

# Economic contestation over user fees in low-resourced healthcare systems: A literature review

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## Abstract

This paper reviewed the literature on economic theory and assumptions that provide the rationale for using a price system to finance health care services in developing countries. The primary case in favor of a system of user fees for financing healthcare in these countries lies in allocative efficiency results to be achieved through a price system. The assumption being that, the price system signals to consumers what they must pay for health care services hence giving them an incentive to utilize those services well. However, this assumes perfect markets, where prices reflect the true marginal benefits of consuming healthcare goods and the marginal cost of their production. All equity concerns being addressed through price discrimination, a system of user fees can then allocate health care resources efficiently. Although the application of user fees in the health sector is justified by the perfect markets, there are concerns that a perfect market is less likely to be the case in health sector. Therefore, it will not be a viable way to rely on the price system to allocate resources to the population when markets of any healthcare goods and services are not available or are imperfect. Information asymmetry and uncertainty are the major obstacles to a proper function of a price system in healthcare service provision. Due to the inelastic nature of the demand for healthcare, charging fees for healthcare services can pose hard financial catastrophes to poor and lead into poverty. This suggests the need to establish health-financing policies that would facilitate the creation of new markets or which can improve the performance of existing ones in developing countries.

## Introduction

In the early 1980s, governments in most developing countries were struggling to contain national debt, by lowering spending and increasing revenues.<sup>1</sup> In most developing countries, where governments were

unable to finance running costs in the health sector, one of the options was to introduce or raise charges for public healthcare services in response to this macro-economic stress.<sup>2</sup> In Sub-Saharan African countries there were also concerns with technical and allocative efficiency in publicly funded health service provision. In many countries tertiary hospitals were providing primary healthcare, which caused overcrowding at tertiary hospitals and difficulty in resource allocation and managing referral systems.<sup>3,4</sup>

In 1987, the principle of cost recovery through user fees was recommended by the World Bank. The 1987 World Bank policy report entitled *Financing Health Services in Developing Countries* advocated cost sharing for the health care users in public health facilities and the need for governments to recover 15 to 20 percent of general expenditure in health from user charges. This was part of the reforms directed at the health sector in developing countries.<sup>3</sup> By early 1990s, cost recovery in the form of user fees was commonly approved and used by many governments as a tool of health funding policy.<sup>5,6,7</sup> To date, most developing countries still maintained the price system to finance health care and out-of-pocket expenditure accounted for 37% of Current Health Expenditure (CHE) in developing countries.<sup>8</sup>

The theoretical and empirical literature documenting the arguments for and against a price system for health care in developing countries has been growing to date, and includes several views varying in scope and focus. Most literature focused on arguments for and against user fees based on the benefits of user fees as outlined by the World Bank in 1987, *i.e.* the net benefits on efficiency and utilization of health services, equity and quality in healthcare delivery as well as resource mobilization and cost recovery in health services. This paper aims to critically analyze economic contestation over user fees specifically presenting the price system as the theoretical basis for user fees in healthcare in a market economy and the argument for and against the price mechanism of user fees in low-resourced healthcare settings. The findings of this study are relevant to advice policy makers, especially in developing countries where a price system in healthcare is in operation or about to be introduced.

## Search strategy and process

The analysis of this study was based on a survey of the scientific literature (systematic review). Systematic reviews are helpful in summarising the most robust data to

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explore differences among studies on the same question under study.<sup>9,10,11</sup> Conducting a systematic review involves a scientific process of assembling, critical appraisal and synthesis of relevant evidence that address the question under study, in a way that limit bias and random errors.<sup>9</sup> The review process in this study was well developed and planned to reduce biases and eliminate inclusion of irrelevant and low-quality studies. The steps of analysis followed a process of implementing a systematic review which included "(i) correctly formulating the research question to answer, (ii) developing a protocol (inclusion and exclusion criteria), (iii) performing a detailed and broad literature search and (iv) screening the abstracts of the studies identified in the search and subsequently of the selected complete texts."<sup>11</sup>

In order to maximise chances of identifying all relevant articles, several databases relevant to the study were searched, including PubMed, the Cochrane Library, Science Direct, Web of Science and Oxford Academic. The search terms were only in

English. The key words searched were user fees, user charges, co-payment, cost recovery, hospital charges. I developed a search strategy by combining one of the key words with the following terms: developing countries, Sub-Saharan Africa, Africa, Asia, international, primary healthcare, politics, economics, World Bank, WHO, benefits, effects, theories, market price, demand and supply and revenue. In addition to this database search, the references of included articles and other reviews on similar and related subjects were hand searched to identify additional relevant empirical studies.

An article was only retained if it dealt with the economics of healthcare user fees at all levels of care; reported original

empirical data, a textbook, a report or commentary; involved developing countries; mentioned arguments for and against user fees in developing countries; was published in a peer-reviewed journal or monograph; was published between 1982 and 2016 inclusively; and was in English. Studies that qualified and used both qualitative, quantitative and mixed method designs were included. This study examined the content of articles selected to identify the economic arguments for and against user fees in developing countries particularly on the price system in the healthcare market economy.

## Findings

My research approach gathered 28 articles (Table 1) specific to developing countries or with an international perspective. The studies were either discussing only positive (n=12), negative (n=12) or both positive and negative effects (n=4) of price system in healthcare in developing countries.

### Arguments in favor of price system in healthcare

#### *Efficiency results of the price system in healthcare*

In addition to the possibility of reducing

**Table 1. Overview of the articles.**

Positive and negative effects of price system in healthcare	Author	Study Site	Study design	
<b>Positive effects</b>				
1. Charges as an efficiency signal tool to regulate demand and utilization of public health services	Araoyinbo & Ataguba <sup>13</sup>	Africa	An Essay	
	Arkin, Birdsall & de Ferranti <sup>3</sup>	Developing countries	World Bank Report	
	Baicker, Mullainathan & Schwartzstein <sup>24</sup>	Theoretical (general)	Working paper	
	Bajari, Dalton, Hong & Khwaja <sup>25</sup>	Theoretical (general)	A semiparametric analysis	
	Dupas <sup>16</sup>	Developing countries	A review	
	Madore <sup>17</sup>	Developing countries	Report	
	Mwabu <sup>12</sup>	Developing countries	A review	
	Schokkaert & de Voorde <sup>18</sup>	Developing countries	Book	
2. Ability to generate revenue when healthcare demand is price inelastic	Arkin, Birdsall & de Ferranti <sup>3</sup>	Developing Countries	World Bank Report	
	John <sup>37</sup>	Sub-Saharan Africa	Critical Analysis of Evidence	
	Ellis, Martins & Zhou <sup>33</sup>	International	Empirical study	
	Fox & Edmiston <sup>34</sup>	Africa	Working Paper	
	McPake, Normand & Smith <sup>29</sup>	International	Book	
	Mwabu <sup>12</sup>	Developing Countries	A Review	
	Pendzialek, Simic & Stock <sup>30</sup>	International	Systematic Review	
	Ringel, Hosek, Vollaard & Manhovski <sup>32</sup>	International	A literature Review	
<b>Negative effects</b>	Shaw & Ainsworth <sup>36</sup>	Africa	Discussion Paper	
	Zhou <i>et al.</i> <sup>31</sup>	Rural China	Empirical study	
	1. Market failure and inefficiency as a result of uncertainty; asymmetry of information; and externalities	Arrow <sup>40</sup>	International	A Review
		Chen and Toxvaerd <sup>44</sup>	International	Empirical study
		Donaldson & Gerard <sup>41</sup>	International	Textbook
		Dupas <sup>16</sup>	Developing countries	A review
		England <i>et al.</i> <sup>45</sup>	Developing Countries	WHO Report
		Glied & Smith <sup>14</sup>	International	Textbook
Mwabu <sup>12</sup>		Developing countries	A review	
Nguyen <sup>42</sup>		Vietnam	Empirical Study	
Novotny & Zhao <sup>43</sup>	International	Empirical Study		
2. Inequalities in the provision of healthcare services & charges creating a regressive system in the provision of health services	Arrow <sup>40</sup>	International	A Review	
	Dupas <sup>16</sup>	Developing countries	A review	
	Ellis, Martins & Zhou <sup>33</sup>	International	Empirical study	
	Gilson <sup>46</sup>	Africa	Empirical Study	
	Gilson, Russell & Buse <sup>49</sup>	Developing Countries	Empirical Study	
	Munge & Briggs <sup>47</sup>	Kenya	Empirical Study	
	Onarheim <i>et al.</i> <sup>35</sup>	Ethiopia	Empirical Study	
	Schokkaert & de Voorde <sup>18</sup>	Developing countries	Book	
Steinhardt <i>et al.</i> <sup>48</sup>	Afghanistan	Empirical Study		

reliance on government sources of revenue, the principal argument in favor of user fees in healthcare is one related to efficiency driven by neoclassical economic theory. This regards health care as no different from any other good or service and assumes that potential users of health care can make rational decisions about the number and nature of the health services they need. This assumption underpins the idea that the allocation of all goods and services in an economy, including health care, should be based on market prices. This market-based allocation of goods and services is Pareto-efficient at competitive equilibrium.<sup>12</sup> Meaning that under certain conditions, the allocation of resources is such that one person's situation cannot be made better without making another person's situation worse off. The Pareto-efficient equilibrium can be achieved by using the price mechanism and in this case market prices will coordinate economic activities so that, demand and supply of commodities are simultaneously equal at every market.<sup>12</sup>

Based on this neoclassical economic theory, user fees in the health sector can be justified only when the value of public health services financed through user fees exceeds the value of health services that users could otherwise obtain from a private health service provider.<sup>13</sup> This simply means that user fees are suitable only where the marginal benefit of every additional dollar of user fees on public health services exceeds the marginal benefit of every additional dollar in private health services. Under a perfectly competitive market, equilibrium prices reflect both the marginal benefit of consuming healthcare goods and the marginal cost of their production.<sup>12</sup> This means that the prices households are willing to pay for health services convey a message to service providers of the kind of services consumers want and at what quantity. The prices that service providers charge for health services would inform households of the costs of the health services the households are willing to consume.<sup>12,14,15</sup> In the end, the decision of the consumers of health services whether or not to seek healthcare and what kind of healthcare will depend on the price they face. In such a perfect competitive market, a consumer knows all there is to know about the products they wish to consume, and it will be very difficult for the provider to influence the demand for such services.<sup>16</sup> Households will not purchase health care services if the costs attached to those services exceed the benefit expected. For example, a person suffering from a simple cold may decide not to seek medical attention if the cost of treatment and travel time are high. But for a person affected by

severe malaria the benefits of medical treatment are likely to exceed the costs, even if the costs are high.

The healthcare market just like many markets, constitute the economy and requires scarce resources to produce.<sup>12,16,17</sup> Therefore, a price mechanism for allocating healthcare services such as user fees signals the scarcity of health care resources and promotes efficiency in their provision and consumption. To consumers of healthcare services, user fees, whilst not the same as market prices, provide an incentive to utilise healthcare resources well. This incentive was a result of budget constraints faced by households, in such that they would not spend part of this constrained budget on unnecessary health services depriving themselves benefits from consuming other important goods and services.<sup>18</sup> Implementing user fees for health services creates an efficiency enhancing effect as budget constraints by household will provoke a rational response to the use of health services, hence reducing unnecessary demand for healthcare.<sup>3,12</sup> Therefore, charging fees should make the users of public health services more sensible in their demand for services. If the fees reflect the relative cost of services, then charging higher fees at hospitals than at clinics for same service would encourage proper referral practices and discourage patients from seeking those services at the hospitals.

#### ***The potential psychological effects of price in healthcare***

Although not widely researched in the health sector, price may also have important psychological effects beyond the rational comparison of cost and benefit. The effectiveness of some healthcare goods is dependent upon the behavior and compliance by the healthcare user. User fees can enhance allocative efficiency by the psychological effects of prices mainly through the sunk-cost fallacy and price-placebo effect. Thaler's sunk-cost effect theory,<sup>19</sup> suggests that paying for the right to a good and services increases the chance it will be used to its full potential. This idea operates when a consumer uses the product to avoid a feeling that they would have wasted their money if they do not make use of the good or service they paid for.<sup>20,21,22</sup> This idea is common in other markets such as the entertainment industry,<sup>16</sup> but it can also be applicable to health products, such that when a consumer pays for a health service, they will comply with treatment. Preventive services such as the use of mosquito nets will be used to full potential as the consumers would feel the need to use the net considering they paid for it. The placebo-

price effect theory depicts that when a consumer pays a higher price for a good or service, it increases their psychological investment in the good or service, thus boosting its perceived impact.<sup>19</sup> Implementing user fees for public health services may have a placebo-price effect on the consumers if they perceive price to be an indicator of quality or effectiveness.

#### ***Prices and moral hazard***

Implementing user fees for health services could improve efficiency by discouraging ex-ante moral hazard (the behavioural change of patient before the illness),<sup>23-26</sup> such that when health services are costly people are more motivated to stay healthy.<sup>16</sup> When curative services are costly, people will be motivated to invest in preventive services, for example, if the cost of injury is high, people will avoid drinking and driving to avoid road traffic accidents. Contrary to that,<sup>16</sup> argues that user fees could reduce preventive and primary healthcare investments leading to higher costs of curative services in the future. This implied that charging fees for primary healthcare services could delay seeking of preventative and primary healthcare leading to complications requiring higher and expensive services. The World Bank<sup>27</sup> argued that the first point of contact in a healthcare system ought to be primary healthcare either at a clinic or health post where health services are usually less costly than at hospital level. This means that health care users will make a choice to utilize the affordable services at those facilities rather subvert the referral system and seek the more expensive service in hospitals. In a health system where there are no fees or fees are uniform across all levels of care, clients may not consider the cost of health care services,<sup>28</sup> rather they will opt to utilize services at higher levels of care for minor health problems which are offered at the clinics.

#### ***Price inelastic demand and revenue generation effect of user fees***

Elasticity measures how responsive or the rate at which demand/quantity of a good or service change with change in price, income or prices of substitute or complement goods.<sup>29,30</sup> When analysing user fees in healthcare, it is important to know about how healthcare demand responds to changes in price, known as price elasticity of demand. Price theory suggests that if the price of a good or service rises then the demand of that good or services will fall and vice versa.<sup>31,32</sup> When the demand for health care services is said to be inelastic, consumers will not be very responsive to changes in price<sup>32,33</sup> and there will be only a slight drop in demand for healthcare ser-

vices, but expenditure will increase.<sup>12,34</sup> Therefore, a system of user fees will raise revenue for public health facilities when health care demand is highly inelastic. The demand for many curative health services is expected to be relatively inelastic, in large part because there are few close substitutes for medical services.<sup>32</sup> This means that there will only be a small effect in demand from raising fees for health services. This inelastic price effect means that a modest fee on curative services would increase revenue without a negative effect on their utilization. For example, severe health problems like cardiac attack and cancers, are considered to be ‘in-elastic’ of demand of the people. In such a case, people will sell their properties like cattle, land, etc. to meet the high prices of health care services. This is obviously of importance when governments in developing countries consider policy objectives; Is it to raise revenue or to deter use of low-value services?

Proponents of the price system argued that user fees could not only encourage efficiency, but also consumers might opt for cheaper and alternative treatments that are as effective and safe as public health facilities.<sup>12,30,31</sup> An additional argument made by the World Bank,<sup>3</sup> was that revenue generated from user fees could allow for expansion of underfunded essential health services, which in turn helps governments rectify problems with allocation of basic health services. User fees were seen to be increasing financial resources in the health sector<sup>3,35,36</sup> which could ease budgets for healthcare in developing countries.<sup>37</sup> Introducing user fees would lessen the economic burden on government in trying to fund healthcare, by shifting part of the costs of healthcare to the users.<sup>3</sup> The increased revenue from user fees in developing countries was expected to support public health in general and most importantly areas of public health importance such as preventive services and immunizations.<sup>3,36</sup> This means that revenue assured through user fees should be reinvested and be allocated to cost-effective services that improve the health of the poor.

### Arguments against price system in healthcare

There are also counterarguments against relying on user fees as a model for financing and allocating healthcare services, particularly in developing countries. One argument challenges the neoclassical assumption of perfect markets, suggesting instead that health care markets are unable to yield a Pareto-efficient outcome because of what is known as “market failure.”<sup>12,38,39</sup>

### Market failure and inefficiency of price system

Healthcare markets fail to ensure efficiency because of the combined effects of three characteristics: uncertainty; asymmetry of information; and externalities.<sup>40</sup> A person’s demand for health care is characterized by uncertainty. People do not know when they will get sick or will need a particular health care service, they can be unsure of the consequences of illness and cannot easily work out the price of health care or what treatment will cost them.<sup>34,41</sup> A particular medical need might arise at a time where the patient’s income is not sufficient to meet the treatment expenses. Despite the fact that the patient may have sufficient income to cover medical costs, paying for health services may adversely affect the household budget, pushing families into poverty. Therefore, the uncertainty about health care is that the cost of future treatment carries the risk of inability to pay for the required treatment or may be too expensive even if treatment can be afforded.<sup>12</sup> In the face of uncertainty, there are benefits to be gained from insurance, which pools risk and helps spread the costs of health care.<sup>16</sup> However, insurance insulates people from price, deliberately so in order to reduce uncertainty, and this undermines reliance in user charges and the price mechanism (a problem that health economists refer to as moral hazard).

Price theory also assumes that users are well informed about their need for and the quality of any health services being traded.<sup>12</sup> It is questionable whether this assumption applies in relation to health care, especially for complex or rare conditions. Patients are unlikely to know all there is to know about health care services such as the diagnosis of their illness and treatment they will need, and they rely instead on service providers to decide what treatment is required (an issue of information asymmetry). In short, it is the service provider who typically shapes a patient’s demand for health care services. The patient enters into an agency relationship with the service provider,<sup>12</sup> whereby the market yields a Pareto optimum outcome only if the health care service provider acts in the best interest of the patient.<sup>12,42</sup> In that case, there is a possibility that the provider may be influenced by self-interest when treating the patient, even if only sub-consciously. A system of user fees must be accompanied by strong policies by the government that makes it difficult for the violation of efficiency conditions, such that the necessary information is passed to patients regarding their health

and health provider behavior is regulated.<sup>14</sup>

The third cause of market failure is externalities. These are examples of costs incurred or benefits that are enjoyed by people other than the one consuming the good in question. Externalities in health care include the adverse health consequences of environmental tobacco smoke<sup>43</sup> and the benefits of herd immunity enjoyed by families who do not have their child vaccinated.<sup>44</sup> Free markets tend to under-provide goods where there are beneficial externalities, (such as vaccination) and over-provide goods where there are harmful externalities such as tobacco use. One needs to be careful therefore that any reliance on user-fees does not deter the use of services where there are substantial positive externalities. This often means recommendations to keep actions to prevent or treat infectious disease outside of any user-fee system.<sup>45</sup>

### Inequitable access to healthcare services

A second argument against user fees relates to their differential impact, especially in relation to rich and poor. User fees will likely lead to proportionately greater reduction in use of health care services among the poor than the rich.<sup>16,18</sup> This implies that even if user fees are set below the average cost but are high enough to reduce the demand for health care services more among the poor than the rich, then public health spending will be regressive as benefits will accrue to the rich. Although user fees do not reduce demand for health care services by the poor, they will have negative redistributive effects because in paying more for their health services the poor will be left with less money for other essential services than the rich will do.<sup>16</sup>

Frivolous use of public health services is already deterred because travel and time costs to reach health services are usually high.<sup>35,46</sup> This means that charging user fees for primary health care services may cause delays in seeking care by the poor who are price sensitive. These delays will give rise to complications requiring expensive curative services hence jeopardizing efficiency in the health system. The rich will enjoy more subsidized free services than the poor even when services were made available in the same area for equal access. This is because the rich have more wealth, which enables them to meet the cost of time and traveling to obtain care. Therefore, a system of price discrimination by charging fees only to those who are able to pay, would make it easier for governments to scale up services to underserved population through the revenues generated, and this will also remove unfair inherent subsidy

through free care.<sup>47,48</sup> A more equitable health financing system is the one which will charge those who can afford to pay to subsidize the poor, thereby reducing frivolous use of benefits by rich and reducing high costs of providing services to the poor.<sup>49</sup>

## Conclusions

This paper has reviewed the economic theories and assumptions that provide the rationale for using a price system to finance health care services in developing countries. It was every government's responsibility to intervene in raising sufficient revenue for health in response to the macro-economic stress in most Sub-Saharan African countries. Although insurance consideration is an important factor when it comes to risk sharing mechanisms (through a health insurance or progressive taxation), user fees became an option to financing of public health care services in those countries. The option to institute user fees was based on the neo-classical economic theory and the principle that suggests efficiency can be improved through a pricing strategy. All equity concerns being addressed through price discrimination, a system of user fees would allocate health care resources efficiently. The assumption being that the price system would signal to consumers what they must pay for health care services hence giving them an incentive to utilise those services well. Also contentious is the assumption of perfect markets, where prices would reflect true marginal benefits of consuming healthcare goods and marginal cost of their production. In addition, user fees could be a useful way to increase additional funding for health when demand for healthcare is highly inelastic.

However, opponents of user fees arguments indicated that the health care market is imperfect, that is, the perfect market theoretical implications cannot be applicable to the health market simply because demand for health care is not independent of supply as it the case in a perfect market. Available evidence has put forward argument in either favour of or against a system of user fees in the health sector especially in developing countries. The literature reviewed yields robust insights to these arguments' empirical relevance and the reassuring linkage between the findings in different developing countries.

Although the application of user fees in the health sector is justified by the perfect market theory, there are concerns that in the health sector a perfect market does not exist. Therefore, it will not be a viable way

to rely on the price system to allocate resources to the population when markets of many health care goods and services are not available or are imperfect. This suggests that need to create institutions that would facilitate creation of new markets or which can improve the performance of existing ones in developing countries. For example, enforcing insurance laws could help in creation of progressive mandatory insurances and private health insurances as supplementary to attract the wealthier population.

## References

- Nolan B, Turbat V. Cost Recovery in Public Health Services in Sub-Saharan Africa. The World Bank; 1995: p.114.
- Dercon S, Ruttens C. Cost recovery in health care in Africa: a review of the principles and the effects on the poor. World Bank Institute Resources 1998 BVO/98.2
- Akin J, Birdsall N, de Ferranti D. Financing Health Services in Developing Countries. World Bank Publications; 1987: p. 99.
- Schieber GJ. Innovations in health care financing. World Bank Publications; 1997: p. 266.
- Shaw RP, Griffin, CC. Cost Sharing: Towards Sustainable Health Care in Sub-Saharan Africa. Africa Region Findings & Good Practice Infobriefs; No. 63. Washington, DC: World Bank; 1996.
- Ridde V, Morestin F. A scoping review of the literature on the abolition of user fees in health care services in Africa. Health Policy Plan 2011;26:1–11.
- Opwora A, Waweru E, Toda M, et al. Implementation of patient charges at primary care facilities in Kenya: implications of low adherence to user fee policy for users and facility revenue. Health Policy Plan 2015;30:508–17.
- Global Health Observatory. Out-of-pocket expenditure as percentage of current health expenditure (CHE) (%) - Data by World Bank income group. World Health Organization; 2020.
- Cook DJ, Mulrow CD, Haynes RB. Systematic reviews: synthesis of best evidence for clinical decisions. Ann Intern Med 1997;126:376–80.
- McGrath J, Saha S, Welham J, et al. A systematic review of the incidence of schizophrenia: the distribution of rates and the influence of sex, urbanicity, migrant status and methodology. BMC Med 2004;2:13.
- Linares-Espinós E, Hernández V, Domínguez-Escrig JL, et al. Methodology of a systematic review. Actas Urol Esp 2018;42:499–506.
- Mwabu G. User Charges for Health Care: A Review of the Underlying Theory and Assumptions. 1997. UNU: 5218.
- Araoyinbo I, Ataguba J. User fees in Africa: from theory and evidence, what next? An essay submitted to the African Health Economics and Policy Association. Alliance for Health Policy and System Research 2008. Available form: [https://www.who.int/alliance-hpsr/Araoyinbo\\_Ataguba\\_UserFeesAfrica.pdf](https://www.who.int/alliance-hpsr/Araoyinbo_Ataguba_UserFeesAfrica.pdf)
- Glied S, Smith PC. The Oxford Handbook of Health Economics. Oxford University Press; 2011.
- Kolstad JT, Chernew ME. Quality and consumer decision making in the market for health insurance and health care services. Med Care Res Rev 2009;66:28S-52S.
- Dupas P. Global health systems: pricing and user fees. Prepared for the Elsevier Encyclopedia of Health Economics, 2012. Accessed 17.3.2013.
- Madore O. The health care system in Canada: effectiveness and efficiency. Ottawa: Library of Parliament, Research Branch; 1993: p. 15.
- Schokkaert E, de Voorde CV. User Charges. The Oxford Handbook of Health Economics. Oxford Publishers; 2011.
- Thaler R. Toward a positive theory of consumer choice. J Econ Behavior Organization 1980;1:39–60.
- Roth S, Robbert T, Straus L. On the sunk-cost effect in economic decision-making: a meta-analytic review. Bus Res 2015;8:99–138.
- Arkes HR, Blumer C. The psychology of sunk cost. Organizational Behavior and Human Decision Processes 1985; 35:124–40.
- Cunha MC, Caldieraro F. Sunk-Cost Effects on Purely Behavioral Investments. Cognitive Sci 2009;33: 105–13.
- Aron-Dine A, Einav L, Finkelstein A, Cullen M. Moral Hazard in Health Insurance: Do Dynamic Incentives Matter? The Review of Economics and Statistics 2015;97:725–41.
- Baicker K, Mullainathan S, Schwartzstein J. Behavioral Hazard in Health Insurance. Q J Econ 2015;130: 1623–67.
- Bajari P, Dalton C, Hong H, Khwaja A. Moral hazard, adverse selection, and health expenditures: A semiparametric analysis. The RAND J Econ 2014;45: 747–63.

26. Geyman JP. Moral hazard and consumer-driven health care: a fundamentally flawed concept. *Int J Health Serv* 2007;37:333–51.
27. World Bank. *World Development Report 1993: Investing in Health, Volume 1*. World Bank Publications; 1993: p. 346.
28. Griffin CC. User charges for health care in principle and practice. International Bank for Reconstruction and Development, World Bank; 1988.
29. McPake B, Normand C, Smith S, Nolan A. *Health economics: an international perspective*. Routledge; 2020
30. Pendzialek JB, Simic D, Stock S. Differences in price elasticities of demand for health insurance: a systematic review. *Eur J Health Econ* 2016;17:5–21.
31. Zhou Z, Su Y, Gao J, et al. New estimates of elasticity of demand for healthcare in rural China. *Health Policy* 2011;103:255–65.
32. Ringel JS, Hosek SD, Vollaard BA, Mahnovski S. *The Elasticity of Demand for Health Care: A Review of the Literature and Its Application to the Military Health System*. RAND Corporation; 2002. No. MR-1355-OSD.
33. Ellis RP, Martins B, Zhu W. Health care demand elasticities by type of service. *J Health Econ* 2017;55:232–43.
34. Fox W, Edmiston K. *User Charge Financing of Urban Public Services in Africa*. International Center for Public Policy, Andrew Young School of Policy Studies, Georgia State University; 2000. Report No.: paper0004.
35. Onarheim KH, Sisay MM, Gizaw M, et al. Selling my sheep to pay for medicines – household priorities and coping strategies in a setting without universal health coverage. *BMC Health Serv Res* 2018;18:153.
36. Shaw RP, Ainsworth M. *Financing health services through user fees and insurance*. World Bank Publications (World Bank Discussion Papers); 1996: p. 254.
37. John EU. The Impacts of User Fees on Health Services in Sub-Saharan African Countries: A Critical Analysis of the Evidence. *Am J Public Health Res* 2013;1:196–202.
38. Roberts J. Primary care: core values Primary care in an imperfect market. *BMJ* 1998;317:186–9.
39. Vaithianathan R. Health insurance and imperfect competition in the health care market. *J Health Econ* 2006;25:1193–202.
40. Arrow KJ. Uncertainty and the welfare economics of medical care. 1963. *Bull World Health Organ* 2004;82:141–9.
41. Donaldson C, Gerard K. *Market Failure in Health Care*. In: Donaldson C, Gerard K, editors. *Economics of Health Care Financing: The Visible Hand*. London: Macmillan Education UK; 1993. p. 26–48.
42. Nguyen H. The principal-agent problems in health care: evidence from prescribing patterns of private providers in Vietnam. *Health Policy Plan* 2011;26:i53–62.
43. Novotny TE, Zhao F. Consumption and production waste: another externality of tobacco use. *Tob Control* 1999;8:75–80.
44. Chen F, Toxvaerd F. The economics of vaccination. *J Theor Biol* 2014;363: 105–17.
45. England S, Kaddar M, Nigam A, Pinto M, Organization WH. *Practice and policies on user fees for immunization in developing countries* WHO. 2001. Available from: <https://apps.who.int/iris/handle/10665/66712>
46. Gilson L. The lessons of user fee experience in Africa. *Health Policy Plan* 1997;12:273–85.
47. Munge K, Briggs AH. The progressivity of health-care financing in Kenya. *Health Policy Plan* 2014;29:912–20.
48. Steinhardt LC, Aman I, Pakzad I, Kumar B, Singh LP, Peters DH. Removing user fees for basic health services: a pilot study and national roll-out in Afghanistan. *Health Policy Plan* 2011;26:ii92–103.
49. Gilson L, Russell S, Buse K. The political economy of user fees with targeting: Developing equitable health financing policy. *J Int Devel* 1995;7:3 69–401.