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Funding health care in Bangladesh – assessing the impact of new and existing financing

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Also available;

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Bangladesh National Health Accounts 1996/97, Final report, Data International/ Health Economics Unit.

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Abbreviations

BBS	Bangladesh Bureau of Statistics
BCC	Behavioural Change Communication
BIA	Beneficiary Incidence Analysis
BIDS	Bangladesh Institute for Development Studies
CIET	Community Information Epidemiological Technology
CMR	Crude Mortality Rate
DPA	Direct Project Aid
ESP	Essential Services Package
EOC	Emergency Obstetric Care
GDP	Gross Domestic Product
GIO	Gender Issues Office
GOB	Government of Bangladesh
HEU	Health Economics Unit
HPSP	Health and Population Sector Programme
IEPSD	Institute for Economic and Private Sector Development
IMR	Infant Mortality Rate
MAU	Management Accounting Unit
MOHFW	Ministry of Health and Family Welfare
NHA	National Health Accounts
NGO	Non-Government Organisation
OECD	Organisation for Economic Cooperation and Development
PER	Public Expenditure Review
PIP	Project Implementation Plan
PCC	Programme Co-ordination Cell
SWAp	Sector Wide Approach
TFIPP	Thana Functional Improvement Project
UHC	Upazila Health Complexes (formerly Thana Health Complexes)
VAT	Value Added Tax
WHO	World Health Organisation

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Executive summary

Introduction

Much has been written on the need for further resource mobilisation in the health sector. The main Project Implementation Plan (PIP) of the Health and Population Sector Programme (HPSP) argues that the gap between what is required for public provision of essential services and funding available could, at least in part, be covered by new sources of funding such as user charges and insurance

This paper examines the impact of the potential for increasing resources for health both from traditional sources through the budget and alternate funding such as user charges and insurance. These estimates are then placed in a wider context through the detailed examination of the equity consequences of funding methods and then through an examination of the extent to which these methods promote or retard key goals for sound health sector finance.

Health financing in Bangladesh

The financing of health care in Bangladesh is dominated by two main methods: taxation/Development Partner (DP) funding and out of pocket payments. The first mostly finances the public provider system while latter is predominantly used to purchase pharmaceutical products and diagnostic tests. Social and private insurance and official user charges in public facilities currently comprise a very small proportion of total funding.

A key health financing policy consideration is the extent to which alternate sources of funding might be extended in order to channel funding into public services or organised insurance schemes.

Medium term projections suggest that, even if new sources of funding are developed, taxation will continue to be the dominant form of funding contributing at least 63 percent of funding, with funding from DPs providing a significant but diminishing share of resources.

Of the alternate sources the development of social and, to a lesser extent, community insurance could provide important additional finance. Based on an income related contribution (average premium of 500 Taka per person or around 2,000 – 2,500 taka per household) social insurance could contribute up to 8 percent additional revenue for the sector. Community insurance, if developed, in key areas such as TFIPP upazilaz and areas served by NGOs, would extend funding by at least another 4 percent. User charges remain an important way of releasing resources at facility level for consumable items but in total system terms the contribution is likely to be modest.

Equity impact of alternate financing systems

Each of the financing methods can be classified according to how equitable they are in the way they obtain contributions from contributors. The Kakwani index provides one method of evaluating this characteristic. The index divides methods into those

that are progressive– (where the rich pay proportionately more than the poor), regressive (where the poor pay proportionately more than the rich) and proportional (where all pay the same percentage of income).

Simulations using available data suggest that existing and future tax funding of health is proportional or mildly regressive. The main reason is that most taxes are on commodities which have a greater percentage impact on the poor.

Social insurance, in contrast, could represent a strongly progressive system of funding even when a limit is placed on the total absolute contribution paid by a household. This is because social insurance is related to wages which in turn form a large proportion of the income of those working in the formal sector. Community insurance tends to be a regressive form of finance since contributions are usually flat rate and unrelated to income. This remains true even when discounted and free policies/cards are provided to the poor through subsidy.

In common with most countries, user charges appear regressive in impacting much more on lower income groups. This remains true even when quite generous exemptions are introduced for the poor. It is important, however, that the impact is placed in the context of the existing situation of substantial unofficial payments. Using available information on their incidence suggests that *if unofficial payments are eradicated or substantially reduced* as a result of the official charging then equity would improve.

A pluralist funding system, that relies increasingly on new forms of funding, can be implemented in a way that improves overall equity, provided that attention is paid to exemptions from user charges and subsidised insurance for the poor and most vulnerable.

Evaluation of health financing options

Potential resource mobilization and financing equity are not the only criteria upon which to judge a financing system. The paper specifies a number of additional criteria, including whether financing:

- is distributed according to need;
- reduces the burden to households of unexpected catastrophic risk;
- develops an individual's interest in improving his/her own health;
- is managed in a way that is accepted as transparent and trustworthy;
- encourages resources to be used in a way that maximises the (health) benefits to the target population.

An important conclusion is that it is not only the financing system that determines whether these requirements hold. Also important is the way the finance is disbursed and managed.

Extending the range of financing options opens up opportunities for building a public system that is more responsive to the range of needs. The emphasis of current funding is on a basic infrastructure combined with an essential service package. Much of the additional funding will be used to extend these services. At the same time the bulk of

funding through insurance and user charges must be used to benefit contributors, mostly the non-poor. Yet as the economy grows there will also be an increasing level of as yet uncommitted finance. There is an important opportunity to use these resources to extend risk-pooling for catastrophic care to the poor and so lay the ground for a system that can offer something to all parts of society.

1. Introduction: health system funding in Bangladesh

Much has been written on the need for further resource mobilisation in the health sector. The main Project Implementation Plan (PIP) of the Health and Population Sector Programme (HPSP) argues that the gap between what is required for public provision of essential services and funding available could, at least in part, be covered by new sources of funding such as user charges and insurance (GOB, 1998). Resource mobilisation is the main motivation behind the recent application to the Ministry of Finance to retain user charges at facility level rather than returning them to the treasury (Dave_Sen, Karim et al., 2000). There is also increasing focus on insurance as a way of increasing available funding.

This paper examines the impact of increasing resources for health both from traditional sources through the budget and alternate funding such as user charges and insurance. An earlier paper (Miller, 2001) examined the revenue potential for current and new forms of funding. These estimates are reviewed and then placed in the wider context through the detailed examination of the equity consequences of funding methods and then through a wider examination of the extent to which these methods promote or retard key goals for sound health sector finance.

Justifying additional spending

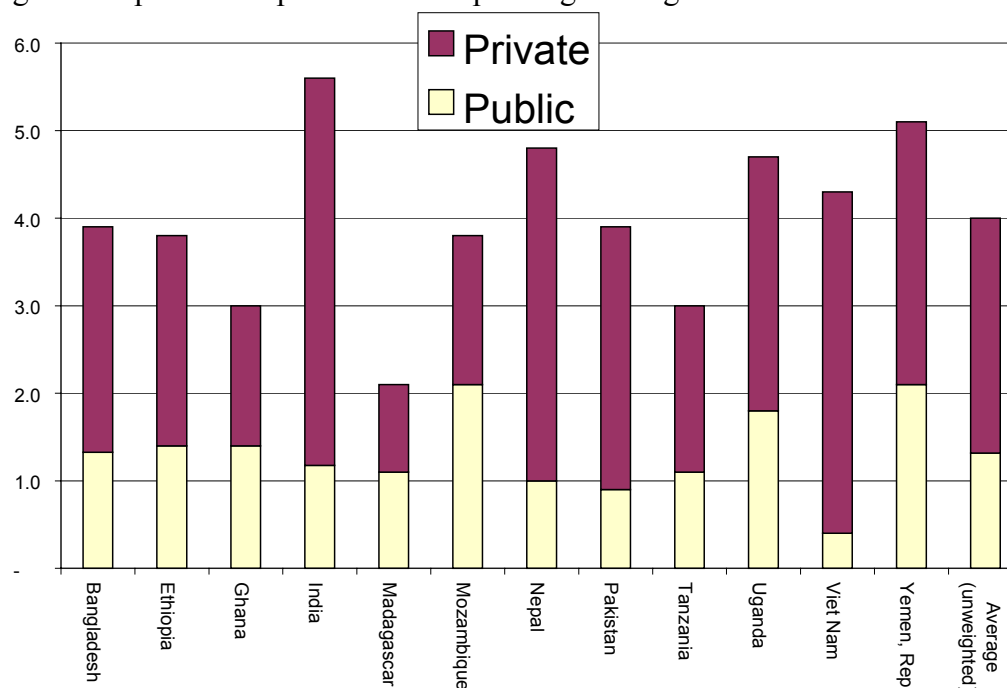
Before investigating how additional revenue might be raised, it is important to establish a justification for increasing the level of resources devoted to health care.

It is difficult, perhaps impossible, to define the correct level of financing for health care in a country. In principle, policy makers should seek to maximize the overall welfare of the population through public funding and provision of some services, and the regulation of the private provision of other services. Weighing up the competing benefits of spending on education, health, roads and other priorities, and subjecting these both to economic and political constraints imposed on governments, means that in practice public policy can rarely if ever perform in this utopian way. Practical policy making is likely to rely on more manageable objectives based on reasonable, but perhaps contentious, assumptions. One way to examine this question is to look at spending in other similar countries.

According to the 1996/97 National Health Accounts, Bangladesh spends around 11 US dollars per capita on health care. This includes both public spending, including domestic and development partner funding, and private out of pocket payments. This amounts to around 3.9 percent of national income being spent on health. About two thirds of this is in the private sector. In the intervening years since the NHA was carried out public health expenditures fell slightly to about 1.2 % from around 1.36 percent (Heath_Economics_Unit and Data_International, 1998). Until the next round of the Household Expenditure Survey is available later this year we will not know whether the proportion of private spending on health has shown any marked change, although there is little reason to expect that it will have increased significantly. We can conclude, therefore, that at today's prices Bangladesh probably spends about \$12 dollars per capita, of which about \$4 is public spending.

It is probably not feasible to expect that overall health care spending will rise significantly in the short term. Internationally the level of spending per capita is largely determined by the level of per capita income. Average spending on health as a proportion of GDP in other large low income countries (less than \$500 US per capita and population of greater than 15 million) was 4 percent in 1997 (see figure 1.1). The maximum was 5.6 percent. Bangladesh is close to the average for the group.

Figure 1.1: public and private health spending for large low-income countries



Sources: Health_Economics_Unit and Data_International, 1998, World_Bank, 2000, WHO, 2000

Although total national spending may not increase significantly, it may be possible to use existing expenditure in a way that is more efficient. Of the 63 percent of spending from out of pocket payments reported in the NHA, around 46 percent was on drugs, most of which are purchased from private pharmacies. There is accumulating evidence, both in Bangladesh and elsewhere, that much of this spending is partly or wholly wasted on ineffective or inappropriate medicines. It should also be mentioned that even medicines given by doctors through public facilities are often mis-prescribed or given to patients without proper information on their use (Ahmed, Chowdhury et al., 2000, Begum, Ensor et al., 2001). A key challenge, in designing new systems of financing for health is to channel this spending into the purchase of more effective service provision.

Rather than attempt to estimate or guess how much spending in Bangladesh represents the 'correct' amount, it is perhaps more fruitful to turn the question around and consider the reasons why spending is at the current level and what justifications exist for attempting to increase (or decrease) these resources.

Spending, at least private spending, represents a balance of personal ability and willingness to pay for medical treatment. Ability is determined both by average incomes and by the distribution of those incomes. A country with a very unequal distribution may find that most of the demand for treatment comes from a small

section of the population, who demand sophisticated elective surgery and diagnostic tests often obtained in other countries. A more egalitarian society might demand, under the right circumstances, a greater emphasis on cost-effective interventions aimed at a wider cross-section of society.

Willingness to pay for health care is just as important as ability to pay. Willingness is determined by a complex combination of factors including information available to the individual about his/her health status and need for health and the availability of services as reflected in factors such as price, proximity to services, quality, and types of services available.

If income was distributed according to social objectives, accurate information was fully available to the population on the need for health care, and services were arranged in an efficient way, then there would be little need for the government to finance or provide health care. The argument that these conditions do not hold in practice lends legitimacy to government intervention in health care markets. Any argument to increase the amount of publicly channeled funding from the current level should also be subjected to similar analysis.

The main arguments for diverting or channelling spending are as follows:

1. Redistribution – increased public funding can be used to benefit the poor.

A key argument behind devoting an increasing level of public funding to health care is that it is a way of addressing poverty and inequality through an in-kind redistribution of resources towards the poor in the form of better health services. The important pre-requisite for this argument to hold is that funding really does benefit the poorest in society. Evidence in Bangladesh, as elsewhere, is that the poor are more likely to use lower level (upazila and below) services and less likely to use hospital services. Yet there is also evidence that the quality of services available to the poor at lower level services is often inadequate and that patients still make substantial payments for treatment. Arguments based on redistribution impact should, therefore, be based on a clear plan for channelling resources to lower level services in a way that significantly improves their quality and reduces the unofficial out of pocket burden on poor households.

2. Information & personal demand – regulation and provision

Patients often do not have sufficient knowledge of ill health and information about health care to enable them to obtain adequate care. Although there are many health care providers, particularly in urban areas, it is difficult to know which ones will provide appropriate, effective and good quality care. Government intervention to correct the information distortion should be based on a multiple strategy. First, to subsidise or directly provide some effective services that enhance public health. Second, to develop effective regulatory mechanisms to enhance the quality and effectiveness of the services provided in the private sector. Finally, information should be provided to individuals so that they can make more effective use of services. This includes the traditional idea of communication for improving basic understanding of health and health services and also encompasses the provision of

information that allows individuals to make informed choices about the facilities in their area – public, NGO and private.

3. Risk pooling

Most private spending in Bangladesh is made directly out of pocket when the person is sick (user charges). An implication is that households are often forced to pay for health care when their ability to pay is at its lowest. Channelling more funding into organised insurance schemes is one way of reducing the need to pay for health care at time of illness but instead spread the costs of care across time and over individuals.

4. Improving the efficiency of public sector investments

A final reason for increasing resources into the public sector is as a way of improving the effectiveness of current public sector facilities. A key problem is that limited resources mean that much of the allocation is spent on buildings and staff, with little left over to purchase necessary medicines and other supplies. In these circumstances additional funding provided, for example, through user fees can improve the productivity of staff inputs and thus the technical efficiency of services.

It is, however, important that user based charges do not become an excuse to postpone more fundamental changes. Rather than utilising existing staff a little more efficiently, greater improvements may come through the reallocation of public funding through the reduction, for example, in total staff complement and the use of the released resources for staff incentives and medical supplies. Such reallocations require changes in budget allocation processes so that resources available to an area are related to need and can be used more flexibly for the improvement of services. While these changes will undoubtedly take some time to effect, it is important that the process is still seen as necessary, even once additional community finance is mobilised through insurance and user charges.

This discussion highlights a more fundamental issue, which is that while it is clear that much private spending is ineffective the same can also be said for many of the services financed and delivered within the public sector. If a strong argument is to be made for resources to be channelled into the public sector or other forms of organised financing, society must be convinced that the resources will be utilised effectively. Without this assurance it is likely to prove impossible for policy makers to convince the public that health service resource mobilisation is not ‘just another tax’ and evade it accordingly.

2. Extending health finance in Bangladesh

Main funding systems

Funding methods can be divided into two main types: direct and indirect. Direct methods are where users make a payment in return for a guarantee (for?) medical services. Payment may be made well in advance, just before or after the service has been obtained.

In contrast indirect methods are where payments are in return for an entitlement to service if sick within a specified period. Payments tend to be made well before service is required in order to avoid the moral hazard that people may only pay for the entitlement to service when they actually require services.

Based on these definitions financing methods can be categorized (see table 2.1). Systems with an element of insurance can mostly be placed in the second category. This includes social, community and private insurance. It also includes funding from general taxation, which can be considered a type of insurance based on universal entitlement to benefit.

Table 2.1: types of health system financing

<p>Direct - payment for service</p> <ul style="list-style-type: none"> ● User charges ● Savings - pre-payment, medical savings <p>Insurance - payment for entitlement to service if sick</p> <p>➤ Universal</p> <ul style="list-style-type: none"> ● General Taxation ● Earmarked tax <p>➤ Selective</p> <ul style="list-style-type: none"> ● Social insurance ● Voluntary Community insurance ● Private insurance

User charges, which are only paid when service is required, clearly fit into the first category. So too do systems of pre-payment where users pay in advance, perhaps when the users have sufficient income, for services that they are guaranteed to receive later on. Sometimes such methods are mistaken for indirect insurance based systems. They are not, because they guarantee service rather than entitlement if sick. A further direct method is the medical savings account pioneered in Singapore. Here people put aside regular savings that can only be spent on health care. Essentially, this is a sophisticated pre-payment system. It is not an insurance system since risks remain un-pooled across groups of the population.

Insurance systems do not guarantee that a consumer will be given services. Rather they "give individuals rights to specified services in the event of medical need" (Normand, 1999). The basis of entitlement is an important defining feature of insurance systems. *Universal methods* provide the entitlement to all, regardless of contribution, usually on the basis of citizenship. There are two main types:

- General taxation – where money from a variety of taxes is collected into a common pot and then divided between sectors according to annual government priorities. Taxes are both direct, based on an individual's wages and other forms of income, and indirect, where taxes are collected from the sale of goods and services and import and export commodities.
- Earmarked or hypothecated taxes – where taxes are levied for specific purposes. Those paying the tax know that the money will be spent for a particular service. Earmarked taxes can be both direct, as a proportion of wages or payroll, or indirect, through a specific tax on a good or service.

There are a variety of methods that can be described as *selective systems* where the payment of the contribution directly confers an entitlement to benefit from the insurance. The main types are as follows:

- Social insurance is usually based on earmarked payroll taxes, but where the contributions are placed into a separate fund to be used to benefit only those contributing. Because contributions are levied on the basis of income they increase as income increases, making them broadly proportional in their incidence.
- Voluntary community insurance – where people pay a flat or income related contribution for additional services on a voluntary basis.
- Private insurance – where profit or not-for-profit companies sell insurance based on their risk of becoming ill. Incidence tends to be regressive since those likely to be ill are also more likely to be poor.

There are two crucial problems with insurance – both universal and selective. How these are solved largely distinguishes the type of scheme being operated. ***First, those that are likely to be sick will wish to join a scheme, whereas those who are basically healthy will not.*** This presents a problem, since insurance depends on the healthy subsidising the sick. A number of solutions may be used to overcome this problem, including:

- make the scheme compulsory
- increase the premium for the unhealthy and decrease it for those that are healthy
- introduce special incentives to encourage the healthy to join

This problem is known as *adverse risk selection*.

Second, once a person has joined there is an incentive to over-use services since another party (e.g. private insurer, government NGO) will pay. Again several solutions exist, including:

- Charge everyone a proportion of the cost of care (co-payment)
- Use managerial and clinical methods to identify those that really need treatment.

This problem is known as *moral hazard*.

But it is important to realise that solutions to both these problems are partial and each one has different impacts on various population groups.

The main approaches to these two problems used by each of the main insurance systems are summarised in table 2.2. Further discussion is provided in Ensor, 2000.

Table 2.2: methods of controlling adverse selection & moral hazard

Insurance system	Adverse selection	Moral hazard
Private insurance	<ul style="list-style-type: none"> ➤ Risk related premiums ➤ Benefits to attract and identify low risk groups 	<ul style="list-style-type: none"> ➤ Co-payments ➤ Contracts with low cost providers ➤ Managed care
Social insurance	<ul style="list-style-type: none"> ➤ Compulsory for identified population sub-group. 	<ul style="list-style-type: none"> ➤ Manage referrals ➤ Contracts with low cost providers
Community insurance	<ul style="list-style-type: none"> ➤ Special benefits for low risk. 	<ul style="list-style-type: none"> ➤ Limits on volume ➤ Co-payments

Health system funding in Bangladesh

Health system funding in Bangladesh is currently dominated by two main financing types: direct user charges and consolidated funding (table 2.3)¹. Most of these taxes are indirect taxes on goods and customs duties. Around 33 percent of funding is obtained from general taxation and allocated to public facilities. More than 63 percent of funding is obtained from out of pocket direct payments (user charges).

Other financing contributes very little to total funding although the methods are important in demonstrating alternative systems. Private insurance is limited to a small proportion of the formal sector and contributed less than 0.003% in 1996/97.

¹ Consolidated funding is mainly funded by general taxation but also by development partners.

Table 2.3: The public-private mix in Bangladesh (simple typology) - million Taka

		Funding					
		Public	%	Private	%	Total	%
Provision	Public	MOHFW facilities		User charges in public facilities			
		18,030	33.0%	170	0.3%	18,200	33.3%
	NGOs	Donor & GoB funding of NGOs		User charges in NGO facilities			
		1,186	2.2%	210	0.4%	1,396	2.6%
	Private	GoB spending on research institutes		User charges and voluntary insurance in pharmacies, clinics, diagnostic centres			
		648	1.2%	34,455	63.0%	35,103	64.2%
Total	19,864	36.3%	34,835	63.7%	54,699	100%	

Source: figures from National Health Accounts, (Health_Economics_Unit and Data_International, 1998)

All civil servants are enrolled in a number of limited government schemes that can be classified as social insurance or payroll based systems. These are:

- Benevolent fund – will pay up to 8000 Taka for outpatient care and 15,000 Taka for inpatient care but can only be accessed three times during the civil servant's career,
- Medical allowance – an addition to monthly salary of 200 Taka to defray medical expenses,
- Comprehensive Catastrophic Care Scheme – benefits of up to 1 Lakh Taka subject to special application to a review board.

It has been suggested that these schemes, if merged, could form the basis of a fully fledged system of social insurance for civil servants (Killingsworth, 1999).

Community insurance exists through a number of innovative schemes run by NGOs and local hospitals. They include the schemes run by Dhaka Community Hospital, Gonoshastaya Kendra in Savar and Urban Hospital and the Grameen Health Plan. These are reviewed elsewhere (Islam, 1999). The schemes are integrated in the sense that each organization offers insurance and provides services. The schemes have had considerable success within a limited area but the overall contribution of funding to total national spending is small.

A number of NGOs, such as Proshika, have developed health savings schemes to complement existing credit schemes. Members, usually women, aim to save a small amount each month at the same time they make re-payments on their loan. This money can be used to pay for health services at time of illness. Although this method is a direct method of payment there may be potential to transform this willingness to save into a willingness to insure.

Seeking additional funding: resource projections for the health sector

A key consideration in introducing new, or refining existing, systems of finance is how much additional money can be channelled into the sector. As already discussed, this is mostly about channelling direct private payments into public services or organised insurance schemes.

A previous HEU paper (Miller, 2001) examined the prospects for increasing (public) health sector funding during the current and next five year plan periods. The work was based on macroeconomic projections for the economy, assumptions about tax collections and scenarios for channelling more resources into the health sector. It also investigated the potential for increasing resource through the development of user charges and insurance based on a range of plausible scenarios.

Table 2.4: scenarios for health sector funding²

	Current	%	“Adjustment with better tax efficiency”	%	“Baseline”	%
Government revenue	1,535	63.1%	4,137	64.4%	3,140	64.1%
Development partners	898	36.9%	1,489	23.2%	1,299	26.5%
Total current sources	2,433	100%	5,626	87.6%	4,439	90.6%
Insurance		0.0%	743	11.6%	401	8.2%
User charges		0.0%	57	0.9%	57	1.2%
Total alternate sources	-	0.0%	800	12.4%	458	9.4%
Grand total	2,433	100%	6,426	100%	4,897	100%
Real spending (95/96 prices)	2,065		4,078		3,108	
Nominal growth since 2000/01			164%		101%	
Real growth			98%		51%	
<i>Assumptions:</i>						
Real economic growth (rising to)			6.5%		4.5%	
Inflation			4.1%		6.5%	
% GDP collected in tax			9.5%		8.0%	
Export/import growth (average)			6.5%/6%		11.4%/9%	
Budget deficit			4.5%		6.0%	
Insurance			Social & community		Social only	

Source: (Miller, 2001)

² For a full description of the scenarios and assumptions upon which they are based see Miller, N. (2001) Financing the health and population sector - resource projections, Dhaka, Health Economics Unit, PRU, Ministry of Health and Family Welfare, Research Paper 24..

The main conclusion of this work was that under all plausible scenarios funding will continue to be dominated by general taxation (see table 2.4) – between 87 and 91 percent. The paper describes a number of scenarios obtained by varying the assumptions for economic growth, inflation, improvements in tax efficiency and changing commitment of government to the health sector. A ‘baseline’ scenario, based on a conservative economic growth projection of 4.5% and no change in tax efficiency, yields a resource envelope for 2006/07 of around 4,900 Crore Taka. An “adjustment” scenario, assuming higher growth and increasing tax efficiency, yields an estimate of around 6,400 Crore Taka.

On the assumption that funding from development partners does not rise in real terms, the government share of this funding will represent an increasing percentage of this funding.

Projecting resources available from other sources, including user charges and insurance, is subject to considerably greater uncertainty since everything depends on when and whether the systems are developed. The best that can be done is to base projections on informed speculation founded on more or less plausible scenarios.

The scenarios presented assume that, in the baseline case, social insurance can be developed and extended to all civil servants and up to a third of the formalised private sector. In the adjustment scenario, revenue is supplemented by schemes for those in the informal sector based on TFIPP upazilas, areas served by NGOs and those living close to district hospitals. These areas were selected as providing relatively better services, for which people might be prepared to pay an insurance premium. Including between 15 and 25 percent of the target areas’ population into these schemes yields the higher resources projected in the adjustment scenario. The simulations suggest that between 7 and 11 percent of resources might feasibly be derived from insurance revenue by the end of 2007. Such projections are, of course, dependent on decisions taken within the next one to two years regarding the implementation of suitable schemes.

It should be realised that money obtained from insurance and, indeed, from the much lower yielding user charges, will not be collected without a corresponding improvement in quality of services. Revenue generation is, therefore, contingent on greater spending to improve services for those *paying* insurance contributions. If the revenue is spent on all, regardless of contribution, then people are unlikely to be willing to pay the contributions. This has equity implications since it should not be assumed that all, or even most, of the money from these sources can be channelled into services for poorer groups of society. We return to this theme in the final section.

A sound and fair health system funding is not, however, only concerned with increasing the level of resources. It is also important that any new resources generated from new or existing systems of finance are implemented in ways that are equitable and that meet the other criteria of efficiency and good governance described in section two. These issues are addressed in the next two sections.

3. Equity in health service funding

In this section we examine the extent to which each of the main health financing systems can be classified as equitable in the way in which contributions are collected. The main theoretical concept used is a measure of financing progressiveness, the Kakwani index. This is used because it is relatively simple to construct from limited data and can easily be used to simulate small changes in proposed financing mechanisms. It is important, however, to be aware of its limitations. Most importantly, while it successfully measures the proportionality of funding, it fails to capture the differences between systems of indirect (risk pooling) and direct payment. A more sophisticated alternative is proposed by the WHO World Health Report, the fairness of financing index, which embodies a measure of relative risk aversion into the main index (Murray, Knaul et al., 2000). This is particularly important for inter-country comparison. Since we are essentially examining complementary, rather than competing, systems of finance, we confine the quantitative work to the progressiveness issue but address risk pooling characteristics in the discussion section.

Measurement of financing equity

One of the key criteria for a successful financing system suggested earlier in the paper is its' ability to raise revenue in relation to ability to pay. A financing system can hardly be judged successful, even if it succeeds in generating significant revenue for the health sector, if contributions are disproportionately extracted from poorer members of society. It is important, therefore, to examine how different financing systems impact upon different economic groups.

In order to examine the impact of different financing schemes the Kakwani index was estimated from available data (see box 1 for more details). The Kakwani index measures the extent to which funding systems are:

- Progressive (index greater than one) - the rich pay proportionately more than the poor.
- Regressive (index less than one) - the rich pay proportionately less than the poor.
- Proportional (index equal to one) - the rich pay the same proportion as the poor.

The degree of progressivity or regressivity is indicated by the magnitude of the index. The estimates derived are provisional and further data collection and analysis will be required in the future to refine the figures.

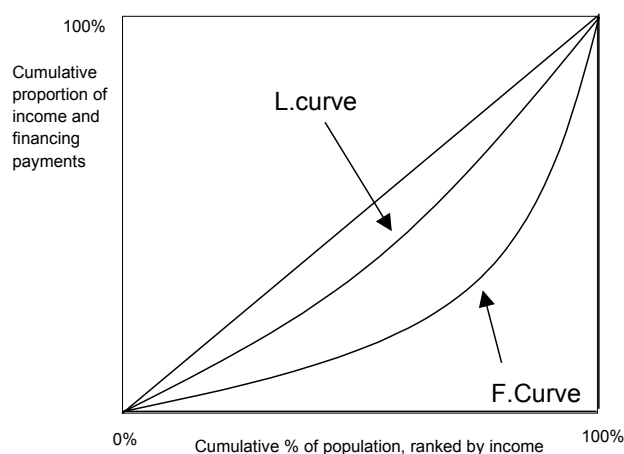
Existing system of public funding

The dominant source of organized health financing is the consolidated government budget. This incorporates both domestically derived revenues, from various tax and non-tax sources, and programme assistance from development partners. Government revenues as a whole were split, in 1999/2000, 63 percent domestic and 37 percent programme assistance. Health care spending was divided approximately two-thirds domestic, and one third Development Partners (HEU and MAU, 2000).

Box one: The Kakwani index and health financing ‘concentration’ curves

A useful measure of financing equity is provided by the Kakwani Index. This is based on the Gini coefficient and measures the extent to which financing systems depart from proportionality. It is best illustrated with reference to a Lorenz curve. The Lorenz curve provides a graphical representation of the degree of income inequality in society. The vertical axis measures the cumulative proportion of income while the horizontal axis measures the cumulative proportion of the population (arranged in order from the poorest on the left to the richest on the right). If income is distributed evenly then the Lorenz curve would exactly match the 45 degree line between the origin and top right corners so that 25 percent of the population would earn 25% of the income, 50 percent would earn 50 percent of the income and so on. If, as in most societies, income is not distributed evenly then the Lorenz curve will fall below the 45 degree line. In this case, for example, 25 percent of the population may earn only 10 percent of income. The Gini coefficient is used to represent (almost) the same information numerically. It is defined as twice the area between the 45 degree line and the Lorenz curve. It is a bounded index since its minimum is zero – where the two curves converge at perfect equality – and the maximum is one, where one person earns all the wealth and the Lorenz curve matches the horizontal and then right vertical axis (see figure 3.1).

Figure 3.1: Lorenz curve and concentration curve for payments



The impact of different financing options can be compared by examining the relative payments by different income groups compared to the underlying income distribution (Lorenz curve). Concentration (health financing) curves are derived by examining what proportion of funding is drawn from each income group. What proportion of financing, for example, is paid by the bottom 25 percent, 50, 75%? The resulting concentration curve is then compared to the Lorenz curve. If it lies above the curve then it indicates that lower income people contribute a greater proportion of total health financing than the proportion of income they receive and the system is therefore regressive. A curve lying below the Lorenz curve indicates a progressive system, while a financing curve that lies on the Lorenz curve indicates direct proportionality. It is also possible for the financing curve to cross the Lorenz curve. This suggests that the financing system is regressive for some income groups and progressive for others.

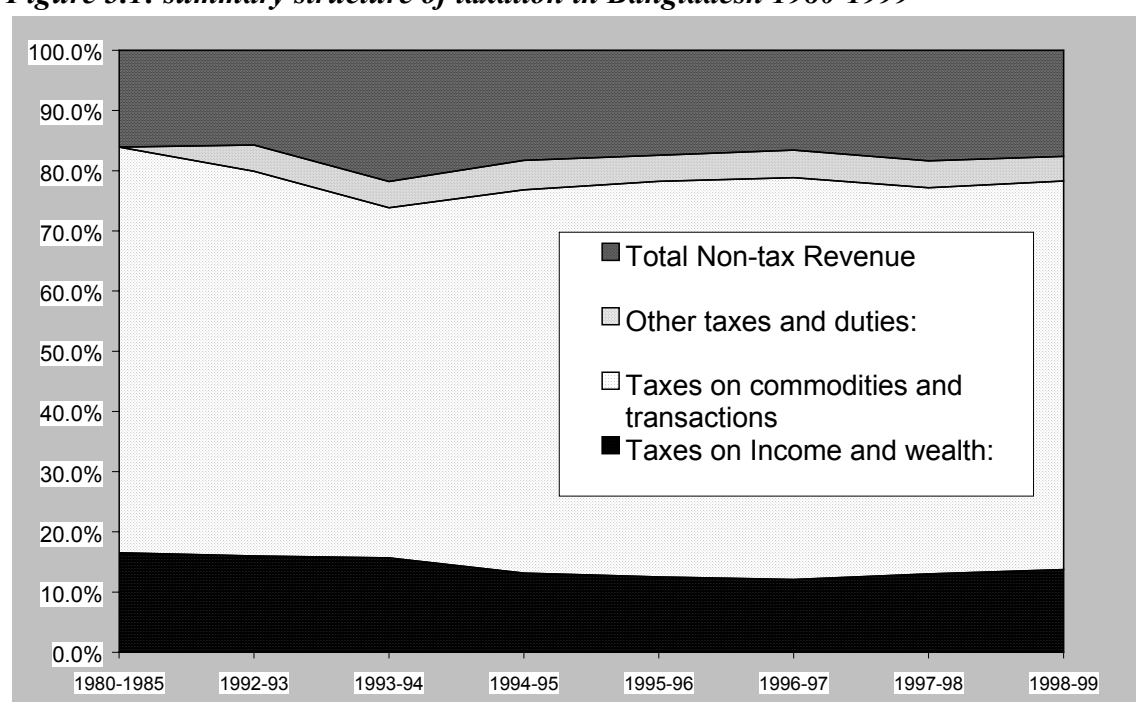
An index of financing equity, known as the Kakwani index, has been developed based on these concentration curves (Kakwani, 1977). Initially developed to look at the impact of taxation, it is suitable for examining the equity impact of many types of financing systems. The Kakwani index is defined as Gini coefficient minus the concentration index¹. This is twice the area between the Lorenz and health financing curve. The Kakwani index is positive (maximum value one) when financing is progressive and negative when financing is regressive. Proportionality is reflected in a Kakwani of zero. If the financing curve cuts the Lorenz curve then negative and positive values cancel each other out and the overall index is ambiguous. This means that graphical representation, as well as the index, should be reported in order to highlight any differences in financing impact at low and high incomes.

Here we concentrate on the impact of financing from domestic resources. The impact of foreign assistance is a little ambiguous. Since most aid, particularly for health, is in

the form of grants rather than loans it might be argued that there is little impact on the resident population at any level³. This conclusion might be modified if the impact of tied aid and repayment of loans is taken into consideration. If, however, the aim is to examine the impact of long term sustainable finance, then an implication is that the analysis would expect assistance to decline anyway and domestic funding to become the main or only source of funding through the government budget.

There is little current information on the incidence of taxation in Bangladesh. A detailed study was carried out by Omar Haidar Chowdhury of BIDS on 1984/85 data (Chowdhury, 1994). This indicated that the tax system is slightly regressive in rural areas and has little impact in narrowing the gap between urban and rural areas. Since this study, no other study has been carried out on tax incidence.

Figure 3.1: summary structure of taxation in Bangladesh 1980-1999



Source: (BBS, 1999)

A notable feature of the structure of taxation in Bangladesh is how little it has actually changed (figure 3.1 & annex two) in the last twenty years. In 1980/85 just over 81 percent of revenue was obtained from indirect taxes. By 1998 the figure was around 82 percent. Even within these categories, and despite the introduction of VAT and supplementary VAT, the structure has changed little⁴. This suggests that, although a

³ Loans from the World Bank for HPSP amount to around 33% of their total contribution. Most bilateral funding is totally in the form of grants although funding for community clinics provided by the Islamic Development Bank is in the form of a loan with a 10 year grace period, 30 year repayment and interest rate of 0.75%.

⁴ Although termed a VAT the tax is similar to a sales or turnover tax. The act that introduced the tax provides for a list of both items and services that are exempt from the VAT. This includes most basic food products and also many domestically based services. A further schedule establishes a list of services that are subject to a supplementary VAT. This ranges from 5 to 270 percent and includes many imported 'luxury' items such as shampoos, powdered milk, refrigerators and alcohol. The exemption of most basic food items should ensure that the regressive impact incidence of the tax is minimised in the same way as the emphasis on customs duties has been. The overall impact is unclear although it is clear

more up to date analysis would be desirable, overall tax incidence may have changed little since the 1985 study and these figures provide a reasonable estimate for deriving the impact of current health financing.

Using 1985 estimates, a tax financing curve was derived based on urban and rural tax incidence weighted for the urban and rural population proportion in 1999. The resulting health financing curve is indicated in figure 3.3. The corresponding Kakwani index was calculated to be -0.019 , indicating that funding through taxation is mildly regressive. If account is taken of the minority of revenue obtained through direct taxation then system incidence appears to be approximately proportional.

Additional forms of funding

In this section we examine the equity impact of the additional forms of funding discussed in previous sections. These include insurance for the formal sector (payroll taxes), community insurance and user charges. More revenue might also be obtained, particularly for urban health services, through property taxation.

Formal insurance

Two types of insurance were reviewed in the resource mobilization section – formal sector coverage and community insurance. The way in which these are implemented suggests different impacts. Formal sector insurance is usually obtained through a compulsory payroll tax paid by employer and employee. The incidence of the tax depends less on the statutory obligation of employees and employers and more on labour supply and demand elasticities. If labour supply is relatively inelastic, then much of the premium will be transferred to employees through lower wages. In contrast, elastic supply, where there are many opportunities for alternative employment, could mean that employers are forced to absorb both employer and employee contributions through lower profits.

From the point of view of the simulations, the main thing is whether there is any differential effort across income groups. Intuition suggests that labour supply may be increasingly elastic for higher income groups, and skills in short supply, such as information technology, where employees have a wide choice of potential employers. In contrast, the majority of the workforce employed in traditional skill areas, such as garment and construction workers, would have less choice over employment and so be forced to absorb most of the cost of insurance themselves.

A simplifying assumption for the simulations is that a percentage payroll tax is shared equally between employee and employer for each sub-group of the population and that the percentage incidence falls equally on all those enrolled. This assumption is likely to make the incidence appear slightly more progressive than is actually the case.

The Household Expenditure and Labour Surveys divide the workforce into approximately fourteen categories. The survey provides a breakdown of each of these groups by income (table 3.1). The categories likely to be the most formalized are

that some non-luxury items, including fresh onions and garlic, that were not taxed previously, now incur a duty.

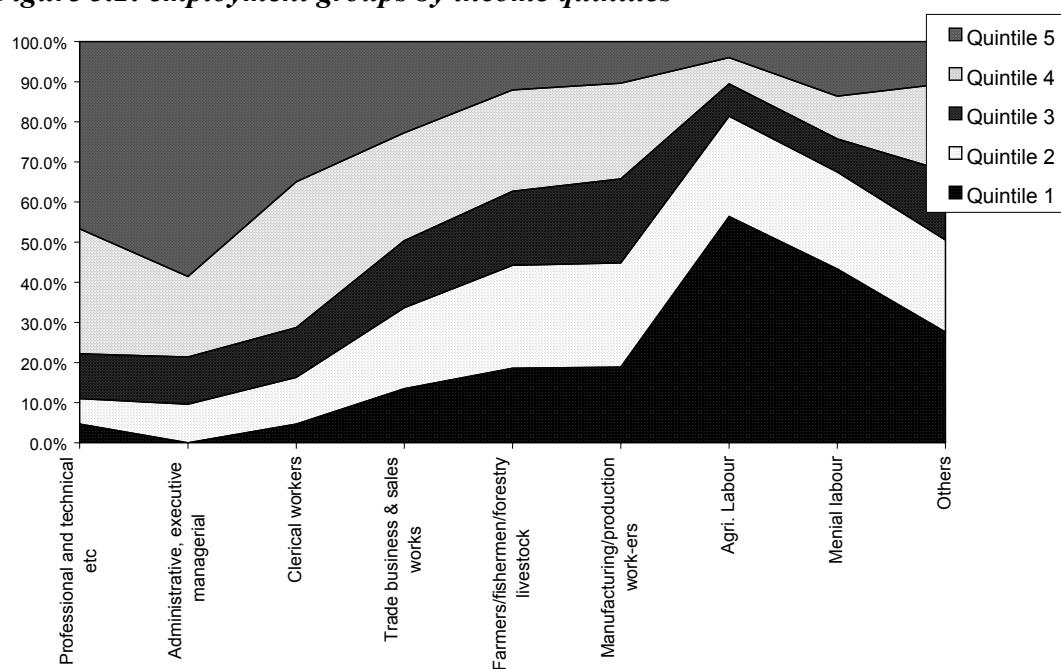
professional and technical, administrative and clerical workers. Most of these are in the top two income quintiles (see figure 3.2). As more of the workforce is formalized it is likely that manufacturing workers and the service sector will be able to be enrolled into the insurance scheme.

Table 3.1: major employment categories by income group

	Formal (F) or informal (I)	Households (%)
1 Professional and technical, etc	F	2.49
2 Administrative, executive & managerial	F	0.29
3 Clerical workers	F	3.68
4 Trade business & sales work	I	15.35
5 Farmers/fishermen/forestry/live-stock	I	36.08
6 Transport/communication	I	5.7
7 Manufacturing/production workers	I or F	6.85
8 Services, sports & recreation	I	0.97
9 Construction farm work	I	2.3
10 Agricultural Labour	I	14.8
11 Electric, gas water	I	0.38
12 Services	I of F	2.77
13 Menial labour	I	4.49
14 Others	I	3.8
Total		100

Source: (BBS, 1999)

Figure 3.2: employment groups by income quintiles



Source: (BBS, 1999)

For the simulations, we assume the following:

- In the first stage the first three groups (1, 2 & 3 in table 3.1) are included in formal insurance. In the second scenario we assume that a further two categories (7 & 12) are added to the formal scheme.
- The standard premium is 1.5 percent of payroll.
- Those earning less than 4,000 per month (around 8% of households) are exempt from paying but are still enrolled into the scheme through their employer.
- In the second and third scenario a higher premium (2%) is imposed for those earning more than 15,000 taka per month.
- For the third scenario we assume that a limit on the maximum contribution to the scheme per household is set at 2,500 Taka per year. This is done on the basis that contributions that continue to increase with income look too much like a tax on income and could alienate the rich and lead to payment evasion.

The results of the simulations are shown in table 3.2. The income related nature of contributions ensures that in all cases the systems are progressive. The system becomes more progressive (increasing the Kakwani index) when the premium is increased for those with an income of over 15,000 Taka. It falls once again when the more realistic limit of 2,500 Taka is placed on contributions.

Table 3.2: formal sector insurance simulations

Contribution	Kakwani index (3 groups)	Kakwani index (5 groups)	Average contribution (per household)
Scenario one: 0% - under TK 4000; 1.5% - over TK 4,000	0.371	0.239	2,310
Scenario two: 0% - under TK 4000; 1.5% - TK 4000 to 15,000, 2% - over TK 15,000	0.405	0.282	2,742
Scenario three: 0% - under TK 4000; 1.5% - TK 4000 to 15,000, 2% - over TK 15,000 limit on contribution - 2500 per year	0.280	0.145	1,691

The index is lower under all three scenarios when the formal scheme is extended to two more sectors (manufacturing and some services). Given that these schemes bring in generally lower income employees (see figure 3.1), this is not surprising. The limit on contributions has a particularly dramatic impact in curtailing the contributions of the relative rich and placing a greater proportionate burden onto lower income groups.

Community insurance

Community insurance is usually based on flat rate voluntary contributions. These are paid to a local scheme manager who is often, although not always, a health care provider. Cross subsidy from the rich to the poor may not generally be possible since the voluntary nature of uptake means that the low risk, who are often also the relative rich, can opt out (the problem of adverse risk selection).

The adverse selection problems do not, however, mean that all necessarily need to pay the same premium. A lower premium for some may be possible if a subsidy is available from other sources, such as the government or another donor. Some local cross-subsidy may also be possible within a community where the rich may be willing to pay a premium for the poor known to them in the area⁵. Arguably, this is more likely in a small cohesive community than where the non-poor are asked to subsidise faceless individuals across a region. It may also be more likely where the scheme has been developed and managed by local groups (micro-insurance) than where the scheme is imposed by other organisations (NGO or government).

For simplicity we assume that cross-subsidy is not possible but subsidy from an external source can be utilised. We develop two scenarios⁶:

- Standard household premium (covering up to 5 family members) of 800 taka per annum;
- Low premium of 400 taka under scenario two and nothing under scenario three, for those with income below 4000 Taka per month (40 per cent of those insured).

The impact on the equity index is shown in table 3.3. Because the premium is flat rate the percentage contribution increases as income falls. As a result all the scenarios indicate a system that is regressive. Introducing lower premiums for the poor reduces the regressiveness of the system. The problem with this is that the income of the scheme, as reflected in the average premium, falls and there is a danger that those paying the full premium will not consider that the scheme to provide sufficient benefit. This is a particular risk for those that make little use of medical services (adverse risk selection).

Table 3.3: Community insurance simulations

Contribution	Kakwani	% subsidy	Average contribution
1. 800 - no exemption	- 0.487	0.0%	800
2. 800, 400 – low income	- 0.343	20.3%	638
3. 800, zero – low income	- 0.102	40.5%	476

⁵ In economic terms, this implies that the utility of a vulnerable group partly determines the utility of the non-poor – a caring externality. It is arguably more likely where the poor are known to those that can afford to pay.

⁶ These broadly fit with the baseline scenarios for community insurance developed in research paper 24. Note that the premium here is for a household, while the premium in the earlier paper was specified at an individual level.

One solution to the adverse risk problem is to provide a subsidy to the scheme so that an average fund of 800 taka is available for every household joining. For the part premium this implies a 20 percent scheme subsidy rising to 40 percent for the 100 percent premium exemption.

User charges

Although user charges have been collected for many years, all the revenue was liable to be returned to the treasury. As a consequence there was little incentive to collect the fairly nominal charges obtained from patients for facility entrance tickets and for some diagnostic tests.

During 2000, proposals were submitted to the Ministry of Finance for permission to collect and retain enhanced charges in areas to be approved by the Budget Committee of the Ministry of Health and Family Welfare (Dave_Sen, Karim et al., 2000). These were approved at the end of the year. Plans are now being developed for the implementation of the charges.

It is not yet known what form these charges will take. It is likely that charges will adhere to the following basic principles:

- simplicity in charging schedule – to minimize the cost of administration,
- targeted exemptions – to protect high users/low income,
- larger charges for more sophisticated care and low charges for services with high externalities – to ensure that services that have wide social benefit, such as immunization, are not discouraged.

To measure the likely impact on different groups data are ideally required on the utilization of different service levels by income group together with the likely charge to be levied for each service at each level.

In fact, there is an added complexity, since the charge itself may lead to some change in utilization and, therefore, incidence of the charge. The analysis ignores this impact effect since, first, the magnitude is unknown and, second, it does itself represent part of the incidence effect that is not captured in spending incidence. To include this effect could have the perverse effect of suggesting that user charges have little impact on the poor since they do not pay them, even though the reason why they do not pay is that they are discouraged from using services because they cannot afford the charges.

For the purposes of the analysis it is assumed that users basically use, or at least need, similar levels of public service. This assumption is countered by two opposite effects: first the fact that the low income households, who are disproportionately represented by woman heads, the elderly and other relatively high need groups, may have greater health problems and so have more need for health care. Second, that people in higher income groups generally have better physical access to facilities and so make more use of services. We assume here that, since the analysis is attempting to simulate incidence taking account of people's health needs rather than actual use, the second of these effects can be ignored. The first suggests that any result must be qualified by the likely greater needs of the lower income groups.

The assumption is that user charges are implemented on a simple sliding scale. Those below the poverty line (around 2000 Taka per household) are exempted, while those earning between 2000 and 4000 Taka per month are charged half the normal fee. The way in which these exemptions are applied must be worked out, but could include, inter alia:

- exemptions for all in certain deprived geographic areas (geographic targeting),
- exemptions for certain services (such as ESP),
- individual exemptions based on community judgement, national card system (such as VGF⁷ food subsidy cards) or judgment by facility staff at time of treatment.

Based on the above scenario the effect of user charges was worked out relative to income using the Kakwani index. The index was found to be -0.226 for fees based on a 50 per cent exemption for the middle group and 100% exemption for the poorest (table 3.4). Similar regressive results for user charges are found in most OECD countries. Across a group of 13 OECD countries, for example, it was found to range from -0.08 (Italy, least regressive) to -0.38 (United States, most regressive) (Wagstaff and Doorslaer, 2000).

Table 3.4: equity impact of user charges, exemption options

Scenario	Exemption arrangements	Kakwani
1.	No exemptions	- 0.436
2.	100% exemption for poor (<2000 taka per household)	- 0.387
3.	100% poor (<2000 Taka), 50% middle income (2000-4000 Taka)	- 0.226
4.	100% for poor and middle	0.124

Note: Exemption bands refer to monthly household income.

Further simulations found that user charges are only found to be progressive when 100% exemptions are introduced for households with income below 4000 Taka - approximately equal to the bottom 35 percent of households.

An important qualification to these results is that they make no allowance for the effect of official charges on unofficial payments. A number of surveys have found that while official payments in public facilities are usually very small, users nevertheless have to make significant out of pocket payments in the form of unofficial charges.

It is notoriously difficult to get information on unofficial payments mainly because people are often unwilling to report on what may be considered an illegal activity for

⁷ Vulnerable Group Feeding Programme.

which they or others might receive punishment. Many regard the quantitative survey as an inadequate tool for obtaining such information, preferring instead qualitative methods that can both build up trust between interviewer and respondent and delve deeper into the circumstances behind the payment. Despite this there is a growing literature on the prevalence of unofficial payments in the health sector, mostly through the incorporation of questions into household and patient surveys.

Recent studies in thana and district facilities have found between 20 and 30 percent of users reporting payments (CIET, 1999, CIETcanada, 2000, Begum, Ensor et al., 2001). Payments vary between 40 and 140 Taka for patients making payments (10 – 27 taka on average for all patients). For larger medical procedures payments can be considerably higher. One study in Dhaka reported that patients pay an average of 1,275 taka for a normal delivery and 4,700 taka for a caesarean section (Nahar and Costello, 1998).

The issue is complicated by the fact that those receiving the payments are often not those finally benefiting. Ayas and ward boys sometimes receive payments on behalf of more senior staff (Killingsworth, Hossain et al., 1999). Also, in addition to direct payments to staff, a proportion of payments for drugs and other supplies are often taken by staff as ‘commission’.

Not all the surveys undertaken report payments by income group. Where they do they seem to indicate little difference in likelihood of payment. The CIET surveys suggest that when a payment is made it is around 20 percent less for the poor (less than 2000 taka a year). The HEU exit survey found that across all income groups the size of the payment varies but in no systematic direction. Overall it appears that payments vary little in absolute terms across income groups and, as percentage of income, fall with income and so are regressive. The Dhaka obstetric study reports that more than 27% of women spent between one and eight times their monthly household income in order to pay for delivery care (Nahar and Costello, 1998).

The discussion indicates that the correct baseline for computing the impact of formal user charges is not the existing income distribution based on no-charges. Rather it should be compared to the equity impact of informal charges. In order to provide some comparison, a simulation was performed that compared the collection of an equivalent revenue from both unofficial and official payments. The basis of the unofficial collection was the regressive incidence of payments found at upazila service levels in the BIA study (Begum, Ensor et al., 2001). The baseline for official charges used is the third scenario (table 4.4) based on a sliding scale of three payment exemptions.

Simulations assumed that the same total payment was collected with both official and unofficial fees but the distributional impact was different. The unofficial scenario yielded a Kakwani index of -0.52 whereas the official scenario, as already reported, yielded an index of -0.226. It appears, therefore, under this rather artificial scenario, that formalising payment would improve equity. The important assumption, one that can only be verified empirically, is that formalisation replaces unofficial payments. If, instead, they add to the user burden then the overall impact would be extremely regressive. A necessary, although perhaps not sufficient, condition for improvement is

likely to be the retention of fees for the improvement of quality and, possibly, incentives for staff.

Taxation

Discussion of additional forms of funding would be incomplete without mention of further taxation as a way of financing care. Taxation is likely to remain the dominant form of financing for health, at least in the short run, not only in total but also to provide additional funding. The last section showed, based on assumptions about the macro-economy, how revenue from taxation might increase or supplement existing health spending. The important question is what impact raising additional funding has on distributional questions of financing fairness.

If it could be assumed that the existing pattern of taxation continues, then the marginal impact is likely to be similar to the average impact discussed earlier, where tax contributions are close to proportional, and very slightly regressive. This is certainly reflected in the tax statistics, which show very little change in the proportion of tax by source over the last 10 to 15 years. If, on the other hand, significant advances are made in the next five years in increasing the level of property and income taxation then it would be possible to make the structure mildly or even substantially progressive. Miller points out how this might be done through proper valuation and collections from urban property taxes (Miller, 2001). The actual impact is, therefore, highly dependent on changes made in this area over the next few years. Currently, however, the likelihood of significant improvements in direct taxation does not appear high and the figure below (3.3) is based on the current reliance on indirect taxes continuing.

Horizontal equity

All the previous discussion is concerned primarily with vertical equity – that those with higher income should pay more, and even proportionately more, contribution to health care costs. A further concern is whether people with similar incomes make similar contributions to the cost of care. In an evolving system, with multiple financing systems, this objective is much harder to achieve. A simple comparison between formal and community insurance illustrates the likely problem. Whereas formal insurance obtains contributions that broadly proportional to income, the flat rate contributions that most community enrolees pay ensures that the relative poor but non-exempt will generally pay more under the community scheme than under the payroll based scheme. Conversely, the relative rich will pay more under the formal scheme than under the payroll scheme. Horizontal equity questions are, therefore, only likely to be resolved once schemes mature into universal systems based primarily on levels of income.

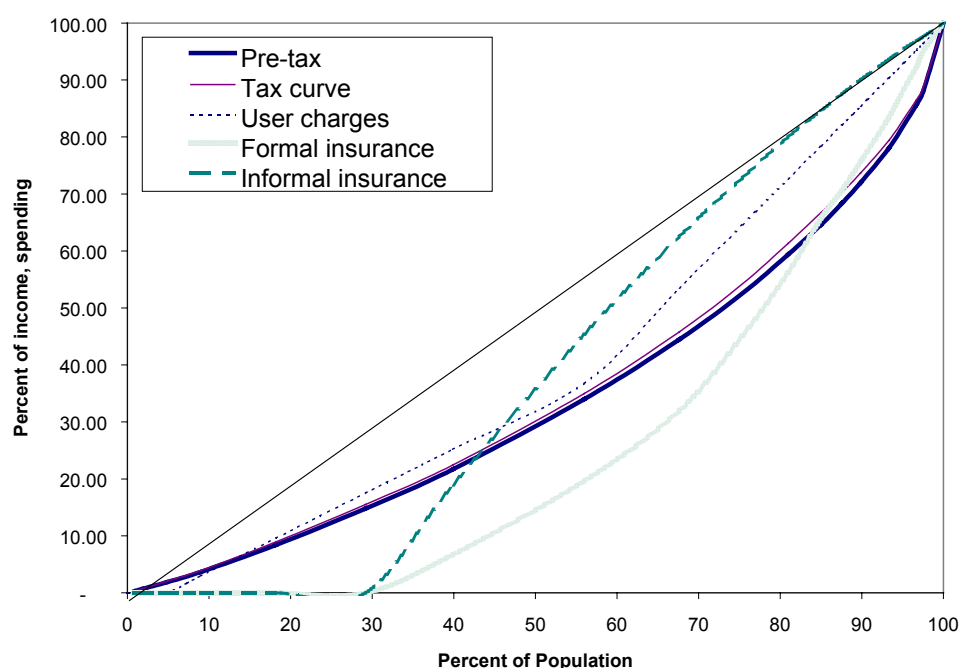
While horizontal equity is primarily a question for later scheme development, ensuring that schemes converge towards an equitable pattern of funding can be influenced by choices made now. One such choice is to develop schemes now which, while they may vary in detailed content (e.g. types of service covered), are not dissimilar in terms of service obtained for every taka contributed. A problem faced in countries such as Thailand is the development of a high benefit scheme for civil servants that is almost fully subsidised by the Government. Extending this scheme

through integration with other schemes has proved difficult because the benefits are so much more superior to those offered by other schemes and would prove unaffordable.

Summary: total impact of funding sources

It is likely that Bangladesh, in common with most countries around the world, will have an increasingly pluralist health system both in the provision of care and its' financing. Although taxation is likely to remain dominant the development of user charges and insurance will add to overall resource mobilization and increase risk coverage.

Figure 3.3: health financing curves for insurance, user charges & taxation



Measuring the overall impact on equity of the entire funding system, using the Lorenz and Kakwani approach, can be done by weighting the index of each separate source of funding by the amount of funding generated. Based on the 'adjustment funding scenario' (table 2.4) the weighted total impact index is computed as -0.01 based on the gradual implementation of insurance and user charges replacing unofficial fees. This is based on the subsidized introduction of community insurance, differential social insurance payments and user charge exemptions for the poor (scenario 3 in each case). This implies that a gradual development of alternate financing options in addition to the increased tax collections implied by economic growth could be implemented in a way that is at worst mildly regressive - less so than under the current system of financing.

If, on the other hand, user charges are implemented without exemption and they supplement, rather than replace, unofficial charges, and insurance is introduced without regard to the ability to pay (the first scenario for each system) then the overall index falls to around -0.047 , which suggests that financing could become more regressive than at present. The key message is that financing equity depends, crucially, not on the type of funding system but on the way it is implemented.

4. Evaluating financing systems

The last section provided a detailed evaluation of the financing equity consequences of funding systems. In this section the evaluation is extended to other criteria of ‘good’ financing systems. Five main criteria are used that are phrased in terms of a requirement. Financing systems should:

- 1) be collected and distributed in a way that is accepted as fair;
 - Contributions based on ability to pay.
 - Distribution based on need.
- 2) reduce the burden to households of unexpected catastrophic risk;
- 3) develop an individual’s interest in improving his/her own health;
- 4) be managed in a way that is accepted as transparent and trustworthy;
- 5) encourage resources to be used in a way that maximises the (health) benefits to the target population.

Inevitably, this list will omit criteria that some consider important. It makes, for example, no mention of quality, although the implicit assumption is that quality care is part of the ‘maximisation of health benefits’. The evaluation is inevitably subject to the subjective criteria chosen but the aim is to be as explicit as possible so that readers can adapt the evaluation to suit additional criteria chosen. A detailed description of the criteria used is given in annex one.

Table 4.1 attempts to summarise the main characteristics of each funding system according to these criteria. In addition to the five mentioned above, a sixth criteria based on the ability to mobilise additional resources in the context of Bangladesh is added.

An important point to note is that, in any given country context, it is impossible to evaluate one financing method in isolation of other methods being used. Financing methods only make sense when they are viewed as part of the system. That system includes existing financing sources within the context of wider fiscal, administrative and legal institutions that form the structure of government and support society. Methods that may encourage transparency in one context could have the opposite effect in another. The following comments on the way in which each method discussed measures against the criteria for sound financing should, therefore, be viewed as general comments that will have to be adapted as the method is adapted for use in Bangladesh.

Table 4.1: summary characteristics of main health financing systems

	General taxation	Social insurance	Community insurance	User charges
Potential for resource mobilisation	Dominant in Bangladesh. Largely dependent on economic growth and levels of tax efficiency.	Most suitable for formal sector employment and will tend to develop with the growth of this sector. Potential in Bangladesh is currently low but beginning to increase.	Mainly aimed at informal sector. This is the dominant sector in Bangladesh and so the source is potentially significant. The voluntary nature of the scheme, lack of ability and willingness to pay, means that extending these systems is often difficult and costly. Few countries have managed to extend this type of cover to more than a few percent of the population. Loose specification of benefits can be very expensive and unsustainable.	Tends to be primarily a way of improving quality and personal responsibility at the facility level. Volumes of finance do not tend to be large.
Equity				
Financing - fair contributions where rich pay more than poor	Depends on nature of taxation system - currently mildly regressive.	Payroll related to income although maximum premium levels may reduce the progressiveness.	Flat rate premiums mean that it tends to be regressive even with low income exemptions/free cards.	Regressive when compared to no charges even with exemptions. But may improve equity if formal charges replace unofficial payments.
Reduce the burden of catastrophic illness through appropriate risk pooling.	In principle catastrophic risks can be covered. The objective of targeting scarce resources at essential primary care has reduced the catastrophic risk pooling role of taxation.	An important benefit of social insurance.	In principle could pay for the costs of costly illness. Careful costing and management of the package will be required to prevent such spending bankrupting the scheme.	Costs are paid when illness occurs. By definition no risk pooling across individuals although some systems may permit pre-payment or late payment in order to spread the costs over time for the same individual.
Provision -benefits according to need (need based equity and allocative efficiency)	Benefit distribution largely dependent on the methods of resource allocation rather than the financing method.	Allocation according to need or demand depends on the nature of the implementation of the fund. Benefits are aimed at members in need.	Benefits based on payment of premium. Subsidy likely to be required for vulnerable groups in order to ensure beneficiaries. Providing insurance to those currently without effective risk protection could be an important way of developing social protection. This is likely to require active subsidy from government.	Benefits distributed according to willingness and ability to pay. This may not be equivalent to need since much need is from those unable to pay. Valuation te
Personal responsibility for health	Free point of delivery care does not encourage personal responsibility over health or use of health service resources.	If introduced as a rights based scheme. Protection against over-use may be required through good referral procedures and incentives for preventive care.	Encourages a rights based view of the system. Incentives may also be put in place to encourage careful use of services.	If used as a way to reduce inappropriate treatment and unnecessary use of referral services. May also damage access to essential care if implemented incorrectly.

Table 4.1 (cont.): summary characteristics of main health financing systems

	General taxation	Social insurance	Community insurance	User charges
Governance: transparent and trustworthy	Dependent on the transparency of the existing government bureaucracy.	Depends on how fund is constituted. An independent fund separately audited with participation of members could improve transparency.	Community based organisations can be strongly accountable to members. Conversely weak management and governance structures can open the system to abuse. This could do irreparable harm to nascent community based financing systems.	If implemented correctly could reduce the reliance on unofficial fees and introduce more transparency to financial flows. Providing staff incentives to manage and utilised funds correctly is probably a pre-requisite.
Efficiency				
Encourage technical efficiency.	Dependent on the management and financing methods used within the system.	Insurance fund may be in a better position to encourage improvements in quality for its members. Largely dependent on the relationship between fund and providers.	Scope for encouraging major changes in way services are delivered is limited. Could help to improve quality of care and availability of medicines and staff if provider reimbursement system is designed well.	May help to reduce waste of supplies. Overall effect on efficiency is quite small.
Efficiency of administration and collection of contributions	Determined by the efficiency of general tax collections. Can be low cost since combined with other revenue collections.	Collection cost increases in proportion to the number of firms involved and inversely with the formalisation of the sector and urbanisation of the workforce.	Management depends on strength of community level institutions. Lack of management expertise is often a reason for failure of schemes.	Depends on complexity of charges and exemption mechanisms. Small charges for many services may increase personal responsibility but they can be complex and expensive to collect.

Potential for resource mobilisation

The simulations developed earlier in the paper showed that taxation, supported by funding from development partners, is likely to remain the dominant source of funding for health care. Tax revenues are largely dependent on economic growth and the efficiency of the tax administration. Currently there appears to be considerable slack in the system and potential for developing this revenue based upon wider changes in the administration of the revenue collection system. It is worth reiterating the view that for the health sector to develop a strong case for additional tax financing it must first show that it can use the existing budget in an effective way.

Social insurance as a form of funding is largely dependent on the employment structure of the country. Significant development can only occur as the formal sector develops. Internationally there are many examples of countries that have developed systems when their formal sector has been relatively small and then later seen it increase dramatically as the economy develops. One note of caution is that the drivers of tax system and social insurance development are quite similar i.e. strong economic non-agricultural based growth. Basing a case for social insurance on its' resource mobilisation potential is illusory since both systems have similar potential. It is important, therefore, that there is a strong possibility that the change will yield other significant benefits.

Community insurance is mostly aimed at those in informal employment. In principle this is a large group, but obtaining substantial funding through this method is complicated by the fact that it is dependent on the sale of cards on a voluntary basis. Many people in this group will either be unable, or unwilling, to purchase the card, even once they are fully aware of the benefits that are provided. It is important to realise that if this method is to be an effective method of social protection amongst the poor then a significant subsidy will be required from government sources.

User charges have long been touted as a significant source of revenue collection in Bangladesh. International experience, combined with realistic projections, suggest that they could provide a modest addition to overall revenues that could, nevertheless, have a significant impact on quality at local levels.

One issue that is important to stress is that, ideally, charges should be levied at higher levels in order to prevent inappropriate use of tertiary care. At the same time, revenues are needed at primary level to improve quality and prevent inappropriate referrals. The system should, if possible, manage this redistribution of collected revenues.

Equity of financing

Section three indicated the likely impact of different financing options for financing equity. Income related sources of funding tend to be the most equitable. Even imposing an upper limit on contributions still indicates that social insurance could be a progressive form of funding. The key requirement is to establish the system as a benefit for the employees of large companies that the companies wish to pay to build a competent workforce. If the benefits offered by the scheme are illusory, or not-valued, then the contribution will be viewed as another tax and evaded or 'negotiated' in the same way.

Funding from general taxation largely depends on which sources are most strongly developed. Development of taxes that are related to wealth or income, including income, property and further luxury good taxes, would strengthen the tax structure and make its overall incidence more equitable. Many of these factors are outside the direct control of the healthy sector.

Flat rate premiums mean that community financing tends to be regressive. The most important requirement to minimise this impact and enlarge the scheme is that the poor are subsidised from another source. In general, the scheme will not work if attempts are made to get the rich, low-risk to pay for the poor, high-risk since later they will not participate in the scheme. In theory, it is possible to introduce multiple premiums, based on ability to pay, which provide for progressive exemptions as income or other measures of ability decline. In practice, this is often cumbersome to administer and it is difficult to identify people falling into each group.

Taken in isolation from the rest of the system, user fees are unambiguously regressive, even with fairly generous exemption mechanisms. In the context of the current system they may, if implemented effectively, reduce the burden of unofficial payments and lead to a fairer, more transparent and equitable system. The implementation of user fees in Bangladesh will require careful evaluation to monitor the extent to which this occurs in practice.

In theory, taxation, social insurance and community insurance all embody risk pooling principles and so should reduce the financial burden of catastrophic illness. In practice, tax funding is currently targeted at cost-effective primary care interventions. While these have a large health benefit, and may cause some financial loss over time, they are probably not the main cause of sudden financial loss which can send a

household into a cycle of debt, poverty and further ill health. Having said that, the government in most countries, including Bangladesh, continues to spend heavily on the hospital sector, providing the basic buildings, equipment and staffing. What is missing, and the reason why hospitalisation may cause such considerable financing loss, is adequate spending on medical supplies and additional staff incentives. Both types of insurance mentioned in this paper could have a role in bridging this gap in order to provide the basic consumables required for secondary care medical interventions. This perhaps can be seen as the major benefit of introducing systems of insurance as an important complement to existing government health expenditures.

Equity of provision

The main principle of equity on the provider side is that effective services are channelled to those most in need. In fact, this is also close to the concept of allocative efficiency which is the extent to which resources are allocated to achieve a maximum increase in health status. The main difference is that sometimes the most vulnerable and 'needy' may not be those who are most able to benefit through investments in health care.

The distribution of benefits in the current tax funded system is largely a product of the internal health system processes. If these processes change, then the beneficiaries may change. This is, indeed, the main objective of HPSP, which attempts to channel resources according to a refined set of more transparent objectives with the aim of benefiting the most vulnerable. In the same way, while the current system of geographic resource allocation does not always benefit areas most in need, a refined approach could greatly enhance the geographic equity of distribution (Ensor, Hossain et al., 2001).

Where benefits accrue according to payment made, the financing system has more impact on the beneficiaries of services. This is true, in different ways, of both types of insurance and also user charges.

A system of social insurance can be developed in two main ways. One type is the needs based approach, where insurance is introduced mainly for its revenue raising potential, and purchasing priorities are determined by the central level. This ensures that, at least for those covered, normative criteria on what constitutes need can be adhered to. A second approach, probably more common with employer based insurance, is where the package of entitlements responds to individual demand for service. This may lead to a pattern of care that does not always constitute an efficient allocation of resources. The managed care approach in the US and other countries is one attempt to bring these two together by encouraging providers to deliver care that is at least technically efficient and appropriate. The approach does not guarantee an approach that is allocatively efficient in terms of using the fund's resources for the maximum health good of its members.

Community financing, including both community insurance and user charges, provide benefits for those able to pay. A key component, to ensure that those in need also have access to services and risk pooling schemes, is to provide subsidised insurance and user charge exemptions for vulnerable groups.

Personal responsibility for health

Personal responsibility is a two way process. It involves ensuring that individuals are interested in getting best value from the system and can hold that system to account. It also places obligations on users not to abuse the system, including the use of financial and non-financial disincentives.

A commonly held conception of the public system funded by general taxation is that of little personal responsibility and involvement. Service providers generally receive paltry reimbursement, providing, in return, poor quality services which even then require additional unofficial payment from users. In return, users abuse the system by self-referring themselves to tertiary level services for minor illness and requiring extensive prescriptions for self-limiting illness. The perceptions of users and providers are reinforcing and lead to a service that is generally under-valued.

Before considering the role of other financial mechanisms, it is worth asking whether this state of affairs need be a necessary characteristic of a tax financed system. As with benefit incidence, much of the cause of this malaise lies with the methods of resource allocation rather than the resource collection method itself. Even under HPSP a number of initiatives are being implemented to attempt to correct these allocation problems, including the Hospital Improvement Initiative, Public-Private Partnerships and patients' charter. Arguably the most fundamental change has yet to be implemented, that of civil service reform to provide greater incentives for public staff to provide a good quality public service.

The basis of insurance is entitlement to service when sick. This entitlement is purchased on a discretionary or mandatory basis. Often the insured person is given a list of specific benefit entitlements. Another element of participation is in the payment of the premium. With community insurance the premium is paid directly by the individual who, therefore, has a direct interest in the provision of good service. With social (payroll) based insurance the contribution is often shared between employer and employee. From an economic point of view it actually matters little whether the contribution is by the employer or employee since the final incidence of payment will be determined by the elasticity of labour and supply curves. But, from a participatory point of view, it does matter since employees see an explicit deduction from wages which may foster an interest in the quality of service delivered.

User charges provide the individual with direct participation in service delivery and interest in quality of care. It is often found that where exemptions are given the beneficiaries receive poorer quality service even though the provider is still being remunerated because the direct financial contract link is broken.

Transparency and trust

It is an over-simplification, but tax financed systems sometimes appear to negate the need for transparency because taxes are collected as the right of government and spent in any way they wish. In contrast, systems based on explicit contributions from individuals, particularly where voluntary, are forced to be transparent and build trust, since otherwise they go out of business. This is an over-simplification. In principle, countries with a strong and well informed civil society should be able to demand

transparency from the government. In contrast, there are plenty of examples where autonomous insurance funds, particularly those that have developed in the former Soviet Union, have been involved in corruption scandals and other un-transparent practices (Ensor and Duran, 2001).

Technical efficiency

An important component of health care reform in many countries has been the separation of the purchaser or funder of services and provision. This is seen as important in order to break the vested interest and guaranteed funding available to the provider in a traditional integrated public system. Separation of the two roles can permit more aggressive contracting of services, that allow purchasers to demand better quality services with a broader range of providers – public, private and non-profit/NGO - and improve the efficiency of service delivery (technical efficiency). This trend began in a number of OECD countries during the 1980s and has since spread to a range of middle and low income economies (Chernichovsky, 1995).

From the perspective of the purchaser and provider split, the main difference between insurance and tax funding is the ease with which such a division can be developed. In principle, it is possible, as occurred in the UK system, to develop a distinction between the management of providers and financiers/purchasers. In practice, developing that within the monolithic civil service based structure of the Bangladeshi system is fraught with difficulties.

In contrast, establishing a separate insurance fund that may be managed by an autonomous NGO or private organisation can automatically establish a split that permits reasonably independent contracting with many different service providers. In principle, this is a major advantage of an insurance system because it removes the purchasing decisions from the government machine and encourages a more diverse public-private split.

The core danger with the above approach, and one that could derail any alleged advantage of insurance, is whether the contracting process works in practice. There are two principle problems. First, contracting is a skilled process that requires expertise that is not common within a traditional public sector. Attempts at contracting have failed in other low and middle income countries because the requisite expertise has not developed (Mills, 1998). Second, the process is dependent on a fair and transparent tendering process. If personal unofficial incentives are not in line with the institutional objective of a fair contract process, then the system may award contracts that do not encourage the most efficient use of limited resources.

Efficiency of administration

All health financing systems must be administered and managed, and a portion of any revenue collected will be used for this purpose. It is often argued that a system that collects revenue for multiple uses of expenditure, as with the tax system, is more efficient than one that collects revenue for a single use, as with insurance. This is contentious in a society where the efficiency of the taxation system appears to be low, and often left to the individual negotiation between tax officers and those assessed. Anecdotal evidence also suggests that, while the administrative cost of collecting the

low yield income tax appears to be high, the cost of collecting trade taxes is much higher.

Collection costs for employer paid insurance contributions tend to increase with the number of firms assessed. The initial development of insurance can be done at reasonably low cost, as large employers such as the civil service or larger private employers are covered. As the system is extended to cover small businesses the cost increases. Such a position is now being experienced in Thailand as the system attempts to cover businesses with fewer than ten employees (Nath, Qasem et al., 2000).

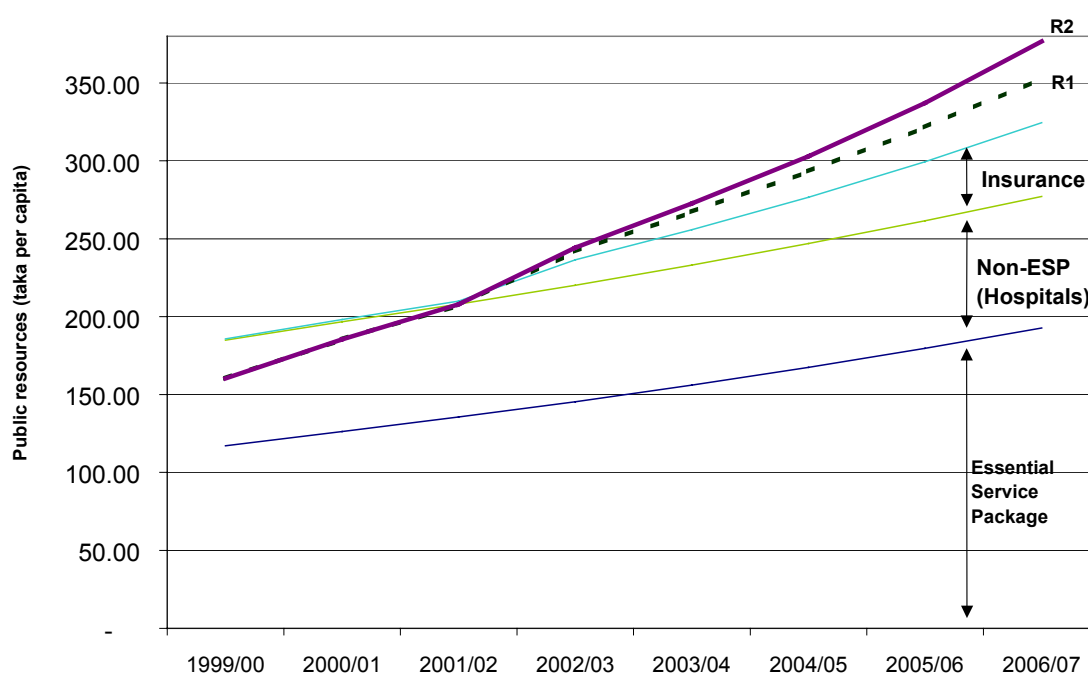
The administration of small community schemes is a major consideration. Management breakdown is often cited as a reason for the failure of these schemes since community based associations often lack the management and administrative ability to run the schemes efficiently. The provision of training in this area is often cited as a key area for government contribution to this sector (see Atim, 1998, page 54).

Conclusion

Earlier studies have suggested that public sector expenditure are not sufficiently pro-poor. These studies indicate that, at hospital level, the non-poor certainly use services more than the poor, while, at upazila and below, the poor make use of services but often receive inferior or inadequate treatment (see Begum, Ensor et al., 2001, CIETcanada, 2000, Yazbeck, 1999). HPSP is founded on the premise that more of the funding should benefit the poor. While few could argue with this social objective, there is a danger that by reducing the level of benefits provided to the middle and richer classes of society those groups' interest in improving public services could diminish. The likelihood, already seen in practice in many areas of the country, is that the system is divided into an adequate or good private sector offering wide choice of care to those able to pay and an inferior public service for the poor. The latter is likely to cover mostly basic primary care with some, but inadequate, cover for catastrophic needs.

A strategy for alternative funding systems for health should place the characteristics of different funding systems, as discussed in the last section, within the context of the overall concern of developing health services for the entire population.

Figure C: Summary distribution of public resource envelope



Note: based on the baseline scenario presented in section three.

It is perhaps useful to separate potential funds into three distinct categories: those required to preserve the existing infrastructure, those that must be used to improve services for those making a contribution for care, as with insurance and user charges, and uncommitted funding. Spending projections for each category, together with resource envelope projections under both a baseline (pessimistic, R1) and adjustment (optimistic, R2) scenario are shown in figure C. We examine each of these projections in turn.

i) Existing infrastructure and ESP spending

The public health system that has developed in Bangladesh, and now refined during HPSP, can be characterised as providing a basic infrastructure through a comprehensive network of facilities, and a trained workforce, together with the near-fully funded delivery of the ESP. Services outside the ESP provided through the public system are co-funded on both a semi-official and unofficial basis by users of the service.

In order to preserve this network and the delivery of the ESP, funding must increase at least in line with inflation. In fact, in order to deepen the scope of ESP coverage and provide some additional funding for real increases in pay levels, funding increases in excess of inflation are required. Assuming that an additional real terms increase of 1.5 percent per annum is required for this, then by 2006/07 around 80 percent of the public resource envelope will be required to maintain the existing system (assuming the baseline resource scenario).

ii) Direct benefits (insurance and user charges)

Further funding would be required to fund the benefits provided to those contributing to insurance, assuming that, in total, what is collected is approximately equal to the benefits of the schemes. If revenues from these schemes are taken to cross-subsidise health care for those not contributing it is likely that few will be interested in contributing to the scheme.

While the earlier sections indicated that in general social insurance is a progressive system, those entering the scheme are likely to be mostly those in middle and upper income categories, although extending the scheme to private sector industries such as garment manufacturing would broaden the population base. It is safe to assume, however, that such schemes will not, on their own, extend to the poorest parts of society without significant subsidy.

iii) Additional spending

Superimposing the expenditure projections described above with the resource scenarios (baseline and adjustment) described earlier in the paper, it is possible project the possible level of uncommitted or additional resources available to the health sector (represented by the difference between the lines R1 or R2 and the 'insurance' line).

In the early stages of the projection the balance is, in fact, negative. This is based on an estimate of the recurrent cost implications of financing the developing infrastructure and equipment envisaged in the original Project Implementation Plan for HPSP. It indicates that current levels of spending and resources are insufficient. Later in the scenario a positive balance emerges despite the increased real terms funding for ESP services. By 2006/07 the baseline scenario (R1) predicts resources available equal to 8 percent of total funding while under the adjustment scenario around 14 per cent of funding is available.

Additional funds could be used in many ways for general improvements in the health system network or for the benefit of specific population groups or services. One possible use is to provide insurance subsidies which could be used to enrol the poor into social and community insurance schemes. Funding available would permit an insurance subsidy equal to between 30 and 50%. This implies that for every 100 people that contribute to an insurance scheme the government might fully subsidise insurance (at the level of premiums described in section 3) an additional 50 to 100 people by the year 2007.

Such subsidies would have to be carefully targeted and are, of course, dependent on the existence of suitable schemes. Such enrolment is attractive because it would begin to address the potentially catastrophic financial impact of serious illness on families. Furthermore, if developed in the right way, it would seek to enrol the poor in schemes in which the non-poor were already beneficiaries. This has the advantage that it would begin to raise the level of services provided to the poor to the level of the non-poor rather than encouraging the dual health system common in publicly financed systems.

As observed in previous sections, health funding options in Bangladesh are currently quite limited. Encouraging the development of a more pluralist funding could simply benefit the relative rich. Yet, if developed carefully, with judicious use of subsidies, it may be possible to extend risk pooling to a much wider section of the population.

References

- Ahmed, M., Chowdhury, S. A. R., Hossain, C. F., Quayyum, X. and Khan, O. F. (2000) Drug utilisation and cost efficiency in Thana Health Complexes of Bangladesh, Dhaka, Institute of Health Economics, University of Dhaka, Draft report.
- Atim, C. (1998) The contribution of mutual health organizations to financing, delivery, and access to health care: synthesis of research in nine West and Central African countries, Bethesda, Abt Associates.
- BBS (1999) 1998 Statistical Yearbook of Bangladesh, Dhaka, Bangladesh Bureau of Statistics.
- Begum, T., Ensor, T., Ali, Q. L., Begum, S. A., Moral, H. and Dave_Sen, P. (2001) Who benefits from public health expenditures?, Dhaka, Health Economics Unit, Research Paper 22.
- Chernichovsky, D. (1995) What can developing countries learn from health system reforms of developed economies?, in P. Berman, Health sector reform in developing countries: making health development sustainable, Massachusetts, Harvard University Press.
- Chowdhury, O. H. (1994) Incidence of indirect taxation in Bangladesh: 1984/85, Dhaka, Bangladesh Institute of Development Studies, Research Monograph 16.
- CIET (1999) Baseline service delivery survey, CIET Canada, Report submitted to Ministry of Health and Family Welfare.
- CIETcanada (2000) Service Delivery Survey: second cycle, 2000 preliminary findings, Dhaka, completed for the Health and Population Sector Programme.
- Dave_Sen, P., Karim, E., Martin, J. and Abedin, N. (2000) Proposal to Ministry of Finance for local utilisation of user fee revenue on a pilot basis within HPSP, Dhaka, Health Economics Unit, PRU, Ministry of Health and Family Welfare, Research Note 22.
- Ensor, T. (2000) Covering the population: extending health insurance in Bangladesh, Dhaka, Health Economics Unit, PRU, Ministry of Health and Family Welfare, Research Note 18.
- Ensor, T. and Duran, A. (2001) Corruption as a challenge to effective regulation in the health sector, in R. Saltman, E. Mossialos and R. Busse, Regulating entrepreneurial behaviour in European health care systems, Open University Press.
- Ensor, T., Hossain, A., Ali, L., Begum, S. A. and Moral, H. (2001) Geographic resource allocation of the public health budget in Bangladesh, Dhaka, Health Economics Unit, PRU, MOHFW, Research Paper 21.

- GOB (1998) Project Implementation Plan, Health and Population Sector Programme , Government of the People's Republic of Bangladesh.
- Heath_Economics_Unit and Data_International (1998) Bangladesh National Health Accounts 1996/7, Ministry of Health and Family Welfare.
- HEU and MAU (2000) Public Expenditure Review of the Health and Population Sector Programme, 1999/2000, Dhaka, Health Economics Unit & Management Accounting Unit, MOHFW, Research Paper 19.
- Islam, K. L. (1999) Designing a pilot of rural social health insurance in Bangladesh, Dhaka, Paper prepared for Health Economics Unit.
- Kakwani, N. C. (1977) Measurement of tax progressivity: an international comparison, Economic Journal **87**(343): 71-80.
- Killingsworth, J. (1999) Bangladesh Government Employees Health Insurance, Dhaka, Policy and Research Unit, PRU Policy Options Paper 4.
- Killingsworth, J., Hossain, N., Hedrick-Wong, Y., Thomas, S. D., Rahman, A. and Begum, T. (1999) Unofficial fees in Bangladesh : price, equity and institutional issues', Health Policy and Planning **14**(2): 152-163.
- Miller, N. (2001) Financing the health and population sector - resource projections, Dhaka, Health Economics Unit, PRU, Ministry of Health and Family Welfare, Research Paper 24.
- Mills, A. (1998) To contract or not to contract? Issues for low and middle income countries [Full text delivery], Health Policy and Planning **13**(1): 32-40.
- Murray, C. J. L., Knaul, F., Musgrove, P., Xu, K. and Kawabata, K. (2000) Defining an measuring fairness in financial contribution to the health system, Geneva, World Health Organisation, GPE Discussion Paper Series No. 24, www.who.ch.
- Nahar, S. and Costello, A. (1998) The hidden cost of 'free' maternity care in Dhaka, Bangladesh, Health Policy and Planning **13**(4): 417-422.
- Nath, D. K., Qasem, A., Howlader, S., Begum, S. A., Ensor, T. and Dave-Sen, P. (2000) Health insurance in Thailand and the Philippines and lessons for Bangladesh:
Report of HEU health insurance study tour, 22nd May - 3rd June, Dhaka, Health Economics Unit, Research Note 19.
- Normand, C. (1999) Using social insurance to meet policy goals, Social Science & Medicine **48**: 865 - 869.
- Wagstaff, A. and Doorslaer, E. v. (2000) Equity in health care finance and delivery, in A. J. Culyer and J. P. Newhouse, Hanbook of Health Economics, Amsterdam, North-Holland, **Volume 1B**.

WHO (2000) The World Health Report 2000, health systems: improving performance, Geneva, World Health Organisation.

World Bank (2000) World Development Report 2000/2001: Attacking Poverty, Washington, Oxford.

Yaqub, S. (1999) How equitable is public spending on health and education?, Poverty Research Unit, Sussex University, Background Paper to WDR 2000/1.

Yazbeck, A. (1999) How to buy a \$12 package at \$3.50, A Bangladesh case study, Dhaka, World Bank, Case Study for session 7, Module 2 Core Course on Population, Reproductive Health and Health Sector Reform.

Annex One: Characteristics of health system funding

In order to analyse a funding system it is first necessary to define the criteria of a sound financing system against which methods can be evaluated. The dimensions chosen are influenced to a degree by subjective perceptions of what constitutes desirable characteristics. Even if these are not agreed by all readers, spelling them out in an explicit way should make it possible to adapt the criteria to better fit preconceptions of sound health finance.

Equity

Financing should be collected and distributed in a way that is generally accepted as fair.

Equity in public finance is traditionally divided into two parts. First, the way in which contributions are collected (financing equity) and, second, the way in which funding is distributed (equity in provision). Before we can examine the impact on both of these it is necessary to have a working definition of what constitutes an equitable system. For the purposes of this paper it is assumed that desirable characteristics of financing are:

- Progressive, or at least proportional, collection of finance,
- protection against the financial consequences of catastrophic risk,
- need based distribution of finance.

Progressive financing means that as a person's income increases so does the proportion of income collected to finance the health system. The contrasting possibility is that the system is regressive: this means the proportion of income paid into the system declines as income rises. The middle possibility is that of proportionality – whereby the proportion contributed remains the same for all income levels.

All three of the above are vertical concepts relating to the comparison of contributions between people of different incomes. One further concept is that of horizontal financing equity where a comparison of contributions is made between people with the same income. It is quite possible for contributions to be different for people of the same income if these people are enrolled, for example, in different insurance schemes. Someone working for a large corporation may be required to pay income related contributions into an insurance fund whether or not services are likely to be required. Someone with a similar income but self-employed may be able to enrol in another scheme and receive a reduced premium.

The above concepts capture the general requirement that financing should be related to ability to pay. A further refinement is how they deal with catastrophic costs.

Financing mechanisms should reduce the burden of unexpected catastrophic risk to households.

This equity criteria is closely related to the fairness criteria but attempts to spell out more explicitly the desirability of covering the unexpected catastrophic impact sudden illness can cause to households - particularly poor households. There is good evidence that such spending not only has a major negative impact on the poor but is also an important factor that may send a near poor household into debt and poverty. Being able to reduce these catastrophic effects is an important feature of sound financing systems, particularly those that are insurance based.

Both the idea of progressivity and the risk pooling were incorporated into the WHO's index of fair financing used in the 2000 World Health Report (WHO, 2000).

Equity in provision (font?)

We can think of access to services as being a process of surmounting at least two hurdles. The first is determined by whether the funding system covers all with need or only those that have paid the contribution. In the case of user charges, or most types of social or private insurance, if a person (with a medical need) does not make a contribution then s/he is barred from obtaining certain types of service. Universal systems of finance that distribute to all, regardless of contribution, in contrast, are aimed at providing services to all with a medical need. People covered under such a system have crossed the first hurdle but are then subject to the second, whether or not funding, in practice, actually benefits the most needy.

The distribution of benefits is only partly influenced by the source of financing. Much also depends on the internal distribution systems, incentives to providers and targeting of subsidies. In recent years there has been much criticism of publicly funded health systems which are intended to favour poor and vulnerable groups but which, in practice, favour the largely urban middle classes. This argument was articulated recently in the World Development Report (World_Bank, 2000). This itself was based on a series of analyses of benefits' incidence of the social sectors including health (Yaqub, 1999).

It is clear, therefore, that while an equitable funding base is a necessary pre-condition for an equitable distribution of resources it is not in itself sufficient. It is the words missing....

Personal responsibility

A financing system should, where possible, develop an individual's interest in improving his/her own health.

Another important feature of a health financing system is the extent to which it encourages the development of personal responsibility in obtaining and using medical services. One way of developing this responsibility is to ensure that individuals bear some of the cost of their treatment. This can be accomplished in different ways. Direct methods include user fees, prepayment and savings accounts. Indirect methods, through insurance, could include discounts on the cost of future policies in return for low, or no, health service utilization. Each method encourages patients not to waste resources on unnecessary care. The two key problems are concerned with ability to pay and imperfect (incomplete?) information. If an individual is simply unable to pay

for services then the user charge will deter even necessary consumption. Good exemption mechanisms are required to protect the poor.

A key way to prevent the second problem is not to deter users from entering the medical system. Charging fees at the primary level can deter patients from obtaining initial diagnosis of illness. Ultimately this can lead to much more expensive and costly illness. Most analyses suggest that user charges should progressively increase with the level of care so that primary, particularly essential ambulatory, services are almost without charge while user charges for secondary and tertiary level inpatient services are higher.

Governance & accountability

Financing systems should be managed in a way that is accepted as transparent and trustworthy. Those paying contributions and those receiving benefits must be convinced that managers are properly accountable for what is financed and the services that are subsequently 'produced'.

The degree of transparency and trust in a government system of health financing is often intimately linked to confidence in the general system of public finance. If, for example, people are distrustful of the system of tax collection and expenditure distribution then they are unlikely to be willing to trust a system of public health insurance that is organized and managed by the state. A similar argument can be made for trust in the private sector where this form of management is being considered.

At facility or local administrative level, if people are to be willing to pay user charges or community insurance contributions then systems must ensure that the contributions or payments collected go to the services for which they are intended. This requires a clear system for accounting for money collected, and adequate investment in local management systems for using the money in a way that improves service. It should be remembered that it is perfectly possible to implement a system that satisfies financial audit requirements in demonstrating a clear and justified audit trail, but that nevertheless fails to deliver the expected quality of service. Systems of activity accounting and quality assurance can help to improve this later dimension.

Efficiency

A financing system should encourage resources to be used in a way that maximizes the benefits to the target population

The determinants and definitions of efficiency of the health financing and delivery system are extremely complex. One dimension of efficiency is in service provision. This encompasses management and technical aspects of service delivery – to what extent are resources used in a way that minimizes the cost of a particular treatment or procedure. It also includes the overall allocation of resources to maximize health gain (allocative efficiency) – which disease treatments or prophylactic measures should be financed in order to improve the health of a population. Both of these are primarily dependent on the way in which resources are allocated and used within the health sector although the financing system may play a minor role if the method of financing

influences the management and incentive structure. One example of this is the effect of introducing user fees that are retained by a facility. Doing so effectively places purchasing, and so some bargaining power, in the hands of patients⁸. The result may be that patients are able to encourage practitioners to provide a better quality service than when a large and impersonal funding agency allocates all finance necessary to pay for the service.

A second dimension of efficiency is the overall efficiency of the system within the context of the macro-economy and other public finance objectives. Devoting finance, whether public or private, to one social programme necessarily implies less finance available for other programmes. Spending by the public sector necessarily crowds out public or private spending on other social goals. An important characteristic of a funding system is the ability to control the overall levels of funding going into one sector to permit a considered and explicit trade-off between multiple social programmes.

A further aspect of efficiency is the cost of administering the financing system. Different financing systems have different costs. Broadly speaking, financing systems that are cheaper to establish and manage are to be preferred, although there may sometimes be a trade-off between low system costs and one or more of the other desired characteristics. In many countries, one of the lowest cost systems is a system of general taxation where one agency collects revenue for multiple purposes and then allocates it to different sectors. Yet such a system may not encourage personal responsibility in the utilisation of medical resources since financing has no direct link to service delivery.

⁸ Although only those able to afford to pay.

Annex Two: Total government revenue by source

(Taka million)

Heads	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
1 Total Tax Revenue	90989	95897	120536	121012	142231	153649	169863
A. Taxes on Income and wealth:	17296	19252	19400	18371	20604	24559	28354
(a) Corporation tax	-	-	-	-	-	-	-
(b) Taxes on income other than Corporation tax	4448	5173	4123	3091	5384	6300	7400
(c) Taxes on agricultural income	-	-	-	-	-	-	-
(d) Estate duty	-	-	-	-	-	-	-
(e) Wealth tax	36	10	112	40	80	110	120
(f) Gift tax	1	1	1	1	1	1	1
(g) Land Revenue	1211	1323	1520	1331	1850	1970	2050
(h) Income-tax realised under M.L.R.	-	-	-	-	-	-	-
(i) Private Banks, industries and investment organisation	10629	11840	11794	12694	11966	14700	17300
(j) Mis. Taxes	971	905	1850	1214	1323	1478	1483
B. Taxes on commodities and transactions	68979	71320	93924	96327	113820	120740	133010
(a) Customs:	28391	29799	36236	41093	45620	47840	53260
(i) Imports	27507	25187	34990	36841	41650	3240	3260
(ii) Exports	354	552	499	58-	-	-	-
(iii) Miscellaneous	530	4060	747	4194	3970	44600	50000
(b) Excise duties:	11909	1606	4555	1941	2070	2140	2250
(i) Excise	11261	1526	4555	1941	2070	2140	2250
(ii) Dev. surcharge on petroleum products	648	80-	-	-	-	-	-
(c) Sales tax VAT	28679	39915	53133	53293	66130	70760	77500
(i) On imports/exports	-	-	-	-	-	-	-
(ii) On locally manufacturing goods (VAT)	8987	21956	29969	12611	14510	17433	17990
(iii) Import/Export (VAT)	15328	5326	5522	24913	29890	29487	32510
(iv) Supplementary duty	4364	12633	17642	15769	21730	23840	27000
C. Other taxes and duties:	4714	5325	7212	6314	7807	8350	8499
(a) Receipts under M.V.Act.	417	766	874	946	1300	1150	1170
(b) Stamps	3483	3848	4419	4320	5270	5610	5670
(c) Other taxes and duties n.e.c.	814	711	1919	1048	1237	1590	1659
2 Total Non-tax Revenue	16999	26749	26953	25589	28329	34628	36337
A. Income from property:	9835	16419	17155	14833	17749	20317	23656
(a) Enterprises	6573	12350	13911	10572	12449	14617	17806
(i) Post Office	-368	-368	-368	-368	-368	-368	-368
(ii) Telegraph and telephone	3630	5075	6750	5503	6300	7650	9050
(iii) Railway	-984	-1086	-1299	-1517	-894	-815	-766
(iv) Income from nationalised and Private Banks and Investment Institution	4295	4149	6464	5189	5246	5769	7001
(v) Nationalised Industrial Corp.	4106	4580	2364	1765	2165	2381	2889

(b) Interest receipts	3262	4069	3244	4261	5300	5700	5850
(c) Other income from property	1095	1016	1391	4532	1650	1390	1437
(i) Forest	350	372	519	552	650	490	517
(ii) Defence services	745	644	872	3980	1000	900	920
(iii) Civil works	-	-	-	-	-	-	-
B. Fees and miscellaneous receipts:	7164	10330	9798	10756	10580	14311	12681
(a) Agriculture, Fisheries & Livestock	146	158	197	204	360	194	215
(b) Industry	5	5	6	15	8	20	25
(c) Justice and police	439	389	427	503	817	488	486
(d) Education	188	357	232	917	254	245	245
(e) Health	190	294	316	304	390	201	216
(f) Radio and television	322	554	564	473	822	880	925
(g) Port and Pilotage	29	39	57	32	35	19	21
(h) Misc.fees & other misc.receipts	4849	7416	6738	7070	6244	10504	8738
(i) Registration	996	1118	1261	1238	1650	1760	1810
Total Revenue receipts (1+2)	107988	122646	147489	146601	170560	188277	206200