

# “Make or buy” decisions in the production of health care goods and services: new insights from institutional economics and organizational theory

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A central theme of recent health care reforms has been a redefinition of the roles of the state and private providers. With a view to helping governments to arrive at more rational “make or buy” decisions on health care goods and services, we propose a conceptual framework in which a combination of institutional economics and organizational theory is used to examine the core production activities in the health sector. Empirical evidence from actual production modalities is also taken into consideration. We conclude that most inputs for the health sector, with the exception of human resources and knowledge, can be efficiently produced by and bought from the private sector. In the health services of low-income countries most dispersed production forms, e.g. ambulatory care, are already provided by the private sector (non-profit and for-profit). These valuable resources are often ignored by the public sector. The problems of measurability and contestability associated with expensive, complex and concentrated production forms such as hospital care require a stronger regulatory environment and skilled contracting mechanisms before governments can rely on obtaining these services from the private sector. Subsidiary activities within the production process can often be unbundled and outsourced.

**Keywords:** delivery of health care, methods; public sector; private sector; outcome and process assessment, health care; decision-making, methods; models, economic; models, organizational.

*Voir page 788 le résumé en français. En la página 788 figura un resumen en español.*

## Public and private roles in the health sector

Economic theory and empirical evidence provide ample justification for significant engagement by the state (1) in tackling problems of both equity (2–6) and efficiency (7–9) in the health sector. However, experience during the past two decades has revealed a range of problems in public production (10, 11) which have parallels with well-known market imperfections in the private sector (12–15). These problems relate, among other things, to public accountability (16), informational asymmetry (17), abuse of monopoly power and failure of strategic policy formulation, and there are clear parallels in market failure (18).

There is an urgent need to reform inefficient and bloated bureaucracies (19–22) by exposing public services to competitive market forces (23), reducing the size of the public sector (24, 25) and

increasing private sector participation (26–29). A better match is desirable between the roles of the state and the private sector and their respective capabilities (30). In most countries this means rebalancing what is already a complex mix of public and private roles in the health sector (31).

Using a framework based on recent developments in institutional economics and organizational theory, we argue for greater private participation in the generation of inputs and the provision of health services (32, 33). We also stress the importance of a strong stewardship function of governments in securing equity, efficiency and quality objectives through more effective policy-making and financing (34).

## Theoretical underpinnings for a contracting framework

The current tendency is to use at least one of three approaches in order to deal with public sector failure in the generation of inputs and the provision of health services. These approaches, indicated below in descending order of strength, involve:

- exit possibilities (market forces through consumer choice);
- voice (client participation);
- loyalty (hierarchical sense of responsibility) (35).

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Exit should be used unless the weaker variants have to be employed because the goods and services involved are not marketable. Exit options can be implemented in parallel with other public sector management reforms that increase voice and loyalty.

### From neoclassical economics...

One of the central tenets of neoclassical economics is that competitive forces in an optimally functioning market lead to a more efficient allocation of resources than command economy or non-market solutions. Neoclassical economic theory shows that, if certain conditions are met, competition produces an equilibrium in which it is impossible to make someone better off without making someone else worse off.

The neoclassical model categorizes goods and services as private, mixed or public. Private goods exhibit excludability (consumption by one individual prevents consumption by another; there are no positive or negative externalities), rivalry (there is competition among goods based on price), and rejectability (individuals can choose to forgo consumption). True public goods have significant elements of non-excludability, non-rivalry, and non-rejectability. Mixed goods have some but not all of the characteristics of private goods (Fig. 1).

According to neoclassical theory a breakdown occurs in both efficiency and equity when public goods or services with significant externalities are allocated through competitive markets. Even public goods can be sold in private markets but usually this leads to suboptimal quantity, quality or price, thereby creating a strong justification for collective action. Likewise, significant problems occur in efficiency and equity when private goods are produced or provided by a public sector monopoly (23).

The perfectly competitive Walrasian model assumes that:

- the goods involved behave like true private goods (i.e. there is excludability, rivalry and rejectability);

- rights can be perfectly delineated;
- there are no transaction costs.

Applying this to the health sector reveals that most health care goods and services have some degree of excludability, rivalry and rejectability. However, rights are often difficult to delineate, leaving multiple residual claimants. Furthermore, transaction costs are often high. Even many health activities that generate significant externalities, such as sanitation services, the control and prevention of communicable diseases, health promotion, research and professional education, are not pure public goods. For example, a vaccine given to one patient cannot simultaneously be consumed by another patient. Patients can choose not to be vaccinated, and vaccination programmes may compete for market share.

Unfortunately, consumption characteristics alone hardly ever indicate anything about the specific production processes that ensure technical efficiency. Although the neoclassical framework provides a robust test to justify the need for stewardship and financing, it does not help us understand the optimal organizational arrangements for service production, being essentially institution-free (36). It does not help to answer the following critical question facing policy-makers. When a decision has been taken to finance certain items, should the public sector make or buy them?

### ... to institutional economics and organizational theory

Much progress has been made in identifying the key factors causing wide variations in the performances of organizations. The developments most relevant to understanding the advantages and disadvantages of different arrangements for service delivery derive from principal/agent theory, transaction cost economics, property rights and public choice theory. These fields, often categorized as institutional economics, deal with considerations of information, motivation and innovation and the implications for the best possible organization of productive activity. Institutional economics is directly concerned with creating the best possible structures for organizations that consist of individuals pursuing multiple and often conflicting interests (37).

**Agency theory.** This framework shows that social and political objectives may be more readily achieved through a series of explicit and transparent contracts for labour and services between an agent and a principal. The agent undertakes to perform various tasks for the principal, in exchange for a mutually agreed award. The principal usually needs the efforts and expertise of the agent but has limited ability to monitor the agent's actions or evaluate whether the outcome is satisfactory. On such matters as payment and monitoring arrangements, the agency literature surveys the range of contracts observed in the economy with respect to incentives and cooperation among self-interested but interdependent individuals

Fig. 1. The nature of goods based on neoclassical economics

Properties	Nature of economic good		
	Public	Mixed	Private
Excludability	--	±	+
Rivalry	--	±	+
Rejectability	--	±	+

<p><b>Consumers' protection</b></p> <p>Policy-making Regulations Setting standards Quality control</p>	<p><b>Consumption goods</b></p> <p>Medical clinics Hospitals Medical suppliers Pharmaceuticals</p>
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(38). Several studies have generalized the agency insight from the employment context to the full range of relationships that make up the firm, now conceptualized as a nexus of many contracts (39, 40). The need for incentive alignment is pervasive in the health sector: the relationships between patient and physician or governments and contracting agencies are classical examples of the principal/agent structure.

**Transaction cost economics.** Transaction cost economics emphasizes the limitations of contracts and the need for flexible means of coordinating activities. Principals and agents are both opportunistic. Agents seek to minimize aggregate production and transaction costs and to maximize their benefits. Unless closely monitored, agents may be unreliable, engaging in behaviour such as rent-seeking, cheating, breach of contract and incomplete disclosure. Principals may try to maximize their benefits to such an extent that the relationship could become unviable for the agent. The degree of such opportunism varies considerably from country to country and from one cultural setting to another. In some settings, such as monopolistic national health services, opportunism may be less apparent than in other settings where providers are more in the habit of competing with each other. Opportunism may appear to be relatively pronounced in some countries, e.g. Chile, India, and the USA. In others, e.g. Costa Rica, New Zealand, the Scandinavian countries, Sri Lanka, and the United Kingdom, there is good evidence that principal/agent relationships within the national health services are vulnerable to opportunistic behaviour.

This theory sheds most light on firm boundaries and the conditions under which it is better to arrange activities within a hierarchy rather than interacting in a market with suppliers or other contractors. More generally, vertically integrated organizations, simple spot contracts, franchises or joint ventures are interpreted as discrete structural alternatives, each offering different advantages and disadvantages for effective governance (41). Governance arrangements are evaluated by comparing the patterns of costs generated for planning, adapting and monitoring production and exchange (42, 43).

Unlike public organizations, private firms have the flexibility, indeed the requirement, to adjust their governance structure to changes in the market environment. This makes them fruitful sources of better practices for governance arrangements. Public agencies that have tried adjusting public organizations to changes in the market environment have often encountered problems with underlying incentive structures and their sustainability. This has happened in relation to the formation of National Health Service Trusts in the United Kingdom, the establishment of the Hospitals Authority in Hong Kong, and the corporatization of publicly owned hospitals in New Zealand. Major policy reversals in New Zealand and the United Kingdom have added weight to the argument that it would have been better

to privatize than to settle for the imperfect middle ground of public sector corporatization.

Thus, for example, vertically integrated organization, i.e. within a firm, arises as a response to problems with market contracting. The firm substitutes low-powered incentives, like salaried employment, for the high-powered market incentives of profit and loss. Vertical integration, i.e. unified ownership, permits details of future relations between suppliers (including employees), producers and distributors to remain unspecified; differences can be adjudicated as events unfold. It pools the risks and rewards of various activities undertaken by the organization, and can facilitate the sharing of information, the pursuit of innovation, and a culture of cooperation.

Notwithstanding these positive features, vertical integration suffers from characteristic weaknesses as a mechanism of governance. The two most prominent are the weakening of incentives for productivity and the proliferation of influence activities (see Box 1). Weak incentives arise when people obtain shrinking gains from their own efforts as rewards and losses are spread throughout an organization. From the standpoint of transaction cost economics, vertical integration is seen as the governance mechanism of last resort, even though the focus is on the contracting problems that motivate internal organization. Even in the many instances where policy objectives imply that spot market transactions are undesirable, unified ownership arrangements are outperformed by contractual networks, virtual integration, franchising or concessioning.

**Property rights theory.** Property rights theorists have attempted to find out why private ownership appears to have strong positive incentives for efficiency. Explanations have focused on the possession of residual decision rights and the allocation of residual returns (45). Residual rights of control are the rights to make any decisions regarding an asset's use not explicitly contracted by law or assigned to another by contract. The owner of an asset usually holds these

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#### Box 1. Influence activities

An important issue related to moral hazard and the structure of organizations is that of influence activities and the associated costs, known as influence costs (44). Recent analysis has shed much light on the propensity of publicly owned service delivery organizations to capture inordinate portions of the sector budget, as well as their ability to influence sector policy to their benefit, often against the public interest.

In the health sector, provider organizations try to gain advantages by affecting decisions on the distribution of resources or other benefits among providers. Such influence activities occur in all organizations, but countervailing forces are particularly weak in public service delivery structures. Influence costs are one of the most important costs of centralized control. Evidence of such activities in the health sector is seen in the tendency to allocate resources to tertiary and curative care at the expense of primary, preventive and public health activities.

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rights, although the owner or the law may allocate many rights to others. The notion of ownership as residual control is relatively clear for a simple asset like a motor car. It gets much more complicated when applied to an organization such as a firm. Large organizations bundle together many assets, and it may be unclear who has specific decision rights. In addition to residual decision rights, owners hold the rights to residual revenue flows from their assets. In other words, owners have the right to whatever revenue remains after all funds have been collected, and all debts, expenses and other contractual obligations have been met.

**Political choice theory.** This field focuses on the self-interested behaviour of politicians, interest groups and bureaucrats, and studies the implications for effective government and the size of government. Individuals are viewed as rational utility maximizers. Bureaucrats, attempting to maximize their budgets, acquire an increasing share of national income. As a result the state grows well beyond what is needed for the delivery of its core functions. Powerful interest groups capture increasing portions of resources. Institutional rigidities develop which reduce economic growth (46).

This analysis has led public choice theorists to support conservative political agendas which minimize the role of the state.

### Towards a new understanding of the production characteristics of goods and services

The principles of institutional economics lead to a much more refined and useful understanding of the different kinds institutional arrangements required for the efficient and effective production of goods and services. A model can be developed on the basis of two characteristics of goods, namely contestability and measurability (Box 2) (47).

### The contestability and measurability matrix

It is possible to categorize all health care goods and services on a matrix along a continuum ranging from high contestability and high measurability to low contestability, low measurability and significant informational asymmetry. The following discussion refers mainly to curative services and public health services, although the analysis could be extended to some of the broader intersectoral determinants of good health, such as water, sanitation, education, healthy life-style policies and good nutrition.

### Production characteristics of inputs (factor markets)

The contestability and measurability matrix for the production of inputs would be as indicated in Fig. 2.

The production of consumable items and the retailing of drugs, medical supplies and other

consumables would be the best example of highly contestable goods where outputs are also easy to measure (Type I). There are usually many companies jostling for a share of the market and few barriers to entry. The initial investment capital is modest and there are few requirements for specialized licensing or skills. Unskilled labour also belongs in this category.

As we move across the first row in Fig. 2 a number of factors begin contributing to increasing barriers to entry, thereby reducing the contestability of the goods or services in question (Type II). Investment cost (sunk cost) and increasing technical specifications create moderate barriers to entry in the manufacturing of specialized equipment and supplies. The wholesaling of drugs, medical supplies and medical equipment encounters some barriers to entry because of larger investment requirements and more limited supply and distribution chains. The specialization and licensing of pharmacists contribute to these entry barriers. In the case of small capital stock, such as clinics and diagnostic centres, entry barriers are mainly created through certification and licensing.

On moving across to Type III activities, e.g. the production of pharmaceuticals and high-technology medical equipment, barriers to entry are much greater because of large initial investment costs that cannot be recovered later when assets are sold (sunk costs). These production activities are also associated with costly and long lead times needed for research, development and the registration of new products.

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#### Box 2. Contestability and measurability

A market can be said to be perfectly contestable if firms can enter it freely (without any resistance from other firms) and subsequently leave it without losing any investments, while having equal access to technology (no asset specificity) (48–51). Contestability allows competition for the market to substitute for competition in the market.

Contestable goods are characterized by low barriers to entry and exit from the market, whereas non-contestable goods have high barriers such as "sunk cost", monopoly market power, geographical advantages and asset specificity. Investments in specific assets represent a sunk cost since their value cannot be recovered elsewhere (52). Two specific assets that are of particular importance in the health sector are expertise and reputation. Once incumbents have invested in activities that result in expertise or generate trust, they enjoy a significant barrier to entry for other potential suppliers, thereby lowering the degree of contestability. Opportunism, on the other hand, lowers such trust or barriers to entry. The degree of such opportunism varies from one country to another and between different cultural settings.

Measurability in the health sector, as in other sectors, is the precision with which inputs, processes, outputs and outcomes of particular goods or services can be measured. It is difficult to measure with precision the output and outcome of health services, which are characterized by informational asymmetry – the highly variable extent to which information about the performance of a given activity is available to users, beneficiaries or contracting purchasing agencies.

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Other barriers to entry in this category include product differentiation (specialized medical equipment) and copyright protection (drugs with brand names). Furthermore, the benefits arising from economies of scope and scale have resulted in a significant global concentration of pharmaceutical and high-technology industries, giving them considerable monopoly power. For all the activities in the first row (Type I to Type III) the measurability of outputs remains high and there is little informational asymmetry.

On descending to the second row the measurement of outputs and outcomes becomes more problematic, although it is possible. Various barriers to entry reduce contestability. Training is almost always associated with special licensing and long lead times (Type V). The specialized labour market is usually associated with many professional barriers and consequent restrictions in the scope of practice and labour mobility. Contestability is even lower in Type VI. Most research and other knowledge-generating activities belong in this category, as does the training of specialized staff in universities and other higher education centres.

There are no good examples of inputs for the health sector that would fit in the last row with significant informational asymmetry in addition to measurement problems.

### Production characteristics of outputs (product markets)

It is also possible to categorize interventions and services along a similar continuum ranging from high contestability and high measurability to low contestability, low measurability and significant information asymmetry (Fig. 3). Whereas reduced contestability attributable to market concentration is one of the main problems encountered in factor markets (production of inputs), a key problem with interventions and other outputs (product markets) has to do with difficulties in specifying and measuring outputs and outcomes.

The measurement of outputs and outcomes becomes more problematic for Type IV, Type V and Type VI. Although routine diagnostic procedures, e.g. laboratory tests, may be highly contestable (there being many players in a competitive market with few barriers to entry), monitoring their performance in terms of effectiveness and quality of the activities undertaken is much harder (Type IV). The same is true for various non-clinical hospital activities.

In Type V, contestability is reduced by various barriers to entry. Diagnostics involving high technology usually requires specialization, licensing and large sunk costs, giving existing players a marked advantage over new entrants. A further barrier to entry for these activities would be government policies controlling or restricting the introduction of some new technologies (computerized tomography or nuclear magnetic resonance scanners). The outsourcing of clinical interventions usually involves the use of certified providers. In all of these cases the measurement of

Fig. 2. Production characteristics of inputs (factor markets)

	High contestability	Medium contestability	Low contestability
High Measurability	Type I Production of consumables Retail Drugs & equipment Other consumables Unskilled labour	Type II Production of equipment Wholesale Drugs & equipment Other consumables Small capital stock	Type III Production Pharmaceuticals High technology equipment Large capital stock
Medium Measurability	Type IV	Type V Basic training Skilled labour	Type VI Research Knowledge Higher education High education Highly skilled labour
Low Measurability	Type VII	Type VIII	Type IX

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Fig. 3. Production characteristics of outputs (product markets)

	High contestability	Medium contestability	Low contestability
High Measurability	Type I	Type II	Type III
Medium Measurability	Type IV Non clinical activities Management support Laundry & catering Routine diagnostics	Type V Clinical interventions High technology diagnostics	Type VI
Low Measurability	Type VII Ambulatory care medical nursing dental	Type VIII Public health interventions Intersectoral action In-patient care	Type IX Policy-making Monitoring/evaluation

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outputs and outcomes is possible but more difficult than in the case of activities in the first row.

In addition to difficulties in measuring output and outcomes, most clinical interventions are constrained by informational asymmetry. Information may be readily apparent to patients, e.g. concerning the quality of hospital services with respect to privacy, the courtesy of clinical staff, the length of waiting periods, the cleanliness of bed sheets, the taste of food, and other matters. However, in the absence of survey techniques such information may not be readily available to contracting policy-makers or administrative staff.

For these reasons, ambulatory clinical care would fall in Type VII with relatively low barriers to entry other than professional qualifications/certification of staff, but with high informational asymmetry and difficulties in the measurement of outputs and outcomes. On moving across the third row, contestability diminishes due to specialization and cost, in addition to measurement problems. Consequently, public health interventions, intersectoral action programmes and inpatient clinical care are Type VIII activities.

This leaves a few distinct activities such as policy-making, monitoring and evaluation in the Type IX category. The contestability and measurability of these activities are extremely low, and they are therefore usually retained as a core part of an integrated bureaucracy.

## “Make or buy” decision grid

### Prioritize

In many countries, “make or buy” decisions are made before policy-makers and providers have gone through a process of explicit prioritization about the range of interventions to be financed through public resources (including preventive services) and of ensuring that public subsidies are appropriately targeted (e.g. on the poor and other vulnerable groups) (53). Countries often make hasty “make or buy” decisions before prioritizing interventions that are needed and affordable. Such prioritization is complicated by the fact that the costs of treating different illnesses vary greatly and often bear little relation to the effectiveness of available interventions (54). Furthermore, there may be a range of activities for which information disclosure and coordination through a strong stewardship function is sufficient.

### Decide who can produce what

On the above basis it becomes easy to map the goods and services that can be bought or for which coordination is adequate, and those that are better produced in house by the public sector itself (Fig. 4). The size of the “make” in-house production triangle depends largely on the effectiveness of policy instruments for dealing with problems of contestability and measurability.

### Decide whom to buy from and how

Once “make or buy” options have been settled it is necessary to decide:

- whom to buy from;
- how to structure purchases.

### Whom to buy from

- All possible producers should be considered (public, nongovernmental and private-for-profit; domestic and international).
- Purchasing decisions should be based on considerations of the best products at the lowest prices responsive to specific needs: type of goods, price, quantity, after-acquisition support, timeliness, and so on (international competitive bidding should be considered if possible).
- If there is no market, consideration should be given to stimulating demand rather than in-house production.
- If contestability is low and there is no competitive market, consideration should be given to using benchmark purchasing based on estimated reference costs over which suppliers have to compete for the market rather than in it.
- If there is a dysfunctional market, consideration should be given to improving its function through appropriate strategic subsidies or anti-trust regulations.

### How to buy

The contractual arrangement most suitable for a given purchase should be chosen: spot market for unpredictable items, medium-term supply contract for predictable items, franchise arrangements for standardized needs at multiple locations, and relational contracts for purchases that are difficult to monitor (55).

If a decision has been taken to buy, it is important that all potential producers are treated in the same way. Among other things this means ensuring that there are no hidden competitive advantages such as tax concessions, access to subsidized capital, or privileged access to information.

## Policy levers for enhancing “make or buy” decisions

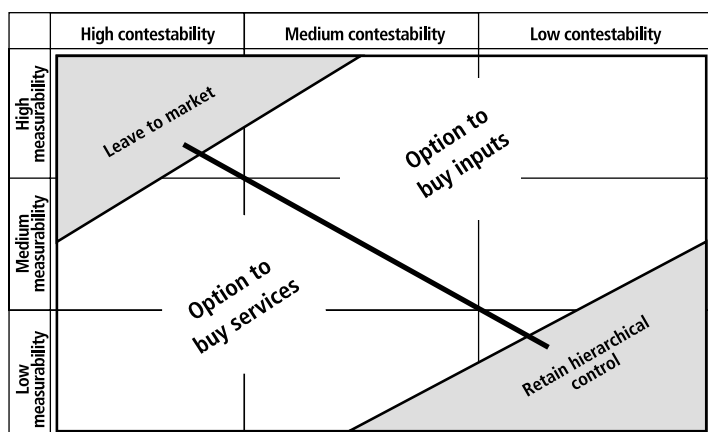
Clearly, most goods and services have some degree of market imperfection in terms of reduced contestability and measurability. Governments have various instruments that can be used to deal with this situation. In order of increasing intrusiveness, some of them are:

- requiring information disclosure;
- introducing regulations;
- contracting for services;
- providing subsidies or direct financing;
- public production.

### Standard instruments of governments

**Factor markets.** For some inputs – the production of consumables, unskilled labour, and the retailing of drugs, medical equipment and consumables – there are few serious market imperfections such as reduced contestability and low measurability (upper left corner of the matrix in Fig. 5). With minimal

Fig. 4. “Make or buy” decision grid



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government intervention, e.g. requiring good information disclosure and some quality or safety standards, competitive markets are best at producing these inputs, the public production of which usually leads to low quality, lack of innovation, and inefficient production modalities.

At the other extreme, the training of very specialized labour and the generation of knowledge about rare health conditions and their treatment is characterized by considerable market imperfections because of low contestability and reduced measurability. A mix of strong regulation and in-house production is often needed to ensure adequate generation of these inputs.

Most other inputs can be bought. Markets, however, often give wrong signals about the level (i.e. surpluses and shortages), mix and distribution of these inputs. This is especially true in the case of human resources and the production of pharmaceuticals and medical equipment where the training or development phase is very long. The skilled use of regulations and contracting mechanisms is therefore needed when purchasing such inputs with moderate contestability and measurability problems.

Large producers may try to bring about a severe reduction in contestability by erecting strong barriers to entry through collusion, protective policies (patents and licensing requirements), benchmarking (manufacturing standards), requirements for large sunk costs, and a high degree of specialization (research and development). For these inputs, stronger policy measures may be needed, such as monopsony purchasing power and long-term contracts.

Despite this complex landscape of characteristics of goods, governments could, in many areas of reduced contestability and measurability, achieve most equity, efficiency and quality objectives through regulations and contracting (54, 56).

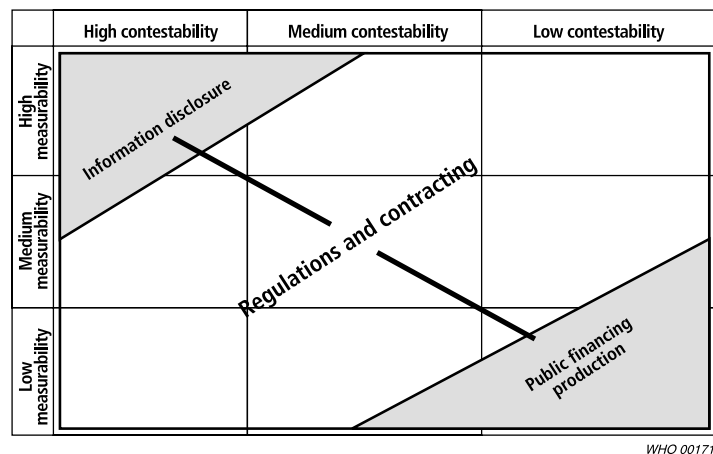
**Product markets.** As in the case of inputs, interventions and other outputs can be contracted out, i.e. purchased, and do not in principle have to be produced in house.

Decisions about which interventions to make in house and which to contract out are complicated by the following factors.

- For some outputs, such as clinical interventions, it is much harder to specify what is to be delivered than is the case with inputs, and this makes it difficult to manage the resulting contracts and prevent opportunistic behaviour among providers. Such behaviour is particularly likely in the field of private health insurance.
- Contestability is often reduced for the same reasons as indicated above for inputs.
- Complex health problems often require strategic coordination among different interventions and other outputs (e.g. integrated care, continuity of care, appropriate and timely referrals).

In the case of outputs, policy-makers have to examine two additional questions before arriving at “make or buy” decisions.

Fig. 5. Policies to deal with reduced contestability and measurability



- Is there a need for a strategic coordinated response?
- To what degree do the goods and services benefit from continuing innovation and adaptability?

For example, non-clinical activities such as custodial services, catering, laundry and management do not require special strategic coordination. They can usually be unbundled and contracted out as standard services to specialist firms without too much customization. In contrast, clinical and public health interventions often have to be coordinated and adapted to the individuals and populations receiving them and the organizations providing them. Experience has shown that unbundling these activities often leads to problems, such as cost shifting, discontinuity of care and poor quality (57, 58).

### Policy levers that are often forgotten

The contestability and measurability of goods and services are not static: they are influenced by elements of the systemic environment. Government policies directly affect this environment and the nature of goods and services, yielding alternative levers to take them closer to or further away from the ability to use the indirect tools of contracting and regulation. These levers include:

- governance, i.e. the relationship between owners (governments) and health care organizations;
- the market environment, i.e. competition in or for markets in goods and services;
- purchasing mechanisms, i.e. funding or payment arrangements for goods or services.

These factors exert a powerful influence on the nature of goods and services, and hence on the ability to ensure delivery through indirect mechanisms.

### Governance and internal incentive regime

Changes made in the relationship between government and organizations, i.e. governance, influence the characteristics of the health care goods and

services in question. This relationship can be modified substantially in five dimensions:

- the rights given to managers to make decisions;
- the residual claimant status;
- the degree of market exposure;
- accountability arrangements;
- the adequacy of subsidies to cover social functions (59).

Contestability may be enhanced by:

- unbundling large bureaucratic structures (modification in governance);
- outsourcing other functions to specialized providers (modification in payment system);
- exposing all public and private actors to the same potential benefits and losses attributable to market exposure (modification in governance and payment system);
- decreasing barriers to entry caused by political interference or unwarranted trust in public production (modification in market structure);
- explicitly separating contestable commercial functions and non-commercial social objectives (modification in governance and stewardship).

Measurability may be enhanced by:

- relying on quantifiable results (output or outcome measures) for accountability and performance targets rather than process (inputs and bureaucratic procedures) (modification in governance and payment system);
- shifting from difficult-to-define long-term relationships (employment or service arrangements) to shorter-term, more specific contractual arrangements (modification in payment system);
- using quantifiable monetary incentives rather than non-monetary incentives, e.g. involving considerations of ethics, ethos and status, which are more difficult to track (modification in payment system);
- tightening reporting, monitoring and accountability mechanisms (modification in governance and payment system).

For example, by removing restrictive government monopolies from vaccination services (governance/market), programmes could be shifted into a Type II or even a Type I position. It is easy to measure the number of children vaccinated or contracting a given disease, and to have moderately low barriers to entry for firms that want to provide such services on behalf of government. Similar action applied to other services could shift many of them from the lower right corner of the grid towards the upper left corner (Fig. 6).

Likewise, through better information on outcome and policies favouring clearly defined contracts, performance benchmarks, and a tightening of reporting, monitoring and accountability mechanisms, it would be possible to shift tertiary and quaternary care provided in universities from a low contestability/measurability position to a medium

position. The same would be true for public health services and public health activities that are often part of the responsibility of ambulatory care providers, e.g. vaccination.

Several factors may also alter the goods characteristics of pharmaceuticals, medical equipment and consumable supplies. Medical equipment or drugs that were highly specialized and very expensive due to development costs, patent protection, and a small market share (Type III goods) only ten years ago, may now behave as ordinary goods (Type I or Type II). Examples include the production of generic drugs by many companies once patent protection expires or the rapid increase in the use of sigmoidoscopes and/or transcutaneous surgical instruments once the technology is no longer new and prices have dropped.

Changes in the characteristics of goods do not occur in only one direction. The properties of goods may become less contestable and more difficult to measure. Organizational reforms do not always lead to increased decision rights, residual claimant status, market exposure, accountability arrangements and explicit subsidies to cover social functions. Many national health systems that were introduced through the nationalization of ownership and production during the past 50 years deliberately shifted goods and services in the opposite direction.

Market imperfections may increase rather than reduce barriers to entry. Doctors, dentists and pharmacists collude to restrict entry by potential competitors. Hospitals have a natural monopoly for their services for patients living nearby, and can create monopoly power through relations with other hospitals and referring doctors. Local medical equipment distributors that represent some of the biggest international companies can easily monopolize domestic markets. Pharmaceutical retailers can control mark-ups through professional cartels. The public and nongovernmental sectors have a competitive advantage over the private sector because of their access to subsidized or free capital from domestic and foreign donors.

## Market environment

One of the central arguments in favour of exposing providers to market forces is that, in a functioning market, competitive forces lead to a more efficient allocation of resources than is the case with command economy or non-market solutions. The structure of the market to which organizations are exposed, therefore, has a critical influence on their behaviour. It may directly determine the strategies to be adopted for the generation of increased revenue.

Policies that influence the competitive environment through regulations or contracting can significantly alter the contestability of health care goods and services. Likewise, informational asymmetry can be reduced by policies that increase the availability of good information on health services, enhance the institutional capacity of health care



providers to deal with such information, and improve patients' understanding of health problems.

Such policies not only address some of the underlying contestability and measurability problems but also shift both the contestability/measurability grid and the boundaries of needed government intervention to ensure favourable outcomes (Fig. 7).

Conversely, in a less competitive environment with weak policies and data for overcoming informational asymmetry the grid for services that fall into the left upper corner (Types I, II and IV) may contract while the grid in the right lower corner (Types VI, VIII and IX) expands.

### Purchasing mechanisms

Provider payment systems influence the properties of goods by interacting with three of the key elements of the internal incentive regime of health care organizations: distribution of residual claims, market exposure and provisions for social functions. Service providers in particular respond differently to alternative funding and payment mechanisms. For example, collective purchasing by a strategic social health insurance fund in Germany sends signals to providers which differ from those associated with regulated competition in the USA, consumer-driven demand through out-of-pocket payments in India, medical savings accounts in Singapore, and monopolistic purchasing in the United Kingdom.

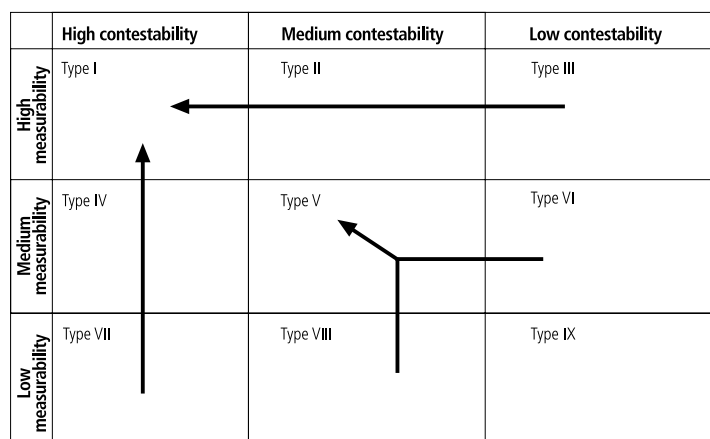
While reforms in governance may endow a given organization with formal claims to residual revenue in different categories, the structure of the payments system directly determines whether the claims have any real meaning or incentive effect. If, for example, services must be delivered at prices below cost there will be no residual revenue to claim. Thus the relationship of costs to the price-setting and capital-charging formula in the payments system is a critical determinant of the incentives of the model. The crucial factor is whether marginal cost-saving efforts by providers can generate revenue flows that they can keep without deterioration in quality or effectiveness.

When reforms to organizations such as hospitals entail a shift to earning revenue through the delivery of services in a market, the nature of the emerging market becomes crucial. Often the government is the largest or only buyer. In this case the process and terms under which the government purchaser engages providers may well determine the degree of pressure to which they are subjected for delivery.

In order to gain maximum benefits from reforms that expose the public sector to competition with the private sector, adequate steps should be taken to secure competitive neutrality. This requires:

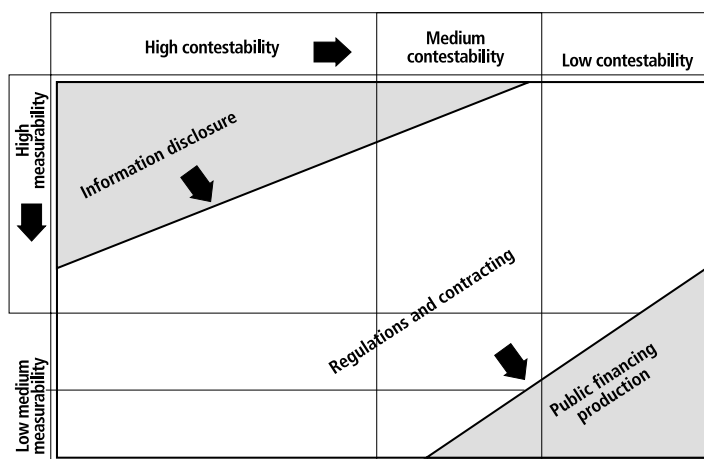
- monetization of social functions, e.g. explicit subsidies that adequately cover costs plus a reasonable margin in the delivery of services to non-paying or non-insured patients;
- standardization of the fee structure and cost of capital for both the public sector and the private sector.

Fig. 6. The nature of health care goods based on organizational economics



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Fig. 7. Shifting the contestability/measurability grid and needed public policies



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### Conclusions

Many low-income countries have large inefficient public sectors producing goods and services that could be bought from nongovernmental providers. However, moving from one system to another is not easy. It takes time and must be accompanied by capacity-building in areas such as contracting, regulation and the coordination of nongovernmental providers.

A three-step process can be used so as to move gradually from one balance to another in the public-private mix in service delivery. If there is already a large private sector the public sector should recognize its existence and slowly increase the use of its resources through better coordination and contracts and the establishment of a positive regulatory environment. Once experience has been gained in coordinating and contracting with providers, the lessons learnt can be transferred to other priority areas where there may be no activity by nongovernmental providers. Finally, where the public sector is

clearly engaged in inefficient activities, as is the case with the production of many inputs, they can be converted through outright privatization and subsequently bought from the private sector (56).

However, the public sector may not be involved in areas of strategic importance, such as the collective financing of health services. Conse-

quently, in parallel with moving out of the area of production of goods and services, in many low-income and middle-income countries it may be desirable to have a more integrated approach and greater public sector involvement in health care financing, knowledge generation and the provision of human resources. ■

## Résumé

### Décisions relatives à la sous-traitance des produits et services de santé : nouveaux enseignements de l'économie institutionnelle et de la théorie de l'organisation

Les systèmes de santé ont quatre fonctions centrales : générer des apports (connaissances, ressources humaines, produits pharmaceutiques, matériel et produits médicaux); assurer un financement (mobilisation des ressources, mise en commun des risques et services d'achat); fournir des services (santé publique, soins ambulatoires et soins hospitaliers); et s'occuper de l'administration générale (élaboration des politiques, supervision, coordination, réglementation, surveillance et évaluation). Les systèmes de santé de bon nombre de pays à revenu faible ou moyen ne fonctionnent pas bien, parfois à cause du développement inégal de ces fonctions et parfois à cause de déséquilibres entre le rôle joué par l'Etat et celui joué par le marché.

Le présent article propose un cadre conceptuel visant à aider les gouvernements à parvenir à des décisions plus rationnelles en matière de sous-traitance pour ce qui est de la production de produits et de services de santé. Par exemple, concernant les travaux non qualifiés et la vente au détail de médicaments, de fournitures et de produits médicaux, les rendements sont faciles à mesurer et les fournisseurs sont en général nombreux. Dans la plupart des pays, ces activités sont laissées au secteur privé et l'engagement de l'Etat y est minimal. Une participation plus importante de l'Etat est souvent nécessaire sous la forme de réglementations et de sous-traitance stratégique visant à assurer des résultats optimaux pour ce qui est de la fabrication de matériel et de fournitures et de la vente en gros des médicaments, des fournitures et du matériel médicaux. La production de substances pharmaceutiques et de matériel médical complexe est associée à un investissement initial important et à une concentration du marché, qui limitent la concurrence. Cependant, même dans ce cas, la réglementation en matière de qualité, les mesures antitrust et les achats en situation de monopole sont préférables à une production publique qui, en général, se solde par la fabrication de produits de mauvaise qualité, une absence d'innovation, une technologie dépassée et des modalités de production inefficaces.

Tandis que la réduction de la concurrence imputable à la concentration du marché est l'un des principaux problèmes rencontrés dans la production d'apports dans ce domaine, le problème essentiel auquel se heurte l'offre des services de santé publique et des services curatifs n'est pas sans rapport avec les difficultés qui se posent pour préciser et observer les produits et les résultats obtenus. Dans beaucoup de pays, les soins ambulatoires sont déjà assurés par le secteur privé (à but lucratif ou non) par le biais d'un financement public (sous-traitance) ou par paiement direct dans le secteur informel. Les soins hospitaliers et les services de santé publique exigent des mécanismes de sous-traitance plus élaborés et un environnement réglementaire plus solide avant que les pouvoirs publics puissent les confier au secteur privé. Toutefois, même en pareilles circonstances, des activités auxiliaires telles que les services de gestion et de soutien non clinique peuvent souvent être dissociées et externalisées.

L'assurance-maladie présente un tableau différent. Si beaucoup de fournisseurs et de produits observables (couverture de l'assurance) plaident en faveur de solutions obéissant aux lois du marché, l'assurance médicale privée est, dans la pratique, associée à une grave carence du marché et à une perte de protection financière générale de la population contre le coût de la maladie. Pour des raisons stratégiques, la plupart des pays choisissent de conserver cette fonction dans le secteur public.

Tout milite en faveur d'une plus grande participation du secteur privé aux apports et à la fourniture des services de santé parallèlement à l'engagement plus important des pouvoirs publics en faveur des objectifs d'équité, d'efficacité et de qualité, lié au mandat d'administration générale et de financement qui est le leur. Malheureusement, bon nombre de pays à revenu faible et moyen consacrent une grande partie des fonds publics à la production, laissant peu de ressources pour l'achat stratégique de services auprès d'organisations non gouvernementales et de dispensateurs privés.

## Resumen

### Decisiones relativas a la subcontratación de productos y servicios de salud: nuevas enseñanzas de la economía institucional y la teoría de la organización

Los sistemas de salud tienen cuatro funciones básicas: generación de insumos (conocimientos, recursos humanos, productos farmacéuticos, equipo médico y material

fungible); financiación (movilización de recursos, mancomunación de riesgos y compra de servicios); prestación de servicios (salud pública, atención ambulatoria y

atención hospitalaria); y rectoría (elaboración de políticas, supervisión, coordinación, reglamentación, vigilancia y evaluación). Los sistemas de salud de muchos países de ingresos bajos y medios no funcionan adecuadamente, a veces a causa del desarrollo desparejo de esas funciones y a veces de los desequilibrios entre la función del Estado y la del mercado.

En el presente artículo se propone un marco conceptual para ayudar a los gobiernos a adoptar decisiones más racionales por lo que respecta a la subcontrata durante la producción de bienes y servicios de atención de salud. Por ejemplo, en lo concerniente a la producción de personal no calificado y la venta al por menor de medicamentos, suministros médicos y otros bienes fungibles, los resultados son fáciles de medir y por lo general hay muchos proveedores. En muchos países, estas actividades se dejan en manos del sector privado y la participación del Estado es mínima. A menudo, es necesaria una mayor participación del Estado en forma de reglamentaciones y contratos estratégicos para lograr resultados óptimos en la fabricación de equipo y suministros y en la venta al por mayor de medicamentos, suministros y equipo médicos. La producción de preparaciones farmacéuticas y equipo médico complejo requiere una inversión inicial y una concentración del mercado considerables, y esos dos factores limitan la competencia. Incluso en este caso, sin embargo, la reglamentación de la calidad, las medidas antimonopolio y la compra en régimen de monopsonio son preferibles a la producción pública, que por lo general implica productos de baja calidad, falta de innovación, tecnología obsoleta y modos de producción ineficaces.

Mientras que la reducción de la competencia atribuible a la concentración del mercado es uno de los problemas principales con que se tropieza en la producción de insumos, el problema fundamental en la

producción de servicios de salud pública y servicios curativos tiene que ver con las dificultades que plantean la especificación y la observación de los productos y los resultados. En muchos países, la atención ambulatoria ya la presta el sector privado (con o sin fines de lucro) mediante financiación pública sobre una base contractual o mediante financiación directa en el sector informal. La atención hospitalaria y los servicios de salud pública requieren mecanismos más cualificados de contratación y un entorno normativo más estricto para que los gobiernos puedan adquirir esos servicios al sector privado. Aun en estas circunstancias, las actividades subsidiarias, como la gestión y los servicios de apoyo no clínicos, a menudo se pueden disociar y confiar a terceros.

Ahora bien, el panorama es diferente en lo tocante al seguro de enfermedad. Aunque son numerosos los proveedores y los resultados observables (cobertura mediante seguro) que hacen preferibles las soluciones basadas en el mercado, el seguro de enfermedad privado, en la práctica, está asociado a fallos graves del mercado y a una pérdida de la protección financiera general de la población contra los gastos de enfermedad. Por razones estratégicas, la mayoría de los países prefieren mantener esta función dentro del sector público.

Hay sólidos argumentos en favor de una mayor participación del sector privado en la generación de insumos y la prestación de servicios de salud, que se acompañe paralelamente de un mayor empeño del gobierno en conseguir los objetivos de equidad, eficiencia y calidad mediante la función de rectoría y la financiación. Lamentablemente, muchos países de ingresos bajos y medios dedican una gran parte de los fondos públicos a la producción, dejando pocos recursos para la compra estratégica de servicios a organizaciones no gubernamentales y proveedores privados.

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