Health Financing Innovations in the Caribbean: EHPO© and the National Health Fund of Jamaica

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Foreword

This paper describes the conceptualization, development and implementation of the National Health Fund in Jamaica. Established in 2003, the NHF provides direct assistance to patients for drug purchases and funding support to private and public organizations for approved projects. The NHF marks a new strategic approach to the introduction of national health financing schemes utilizing the EHPO© analytical model. EHPO© (Evaluating Health Policy Options) helps policymakers develop strategies and options and includes an interactive, dynamic computer model that is used to evaluate benefit coverage options and their financial risks.

The paper examines the desirable features of national health financing systems, the Jamaica public policy context and the role of EHPO© in analyzing health benefits and coverage, financial risk and liability. It suggests lessons to other countries for the design of healthcare benefits coverage, financing, provider payment mechanisms and public policy implementation.

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We believe that this paper can contribute to the broad discussion on health financing and the feasibility of introducing national health insurance systems in the Caribbean.

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Introduction

The health status of people living in the Caribbean may be characterized as *low child mortality, low adult mortality* (WHO, 2003) and reflects epidemiological patterns more associated with those of developed countries.[1] Following decades of strong public commitment to health and other welfare-enhancing measures, significant progress has been made in reducing the threat of infectious diseases. But progress has also led to the dominance of chronic noncommunicable conditions and an increase in the number of accidents and injuries, which, along with the HIV/AIDS epidemic, have multiplied the challenges facing these countries to sustain improvements in health status. Their dilemma is how to generate and allocate adequate resources to finance the mix of health services needed to address the spectrum of health conditions: persistent infectious diseases, chronic conditions, accidents and injuries, and HIV/AIDS.

Resources to finance health services in the Caribbean generally rely on a mix of public and private instruments. Tax funds largely support hospital, public health and regulatory/stewardship services, while large out-of-pocket payments and limited private health insurance (covering 12 percent of the population) fund ambulatory care (visits to private doctors and specialists) and pharmaceutical services. Only three of the nineteen countries have functioning social health insurance plans. External aid plays a small but significant role in the overall financing of health services.

The slowdown in economic growth in most countries, caused by problems in the main wealth producing sectors (tourism, agriculture and manufacturing), as well as lopsided growth in some countries (leading to persistent unemployment, growing social inequalities and increasing informal sector activity) have imposed severe constraints on the ability of the state and individuals to pay for the full range of necessary health services. Several countries such as Jamaica, Trinidad and Tobago, St. Lucia, St. Vincent and The Bahamas prepared or are preparing national plans for new mechanisms (chiefly national health insurance) to fund health services. Many of these plans have stalled in the face of continuing economic constraints, weak design or indecision (Lalta, 2001).

This report examines the experience of Jamaica, which after years of macroeconomic difficulties, constraints on fiscal resources for health and debate on alternative financing, established the National Health Fund in 2003. With a view to eliciting critical lessons for future actions and for other countries, the paper focuses on the policy context and the process of decision-making, the challenges of design and implementation and the early operational results. It begins by reviewing the desired features of a health financing system and the health policy context in Jamaica. This is followed by a description of the concept and operational features of the NHF and a discussion of the economic issues in designing the NHF, the development of the Evaluating Health Policy Options (EHPO) model and the implementation experience. The report closes by identifying some major lessons of experience for Jamaica and the Caribbean as well as other countries facing the challenges of national health financing.

[1] The Caribbean is made up of small low- to middle-income countries from The Bahamas in the north to Guyana on the South American mainland.

Health Financing:
Desired Features and the Jamaica Policy Context

Financing is a critical instrument for the achievement of national health policy goals. Health financing systems, whether in developed or developing countries, reflect accumulated responses by individuals, groups and national authorities to five central issues (Kutzin, 1995):

- How are funds generated and collected, i.e. what mechanisms are used (such as taxes, earmarked contributions, premiums and direct out-of-pocket payments) and who bears the burden of paying.

- Who pools and manages the funds and organizes or purchases health services, e.g. public (governmental or statutory body) or private (profit or nonprofit) agency.

- What mix of services are bought, i.e. ambulatory, institutional (primary, secondary, tertiary) and regulatory.

- How are services purchased and providers remunerated, e.g. salary, capitation, budget, fee for service.

- Who benefits and the extent to which access to care is linked directly or otherwise to one's payment/contribution.

Internationally, health financing systems have evolved to include varying mixes of the following mechanisms:

- tax-based funding as in the United Kingdom, Canada, Sweden, Brazil and most Caribbean countries;

- mandatory social health insurance as in Germany, Japan, Costa Rica;[2]

- mandatory social health insurance associated to individual health plans managed by private institutions in a competitive scheme (Chile, Argentina, Uruguay)

- voluntary private health insurance as in the United States and South Africa;

- medical savings accounts as in Singapore and some provinces of China;

- community-based funding, e.g. revolving funds and prepaid plans as in the Bamako Initiative countries of Sub-Saharan and Thailand;

- direct out-of-pocket payments by patients as in India and several Caribbean countries; and

- grants and gifts as in several Sub-Saharan and Southeast Asian countries.

The ongoing challenge for all countries is to adjust or develop the mix of financing methods best suited to their macroeconomic conditions, sociocultural environment and disease burden (WHO, 2003). This requires a financing system that generates adequate resources to meet the costs of current and projected health needs and priorities; is equitable in that resources are raised according to ability to pay (vertical equity) while access to services is based on need rather than one's income or contribution (horizontal equity); and is efficient (at the macro and micro levels) in terms of purchasing services that provide the best value for the money.

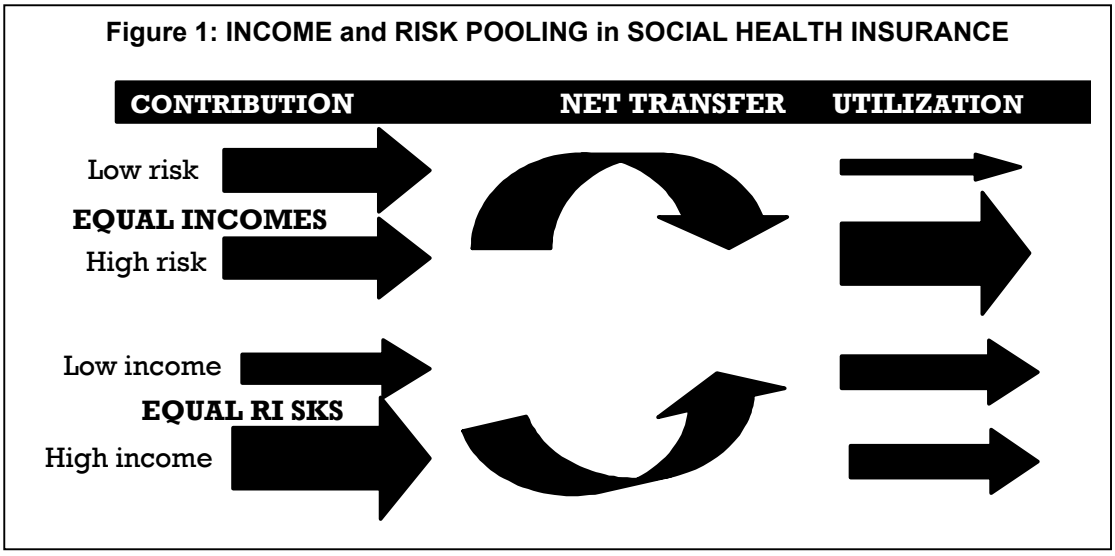
While the above criteria may be deemed to satisfy the *necessary* conditions for a good financing sys-

[2] Chernichovsky et al. (2003) make a distinction between social health insurance plans based on the 'social insurance model' where a single national or regional fund collects and allocates resources to various insurers/sickness funds as in Israel, Russia and Colombia, and the 'group insurance model' where contributions are paid directly to insurers/sickness funds and risk equalization transfers are made as is the case in Germany, Japan and France.

tem, commentators drawing on theoretical postulates and empirical data are still locked in an unresolved debate over which financing method secures these and other *sufficient* conditions.[3] Overall, there seems to be some consensus that experience-rated private health insurance (that encourages segmentation of health risk groups, adverse selection and direct out-of-pocket payments likely to lead to catastrophic expenditure and entrench poverty) are inequitable. Mandatory pooling mechanisms (such as tax-funded schemes and social health insurance) that offer more solidarity and financial protection are considered to be more equitable.[4] This observation is supported by López-Acuña (2001), who noted that the resource constraints on investment were a critical issue, and concluded that a national fund for health financed from general revenues and social security may be the most feasible alternative. The analysis also indicated that a single administrator is a more efficient model than using multiple administrators or insurers. It also concluded that universal coverage (rather than private insurance or seeking to support provider market creation or expansion) was the preferred basis for access and equity. Mandatory pooling where there is a transfer of risk and income from the healthy to the sick and from the rich to the poor so that access is based on need is typified in the prescriptive framework by the World Health Organization (2000), as shown in figure 1.

The actual efficiency and effectiveness of the mechanisms for transfer of risks and income are still being debated. This includes issues such as whether the transfer of risks and income should take place through single or several pools and risk equalization payments or community-rated premiums in social health insurance (as in the Netherlands, Israel and Colombia), or through general income, progressive or proportional, earmarked or sin taxes as in public-funded schemes.[5] Key issues in the efficiency/effectiveness debate within and between tax-funded and social insurance models of health financing are the cost of administration (collection and pooling), the quality of purchasing and allocation decisions, and the mechanisms for remunerating providers (e.g., salaries, capitation, prospective or retrospective fee for service, budget and performance contracts). Remuneration systems influence the magnitude of funds to be collected, the level of cost control, incentives for activity by providers, moral hazard and the extent of co-payments by patients (Savedoff and Carrin, 2003; Chernichovsky et al., 2003).

Figure 1: INCOME and RISK POOLING in SOCIAL HEALTH INSURANCE



[3] Zschock, 1979; World Bank, 1987 and 1993; van Doorslaer et al., 1993; Donaldson, 1993; Chernichovsky et al., 2003; WHO, 2000.

[4] van Doorslaer et al., 1993; Kutzin, 1995; World Bank, 1993; IDB, 1996; Donaldson and Gerard, 1993.

[5] Frenk and Londono, 1996; Docteur and Oxley (2003); WHO, 2003

A critical additional issue in the debate over an appropriate health financing system is the complementary (as against the competitive) role of different mechanisms. In this respect the discussions switch to the nature of health services to be provided and the instrumental role of health financing. Generally, distinctions are made between *public* goods (such as vector control, safe food and water, social communication in health education, emergency services, regulatory functions) and *private* goods (such as individual ambulatory and institutional care services, pharmaceuticals and medical interventions). For the former, public financing methods through taxes are deemed to be more appropriate and efficient while, for the latter, experts suggest that private financing through social insurance, private insurance and out–of-pocket payments are more suitable.[6]

Overall, five key principles emerge from the discussions and debates on a desirable health financing system:

- Mandatory pooling of income and health risks, e.g. through social insurance or tax-funded plans.
- Individual and household contributions on the basis of ability and capacity to pay (the issue of fairness of contribution in terms of progressive payments or equal burden, i.e. same share of capacity to pay, is still unresolved[7]).
- Limited out-of-pocket or direct payments to obviate catastrophic payments and health-induced poverty.
- Purchasing plans based on value-for-money and remuneration systems that are prospective and performance related.
- Public funds should be used for public goods, merit goods and to avoid negative or promote positive externalities, while private funds should be used for private goods.

[6] World Bank, 1993; Musgrove, 1996; Mills et al., 2003

THE POLICY CONTEXT IN JAMAICA

Compared to other lower middle-income developing countries, Jamaica has made impressive progress in improving the general health status of the population over the last four decades. The WHO's 2000 World Health Report ranked Jamaica as eighth in the world in terms of the efficiency of its health system. "Good health at relatively low cost" reflects continued commitment to and investment in health as well as other welfare enhancing programs. With a population of 2.6 million persons, key health status indicators in 2002 show that life expectancy at birth is 73 years, the crude birth rate is 20 per 1,000 persons, the crude death rate is 6 per 1,000 persons, and the infant mortality rate is 20 per 1,000 live births. However, the sustainability of progress in the health sector is being severely tested by challenging developments in the epidemiology of disease and disorders, the macroeconomic environment and the adequacy of financing arrangements. This section examines critical aspects of these challenges and how responding to them led to the establishment of the National Health Fund (NHF).

The Epidemiological Context

Jamaica may be said to be in the end stage of the epidemiological transition with chronic non-communicable conditions completely replacing infectious and communicable diseases in the country's total burden of disease. Using international classifications and records for 1990 (morbidity/health services utilization and mortality reports), the World Bank estimated that chronic noncommunicable conditions accounted for 60 percent of the disease burden, injuries for 25 percent and communicable diseases (including maternal and perinatal conditions) for 15 percent (World Bank, 1994). This trend has continued in subsequent years.[8]

Significant achievements have been made in the eradication and control of major infectious diseases (polio, cholera, yellow fever, malaria) through sustained public health measures, such as vector control and sanitation campaigns, educa-

[8] Annual Report of Ministry of Health; Healthy Lifestyle Survey 2000; Population Census Report, 2003.

tion, vaccination, surveillance and treatment. However, periodic outbreaks of dengue fever, typhoid fever, gastroenteritis, measles and meningitis necessitate continued vigilance and resource allocation for control and treatment activities. More significantly, the spread of the HIV/AIDS epidemic is now regarded as a "national development problem" with increasingly negative repercussions for overall health gains as well as economic and social progress. Ministry of Health data[9] for the period 1982 – 2002 shows the cumulative total number of AIDS cases reported is 7,027. Of this number, the 20-39 age group accounts for 55% of the cases and the overall sex ratio is 150 males to 100 females. The National HIV/AIDS Control Project estimates the incidence of AIDS as 1,000 cases per year of which 40 percent are diagnosed upon death.

Chronic diseases largely linked to lifestyles, such as hypertension, diabetes, cancers, arthritis, asthma and major depression, dominate the disease profile and health services utilization patterns in Jamaica. Almost one in every two adults has a chronic condition and estimated prevalence rates for some conditions such as hypertension, prostate cancer and diabetes are among the highest in the Americas (PAHO, 2002). Recent research reports have highlighted the size of this burden as well as the negative impact on productivity and health resource requirements. The World Bank (1994) estimated that 62 percent of those with chronic diseases would die prematurely and 58 percent would incur a disability. Handa and Neitzert (1998) found that 58 percent of women and 34 percent of men over the age of 45 have at least one chronic disease, with 23 percent of the men affected and 65 percent of the women having to stop work early because of the condition (compared to 4 percent of men and 27 percent of women without a chronic disease).

The growing incidence of unintentional accidents and injuries as well as intentional inter-personal violence poses serious challenges and consequences for the health system. They impose high human resource costs, accounting for about 25 percent of the premature death and mortality in Jamaica, as well as financial costs in terms of resources required to treat and rehabilitate affected persons. The full cost of accidents, injuries and violence, and their impact on and implications for the overall social, psychological and economic wellbeing of the population have not yet been properly studied or estimated.

The Macroeconomic Context

Macroeconomic developments exert a significant influence on the availability of resources for the health sector, on sharing the burden of payments and on the choices of health policymakers. According to the most recent government data, the Jamaican economy has experienced persistent difficulties since the 1970s despite several years of strenuous stabilization adjustment measures. After declining at an average annual rate of 1.3 percent in the 1970s, gross domestic product increased at an average annual rate of only 1 percent in the 1980s. During the 1990s that rate of growth slipped to only 0.5 percent. Per capita GDP stood at US$1,800 in 2002, while the unemployment rate was 16 percent and 20 percent of the nation's population lied below the poverty line. In addition, the foreign debt burden (as measured by debt servicing as a percent of government expenditures) stood at 65 percent and the informal sector accounts for 40 percent on national economic activity.

The poor performance of the economy, with as many years of positive and negative growth over the period 1970 to the present, reflects difficulties in all the major wealth-producing sectors, including agriculture, manufacturing, industry and services. Only tourism and remittances have shown sustained increases. Heavy foreign borrowing for balance of payments and fiscal reasons, as well as internal borrowing to mop up liquidity in financial markets and to prop up struggling financial intermediaries has resulted in an accumulated debt burden that is almost twice the GDP. Debt servicing absorbed about 45 percent of government revenues in the 1990s and 65 percent in 2003, compared to 30 percent in the 1980s. As a result, Jamaica has one of the highest active debt servicing ratios in the world, much of which is sovereign debt with the first call on government resources. This means that allocations to ministries can only draw on the discretionary portion of pub-

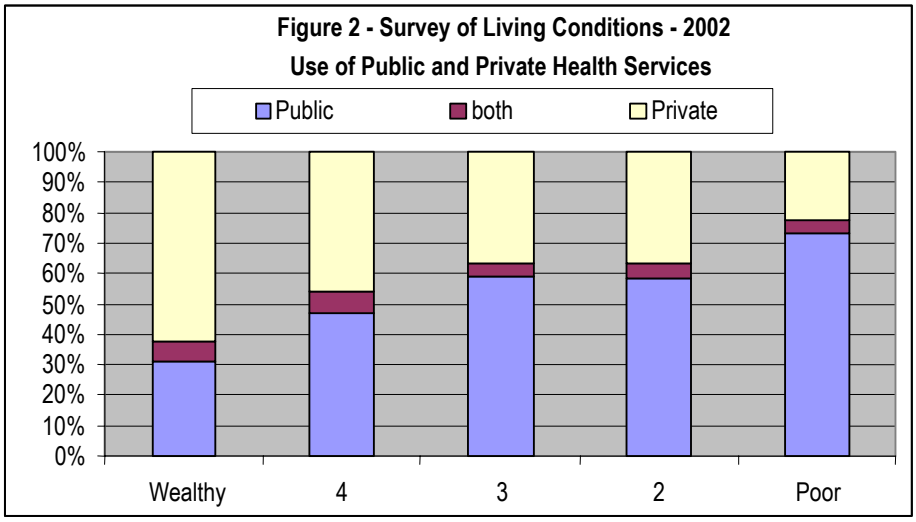
[9] Ministry of Health Annual Report 2002 page 40

lic budgets, constraining the ability to finance new programs, however attractive.

As indicated by persistently high unemployment rates, the labor market has also felt the harsh impact of macroeconomic difficulties. The pattern and potential of health financing is also reflected in the sharply skewed income distribution (with a Gini coefficient of 0.4 in 2002), and the growth of *contract* as against *tenured* employment. The shortage of employment opportunities in the formal sector has, *inter alia*, led to increased growth in the already large informal sector, which was estimated at about 40 percent of the formal economy in 2002. The number of persons and households living below the poverty line has remained persistently high, averaging 20 percent since the beginning of the 1990s, and it is a continuing cause of concern. Data from the Survey of Living Conditions reveal that the poor report as much illness as the rich but are less likely to seek health care, are not covered by private health insurance plans and depend heavily on the public sector for care and medication. For them, the risk of catastrophic health payments and medical indigence is real.

health expenditure was about US$350 million, representing 6 percent of GDP or US$140 per capita. The public sector accounted for 46 percent of total expenditure, out-of-pocket payments totaled 36 percent, private health insurance covered 16 percent and donations and grants accounted for the remaining 2 percent. Public financing went largely to stewardship and regulatory functions, hospital care and primary public healthcare services. Out-of-pocket payments and private insurance paid for ambulatory visits, pharmaceuticals, diagnostics and overseas care. Donations and grants largely used to cover ambulatory care and health education services delivered by non-government organizations (NGOs).

The problems of health financing were examined from the viewpoints of the two main payers for health services**.** Most individuals and families are facing serious difficulties in paying for health services. The Survey of Living Conditions shows that, during the 1989–1999 period, household out-of-pocket expenditures on healthcare increased at an average annual rate of 12 percent. Out-of-pocket expenditures on drugs increased at 15 percent per year, and expenditures on other items increasing at an annual rate of 10 percent.



The Health Financing Context

Health financing reflects a mix of public and private mechanisms and intermediaries. National health accounts data for 2002 show that overall

Only 12 percent of the population is covered by private health insurance, mainly in health plans for employees of medium to large establishments. Escalating health care costs, alongside inadequacies in the supply of public health services, reduce

the equity in access to care. This leads to a three-tiered health system where those with insurance and high incomes seek care overseas, those with middle incomes and insurance visit local private providers and the poor seek care in public facilities. As the 2002 Survey of Living Conditions shows (Figure 2) , efforts at targeting, to cushion the effects on the poor, have not been as successful as planned because systems for identifying the poor are weak, leading to the exploitation of opportunities for Type II errors.

The most pressing concern in the public health sector is the increasing gap between the demand for and cost of services and the availability of resources to meet these costs. As the main payer and provider of services, the State faces many problems in financing the full range of primary, secondary and tertiary health services. Demand and costs are driven upwards by demographic, epidemiological, technological and social factors. The proportion of the national budget allocation for health has declined from 10 percent in the 1960s to 8 percent in the 1970s, 7 percent in the 1980s, 6 percent in the 1990s and 5 percent in 2002. Rigidities in the market for health workers has not led to a decline in spending on personnel, which, as a result, has assumed a greater proportion of the budget. However, figure 3 highlights the decade of the 1990s when the budget increased marginally in real terms while there were significant increases in labor rates. Despite this, compensation levels are still deemed below internationally competitive rates resulting in significant migration of skilled health workers.

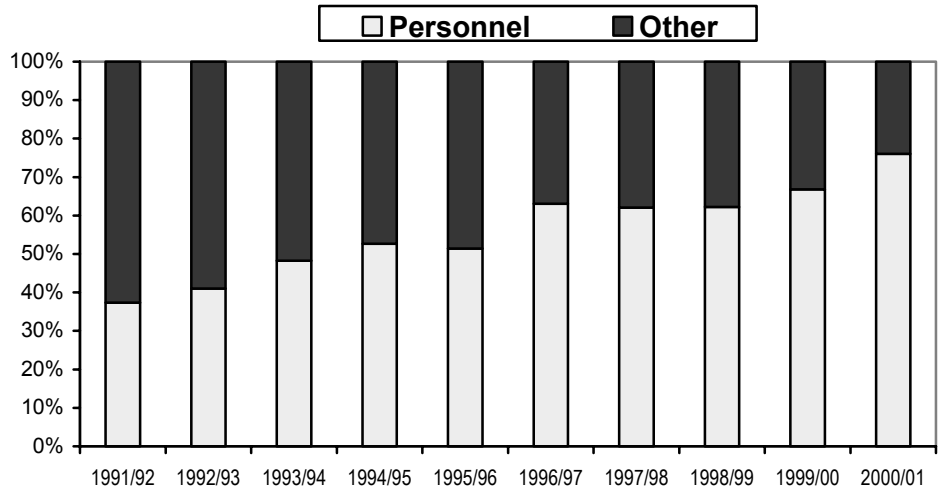
Inadequate and, to some extent, inefficiently used public sector resources have resulted in shortages of staff, supplies and drugs, ongoing maintenance problems for equipment and infrastructure, uneven quality and availability of services and a large accumulated debt. Attempts at cost-sharing (with revised user fees in 1984, 1993 and 1999) have been quite successful with collections increasing from J$6 million (US$0.168 million or 1.4 percent of recurrent expenditure) in 1988 to J$900 million (US$25 million or 11 percent of recurrent expenditure) in 2002. Other attempts to generate resources through gifts and grants, such as lottery proceeds, have been reasonably successful. However, these various resource generation measures only managed to partially bridge the gap in public health financing.

The National Health Insurance Plan (NHIP)

The intensified search for new health financing methods to bridge the gap in budgetary allocations

Figure 3

Ministry of Health Allocation of Budgetary Funds



led to a series of studies and proposals for national health insurance that culminated in the preparation of a Green Paper on the NHIP in 1997.[10] Discussions on some version of national health insurance can be traced to the 1960s when the national insurance scheme (NIS) was established with assistance from the International Labor Organization.[11] Discussions started anew in the 1970s about the possibility of imposing a levy on income to establish a national health insurance plan. This idea did not find favor with policymakers. More recently, studies for the development of a feasible health-care financing method are underway as part of a health sector reform program, which is being undertaken with assistance from the Inter-American Development Bank (IDB) and the Pan American Health Organization (PAHO).

Several national health insurance proposals were prepared in the 1980s as fiscal and debt payment difficulties became acute. These efforts stalled over issues such as who should contribute, who should manage the plan, what services should be in the package of benefits, and whether a pilot project should be implemented. National health insurance discussions were restarted in the 1990s as part of the "alternative financing" component of an IDB-funded health reform program. The Green Paper on NHI was prepared in 1997 outlining the goals, principles and proposed operational features. The key features included universal coverage ("health security for all"); supplementing budgetary allocations to the health sector; the purchase of a standard benefits package consisting of prescription drugs, diagnostic services and in-patient hospital care; choice of insurer and service providers; contribution through a levy on income; and the creation of a catastrophic care fund.

A National Steering Committee comprising key stakeholders in health was asked to examine both the Green Paper proposal and the supplementary Policy Framework Paper in order to develop implementation plans. Opinions were divided on the role, scope and viability of the plan given the existing (and continuing) difficult macroeconomic climate. The NHIP also faced significant opposition from the Ministry of Finance because of the substantial cost to the government both as an employer and to cover the premiums for the indigent population. Financial projections estimated the cost of the NHIP at J$12 to J$15 billion per year (US$337 to US$421 million) with approximately 50 percent to be borne by the government. At the time, the Ministry of Health had an annual budget of approximately J$6 billion (US$169 million). The Committee highlighted these and other concerns in its 1999 report and the Ministry of Health (MOH) decided to develop a revised plan. This led to the design of the National Health Fund.

Issues Influencing the Design of the National Health Fund

For the NHF, "getting the design right" meant incorporating the desirable features of a good financing system while taking into account Jamaica's policy context (as described above). This required a focus on the issues described below.

- *The Funding (Resource) Boundaries*: Given macroeconomic and fiscal constraints (including the imperatives of keeping inflation under control and other performance targets) as well as the aversion of income earners to "making another mandatory contribution," what funding mechanisms would provide a reasonable amount of resources and still be acceptable to policymakers and the population?

- *The Benefit Package*: Given funding limitations and debates over the Green Paper proposals, what package of health services would provide the best value for the money?

- *Administration*: Given the economies of scale of having a single national pool, should a public or private agency be responsible for administration? Or could the functions be contracted out to make use of sector efficiencies?

[10] A total of 17 studies were conducted between 1982 and 1995. A Green Paper is a preliminary statement of proposed positions on a policy issue, to foster public discussion and debate. A White Paper is also a public document that incorporates the feedback received on a Green Paper.

[11] Some observers were of the opinion that a health insurance component should have been included among the social security provisions.

- *The Service Providers*: Given the weaknesses in the supply of health services in the public health sector, choice of service provider is essential (to making any plan acceptable). But if patients consistently choose private providers, what can be done to make the public facilities competitive and prevent the Fund from being just a conduit for enhancing access to the private sector?

- *Remuneration of Providers*: Providers are attracted to timely payments at prevailing market rates. But if the NHF is to influence the market in terms of choice of drugs and of providers, what level of prices and modes of payment should be developed to give the right incentives for providers to join the plan as well as for adequate provision and effective cost control?

- *Beneficiary Co-payment*: Cost control requires beneficiaries to share some of the costs of their decisions. At what level (transparent and widely known figure) and on what basis should co-payments (flat or percentage) be established?

- *Building a Consensus*: Given the role of stakeholders and the experience with the Green Paper (as well as other unsuccessful policy proposals), whose support is critical for influencing policymakers at the highest level and how should that support best be secured?

The National Health Fund
Concept and Operating Framework

According to internationally accepted human rights principles, governments have an obligation to provide national healthcare coverage to the citizenry. Three criteria, dealing with equity, effectiveness and economic issues, have been developed for evaluating these actions. The equity criteria are designed to ensure that all persons have an equal entitlement and access to the services offered. The effectiveness criteria state any services offered should ensure the greatest good for the greatest segment of the population. Finally, the economic criteria are designed to ensure that the services offered are affordable, financially sustainable and that their availability is equitable.

THE MISSION AND GOALS OF THE NATIONAL HEALTH FUND

The Green Paper provided policy guidelines regarding the mission, principles and goals of the National Health Insurance Plan that were adopted for the NHF. The mission of the NHIP is "to facilitate the achievement of the health goals of Jamaica through an equitable and accountable financing system which guarantees access to an affordable package of quality services regardless of one's age, income or health status." Its guiding principles are universal coverage (for the entire population); equity (sharing of costs and benefits); efficiency (value for money in all services); quality (consistently high standards of care); integration (optimal collaboration within and among sectors); and accountability (clear stakeholder responsibilities). The goals of the National Health Insurance Plan are to provide access and health security for all persons suffering from the specified chronic illnesses; to supplement out-of-pocket expenditure on healthcare; to improve the availability and quality of healthcare services; to increase public/private collaboration; and to foster more individual responsibility for health.

NHF OPERATING FRAMEWORK

The National Health Fund is a statutory company that receives and administers the funds collected. The NHF seeks to introduce a public health management approach to the treatment of chronic disease by providing two categories of healthcare benefits to the Jamaican population: individual and institutional benefits. NHF *individual benefits* are available to persons who enroll as required. Up to 50 percent of the NHF revenue is to be spent on these benefits. NHF *institutional benefits* are available to private and public organizations through two funds: one dealing with health promotion and the other with health support. The NHF Health Promotion and Protection Fund provides assistance and support in conformity with criteria determined by the NHF. At least 10 percent of NHF revenue is to be spent through this Fund. The NHF Health Support Fund provides funding for public sector entities only. At least 15 percent of revenues are to be spent through this Fund.

It is estimated that administration expenses will account for 15 percent of the Fund's revenues and that 10 percent will be spent on a financial reserve fund to accommodate unanticipated demands. The funds allocated for financial reserves may be spent on additional healthcare programs, post facto, if the financial reserve fund is at the desired level. Initially, this has been set at 40 percent of the NHF individual benefits liability.

The operational framework of the NHF emphasizes *choice* of provider by members, *competition* among providers of services, and *shared governance and administration* with responsibilities for all the key stakeholders. Two of the popular concerns about NHF individual benefits relate to the exercise of choice by beneficiaries and the benefit items provided. Figure 4 depicts the flow of resources and services and the responsibilities of the key players.

NHF OPERATIONAL FRAMEWORK

The National Health Fund policy guidelines for the key operational elements, discussed in this section, address access and coverage, the individual benefits package, health services providers, provider remuneration, institutional benefits, revenues, governance and administration.

Access and Coverage

NHF individual benefits are provided on the basis of universal coverage. Consequently, it is essential to specify policies, systems and eligibility rules to protect the integrity of the system and ensure that only bona fide members can gain access to the benefits. This requires an enrollment and adjudication system that is accurate, efficient and cost effective. The policy guidelines relating to access and coverage address coverage, ineligibility, enrollment, choice of provider and confidentiality.

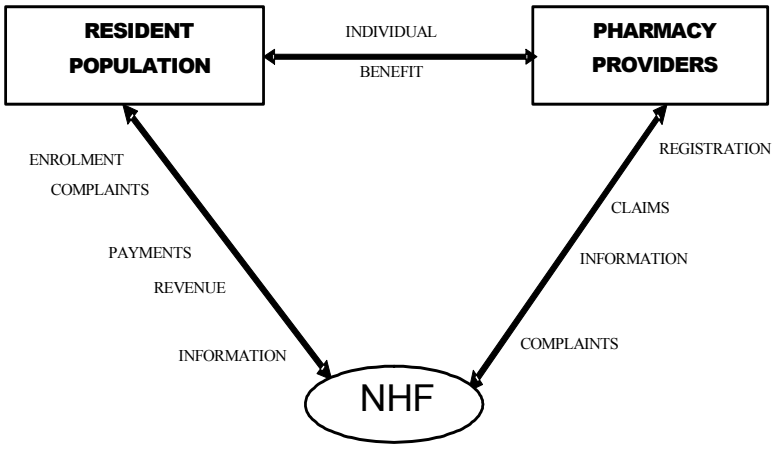
Population Coverage: NHF individual benefits cover all persons who normally reside in Jamaica. No person seeking NHF individual benefits may be denied service because of age, sex, income or existing health condition. This is known as universal coverage.

Ineligibility: Persons who are ineligible for NHF individual benefits include tourists, other short-term visitors, in-transit passengers, business travelers, temporary workers with work permits valid for less than one year, and temporary military and diplomatic personnel. Foreign students (regardless of age) enrolled at an approved educational institution in Jamaica *are* eligible for benefits in the NHF.

Enrollment: Persons seeking individual benefits are required to be in possession of a valid NHF beneficiary card. To obtain this card, individuals must provide identification, preferably a taxpayer registration number (TRN) which is available free of charge to all persons normally residing in Jamaica. They are also required to obtain a certification of their chronic illness from their medical practitioner with an assessment of their condition.

Choice of Provider: The beneficiary may choose any NHF approved health service provider in the private or public sector to receive individual benefits. The transaction processing system is critical to this aspect because the volume of transactions to be handled can only be managed and monitored effectively with a computerized system. Concomitant to this is an effective, consumer friendly, public sector pharmacy system to deliver NHF benefits. Provision was made in the NHF startup budget to equip all public sector pharmacies with the necessary physical and information infrastructure thus ensuring they have the ability to interact with the NHF. This delivery system is critical in

Figure 4
NHF Operational Framework



helping to ensure competition in the market, reduce profiteering and ensure access to the system for the indigent and other disadvantaged groups.

Confidentiality: All beneficiary data is confidential and will not be made available to unauthorized persons or organizations unless the beneficiary has given consent. Grouped data, not allowing identification of the individual, may be used for evaluation and research purposes. Only information necessary for enrollment is requested by the NHF.

NHF Individual Benefits Package

NHF individual benefits provide guaranteed access to a specific range of prescribed pharmaceuticals that are medically necessary for the treatment of specific chronic[12] diseases resulting from inpatient care in a hospital, visits to a health center/clinic, hospital emergency room or the private office of a general practitioner or specialist. The chronic diseases covered are determined from the epidemiological profile of the population, respond to their needs and are in keeping with the health goals of the country.

A technical group from the Ministry of Health itemized the NHF individual benefits. Treatment regimen and the National Formulary were used to determine the pharmaceuticals required for the proper treatment of the chronic diseases specified. These documents were reviewed by a panel of external practitioners before being finalized for use in the NHF. The Board of the NHF has a Medical Review Subcommittee that is responsible for maintaining the benefits list.

All persons seeking to obtain NHF individual benefits are required to enroll with the National Health Fund. There are special arrangements to assist children and elderly persons obtain a taxpayer registration number for registration. Beneficiaries are also required to present verification of their illness by a registered medical practitioner. Beneficiaries are required to present their beneficiary card and make a co-payment, determined by the pharmacy provider, to obtain an NHF benefit. The Ministry of Health determines the co-payment at public sector pharmacies. Designated groups of persons may obtain benefits without making a co-payment.

Other issues affecting the administration of NHF individual benefits include eligibility, standards of care, inpatient services, prescription drug benefits, co-payment, the National Formulary, changes to the standard benefits package, limits and exclusions, and the phasing of benefits.

- *Eligibility*: All persons normally residing in Jamaica are eligible for full access to NHF Individual Benefits.

- *Standards of Care and Treatment Protocols*: There are clearly defined standards of care for health delivery services and treatment options where applicable for NHF individual benefits.

- *Inpatient Services and Referrals*: Persons are only eligible for NHF individual benefits as inpatients upon referral by a registered medical practitioner.

- *Prescription Drug Benefits*: The benefit items covered are based on the Food and Drug Act - List 4, which defines prescription drugs. NHF individual benefits do not cover drugs that have not been prescribed by a registered practitioner or not dispensed by an authorized provider of services.

- *Co-payments*: The NHF pays an agreed sum for the NHF individual benefit item based on the best available price in the market. Beneficiaries are responsible for the difference between the NHF subsidy and the purchase cost of the item.

- *The National Formulary*: The Standards and Regulations Branch of the Ministry of Health is responsible for updating the National Formulary.

- *Revision of the Standard Benefit Package*: The Medical Review Committee of the NHF Board reviews the NHF individual benefits on

[12] Chronic disease can be broadly defined as illnesses that are prolonged, do not resolve spontaneously, and are rarely cured (Center for Disease Control).

an ongoing basis to include or exclude specific services and treatments.

- *Limits and Exclusions*: Treatment options are determined for two categories of illness loosely referred to as mild and severe. Each beneficiary is automatically provided with access to treatment up to the quantity limit specified for the minimum condition, i.e. mild. Increases over this limit are based upon an application to the Medical Review Committee of the NHF Board, supported by a written recommendation from an examining physician.

- *Phasing of Benefits*: The National Health Fund is the first phase of implementation of a National Health Insurance Plan as envisioned in the 1997 Green Paper. At a later time, the NHF may be expanded to include other benefits such as in-hospital care and diagnostics.

Health Service Providers

The policy guidelines for the provision of individual health benefits under the National Health fund emphasizes patient choice, appropriate standards of care, quality control, and competition among licensed and accredited providers.

- *Registering Participating Providers*: Only providers who meet the appropriate professional and medical standards and are licensed operators will be accredited by the NHF and allowed to participate.

- *Display Credentials*: Providers must display their credentials and NHF accreditation where they can be clearly seen by patients.

- *Service to Beneficiaries*: Providers are not allowed to refuse service to legitimate NHF beneficiaries.

- *Standards of Care and Treatment Protocols*: The Standards and Regulations Division of the Ministry of Health sets standards for the delivery of care.

- *Recordkeeping*: Providers are required to maintain adequate and proper records and are subject to audit by the NHF.

- *Competition*: Competition is encouraged based on price and service. The NHF pays all providers an established amount toward the retail price of the benefit item. The beneficiary's co-payment covers the remainder of the purchase cost. Public sector pharmacy providers will be a major influence and factor in price competition.

- *Provider Abuse*: Controlling provider abuse depends on an effective Management Information System (MIS) that allows for an analysis of behavioral patterns and trends in utilization. All providers will be audited at least once a year.

Provider Remuneration

Providers are paid an agreed amount for benefit items, as specified in the NHF Provider Contract, based on the best available price for the drug. This amount (the NHF individual benefit subsidy) is the first contribution toward the provider's price for the item. The remainder of the selling price may be made up with a portion from a commercial health insurance carrier, where applicable, and the balance as a direct out-of-pocket payment by the beneficiary.

Although the manual submission of claims is allowed, the preferred method of transaction between the provider and the NHF is by a computerized on-line, real-time system. In order for the claim to be adjudicated, the provider makes contact with the contracted transaction processor via a telephone line. Adjudication of the claim immediately validates the provider, the beneficiary, the NHF card, the benefit item, tests for utilization quantity of the benefit item and claim frequency. Upon successful adjudication, the claim is accepted by the NHF system and the beneficiary and provider are informed by means of a printed receipt for the transaction. One copy of the receipt is to be kept by the provider and the other by the beneficiary. Claims data is transferred from the transaction processor to the NHF in order to update the beneficiary and provider databases. Sys-

tem acceptance of a claim assures the provider of acceptance and ready payment by the NHF subject to administrative objections due to such things as outstanding audit queries. All private and public providers are treated equally by the National Health Fund.

Providers who do not use the computerized claims adjudication system may submit claims manually, but bear the risk that the claim may not being accepted upon adjudication. Claims are only paid after successful adjudication. The adjudication system provides for intervention in unusual circumstances that allows for a manual override of adjudication parameters with authorization. These interventions follow clearly stipulated, objective and transparent rules.

- *Subsidy Determination*: The level of NHF individual benefit subsidy is based on the best available market price of the benefit item. This is to ensure that the beneficiary will be required to make a co-payment. The benefit item is determined by the active ingredient or chemical specified in the treatment regimen. The subsidy is a rate calculated on a per unit quantity that is applied to the various package sizes. Thus, the subsidy provided is the same rate for each chemical covered as an NHF individual benefit irrespective of source manufacturer or brand.

- *Claims*: Providers are responsible for preparing complete and accurate claims to ensure prompt settlement. This procedure is facilitated by the on-line adjudication system, which provides immediate real time adjudication of the transaction.

- *Complaint Mechanism*: The NHF has established appropriate mechanisms to deal with provider complaints and disputes.

- *Co-payments*: Co-payment is determined by the provider's selling price for the NHF individual benefit item. Special groups and the indigent are able to obtain NHF individual benefit items from public sector pharmacy providers at predetermined co-payment levels.

NHF Institutional Benefits

NHF institutional benefits are administered through two funds. The National Health Fund plans to allocate 10 percent of its revenues to program activities directly involved in promoting health and preventing illness that carried out by private and public sector organizations through a NHF Health Promotion and Protection Fund. Requests for assistance are evaluated in the context of the National Strategic Health Plan priorities and Health Protection and Promotion Strategy as set out by the government. Funds are committed and allocated on a program and not a period basis. Projects are required to provide a detailed operational plan with specific objectives and schedules, and defined measurable outcomes. Progress reports are required for the project to receive funding and an end-of-project report is required for the organization to qualify for further assistance. The NHF will not audit projects but will monitor their progress and outcomes. The NHF also funds lifestyle seminars designed to educate the population to better manage and prevent chronic and other diseases. These seminars are integrated into the provision of NHF individual benefits by encouraging and monitoring the involvement of beneficiaries.

The NHF plans to allocate 15 percent of its revenues to funding support for the public sector healthcare system through a NHF Health Support Fund. Public sector institutions are required to request support for specific projects and funds shall be committed and allocated on a project not an annual basis. Requests for assistance are evaluated in the context of the National Strategic Health Plan priorities with the Essential Public Health Functions (EPHF) developed by PAHO. The EPHF have been defined as conditions that permit better public health practice and indicators, and standards to improve public health practices by strengthening necessary institutional capacities.

The eleven essential public health functions are:

- Health Situation Monitoring and Analysis

- Public Health Surveillance, Research and Control of Risks and Damages in Public Health
- Health Promotion
- Social Participation and Empowerment of Citizens in Health
- Development of Policy, Planning and Managerial Capacity to support efforts in Public Health and the Steering Role of the National Health Authority
- Public Health Regulation and Enforcement
- Evaluation and Promotion of Equitable Access to Necessary Health Services
- Human Resources Development and Training in Public Health
- Ensuring the Quality of Personal and Population-based Health Services
- Research, Development, and Implementation of Innovative Public Health Solutions
- Reducing the Impact of Emergencies and Disasters on Health

Revenue

The three sources of revenue identified for the National Health Fund are an excise tax on the consumption of all tobacco products estimated to yield 43 percent of revenue; a payroll tax (in parallel with an existing national insurance deduction primarily for pension benefits), estimated to yield 35 percent of revenue; and a specific contribution by the government estimated to yield 22 percent of revenue. Existing mechanisms for tax collection are used where possible for ease and effectiveness of administration. The tax collection mechanisms are mandatory contributions and revenue sustainability. In the case of *mandatory contributions*, companies are required to make payments to meet their NHF obligations. Companies that are not current with their payments face penalties specified in the NHF law. *Revenue sustainability* refers to the fact that the revenue mechanisms will be reviewed and adjusted periodically to ensure the sustainability of the NHF. Other revenue bases may be considered when appropriate.

Governance

The legal framework for the National Health Fund was developed to cover aspects of governance and administration such as participation by stakeholders, accountability and reporting relationships, dispute resolution and management. The Ministry of Health is responsible for setting standards of care, licensing, quality control and reviewing the National Formulary.

The NHF Act (2003) imposes penalties on beneficiaries and providers who are found guilty of abusing their role in the system. The NHF has established policies that protect the rights of beneficiaries, particularly to privacy, and the obligations of the NHF to its service providers. The NHF is a not-for-profit entity. It is not an asset building institution and seeks to expend all its revenue in support of the provision of healthcare nationally.

Administration

The NHF is a statutory organization established by the NHF Act (2003) with a Chairman and Board of Management appointed by the Minister of Health. The Chief Executive Officer is an ex-officio member of the Board of Management. The Board has five subcommittees including a medical review committee, an institutional benefits committee, and a finance and audit committee. The *Medical Review Committee* is responsible for monitoring adjustments to benefit levels based on the severity of diagnoses, adjusting the benefits provided based on changes in the use and/or availability of drugs, and making recommendations on the type of benefits and illnesses to be covered. The *Institutional Benefits Committee* approves the NHF institutional benefits project requests and monitors their progress and accomplishments. The *Finance and Audit Committee* monitors the financial and administrative operations of the NHF including financial audit and procurement.

A critical aspect of NHF operations is the management information system. The processing of transactions by providers is contracted to a third party and paid for on a fee-for-service basis with an in-house capability to carry out clerical functions and statistical analyses. The contracted transaction processor is the interface between the NHF and its providers, and is required to supply on-line, real-time communication for claims adjudication and provider information support. All information is owned by the NHF and is regularly replicated from the transaction processor to the NHF where it is stored in an identical database.

The NHF has the administrative and analytical capacity to maintain an information database on the activities of beneficiaries and providers. This database is used to provide statistics on the utilization of the NHF and analyzed for trends that may indicate abuse of the system. The NHF uses this analysis to guide the need for operational audits and investigations. The information is also used to determine payments to providers. The in-house MIS operations of the NHF retrieve claims data from the transaction processor, maintain beneficiary and provider databases, and provide clerical and financial support for administrative operations. They also undertake statistical analyses of the data that will provide epidemiological information and assist in detecting trends in disease occurrence and treatment.

NHF – Economic Considerations and the EHPO© Model[13]

ECONOMIC ISSUES

Some of the economic issues considered in designing the NHF were:

- the impact on the tobacco market resulting from a consumption levy,
- the impact on net earnings of workers resulting from an increase in payroll-based contributions,
- the impact on out-of-pocket payments for prescription drugs by patients with specific chronic diseases,
- the advantages and disadvantages of NHF beneficiary subsidy options for eligible drugs,
- the NHF systems to limit and prevent abuse, fraud and moral hazard, and
- the likely impact of the NHF on the behavior and products of private health insurance carriers.

Impact of the Tobacco Tax

The major source of revenue for the National Health Fund is a consumption levy on tobacco products, chiefly cigarettes. While there has been a steady long-term decline in consumption since the 1970s, the industry was already a large contributor to tax revenues: taxes amount to 45 percent of the retail price. The industry is dominated by a large manufacturer and an importer. Cigarettes are produced from imported raw materials. The informal sector accounts for 70 percent of sales through street vendors who sell by the stick.

The challenge for the NHF was to design a levy that would yield adequate revenue without affecting existing tax yields. The levy on tobacco was designed using price-point analysis to optimize the NHF revenue potential while maintaining the manufacturer's return-on-assets and margins.

Impact of the Payroll-Based Tax on Employee Net Earnings

Net (or take-home) earnings are affected not just by what adjustments are made to the payroll-based National Insurance Scheme (NIS) deduction but also by its interaction with other statutory payroll deductions, i.e. National Housing Trust of Jamaica (NHT), Education Tax and Income Tax. In addition, certain tax-exempt provisions relating to pensions and other similar deductions also affect net earnings. Previously, these deductions were:

- NIS: 2.5 percent of gross earnings up to a maximum of J$250,000 per annum with an employer's matching contribution of 2.5 percent
- NHT: 2.0 percent of gross earnings with an employer's matching contribution of 3 percent
- Education Tax: 2.0 percent of [Gross earnings - pension contribution - NIS deduction] with an employer's matching contribution of 3 percent
- Income Tax: 25.0 percent of [Gross earnings - pension contribution - NIS deduction - 'tax relief' income of J$120,432 per annum]
- Pension Contribution: typically 5 percent of gross earnings; employer's contribution varies

The National Insurance Scheme contribution ceiling was increased from J$250,000 to J$500,000 per year. The existing NIS deduction rate was changed to 4 percent for NIS and the remaining 1

[13] Barrett, 2000

Table 1
A COMPARATIVE ANALYSIS OF PAYROLL DEDUCTIONS

PREVIOUS STATUTORY DEDUCTIONS								**CURRENT STATUTORY DEDUCTIONS**						
NIS	2.5%	Gross Earnings up to $250,000 per year						**NHF & NIS**	2.5%	Gross Earnings up to $½ million per year				
Pension	5.0%	Gross Earnings						**Pension**	5.0%	Gross Earnings				
NHT	2.0%	Gross Earnings						**NHT**	2.0%	Gross Earnings				
Ed Tax	2.0%	Gross Earnings - Pension - NIS						**Ed Tax**	2.0%	Gross Earnings - Pension – NIS				
Income Tax	25.0%	Gross Earnings - Pension - NIS - I/Tax relief						**Income Tax**	25.0%	Gross Earn-Pension-NIS-I/Tax relief				
Gross Earnings	**Pension**	**NHT**	**NIS**	**Ed Tax**	**Inc/Tax relief**	**Income Tax**	**Net Earnings**	**NIS & NHF**	**Ed Tax**	**Inc/Tax relief**	**Income Tax**	**Net Earnings**	**Net/Gross Earn**	
													Prev	**Current**
250,000	12,500	5,000	6,250	4,625	120,432	27,705	**193,921**	6,250	4,625	120,432	27,705	**193,921**	77.6%	77.6%
375,000	18,750	7,500	6,250	7,000	120,432	57,392	**278,108**	9,375	6,938	120,432	56,611	**275,827**	74.2%	73.6%
500,000	25,000	10,000	6,250	9,375	120,432	87,080	**362,296**	12,500	9,250	120,432	85,517	**357,733**	72.5%	71.5%
625,000	31,250	12,500	6,250	11,750	120,432	116,767	**446,483**	12,500	11,625	120,432	115,205	**441,921**	71.4%	70.7%
750,000	37,500	15,000	6,250	14,125	120,432	146,455	**530,671**	12,500	14,000	120,432	144,892	**526,108**	70.8%	70.1%
875,000	43,750	17,500	6,250	16,500	120,432	176,142	**614,858**	12,500	16,375	120,432	174,580	**610,296**	70.3%	69.7%
1,000,000	50,000	20,000	6,250	18,875	120,432	205,830	**699,046**	12,500	18,750	120,432	204,267	**694,483**	69.9%	69.4%
1,500,000	75,000	30,000	6,250	28,375	120,432	324,580	**1,035,796**	12,500	28,250	120,432	323,017	**1,031,233**	69.1%	68.7%
2,000,000	100,000	40,000	6,250	37,875	120,432	443,330	**1,372,546**	12,500	37,750	120,432	441,767	**1,367,983**	68.6%	68.4%
2,500,000	125,000	50,000	6,250	47,375	120,432	562,080	**1,709,296**	12,500	47,250	120,432	560,517	**1,704,733**	68.4%	68.2%
3,000,000	150,000	60,000	6,250	56,875	120,432	680,830	**2,046,046**	12,500	56,750	120,432	679,267	**2,041,483**	68.2%	68.0%
4,000,000	200,000	80,000	6,250	75,875	120,432	918,330	**2,719,546**	12,500	75,750	120,432	916,767	**2,714,983**	68.0%	67.9%
5,000,000	250,000	100,000	6,250	94,875	120,432	1,155,830	**3,393,046**	12,500	94,750	120,432	1,154,267	**3,388,483**	67.9%	67.8%

percent for the National Health Fund. Table 1 shows comparative data on the mix and levels of the deductions as well as net earnings with the increase in the NIS wage contribution ceiling. The data reveals that there is no impact on net earnings for persons whose incomes are J$250,000 or less per year, but there is a decline of up to 1 percent in the net earnings of persons with incomes of J$250,000 to J$500,000 per year. The decline in net earnings is less than the increase in NIS contributions because of the sequencing methodology for computation of other deductions, such as education and income tax. For example, a person with gross annual earnings of J$1,000,000 contributed J$6,250 to the NIS previously and had net earnings of J$699,046. Currently, NHF/NIS payments rise to J$12,500 (i.e., an increase of J$6,250) and net earnings fall to J$694,483 (i.e., a decrease of J$4,563). The data also show that there are relatively small declines in education tax and income tax payments (which are computed after deductions have been made for NIS and pensions).

There is also a corresponding increase in the NIS obligations of employers since they are required to make a matching contribution of 2.5 percent of the wage paid.

Impact on Out-Of-Pocket Payments of Beneficiaries

The major financial benefit of the National Health Fund is the assistance that it provides to persons suffering from a specified list of chronic diseases in paying for prescription drugs. For the majority of residents, these are out-of-pocket expenses because, according to the 2000 Jamaica Survey of Living Conditions Report, only 12 percent of the population is covered by private health insurance plans (which generally meet about 80 percent of the cost of the prescription drugs within an annual limit). To examine the likely impact of NHF assistance in reducing out-of-pocket payments, it should be noted that NHF pays the provider an agreed amount of the retail price of the item and that the beneficiary is required to pay the remain-

der of the cost. NHF payments are defined in absolute amounts rather than in percentages. Patients who currently have health insurance and are required to meet about 20 percent of the cost of the drug, are also eligible for benefits from the NHF. Under the coordination of benefits with commercial insurance carriers, NHF is always the primary carrier.

Because private health insurance plans have an annual drug expenditure ceiling, persons suffering from chronic illnesses are usually unable to obtain private coverage for the total annual doses of drugs that they need. Using the NHF along with private health insurance allows the beneficiary to increase the number of doses of the drugs for which they receive assistance.

Provider Remuneration Mechanisms

The provider remuneration mechanism has two main components: the NHF subsidy and the beneficiary co-payment. In addition to its primary objective of ensuring that the provider is paid for supplying the NHF individual benefit, the remuneration mechanism has several other key functions.

It should support measures for rational prescription and utilization of drugs, enhance efficiency in the pharmaceutical market, and contribute to the cost control and cost containment policies of the NHF. It should be noted that the NHF individual benefit system pays providers only and not beneficiaries.

In view of the mix of factors that influence the pricing of products in the pharmaceutical market (e.g., the cost of producing the active ingredients, the availability of single source or multiple source products through generics/brand name products and the profit margins of distributors and retailers) and the goals of the NHF, three subsidy system options were considered:

- *Option 1*: A fixed NHF subsidy with variable distributor (DSP) and provider selling prices and corresponding variable co-payments by beneficiaries.

- *Option 2*: A fixed NHF subsidy with fixed distributor and provider selling prices and a fixed co-payment by beneficiaries.

- *Option 3*: A variable NHF subsidy with variable distributor and provider selling prices and corresponding variable co-payments by beneficiaries.

The determination of NHF individual benefit items was considered on the basis of *specific illnesses* for which *specific treatment regimens* **only** are allowed. The treatment regimen determines the active ingredients to be used for the illness and the sources of these ingredients are then identified. More than one treatment regimen may be established in accordance with the recommended dosages depending on the medical condition of the beneficiary. The analysis presented is based on the following example:

- *Salbutamol* is the active ingredient

- Pharmacy margins on each product were assumed to be constant in all options

- Beneficiary co-payment is the difference between the retail price and the NHF subsidy

Option 1: Fixed NHF Subsidy - Variable DSP

The NHF price to the pharmacy is the same fixed dollar amount for all benefit items with the same active ingredient in the treatment regimen. The retail price, including the profit margins, will vary by product and differences are borne by the beneficiary in the co-payment.

Stakeholders	*Apo-Salvent*	*Salomol*	*Ventolin*
Distr. S.P.	$120	$180	$250
NHF subsidy	**$100**	**$100**	**$100**
Retail S.P.	$160	$240	$325
Co-payment	**$60**	**$140**	**$225**

Option 2: Fixed NHF Subsidy - Fixed DSP

The NHF price to the pharmacy is the same fixed dollar amount for all benefit items in the treatment regimen that have the same active ingredient. All products listed with the NHF will be negotiated with the manufacturers who must then accept this

price. The retail price (including margins) and the co-payment will be the same for all products.

Stakeholders	*Apo-Salvent*	*Salomol*	*Ventolin*
Distr. S.P.	$100	$100	$100
NHF subsidy	**$100**	**$100**	**$100**
Retail S.P.	$130	$130	$130
Co-payment	**$30**	**$30**	**$30**

Option 3: Variable NHF price-Variable DSP

The NHF price to the pharmacy is variable and based on the DSP for each benefit item in the treatment regimen that has the same active ingredient. The retail price (including margins) will vary by product and differences are borne by the beneficiary in the co-payment.

Stakeholders	*Apo-Salvent*	*Salomol*	*Ventolin*
Distr. S.P.	$120	$180	$250
NHF subsidy	**$120**	**$180**	**$250**
Retail S.P.	$160	$240	$325
Co-payment	**$40**	**$60**	**$75**

Stakeholder Analysis

The Table 2 analyses the implications of each option on the key stakeholders - manufacturers, the NHF, providers and beneficiaries.

Option 1 was used as the basis for the NHF individual benefit subsidy as it was considered to be the most compatible option with a market driven system and satified the NHF objectives for cost control and efficiency

Moral Hazard, Fraud and Abuse

Moral hazard, fraud and abuse, while conceptually different, increase NHF liability. Table 3 shows the measures implemented by the NHF to safeguard the system from likely abuse from the Transaction/Claims processor, beneficiaries, prescribers and providers.

Likely Impact on Private Health Insurers

There were three principal carriers in the private health insurance market in Jamaica. Two were life insurance companies with health portfolios and the third offered health insurance products only. In addition, the government and some large private companies administered their own health plans and there were some foreign companies offering health insurance products. According to the 2000 Jamaica Survey of Living Conditions Report, approximately 12 percent of the population has health insurance and a major component of these plans is the pharmaceutical benefit. Data from the life insurance companies (2001) with health portfolios indicate that 35 to 40 percent of all health insurance claims are for pharmaceuticals and data from the dedicated health insurer suggest that this figure may be closer to 70 percent.

The establishment of the National Health Fund created a potentially large influence on the health insurance market with pharmaceutical benefits because of the size of its membership, subsidy structure, and provider remuneration policy. Commercial insurers may be pushed to alter their products and coverage strategies. This adjustment could take several forms:

Table 2: Stakeholder Analysis

OPTION	MANUFACTURER	NHF	PROVIDER	BENEFICIARY
1	• Manufacturers with lower prices benefit	▪ The burden to the NHF would be limited	▪ Providers may seek to increase margins on low cost items	▪ Beneficiary burden varies with drug price
2	• Rigid system; restricted Manufacturer markup • Manufacturers with lower prices benefit most • May force lower prices from some manufacturers	▪ Easier NHF market management ▪ May conflict with Fair Trading laws	▪ Provider margins would be minimized ▪ System may be exploited	▪ Beneficiary burden largely controlled by NHF
3	• Ideal scenario for all Manufacturers	▪ Greatest burden to the NHF ▪ Difficult to plan ▪ Difficult to justify & monitor	▪ Providers would maximize margins	▪ Beneficiary burden varies with drug price but, may be less than for Option 1

- changing the focus of their marketing and membership efforts to others benefits such as visits to medical practitioners (GPs and specialists), hospitalization, dental, optical, laboratory and diagnostic tests and overseas care;

- covering drugs for illnesses not covered by NHF individual benefits;

- changing their reimbursement systems to cover the co-payment payable by patients who are covered both by the NHF and a private plan;

- coordination of benefits with the NHF to reduce the patient's out-of-pocket cash payment

- reducing drug benefits and overall premiums

The NHF is intended to complement the commercial health insurance market.

EVALUATING HEALTH POLICY OPTIONS (EHPO©)[14]

Implementation of the National Health Fund concept was critically dependent on the Evaluating Healthcare Policy Options (EHPO©) strategy and analytical computer model. The strategy includes the use of a dynamic interactive computer based analytical model that helps policymakers develop and review strategic decisions for structuring and implementing healthcare financing programs. EHPO© helps policymakers develop strategic options, which assist in formulating policy, and provides cost evaluations with socioeconomic sensitivity analyses. Cost calculations are based on medical conditions and cases to ensure that persons with multiple illnesses are accounted for. EHPO© complements other economic decision making tools. Its outputs include listings of the benefit items to be covered; treatment protocols/regimen for each illness covered; a detailed costing for each treatment protocol/regimen; selection of alternate treatment protocols/regimens to determine final costs; an annual operating budget estimate; and five-year financial projections with annual balance sheets, income and cash flow statements.

An analysis of variables is used to determine the sensitivity of the strategy proposed to various political, economic, social and financial factors regarding the financial sensitivity of the plan to changes in the prevalence of each illness; the costs of inputs required (e.g., pharmaceuticals, laboratory and diagnostic tests, other supplies and secondary care), and the priority given to the treatment of each illness and/or category of chronic disease.

Based on the parameters established by government policies, the proposal for the National Health Fund was developed as follows:

- A list of chronic diseases was obtained from the Ministry of Health prioritized in order of importance with respect to maintaining and improving the healthcare provided to the population.

- For each illness, the benefit categories (pharmaceuticals, laboratory and diagnostic tests, other supplies, secondary care) required for its cure and/or management were specified along with prevalence estimates based on the epidemiological profile of the population.

- Treatment options were then inferred from the information provided because treatment protocols do not exist. These options present the various combinations of medication and services that may be used for the cure and/or management of each illness.

- The Ministry of Health and other relevant regulatory bodies were asked to review the laboratory and diagnostic tests, pharmaceuticals, other supplies and secondary care proposed to ensure the accuracy of treatment methodologies and compliance with registration standards. Changes were made as appropriate.

- Cost estimates were obtained for each of the pharmaceuticals, laboratory and diagnostic tests, other supplies and secondary care pro-

[14] Evaluating Health Policy Options, EHPO, is copyrighted – (Raphael D. Barrett, 2000).

Table 3: Likely Abuse and Related Safeguard Measures

ENTITY	LIKELY ABUSE	NHF SAFEGUARD
Transaction Processor	▪ Generating false transactions	▪ NHF only pays for accepted claims
Beneficiary	▪ Falsifying eligibility: false certification of illness or age, etc., to secure the drug benefit for someone else ▪ Collusion with prescriber/provider: to make false claims for drugs or for nonmedical items or for claiming from two insurers	▪ Beneficiary utilization monitoring and limits with illness audits ▪ Beneficiary utilization monitoring and limits with prescription and transaction audits
Prescriber	▪ Unnecessary prescriptions/collusion: Prescribing drugs which are not harmful but not necessary for treatment and collusion with pharmacy to share in reimbursement ▪ Excessive prescription: prescribing more items than appropriate knowing that NHF will cover the bulk of the cost or that the patient is covered by two insurers ▪ Collusion with patient: certifying someone as ill so that the relevant drugs can be obtained for another	▪ NHF treatment regimen specify benefit items by drug and strength ▪ NHF treatment options indicate frequency and regime allowing utilization to be monitored ▪ Beneficiary utilization monitoring and limits with illness audits.
Pharmacy Provider	▪ Product switching: billing NHF for expensive brand while dispensing a cheaper equivalent ▪ Double billing: submitting the same bill twice with mirror alterations or the same bill sent electronically and on paper ▪ Falsifying claim: billing for services not rendered or billing for fictitious patients ▪ Collusion with beneficiary/prescriber: making fictitious claims or wavering patient fee if is covered by different insurers and sending the claims to the different insurers ▪ Borrowed cards: knowingly accepting and dispensing to persons with borrowed cards ▪ Half-loading: providing medicines at less than full strength while charging for the full amount	▪ NHF pays the same rate regardless of brand; audit of prescriptions and beneficiaries ▪ Transaction audit trail and IVR for manual claims; Beneficiary utilization control ▪ Beneficiary utilization limits and monitoring ▪ Beneficiary utilization monitoring and limits with prescription and transaction audits ▪ NHF risk is total population ▪ Beneficiary complaints and MOH investigations

posed for use in calculating unit costs for each treatment regimen.

- If a number of alternative treatment options are allowed for each illness, the highest cost treatment along with the prevalence estimate was used to estimate the financial liability/risk for that illness.

- The estimates of financial liability/risk for each treatment were then summed to provide estimates of the financial liability/risk for each illness by benefit category. The estimates of financial liability/risk for each illness were then summed to provide estimates of the financial liability/risk for each chronic disease.

- Reports were then prepared showing the estimated prevalence and estimated financial liability/risk for each chronic disease ranked in order of the prevalence or financial liability/risk.

EHPO© was used as the analytical framework tool for the development and implementation of the National Health Fund and provides a framework for evaluating the Strategic Financing Implications of Social Health Insurance

The proposal for the National Health Insurance Plan raised enough concerns regarding its management and financing that the Ministry of Health was instructed to review the proposal and address them. A different and innovative approach to the problem was then taken. Options for revenue sources were developed and the government was asked to make decisions on these with the proviso of a minimum level of funding required for viability and that any financing put in place would be additional funding for healthcare. After the government decision on the funding level was obtained, the strategy employed was to determine a

best spend/use of the funds dedicated. It was agreed within the MOH that the goal should be *to reduce the burden on the healthcare sector*. EHPO© was used to analyze that burden and it was determined that the greatest burden was secondary care. Within secondary care, it was determined that chronic illnesses were the greatest source of burden. The next step was to identify the most significant contributors. This yielded the identification of 38 chronic illnesses, which were analyzed using EHPO©. Projections of the annual cost of each chronic illness in the categories of secondary care, laboratory and diagnostic tests, and pharmaceuticals were developed by using the estimates of prevalence.

Given the resource constraint identified by the government, MOH management was able to use the results of the EHPO© analysis to quickly arrive at a feasible strategy for using the appropriated funds. This included allocating funds for education activities as well as direct patient assistance.

EHPO© assists Policymakers determine their optimum Benefit Package given the economic constraints and the desired social goals

The 38 chronic illnesses identified for analysis were evaluated using EHPO©. Estimates of prevalence for each illness were obtained with the assistance of the Epidemiology Unit of the Ministry of Health. A panel of medical experts was assembled to review each illness and determine treatment protocols and/or regimens that provided the data required to assess secondary care, laboratory and diagnostic tests as well as pharmaceutical requirements. These requirements were then costed using EHPO© and projections made regarding the financial and economic risk associated with each illness. EHPO© allowed for a presentation to Ministry of Health management of the estimated annual cost of each illness for each type of care and, thus, the financial implications of coverage. Agreement was obtained within the MOH that 14 chronic illnesses would be covered for pharmaceutical benefits in direct assistance to patients. The covered chronic illnesses are hypertension, diabetes, breast cancer, prostate cancer, glaucoma, arthritis, asthma, high cholesterol, rheumatic heart disease, major depression, epilepsy, psychosis, ischemia and vascular disease.

EHPO© assists policymakers evaluate the cost of each component in a Benefit Package and determine the level of financial subsidy affordable

Once there was agreement on the chronic illnesses that would be covered under NHF individual benefits for pharmaceuticals only, EHPO© was used to determine the benefit structure. Treatment regimens were finalized for each illness in two categories of treatment condition: mild and severe. The drugs recommended for use (along with dosages) were obtained and all possible treatment options computed and costed using EHPO©. The model provided the ability to evaluate various cost options for each treatment using the best–available-price, as well as the most expensive and the average cost. Given the strategy of requiring beneficiaries to make a co-payment, the best-available-price was used in the computations to determine NHF subsidy levels. The subsidy level for each drug was determined after evaluating the financial risk and liability of each strategy.

Financial risk is evaluated as the cost of the most expensive treatment regimen using drugs with the best available price and utilization rates of 100 percent of the prevalent population. The prevalent population was determined using the epidemiologic data. The estimates were validated with population estimates from the Survey of Living Conditions.

Financial liability is evaluated as the cost of the most expensive treatment regimen using drugs with the best available price and utilization by the active population. The Jamaica Lifestyle Survey (2001) was used to estimate the active population. In this survey, 24 percent of the prevalent population is reported as actively seeking healthcare, 36 percent are aware of their condition but not seeking care, and 40 percent are unaware of their condition.

EHPO© allows Policymakers to evaluate various subsidy strategies and determine the one that is most suitable

Once the NHF implementation date was established, the model was used to revise the subsidy strategy computations using updated retail selling

prices for the drugs to be covered. This allowed for a review of the subsidy levels based on the most current information to ensure their relevance. The initial NHF subsidy strategy used was to give priority to the subsidy levels for each illness based on its "threat to life," (for example, subsidy levels for arthritis were given a lower priority than those for diabetes). In finalizing the strategy for NHF individual benefits, it was decided to alter the subsidy strategy so that similar rates of subsidy would apply to all drugs based on the estimated annual cost of the treatment using the best-available-price for the drug (that is, the same subsidy would apply to all drugs with an annual treatment cost of, say, $1,000). EHPO© was used to analyze the feasible options for this strategy resulting in a series of subsidy levels ranging from 25 to 75 percent of estimated patient drug cost using the best-available-price.

The Appendix provides samples of the reports produced by EHPO©.

Implementation Experience

ENROLLMENT

Enrollment for NHF individual benefits began in May 2003 along with the registration of pharmacy providers. Beneficiaries are required to have their application certified by a registered medical practitioner for their chronic illness. Applications were distributed nationally. They were initially accepted at voter registration centers in order to take advantage of the centrally linked registration capability of the voter registration centers and to avoid placing an additional burden on the health system.

Application forms are processed by validating the beneficiary identification and the medical practitioner's registration. The data is then added to the beneficiary database on the NHF Central Data Processing Module. This is used to update the transaction processing database. Data for the beneficiary card is generated from the transaction processing database with which it interacts. Cards are distributed to beneficiaries through the center at which the application was lodged.

Forty thousand persons were enrolled during the first six months, representing over 20 percent of the active population, that is, those seeking care. The experience with the voter registration centers has not been as good as desired due to administrative problems. As a result, the National Health Fund has taken over full administration of the system.

BENEFITS UTILIZATION

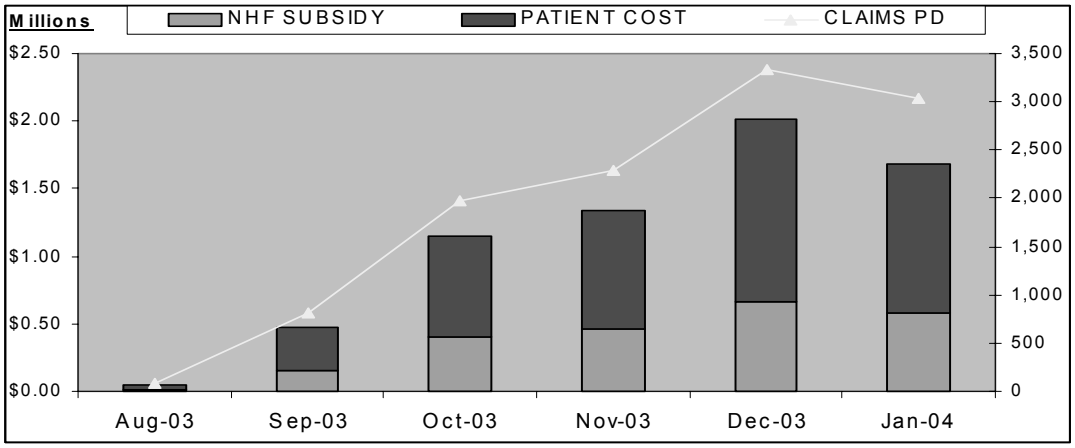
Payment for NHF individual benefit claims began in August 2003. Figure 5 illustrates the pattern of utilization for the first six months. The NHF subsidy averaged 34 percent of the patient cost.

RELATIONSHIP WITH SERVICE PROVIDERS

Most providers' claims are submitted electronically and are adjudicated on-line in real time by the transaction processor. Manual claims are submitted to the National Health Fund, which forwards them to the transaction processor for adjudication. All claims adjudicated and accepted each week are paid the following Thursday. Providers have the option of receiving payment by check or by bank transfer.

A Help Desk at the transaction processor and a Customer Service desk at the National Health

Figure 5
NHF INDIVIDUAL BENEFITS CLAIMS EXPERIENCE: AUG2003 – JAN2004



Fund have been set up to assist providers. In addition, the NHF is establishing an Intranet to be operated by the transaction processor to allow healthcare providers access to information on the NHF, including benefits offered, their NHF account status (i.e. claims paid/rejected), and links to manufacturers and other websites for detailed information on drugs and other products and services. To date, over 50 percent of private pharmacies have registered as participating providers.

TRANSACTION PROCESSING SYSTEM

The transaction processing system is the heart of the NHF individual benefits system. It provides the communications interface with providers of benefits allowing them to have their claims for payment adjudicated on-line in real-time.

The system validates the beneficiary, provider, beneficiary card, benefit item and beneficiary utilization, thus allowing the provider to know whether their claim has been accepted and for what value before the benefit is provided.

The transaction system also manages the beneficiary's benefit record by keeping data on the benefits used.

In this way, the beneficiary's utilization of a benefit item is tracked and used to manage abuse. It also allows for customization of benefits when necessary, as in the case of beneficiaries who need special drugs that are not listed by the National Health Fund. Furthermore, the database is expected to be a useful source of information for epidemiological studies. The system produces a number of useful reports that allow for ready payment of providers, monitoring benefits utilization and patient costs that are useful in managing subsidy levels.

Lessons Learned

In its coverage of pharmaceutical benefits for targeted groups, the National Health Fund is broadly similar to plans in some developed countries, such as Australia's Pharmaceutical Benefits Scheme and Pharmacare in British Columbia (Canada), as well as in some developing countries, such as the Barbados Drug Scheme and the Chronic Disease Assistance Plan in Trinidad and Tobago. However, it is unlike the revolving drug plans established under the Bamako Initiative in several sub-Saharan countries. The NHF also differs significantly from the conventional pharmaceutical benefits programs in terms of its inclusion of and emphasis on institutional benefits (which account for about 30 percent of its resources).

Although it is still too early to evaluate the operational performance of the National Health Fund, there seem to be some clear lessons emerging from the conceptual, design and development stages for future policy proposals and for other countries searching for new public financing mechanisms. These lessons are grouped and discussed under the following broad headings: policy design and decision-making, sources and control of financing, role of consultation, and implementation.

POLICY DESIGN AND DECISION-MAKING

Attention to the Macroeconomic Context

Macroeconomic conditions exert a heavy influence over policy decisions. Policymakers (especially ministers of finance), business firms and individuals pay close attention to *affordability* issues no matter how attractive or "investible" (i.e., claims of providing value for money) the design of the health plans. Often, health plans offer medium- to long-term benefits, while the focus of political parties in power, finance officials and payers are more short term (especially if they cannot maximize the benefits immediately). Focus on the short term tends to be more acute when macroeconomic conditions are difficult. For the National Health Fund, macroeconomic constraints mean that continuous attention is required when devising and revising funding mechanisms that will yield adequate revenues to support individual and institutional beneficiaries without imposing additional pressures on fiscal and inflationary targets or on the contribution levels of businesses and workers.

An Interactive Policy Model

Policymakers are more likely to be responsive if their concerns and queries can be quickly integrated into an interactive model and the implications are presented to them in a short space of time. This reduces delays for "additional research" as well as chances that the policy proposal will be removed from the agenda indefinitely. Development of an interactive model (like EPHO© in the NHF) requires a good, though not exhaustive database (epidemiological, treatment, costs, remuneration levels and financing), as well as keen anticipatory skills to be prepared for queries and suggestions from policymakers and other stakeholders.

Key Role for Public Stewardship and Control in Public-Private Collaborative Programs

For efficiency and sustainability, public-private initiatives in the provision and financing of health services require strong stewardship and control capabilities by the public agencies. In health financing, a single dedicated public administrative agency is likely to be more effective and accountable where a national pool of beneficiaries is contemplated and there are few risk-averse private firms as possible alternatives (WHO, 2000). When public funds are being used to purchase health services from private providers, contracts must be clearly specified with strict guidelines governing the access to care, the volume and quality of services provided and arrangements for remuneration and payment. In the NHF, a critical design issue was how to treat the two segments within the private pharmaceutical industry that would have a severe impact on the objectives of the NHF. The

first segment is the powerful oligopoly of multinational drug manufacturers/distributors whose pricing and market control strategies can result in price increases, thereby eroding the NHF benefit to patients. This is a particularly sensitive issue in the case of life supporting drugs for which demand may be considered to be price inelastic. The second segment is the pharmacy retailers who engage in collusive and other opportunistic practices. The NHF sought to limit the negative impact of these segments through the use of protocols to determine the drugs that would be covered –(the best available price strategy)– and the amount of the subsidy, as well as by upgrading public pharmacies (stocks, service levels, on-line transaction capabilities) to make them an effective alternative source of pharmaceuticals for patients. These initial actions may not be sufficient and further review may suggest the need for direct and stronger regulations in the pharmaceutical industry to ensure that the NHF's objectives are accomplished.

Focus on Burden of Disease

Health plans to treat diseases and disorders that afflict many people (rather than a few) are more likely to receive support from the public and from policymakers. In the NHF, attention to drug benefits for chronic diseases meant that, from the onset, approximately one in four residents could receive almost immediate benefits because of the prevalence of the conditions, the prescription of pharmaceuticals in about 90 percent of visits for care, and the availability of known and widely-used interventions to treat the conditions. Also, the specific inclusion of a component to provide dedicated resources to health promotion and disease prevention (as part of the institutional benefits) is an innovation that ensures practical support for activities that all groups claim as necessary but remain neglected or are starved for funds as resources are allocated to curative and institutional services.

Equity, and Direct vs. Characteristic Targeting

In countries with high rates of poverty but inadequate institutions and mechanisms to identify the poor systematically and continuously, direct targeting in health programs becomes quite problematic. Waiting for appropriate targeting systems to be developed by other agencies or trying to develop one's own arrangements may cause lengthy delays in implementation. The National Health Fund dealt with these issues by treating the non-poor and poor as part of the same target beneficiary pool. Survey data and health officials indicate that the poor suffer as much from chronic diseases as the rich, but are less likely to seek treatment or are only able to pay for part of their prescription/treatment. The NHF enhances their access to prescription drugs by reducing out of pocket payments (for those who can afford to make a partial payment) and improving pharmaceutical services at public facilities where user fees are low and arrangements can be made for exemptions. Given the practical difficulties and high costs of direct targeting, a strong case can be made for achieving the objectives of equity through characteristic targeting and channeling resources to services and facilities more frequently used by the poor.

Key Role of Policy Advocate

Getting and keeping a health policy initiative on the national agenda at a time when the government was (is) absorbed in fighting macroeconomic and other social emergencies required the support of strong advocates. In this respect, both the Minister of Health and the Prime Minister displayed their commitment to the plan by using opportunities in public as well as at the highest policymaking forums to convince stakeholders and other policymakers of the value of the plan, despite intense competition for attention and resources from other programs. This high-level support ensured that resources for design and development activities were available and instilled some measure of confidence in the technical team charged with these activities.

SOURCES AND CONTROL OF FINANCING

Levy on Consumption not Income

In countries where the tax burden on formal sector workers and business firms are viewed as onerous and where the informal sector is quite large, raising revenue through consumption rather than income levies is more effective and less painful. Additionally, where levels of consumption taxes

are also deemed to be onerous, the targeting of products becomes critical.[15] The NHF sought to deal with these concerns by focusing on "sin taxes" on tobacco and alcohol products where consumption levels are high, the elasticity of demand tends to be low or the likely decline in demand is temporary, and where general public disaffection is likely to be minimal or manageable. The government succeeded in placing a levy placed on tobacco products during the first phase. It also sought to ensure that the proceeds from the tax were earmarked and did not become part of general revenue for the government.

Diversification of Sources of Financing

To ensure the adequacy and sustainability of the national health program, it is better to have more than one source of funding. (In addition, liability in terms of expected costs of benefits must be known and must not exceed revenue.) Additional levies on income are always problematic. However, the NHF recognized a window of opportunity in the existing structure of national insurance (social security) contributions. The ceiling on employees' income for assessing contributions had remained unchanged for several years and was widely viewed as too low. Recommendations to lift the ceiling or increase the contribution rate to provide more realistic benefits were under discussion. The NHF proposed lifting the ceiling while keeping the contribution rate fixed. In this way only persons in the higher income brackets (with greater ability to pay) would be affected. This would lead to a major increase in income from contributions to the national insurance agency, a part of which could be allocated to the NHF. This double financing strategy –(triple, when one includes investment of reserve funds) of the NHF ensures a more balanced portfolio so that if tax revenues are declining, stagnant or rising too slowly, this will be offset by social security revenues where income levels are more likely to rise over time.

[15] Earlier attempts by the government to raise revenues through higher taxes on gasoline and levies on consumption of utilities (light and power and telecommunications) led to vociferous and widespread public protests.

Managed Fees and Built-in Cost Sharing Provisions

The opportunities for extra profits or market share through a larger customer base as well as the amount and mechanisms for payment provide incentives or disincentives that influence the participation of private providers. With a resource base, payments have to be carefully determined and rigorously monitored. This becomes more difficult when dealing with private providers operating in a free market. The NHF sought to address these issues by operating a managed fee for service system with built-in cost sharing (i.e., fixed fees would be paid based on a selected product list). Beneficiaries would then pay the difference between the NHF remuneration and the price charged by the pharmacy. This serves as an incentive to be more deliberate in choosing where one gets a prescription filled.

CONSULTATION AND THE DECISION-MAKING PROCESS

Implementation of the NHF after over 30 years of trying is attributable, in no small part, to the processes of consultation and consensus building employed. Implementing National Health Financing is immensely complex as it requires the agreement and support of many facets of society–political, economic, social and technical. The failure to obtain the involvement of any one of these interests would severely damage the likelihood of success for both the concept and the operational program.

In the case of the NHF, it was first necessary to obtain agreement and consensus within the Ministry of Health for the concept and the program. This was essential, particularly as it became apparent that it did not exist when the previously National Health Insurance Plan was proposed. It then became necessary to obtain the support of other governmental agencies, in particular the Ministry of Finance and Planning: a vital step in order to obtain political and economic approval. This was achieved by addressing their concerns regarding previous proposals and demonstrating how their interests were being served both conceptually and practically. With the agreement and support of these agencies, options were then formulated and presented to the political leadership

for their decision. It was critical at this stage that *options* (with their supporting analysis) rather than solution to the problem were presented because this gave policymakers the opportunity to participate in the decision-making process and gain ownership and accept responsibility for the program (Robinson, 2003). National Health Financing is too far-reaching a program –politically, economically and socially– to be achieved without the direct support and commitment of high-level political leaders. Giving them options to consider allows them to engage in the process. Of course, management of this process in both the development and presentation of options is critical to its success.

Also of significant importance is the involvement of private and professional interests who also wield social and political influence. Health is such an sensitive issue that achieving a consensus with healthcare providers and the health insurance industry is critical if public opinion is not to be swayed against the concept before it has a chance to reach implementation. The significance of this challenge is that public opinion will influence the public sector and the political leadership. Furthermore, their technical input is also important, particularly when the program requires the involvement of private and public providers as is the case with the National Health Fund. Involving both parties in the design and development of the concept by requesting their inputs, consulting with them and keeping them informed of progress helps to reduce professional rivalries and jealousies and keep discussions on a more objective basis. Management of this process is critical to its success as consensus building is paramount.

IMPLEMENTATION

Secure Adequate Resources, a Dedicated Team and a Change-Oriented Manager

The range of activities involved in designing and implementing a national program like the National Health Fund requires adequate financial resources as well as a dedicated and knowledgeable staff. Strategically, it also requires a full-time change-oriented team leader who can gain direct access to policymakers rather than going through the normal bureaucratic process (Robinson, 2003). Too often, good proposals fall by the wayside or take a long time to get off the ground because development resources are not made available in adequate amounts and in a timely fashion. Additionally, proposals suffer as ministries seek to add development tasks to the existing portfolios of its staff or leave these tasks in the hands of short-term consultant teams.

CONCLUDING COMMENTS

The NHF is not a health-financing instrument only. It is also a critical management tool to encourage and reward higher levels of efficiency in the provision of healthcare services. In this way, the NHF becomes an effective means of securing the health of the population at present and for the future. These broader goals should be borne in mind in fine-tuning the operations of the NHF.

By design, the NHF makes provisions for ongoing monitoring and review through field studies and in-house data analyses to pinpoint concerns and enhance responsiveness in its operations. There are early warning systems and indicators for four (4) key areas of primary concern to policymakers, beneficiaries and the NHF: coverage of the target population, equity in access, quality of care and financial sustainability. Operational plans are already in place to increase enrolment in the target population, especially persons in rural areas, to enhance knowledge of chronic illness in the population as well as update prescribers and providers on interfacing with the NHF. In addition, steps have been taken for continual review and adjustment of the subsidy to further reduce out-of-pocket payments, to expand the drug benefit list so that patient choice is increased and to develop a long term strategic plan to secure sustainability of the NHF.

Introduction of the NHF will also elicit responses from the pharmaceutical industry and prescribers that could have serious implications for policymakers. Some of these have been explored in this paper and highlight the necessity to monitor this behaviour. It is widely accepted that the prescription drug market is imperfect, driven by patient need and not choice, hence policymakers need to be wary of the ability of manufacturers to increase prices thereby negating the benefit of the subsi-

dies provided for beneficiaries. Similarly, retail pharmacies may regard the introduction of subsidies as an increase in the purchasing power of beneficiaries and seek to introduce charges or increase prices to share in this windfall. Another issue for consideration is the behaviour of prescribers and their impact on the rational use of drugs. The EHPO tool provides the ability to analyse and measure the impact of such behaviour on the subsidy programme thereby assisting policy-makers in their choice of effective response to maximise the benefit to beneficiaries.

Appendix
EHPO© SAMPLE REPORT – NHF TREATMENT OPTIONS

Table 1 NHF Individual Benefits – Treatment cost per year at 30% retail markup

PATIENT COST	NHF SUBSIDY	NHF PAYS	Illness	Severity	Product A	PRODUCT B	PRODUCT C
$20,061.60	36%	$7,288.32	Asthma	common	Salbutamol Inhaler	Beclomethasone Inhaler	Prednisolone tablets
$20,280.00	40%	$8,112.00	Arthritis	severe	Prednisolone Syrup		
$20,376.72	38%	$7,743.53	Hypertension	mild	Prazosin Tablets	Diltiazem Tablets	
$20,498.40	50%	$10,249.20	Asthma<5yrs	common	Fluticasone Inhaler		
$20,670.00	39%	$8,105.76	Asthma<5yrs	severe	Salbutamol Inhaler	Beclomethasone Inhaler	
$20,685.60	40%	$8,274.24	Arthritis<10yrs	mild	Diclofenac suspension		
$20,807.28	33%	$6,830.46	Hypertension	severe	Captopril Tablets	Diltiazem Tablets	
$21,060.00	40%	$8,424.00	Asthma<5yrs	mild	Theophylline syrup		
$21,621.60	40%	$8,648.64	Hypertension	severe	Losartan Tablets		
$22,120.80	49%	$10,735.92	Asthma<5yrs	mild	Salbutamol Inhaler	Fluticasone Inhaler	
$22,479.60	38%	$8,648.64	Asthma<5yrs	severe	Salbutamol Syrup	Beclomethasone Inhaler	
$22,800.96	35%	$7,980.34	Psychosis	severe	Thioridazine Tablets		
$23,091.12	38%	$8,693.57	Hypertension	common	Prazosin Tablets	Diltiazem Tablets	
$23,400.00	50%	$11,700.00	Psychosis	common	Fluphenazine Injection		
$23,871.12	43%	$10,233.60	Asthma	mild	Salbutamol Tablets	Beclomethasone Inhaler	Theophylline Tablets SR
$24,336.00	40%	$9,734.40	Asthma<5yrs	mild	Prednisolone Syrup		
$24,471.72	34%	$8,398.03	Psychosis	severe	Thioridazine Tablets	Benztropine Tablets	
$24,654.24	33%	$8,210.59	Hypertension	severe	Enalapril Tablets	Diltiazem Tablets	
$24,921.00	50%	$12,460.50	Epilepsy-child<12yrs	common	Sodium Valproate oral solution		
$25,396.80	40%	$10,158.72	Asthma	severe	Beclomethasone Inhaler		
$25,599.60	75%	$19,199.70	Diabetes T1	severe	Insulin(regular-Shortacting)		
$25,599.60	75%	$19,199.70	Diabetes T1	severe	Insulin(Mixed 70/30)		
$25,599.60	75%	$19,199.70	Diabetes T1	severe	Insulin(zinc-Longacting)		
$25,740.00	45%	$11,583.00	High Cholesterol	severe	Gemfibrozil tablets		
$26,161.20	42%	$10,968.36	Asthma	mild	Salbutamol Inhaler	Beclomethasone Inhaler	Theophylline Tablets SR
$26,282.88	30%	$7,884.86	Ischaemic	severe	Digoxin Tablets		
$26,669.76	39%	$10,476.96	Asthma	severe	Salbutamol Tablets	Beclomethasone Inhaler	
$27,580.80	40%	$11,032.32	Arthritis<10yrs	severe	Diclofenac suspension		
$27,986.40	35%	$9,795.24	High Cholesterol	severe	Simvastatin tablets		

$28,641.60	39%	$11,132.16	Asthma	severe	Salbutamol Inhaler	Beclomethasone Inhaler	
$28,669.68	30%	$8,481.56	Ischaemic	severe	Captopril Tablets	Furosemide Tablets	Digoxin Tablets
$28,753.92	35%	$10,063.87	Ischaemic	severe	Diltiazem Tablets	Isorbide dinitrate	
$29,074.50	50%	$14,537.25	Epilepsy-child<12yrs	severe	Sodium Valproate oral solution		
$30,157.92	45%	$13,571.06	Major Depression	severe	Fluoxetine Tablets		
$30,747.60	50%	$15,373.80	Asthma<5yrs	severe	Fluticasone Inhaler		
$30,788.16	38%	$11,712.48	Asthma	severe	Salbutamol Tablets	Beclomethasone Inhaler	Prednisolone tablets
$31,730.40	38%	$12,058.80	Asthma	severe	Salbutamol Inhaler	Beclomethasone Inhaler	Prednisolone tablets
$32,307.60	39%	$12,760.80	Asthma<5yrs	mild	Salbutamol Inhaler	Beclomethasone Inhaler	Prednisolone Syrup
$32,510.40	42%	$13,508.04	Asthma	common	Salbutamol Inhaler	Beclomethasone Inhaler	Theophylline Tablets SR
$32,600.88	45%	$14,670.40	Arthritis	severe	Hydroxychloroquine sulphate		
$33,206.47	45%	$14,877.95	Diabetes T2	common	Acarbose Tablets	Glibenclamide Tablets	
$33,259.20	39%	$13,046.28	Asthma<5yrs	mild	Salbutamol Syrup	Beclomethasone Inhaler	Prednisolone Syrup
$34,098.48	35%	$11,934.47	High Cholesterol	severe	Pravastatin tablets		
$34,132.80	75%	$25,599.60	Diabetes T1	common	Insulin(regular-Shortacting)	Insulin(zinc-Longacting)	
$34,132.80	75%	$25,599.60	Diabetes T1	common	Insulin(regular-Shortacting)	Insulin(Mixed 70/30)	
$34,566.48	44%	$15,161.80	Arthritis	mild	Diclofenac	Hydroxychloroquine sulphate	
$34,894.08	44%	$15,400.48	Diabetes T2	common	Acarbose Tablets	Gliclazide Tablets	
$34,951.18	44%	$15,314.13	Diabetes T2	common	Metformin Tablets	Acarbose Tablets	
$36,060.96	43%	$15,337.92	Asthma	common	Salbutamol Tablets	Beclomethasone Inhaler	Theophylline Tablets SR
$37,093.68	43%	$16,018.24	Arthritis	mild	Ibuprofen Tablets	Hydroxychloroquine sulphate	
$38,064.00	50%	$19,032.00	Epilepsy	common	Sodium Valproate Capsules		
$38,656.80	40%	$15,300.48	Asthma<5yrs	common	Salbutamol Inhaler	Beclomethasone Inhaler	Prednisolone Syrup
$40,466.40	39%	$15,843.36	Asthma<5yrs	common	Salbutamol Syrup	Beclomethasone Inhaler	Prednisolone Syrup
$40,996.80	50%	$20,498.40	Asthma	mild	Fluticasone Inhaler		

Table 2 NHF Net Benefit Item Analysis

ILLNESS	DRUG	LABEL	PRSNTN	QTY	Pkg Prc	DistUntPrc	NHF pays	NHF%
RhFever	PENICILLIN V POTASSIUM	APO-PEN VK TAB 300mg	TAB/CAP	100	$260.00	$2.600	$0.84	32.3%
Arthritis	HYDROXYCHLOROQUINE SULFATE	PLAQUENIL TAB 200mg	TAB/CAP	100	$3,483.00	$34.830	$20.38	58.5%
Cancer	CYCLOPHOSPHAMIDE	ENDOXAN-ASTA TAB 50mg	TAB/CAP	100	$1,248.34	$12.483	$21.45	171.8%
Cancer	CYCLOPHOSPHAMIDE	ENDOXAN-ASTA TAB 50mg	TAB/CAP	100	$3,300.00	$33.000	$21.45	65.0%
Cancer	CYCLOPHOSPHAMIDE	PROCYTOX TAB 50mg	TAB/CAP	100	$4,147.42	$41.474	$21.45	51.7%
Cancer	CYCLOPHOSPHAMIDE	ENDOXAN-ASTA INJ 1GM	INJ	1	$543.57	$543.570	$409.50	75.3%
Cancer	CYCLOPHOSPHAMIDE	ENDOXAN-ASTA INJ 1GM	INJ	1	$630.00	$630.000	$409.50	65.0%
Cancer	CYCLOPHOSPHAMIDE	ENDOXAN-ASTA INJ 500mg	INJ	1	$413.00	$413.000	$204.75	49.6%
Cancer	FLUOROURACIL	FLUOROURACIL-EBW INJ1GM	INJ	1	$380.00	$380.000	$247.00	65.0%
Cancer	FLUOROURACIL	FLUOROURACIL-EBW INJ500mg	INJ	1	$220.00	$220.000	$123.50	56.1%
Cancer	FLUOROURACIL	FLUOROURACIL-EBW INJ250mg	INJ	1	$125.00	$125.000	$61.75	49.4%
Cancer	FLUOROURACIL	FLUOROURACIL INJ250mg/5ml	INJ	1	$131.05	$131.050	$61.75	47.1%
Arthritis/Cancer	METHOTREXATE	METHOTREXATE-LAS TAB2.5mg	TAB/CAP	20	$82.84	$4.142	$3.66	88.3%
Arthritis/Cancer	METHOTREXATE	METHOTREX SOD-EBW TAB10mg	TAB/CAP	50	$2,250.00	$45.000	$14.63	32.5%
Arthritis/Cancer	METHOTREXATE	METHOTREXATE-LAS TAB2.5mg	TAB/CAP	20	$346.91	$17.346	$3.66	21.1%
Arthritis/Cancer	METHOTREXATE	METHOTREX-EBW TAB 2.5mg	TAB/CAP	50	$1,450.00	$29.000	$3.66	12.6%
Arthritis/Cancer	METHOTREXATE	METHOTREXATE-LDL TAB2.5mg	TAB/CAP	100	$5,624.05	$56.241	$3.66	6.5%
Arthritis/Cancer	METHOTREXATE SODIUM	METHOTREX-EBW INJ1GM/10ml	INJ	1	$3,300.00	$3,300.000	$1,072.50	32.5%
Arthritis/Cancer	METHOTREXATE SODIUM	METHOTREX-LDL INJ50mg/2ml	INJ	1	$964.10	$964.100	$53.63	5.6%
Cancer	CYPROTERONE ACETATE	ANDROCUR TAB 50mg	TAB/CAP	50	$3,003.00	$60.060	$40.54	67.5%
Cancer	CYPROTERONE ACETATE	ANDROCUR TAB 50mg	TAB/CAP	50	$3,118.00	$62.360	$40.54	65.0%
Cancer	CYPROTERONE ACETATE	ANDROCUR TAB 50mg	TAB/CAP	50	$3,319.73	$66.395	$40.54	61.1%
Cancer	CYPROTERONE ACETATE	ANDROCUR TAB 10mg	TAB/CAP	15	$820.00	$54.667	$8.11	14.8%
Cancer	CYPROTERONE ACETATE	ANDROCUR TAB 10mg	TAB/CAP	15	$842.94	$56.196	$8.11	14.4%
Cancer	TAMOXIFEN CITRATE	ZITAZONIUM TAB 10mg	TAB/CAP	250	$865.72	$3.463	$2.08	60.2%
Cancer	TAMOXIFEN CITRATE	ZITAZONIUM TAB 10mg	TAB/CAP	250	$1,334.60	$5.338	$2.08	39.0%
Cancer	TAMOXIFEN CITRATE	APO-TAMOX TAB 10mg	TAB/CAP	60	$399.00	$6.650	$2.08	31.3%
Cancer	TAMOXIFEN CITRATE	APO-TAMOX TAB 20mg	TAB/CAP	100	$1,430.00	$14.300	$4.17	29.1%
Cancer	TAMOXIFEN CITRATE	APO-TAMOX TAB 10mg	TAB/CAP	100	$715.00	$7.150	$2.08	29.1%
Cancer	TAMOXIFEN CITRATE	APO-TAMOX TAB 20mg	TAB/CAP	30	$476.00	$15.867	$4.17	26.3%
Cancer	TAMOXIFEN CITRATE	ZITAZONIUM TAB 10mg	TAB/CAP	30	$248.90	$8.297	$2.08	25.1%
Cancer	TAMOXIFEN CITRATE	TAMOXIFEN-EBW TAB 20mg	TAB/CAP	20	$395.33	$19.767	$4.17	21.1%
Cancer	TAMOXIFEN CITRATE	NOLVADEX-D TAB 20mg	TAB/CAP	30	$987.23	$32.908	$4.17	12.7%
Cancer	TAMOXIFEN CITRATE	NOLVADEX-D TAB 20mg	TAB/CAP	30	$1,069.99	$35.666	$4.17	11.7%
Cancer	TAMOXIFEN CITRATE	NOLVADEX TAB 10mg	TAB/CAP	30	$579.64	$19.321	$2.08	10.8%
Cancer	TAMOXIFEN CITRATE	NOLVADEX TAB 10mg	TAB/CAP	30	$592.87	$19.762	$2.08	10.5%
Cancer	LETROZOLE	FEMARA TAB 2.5mg	TAB/CAP	30	$7,715.00	$257.167	$167.16	65.0%

Cancer	LETROZOLE	FEMARA TAB 2.5mg	TAB/CAP	30	$8,370.00	$279.000	$167.16	59.9%
Cancer	DIETHYLSTILBOESTROL DIPHOSPHATE	HONVAN TAB 120mg	TAB/CAP	100	$4,170.00	$41.700	$24.40	58.5%
Arthritis/Asthma/RhFever	PREDNISOLONE	PREDNISOLONE-FP TAB 5mg	TAB/CAP	500	$827.30	$1.655	$0.64	38.9%
Arthritis/Asthma/RhFever	PREDNISOLONE	PRELONE SYP 15mg/5ml	LIQ	1	$520.00	$520.000	$270.40	52.0%
Arthritis/Asthma/RhFever	PREDNISOLONE	PRELONE SYP 15mg/5ml	LIQ	1	$380.00	$380.000	$135.20	35.6%
Diabetes	INSULIN REGULAR (HUMAN)	NOVOLIN R INJ U-100	INJ	1	$277.06	$277.060	$533.30	192.5%
Diabetes	INSULIN REGULAR (HUMAN)	NOVOLIN R INJ U-100	INJ	1	$546.71	$546.710	$533.30	97.6%
Diabetes	INSULIN REGULAR (HUMAN)	HUMULIN R INJ U-100	INJ	1	$550.00	$550.000	$533.30	97.0%
Diabetes	INSULIN REGULAR (HUMAN)	INSUMAN R INJ U-100	INJ	1	$1,625.96	$1,625.960	$159.99	9.8%
Diabetes	INSULIN ZINC (HUMAN)	NOVOLIN L INJ U-100	INJ	1	$282.28	$282.280	$533.30	188.9%
Diabetes	INSULIN ZINC (HUMAN)	NOVOLIN L INJ U-100	INJ	1	$546.71	$546.710	$533.30	97.6%
Diabetes	INSULIN ZINC (HUMAN)	HUMULIN L INJ U-100	INJ	1	$550.00	$550.000	$533.30	97.0%
Diabetes	INSULIN REGULAR & ISOPHANE (HUMAN)70/30	NOVOLIN INJ 70/30	INJ	1	$318.12	$318.120	$533.30	167.6%
Diabetes	INSULIN REGULAR & ISOPHANE (HUMAN)70/30	NOVOLIN INJ 70/30	INJ	1	$546.71	$546.710	$533.30	97.6%

Table 3 NHF Subsidy Rate Analysis

DRUG	Strength	NHF pays	ILLNESS	PRSNTN	EHPO prc	NHFrate
Acarbose Tablets	100mg	$13.70	Diabetes	TAB/CAP	**$23.42**	58.5%
Acetazolamide Tablets	250mg	$0.95	Glaucoma	TAB/CAP	**$2.43**	39.0%
Amitriptylline Tablets	25mg	$0.21	Major Depression	TAB/CAP	**$0.65**	32.5%
Atenolol Tablets	100mg	$1.39	Hypertension/Ischaemia	TAB/CAP	**$4.27**	32.5%
Azathioprine Tablets	50mg	$31.46	Arthritis	TAB/CAP	**$48.40**	65.0%
Beclomethasone Inhaler	50mcg/200Dose	$211.64	Asthma	INH	**$407.00**	52.0%
Bendrofluazide Tablets	5mg	$0.24	Hypertension	TAB/CAP	**$0.74**	32.5%
Bendrofluazide&Reserpine (Combezide)	0.15mg/5mg	$0.77	Hypertension	TAB/CAP	**$2.38**	32.5%
Benztropine Tablets	2mg	$0.39	Psychosis	TAB/CAP	**$1.19**	32.5%
Betaxolol Eye drops	0.25%/5ml	$122.85	Glaucoma	OPT	**$270.00**	45.5%
Canasol Eye drops	5ml	$104.65	Glaucoma	OPT	**$230.00**	45.5%
Captopril Tablets	25mg	$0.78	Hypertension/Ischaemia	TAB/CAP	**$2.42**	32.5%
Carbamazepine Tablets	200mg	$0.94	Epilepsy	TAB/CAP	**$2.88**	32.5%
Chlorpromazine Tablets	100mg	$0.88	Psychosis	TAB/CAP	**$2.71**	32.5%
Clozapine Tablets	100mg	$26.11	Psychosis	TAB/CAP	**$50.22**	52.0%
Cyclophosphamide Injection	1Gm	$409.50	Cancer	INJ	**$630.00**	65.0%
Cyclophosphamide Tablets	50mg	$21.45	Cancer	TAB/CAP	**$33.00**	65.0%
Cyproterone Acetate Tablets	50mg	$40.53	Cancer	TAB/CAP	**$62.36**	65.0%
Diclofenac	50mg	$0.68	Arthritis	TAB/CAP	**$2.10**	32.5%
Diclofenac suspension	9mg/5ml/120ml	$114.92	Arthritis	LIQ	**$221.00**	52.0%
Digoxin Syrup	50mcg/ml/115ml	$628.55	Ischaemia	LIQ	**$967.00**	65.0%
Digoxin Tablets	0.25mg	$1.83	Ischaemia	TAB/CAP	**$4.68**	39.0%
Diltiazem Tablets	60mg	$2.64	Hypertension/Ischaemia	TAB/CAP	**$5.80**	45.5%
Dipyridamole Tablets	75mg	$0.69	RhFever	TAB/CAP	**$2.13**	32.5%
Enalapril Tablets	10mg	$1.74	Hypertension/Ischaemia	TAB/CAP	**$4.47**	39.0%
Fluorouracil Injection	250mg/5ml	$247.00	Cancer	INJ	**$380.00**	65.0%
Fluoxetine Tablets	20mg	$9.42	Major Depression	TAB/CAP	**$16.11**	58.5%
Fluphenazine Injection	25mg/mlX 10ml	$243.75	Psychosis	INJ	**$375.00**	65.0%
Fluticasone Inhaler	250mcg/60 Dose	$854.10	Asthma	INH	**$1,314.00**	65.0%

Fosfestrol(Stilboesterol) Tablets	120mg	$24.39	Cancer	TAB/CAP	**$41.70**	58.5%
Furosemide Tablets	40mg	$0.09	Hypertension/Ischaemia	TAB/CAP	**$0.27**	32.5%
Gemfibrozil Tablets	600mg	$12.87	Cholesterol	TAB/CAP	**$22.00**	58.5%
Glibenclamide Tablets	5mg	$0.23	Diabetes	TAB/CAP	**$0.69**	32.5%
Gliclazide Tablets	80mg	$1.68	Diabetes	TAB/CAP	**$4.30**	39.0%
Haloperidol Tablets	5mg	$0.46	Psychosis	TAB/CAP	**$1.43**	32.5%
Hydralazine Tablets	25mg	$0.58	Hypertension	TAB/CAP	**$1.79**	32.5%
Hydroxychloroquine sulphate	200mg	$20.38	Arthritis	TAB/CAP	**$34.83**	58.5%
Ibuprofen Tablets	600mg	$0.94	Arthritis	TAB/CAP	**$2.40**	39.0%
Imipramine Tablets	25mg	$1.03	Major Depression	TAB/CAP	**$1.98**	52.0%
Indapamide SR Tablets	1.5mg	$6.78	Hypertension	TAB/CAP	**$14.90**	45.5%
Insulin(Mixed 70/30)	100u/ml X10ml	$533.33	Diabetes	INJ	**$547.00**	97.5%
Insulin(regular-Shortacting)	100u/ml X10ml	$533.33	Diabetes	INJ	**$547.00**	97.5%
Insulin(zinc-Longacting)	100u/ml X10ml	$533.33	Diabetes	INJ	**$547.00**	97.5%
Ipratropium Bromide Nebulising soln.	250mcg/ml/20ml	$176.54	Asthma	NEB	**$388.00**	45.5%
Isorbide dinitrate	10mg	$0.51	Ischaemia	TAB/CAP	**$1.11**	45.5%
Ketoprofen Capsule SR	200mg	$20.87	Arthritis	TAB/CAP	**$35.68**	58.5%

Table 4 NHF Individual Benefits Liability – based on non-HCL distributor prices

ILLNESS		Prevalence	MINCOST	MIN RISK	LIAB($M) min		TYPCOST	TYP RISK	LIAB($M) typ	
Arthritis<10yrs	mild	52,400	$5,516.16	$289,046,784	$144.5	19.8%	$5,516.16	$289,046,784	$144.5	10.1%
Arthritis<10yrs	severe	5,900	$11,032.32	$65,090,688	$32.5	4.5%	$11,032.32	$65,090,688	$32.5	2.3%
Arthritis	mild	198,500	$231.66	$45,984,510	$23.0	3.1%	$491.40	$97,542,900	$48.8	3.4%
Arthritis	severe	22,100	$737.10	$16,289,910	$8.1	1.1%	$2,141.10	$47,318,310	$23.7	1.6%
Asthma<5yrs	mild	28,700	$486.72	$13,968,864	$7.0	1.0%	$3,311.88	$95,050,956	$47.5	3.3%
Asthma<5yrs	severe	12,300	$7,619.04	$93,714,192	$46.9	6.4%	$15,300.48	$188,195,904	$94.1	6.6%
Asthma	mild	159,800	$238.68	$38,141,064	$19.1	2.6%	$3,513.12	$561,396,576	$280.7	19.6%
Asthma	severe	28,200	$10,158.72	$286,475,904	$143.2	19.6%	$11,132.16	$313,926,912	$157.0	10.9%
Breast Cancer	mild	600	$1,499.47	$899,683	$0.4	0.1%	$115,908.00	$69,544,800	$34.8	2.4%
Breast Cancer	severe	200	$30,088.89	$6,017,778	$3.0	0.4%	$30,088.89	$6,017,778	$3.0	0.2%
Prostate Cancer	mild	3,200	$8,782.02	$28,102,464	$14.1	1.9%	$8,782.02	$28,102,464	$14.1	1.0%
Prostate Cancer	severe	800	$43,776.72	$35,021,376	$17.5	2.4%	$43,776.72	$35,021,376	$17.5	1.2%
High Cholesterol	mild	50,200	$2,448.81	$122,930,262	$61.5	8.4%	$2,448.81	$122,930,262	$61.5	4.3%
High Cholesterol	severe	12,600	$9,795.24	$123,420,024	$61.7	8.4%	$9,795.24	$123,420,024	$61.7	4.3%
Hypertension	mild	379,800	$31.59	$11,997,882	$6.0	0.8%	$667.72	$253,599,676	$126.8	8.8%
Hypertension	severe	42,200	$63.18	$2,666,196	$1.3	0.2%	$1,171.64	$49,443,124	$24.7	1.7%
Ischaemic	mild	9,000	$31.59	$284,310	$0.1	0.0%	$1,286.77	$11,580,894	$5.8	0.4%
Ischaemic	severe	6,000	$2,398.03	$14,388,192	$7.2	1.0%	$4,863.22	$29,179,332	$14.6	1.0%
Rh Fever	mild	4,300	$33.80	$145,340	$0.1	0.0%	$265.46	$1,141,478	$0.6	0.0%
Vascular	mild	26,100	$3,095.82	$80,800,902	$40.4	5.5%	$3,095.82	$80,800,902	$40.4	2.8%
Diabetes T1	mild	13,200	$6,399.90	$84,478,680	$42.2	5.8%	$12,799.80	$168,957,360	$84.5	5.9%
Diabetes T1	severe	1,500	$6,481.10	$9,721,647	$4.9	0.7%	$19,199.70	$28,799,550	$14.4	1.0%
Diabetes T2	mild	117,700	$40.60	$4,778,502	$2.4	0.3%	$598.57	$70,451,924	$35.2	2.5%
Diabetes T2	severe	13,100	$243.59	$3,191,081	$1.6	0.2%	$2,414.88	$31,634,928	$15.8	1.1%
Glaucoma	mild	15,000	$340.61	$5,109,156	$2.6	0.3%	$390.00	$5,850,000	$2.9	0.2%
Glaucoma	severe	6,500	$585.00	$3,802,500	$1.9	0.3%	$585.00	$3,802,500	$1.9	0.1%
Epilepsy<12yrs	mild	5,400	$387.04	$2,089,994	$1.0	0.1%	$387.04	$2,089,994	$1.0	0.1%

Epilepsy<12yrs	severe	2,900	$580.55	$1,683,607	$0.8	0.1%	$580.55	$1,683,607	$0.8	0.1%
Epilepsy	mild	17,200	$280.80	$4,829,760	$2.4	0.3%	$280.80	$4,829,760	$2.4	0.2%
Epilepsy	severe	4,300	$1,161.11	$4,992,764	$2.5	0.3%	$3,368.43	$14,484,249	$7.2	0.5%
Major Depression	mild	130,800	$228.15	$29,842,020	$14.9	2.0%	$228.15	$29,842,020	$14.9	1.0%
Major Depression	severe	56,000	$456.30	$25,552,800	$12.8	1.7%	$456.30	$25,552,800	$12.8	0.9%
Psychosis	mild	12,000	$167.31	$2,007,720	$1.0	0.1%	$613.08	$7,356,960	$3.7	0.3%
Psychosis	severe	8,000	$501.93	$4,015,440	$2.0	0.3%	$924.27	$7,394,140	$3.7	0.3%
Total		**1,446,500**		$1,461,481,997	**$730.7**	**100%**		$2,871,080,932	**$1,435.5**	**100%**

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