993. "Malaria: Impact of a Standardized Protocol on Inpatient Management." *Tropical Doctor* 23: 25–26.

OECD (Organisation for Economic Co-Operation and Development). 2003. *OECD Health Data.* Paris: OECD.

Oliveira-Cruz, V., K. Hanson, and A. Mills. 2003. "Approaches to Overcoming Constraints to Effective Health Service Delivery: A Review of the Evidence." *Journal of International Development* 15: 41–65.

Oliveira-Cruz, V., C. Kurowski, and A. Mills. 2003. "Delivery of Priority Health Services: Searching for Synergies with the Vertical versus Horizontal Debate." *Journal of International Development* 15: 67–86.

Pang, T., R. Sadana, S. Hanney, Z. A. Bhutta, A. A. Hyder, and J. Simon. 2003. "Knowledge for Better Health: A Conceptual Framework and Foundation for Health Research Systems." *Bulletin of the World Health Organization* 81: 815–20.

Petrova, G. I. 2002. "Prescription Patterns Analysis—Variations among Bulgaria, Romania, Macedonia, and Bosnia Herzegovina." *Central European Journal of Public Health* 10 (3): 100–03.

Preker, A. S., A. Harding, and P. Travis. 2000. "'Make or Buy' Decisions in the Production of Health Care Goods and Services: New Insights from Institutional Economics and Organizational Theory." *Bulletin of the World Health Organization* 78: 779–90.

Quick, J. D. 1997. *Managing Drug Supply: The Selection, Procurement, Distribution, and Use of Pharmaceuticals.* West Hartford, CT: Kumarian Press.

Shortell, S., C. Bennett, and G. Byck. 1998. "Assessing the Impact of Continuous Quality Improvement on Clinical Practice: What It Will Take to Accelerate Progress." *Milbank Quarterly* 76: 593–624.

Shortell, S. M., and A. D. Kaluzny. 1983. *Health Care Management: A Text in Organisation Theory and Behaviour.* New York: Wiley.

Sibbald, B., J. Shen, and A. McBride. 2004. "Changing the Skill-Mix of the Health Care Workforce." *Journal of Health Services Research and Policy 2004* 9: 28–38.

Stenson, B., G. Tomson, and L. Syhakhang. 1997. "Pharmaceutical Regulation in Context: The Case of Lao People's Democratic Republic." *Health Policy and Planning* 12: 329–40.

Stewart, J. 1998. "Advance or Retreat: From the Traditions of Public Administration to the New Public Management and Beyond." *Public Policy and Administration* 13: 27.

Stromberg, A., J. Martensson, B. Fridlund, L. A. Levin, J. E. Karlsson, and U. Dahlstrom. 2003. "Nurse-Led Heart Failure Clinics Improve Survival and Self-Care Behaviour in Patients with Heart Failure: Results from a Prospective, Randomised Trial." *European Heart Journal* 24: 1014–23.

Vrijhoef, H. J., J. P. Diederiks, and C. Spreeuwenberg. 2000. "Effects on Quality of Care for Patients with NIDDM or COPD When the Specialised Nurse Has a Central Role: A Literature Review." *Patient Education and Counseling* 41: 243–50.

Vrijhoef, H. J., J. P. Diederiks, C. Spreeuwenberg, and B. H. Wolffenbuttel. 2001. "Substitution Model with Central Role for Nurse Specialist Is Justified in the Care for Stable Type 2 Diabetic Outpatients." *Journal of Advanced Nursing* 36 (4): 546–55.

Vrijhoef, H. J., J. P. Diederiks, G. J. Wesseling, C. P. Van Schayck, and C. Spreeuwenberg. 2003. "Undiagnosed Patients and Patients at Risk for COPD in Primary Health Care: Early Detection with the Support of Non-Physicians." *Journal of Clinical Nursing* 12: 366–73.

Waghorn, A., and M. McKee. 2000. "Why Is It So Difficult to Organise an Outpatient Clinic?" *Journal of Health Services Research and Policy* 5: 140–47.

WHO (World Health Organization). 1985. "The Rational Use of Drugs: Review of Major Issues." Paper prepared for the Conference of Experts on the Rational Use of Drugs, Nairobi, Kenya, November 25–29.

———. 2000. *World Health Report 2000: Health Systems: Improving Performance*. Geneva: WHO.

———. 2001. *Innovative Care for Chronic Conditions*. Geneva: WHO.

———. 2002. *Community Home-Based Care in Resource-Limited Settings: A Framework for Action*. Geneva: WHO.

Yip, W., and W. Hsiao. 2003. "Autonomizing a Hospital System: Corporate Control by Central Authorities in Hong Kong." In *Innovations in Health Service Delivery: The Corporatization of Public Hospitals*, ed. A. S. Preker and A. L. Harding. Washington, DC: World Bank.