THE SUSTAINABILITY OF HONGKONG'S HEALTH CARE FINANCING SYSTEM

A Population Based Projection

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INTRODUCTION

Doubts about the financial sustainability of the mainly tax-based Hong Kong health care financing system have been around for some time. While most would agree that the existing system has many desirable features, many have expressed concerns about its longer term viability. The frequently cited reasons for its unsustainability are: (1) the aging population; (2) the proliferation of expensive drugs and equipment; and (3) a slower rate of growth of the economy.

It has been pointed out elsewhere by the author, that these fears are based on crude generalizations and exaggerated assumptions[1]. A closer look at the facts reveals the following:

Existing Arrangements Effective in Cost Control: While health care expenditure in Hong Kong has gone up in recent years, the existing system still possesses important features which have been proven to be effective in controlling cost-public inpatient care under spending cap, public hospital staff on fixed salary, low administrative expenses, and a competitive private outpatient market financed privately and mostly through out of pocket payments. The introduction of universal health will inevitably lead to the dismantling or dilution of some of the above-mentioned arrangements. Additional resources generated by compulsory contributions will easily be eaten up by the additional administrative costs and unnecessary utilization caused by either consumers or providers under such schemes.

Hong Kong's Ageing Process Mitigated by Immigration: The Census and Statistics Department has estimated that the percentage of those aged 65 and over would rise from the existing 10 percent to 11 percent in 2001 and will remain at that level until 2011. It is then expected to rise to 13 percent by 2016.[2] Such rate of increase does appear to be

rather gradual and mild. This is in part due to immigration from the Mainland. There is a large number of children, born in China with at least one Hong Kong parent, who will be settling in Hong Kong in the coming years. The Census and Statistics Department's figures show that the age dependency ratio in Hong Kong is actually declining. It dropped from 447 per 1,000 in 1985 to 407 per 1,000 in 1996, and is projected to drop further to 377 per 1,000 in 2001. and to 351 per 1,000 in 2011.[3] Hence, the shrinkage in tax base as a result of aging population is not evident in Hong Kong as it is in some other countries.

Medical Equipment and Drugs are Not Cost Drivers: The Hospital Authority 1996/97 Budget indicates that drugs and medical instruments expenses account for less than 9.3 percent of the total recurrent expenditure.[4] Staff costs account for almost 82 percent of total recurrent expenditure. Only HK$195M is earmarked for the purchase of additional or replacement of equipment and vehicles for 1996/97, which 1.2 percent of staff costs.[5] Within the Hong Kong context, expensive drugs and equipment have a rather marginal effect on Hong Kong's overall public health care expenditure. Furthermore, under the existing financing system, in which hospitals are given a fixed budget and doctors are all on fixed salaries, there are no incentives for health care providers in public hospitals to perform unnecessary procedures or to prescribe excessively.

Ample Room For Raising Additional Funds Under Existing System: In the event of slower or negative economic growth, additional revenue can be raised through existing means such as (a) modest increase in the per diem charge, which is currently only 2 percent of the average cost of a patient day; (b) higher cost-recovery for semi-private and private beds, currently at roughly 20 percent and 100 percent respectively; (c) the introduction of charges on procedures deemed to be non-essential or less cost-effective; and (d) a modest increase in personal and corporate income tax, currently at 15 percent and 16.5 percent respectively, which is one of the lowest in the world.

Until the publication of the Report by the Harvard Team in April 1999, there has been no evidence to substantiate the non-sustainability theory. For the first time, the Harvard Team presents a financial projection model to assess the financial situation by the year 2016, if the existing financing system is to continue. The results indicate that public health care expenditures will grow to 3.4 to 4.0% of GDP, and will absorb almost 20% of total public expenditure (in 1996, public health care expenditures were 2.5% of GDP, constituting 14% of total public expenditures), implying that the existing tax-based system would not be viable in the year 2016.[6] Based on this projection, the Harvard Team recommends the implementation of compulsory health insurance (the "Health Security Plan") for Hong Kong.

The projection is based on the assumption that the rate of increase in health spending for the next 20 years will be similar to those in 1991 to 1996. This period happens to be the first 6 years of the Hospital Authority's existence, when major capital, management, and quality improvement investments were made. This period also happens to be the period right before the Asian financial crisis, when the Hong Kong Government was in a very generous financial mood in terms of public spending because of the huge surplus in the

Treasury. To use the health care expenditure figures in this 6-year period as the basis for projection will inevitably result in overestimation.

This paper presents an alternative financial projection for the year 2016 assuming the adoption of a mainly population-based public sector health services funding model. The objective of this paper is to demonstrate that the existing funding system is sustainable because of the above-mentioned factors. The results do show that tax-based financing under the proposed funding method is viable in year 2016.

POPULATION BASED FUNDING

This model starts from the premise that funding to the Hospital Authority (HA) and the Department of Health (DH) should be changed from primarily historical based to primarily population based. Under the existing funding approach, the HA and the DH are given funds by the government to maintain its current level of services (hence historical) plus whatever new services deemed to be necessary. Such funding basis does not provide incentives for the HA or DH to be efficient. It encourages expansion.

The proposed population based approach involves the government providing a sum to the HA and DH every year according to the following factors:

(1) the number of non-elderly persons; and
(2) the number of elderly persons.

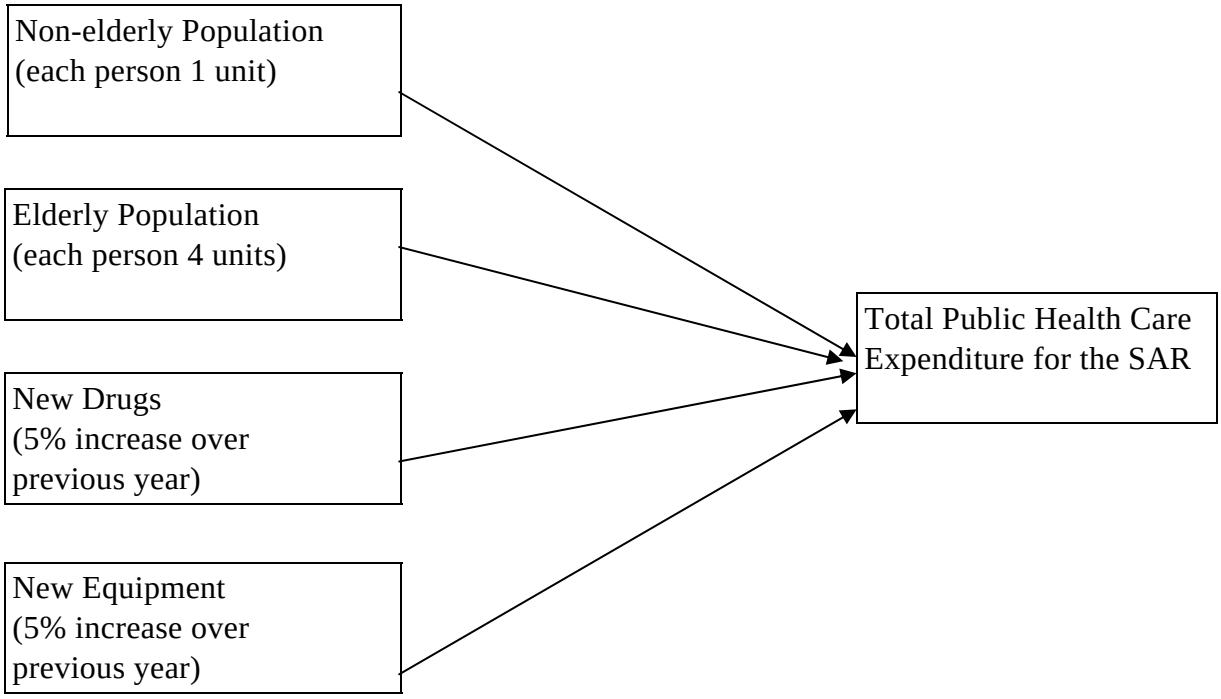
In addition, there will be provisions for new drugs and new equipment.

Under this system, there are incentives for the HA to use the most cconomical means to deliver services to the population. There are no incentives for it to expand unnecessarily. Under this system, the HA and the DH will have incentives to subcontract work to private doctors, private hospitals, or to each other, which will mitigate the existing compartmentalized situation. All of the strengths of the existing system - universal access, simple administration, and minimal supply-side moral hazards - will be preserved. The details of the approach and the model are presented in the following paragraphs.

THE MODEL

The model assumes that the existing level of funding is acceptable, and that any increase in funding should be due to increase in population, and especially the elderly population. As pointed out above there will also be annual provisions for new drugs and new equipment. The conceptual framework is illustrated by Figure 1. The details of the model are described in the following paragraphs.

Figure 1: Population Based Funding Model



The Population Component

In 1996, the population in Hong Kong was 6,292,000, and 10% of which were over the age of 65.[7] Elderly persons, in general, consume more health care than non-elderly persons. From the OECD countries, the average elderly per capita health expenditure is 4 times that of the average per capita health expenditure.[8]

In 2016, the projected population for Hong Kong is 8,205,900, and 13% of which will be over the age of 65.[9]

Using a non-elderly person as the basic unit, an elderly person is given a weight 4 times that of a non-elderly person.

The number of such person units in 1996 is computed as follows:

1(6,292,000*.9)+4(6,292,000*.1)=8,179,600

The number of such person units in 2016 is computed using the same formula:

1(8,205,900*.87)+4(8,205,900*.13)=11,406,201

Allocation of Resources Based on Person-Units

In 1996, total public health care expenditure was $25,051M (Hong Kong Government 1997). The expenditure per person-unit at 1996 was $25,051M/8,179,600=$3,062.

Assuming that 1996 spending level is considered acceptable, the expenditure requirement for 2016 (at 1996 market price) based on population is projected as follows:

$3,062* 11,406,201=$34,933M

Allocation of Resources for New Drugs

The expenditure for drugs in Hong Kong has been slightly below 10% of overall health care expenditure. Allowing for a 5% increase every year for the purchase of new drugs, the additional health care expenditure requirement (at 1996 price) for new drugs for the year 2016 is computed as follows:

$25,051M* 10%*(Compound Value Interest Factor [CVIF] @5% for 20 years)

=$6,646M

Allocation of Resources for New Equipment

The 1996 HA budget for the purchase of additional or replacement equipment and vehicle was $195M, which was around 0.78% of overall public health care expenditure. Assuming 1% of overall public health care expenditure is needed to purchase new equipment, the additional health care expenditure requirement for new equipment for the year 2016 (at 1996 price) is computed as follows:

$25,051M* 1%*(CVIF @5% for 20 years)
=$665M

Total Resources Required by 2016

Total resources required for the year 2016 will be the funding based on population, plus the funding for new drugs and new equipment. The total amount required is computed as follows:

Total Resources Required=$34,933M+$6,646M+$665M=**$42,244M**

Projected Available Resources from Government in 2016

The Government has repeatedly stated that it will not shirk its responsibility in health care, and that future funding level would not be lower than the existing level - i.e. 14% of total public spending.

To assess whether the available resources from Government using existing parameters are adequate in meeting the requirements as computed above, the amount available from the Government is estimated. The estimation is based on the following assumptions:

- total public spending remains at 18% of GDP
- public health care expenditure remains at 14% of total public spending
- GDP growth will be at least in the range of 1 to 3%

The GDP in 1996 was $1,195,315M(at 1996 market price).

At 1% GDP growth, GDP for 2016 will be: $1,195,315M* CVIF@1% for 20 years)

=$1,458,248M(at 1996 price)

At 2% GDP growth, GDP for 2016 will be: $1,195,315M*(CVIF@2% for 20 years)

=$1,776,238M (at 1996 price)

At 3% GDP growth, GDP for 2016 will be: $1,195,315M*(CVIF@3% for 20 years)

=$2,158,739M(at 1996 price)

At 1% GDP growth, the amount available in 2016 for health care expenditure from the government will be:

$1,458,248M*18%*14% = **$36,749M**

At 2% GDP growth, the amount available will be:

$1,776,238M*18%*14% = **$44,761M**

At 3% GDP growth, the amount available will be:

$2,158,739M*18%*14% = **$54,400M**

AVAILABLE RESOURCES VS REQUIRMENTS

The above analyses are summarized in Table 1.

Table 1

AVAILABLE RESOURCES AND REQUIRMENTS UNDER DIFFERENT GDP GROWTH SCENARIOS

GDP Growth	Available Resources	Requirements	Surplus/Deficit
1%	$36,749M	$42,244M	-$5,495M
2%	$44,761M	$42,244M	+$2,517M
3%	$54,400M	$42,244M	+$14,491M

Based on the above, a modest GDP growth of 2% over the next 20 years will be adequate in meeting health care expenditure requirements. An average GDP growth rate of 2% over the next 20 years is not unrealistic, even for matured economies.

As for a GDP growth rate of 1%, the shortfall of $5,495M can be met by a combination of salary tax increase, corporate profit tax increase, and users fees increase. Using 1996 figures, a 0.5% increase in salary tax should yield approximately $1,300M; a 0.5% increase in profit tax should yield $2,200M; and a 5% cost-recovery per diem charge should yield $2,000M. The total would be enough to cover the $5,495 shortfall.

CONCLUSIONS

The above projections cast doubts on the claim made by the Harvard Team that the existing tax-based system would not be viable in the year 2016. These projections, therefore, also question the need to establish a compulsory health insurance scheme, as recommended by the Team.

REFERENCES

1. see Colin Grant and Peter Yuen (1998). *The Hong Kong Health Care Systems* sydney: The University of New South Wales; Peter P. Yuen (1999) “Health Care Financing in Hong Kong: A Case for Tax-based Financing” *International Journal of Health Planning and Management*, Vol.14, No.1, pp 3-18; Peter P. Yuen (1998) “To Change or Not to Change: A Review of Health Care Financing in Hong Kong”. *Asian Hospital*, Third Quarter. pp 26-28.

2. Census & Statistics Department (1997) *Hong Kong Population Projection 1997-2016*, Hong Kong: Government Printer.

3. ibid.

4. Hospital Authority (1996) *Hospital Authority Annual Plan 1996-1997*. Hong Kong: Hospital Authority.

5. ibid.

6. Harvard Team (1999) *Improving Hong Kong Health Care System: Why and For Whom?*. Hong Kong: Printing Department HKSARG.

7. Census & Statistics Department (1997).

8. OECD (1987) *Financing and Delivery Health Care*, Paris: OECD.

9. Census & Statistics Department (1997).