

## Publicly Finance Health Insurance: A Panacea for Universal Health Insurance in Resource Poor Countries

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### Abstract:

*The current paper deals with health care finance with special reference to publicly financed health insurance which has a potential to achieve universal health insurance in the developing nations or resource poor countries. The situation of health expenditure is skewed heavily towards out-of-pocket (OOP) expenditure being borne by the households. The OOP is as high as 70 percent in some developing nations making the health care finance highly regressive due to high level of poverty in these countries where the poor households bear a much higher proportion of the expenditure to family income (Berman, P. A., 1998). There is a need for the government to step in and provide security against the catastrophic health care expenditure and reduce the OOP health expenditure to the resource poor families. Health Insurance is considered to be one of the efficient health care financing mechanisms. However, across the globe, conventional health insurance market is grappling with different kinds of market failures due to information asymmetry leading to different moral hazards, adverse selection, providers' induced demand, cream skimming etc. Due to such market failures, different mechanisms are designed by the insurers in pricing of insurance products and build other terms and conditions, which reduce the potential of health insurance to provide universal health insurance coverage to all particularly to the vulnerable sections of the society. The higher economic classes get the coverage of health care services but the most severely affected are the families from lower economic strata who neither have the purchasing power to procure the health care services from the market nor have any financial security against catastrophic health care expenditures. This leads to huge amount of welfare loss in the society. This makes it imperative for the*

*government to intervene primarily to make the health insurance market efficient and equitable and also to complete the market by providing depth and breadth of services particularly for the lower economic class and also to promote merit goods.*

*Publicly financed health insurance to a great extent tries to overcome market failures arising from information asymmetry in the health care market by making the health insurance program mandatory for all and also through regulations. Different models of publicly financed health insurance are being implemented as wealth transfer programs such as social health insurance or tax based finance health insurance. The Publicly financed health insurance programs particularly the tax based health insurance removes most of the inefficiencies of the health insurance market and brings a lot of value particularly for the lower economic strata. Hence, it has the potential to make the health insurance market more effective and complete from both equity and efficiency perspectives.*

**Key words:** Equity, Efficiency, Health Care Finance, Health Insurance, Market Failures, Publicly Financed Health Insurance, Private Health Insurance, Tax Based Finance, Social Health Insurance

## **Health Care Finance (HCF)**

Health Care Finance can be defined as mobilization of funds from different sources to meet the health care needs of the country and its allocation to different regions and population groups according to their specific types of health care requirements (Hsaio & Liu 2001). A good health care financing system raises adequate funds for health, in ways that ensures people can use needed services, and are protected from financial catastrophe or impoverishment associated with hefty payments. It involves three kinds of interrelated functions – (a) collection of revenues from households, companies, external agencies etc.; (b) pooling of pre-paid revenues in ways that allow risks to be shared and (c) purchasing, means the process by which interventions are selected and services are paid for or providers are paid. The interaction between these three functions determines the effectiveness, efficiency and equity of health

care financing systems. Health care finance is important because it's only the amount of resources collected through health care finance mechanisms that will determine efficient pricing of health care products and services. From the developing nations' perspective, a number of evidences have shown that price of the health care services and products influence decision to initiate treatment in resource poor settings and price increase reduces access to health care services. Hence it is very important to implement efficient and equitable pricing mechanisms of the health care services and this is dependent on sound health care finance mechanism in the country (Hsaio & Liu 2001; Folland, Goodman, and Stano 1997; Glied 2008).

Different health care finance models right from financing through general tax revenue of government or earmarked taxes such as health cess, social health insurance contributions in the case of formal sector employment, private health insurance, community based health insurance and out-of-pocket health care payments are available. Each of these methods distributes the financial burdens and benefits differently and affects those who have access to health care financial protection.

## **Equity in Health Care Finance**

Equity in health sector is largely understood as an objective of access, availability and affordability of health care services for all and has moral and ethical dimensions. As far as access to health care services is concerned, there are four theoretical positions from the ethical perspective. These are (a) Entitlement or libertarian theory, which is basically linked with rights and entitlements of the health care services. Principle of social justice asserts that everybody has the right to life which includes right to access basic health care services. The state has the responsibility to provide affordable basic

health care services to all. (b) Utilitarian theory is influenced by the neo classical and free market economy and holds that the greatest sum of the benefits for the entire population represents the optimum. However, the major critique of this theory is that it is not concerned with the distributive aspects of the benefits in the society. (c) Maxi-min theory is concerned with maximising the benefits of the population who have minimum resources. (d) Egalitarian theory stresses that under health care finance, the collection of revenue should be done based on the ability to pay and distribution of health care resources should be made according to the need. From the developing nation perspective where the society is fragmented and there are people or groups of different socio-economic status, it is imperative to achieve both horizontal and vertical equity in health care finance. Horizontal Equity talks about distribution of resources equally among the members of the same socio-economic groups and Vertical Equity talks about distribution of resources according to the need and ability to pay in the society. Again, when we talk about an equitable distribution of health care services, it talks about equitable distribution of essential health care services. From the efficiency perspectives, essential services are those services which promote physical and mental health and prevent disease, injury and disability. Hence, despite equity and efficiency being the two opposite propositions of any welfare maximization program, they can be achieved simultaneously if the program is designed carefully (Lai & Leung 2010; Okun 1975; Doorslaer & Wagstaff 1992; Wenzel).

## **Efficiency in Health Care Finance**

Efficiency is mainly concerned with maximization of outputs from a given limited resources, which could be analysed by economic evaluations of health care interventions such as cost effectiveness analysis, cost benefit analysis, cost utility analysis

etc. There are several dimensions of efficiency, like (a) Technical efficiency which is concerned with giving maximum outputs from the given inputs or resources. It talks about cost efficiency which means given the output how one can minimise the cost and output efficiency, in other words, given the resources how we can maximise the output. (b) Allocative efficiency is concerned with distribution of resources or inputs between different programs or activities in such a way that the sum of the benefits from all such programs or activities should be maximum (Kruk & Freedman 2008; Chung, Kaleba, & Woznaik 2008; Wenzel).

Hence the role of the policy makers is to see how the limited resources are being used efficiently for maximum benefits for the society and distributed equitably among different sections of the society for maximum welfare gains. Equity and efficiency, despite being two opposite proposition, should go hand-in-hand in the healthcare program because efficiency talks about utility maximization from economic perspective and since healthcare is associated with externality factor or say utility interdependence, the entire society can gain utility by any health care intervention. Hence the government should aim to provide equitable and efficient health care service to all (Okun 1975; Rubio 1995; Lai & Leung 2010; Bogg 2002).

## **Health Insurance as Health Care Finance Model**

Insurance works under the principal of Law of Large Numbers where there is pooling of risks and resources that protects the average person or family from the risk of uncertain and catastrophic expenditures (Ghosh 2011). As the size of the group grows larger, the probability of average rate of illness gets distributed, thus reducing the risks (Folland, Goodman, and Stano 1997). From the social welfare perspective there is cross-subsidization, where the rich cross-subsidise the poor or the healthy people cross-subsidise the ill-health people for their

health care expenditures (Fieldstein 1973; Chiu 1997; Glied 2008). Thus the redistribution of wealth takes place under the health insurance schemes where insurers play the vital role in the process of collecting resources, pooling risks and purchasing of health care services. To make it a viable model, people pay premiums to the insurance companies which are generally considered as actuarially fair premiums where there is equality between expected benefit payments and the premiums received. However, there are other selling and transaction costs due of which the insurance policies are generally not offered at the actuarially fair premium and premiums are higher (Fieldstein 1973; Manning & Marquis 1996).

Insurance can only be sold till the point when there is the diminishing marginal utility of wealth. Once the marginal utility becomes constant, there would be no additional benefit to the customers than when they are uninsured and they will not be attracted towards insurance. If the insurer will charge much more than the actuarially fair premium, peoples' expected wealth will be less when insuring than from not insuring and they will be discouraged from buying any insurance plan. There are other factors as well like income, availability of hospitals, demographic factors like age, price of hospital care etc. which affect the demand and the price of the insurance products (Fieldstein 1973; Folland, Goodman, and Stano 1997).

Optimum insurance policy should cover both preventive and curative aspects of health. Though coverage of preventive health aspects is debatable because expenses on preventive care are not uncertain for which insurance coverage is required. However coverage of preventive care or providing incentives for those who take preventive care is also important both from supply and demand side perspectives. From the supply side perspective, the coverage may help the society by giving it less burden for bearing treatment costs if preventive care can be promoted. Also, from demand side perspective, if the people are only provided insurance coverage for curative aspects, there are

some uncompensated financial loss e.g. wage loss during treatment or uncompensated health loss e.g. loss of quality of life which induce people to take preventive care (Rice 1992).

## **Health Insurance: Market Failures**

A number of health insurance literatures have identified problems of market failures in the health insurance market which are either related to problems of inefficiencies or problems of inequity. The problems of adverse selection or cream selection and moral hazard due to information asymmetry in the health insurance market are very common. Adverse selection is a scenario in which a larger proportion of people who are at high risk or not in a very good health or aging people become the part of the health insurance plan. Due to this, the pooling of risks does not happen in true sense as a larger segment of high- at-risk people are subscribers of the health insurance policy, and the premiums which they pay for insurance is much lesser than what would actually have been in case premiums would have been fixed with full knowledge of their health status. In such cases, insurer will not be able to sustain because the premiums received will be able to purchase medical care services only for a few persons, which will create inefficiency in the market. There is also a problem of 'cream skimming' where, if a person has visible health problems or with some pre-existing health problems or is aged, then s/he will find it very difficult to get any insurance plan. Even if s/he gets one, it is likely to be too costly to afford (Okun 1975).

On the other hand, moral hazard is defined as a situation where, if a person who has been insured under the health insurance plan becomes careless about his health or tends to over consume the medical care services. The problem of over-insurance also makes the insured people or their families tend to use more and more medical services which results in huge amount of welfare loss. The over consumption of medical

services by the insured also leaves very little health care resources for those who are uninsured and who are in need of medical care services.

Due to these problems, if the insurance companies charge even slightly actuarially unfair premium without taking into account the problems of adverse selection and moral hazard, they will incur losses. However, if they charge very high amount of premium then people will not opt for insurance. This is the reason why most of the insurers do not want to insure those health care services which are price elastic and also build different terms and conditions like co-insurance, deductibles, excluding pre-ailment diseases, not covering certain diseases and certain group of persons like old age people etc. (Pauly 1968; Pauly & Philip 1990; Pauly 1983; Fieldstein 1973; Manning et al. 1987).

A number of studies have also shown evidences that health insurance promotes supplier/provider induced demand of unnecessary health care services to generate profits. This is again due to the problem of information asymmetry between the providers and patients. The inference of supplier/provider induced demand can be drawn because some of the health care demands are not associated with price of the services or income of the patients, not driven by medical need or consumer tastes and in majority of such cases the processes are complex with uncertain outcomes which generally requires expert prescription to demand such services. The extra resources consumed over and above the optimal due to the problems of moral hazard or supplier induced demand misallocate the resources or allocating fewer resources in other activities, which is sometimes referred to as "Deadweight Loss" (John 1999; Manning et al. 1987; Jörg 2012; Manning & Marquis 1996; Richmant & Havighurst 2011; Dowless 2007; Judge & Dooley 2006; Macher & Richman 2008; Evans 1974; Richardson & Peacock 2006).



Apart from the above reasons, there are other forms of market failures which justify government intervention in the health care financing and delivery. One such example of market failure is monopoly power which also impacts health care pricing. Monopoly power exists in the health care market at different levels. For instance, hospital services in the market are restricted by different laws, license laws and other restrictions on the health care professionals, restricting their entry in the market; pharmaceutical products are being protected by patent laws, health insurance markets are dominated by only a few players etc. These laws and restrictions create a monopoly power in the market which results in raising prices and hence welfare loss.

Most insurance policies, particularly those offered by the private insurers or even different social health insurances, shift the health delivery to the private sector or secondary and tertiary care centres by incentivizing them. Their heavy investments in the sophisticated health care equipment and technologies not only increases the cost of treatment which is ultimately borne by the society, but also exposes the patients to unjustified hazards and discomforts, which leads to undesirable consequences and even difficult to correct at the later stage (Bhat 1993). The services being provided by these centres have a very high income elasticity of demand and hence mostly being used by the non-poor. As a result, the benefits of insurance tend to accrue mostly to the non-poor and distribution is extraordinarily skewed with most expensive and very small proportion of the population over consuming large share of medical resources and a bigger proportion of population are only left with very small amount of health care resources (Gertler 1998; Wagstaff 2009).

From the efficiency perspective, competitive markets are considered as economically efficient under certain conditions. However, a big question is whether the competitive market in true sense can be achieved in the health care market and

whether it can provide equitable distribution of health care. In health sector, including health insurance, due to the problems of market failure, it is very difficult to achieve a perfectly competitive market. On the other hand, health is generally considered as public good because of its unique externality characteristic. A good example is immunization, where if a child is immunized, then the risk of other children getting infected becomes less, or conversely, if a person is infected with certain disease and if the disease is communicable, then there are chances that others will also get infected if timely intervention at the population level is not done. Due to this unique externality characteristic, the relevance and applicability of the welfare economics theory is very important, which talks about increasing the wellbeing of others. This builds a strong case for financing and provisioning of health care as the responsibility of the State.

Another reason is the issue of equity where there is a need to encourage active participation of the marginalised population because of their poor health indicators. Law of Inverse Care says that free market allocates goods and services according to the ability and willingness to pay and hence the resource poor sections of the society would be unable to afford them even when they need more health care because of various factors. Also, health expenditures are very uncertain and catastrophic in nature which has the potential to make the family impoverish, and thus creating a need for insurance. These are some of the reasons why the health care market cannot be developed as perfect competitive market, and justifies government intervention in financing and provisioning of health care services (Hurley 2001; Folland, Goodman & Stano 1997).

From the social cost perspective, there is a substantial cost to the society when persons or families do not have adequate health insurance coverage required to meet to their healthcare needs. Uninsured population or population who are

not adequately covered by health insurance and not in a position to bear the high cost of medical care, are forced to either borrow money or use their future savings to bear the huge risk of catastrophic expenses and push their families in the vicious cycle of poverty. Their health conditions either deteriorate further or they succumb to the illness, and this becomes a huge social cost for their families and societies. For children who don't get proper medical care when they need, they lose the chance of their normal physical and mental growth which also leads to their poor educational achievements and their future prospects (Watts & Mello 2006; Coase 1960; A Fiscal Policy Institute Report 2007).

There is a direct link between catastrophic health care expenditure and health services requiring payments, low capacity to pay and lack of prepayment or health insurance. There is also a direct relationship between out-of pocket expenditure and catastrophic expenditure. The proportion of people living below the poverty line and the share of total health care expenditure in GDP are also positively correlated with the proportion of households with catastrophic expenditure. Hence, there is a need for the government to intervene in the healthcare sector and provide financial security from the health care expenditure primarily to the resource poor families (Xu et al. 2003).

### **Health Insurance – Efficiency and Equity Trade-off**

Some literatures have argued that a well-intended welfare transfer program will have some amount of efficiency loss due to administrative costs to manage the program, changes in work effort and changes in savings and investments due to redistribution. However, this can be minimised by doing some level of trade-off between economic efficiency and equity in the redistributive or welfare programs where resources are redistributed in the society for welfare maximization (Okun

1975). Blank (2002), finds that there could be three situations, where with some level of trade-off, both equity and efficiency can go hand-in-hand: (a) when the welfare transfer program goes to those sections of the society who don't have capacity to change their behaviour, even when more opportunities are made available through the program, (b) when the programme is designed in such a way that efficiency loss is minimum even after behaviour change and, (c) when the subsidy program functions as the long-term investment and achieves long-term future gains.

While health insurance is an important mechanism to reduce social cost of families and societies, the market has a number of inefficiencies that limit the positive impact of health insurance market. Under the conventional health insurance policies, to correct market failure problems like moral hazard, adverse selection, supplier induced demand etc. insurance companies generally put different conditions like co-insurance, co-payment, deductibles, excluding pre-ailments etc. and try to make it efficient. However, it is equally important from equity perspective for any insurance plan to cover uncertain health shocks by covering treatment costs with lower amount of co-payment and co-insurance so that even poor people will get financial security from catastrophic health expenditures. This will not only have positive implication of increasing the health care utilization by the poor but some studies have also reported improvement in health outcomes due to increased coverage which is very important from social cost and welfare perspectives (Fieldstein 1973; Manning et al. 1987; Niedzwiecki 2012). Hence, from the economic and social welfare perspectives, goods and services which are more uncertain or variable in nature with low elastic or inelastic prices should have more generous coverage with lesser amounts of co-payments or co-insurance. For optimal level of health care insurance there is a need to trade-off between risk reduction and efficiencies. Also, from the perspective of resource poor

families, they need coverage of even price elastic services like non-institutional care because the proportion of expenses of these services to their total health care expenditure is very high (Manning & Marquis 1996). Optimum amount of insurance is required which will not only enable the people to utilize necessary health care services when they need it, and at the same time, prevent them from over-utilizing the medical care services due to insurance coverage. From the social welfare perspective, Publicly financed health insurance will help allocating the resources equitably in the society by pooling the risks and the resources and help equitable distribution of resources (Rice 1992).

### **Rationale of Government Intervention in Health Care Finance**

The above market failures in the conventional health insurance market and the policy commitment for achieving equitable health care finance and distribution of health care resources justify government intervention. Government intervention is needed to provide insurance coverage for the poor sections, who otherwise cannot afford these services; bring in regulatory mechanisms to reduce the market failures, work out ways to improve efficiency through institutional mechanisms like public private partnership, to overcome the market failures and to reduce welfare losses. Externality characteristics associated with health sector can also be corrected by the Government through pricing and other control mechanisms. This will increase the demand of those health care goods and services which have positive externality characteristics by subsidizing the price of such goods and services and restrain the demand of those goods and services which have negative externality by imposing appropriate taxes or charges on such goods and services.

Government intervention is also important for pooling of resources through mandatory programs and their systematic redistribution to achieve equitable outcomes. Government's role also includes promotion of consumption of merit goods regardless of any personal preferences. Its role further extends to filling the incomplete market where private parties may not be interested due to various reasons. For example, most of the private insurance firms do not insure patients suffering from certain chronic illnesses or do not provide coverage for pre-existing ailments. Also, people with low income or destitute are unable to get insured either due to high cost or lack of suitable health care coverage policies designed for them. This makes it imperative for the government to intervene to reduce the welfare losses by filling up such gaps in the incomplete market (Folland, Goodman, and Stano 1997).

### **How Government Can Intervene in the Health Insurance Market: Social Health Insurance versus Tax Based Financing**

Two well-known public health insurance models are Social Health Insurance (SHI) and tax based finance health care insurance. SHI approach of health care finance is known as Bismarck model where a certain percentage of the salaries or wages of the formal sector employees is deducted at source, known as payroll tax, with employers' contribution as top up to finance their health insurance. The tax based finance health care insurance is known as Beveridge model where a portion of the general tax which government collects is used to finance the insurance or public health delivery system.

Tax based finances are generally managed by the government and provide coverage to the entire population irrespective of their occupation. From a developing nation's perspective, tax based health care finance in which services are accessible to all is considered better alternative to SHI where

services are available only to those who are in the formal sector employment and contributing money. This is because government generates revenue from the general tax which is mandatory in nature, to be paid by those who are within the tax bracket. The taxes are collected regardless of health status, thus minimizing the chances of adverse selection. Tax finance is considered as progressive in nature because the taxes are mostly collected from the better off communities and they cross-subsidize the resource poor communities for their health expenditure, which maximizes the social welfare gains. It can easily achieve allocative and technical efficiency in the resource allocation within the health sector as resources are redistributed at national level based equitably on the needs and priorities and not based on the market sentiments. The administrative cost of collection and channelization of funds to the health sector is very less compared to SHI.

Unlike SHI, where there is no control on utilization of services because of absence of any General Practitioner as gatekeeper before seeking any specialists services, in the public health delivery system, the patients need to come through the channel of primary health care before utilizing the services of secondary and tertiary care units. This saves huge amount of resources by discouraging patients from utilising secondary and tertiary care facilities for those services which can otherwise be treated in primary care unless they really need to receive such services during medical complications. Primary health care also emphasizes on preventive care which leads to better health outcomes and helps better chances of early detection and better treatment of chronic illness due to integrated nature of service provisions. Tax based finance also has the potential to achieve universal health coverage due to its large resource base (Wagstaff 2009; Gertler 1998; Savedoff 2004; O'Donnell et al. 2008).

Evidences show that SHI mostly shifts the health care delivery to the private providers which leads to the problems of

moral hazard and supplier induced demand. Evidences also show that SHI is responsible for increased price of health care which tend to increase the social cost and make the services costly for those who are uninsured. Due to increased price, there would be a misallocation of resources which leads to deadweight loss. Again, in the resource poor or developing nations' context, a very small workforce is employed in the organized sector hence contribution can be received from a very small proportion of population and they will be only entitled to receive free or subsidised health care service under SHI regime (Gertler 1998). From the perspective of quality of care also, there is no evidence that SHI has better health outcomes compared to Tax Based Finance; in fact, there are evidences of higher premature mortality from breast cancer among women and loss of potential years of life in SHI (Wagstaff 2009).

## **Conclusion**

Health insurance as one of the health care finance models is an efficient mechanism for collection of revenue, pooling of risks and purchase of services. Different kinds of health insurance models are available to provide financial security from health care expenditure, however from developing nations and resource poor countries' perspective, it is obligatory on the part of the government to design a pro-poor health insurance models which can address the issue of equity in the health care market. There are different models available for public financing of health care system, and depending on what is most appropriate in the given conditions, the Government can make a choice of any one or a mix of these models, for the best results. Since commercial health insurance plans are not suitable particularly for the resource poor households due to efficiency and equity related market failures, therefore to protect the marginalised sections from catastrophic health expenses, and to make the health care market efficient and compete, it is imperative for



the Government to intervene. The option is the Publicly financed health insurance which is normally either the Social Health Insurance (SHI) or the Tax Based Finance. However, since a large workforce in the developing countries work in unorganized sector and also other problems related to SHI explained previously, SHI is not a good proposition for the resource poor households. Hence, tax based health insurance model, which will embrace all the sections of the society with special focus on the resource poor families and has a potential to provide depth and breadth of health care services would be an appropriate policy for them in the developing countries.

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