Synopsis of Healthcare Financing Studies

Mandatory Private Health Insurance for Specific Population Groups

Introduction

This paper demonstrates the possible scope and premium rates for a medical insurance scheme, compulsory for specific population groups using an illustrative insurance plan. The specific groups may include the working population with incomes above a certain level and the insurance plan may provide benefits that are sufficient to cover the charges of medical services provided by the private sector. The Food and Health Bureau commissioned a project team with actuarial consultants from Milliman Limited to conduct a study on this subject. It should be noted that the plan presented here has been drawn up based on the current market practice and is meant for illustrative purposes only.

Methodology

2. An actuarial study has been carried out to estimate the premium rate for the illustrative insurance plan assuming it is compulsory for all working individuals aged 18-64 who have a monthly income of $10,000 or above to participate in the scheme, and they have to continue with the insurance scheme after the age 65. The estimation is also based on the current utilization of both public and private healthcare services based on the claims experience of insured employees, and the following favourable features regarding the mandatory insurance scheme:

(a) *Community-rated premium* – all the participants who are required to join the insurance scheme on a compulsory basis will pay the same premium for the same plan regardless of age, gender and health risks.

(b) *Obligatory acceptance of all applicants* – For the mandatory insurance plan, the insurance companies will be required to accept all applicants who want to purchase the plan from them. They are also not allowed to impose any restrictions or exclusions on pre-existing medical conditions, and have to guarantee plan renewal regardless of any changes in the health condition of a member.

(c) *Zero profit margin* – the insurance companies offering mandatory insurance plan are not allowed to make any profit from the plan, although they can profit from selling unregulated voluntary top-up plans that supplement the mandatory insurance plan.

(d) *Free choice of services* –insured patients have the freedom to choose either public or private healthcare services. However, instead of the highly subsidized public fees, the insurance companies will be charged the full cost of services when the patient utilizes public services.

3. It is assumed that the mandatory insurance scheme will be introduced in 2011. The premium rate takes into account an annual administration cost that is inclusive of $110 per person plus 5% of the expected total claims amount as well as the effects of inflations from year 2005 by assuming that (i) administration cost will increase at a real rate of 1% per year, and (ii) medical cost will increase at a real rate of 3% per year. Projections have also been made on the premium taking into account changes in the insured demographics based on population projections data provided by the Census and Statistics Department (C&SD), and the effects of inflation on administration costs and medical costs.

Scope and Benefit Schedule

4. Two packages are illustrated, one covering the full range of in-patient services, specialist out-patient services and long-term medication, while the other covers only in-patient services. Both do not cover general out-patient services. Presented in Table 1 illustrates the covered services and their respective benefit limits (i.e. the maximum amount that the insurance company will pay out to an insured patient who makes a claim for a particular insurance benefit). If the claimed amount for a particular item falls within its benefit limit, the insurance company will pay the claimed amount in full. However, if the claimed amounts exceed the respective benefit limits, the insurance company will only make the maximum payout as stated in the benefit limits, and any amount in excess of the payout will have to be borne by the patient.

5. In general, the benefit limits are set on a per-disability basis, with a disability being defined as a hospital admission or treatment episode for a particular medical condition. Re-admissions or treatment episodes for the same

medical condition that occur within 60 days are considered as the same disability. However, if the admission or treatment is for a different medical condition, it is regarded as a different disability. For example, if a patient is admitted to hospital and stays for three days due to diabetes and he/she is re-admitted to hospital six weeks later due to coronary heart disease as a complication of diabetes, these two admissions will be considered as the same disability. On the other hand, if a patient is admitted to hospital with minor burns one month after he/she has undergone coronary artery angioplasty operation, these two admissions will be regarded as two different disabilities. In fact, if a patient receives treatment for two unrelated medical conditions (such as angiocardiography and a simple removal of bunion) in one hospital admission, the admission would be considered as two disabilities with respect to the benefit limits. Further per-day or per-year limits are imposed on some of the items. For example, the benefit limits of daily room and board charges are $600 per day for a maximum of 100 days, which means that the maximum payout for the daily room and board charges is $60,000 per disability.

Table 1. Illustrative insurance benefit schedule of in-patient and out-patient services

In-patient Benefits	Benefit Limits
Daily room & board (max. 100 days)	$600 per day
Daily ICU (max. 30 days)	$3,000 per day
Surgeon's fee	
Complex operation (e.g. complete thoracoplasty)	$52,500
Major operation (e.g. coronary artery bypass)	$37,500
Intermediate operation (e.g. cardiac catheterisation)	$15,000
Minor operation (e.g. angiocardiography)	$7,500
Anaesthetist's fee (% of surgeon's fee benefit limit)	30%
Operating theatre fee (% of surgeon's fee benefit limit)	30%
Doctor in-patient fee (max. 100 days)	$600 per visit
Inpatient specialist fee	$3,000
Other hospital expenses (e.g. medication, dressings, standard X-ray and laboratory tests but excluding advanced diagnostic imaging test)	$10,000
Post-operative Consultation / Therapy (follow-up treatment after discharge from hospital including diagnostic / pathology exam)	$2,500

(Table 1 – continued)

In-patient Benefits	Benefit Limits
Advanced Diagnostic Imaging Test (including tests performed in out-patient settings) - Magnetic Resonance Imaging (MRI) - Computerised Tomography Scan (CT scan) - Positron Emission Tomography Scan	$10,000 (80% reimbursement)
Chemotherapy/Radiotherapy/ Renal Dialysis Treatment	$100,000 (80% reimbursement)
Out-patient Benefits	**Benefit Limits**
Specialist Consultation (including 5-days western medication) (max. 10 visits per year)	$500 per visit (80% reimbursement)
Standard X-ray/lab	$1,500 per year (80% reimbursement)
Long Term Western Medication (any legitimate source other than doctor's clinic, for drugs with prescription duration exceeding 30 days)	$3,000 per year, based on specified formulary

Note: Limits are per disability, unless otherwise stated. A disability is defined as a hospital admission or treatment episode for a particular medical condition. Re-admissions or treatment episodes for the same medical condition occurring within 60 days are considered as the same disability.

6. For surgeries, there are separate benefit limits for surgeon, anaesthetist, and operating theatre fees. These limits are set according to the complexity of the operations, which are broadly classified as complex, major, intermediate, and minor operations. The benefit limits for the anaesthetist's fee and operating theatre fee are benchmarked at 30% of the limits for the surgeon's fee. For example, for a major operation such as coronary artery bypass surgery, the maximum claims payable are $37,500 for surgeon's fee and $11,250 each for anaesthetist's fee and operating theatre fee, which add up to a total of $60,000 per disability. In-patient doctor consultations are subject to separate limits. The benefit limits are $600 per day (for a maximum of 100 days) for in-patient consultations of a general nature (for example, for a routine follow-up check, post-surgery), or $3,000 per disability for consultation of a specialist nature (for example, consultations with regard to a specific medical condition).

7. For other hospital charges that are inclusive of standard X-ray and laboratory tests, medication, and dressings, an insured patient can claim up to $10,000 per disability. Maximum payouts for advanced diagnostic imaging tests

such as Magnetic Resonance Imaging (MRI), which may be performed in an out-patient setting, are capped at 80% of the charges or $10,000 per disability, whichever is lower.

8. As for out-patient benefits, the limit for specialist consultations inclusive of 5-day medications is capped at 80% of the charges or $500 per visit, whichever is lower, and up to 10 visits a year. Standard X-ray and laboratory tests ordered by a specialist have a separate benefit limit capped at 80% of the charges and the annual maximum payout is $1,500. Long-term medications, which refer to western medications with a prescription duration that exceeds 30 days are subject to a benefit limit of $3,000 per year. It should be noted that only long-term medications that are dispensed at registered pharmacies or any legitimate source other than a doctor's clinic are covered. Medications that are directly dispensed at a specialist's clinic would have been included in the out-patient benefits for specialist consultation while those dispensed at a general doctor's clinic are ineligible because the illustrative plan does not cover general out-patient services.

Case Illustration

9. Table 2 shows the hospital charges, benefit limits and maximum payout from the insurance for an insured patient who has undergone a hernia operation that involves a 3-day stay in the general ward of a private hospital. In this case, the hospital bill is $30,500 but the amount that will be settled by the insurance is $28,000 because of the benefit limits, which means that the patient has to pay the remaining $2,500.

Table 2. Hospital charges, benefit limits and insurance payouts for a hernia operation with 3-day hospital stay

	Hospital charges	**Benefit limits**	**Payouts from insurance**
Room & board	$1,800	$600 x 3	$1,800
Surgeon's fee	$17,500	$15,000	$15,000
Anaesthetist's fee	$4,500	$4,500	$4,500
Operating theatre fee	$2,600	$4,500	$2,600
Doctor in-patient fee	$1,800	$600 x 3	$1,800
Other hospital expenses	$2,300	$10,000	$2,300
Total	$30,500		$28,000

10. Consider another case where an insured patient consulted a private specialist out-patient clinic, had an X-ray taken and was given a 5-day prescription for one drug item. The charges, benefit limits and maximum payout from the insurance are illustrated in Table 3. In this case, the medical bill is $770 but the amount that will be settled by the insurance is $616 because of the benefit limits, which means that the patient has to pay the remaining $154.

Table 3. Charges, benefit limits and insurance payouts for a private specialist visit with an X-ray and a five-day drug prescription for one drug item

	Private SOP charges	**Benefit limits**	**Payouts from insurance**
Consultation Drug	$500 $70	$500 or 80% reimbursement = ($500+$70) x 80% = $456, whichever lower	$456
X-ray	$200	$1,500 or 80% reimbursement = ($200) x 80% = $160, whichever lower	$160
Total	$770		$616

Premiums for Compulsory Participants

11. It is estimated that the community-rated premium, if the mandatory insurance scheme is introduced in 2011, would be $293 per person per month if the plan covers the full range of in-patient services, specialist out-patient services and long-term medication, or $208 if only in-patient services are covered. Presented in Table 4 are the community-rated monthly premiums for the compulsory participants (i.e. working individuals aged 18-64 who have a monthly income of $10,000 or above as well as those aged 65 and above who have joined compulsorily before age 65) up to year 2023. The projected premiums in 2023 for plans that cover a full range of services and those covering only in-patient services are $523 and $384 respectively.

Table 4. Community-rated monthly premiums for all compulsory participants, 2011-2023

Mandatory insurance plan	Year			
	2011	2015	2019	2023
Covers in-patient services, specialist out-patient services and long-term medication	$293	$344	$419	$523
Covers in-patient services only	$208	$246	$303	$384

Note: all premium rates are presented in 2005 price levels

Alternative Compulsory Participants – Younger Age Groups

12. If individuals aged 65 and above are not required to join the scheme on a compulsory basis, then the compulsory participants of the scheme will be confined to working individuals aged 18-64 who have a monthly income of $10,000 or above. The community-rated monthly premium rates for these younger compulsory participants are presented in Table 5. The projected premium rates in 2023 for plans that cover a full range of services and those covering only in-patient services are $433 and $307 respectively.

Table 5. Community-rated monthly premiums for compulsory participants aged 18-64, 2011-2023

Mandatory insurance plan	Year			
	2011	2015	2019	2023
Covers inpatient services, specialist outpatient services and long-term medication	$293	$335	$382	$433
Covers inpatient services only	$208	$238	$271	$307

Note: all premium rates are presented in 2005 price levels

Alternative Compulsory Participants – Higher Income Groups

13. Table 6 sets out the community-rated monthly premiums if the monthly income level for the definition of compulsory participants is raised to $12,000 or $15,000. In other words, the compulsory participants in these two cases are working individuals aged 18-64 who have a monthly income of at least $12,000 and at least $15,000, as well as those aged 65 and above who have joined the scheme compulsorily before age 65. In the first few years of the scheme, the community-rated monthly premium increases slightly when the income cut-off is increased for the definition of compulsory participants.

Table 6. Community-rated monthly premiums for compulsory participants, at different income cut-offs for the definition of compulsory participants, 2011-2023

Income cut-off	Year			
	2011	2015	2019	2023
Covers inpatient services, specialist outpatient services and long-term medication				
$10,000	$293	$344	$419	$523
$12,000	$296	$342	$410	$509
$15,000	$300	$345	$407	$494
Covers inpatient services only				
$10,000	$208	$246	$303	$384
$12,000	$210	$244	$295	$371
$15,000	$212	$245	$292	$358

Note: all premium rates are presented in 2005 price levels

Alternative Compulsory Participants – Older Age Groups

14. Given the favourable features of the mandatory scheme, individuals who have never joined the scheme before age 65, may also wish to be included in the insurance scheme when they are aged 65 or above because of increasing health needs. If it is compulsory for all persons aged 65 or above to join the scheme and to pay the same community-rated premium as the compulsory participants aged 18-64, the premium is expected to rise because the inclusion of this large group of older participants will result in much higher overall utilization of healthcare services. Moreover, the premium rates for all aged 65 and above are based on the

general Hong Kong population's healthcare utilization experience for this age group (see Tables 7 – 9), while those presented in Tables 4 – 6 are based on the extrapolated experience of a continuously insured population with utilization lower than that of the general population. Presented in Table 7 are the estimated community-rated monthly premiums in 2011 through 2023 for the insured population that includes all individuals aged 65 and above as well as compulsory participants aged 18-64 who have a monthly income of $10,000 or above. It is estimated that the community-rated premium will increase to a level of up to $713 per person per month if the plan covers the full range of in-patient services, specialist out-patient services and long-term medication, or up to $571 if only in-patient services are covered.

Table 7. Community-rated monthly premiums for compulsory participants aged 18-64, plus all individuals aged 65 or above, 2011-2023

Mandatory insurance plan	Year			
	2011	2015	2019	2023
Covers in-patient services, specialist out-patient services and long-term medication	$713	$806	$926	$1,081
Covers in-patient services only	$571	$646	$742	$866

Note: all premium rates are presented in 2005 price levels

15. Thus the community-rated premium will be much elevated by pooling in all individuals aged 65 or above. There are two possible options to redress this situation: (i) separate community-rated premiums for compulsory participants aged 18-64 and those of age 65 or above; and (ii) compulsory participants aged 18-64 pay a community-rated premium while participants aged 65 or above pay premiums that are based broadly on age and gender considerations (i.e. age-gender specific premiums). The two options are elaborated in the ensuing paragraphs.

Separate Community-rated Premiums

16. Compulsory participants aged 18-64 and those aged 65 or above are separated into two groups in the calculation of community-rated premium. This way, the community-rated premium for compulsory participants aged 18-64 would be maintained at the same level as indicated in Table 4. As for the older participants, their community-rated premium is estimated to be $1,749 per person per month if the plan covers the full range of in-patient services, specialist

out-patient services and long-term medication, or $1,470 if only in-patient services are covered. The community-rated monthly premiums for older participants in year 2011 through 2023 are shown in Table 8.

Table 8. Community-rated monthly premiums for all individuals aged 65 and above, 2011-2023

Mandatory insurance plan	Year			
	2011	2015	2019	2023
Covers in-patient services, specialist out-patient services and long-term medication	$1,749	$1,922	$2,103	$2,300
Covers in-patient services only	$1,470	$1,613	$1,761	$1,916

Note: all premium rates are presented in 2005 price levels

Age-gender specific premiums

17. Under this option, compulsory participants aged 18-64 continue to pay a community-rated premium, which is maintained at the same levels indicated in Table 4, while older participants pay age-gender specific premiums. Table 9 illustrates the estimated age-gender specific monthly premium rates in year 2011, for plans that cover only in-patient services. The rates for individuals aged 18-64 are also included in the table to illustrate the differences between the community-rated premium and the age-gender specific premium.

Table 9. Age-gender specific monthly premiums in 2011 for plans that covers in-patient services only

Age	Male	Female
18-24	$89	$68
25-29	$103	$105
30-34	$114	$145
35-39	$146	$179
40-44	$180	$229
45-49	$236	$260
50-54	$300	$320
55-59	$452	$385
60-64	$602	$455
65-69	$940	$599
70-74	$1,284	$855
75-79	$1,777	$1,274
80-89	$2,426	$1,847
85+	$3,082	$2,698

Note: all premium rates are presented in 2005 price levels

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