CHAPTER

3 What makes the market for healthcare different? 🔓

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Abstract

The market for healthcare is different from 'ordinary markets' for two quite different reasons: first, there are inherent failures in the market for healthcare which create *inefficiencies* if left unregulated. Second, a large number of countries have a policy objective of *equity* in access to needed health services, in line with the World Health Organization's ambition of universal health coverage. This chapter investigates the *efficiency* reasons for public regulations, explaining what makes healthcare different. The assumptions behind the perfect market model are compared with the real-world imperfect market for healthcare. Asymmetric information between the provider and the consumer calls for protection of healthcare users, through quality control and ethical codes of conduct. The chapter explains the agency relationship between doctors and patients. Another important market failure is that of externalities in healthcare consumption, which calls for various types of regulations.

Keywords: perfect market model, imperfect healthcare market, asymmetric information, agency relationship, externalities

Subject: Public Health, Epidemiology

3.1 Efficiency and equity reasons

Markets for healthcare are characterized by a wide range of public regulations. These regulatory measures are justified on either of two fundamentally different reasons: efficiency and equity. This chapter explores various market failures and discusses *efficiency* reasons for regulating healthcare markets.

The specific characteristics of the market for healthcare will be analysed with reference to the general model of the perfectly competitive market. The context of this inquiry into 'failures' follows the neo-classical economic tradition, where benefits reflect consumer preferences as expressed by their willingness to pay.

If, on the contrary, benefits are to be valued in terms of health improvements and healthcare is to be distributed in accordance with the principle of 'equal access for equal need', there are *equity* reasons for intervening in healthcare markets—a topic for Chapter 4.

3.2 The perfect market model and the imperfect market for healthcare

A market can be defined as any place where the sellers of a particular good or service can meet with the buyers of that good and service. Such meeting points for transactions and trading could be anything from an old village market, a supermarket, or an online marketplace.

A distinguishing feature of markets in economic theories is the number of sellers. If there is one seller only, that is referred to as a monopoly; if there are two sellers, it is a duopoly; and if a handful or more, it is referred to as an oligopoly. In these types of markets, sellers are able to charge higher prices on their goods than what it costs to produce them. Such markets would therefore not be considered perfect for the consumers. A key characteristic of what economists refer to as a *perfect* market—or the market with *perfect competition*—is one in which there is such a large number of sellers that none of them is able to influence the price.

The perfectly competitive market is a very attractive mechanism for distributing goods and services: consumers get what they want if they pay what things cost, and producers get sufficient revenues to cover their costs. Due to the harsh competition between producers, any profits over and above what is needed to keep them in business evaporate in the long run. The market clearing point—or the equilibrium—in which supply equals demand (see Figure 2.14 in Chapter 2) yields a market *price* where the marginal social value equals the marginal social costs, and a *quantity* produced equal to the quantity demanded.

Beyond serving as an attractive model, the perfectly competitive market also serves as a yardstick against which the imperfect real world can be compared with an ideal model world. But what is required for a market to be *perfect*?

To understand why real markets do not always operate so perfectly, Table 3.1 sets out the fairly restrictive assumptions upon which the perfect market model rests.

Table 3.1 Seven assumptions behind the perfect market model

Assumptions	Implications
1. Full information	Buyers know how much and when they wish to consume, as well as the quality of the goods
2. Impersonal transactions	Buyers and sellers act independently and operate at 'arm's length'
3. Private goods	Only the person consuming the good is affected by it; she pays all the social costs and gains all the social benefits
4. Selfish motivation	Buyers are 'only in it for getting satisfaction', and sellers are 'only in it for the profit'
5. Many buyers and sellers	No single buyer or seller can influence the market price, neither alone nor through coordinated action
6. Free entry (and exit)	Anyone who would like to sell the products may start to do so, and anyone may leave the market whenever they want
7. Homogenous products	Buyers cannot distinguish any differences between the products of the different producers or sellers

There are not many real-world markets that completely satisfy *all* of the above-mentioned assumptions. However, the reason why 'imperfect' markets may still be favoured is that they are believed to work better than an alternative with public regulation and public ownership. We can think of real-world markets ranging from (almost) *perfect* to (almost) *imperfect*. The market for healthcare stands out as being almost completely imperfect. To what extent, then, are the assumptions shown in Table 3.1 not met in the market for healthcare?

3.2.1 Full information

This first assumption consists of two separate issues: (1) buyers can predict how much they want to buy and when—that is, there is no *uncertainty* involved; and (2) buyers know the quality of the good, either through their own experience from previous consumption, or based on available *product information.*

The distinction between these two issues is important in the context of healthcare. First, certainly, there is uncertainty in sickness and in health! An individual does not know what disease might strike nor when. There is a corresponding uncertainty about the costs of treatments. Thus, planning expenditure on healthcare, even over a relatively short time period, is almost impossible. This gives rise to insurance markets with their associated market failures (see Chapter 10). Second, when becoming a victim of a disease, patients also lack information about the expected effects that various types of healthcare may have on health, which is why they seek doctors. While doctors are not fully informed either, the important matter here is that they have much more information *relative* to their patients. This problem of *asymmetric information* between doctors (as providers or sellers) and patients (as consumers or users) is elaborated in section 3.3.

3.2.2 Impersonal transactions

This assumption means that buyers have the same level of trust and confidence in all sellers. They are completely indifferent as to who the seller is. For many healthcare services, especially in primary care, buyers know who the producer is. The transactions between buyers and sellers are personal and their relationship will be based largely on trust. Thus, the notion of *impersonal transactions* between atomistic agents is not an appropriate description of the doctor–patient relationship. In the market for healthcare, rather than operating at arm's length, buyers and sellers are almost hugging one another.

3.2.3 Private goods

Goods are considered *private* when only the person consuming the good is affected by it. The opposite are *public goods*, which can be jointly consumed by many people. Public goods are characterized by (1) *non-rivalry*, that is, the consumption of the good by one person does not preclude its consumption by another person (e.g. street lights); and (2) *non-excludability*, that is, individuals can receive the benefits of a good without having to pay for it. When users do not have an incentive to pay for public goods, such goods are underprovided.

Some preventive programmes targeted at those environmental factors that have an impact on people's health can be conceived of as 'public goods', for ↳ example, reduction of toxic air pollution, and malaria control such as pond clearing. These programmes are characterized by non-rivalry in that everybody in the community will benefit from clean air without stopping anyone else from benefiting. Additionally, one cannot exclude people in the community from benefiting, although they haven't paid for its provision.

Somewhere in between pure *private goods* and pure *public goods* lie goods for which more people than the person consuming the good are being affected by it. Economists talk about *externalities* in consumption when there are additional 'by-product consequences' on other people's utilities which are *not* being priced in a market. When one person's consumption positively affects another person's utility, we have a *positive externality.* For example, putting the heat on in your flat may increase the temperature in the flat above, to the benefit of your upstairs neighbours. The most widely used example of a *negative externality* is smoking.

The economic problem with externalities is one of inefficiency. An unregulated market will under-provide goods with positive externalities, while it will over-provide goods with negative externalities. The standard market solution to the problem is to *internalize the externalities*, that is, make the person who consumes a good which includes externalities take into accounts its effects on others. Negative externalities should be *taxed* in accordance with the extra costs imposed on others, while positive externalities should be *subsidized* in accordance with the value of the extra benefits experienced by others. Some types of healthcare clearly involve positive externalities, which will be elaborated in section 3.4.

3.2.4 Selfish motivation

While selfish motivation does not govern people in all walks of life (fortunately), this assumption makes sense for describing much of our behaviour in the market place. Consumers buy goods simply because goods yield utility. Producers sell goods in order to make a profit.

Consumers and producers appear to behave quite differently in the market for healthcare. Patients may not be so selfish that they disregard any concern with how their condition impacts other people. And rarely, if ever, would doctors say that they practise medicine so as to maximize profits—even if they did, a code of professional ethics attempts to restrict them from doing so.

3.2.5 Many buyers and sellers

When a single actor cannot influence the market price—either alone or through coordinated actions—they become what is referred to as 'price takers' to the price they face in the market.

There are certainly many buyers of healthcare, and in most cases they operate sufficiently independently of one another. The number of independent sellers will vary. Only in big cities do we find many hospitals. General practitioners and specialists might be found in large numbers and may compete with each other in attracting patients. However, rarely would we observe such competition being exercised through lowering prices. Overall though, as judged from the assumption of many sellers and buyers, the market for healthcare is imperfect.

While oligopolies (few sellers) and monopolies (one seller) are not unusual features of a market economy (where a few sellers may benefit from economies of scale and thus promote efficiency), economic theory considers competition to be good—and monopoly to be bad. Monopolistic conditions will result in so-called *X-inefficiencies* (such as managerial slack) due to the lack of incentives to produce at lowest cost.

3.2.6 Free entry (and exit)

The opportunity for new providers to step into a market is important in order to maintain cost-efficiency. As for healthcare, there are professional regulations that prohibit non-medics from offering their services. In addition, certain types of professional qualifications are required in most countries for practitioners to receive public funding (e.g. physiotherapists). And even if they might be prepared to rely on patient payments, many countries regulate the number of various practitioners in any region. However, as in most markets, there is free exit in that doctors may stop practising whenever they want.

3.2.7 Homogeneous products

When the products from different sellers are indistinguishable to the buyers, it becomes impossible for one seller to charge a higher price than others. Thus, the scope for making profits by increasing the price is impossible.

A common strategy for producers in modern markets is to attempt to make their products appear distinguishable from those of their competitors—a practice known as *product differentiation*. Through brand names and packaging, effective marketing makes consumers perceive the quality to be superior, which makes them willing to pay more. Bottled water brands are one example.

The same type of product differentiation can be observed in the market for healthcare. Although the chemical substance of a generic drug is identical with that of a patented drug (i.e. they are *homogenous products*), the different producers use distinguishable brand names. Again, marketing attempts to make patients believe that a higher price is a signal of a more effective drug. An astonishing study showed that an expensive placebo was more effective than a cheap one: when comparing two groups of patients, those who
were told that ↳ their 'drug' was very expensive performed better in the clinical tests (Espay et al. 2015).

By including attractive amenities, private hospitals and physicians also attempt to make patients believe their services are of a superior quality than those of public providers. Indeed, non-price competition is only possible if patients perceive the services provided by different hospitals or doctors to be different.

While patients—like consumers—can be manipulated to believe that expensive services are of superior quality, there certainly exist genuine quality differences across different providers. Such real differences (some doctors have better skills) in seemingly similar services are, however, hard for lay-people to identify. Therefore, the assumption of *homogeneous products* is not satisfied in the market for healthcare.

So, none of the seven assumptions listed in Table 3.1 would hold for describing healthcare markets in general. While some of these assumptions are not satisfied in many other markets either, the market for healthcare stands out with three key characteristics according to Evans (1984). These are (1) uncertainty, (2) asymmetric information (i.e. the two violations of the assumption of full information), and (3) externalities. In addition to the 'selfish externalities' related to the fact that one person's health may affect other people's health or wealth, there is the so-called caring externality in health which refers to the altruistic reasons for subsidizing our fellow citizens' healthcare consumption (Culyer 1989).

The solution to (1) uncertainty, is insurance which will be analysed in Chapter 10. The solution to (2) asymmetric information, is regulation of providers, which will be dealt with in section 3.3, as well as in Chapters 14 and 15. The solution to (3) externalities, would primarily be various types of regulation and subsidization, which will be dealt with in section 3.4 and in Chapter 4.

3.3 Asymmetric information and the agency relationship

Asymmetric information exists when one party possesses more information than the other, and when this information is of a kind that is considered important to the latter. Doctors possess two types of information that are important to patients: *diagnostic* information ('What is wrong with the patient?') and *treatment* information ('What can be done for the patient?'). As a consequence, a patient would want her doctor to act as her *perfect agent*. In general terms, an agency relationship exists when one individual or group (the agent) acts on behalf of another individual or group (the principal). We can consider a ↳ doctor as acting as an agent in two distinct ways: when he acts solely for an individual patient, and when he considers other people alongside that patient. For example, he might simultaneously consider his other patients or possibly a third-party payer, such as the government or society as a whole.

3.3.1 The doctor–patient relationship

The consumption of healthcare is different from the consumption of most other goods in that the consumer lacks information about the effects that healthcare will have on her utility. Unlike normal goods that are consumed for their direct utility yielding properties, healthcare is consumed for its impact on health. Healthcare itself is not a 'good' in the conventional sense, but a 'bad' (or a necessary evil) required to improve health. Thus, the demand for healthcare is a *derived demand* for health. As with most other goods in the utility function, the individual is the best judge of her utility from health. Going back to Figure 1.3 in Chapter 1, the consumer is sovereign in judging the utility she gets from health directly, as well as indirectly via the impact that health has on income and social relations.

However—and this is crucial—the consumer lacks information about the impact of healthcare on health, that is, about the production function: $H = f(HC)$. Typically, the patient will lack information about which treatments might be available, and the effectiveness of the alternative treatments. On the other hand, the supplier of healthcare—the doctor—has much greater knowledge concerning the relationship between healthcare and health. Given this information asymmetry, it is not surprising that patients would often prefer that doctors make decisions on their behalf.

Doctors do, however, differ in their views about what it is that patients want from them. Some argue that their task is to tell the patient what treatment they should have, others that it is their task to provide the patient with information so that the patient can decide. *In theory*, this agency relationship is not a problem because the utility function of the agent (the doctor) is identical to that of the principal (the patient)—that of maximizing the utility of each patient. As Williams (1988) points out, if the doctor is the perfect agent, 'The *doctor* is there to give the *patient* all the information the *patient* needs in order that the *patient* can make a decision, and the *doctor* should then implement that decision once the *patient* has made it'.

However, even if patients' and doctors' utility functions were identical (which is unlikely), this still requires each doctor to have full knowledge of the arguments in each patient's utility function. Now, it seems

reasonable to assume that maximizing health will have a dominant place in most patients' utility functions.

Beyond health outcomes, there are important attributes related to ↳ the process of care, such as the way relevant information is being communicated, the doctor's ability to listen to—and respect—patients' preferences, or the desired degree of involvement in the decision-making process. The relative importance of these arguments will differ between patients. Thus, it is unlikely that any doctor could act as a perfect agent for all patients.

In reality, the agency relationship that has evolved in healthcare is one in which the supplier can greatly influence the consumer's utility function. Because doctors hold a position such that they can have some influence over both the costs and benefits of healthcare, there is the potential for exploitation. Williams (1988) claims that the more recognizable form of his characterization of the agency relationship is one in which the words 'doctor' and 'patient' are reversed: 'The *patient* is there to give the *doctor* all the information the *doctor* needs in order that the *doctor* can make a decision, and the *patient* should then implement that decision once the *doctor* has made it'.

While such a description of the doctor–patient relationship suggests the patient has a completely subordinate role, it may still correspond with a preference for letting the doctor decide. Although there is currently much health policy attention on 'user involvement' and 'shared decision-making', patients often reveal some degree of choice aversion.

Professional autonomy and clinical freedom are important attributes in doctors' utility functions. Consequently, doctors have protected their right to exercise a fair degree of discretion in how they practise their trade. Within the same specialty, different schools of thought have evolved, each with their own conviction of doing the (only) right thing. However, the emergence of so-called evidence-based medicine (EBM) over the last few decades has created scientific justification for developing clinical guidelines based on the best evidence. Implementing such clinical guidelines necessarily implies reductions in clinical freedom, something which has not always been popular among doctors.

3.3.2 The agency relationship and social welfare

Discussions of the individual doctor–patient relationship appear to suggest that a perfect agent is a doctor who provides the patient with the combination of services which is most preferred by the patient himself. However, what the patient wants might differ from what society wants. This raises questions about who the doctor is ultimately the agent for—the patient, a group of patients, a third-party payer, or society as a whole?

Following the medical code of ethics that 'the health of my patient shall be my first consideration', is based on the assumption that doctors should act in the best interest of the patients *ex post*, which means *after*

people become sick and are in need of care. However, the very same people are likely to have had ↳ other preferences *ex ante*, meaning *before* they became sick and in need of care. As tax-paying funders of healthcare, people have two sets of preferences—one about the services they would like for themselves should they become ill (insurance motive), and one about those services which they are prepared to cross-subsidize for others (altruistic motive).
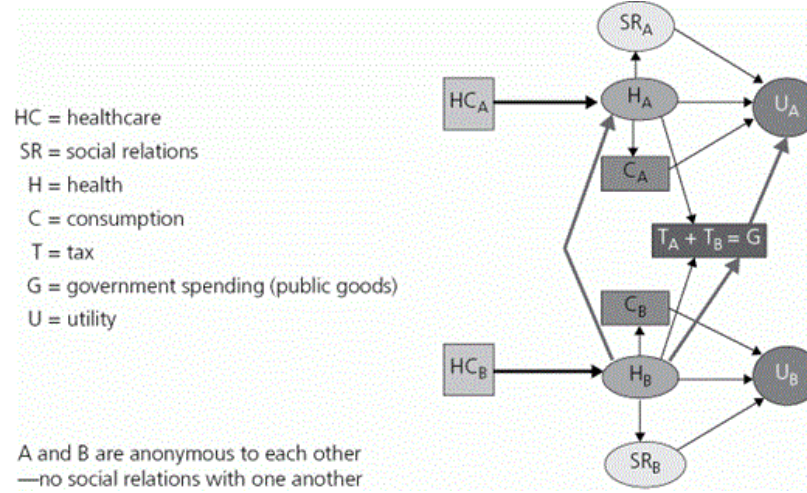
Given such *split preferences*, the size of the healthcare budget depends on the choices made by doctors regarding the mix they offer between health-enhancing services and those services which have no impact on health but which patients may still want for other utility-enhancing reasons. If doctors provide a mix that reflects the preferences of patients *ex post*, funders will react by reducing their contributions to healthcare since they do not like to see healthcare being 'wasted' on services that do not improve health. However, the very same funders would still wish to see such services being available to themselves should they end up as patients.

Hence, doctors will act as perfect agents for their patients if they provide *less* non-health enhancing services than what patients would prefer. By restricting 'waste', the total healthcare budget is increased, thereby enabling doctors to treat more patients. This model is based on an assumption that our willingness to cross-subsidize healthcare depends on the effectiveness of that care in improving health (see Clark and Olsen 1994).

3.4 Externalities

If only the patient/user of healthcare were affected by it (positively or negatively), it would be labelled a *private good*. However, an inquiry into the various types of interpersonal relationships in health suggests that there are four different ways in which the improved health that a person obtains from her healthcare use may affect another person's utility. These externalities in the use of healthcare are illustrated in Figure 3.1, which represents an extension of Figure 1.3.

Figure 3.1

HC = healthcare
SR = social relations
H = health
C = consumption
T = tax
G = government spending (public goods)
U = utility

A and B are anonymous to each other
—no social relations with one another

The externalities in health.

Figure 3.1 illustrates two individuals, A and B. Attention is drawn to how B's improved health may affect A. As compared with Figure 1.3, the variable income is subdivided into own consumption and tax contributions that go to finance government spending (i.e. public goods such as schools, parks, and police). So, why would A care about B's use of healthcare (and vice versa, which for expositional reasons are not drawn in this figure)? There are two *selfish* reasons that will be dealt with here, and two *altruistic* reasons to be discussed in Chapter 4.

The links illustrated in Figure 3.1, focusing on individual A's utility from his own utilization of healthcare, as well as indirectly via individual B's health (resulting from B's utilization of healthcare) can be formalized within a utility ↳ function. Start with a simple version (based on Figure 1.3) including A's social relations (SR_A), his income (I_A), and his health which again depends on his use of healthcare $[H_A(HC_A)]$:

$$U_A = u\left[SR_A, I_A, H_A\left(HC_A\right)\right]$$
$$(3.1)$$

This simple utility function can be extended to account for two types of externalities from B's healthcare use onto A's utility. First, the *contagion argument* shows the effect of B's improved health on A's health. Second, the *economic contribution argument* shows the effect of B's improved health on her productivity, and thereby via tax contributions to government-funded goods, G, that are to the benefit of A as well as other citizens. The size of G depends on the total tax contributions in society $(G = T_A + T_B)$. Hence, the extension of Equation (3.1) to (3.2) involves a split of gross income into own consumption and taxes that goes to finance G, and the inclusion of the two types of selfish externalities:

$$U_A = u\left[SR_A, C_A, H_A\left(HC_A, H_B\right), G\left(H_A, H_B\right)\right]$$
$$(3.2)$$

3.4.1 Contagion

Contagion is illustrated in Figure 3.1 by the arrow from H_B to H_A. In the extended utility function (3.2) it refers to the third argument: $H_A(HC_A, H_B)$ In other words, healthcare consumed by B may have a positive impact on A's health, such as vaccination and the cure of infectious diseases. In an unregulated market, B will consume this type of healthcare up to the level where her private ↳ benefits equal costs. However, in a societal perspective, this is not sufficient due to the existence of *positive externalities,* which imply that A (along with all other affected members of society) will experience benefits beyond B's individual benefits. These benefits—as valued by the rest of society—should be added to the individual benefits in order to derive *aggregate social benefits.*

So, how can such market failures be corrected for, that is, how can we *internalize the externalities?* The simple answer is for the rest of society to cross-subsidize B's costs of these services to the extent that she will face private costs which are so low that she will choose to consume the socially optimal quantity. To illustrate this point, assume that an individual's private benefit (PB) is given by his maximum willingness to pay for healthcare. The external benefits (EB) are those that are valued by other people besides the consumer—through *their* willingness to pay. Therefore, the summation of PB and EB represents social benefits (SB). Let us also assume that all relevant social costs (SC) are included. The optimal amount consumed is where the total social benefits = social costs:

$$PB + EB = SB = SC$$

(3.3)

In Figure 3.2, PB illustrates the private demand curve, D_P, and SB represents society's demand curve, D_S. Thus, the vertical distance between the two curves reflects the magnitude of the external benefits, EB. For simplicity, we have assumed constant marginal social costs as illustrated by the horizontal supply curve, S. The intersection between D_P and S gives the private quantity, X_P, which is where the individual would choose to consume in the absence of any influence from others. The intersection between D_S and S gives the optimal quantity for society, X_S. The individual can be induced to move there if we subsidize healthcare by the vertical distance between D_S and D_P at this quantity.
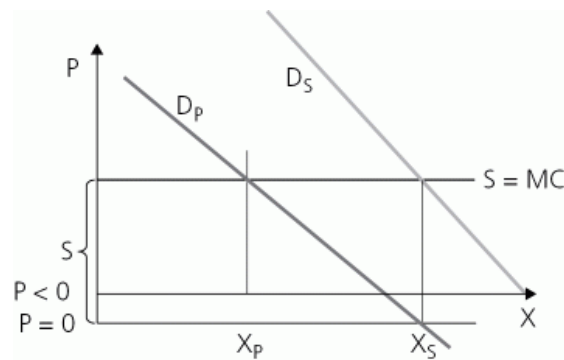
Figure 3.2
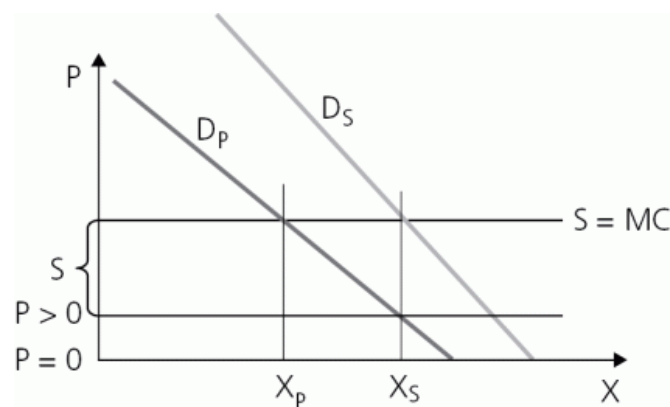
Positive externalities and positive co-payment: P > 0.

Interestingly, this optimal level of cross-subsidy (i.e. the vertical distance between the two benefit curves at the point where $D_S = S$) does *not* imply that consumers would face a zero price. Analytically, this represents a special case. ↳ Figure 3.2 illustrates an optimal solution where the consumer has to pay a positive amount, that is, a so-called co-payment.

It is, however, quite possible to imagine situations where the external benefits to the rest of society might be so large that the locus of the intersection between D_S and S implies that users should face a *negative* private price; that is, they should be paid to consume healthcare. Figure 3.3 illustrates a situation in which the external benefits, EB, are larger than the social costs.

Figure 3.3

Positive externalities and negative co-payment: P < 0.

Three alternative quantities are shown in Figure 3.3: X_P is the quantity consumed if patients were to pay everything out of pocket; $X_P = 0$ is the quantity consumed if it was provided free; and X_S is the *optimal quantity* consumed, that is, where society's marginal valuation equals social costs. In order to reach this optimal quantity, users would have to receive a premium equal to the marginal costs minus the valuation of external benefits: P = SC – EB. Hence, as for healthcare involving large positive externalities, there is nothing in theory that suggests such healthcare should be provided at zero price. For example, negative patient payments on some types of vaccination may prove to be an effective way of reaching the target population.

Of course, negative patient payments represent a healthcare *cost*, as opposed to (positive) patient payments that are a source of *revenue*. The implication is that the funding of such a scheme requires more money to be collected from other sources (e.g. higher taxation).

This way of *internalizing externalities* through cross-subsidies could take the form of voluntary donations or tax financing. In situations with severe communicable diseases, there are strong externalities associated with immunization and vaccination. Consequently, many countries have at various times introduced mandatory vaccinations—as well as providing it free of charge. While the growth of public healthcare is very much a history of fighting communicable diseases, the proportion of publicly financed healthcare justified by this type of externality correction is very small in rich countries.

3.4.2 Economic contribution to society

An important consequence of improved health is that it affects people's productive capacity. Not surprisingly, economists have recognized for a long time the importance of a healthy labour force for economic growth. For example, the early economic evaluation techniques considered the increased value of production from improved health as the way to measure outcomes from treatments—the focus was on 'repairing' the input factor 'human capital'. This increased productivity would increase income, which in turn increases consumption. In an influential health economic model, these impacts are termed the 'investment benefits' from health, as opposed to the 'consumption benefits' which follow from the enjoyment of being in better health (Grossman 1972).

If increased production ends up as own consumption only, and if we are indifferent to a fellow citizen's consumption level, then there are no externalities from the wealth generated. However, in most economies, some of the increase in an individual's income ends up contributing towards society; people pay income tax that goes towards the financing of public goods and services. There are two self-interested reasons why we are concerned with our fellow citizens' increased economic contributions to society: (1) public goods and services are positive contributing factors in our utility function; and (2) if a sufficient level of such goods was already produced, then more contributions from others mean that we will have to pay less ourselves.

Therefore, if the only reason why we care about the health of others is because of their economic contribution to society beyond their own consumption (the links in Figure 3.1: $H_B \rightarrow T_B \rightarrow G \rightarrow U_A$), we would be willing to subsidize their healthcare so that they could return to the workforce. We would do so as long as the expected future economic contributions exceed the costs of treatment, that is, as long as people 'pay their way' in terms of their use of collective resources ($T_B - HC_B > 0$).

The implication of this type of selfish concern for others is of course that we would provide a higher subsidy to those groups in society who will make the highest economic contributions from being treated. One way that this has been put into practice in some countries is to have sickness benefit funds that pay the costs of treating people who return to work as a consequence of cure. While this may be a quite rational selfish argument, it might well be that there is a conflict here with one of the key equity objectives of many health systems, namely 'equal access for equal need', independent of economic position.

3.5 Policy lessons

No market works perfectly. But some work less perfectly than others—and the market for healthcare appears to be one of them. Note that public regulation of ↳ healthcare markets can be motivated out of a concern for efficiency alone—we might not care one jot about equity and still have government involvement in healthcare.

Asymmetric information calls for regulation of healthcare providers to avoid any self-interested motivation for offering services that patients do not need. Furthermore, clinical guidelines are necessary to ensure that third-party payers do not reimburse cost-*in*effective services.

The 'your-health-may-affect-my-health' externality represents a strong case for subsidizing services that prevent and treat infectious diseases. When the total benefits to society outweigh the costs of vaccination, there are efficiency reasons for public finance.

Another selfish reason for subsidizing other people's healthcare is that of productivity. The more people in the workforce that contribute through their taxes to finance public goods and services, the less tax burden per capita. Hence, if the cost of cure is less than the person's tax contribution, free healthcare involves a net benefit for the (rest of) society. Essentially, this is the 'public purse argument' for curing people who can return to work.

Still, the major part of healthcare that is provided by publicly funded health systems cannot be explained by these two types of selfish reasons. Rather, they reflect a type of altruism referred to by the term 'caring externality' (see Chapter 4).

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