

## Willingness to Pay for Drugs in Future National Health Financing Scheme among Malaysian Population

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**Abstract:** Escalating of healthcare cost is a global healthcare challenges in most of the countries. In line with the increasing of disease prevalence, there will be escalating of drugs expenditures. In Malaysia, the drug expenditures is keeps increasing which is in 2008, Government spent RM1, 510 million for the drug purchase. Since Malaysia has still in progress of implementing the compulsory National Health Financing Scheme (NHFS), most of these expenditures are still highly subsidized by the government. Therefore, Malaysia is in planning to develop a new national health financing scheme to support the existing health financing policy. It is essential to identify public willingness to pay for drugs in National Health Financing Scheme to ensure the new implemented policy will be benefit the government as well as the patients. In conclusion, health care financing is the most essential component in the achievement of health improvement. The level of health care financing may influences the accessibility to human resources, medical supplies and delivery of health care facilities as well as quality of health services.

**Key words:** Willingness-to-pay • National Health Insurance • Contingent Valuation Method

### INTRODUCTION

The healthcare costs are still expansively increased even in the country with high coverage of insurance. In certain countries, it might due to the extension of insured healthcare coverage especially to the elderly and also with the treatment of diseases which is more complex. Instead of that, with the demand for new and state of the art technologies as well as the longer average length of stay (LOS) are the reasons that contribute to the increasing of hospital costs [1]. The most essential indicator for the hospital performance is the cost containment [2, 1]. There are two approaches in controlling the rising of healthcare cost which can be categorized into the macro-aspect and the micro-aspect [3]. In order to reduce the increasing of healthcare expenditures, the cost containment strategies should focus both the macro-aspect which is through public policy and regulation as well as the micro-aspect which is the hospital costs itself [1]. Globally, pressure from economic changes and financial condition caused the policymakers and hospital managers have to confront

with the rising of healthcare spending. As for Malaysia, the total expenditure on health as percentage of GDP in 2009 is 4.8% [4] where it shows increases as compared in 2001, which the total expenditure on health is at 3.8% of the GDP and only 2.8% in 1997 [5]. While the general government expenditure on health as percentage of total government expenditure is only at 6.1 % in 1997, 6.5 % in 2001 and 6.9 % in 2007 [4], just a slightly increased as compared to the other industries.

**Problem Analysis:** Better and appropriate utilization of prescription drugs has the potential to lower total expenditure and improve the quality of care [6]. Around the world more than 50% of all medicines are prescribed, dispensed, or sold inappropriately [7]. Effective plan design and strategies such as generic substitution, rational prescribing and use of formulary drugs can help to manage the costs while maintaining quality and improve patient satisfaction. In addition, seniority of doctors with higher post is associated with more expensive drugs they will prescribe. Thus, they have a tendency to advocate clients to purchase these drugs at

a higher cost, even though similar efficacy inexpensive generic drugs are available in the market [8]. Besides that, extensive clinical courses that have a high level of intensity such as among the older patients, patients from the intensive care units, higher existence of co-morbidity and complications will usually be prescribed the more expensive and usually branded original drugs rather than generic drugs that is considered less superior efficacy. Clinician's inability to advocate and educate their patients of the same clinical properties of generic medicines will lead to escalating cost imposed on government as well as patients [9].

In countries practicing insurance-based health system, the prescribing pattern and drug cost are mainly influenced by strategies used by Managed Care Organizations to control drug expenditures. These include formularies, generic substitution, drug benefit design, prior approval, product price control, profit control, target drug programs, therapeutic interchange, patients' co-payments and reference drug listing [9].

From the year 2000, the national drug expenditure in Malaysia has seen an increase from RM346 million (\$91 million) to RM915 million (\$241 million) in 2005. From the year 2004 to 2005, an increase of 13.3% was recorded [10]. Factors that may contribute to this increase include increase in drug prices, a growing and aging population, higher expectation of the public regarding equality in assessing therapy, long-term drug treatment and polypharmacy, improvements in diagnosis and treatment of diseases and technological advancement that produces newer expensive drugs [11].

Findings of a recent WHO/Health Action International (HAI) report, "A Survey of Medicine Prices Availability, Affordability and Price Components in Malaysia" [12] showed that drug prices in Malaysia are generally higher for both generics and innovator drugs when compared with the international reference price. The report also stated that there was low affordability for all categories of drugs studied for both innovator brands and generics. These were for common illness such as for hypertension, asthma and diabetes. Since Malaysia practices free market for drug prices which does not control the price of drugs, a market failure situation is expected to occur because of the unbalanced of information available plus the monopoly and patent protection of the certain pharmaceutical company. It is important that the Ministry of Health implement policies that can avoid this situation whilst at the same time improving efficiency of the public healthcare services. In addition, a full pharmacoeconomic evaluation and

continuously measuring outcome for selection of new drugs are some of the suggested strategies. Other approaches that might be consider include generic substitution policy and using standard treatment guidelines in clinical and policy decision-making to ensure that the most cost-effective and evidence-based alternatives are chosen [11]. In the other hand, the schedule of fees was also necessary because it had indicated that there was much inconsistency in what was being charged to the patients. A schedule of fees was necessary if we plan to introduce health insurance to enable the insurance providers to do the calculations of the premiums [13].

**Social Health Insurance:** Social health insurance turns out to be one of the most feasible solutions to improve health status of the population especially in developed countries. Same goes to developing countries such as Indonesia which came out with numerous strategies in an effort to achieve a universal coverage as well as improving the population health status. *Asuransi Kesehatan* (Health Insurance), or *Askes scheme* was implemented after Indonesia gained its independence in 1945. The *Askes* or Civil Servant Social Health Insurance Scheme covered civil servants with salaries below a fixed ceiling. The civil servants entitled for free of charge health services in public hospitals and reimbursable if they seek treatment in private hospitals. However, 3 percent copayment was charged for the inpatient services [14]. On the other hand, the scheme were found having several problem which is no coverage for retired officers, increasing moral hazard and elevated cost of public budget including high administrative cost. Thus, in 1968, the *Askes Persero* was implemented to cover both active and pensioned civil servants as well as their direct family members. While to widen the coverage for private employees and employers, Indonesia established the *Jaminan Sosial Tenaga Kerja* (Workforce Social Security), or also known as *Jamsostek* which is a social security based program in 1992 [14].

In an effort to lessen the impact of economic crisis in 1997-1998 towards the poor and vulnerable group, the Indonesia government implements a program of *Jaring Pengaman Sosial* or Social Safety Net including health subsidies. In this program, the Indonesia Ministry of Health was concerned in promotion of Village Community Development (*Pembangunan Kesehatan Masyarakat Desa*) and community-managed health care based on the American health maintenance organization model which is known as *Jaminan Pemeliharaan Kesehatan*

*Masyarakat* (JPKM) [14]. In 2004, to expand the universal coverage for the poor, the new health program was introduced which called *Asuransi Kesehatan Masyarakat Miskin* or Health Insurance for Poor Population also known as *Askeskin*. This program was designed to increase access to health services as well as providing the quality of health services for the poor population. By having this program, the insurance coverage would be covering about 36 million poor people. In 2008, under the current program known as *Jaminan Kesehatan Masyarakat* (Health Insurance Scheme for Population) or *Jamkesmas*, the target was soon expanded to cover more than 76 million of poor and near poor groups however, more than half of the population in Indonesia still lacked health insurance [14]. In Indonesia, the *Jamkesmas* program is being implemented throughout the country. This is inline with the Indonesia government effort of proposed universal coverage scheme, which is intended to synchronize the numerous health insurance schemes in Indonesia.

The National Health Insurance (NHI) design in Indonesia has taken consideration to cater the huge population with 203 million people [15]. The concept of social health insurance system depends on contribution from employees and employers while for the self employed will be subsidized by some government. NHI should begin from formal sectors with no “opting-out” provision in order to ensure higher income workers share the risk with lower income workers. Nevertheless, there are always turning out to be common issues in NHI with the difficulty in determining and collecting the premiums or contributions from those who work temporarily, self-employed, or seasonal workers. According to Chusun, *et al.* [16, 15] a nationwide employer survey that was conducted in 2001 found that the average employer spent for health benefits is at 5.2% of employee salaries. Thus it should not be a significant burden for both employers and employees regarding the proposed contribution of 6% salary paid by employer and employee. In NHI, the benefits will be comprehensive with some cost sharing will apply. As cost control mechanism, those covered under NHI, should pay a portion of health care costs in order to prevent the moral hazards while drugs only will be covered based on a special formulary developed by a Committee in the NHI [15]. Instead of that, to assess the appropriateness of medical procedures and treatments given by contracting providers, the NHI also will carry out utilization review. In Indonesia, the Task Force decided to have a single payer system organized by a National Body which is called *Badan Penyelenggara Jaminan Kesehatan Nasional*, (BPJKN) to guarantee the

efficiency of the SHI and its benefits across the nation. In addition, to ensure the appropriateness of expenses across regions as well as to allocate wise spending for health care, the Actuarial Committee of the Board of Trustees will periodically examine the SHI operations [15]. If Malaysia is to follow the Indonesia health care reform model, the numerous social health insurance that is available in Indonesia must be used in Malaysia as well. Coverage of Malaysia citizens must be streamlined into the subsidized by national insurance coverages and related benefit packages that does not burden this population once they are at risk of catastrophic illnesses. The likelihood that we will start charging premiums that undoubtedly burden the poorest quintile of the population is very likely.

#### **The Concept of Populations' Willingness-to-Pay:**

Recently a willingness-to-pay (WTP) study has been conducted in the diverse fields of health sector. Willingness-to-pay is used to estimate effectiveness of specific programs or intervention in monetary terms. However, economic theory argues that the maximum amount of money an individual is willing-to-pay for a product such as health insurance is considered as an indicator of the utility or satisfaction of that product [17]. In other study stated that, a valid estimate of WTP is important for developing an optimal pricing strategy [18, 19]. Therefore, such estimates can be applied to predict market response to price changes [20]. In the private sector, one study shows that people are willing-to-pay higher prices in return for higher quality of health services [21]. Most of the developing countries including Sudan are unable to allocate an adequate amount of money to financing its health services unless the majority of the populations are afford to fill the gap [22]. However, if they imposed a user charges, it will have a negative result on equity because the fees tend to be a hurdle especially for the poor to utilize health services [23]. It is supported by other studies that shows the function of the nature of payment mechanisms towards equity which is the systems that use a pure user charge are more likely to influence inequality as compared with the other mechanism of exemptions or risk sharing schemes [22].

In Sudan user charges may be seen as an approach to improve the sustainability of financing public health services. User fees have been used in many other countries with some failure and success [24, 25]. However, the implementation of user-fees policy has discouraged certain group of population especially among the poor and children from utilizing the health services [26].

Thus, the benefit only goes to the high income group in the population where they can have better access to health care services as compared to the poor [17].

As indicated by China National Health Service Survey in 1998, the two-week outpatient utilization rate reached only 13% in poor rural areas which are 22% lower as compared to the average level in rural areas. 71% of those who were admitted did not use inpatient services. This is because most of them are unable to afford high hospitalization expenses [27]. Consequently, it will lead to exclusion among poor individuals who cannot afford to pay the charges especially among uninsured farmers because the out-of-pocket payment mechanism are seen as obstacles for them to access even the basic health services [24]. It brings a crucial challenge to the Chinese government to reestablish the Cooperative Medical System which is one type of community based health insurance schemes that covered 90% of all villages in the mid-1970s in order to increase farmers' accessibility to the basic health services in rural China. Unfortunately, due to lack of willingness-to-pay or lack of ability to pay, most of these efforts failed, especially in the poor rural areas of China [28]. China have announced a new funding strategy for a newly established community based health insurance in October 2002 with the government intended to attract farmers to participate in the new community based health insurance by providing each participant with an annual subsidy of 10-20 Yuan which is equal to US\$ 1.25-2.50 [29]. According to Zhang L. et. al. 2006, [29] it is expected that farmers' willingness-to-join the community based health insurance would be increased inline with the government subsidy. However based on previous study, it is shown that there are many factors might influence farmers' willingness-to-join the community based health insurance. Among other factors are the ability-to-pay, health status, education, household size as well as demographic status for example age and gender [30, 31]. The probabilities of willingness-to-join the community based health insurance in all options of government subsidies and individual's contributions have strongly positive associations with both income and asset [29]. Age and the concern to the medical expense are also positively associated with the willingness-to-join the community based health insurance [29]. In previous study that was conducted by Gustafsson et.al. 2009, the result shown that the young are more likely to join the insurance scheme as compared to the elderly and education also shown a statistically significant in determining the decision of respondents to join the insurance scheme.

With evidence by most of the literatures, income resulted to be a positive, consistent and statistically significant impact on the willingness of households to pay both the first and the second higher bids [32].

In other study by Ghosh and Mondal (2011), indicates that the household has to seek treatment from different health care providers in order to gain treatment especially for the morbidities. Thus, utilization of private resources was larger among all expenditure of poorest, middle and richest groups [33]. According to Ghosh and Mondal [33] studies, it was shown that the maximum share of the out of pocket health care spending goes to purchasing medicines and payment of doctor's consultation fees. In the same study, the results showed that people had to borrow money from other sources such as neighbors, relatives and private lenders. The findings reveal that more than 40 per cent of people borrowed money from private money lenders by taking high interest loans in order to meet with their need for health care. Therefore, it has shown that with the increased burden of health care costs as well as lacking of financing source can turn out to be a double burden on the population [33]. It was found that 60 per cent of those who need for pre-payment schemes thought that they are able to purchase the schemes. However, another 40 per cent revealed their inability to pay and had no purchasing power for such schemes. Due to their informal nature of occupation and lack of fixed monthly income, they were also unable to notify even the exact amount they would be able to pay for the schemes [33].

In the same study conducted by Ghosh and Mondal also explored that the unwillingness-to-pay for health insurance scheme in the population was associated with their belief, past experiences and financial conditions. The findings revealed that one-third of the house holds unwilling to join the health insurance scheme because they perceived their family in a good health and fairly free from morbidities. Another 10 per cent of the families thought that they are at risk only to minor illnesses which do not acquire for large expenses thus there was no need for health insurance. However, due to previous experience of non-usefulness of other insurance policies and lacking of trust in investing money in such schemes, about 18 per cent people said they do not wish to join the health insurance scheme. While another 6 per cent people revealed that the payment schemes are not poor-friendly because they are already unable to bear the burden to meets their daily needs hence cannot afford to join the health insurance schemes [33].

**Contingent Valuation Method (CVM):** In determining the maximum WTP among respondents, a contingent valuation will be conducted by capturing respondents' WTP for a hypothetical program. This method is called Contingent valuation because respondent responds are contingent on the scenario offered [34]. This method involves a utility change valued in money, determined by the maximum amount that respondents agree to pay for a certain product and in this case maximum amount that patients agree to pay for drugs in National Health Financing Scheme. In other words, it will represent the minimum amount patients are willing to accept in order to forgo the product or any services offered [35]. In CVM, it is claimed that questions referring to a starting price have a better results than open-ended questions [36]. The most basic method is the 'take-it-or-leave-it' which is dichotomous choice where respondents can either agree or disagree to a proposed price [34]. Another alternative in CVM is called the 'bidding game', that is considered more reliable as compared to dichotomous choice [37]. The bidding game is the process whereby the respondent is presented with a price, which will increased each time the respondent accepts the bid and lowered the price each time the respondent rejects the bid until the respondent accepted the bid. Then, the accepted bid will be captured as the WTP level [34]. Besides, a Contingent Valuation survey should include questions regarding socioeconomic status such as level of income, level of education, occupation etc and characteristics of the respondents as well as questions which relate to the product or program for instance the health insurance [38]. However, there is a potential limitation of using contingent valuation method that is related to the bias which may often come from the starting point of the bid [32]. As supported by one study, it showed that individuals in the highest starting-bid group were willing to pay double as compared to those in the lowest starting-bid group [39].

In another study stated that, in measuring willingness to pay, there must be a mechanism to draw out the value from the respondent. Among the common used mechanism are the open-ended questions, bidding games or referendum formats which is also in dichotomous format [32]. In the study conducted by Gustafsson-Wright E. et. al. 2009, [32] they used a double bounded dichotomous choice elicitation method. According to his study, each respondent is asked if they are willing to pay the first bid. If they say 'yes' to the first bid, a second higher bid will be given and their willingness to pay is

asked. If they say no to the initial bid, a second lower bid will be provided. If they say 'no' to both the first and the second bids then they will be asked to mention the maximum that they are willing to pay.

**Willingness to Pay (WTP) for Drugs:** In a study by Adeneye et.al that was conducted in 2006 to examine the willingness to pay for treatment with praziquantel before and after provision of the drug in Ogun State, Nigeria, the finding showed that with the high positive perception about the drug among the respondents, 92.3% of them were willing to pay for the treatment of infected members of their household with the drug [40]. In the same study, the results revealed that majority of respondents which is 51.7% said that they preferred buying the drug from reliable persons chosen by the community, 25% preferred buying from community head, 11.7% from pharmacy/chemist shop, 5% from the Community Association Secretary, while others cited that only 1.7% from government clinics as preferred sources, with the remaining 5% ambivalent [40]. In the study that was conducted by Mataria A, et.al. 2006 [41] to examine the impact of impoverishment on patients' preferences with respect to improving the quality of health care, the drug availability result shown that, patients who did not find any of their prescribed medications in the center were willing to pay more to be always able to find them in the pharmacy of the center as compared to those who found "Some" or "All" of their medications [41]. However, in one study of assessing patient's WTP to avoid a repeat revascularization procedure due to coronary restenosis (re-narrowing), they found that the proportion of patients willing to pay was higher with greater absolute risk reductions [42]. While in assessing willingness to pay for cancer prevention, the result revealed that income and the probability of developing cancer were positively related to WTP [43].

**Essential Benefit Package and WTP:** In West Africa, clients' satisfaction with benefit-package that was designed in a community-based health insurance scheme was contributed to a higher willingness-to-join [44]. The inclusion of high-cost health services for example operation, essential drugs and consultation fees were among the strong preferences in the benefit package [45]. The package must be attractive which is it must meet clients' perceived needs and it must be affordable to the poor if the poor are expected to pay for the insurance [46]. In the study of "Possible objectives and resulting

entitlements of essential health care packages”, there are eight possible objectives being outlined for an essential benefit package: 1) to protect against catastrophic illness events; 2) to ensure social risk pooling; 3) to improve allocative efficiency in the health system; 4) to eliminate ‘high burden of disease’ conditions; 5) to improve equity of access to services; 6) to combat cost-escalation; 7) to encourage competition between insurers; 8) to facilitate public participation and transparency in decision making [47]. In a situation where costs of treatment are high, the households are likely to forego other expenditures for their long term disadvantage such as on food supplies or education in order to cover the escalating healthcare costs [48, 49]. On the other hand, if these burdens were shared through insurance collections among individuals, possibly these costs would be reasonably affordable [47]. However, if we plan to minimize the burden of individual with low cost insurance packages, it will offer reasonably limited services such as at one package may include unlimited access to private nurse, six annual visits to private doctor, basic medicines, HIV treatment, limited private hospitalization which is the doctor only refers to the hospital for urgent medical treatment and maternity benefits [32].

**Financing Mechanism of Drugs:** In the study of willingness to pay for drug rehabilitation, it was stated that the economic burden of illegal drug use was estimated at \$143 billion in 1998 and \$160 billion in 2003 [50- 52]. There is inadequate public funding to provide the good-quality, accessible care that would benefit society as a whole [50]. Therefore, in order to expand the system, they proposed to use price discrimination by encouraging individuals who are willing to pay, to bear with the price and indirectly providing revenue to the clinics. In other countries, the price discrimination already takes place and out-of-pocket payments are also a part of the revenue to clinics. However, poor execution could result in fewer people obtaining treatment thus, this price discrimination should be fully optimized [50]. Instead of the price discrimination strategy, a rational approach to budgeting treatment subsidies could also be use. The proposed method was Ramsey pricing which is to base the subsidy for various drug users on their elasticity of demand [53]. Ramsey pricing would also set up a rule of price discrimination that maximizes revenue to the drug treatment system by charging more for those with higher demand and less for those with lower demand [50]. Based on the previous study result, patient will pay more for

higher rates of treatment success and for the presence of case management as well as for longer treatment durations. Thus, they concluded that the optimal financing strategy for the drug treatment system was by a combined approach of user fees and subsidization [50].

## CONCLUSION

In other developing countries, the types of low-cost health insurance schemes which refer to low cost insurance packages with limited services is perceived to be well accepted and have the potential to protect the poor against the financial risk of increasing health care expenditures. Thus, the policy makers, health care providers and insurance companies can benefit greatly from the type of willingness to pay evaluations input [32]. Therefore, it is important to acquire reliable information on the amounts that potential clients or patients would be willing to pay and the major determinants that influence their choice.

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