

Global Health Systems: Pricing and User Fees*

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Abstract

This chapter is concerned with the issue of user fees (or user charges) for public health services. We discuss the implications of user fees for cost-effectiveness, allocative efficiency, equity, progressivity of public health care spending, and quality of service. Each of these is a desirable end in itself, and so each is an important factor in the optimal pricing decision. They are not always compatible with each other, however. Furthermore, they all have to be financed from a single, and typically constrained, budget. Thus governments have to tradeoff over them. We review the theory and empirical evidence on the effects of user fees on each factor.

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1 Introduction

Governments throughout the world intervene in the health sector. One motivation is that under Article 25 of the Universal Declaration of Human Rights access to adequate health care is a fundamental human right. To meet this obligation, many governments intervene by providing primary health care services. A second motivation is that the health sector is subject to market many failures, due to, for example, consumption externalities, imperfect information, and imperfect credit. Consumption externalities exist when private consumption of health services yields positive social returns. Immunization is a prime example: when private individuals get immunized, the disease transmission rate falls, yielding increased protection for the whole population. In the case of imperfect information, people do not have all the information they need to make health care decisions. There may, for example, be information asymmetries: the patient typically has less information about her private returns to consuming a given health procedure or drug than the physician trying to sell that service or drug. In the case of imperfect credit, people might not be able to finance lumpy health investments that yield positive returns, such as preventive care. In the presence of these market failures, private consumption of health products and services is socially suboptimal. Thus, in the presence of positive externalities, immunization rates are too low; in the presence of information asymmetries that favor the provider who has incentives to oversell, the utilization rate for services or drugs is too high; and with imperfect credit investments in preventive products is too low. Governments intervene in the health sector to remedy these market failures and achieve the social optimum. They do so in four main ways: public provision of health services, subsidies for private provision, regulation of private provision, and public provision of information. In the first three cases, an important dimension of the governments' intervention concerns the pricing of health products and services.

This chapter is concerned with the question of how to decide what price should be set or charged for what health service or product. How much should patients pay for health services at government clinics? How large should the subsidy be for preventive health products that exhibit positive externalities? What should be the maximum price that private medical practitioners are allowed to charge for primary care services? Although many of the points discussed here are directly relevant to the issue of optimal price controls, price regulation, which is covered in the previous chapter, will not be discussed. Instead, we focus on the issue of user fees (or user charges) for public health services.

Public health services account for more than two thirds of medical services provided in sub-Saharan Africa and between one-third and two-thirds in Southeast Asia. For our purposes, public health services will be broadly defined. They will include the delivery of subsidized health products, even if receipt of these products does not require a health professional. In other words, as defined here, public health services encompass both inpatient and outpatient medical care and the implementation of subsidies for vaccines, bednets, antimalarial pills, and other privately produced health products.

User fees have implications for cost-effectiveness, allocative efficiency, equity, progressivity of public health care spending, and quality of service. Each of these is a desirable policy end in itself, and so each is an important factor in the optimal pricing decision. They are not always compatible with each other, however. Furthermore, they all have to be financed from a single, and typically constrained, budget. Thus governments have to tradeoff over them. While the relative importance accorded to each factor will depend on the social planner's objective function, most are likely to place non-zero weights on most factors. In addition, these five factors have to be considered both for the product or service in question and for other products and services funded from the same budget. Each factor, then, has to be carefully analyzed when setting a pricing (user fee) system for public health services. This chapter reviews the theory and empirical evidence on the effects of user fees on each factor.

2 Cost-Effectiveness

A first reason to charge a user fee for a given health service or product may be to reduce the public cost per unit provided. This per-unit cost reduction would make it possible to increase the quantity provided within a given budget – that is, to become more cost-effective. Two conditions are necessary conditions for a user fee to reduce the unit cost.

2.1 User Fees and Administrative Costs

User fees can only improve cost-effectiveness if the administrative costs of collecting and managing the fee revenue is lower than the fee itself. This is an obvious enough condition, but one that is not always easy to satisfy. Recording keeping at the point of service in many developing countries is done manually. This makes the aggregation of data needed for effective management time-consuming and difficult. In particular, ensuring that fees

are properly collected and remitted in full can require either costly monitoring, or costly incentives for health workers, or both.

2.2 User Fees and Fixed Costs

When fixed costs are important, the impact of user fees on cost-effectiveness will depend on the price-elasticity of demand. Fixed costs for health care are often large: both the facility costs and staff costs must be paid whether patients use the facility or not. This means that a change in demand can have a substantial impact on the average cost. Imagine, for example, that 15 patients use a prenatal clinic daily when the price is zero, but only 9 when a user fee is charged. The fixed costs, for example the salary of the prenatal nurse, would be the same for 9 patients as for 15. As such, the per-patient cost of delivering prenatal care could actually be higher when fees are introduced and utilization rates decrease. Banerjee et al (2010) report on a recent example of the effects of utilization rates on cost-effectives in the presence of important fixed effects. When parents were offered in-kind incentives to use free immunization services, demand increased so much that costs per-child immunized were halved compared to when they received free service alone. In other words, with higher demand fixed costs were spread over many more beneficiaries, so that the negative price was more cost-effective than a zero price.

The question of the price elasticity of demand for health services gained prominence in the mid-1980s. After they signed the 1978 Alma Ata “Heath for All” Declaration, which made access to basic health care a fundamental right, many countries in Africa implemented free primary health care. In the mid-1980s, however, it became apparent that free delivery was not financially sustainable, and in 1987 the WHO, UNICEF, and a group of African Health Ministers launched the Bamako Initiative calling for self-financing mechanisms at the local level, including user fees, particularly, for drugs. The evidence available at the time was mixed and therefore controversial. Earlier studies, using cross-section variation in prices, had estimated that demand for health care was relatively price-inelastic. The price range over which the elasticity could be estimated was relatively narrow, making it difficult to gauge how truly price-sensitive people were. (See Griffin, 1989, for a review of the early literature.) Later studies, using the introduction (or suspension) of user fees, all found large drops (increases) in utilization in response to the policy change. (See Gertler and Hammer, 1997, for a review of these later studies.) More recently, Fafchamps and Minten (2007) study the suspension of user fees in Madagascar

following a political crisis, and find a very large uptick in utilization rates. All in all, the empirical evidence so far suggests that social planner should give close attention to potential reductions in utilization rates when considering user fees as an instrument for reducing the unit costs of public health goods.

3 Allocative efficiency

A second reason to charge user fees maybe to improve allocative efficiency – that is, ensure that the product or service is provided to those that actually need it the most. In particular, user fees may help prevent overutilization, that is, utilization by those for whom the conferred benefits, both private and social, are lower than costs of providing them the good. If user fees do prevent such waste, then the resulting reduction in demand would be desirable even when universal access to services is one of the social planner’s objectives. There are three mechanisms through which user fees can act on allocative efficiency: screening effects; psychological effects; and moral hazard deterrence effects.

3.1 The Standard Role of Prices: Screening

User fees can improve allocative efficiency, first, by screening out those who don’t value the product or service enough to pay for it.

This allocative role of market prices is a standard tenet of price theory. Households, just like governments, are budget-constrained. They, too, are unlikely to invest in a health good—be it prenatal care or a water purification product—if the expected benefits are lower than the costs, both the monetary costs and the time costs. A person with a simple cold, for example, is less likely to be interested seeking care if it will cost money or it will take two hours of her day. But if she has severe malaria, she will probably want to make the investment in medical care, even at a high cost. In the end, whether or not she seeks care and what kind of care she seeks will depend on the prices she faces. In other words, the prices determine the allocation of public health goods. Because it is theoretically based on the user’s valuation of the good, this priced-determined allocation is efficient.

The allocative efficiency of prices breaks down under three market imperfections—externalities, imperfect credit and imperfect information. First, when there are positive externalities to private consumption, private consumption should be subsidized up to the social value to ensure that those for whom the private value is lower than the market

price (but the sum of the social and private value is higher than the price) still invest in the good.

Second, when credit markets are not perfect, people cannot borrow to invest in goods that yield positive returns. Limited access to credit means that people may not have the ability to pay for their full valuation of the good; ability to pay and willingness to pay can then become disjoint. User fees could in such cases bar access to some people for whom the health returns to the health good would be high, but who are too poor to pay for it.

Third, when information is imperfect people may not know exactly the private value of the good. For example, they may not have the information or the ability to process available information; they would then not be able to assess how much they would benefit from, and so should want to pay for, a given medical procedure or product. For some goods they may only be able to acquire the information by first trying the good. In these cases of imperfect information, user fees could screen out those that do not know they need the product, preventing them from ever learning that the good could benefit them. On the other hand, in the presence of imperfect information, how much a service or product is sold for may be interpreted as a signal of its quality (Bagwell and Riordan, 1991; Dawar and Parker, 1994). If so, setting user fees too low could discourage usage by setting too low expectations about the quality being provided. In a randomized study in urban Zambia, Ashraf et al. (2012a) find that too low prices for a new, unknown water purification product dampened demand for the product compared to a higher-priced, well-known product. This signaling effect of prices can be mitigated by information provision, however: in the Zambia study, accompanying the subsidy with a marketing message that informed customers that the new product was as effective as the well-known product led to higher demand at subsidized prices. Likewise, information that the user cost is subsidized might be sufficient to ensure that low prices are not taken as a signal of low quality (i.e., if people infer something about the value of a service from the extent to which it is subsidized).

Evidence from recent randomized experiments suggests that the extent to which user fees can improve allocative efficiency depends on the context as well as the good.¹ Ashraf et al. (2010) randomized the fee charged for a chlorine-based water purification product in urban Zambia. They found that higher fees screen out households that would not

¹Dupas (2012) provides a framework to think about the conditions under which user fees can, or cannot, improve allocative efficiency.

benefit health-wise, because, for instance, they would use the product for house cleaning rather than water purification. Cohen et al. (2012) randomized the fees charged for artemisinin-combination therapy (ACT), the latest class of antimalarial drugs, in rural Kenya. They found that higher fees increase the likelihood that the ACTs are bought by those with a verified case of malaria. In contrast, Dupas (2009) and Cohen and Dupas (2010) found the opposite result. They randomized the fee charged for antimalarial bednets to households and pregnant women, respectively, in rural Kenya. They found that higher fees significantly reduced demand by screening out those who value the product and would use it efficiently if they got it for free but cannot afford to pay for it. Dupas (2012), in a study in rural Kenya, found that the reduction in demand associated with high fees can prevent households from learning the true private value of antimalarial bednets, which dampens future willingness to pay.

Given these dynamic learning effects, and the pervasiveness of credit constraints, a potential alternative to setting user fees is to use non-monetary costs as an allocative mechanism. Studying the adoption of a water chlorination product similar to that studied in Ashraf et al. (2010), Dupas et al. (2011) show that compared to simply handing out the product for free at clinics, distributing free vouchers redeemable at a local store can improve allocative efficiency. This is because the transaction cost of going to the store to redeem the coupon, though small, seems to be enough of a deterrent to dissuade people from picking up a chlorination product they will not use, while not discouraging those who will actually use the product.

3.2 Potential Psychological Effects of Prices

User fees could improve allocative efficiency, second, by way of the psychological effects of prices, including sunk cost fallacy and price-placebo effects.

The effectiveness of some health goods will depend on the behavior—compliance—of the user. For example, the effects of an iron supplementation regimen on anemia depend on the behavior of the recipient. If he does not comply with the regimen, say taking a pill once a week instead of once a day, the treatment will not work as well. The same goes for a bednet; if it is not hung up or used, it will not protect anyone from malaria. Some services also have the same property. If a pregnant woman does not listen to the nurse during her prenatal care visit, she might not learn enough to benefit from the visit. For such goods, user fees might help induce the complementary behavior required for

full effectiveness. They could do so through two psychological channels — the sunk cost fallacy and placebo-price effects

First, the sunk costs fallacy (Thaler, 1980). When this fallacy is operative, the higher the price paid for a good, the higher the likelihood that it is used to its full potential. This is because the buyer wants to avoid feeling that they wasted money. People, it seems, do not recognize when they should consider costs incurred in the past as sunk costs. Arkes and Blummer (1985) find evidence of sunk cost fallacy effects for entertainment products. It is possible that such effects could apply for health products, with, for example, people who pay more likely to comply with an expensive course of treatment or more likely to use a bednet. However, two experimental studies specifically designed to test for sunk costs fallacy effects for health products find no evidence for them (Ashraf et al., 2010; and Cohen and Dupas, 2010).

Second, placebo-price effects. In this case, paying a higher price increases the psychological investment of the user, boosting effectiveness. Thus, Shiv et al (2005) found that people who were charged full price for a drink supposed to boost mental acuity performed better on mental tasks than those who were told they had received a price discount. Whether such placebo-price effects are at play for public health goods remains to be directly tested. The evidence in Ashraf et al. (2010) and Cohen and Dupas (2010) indirectly suggests that such placebo-price effects are not large enough to boost usage of water chlorination products or bednets, but they could increase the effectiveness of medication for mental health, for example. There is no evidence to date on this issue.

3.3 Prices and Ex-Ante Moral Hazard

Charging fees could improve allocative efficiency by deterring moral hazard behavior. If health goods are costly, people are more motivated to stay healthy. Thus, when treatment for injury is expensive and out of pocket, people would be more motivated to avoid injuries than when treatment is free. More to the point, people would have a higher incentive to invest in preventive goods if curative care is costly. Note, however, that this argument can be used to motivate larger fees for curative services, but not for preventive care. For preventive care, the argument is exactly the opposite; user fees would reduce preventive investments, leading to higher demand for curative care in the future, potentially increasing total health care costs. Evidence on the importance of ex-ante moral hazard in a developing country context is rare, probably because it is considered unlikely or minimal.

Thornton et al. (2010), looking at the impact of introducing health insurance for informal workers in Nicaragua, do not find any evidence of moral hazard behavior.

4 Equity

Improving equity in access to health care (if not equity in health) is part of the objective function of most governments. The impact of user fees on equity in access depends on the price-elasticity of the demand for health services and products, and how it varies by socio-economic status.

As we discussed above, there is a large literature on the price-elasticity of demand for health goods. The price-elasticity of the demand for preventive care has recently received a lot of attention, and the evidence from randomized field experiments suggests quite a large price sensitivity in a number of settings (see Dupas (2011) for a review). The evidence on the price-elasticity of the demand for curative care is somewhat mixed and for the most part imperfectly estimated, but it overall suggests that user fees tend to compromise access. When they report estimates of price-elasticity by poverty status, these studies can inform us regarding the redistributive implications of user fees (see for example Gertler et al. (1987) in Peru, Sahn et al. (2003) in Tanzania, and Asfaw et al. (2004) in Ethiopia). Overall, this literature suggests that the poor and the vulnerable, such as women and children, are much more price-sensitive than others.

An obvious way to amend a user fee system to foster equity is to price discriminate, that is, charge the poor less than the rich for a given health service or product, for example through the distribution of vouchers. This is not always easy to do in practice. Most of the poor in developing countries are subsistence farmers or employed (often self-employed) in an informal business. This means that they are not part of the tax base; there is thus no record of their earnings, which makes it difficult to identify who should be eligible for the lower fee / voucher.

5 Progressivity of public health spending—the redistributive implications of user fees

A related issue is that of redistribution. Redistribution is often a health policy objective. In that case, public health services are an integral part of poverty alleviation efforts. An

important consideration when setting user fees is their impact on who benefits from public health spending, or benefit incidence.

If user fees are set below the average cost but remain substantial enough that they reduce the demand for public health services proportionately more for the poor than for the rich, then they would make public health spending regressive: benefits would accrue disproportionately to the rich. Even if user fees do not reduce health service utilization among the poor, they could have negative redistributive implications through negative cross-price elasticities. The more the poor have to pay for their health care, the less money they have left to invest in, say, education. If user fees for health reduce enrollment in public schools among the poor, that might undermine the goal of primary education for all, another objective common to most governments of developing countries.

While, to the best of our knowledge, there is no evidence on cross-price elasticities for publicly provided services, there is, as we discussed above, a large literature on the price-elasticity of demand for health goods, and this literature suggests that the poor and the vulnerable, such as women and children, are much more price-sensitive than others, which would imply that user fees are likely regressive. Castro-Leal et al. (2000) look at public spending on curative health care in seven sub-Saharan countries, and consistent with the price-elasticity literature, find that public health spending is disproportionately benefiting the less poor. The richest 20 percent receive much more than 20 percent of public health subsidies, while the poorest 20 percent receive less than 20 percent. This is because a large fraction of public health subsidies go to services that the poor do not use, such as hospital care, which the poor do not access because they typically live far from any hospital. A recent review of the evidence compiled in the 2004 World Development report shows that this phenomenon is not limited to Africa (World Bank, 2003).

A potential solution to ensure that public health spending is targeted at the poor is, here again, to price discriminate. While price discrimination for a given product can be difficult when identifying the poor is itself difficult, an alternative is to charge high fees for products and services that only the rich demand/use, and low or no fees for the products and services used primarily by the poor. That would mean, for example, charging high fees for hospital care and low fees for care at primary facilities; or if there is geographic segregation, charging higher fees in richer areas and lower fees in poorer areas.

6 Quality of Service

The last factor to consider in the pricing decision is that of the quality of the health care received by the population. This means considering both the quality of those health services subsidized or provided by the government as well as the quality of the alternatives that people would have to resort to if user fees deter them from accessing public services.

6.1 User Fees and the quality of the services for which a fee is charged

User fees can have a direct positive impact on quality of the services for which they are charged if the revenue they generate is retained by the local facility charging them, and used locally. This can come about through two main mechanisms. First, the user fees can finance quality improvements such as maintenance or renewal of the equipment or the facility or in-service training for health workers. Second, the revenue from the user fees can be used to incentivize health workers: if health workers can pocket the user fees, they have a higher incentive to be present and serve than if their payoff function is flat. On the other hand, pay-for-service can lead to overprovision of services, that is, moral hazard on the part of the provider. There is, to the best of our knowledge, no evidence to date on these issues in a developing country context, in great part due to the fact that in most health systems, the revenue from user fees is not kept by the local health providers but remitted to the central authority. It is therefore not known how potential quality improvements attained through user fees would compare with direct investments in quality by the government, such as incentive pay systems paid out of general revenue. There is however some evidence from the private sector suggesting that the margins that can be made by providers on health products are so low that the incentives effect is almost inexistent. In Zambia, Ashraf et al. (2012b) find that nonfinancial rewards (e.g., social recognition) for agents selling condoms are more effective than allowing the agents to keep a margin on their sales.

Even if the revenue from user fees is not used to directly finance quality improvements, user fees could impact quality indirectly. We can think of two such potential indirect effects. First, the total revenue raised in user fees by a given health facility could be interpreted by the central authority as a signal of the quality of the services this facility provides. Indeed, it has been shown that demand is responsive to quality levels (see review

in Gertler and Hammer, 1997; and more recently Sahn et al, 2003). The government could then allocate quality-enhancing projects based on this measure of quality, or use it as a way to monitor the local providers. Second, user fees might provide incentives for users to monitor their local providers and to demand better care: if they have to pay for the service, they have an incentive to demand high quality to ensure they get their money's worth. This argument was put forth quite forcefully by the World Bank 2004 Development Report titled "Making Services Work for Poor People" (World Bank, 2003). It is not clear, however, that users can easily judge the quality of the services they receive. Banerjee et al. (2004) show that, despite extremely low quality of the health care they are getting, and their poor resulting health status, people in Udaipur (India) are quite satisfied with their own health and the services they receive. As such, community monitoring of local health providers might require information provision, such as through report cards (see Bjorkman and Svensson (2009) for an example from Uganda), even in the presence of user fees.

6.2 User Fees and Health Outcomes.

Even if user fees can enhance the quality of the services for which fees are charged, the quality change might not translate into better health outcomes for the population if user fees reduce utilization of those services and divert people to private alternatives of low quality, such as private practitioners with dubious qualifications, or self-treatment. It is therefore critical to know the price and quality of the alternatives available to people, as well as the likely impacts of a change in public sector fees, in order to fully assess the ultimate impact of user fees on the quality of health care that is received.

The effects of users on quality may be dynamic. An example is that of pricing for antimalarial drugs. Artemisinin-based therapies now constitute the only treatment effective against *Plasmodium Falciparum* in Africa, where parasite resistance to earlier generations of antimalarials is widespread. Monotherapies are cheaper to produce than combination therapies (which combine an artemisinin derivative with a partner drug), and therefore favored by consumers. But the use of monotherapies is suboptimal from a social standpoint since it contributes to faster resistance development to artemisinin. This means that high fees for combination therapies today may lead to lower drug quality in the future, if they deter demand and instead lead patients to purchase monotherapies from the private sector. Here again, considering cross-price elasticities is thus critical when determining

optimal pricing strategies.

7 Conclusion

Governments intervene in the health care sector primarily to improve health outcomes. But their ability to intervene is limited by a budget constraint. This means that optimal pricing for public health services has to strike a delicate balance: it has to minimize the likelihood that a needy person does not access the health products or services that could benefit her, while also minimizing the likelihood that these products and services are used by those for whom the returns are low. The critical parameters to take into consideration when setting a price or user fee are thus price-elasticities: the price-elasticity of the demand for the health product or service under consideration, and how it varies with income and health status; but also the cross-price elasticities of other human capital investments that the government might care about.

Overall, the empirical evidence suggests that the price-elasticity of the demand for health products and services is relatively important in developing countries, but often not because of frivolous demand at low prices – rather, because of underutilization at high prices. This suggests that in many cases the introduction of user fees might need to be paired with exemptions for the poor in order to achieve the objectives of improving aggregate health outcomes and equity of access. The question then becomes one of cost-effectiveness: if running a scheme of user fees with exemptions is costly to administer, it might be much simpler and no more costly to have a blanket no-fee policy.

Identifying what price is optimal for a given service, drug or product, given the local context and given the objective function, is not necessarily simple, as the discussion above as highlighted. But even once it has been identified, implementing the chosen price schedule is not necessarily that simple either. Providers at public health facilities might demand under-the-counter payments from clients for drugs, services, and other products on top of the set user fee. For example, the 2008 Kenya Bribery Index compiled by Transparency International reports that 53 percent of people who visited a public hospital in 2008 faced a bribery demand (Transparency International, 2008). The effects of this type of corruption – which can undermine even the most carefully designed and progressive user fee system – are a part of a separate but related and extremely important theme on which research has been and is currently being performed.

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