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# Are patient charges an effective policy tool? Review of theoretical and empirical evidence

**Key words:** patient charges, health policy, efficiency, equity, informal payments

## ■ Introduction

Policy-makers assign various objectives to the implementation of patient charges for public health care services. Overall, patient charges are seen as prices for health care consumption and as such, they are expected to affect the quantities of health care demanded by the consumers and to generate revenues [1, 2]. Hence, patient charges are implemented with macro-level objectives (cost-containment and rising revenue for a sustainable health care system) or with meso- and micro-level objectives (efficient health care utilisation, improvement of service quality and adequate reimbursement of health care providers). The possibility to increase providers' income by allowing health care providers to charge patients directly for health care services provided, is also seen as a way to deal with informal patient payments, especially in countries where these payments are directly requested by providers.

The actual ability of patient charges to achieve these objectives depends to a great extent on the patient payment mechanism implemented in a country, as well as on the health care system and context-specific factors. Evidence from various low-, middle-, and high-income countries indicates what could be reasonably expected from the introduction of patient charges in a public health care sector. The aim of this paper is to review and discuss the theoretical and empirical evidence on the effectiveness of patient payment policies. The objective is to outline the key policy considerations.

## 1. Patient charges and health care demand

The implementation of patient charges in the public health care sector imposes prices on health care consumption (incl. services and commodities). From an economic point of view, prices are the major determinant of consumer behaviour and the quantities of a good demanded [3, 4]. This implies that patient charges offer

policy-makers a tool to influence the behaviour of health care consumers and to manage the utilisation of health care services towards efficiency improvements. In fact, the objective of controlling health care utilisation in order to improve efficiency in the health care sector is broadly assigned to the implementation of patient charges in countries of all level of development [3, 5, 6].

There are theoretical reasons for expecting efficiency improvement after the implementation of patient charges. It is suggested that if patients have to pay for health care they evaluate the expected benefits before the actual service use and utilise only necessary care (see e.g. [7–10]). Thus, economic theory predicts that patient charges make consumers cost-conscious and reduce the excess demand for health care services caused by free-of-charge health care provision (due to moral hazard) [11, 12]. It should be underlined however, that excess demand does not necessarily mean demand for services that are medically unnecessary or potentially harmful. Indeed, the consumption of these additional services may have positive health effects. The demand is considered to be excessive in economic terms when the marginal costs of providing these additional services are greater than the marginal social benefits of their consumption [3, 13].

Empirical evidence from high-, middle- and low-income countries confirms that the health care utilisation actually declines after the implementation of patient charges (e.g. [14–24]). However, there is no convincing evidence that the utilisation is always reduced because services are unnecessary from an economic or medical point of view [18, 19, 25, 26]. In fact, it is reported that patient charges mainly reduce the utilisation of health care services provided to children, poor individuals and in areas where other costs (e.g. travelling costs) are significantly high [6, 13, 27]. This indicates primarily adverse equity effects rather than efficiency improvements.

Some authors even claim that patient charges cannot be an effective policy tool for controlling health care uti-

lisation due to the potential existence of supplier-induced demand (discussed in [13, 28]). In the health care sector, the demand for health care services is based upon information acquired from the suppliers (i.e. health care providers) due to consumers' insufficient medical knowledge [29]. This gives the suppliers a possibility to influence the consumers' decision to seek health care and consequently, the quantity of health care demanded [1]. The decisions of health care providers are likely to reflect not only the medical needs of their patients but also their own preferences, and particularly, their preferences for a reasonable income [29]. Whenever physicians' income is related to the nature and volume of services they supply, physicians might have incentives to induce health care demand and thus, to maximise their profits. If the implementation of patient charges leads to a reduction in health care utilisation, this threatens the income of those providers who are paid based on service provision. Health care providers might try to compensate the income reduction by inducing consumer demand for additional or more expensive services [13, 26]. The suppliers' response to the reduction in service utilisation caused by the introduction of patient charges, can neutralise the efficiency improvement potential of patient charges [1, 30]. In order to avoid the negative effects of supplier-induced demand, basic strategies can be employed, e.g. remuneration of health care providers that is independent from the nature and quantity of services provided and/or strong supervision of providers' activities [13, 26].

It should be recognised however, that the demand for health care services is not always provider-determined. The utilisation of some services (e.g. first contact with GP or visit to a specialist without a referral) is initiated primarily by the consumers and it derives from consumers' perceptions for the necessity of health care use in order to improve their health. The demand for such services is determined mainly by the consumers' willingness and ability to pay for these services and not by the suppliers. Thus, the introduction of patient charges for consumer-initiated health care services could appear suitable when considering an efficiency perspective. Moreover, applied simultaneously with supply-side measures for suppressing the supplier-induced demand, patient charges can be justified even for services, which utilisation is not determined by the consumers [13].

The potential impact of patient charges on the quantity of health care demanded can be essential not only for decreasing the unnecessary service utilisation, but also for encouraging the use of particular health care services. The assignment of this objective to patient charges is grounded in the fact that health care is not a monolithic commodity, but it comprises various commodities which consumption is characterised with specific private benefits for the patients and externalities for the society. In particular, the consumption of some health care services results in external physical, psychological and/or financial benefits (so called externalities) to other individuals aside from the patients, and more generally, to the society. Also, the private long-term benefits to the patient are not always fully recognised by the patient at the time of

services consumption [4]. In this sense, different types of health care services should be provided to the consumer with different relative prices depending on their short- and long-term value to the patient's health and the level of externalities to the society from their consumption [4, 31]. For example, preventive and emergency services are associated with high (long-term) benefits to the patient's health and high-level of externalities to the society. Low or no patient charges in case of preventive services could encourage the use of these services and reduce the need of curative services in future. On the contrary, dental services where the benefits are mainly restricted to the patient, could be provided with higher patient charges. The difference in the relative prices faced by the consumers can provide incentives in favour of more beneficial spending of the public resources. Thus, despite the full or partial coverage of some health care services, the social benefits can be adequately maximised.

The idea to link patient charges to the value of health care services is extensively discussed at present in the US literature (e.g. [9, 31]). Such patient payment designs are known as value-based insurance designs or clinically sensitive cost-sharing. They presuppose the exclusion of specific services from patient charges, which are considered to be highly valuable for the patient and society, and/or exclusion of specific patient groups from patient charges, which are expected to benefit most from the health care consumption. However, the successful implementation of such designs depends on the effectiveness of the services targeted, the level and precision of targeting, the magnitude of patient fees, and patients' responsiveness to prices [31].

The implementation of different patient charges for different health care services and its impact on the pattern of health care utilisation have not been studied properly yet [26, 32, 33]. However, the influence of such payment schemes on health care utilisation has been registered when there is a mixture of patient charges and free-of-charge health care provision. As suggested by Akin et al. [7], on the background of patient charges, the quantities of preventive and maternity services, services for children and communicable diseases, provided free-of-charge, has increased. Despite the potential over-consumption, the free access to these services reduces the need of cure in the future and leads to externalities for non-users. Yet, little is known if the increased use of this group of services is a result of their exclusion from patient charges [27].

The experience with patient charges provides another indication for the potential impact of patient charges on the pattern of service utilisation. It refers to the application of a cascading (sliding) fee system of patient charges [4, 8, 34]. The cascading system involves lower charges for primary health care services, higher charges for hospital services and highest in tertiary health care facilities. Thus, by graduating the price of health care services according to the level of health care facilities, patients can receive price signals, which can stimulate them to use services at lower levels [27]. However, the cascading system should be designed in a way that ensures appropriate signals to consumers. For example, when patients are referred from

primary care units to hospitals they should not pay the fees at both levels because this can encourage them to contact directly the hospital in order to avoid the first payment [8]. Moreover, evidence suggests that the cascading systems cannot be effective if the health care services are not provided at all levels with the same quality [27].

While the efficiency improvement potential of patient charges at micro-level is still being discussed, authors commonly agree that the decline in health care utilisation after the introduction of patient charges has no significant influence on the overall health care expenditure [35]. The overall health care expenditure in a country is primarily supply-driven while patient charges are a demand-side policy tool. For that reason, achieving a cost-containment objective through patient charges is unfeasible. As indicated by the experience in high-income countries [13, 35, 36], measures that act on the supply side of the health care market, appear to be more effective for containing the overall health care costs. For example, many European countries place the primary care providers in the role of 'gate keepers' to the specialised health care services and attempt to improve the utilisation pattern in their health care sectors. The application of supply-side measures together with patient charges for improving the efficiency in health care utilisation, has already proven to be effective in practice [13, 35].

## 2. Patient charges and health care system funding

The introduction of patient charges suggests a potential to generate additional revenue for the health care sector [28]. This characteristic of patient charges is of a particular interest for policy-makers in a context of increasing fiscal pressure and sustainability problems within the public health care system [5, 10, 32, 37]. Such a situation is reported in many low- and middle-income countries. In these countries, insufficient domestic resources impede the improvement of the health care sector and the provision of health care services with adequate quality for the entire population. Many of these countries were advised in the past to implement some kind of patient charges in order to increase the resources of their public health care sector [38, 39, 40].

However, empirical evidence indicates that on an aggregate level, patient charges revenues do not present a significant contribution to the public health care funding. The gross revenues generated from patient charges in countries of all levels of development (including high-income countries) is not higher than 15% of the public health care expenditure with an average of 5% [14, 25, 28]. The main reason for this is the fact that patient charges need to be sufficiently low to assure that the majority of consumers are able to pay them while offering even lower or no charges for those who cannot pay or who use health care frequently. Otherwise, patient charges might discourage some consumers to seek health care services when necessary, resulting in adverse equity effects and worsen health status [41].

Even when patient charges have the potential to generate high gross revenue, the considerable administrative

costs related to their collection at a national level, further decrease the yield of their implementation [42]. The experience shows that the management of patient charges can even absorb the revenues collected, like for example in some high-income countries with relatively strong administrative systems. If in a country, the net yield of patient charges tends to be null, patient charges cannot be considered as an effective policy tool for revenue rising [25]. Clearly, patient charges have relative limited potential for generating health care revenue on an aggregate level [8, 25, 27]. Therefore, assigning such objectives to patient charges tends to be unfeasible and expectations for additional health care revenues through patient charges seem to be over-optimistic [6, 27, 41].

The ability of consumers to pay for health care and the administration costs related to patient charges are not the only factors, which influence the size of the patient payment revenue. There are other important determinants as well, such as [4, 10, 25]:

- the type of patient payment mechanism;
- the willingness of health care consumers to pay;
- the market for private health care services;
- the possibility of obtaining additional insurance to cover the patient payment obligations.

These factors need to be analysed before assigning a revenue-generation objective to patient charges. It can help to avoid over-optimistic expectations from the implementation of patient charges.

A more appropriate role of patient charges in the health care system funding is their application as a contributory financing for the local health care structures [8, 25]. In some countries, where the public health funds have been slashed due to deteriorating economies, patient payment revenues are retained at the level of collection and are successfully reinvested in the local health care facilities to revitalise the health care provision [5, 6, 8, 43]. In particular, patient charges are used for covering the very small expenditures of maintenance and emergency purchases (e.g. medical supply and devices). The collection and use of patient payment revenues at the point of service provision appears to make a major difference to the quality of health care services [8, 27, 44]. Evidence from different countries indicates that consumers are overall willing to pay some (usually low) fees if they receive health care services with good quality [4, 24, 39, 45, 46].

For this strategy to be successful, it is essential to have a suitable banking system and skilful local management to assure that the revenues of patient charges are actually spent on urgent local priorities. Moreover, patients' and providers' involvement in the management of these revenues is required to be able to identify adequate priorities and their appropriate targeting [5, 8, 41]. Thus, in a context of health care financing crisis with a severe under-funding of critical inputs, the marginal net revenue from patient charges that are retained locally, may offer greater benefits than those suggested by the low monetary figures at a national level [6, 25, 32].

Another issue related to patient charges and health care system funding, is the existence of informal patient payments in a country. The existence of these payments

is often a response to the insufficient financial resources and poor access to basic health care services. The presence of informal patient payments is an important feature of the health care systems in many middle- and low-income countries [47, 48] but informal patient payments are reported in high-income countries as well [49]. Empirical evidence shows that the informal payments in some countries can represent a significant part of the income of the health care providers. Informal payments are paid to health care providers both in the hospitals and in out-patient polyclinics. These payments can take either monetary or non-monetary form [48, 50, 51]. The existence of informal patient payments can have an adverse effect on equity and efficiency in the health care system, and can hinder the estimation of future funding requirements of the health care sector. Moreover, these types of payments can introduce undesirable incentives for health care providers [48,52], such as provision of health care based on the ability to pay rather than health care needs and cost-effectiveness of care. Therefore, they should be eliminated.

From a theoretical point of view, the implementation of patient charges can be seen as an opportunity to convert the informal patient payments into formal health care charges. However, the development of an appropriate patient payment policy aimed at dealing with the informal patient payments requires reliable data on the magnitude and pattern of these payments, as well as on the willingness and ability of consumers to make such payments. This is also a necessary precondition to avoid the potential adverse effect of the implementation of patient charges in a context of informal payments. Evidence suggests that the introduction of patient charges can result in a mix of formal and informal charges, which increases the real out-of-pocket spending of the consumers [13, 48].

Thus, inequities in health care financing created by informal patient payments in case of officially free-of-charge health care provision can deteriorate after the introduction of formal charges [13]. Furthermore, if patient charges are perceived as a mechanism for replacing the informal payments, the local management of patient charges revenue aimed at adequate supply and provider remuneration is important [47, 48]. Some authors even suggest that the possibility to shift the flow of financial resources from the informal part of the health care sector to an official mechanism for pooling resources (such as patient payment mechanism), should be considered from a broader perspective. A general financial reform in a country accompanied by in-depth health care reforms might be more effective in dealing with informal patient payment rather than the introduction of official patient charges [43].

### 3. Equity consideration for the implementation of patient charges

Although, the literature provides diverse conclusions about the rationale of implementing patient charges for efficiency and sustainability improvements in the health care sector, there is nearly a common agreement about

the potential adverse effects of these payments on equity [4]. This is because by definition patient charges contradict the equity concepts. In general, equity in the health care sector means paying according to the ability and receiving according to the needs, while patient charges imply contributions based on the health status and access determined by the income [54]. Thus, the introduction of patient charges for health care services is associated with both inequity in health care financing and inequity in health care access.

Patient charges for public health care services cause inequity in health care financing, since their magnitude is not necessarily related to the consumers' ability to pay. Individuals from the same income group are charged differently if they have different health care needs. At the same time, individuals from different income groups can be required to pay the same amounts if they happen to need the same services. In this sense, patient charges cannot assure proportionally equal payments for health care from all income groups [13, 32, 55].

Because patient charges do not require a distinction between high- and low-income individuals, and because the low-income individuals are likely to be more price-sensitive, it is suggested that the introduction of patient charges causes a higher financial burden for low-incomeers than for the wealthier [6, 13, 45]. Thus, the reduction in the quantity of health care demanded after the introduction of patient charges can be greater for the poor than for the richer. The wealthier patients can afford to pay more without significantly reducing their necessary (and even unnecessary) demand [21, 32, 56]. For that reason, patient charges are described (e.g. [54, 55]) as a highly regressive policy tool.

Even when all income groups are equally price-sensitive, as suggested by some studies (see [18, 19, 26]), patient charges are regressive because the poor need to spend a larger part of their income for health care than the richer. In some cases, it could be that the spending of the poor for health care services reaches the limits of their incomes, which means that patient charges could result in a great welfare loss for the poor. Therefore, some authors (e.g. [55, 57]) suggest that the basic equity effect of introducing patient charges is shifting the health care costs from those paying premiums/taxes to those who have fallen sick. In this sense, patient charges present a kind of "taxation" on the illness from those who are already in the disadvantaged position of being sick. A policy that results in taxation of disadvantaged people would be undesirable for social and ethical reasons [58].

From a theoretical point of view, equity in health care financing can only be ensured if patient charges are related to patient income [59]. Introducing price discrimination among the health care consumers is of course not unproblematic. Patients have to be classified into income groups and differentiated prices for different services should be calculated [56]. If such patient payment mechanism can be developed, its successful implementation will be determined to a great extent by the financing and management capacity of the particular health care system [38]. The potential of price discrimination may be even lower

if the wealthier patients can opt for purchasing health care services at the private sector [56]. A more appropriate system of price discrimination can be to set fees for different services and then to adjust these fees based on patient income during the service provision. For example, it is possible to have a low-enough uniform fee for a consultation and then to introduce a price discrimination during the treatment. This way neither the poor nor the wealthier patients will be discouraged to purchase a consultation at public health care facilities [56]. In any case, a patient payment mechanism based on price discrimination will be characterised with high administration costs and complexity. It is likely that the administration costs of such mechanisms considerably wave its benefits. Therefore, it is not surprising that patient payment mechanisms based on price discrimination remain primarily theoretical models.

Patient charges can also cause inequity in access to health care services since the opportunity to benefit from health care when there are patient charges is not necessarily distributed according to the needs. Patient charges create financial barriers most often for people who need health care frequently [13]. The very poor people for example often fall in this group due to the reverse relation between poverty and poor health status [60]. The introduction of patient charges can deeper this reversible effect by reducing the access of poor individuals to health care services [26, 60]. Even for individuals who do not fall in the group of poor people, patient charges can present a financial barrier to service utilisation if the intensity of use is high. This could be the case of the elderly, children, and chronically sick who belong to middle-income households, but who often need health care services. For these population groups, the accumulation of patient charges can become a financial burden. For both poor and intensive users, patient charges can cause delays in seeking necessary treatment and worsen health status. This situation is observed in low-, middle- and high-income countries (e.g. [3, 35, 58, 61]).

Yet, the experience with free-of-charge health care provision suggests that the absence of patient charges does not necessarily ensure equal access to medical care for all population groups especially if the health care resources are insufficient (see [6, 62, 63]). When health care is free at the point of consumption, other factors than patient charges replace the rationing of service utilisation. The travel costs, for example, can represent an important financial barrier for using otherwise free health care services. The services provided free-of-charge at the point of consumption are often inequitably distributed and concentrated mainly in the urban areas close to the middle- and high-income population groups (see [61, 64]). When the travel distances are long and the transport costly, the unequal geographical distribution of the health care services makes access of low-income groups and rural population rather expensive and time consuming [65]. Moreover, even if there is no financial or timing barrier for using health care services, the behaviour of health care providers can have inequitable consequences. Physicians might have (or find) the possibility to decide themselves to whom from the waiting patients to provide

the free-of-charge services, which can affect the equity in access. When there is no control over the physicians' decisions, the amount of health care services provided according to factors other than the needs of the patients may be increased. The existence of informal patient payments in a country might be an additional argument why officially free-of-charge health care provision does not always assure equity.

It should be underlined however, that inequities caused by patient charges are much greater than in case of free-of-charge health care provision. In addition to the costs of travelling and waiting, vulnerable low-income and rural population groups should bare also the patient charges. The potential distortion of equity in the health care sector due to the implementation of patient charges is the soundest reason for the objection of patient charges as a policy tool [4]. Therefore, it is not surprising that the need to remove patient charges in low-income countries has come into focus of current policy debates and empirical research [6, 32, 66–68]. It is recognised however, that the removal of these payments cannot be done instantaneously and should be accompanied with policy measures to avoid deterioration in health care provision due to reduced service funding [55].

The inequity in health care provision caused by patient charges can be reduced to a certain extent by exempting the poor from such payments and introducing modest patient payment obligations for the low-income groups [41, 65]. However, other vulnerable population groups who are frequently in need of health care services (e.g. children, elderly and chronically sick) need to be considered for exclusion or fee reductions as well [3, 13, 61, 58].

Despite the intentions of policy-makers to accompany the introduction of patient charges with equity protection measures, the adverse equity effects are still observed [4,69]. There are two main reasons for this: inadequate design of the equity protection measures and/or inability to implement them in practice. For example, in a review of exemption mechanisms that accompanied patient charges in low-income countries, Barnum and Kutzin [34] report that these mechanisms frequently have an inequitable nature, notably for civil servants and members of the armed forces, who are not necessarily unable to pay or in need of frequent health care use. Thus, the exemption arrangements do not always reflect the consumer ability to pay but are also based on other general considerations [70].

Even when the exemption mechanism designed by policy-makers provides a base for ensuring equity and improving the access of the poor to health care, its implementation often fails in practice [6, 71]. In some low-income countries for example, the calculation of the incomes is administratively difficult due to absence of reliable data about the real economic status and existence of income-subsistence activities [4, 38]. As result, the poor population groups cannot be accurately identified, which leads to inequity even though an exemption mechanism is in place. Additionally, the failure of the exemption mechanism can be caused by a lack of appropriate

dissemination of information about its existence, providers' reluctance to grant the exemption and/or the social stigma associated with the exemptions [4, 60, 70, 72].

## Conclusion

This paper presented a review of theoretical and empirical evidence on the effectiveness of patient payment policies with the objective to discuss the key policy considerations. The experience of countries at different levels of development (low-, middle-, and high-income countries) was taken into account to outline what could be reasonably expected from the introduction of patient charges for public health care services.

The review suggests that the social benefits of introducing patient charges in the public health care sector are still rather uncertain (mostly due to a lack of systematic empirical research), while their adverse effects on equity are well recognised. Overall, patient charges could be, to a certain extent, a successful policy tool for shaping the pattern of health care utilisation towards micro-efficiency improvements, and for improving the quality of health care provision by managing the fee revenues at a local level. However, an additional condition for success is the appropriateness of the design of patient charges with respect to equity in the public health care sector.

Nevertheless, an increased reliance on patient charges is unlikely to improve macro-level efficiency and sustainability in the health care sector but will rather have adverse equity effects on health care provision especially in a context of informal payments. It remains the government's responsibility to deal with the existence of informal patient payments (where applicable), to secure adequate resources and investments for the public health care sector, and to contain the overall health care costs using supply-side measures rather than solely patient charges.

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## Abstract:

Policy-makers assign various objectives to the implementation of patient charges for public health care services. These charges impose prices on health care consumption and as such, they are expected to affect the quantities of health care service demanded, and to generate revenues. The actual ability of patient charges to achieve these objectives depends to a great extent on the patient payment mechanism implemented in a country, as well as on the health care system and context-specific factors. This paper reviews and discusses the theoretical and empirical evidence on the effectiveness of patient payment policies. The paper suggests that patient charges can be a successful policy tool for controlling the pattern of health care utilisation and improving the quality of health care provision. However, an additional condition for success is the appropriateness of the design of patient charges with respect to efficiency and equity in the public health care sector.

## Streszczenie:

**Dopłaty pacjentów jako skuteczne narzędzie polityki zdrowotnej. Teoretyczne założenia i empiryczne dowody**

**Słowa kluczowe:** dopłaty pacjentów, polityka zdrowotna, efektywność, sprawiedliwość

Wprowadzeniu dopłat pacjentów do publicznych świadczeń opieki zdrowotnej towarzyszą różnorodne cele. Dopłaty te, stanowiąc cenę konsumowanych świadczeń opieki zdrowotnej, mają wpływać na ich liczbę i/lub generować dodatkowe przychody. Możliwość osiągnięcia tych celów zależy w dużej mierze od mechanizmu dopłat pacjentów wprowadzonego w danym kraju, jak również od cech systemu opieki zdrowotnej oraz czynników pozasystemowych. Niniejszy artykuł prezentuje i poddaje pod dyskusję teoretyczne założenia i empiryczne dowody na skuteczność polityki dopłat pacjentów. Przedstawione wyniki wskazują, że dopłaty pacjentów mogą być skutecznym narzędziem kontroli struktury korzystania ze świadczeń opieki zdrowotnej, jak również polepszenia jakości dostarczanej opieki zdrowotnej. Jednakże dodatkowym warunkiem osiągnięcia sukcesu jest odpowiednia konstrukcja systemu dopłat, zapewniająca efektywność i sprawiedliwość w publicznym systemie opieki zdrowotnej.

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