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FEASIBLITY STUDY ON THE KEY FEATURES OF THE HEALTH PROTECTION SCHEME

Prepared by
CHYE Pang-Hsiang, FIA, FAIRC
MILLIMAN LIMITED

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Unit 3904, 39 Floor AIA Tower
North Point, Hong Kong

Tel +852 2147 9678
Fax +852 2147 9879

milliman.com

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EXECUTIVE SUMMARY

Overview

1. The aim of this study, as commissioned by the Food and Health Bureau ("FHB"), is to design actuarially sound insurance product templates and develop policy options for provision of incentives where necessary to enable the Health Protection Scheme ("HPS, "the Scheme") to operate effectively.

2. The objectives of the Scheme are:

   - Encourage take-up of medical insurance and savings plans among the population and improve their sustained access to affordable and value-for-money private healthcare services, in order to provide choice to those who are able and willing to pay, and induce their making greater use of private services as an alternative to public services.

   - Improve transparency about service standards and price levels in the private health insurance ("PHI") and healthcare markets, with a view to encouraging standardised product development and offerings, promoting market competition, and enhancing consumer protection and confidence.

3. For the Scheme to be successful in achieving its specific objectives, it must:

   - Provide terms of coverage, including price and delivery of service, that are attractive and transparent to those eligible to participate.

   - Be financially sound, so that its promises are fulfilled, including less reliance on HA funding than in the past.

   - Be cognisant of the degree of standardisation in products, as over-standardisation inhibits competition and innovation.

4. For these objectives to be satisfied long term, the Scheme must manage the risk and provide appropriate incentives. These considerations are covered in the paragraphs on Risks and Control Knobs, Supervisory Structure, and Government Incentives.

5. The sections following the Executive Summary provide details that support our findings.

6. The Health Protection Scheme ("HPS", "the Scheme") comprises a protection component ("Protection Scheme") and a savings component to help policyholders save for post-retirement medical expenses ("Savings Scheme").

Protection Scheme

7. The Scheme design is based on the premise that the access to public health care services would absolutely be unaffected by Scheme participation. In other words, the Scheme members would continue to enjoy same freedom and same level of subsidy as other people in using public health care services.

8. The covered benefits are broadly divided into three categories:

   - Hospital inpatient and ambulatory procedures
   - Outpatient services relating to the hospital admission or ambulatory procedure
   - High cost outpatient treatment

   The benefit limits are illustrated in Exhibit 1 on the following page.

9. Currently at least one private hospital in Hong Kong offers over 70 packages with fixed prices. The proposed Scheme would encourage private hospitals to offer more packages with fixed charges. The Scheme products would have benefit limits for each package so that members have greater certainty of medical charges, and know how much would be covered by the insurer versus paid out-of-pocket by the member. Packaged charges that vary by diagnoses and severity of the diagnoses (referred to as Diagnoses Related Groups or "DRG") are used in several countries around the world, including Australia and the USA.

10. The benefit limits for the hospital inpatient and ambulatory packages in Exhibit 1 are examples and illustrative. Before implementation, the benefit limits should be refined so that even for the same diagnoses, packaged charges and benefit limits would be higher for more complex cases under the same diagnosis. A good starting point for reference would be the DRG system used by HA.

Exhibit 1: Benefit limits for Base plan and illustrative top up plan

Plan Type	Base	Bronze Top Up
Hospital Inpatient and Ambulatory Procedures		
Room Type	Ward	Ward
Benefit limits where hospital offers a package		
Examples of hospital inpatient packages (uncomplicated cases[1])		
▪ *Hernia Procedures*	$22,000	$28,000
▪ *Haemorrhoid Procedures*	$30,000	$34,000
▪ *Appendicectomy*	$35,000	$40,000
▪ *Laparoscopic Cholecystectomy*	$40,000	$45,000
▪ *Percutaneous Transluminal Coronary Angioplasty ("PTCA") (Stents are covered separately under Surgical Implant benefit)[2]*	$90,000	$100,000
▪ *Laparoscopic Anterior Resection of Rectum + Colostomy*	$112,000	$125,000
Examples of ambulatory procedure packages		
▪ *Haemorrhoid Procedures*	$7,000	$8,000
▪ *Endoscopic Retrograde Cholangiopancreatography ("ERCP")*	$10,000	$11,000
▪ *Cataract Procedures*	$13,000	$15,000
▪ *Hernia Procedures*	$13,000	$15,000
▪ *Extracorporeal Shockwave Lithotripsy ("ESWL")*	$15,000	$17,000
Benefit limits where hospital does not offer a package		
Room & Board limit (daily), maximum 180 days	$550	$700
Doctor's visit (daily)	$650	$800
ICU R&B limit (daily)	$2,000	$3,000
Surgical limit (Surgeon, anaesthetist, op theatre) per procedure[3]	$50,000	$70,000
Specialist fee per admission	$2,000	$2,500
Miscellaneous hospital expenses per admission	$8,000	$10,000
Surgical Implant (subject to approved list of implants)	Per implant schedule	Per implant schedule
Coinsurance (first $10K/next $90K/subsequent) per admission / amb. proc.	20%/10%/0%	20%/10%/0%
Outpatient services related to hospital inpatient or covered ambulatory procedure		
Specialist consultation, per consultation Maximum 3 consultations per admission / amb. proc.	$600	$700
Specialist outpatient investigations[4], per admission/amb. proc.	$5,000	$6,000
Advanced diagnostic imaging tests[5], per admission/amb. proc.	$5,000	$6,000
Coinsurance	20%	20%
High cost outpatient services		
Radiotherapy or chemotherapy, per disability[6]	$200,000	$200,000
Coinsurance	20%	20%

Notes:

1. The benefit limits illustrated are for uncomplicated cases. The benefit limits would be higher for cases with complications and comorbidities (see Appendix F for examples).
2. An additional payment for stents would be paid under the Surgical Implant benefit. The payment would be subject to a schedule with different limits for different types of implants. An illustrative benefit limit for stents is $22,000 per stent.
3. Subject to surgical schedule.
4. Examples: endoscopy, colonoscopy, gastroscopy.
5. Examples: MRI, PET scan, CT scan
6. Base plan subject to formulary set by Scheme supervisory body. Top up products may have broader formulary.

11. The benefit limits shown represent a "budget" to cover medical costs and are before coinsurance. For example, the budget for chemotherapy is $200,000. The member would pay for 20% of medical costs falling within this budget, and 100% of all amounts exceeding the budget.

12. Examples of how the various benefit limits, deductibles, and coinsurance would apply to a hospital bill are included in Appendix A.

13. All participating insurers would be required to make available the Base plan, but would be free to design top up covers that provide benefits that are more generous than the Base plan.

14. The Base plan benefit limits are generous enough to allow members access to an entry-level general ward of a standard private hospital, with out-of-pocket costs mostly limited to the indicated coinsurance, for most types of admissions. Although the benefit limits would likely not be sufficient for more complex admissions, in particular those requiring inter-disciplinary care, it is the government's intention for these high-cost services to remain with HA. Members who intend to seek such care from the private sector can purchase an appropriate top up plan. Members may also choose to use subsidised HA services which remain universally accessible for Hong Kong residents.

15. We have kept the Base plan benefit limits relatively low because:

    - Some employers only provide coverage around the Base plan level, or even lower (see Appendix G for a comparison of benefits). We do not want to exclude these employers from the Scheme by making the Base plan benefit limits too high.

    - We want to encourage individuals and employers in general to participate in the Scheme. By setting the Base plan benefits at a low level, the majority of existing plans would qualify as Scheme products with some minor tweaks to the terms and conditions (see Exhibit 2). In some cases, some tweaking of benefits may be required (e.g. to include chemotherapy cover).

      We refer to this as an integrated top up approach, which makes it easier for members to understand how much cover they are purchasing. An alternative would be a supplementary top up approach, where members would be purchasing a Base plan and a supplementary top up plan that provides additional benefits; to understand how much cover has been purchased, the

member would have to add up the limits of the two plans, which some members of the public may find confusing.

16. To lower the premium paid while still retaining protection against large hospital bills, in addition to a Base plan with no deductible, the member would have the option of selecting a deductible of $5,000, $10,000, and $15,000. The deductible operates like an excess in motor insurance, where the policyholder pays for the first $10,000 of the hospital bill, for example, and the insurer pays for the remainder subject to any other coinsurance. Appendix A of this report illustrates how the deductibles and coinsurance applies to a hospital bill.

17. Individual Scheme members would also be entitled to discounts on the standard published premiums, based on the number of consecutive claim-free years:

    - 10% discount if no claim in the past one year, on renewal of the policy
    - 20% discount if no claim in the past two years
    - 30% discount if no claim in the past three years ("30% No Claim Discount" or "30% NCD")
    - The NCD resets to 0% at next insurance policy renewal, i.e. no discount, upon making a claim

18. To promote the Scheme, new members joining the Scheme within the first six to twelve months after the launch of the Scheme would start at the 30% NCD level.

19. In order to attract people to enrol when young on an ongoing basis, those joining at any time before the age of 30 would also start at the 30% NCD level.

20. The cost of offering NCD would be absorbed by the insurers and priced in when calculating premium without involving government subsidy, except for the initial stage of scheme implementation when extra NCD for a limited period would be subsidised by the government to encourage early enrolment.

21. Exhibit 2 compares the advantages of the Protection Scheme, compared to existing PHI products.

Exhibit 2: Value proposition of the Protection Scheme compared to existing products

	Scheme	Existing PHI
Guaranteed renewal for life	Offered by all participating insurers	Offered by half the major insurers
Coverage of pre-existing medical conditions	25% covered after 1 year, 50% covered after 2 years, and 100% covered after 3 years of Scheme membership.	Not covered for individual PHI. Covered for some group PHI policies.
Guaranteed issue	Participating insurers must accept all applications for individual insurance.	Insurer can decline to cover an applicant.
Premium loading	An insurer may not load any individual policyholder by more than 200% of its standard published rate.	No restrictions on the premium an insurer can charge a policyholder.
Portability	Scheme coverage can be transferred from group insurance to individual insurance and between individual insurance covers without re-underwriting or resetting of the waiting period.	Not portable for individual PHI. Portability from group insurance to individual insurance offered by selected insurers.
Certainty of out-of-pocket ("OOP") costs	Greater certainty where the hospital offers a packaged charge.	Provider charges are uncertain, while the benefit limits of insurance products can be confusing.
Premium rate increases	Subject to guidelines agreed between the Scheme supervisory body and the insurance industry	At the sole discretion of the insurer
No claim discount	Up to 30% no claim discount if member has not made a claim for 3 consecutive years.	Offered only by some insurers.
Standardised terms and conditions	The Scheme supervisory body will work with the industry to adopt a uniform set of key terms and conditions.	Wording and interpretations may vary from one insurer to another.

Overall, the Protection Scheme provides the member with greater certainty of coverage, which is the purpose of insurance.

22. Any product that provides benefits at least as generous as the Base plan and follows the terms and conditions of the Scheme, where applicable[1], would qualify as a Scheme-approved product.

Savings Scheme

23. Health care costs and insurance premiums are expensive at the older ages and increase exponentially during a period when individuals are retired and drawing on their savings. Individuals would need to budget a portion of their post-retirement savings in order to afford the relatively high premium rates at these ages. Otherwise, we would expect a high proportion of policyholders to lapse their PHI covers when they retire and fall back to HA. The effect of old-age

[1] Some terms and conditions such as guaranteed renewal for life, premium loadings, and NCD do not apply to group insurance.

lapsation on the sustainability and viability of the Scheme would compound amidst an ageing population.

24. Hong Kong people are not averse to saving for the post-retirement living expenses, including medical expenses. However, they do not like to be told how to save. For this reason, we have structured the possible savings approaches along the lines of "degrees of freedom" ("DOF"), which is summarised in Exhibit 3.

Exhibit 3: Possible Savings Scheme approaches

Scheme Feature	"Degrees of Freedom"		
	Low	Medium	High
Explicit Funding Target	100% of expected cost of post-retirement PHI premiums	50% of expected cost of post-retirement PHI premiums	None
Contribution Pattern	Stipulated, but adjusted periodically if necessary so that the long term funding target is met	Not applicable, as long as minimum fund balance is maintained	No restriction
Funding Vehicle	Insurance company	Savings account / MPF	No restriction
Investment Restrictions	Funds that offer stable or guaranteed returns	Wide range of approved funds	No restriction
Qualifying Criteria	Must be Protection Scheme member	Must be Protection Scheme member if aged 30 and above	No specific requirements on length of membership, but level of rebate dependent on length of Protection Scheme membership
Possible Incentives	Notional government contributions to savings	Combination of notional government contributions and post-retirement premium rebates	Post-retirement premium rebates

25. The least restrictive approach, the High DOF approach, does not involve a formal Scheme savings structure but implicitly assumes that Protection Scheme members will be saving on their own. This would be the case if i) members value the Protection Scheme benefits, and ii) the government provides sufficient incentives. The incentive could be in the form of a premium rebate at the post-retirement ages, with the size of the rebate increasing with the length of Protection Scheme membership, akin to a loyalty discount.

26. The most restrictive approach, the Low DOF approach, would require the member to make specific contributions into a savings vehicle, with the contributions accumulating towards a funding target equivalent to the expected cost of post-retirement premiums. The funding vehicle could be approved insurance companies that offer stable or even guaranteed minimum investment

returns, or other financial institutions that are able to offer a similar level of security. The government incentive would be notional savings contributions from the government, which would accumulate in parallel and help to defray the cost of post-retirement premiums.

27. The Medium DOF approach is a hybrid, with 50% of the funding target formally funded and the remaining 50% assumed to be funded by the member outside of the Savings Scheme. The incentives would be a combination of government savings contributions and premium rebates. The funding vehicle would be a savings account, perhaps a second voluntary MPF account, where the savings balances can be allocated across different investment funds.

Risks and Control Knobs

28. We have identified several key risks, which we discuss below in descending order of potential impact on the Scheme's long term viability and its ability to meet the objectives of enlarging the PHI population and improving the transparency, market conduct, and competitiveness of the private health insurance and health care delivery markets.

- Persistency at older ages

    - One risk is that most Scheme members will lapse their policies at the older ages when premiums become expensive, as is currently observed in the market. In this case, the impact of the Scheme would be extremely marginal and would likely not provide noticeable relief to public health care financing, in which case the purpose of the Scheme would be questioned.

    - We have suggested several control knobs, but ultimately, some form of government incentive will be required to encourage members to stay on the Scheme through the older ages. In the absence of meaningful government incentives to reduce of cost of Scheme premiums at the older ages, it is very likely lapse rates will remain high at the older ages.

- Competition amongst providers

  - To encourage competition amongst private hospitals, we are recommending that private providers be encouraged to provide more packaged charges and that the charges and performance be benchmarked amongst private hospitals and against HA.

  - However, because the supply of private hospital services currently lags demand, private hospitals may not have enough incentive to adopt packaged pricing and service benchmarking in a meaningful fashion, and so addressing the issue of private provider capacity, discussed later below, would need to be tackled simultaneously.

  - Failure to implement these control knobs may mean i) the Scheme may not be able to differentiate itself sufficiently from non-Scheme products, apart from any government incentives and ii) the Scheme would not have met its objective of improving the transparency of the private health care delivery system, at least not significantly. This may not compromise the financial viability of the Scheme in the short term, but it may compromise the sustainability of the private sector and the Scheme in the long run if private medical costs become unaffordable, especially relative to HA.

  - Ultimately, the ability to achieve the Scheme's objectives to its fullest extent will likely take time and would be dependent on the balance of supply and demand for private hospital services, and the ability of the Scheme supervisory body to promote packaged pricing and service benchmarking.

- Provider moral hazard

  - There appears to be an over-prescription of non-medically necessary services in the private sector, particularly in terms of investigations such as endoscopies and colonoscopies. The risk of this continuing to occur in the Scheme is high, unless a medical necessity arbitration panel and clinical protocols (at least for selected diagnoses) or other substitutes are put in place.

  - However, there may be stiff resistance to this from the medical fraternity. The medical fraternity would need to be involved in the

setting up and development of these control knobs from the outset, without compromising the effectiveness of the end product.

- Certainly, this will not be an easy task. We do not think failure to implement these control knobs will jeopardise the financial viability of the Scheme in the short run, because this excess usage is already present in the environment in which PHI operates. However, if left uncontrolled, the moral hazard risk may jeopardise the sustainability of the private provider sector and the Scheme in the longer term if private medical costs and premium rates become unaffordable.

- Private provider capacity

  - Currently, the supply of private hospital services appears to be lagging demand. If the Scheme shifts admissions from HA to private hospitals, this will exacerbate the situation and potentially create queues at private hospitals and dissatisfaction amongst Scheme members. In addition, this will compromise the ability to execute other provider-related control knobs, such as provider benchmarking and clinical protocols, in a meaningful manner.

  - The control knobs of encouraging medically-appropriate shifting of some procedures from an inpatient setting to an outpatient setting, and building new hospitals should be able to address the situation. The supply of doctors, and nurses and other key medical personnel would probably not be a problem in the private sector, as the manpower from HA would likely follow the patients to the private sector. The patient to manpower ratio across Hong Kong would remain unchanged. However, there is a risk that too much manpower moves from HA to the private sector relative to the shift in patients. The Scheme would be criticised if this leaves HA with inadequate manpower. This will require careful planning on the part of the government, HA, and the relevant medical associations.

- Limited Scheme membership

  - If the Scheme attracts "too few" members, then the Scheme would be seen as a failure and all the time and money spent developing the Scheme would be seen as being a waste of public money.

- However, we think the likelihood of this is moderately low because there are currently 2.3 to 2.4 million existing lives with PHI. As long as the Scheme has the support of the insurers and the intermediaries, we believe the design of the Scheme will make it an easy decision for existing PHI policyholders to migrate to the Scheme and the migration process will entail little to no inconvenience.

- However, increasing the overall size of the PHI population, i.e. getting the uninsured to join the Scheme will be more difficult because the cost of assessing HA is so cheap and those who have not already purchased PHI may be set on staying with HA. At the end of the day, the Scheme may be able to achieve its objective of improving the transparency, market conduct, and competitiveness of PHI and private providers, but it may have more difficulty increasing the overall PHI penetration rate significantly.

- Anti-Selection

  - There is a risk that unhealthy lives will purchase Scheme plans rather than PHI products in the open market, which does not cover pre-existing conditions. This would compromise the ability of the Scheme to attract the relatively healthy lives, which make up the majority of the population.

  - However, we think this risk is relatively low if the following control knobs are put in place:

    - Pre-existing conditions are not covered within the first policy year, 25% of full benefits is covered in the second year, and 50% of full benefits in the third year; we expect this control knob will be sufficient to curb anti-selective behaviour while at the same time reduce the financial impact of any residual anti-selective behaviour

    - Insurers would be free to underwrite and apply premium loadings up to 200% or three times the insurers' standard premiums, so individuals with estimated risk costs falling within this threshold would be charged appropriate premium rates.

- A High Risk Pool ("HRP") would be put in place to fund the cost of individuals with expected risk costs exceeding three times the standard premium. The cost of these high risk individuals would be funded by the premiums paid by those individuals (i.e. three times the standard premium), HRP reinsurance premiums paid by Scheme insurers into the HRP, and financial support from the government where necessary to maintain the financial viability of the HRP and the overall Scheme (see discussion on Price Arbitrage further below).

  - There is enough flexibility in these control knobs to allow ongoing adjustments to be made, so the Scheme can continue to compete with open market PHI products to attract the relatively healthy lives.

- Policyholder moral hazard

  - One of the often mentioned and observed problems with health insurance is the "buffet" mentality, where after paying a fixed premium the policyholder may have the incentive to consume as much health care services as desired, even if not strictly medically necessary.

  - To overcome this we have introduced coinsurance into the design of the Base product, so that the member remains financially engaged in the decision on whether, for example, a particular procedure or test is medically necessary and questions what are the cost-benefits of that procedure or test.

  - The control knobs to avoid provider moral hazard may also help to control policyholder moral hazard, as they encourage providers to advise patients on what courses of treatment or procedures are medically necessary.

- Competition amongst insurers

  - The current PHI market appears to be very competitive. As the Scheme would introduce greater market transparency, and facilitate comparison-shopping by introducing standardised products and a product exchange, we think there is very little risk of the Scheme being less competitive than the current market. Also, the insurers participating in the scheme would be free to set premium levels and

introduce top up plans, so that the drive for product and price competition can be maintained.

- However, the government needs to be careful not to make the barriers to entry too high, to avoid too few insurers choosing to participate in the Scheme. These barriers could take the form of regulatory compliance costs and the cost of developing and maintaining specialised IT infrastructure and manpower to administer the Scheme products.

- Price arbitrage

  - The Scheme would give participating insurers the freedom to underwrite and set premium rates, consistent with the open market, to avoid any risk of price arbitrage. For example, if the Scheme were only allowed to charge a flat premium or community rate, then all the relatively young and healthy individuals would purchase cover from the open market, leaving the Scheme with an inadequate premium rate to cover the relatively old and unhealthy.

  - There is also a risk of price arbitrage if the cost of HRP reinsurance is so high, that it compromises the ability of the Scheme products to compete with the open market products. Otherwise, a substantial number of healthy lives may quit the Scheme to avoid the burden of cross-subsidising the unhealthy lives in the HRP. Then there would be a disproportionate number of unhealthy lives in the Scheme, making it financially unsustainable.

- Falling back to HA

  - Members will still go back to HA for services not available in the private sector (in particular admissions through the emergency room) and also for complex care which are more readily available in HA hospitals and extremely expensive at private hospitals. The Base plan has not been designed to be sufficient to cover the cost of complex admissions at private hospitals, particularly those requiring inter-disciplinary care. The government's strategic direction is for these services to remain with HA. However, the member may choose to purchase top up cover and enhance the benefit limits for complex care.

- Apart from this, it is unlikely Scheme members will go back to HA for financial reasons, as the Base plan has been designed to provide access to an entry-level general ward in a standard private hospital. We expect the entire publicity campaign of the Scheme would centre on choice and access to private hospital care in a better-regulated environment with more certainty. There should be no doubt as to value of the Scheme and the intentions of the individual to access private care, if the individual purchases the Scheme product.

- During the government's publicity campaign, it must be made clear to potential buyers that the Base plan is designed for the use of general ward of a standard private hospital. To access more expensive private hospitals or better room accommodation, the consumer would need to purchase a top up plan. A member may feel short-changed if the member goes to a more expensive private hospital, but only bought the Base plan and ends up paying significant portion of the hospital bill out-of-pocket. The risk of this should be low, as we expect most insurers will try to promote the top up covers and many members will purchase a top up product rather than the Base product.

- If deductible plans were allowed, there would be a higher chance that the insured persons with deductibles would fall back to HA, especially in cases where the charges incurred are small. Although, if the relatively low-cost deductible plans are not allowed, then it is possible that this segment of the population would never purchase PHI.

- The scope of coverage and benefit limits of the Base product would need to be regularly reviewed to ensure it remains relevant to the scope and cost of services in the private sector.

- However, if the queues at HA reduce in the future, perhaps as a result of the Scheme, then there is a risk some individuals will withdraw from the Scheme and return to HA.

Supervisory Structure

29. A supervisory structure would need to be put in place to:

    - Govern Scheme implementation

- Supervise Scheme operation
- Monitor Scheme achievements

30. Having taken into consideration the existing supervisory mechanisms that are in place in Hong Kong, we propose that the supervisory functions be divided amongst three entities:

    - Prudential regulation of insurers, supervised by the Office of the Commissioner of Insurance ("OCI") or the Independent Insurance Authority ("IIA", i.e., the OCI if it becomes a statutory body). This overlaps with the existing functions of the OCI, which includes ensuring companies have sufficient capital and reserves to meet its contractual obligations to policyholders.

    - Quality assurance of health care providers, supervised by the Department of Health. This would include collecting information for benchmarking from private providers and performing clinical audits at private hospitals.

    - Scheme administration, supervised by a new governmental agency, preferably an independent statutory body ("Scheme Supervisor"). This would involve supervising the Scheme implementation, including fostering the development of packaged pricing and clinical protocols, formation of the arbitration panel, and development of benchmarks for insurers and private hospitals and HA. This would also involve supervising ongoing Scheme operations, including product registration, maintaining a product exchange and benchmarks, monitoring market conduct, administering government incentives, and providing feedback to the government on changes that need to be made to the Scheme to maintain its viability and meet its objectives.

Government Incentives

31. We see three areas where government incentives could be provided:

    - One off premium rebates so that entrants into the Scheme start off at the 30% NCD level, for a limited time period. This type of time-limited incentive, in conjunction with widespread publicity campaigns coordinated between the government and insurance companies helped to increase the PHI penetration rates in Australia significantly within a short period of time. The cost of this

incentive to the government is not significant because the vast majority of members are expected to not make claims for three consecutive years and therefore would eventually earn the 30% NCD anyway; we expect insurance companies will charge premiums that, after the 30% NCD, are adequate for this population of healthy individuals and government financing will not be required. Government financing would be required for the unhealthy individuals that would otherwise not be entitled to a 30% NCD in the longer term. We expect the cost will mostly occur in the first year of the Scheme and amounts will be smaller in the second and third years.

- Financial support for the HRP, where necessary. The Scheme products cover pre-existing conditions, while the open market products do not. If this results in a disproportionate number of unhealthy lives joining the Scheme, then the HRP reinsurance premiums required to fund the HRP would be excessive, directly leading to high premium rates compared to open market products. Consequently, this would make it very difficult for the Scheme to attract healthy lives and the overall Scheme risk pooling mechanism would break down. The government would need to inject money into the HRP to reduce the amount of funding required from HRP reinsurance premiums. In the current system, the government is probably already funding a large proportion of the uninsured treatment of unhealthy individuals via HA.

- Incentives to encourage savings for post-retirement Scheme premiums. As mentioned earlier, in the absence of meaningful government incentives to reduce the cost of Scheme premiums at the older ages, it is very likely that lapse rates will remain high at the older ages. We expect the burden on HA mostly comes from the elderly population. If at the end of the day there is only a small proportion of elderly insured with the Scheme, then we expect the impact of the Scheme would be extremely marginal and would likely not provide noticeable relief to public health care financing, in which case the purpose of the Scheme would be questioned.

32. A number of observers have suggested premiums be tax deductible. However, only around 20% of the population pays tax. Tax deductions would therefore only benefit a select group of higher-income individuals who probably already have PHI coverage.

SECTION 1: INTRODUCTION

Background

The Food and Health Bureau ("FHB") has commissioned a series of studies to devise a proposal for a feasible incentivised voluntary Health Protection Scheme ("HPS", "the Scheme"), guided by the policy direction in the Chief Executive's Policy Address 2009-10 to propose a supplementary health care financing option based on voluntary participation with insurance and savings components for the second stage public consultation on health care reform.

Milliman Limited ("Milliman") has been appointed by FHB to carry out "Feasibility Study on the Key Features of the Health Protection Scheme."

The aim of this study is to design actuarially sound insurance product templates and develop policy options for provision of incentives where necessary to enable the Scheme to operate effectively.

Scheme Objectives and Parameters

The objectives of the Scheme are:

- Encourage take-up of medical insurance and savings plans among the population and improve their sustained access to affordable and value-for-money private healthcare services, in order to provide choice to those who are able and willing to pay, and induce their making greater use of private services as an alternative to public services.

- Improve transparency about service standards and price levels in the private health insurance ("PHI") and healthcare markets, with a view to encouraging standardised product development and offerings, promoting market competition, and enhancing consumer protection and confidence.

In designing the Scheme, we have worked within the following parameters:

- The Scheme will focus on inpatient care. Primary care, maternity care, non-medically necessary cosmetic surgery, and experimental procedures are

excluded from cover under the Scheme. In particular, we discuss the reasons for excluding primary care and maternity care in Section 2.

- Scheme members' rights to use HA would not be diminished.

- The role of the government would be to facilitate free market competition and market forces, while putting in place control knobs to avoid potential market failures.

- Premium rebates will not be provided to those aged under 65. Non-recurring subsidies will be limited to $50 billion. There will be no means testing in determining the amount of subsidies provided to each individual.

- HA will not provide additional private beds, unless there is a shortage of capacity at the private hospitals.

The development of the Scheme design is both driven and constrained by the objectives and parameters outlined. The design of the Scheme could differ significantly if these objectives and parameters are changed.

For the Scheme to be successful in achieving its specific objectives, it must:

- Provide terms of coverage, including price and delivery of service, that are attractive and transparent to those eligible to participate.

- Be financially sound, so that its promises are fulfilled, including less reliance on HA funding than in the past.

- Be cognisant of the degree of standardisation in products, as over-standardisation inhibits competition and innovation.

For these objectives to be satisfied long term, the Scheme must manage the risk and provide appropriate incentives.

Approach

In designing the Scheme, we have relied on:

- The experience of Milliman in Hong Kong, the region, and relevant countries from around the world

- Information and analyses from the "Local Market Situation and Overseas Experience of Private Health Insurance and Analyses of Stakeholders' Views", which includes research on the experience of PHI from around the world, the Hong Kong PHI market, and the views of the various stakeholders in the Hong Kong health care system.

- Invaluable input from several government committees, which comprise stakeholder representatives and government bureaux/departments, including:

    - Health and Medical Development Advisory Committee ("HMDAC") and Health Care Financing Working Group under HMDAC
    - Consultative Group on Voluntary Supplementary Financing Scheme
    - Task Force on Voluntary Supplementary Financing Scheme
    - FHB

- Information and views collected from various stakeholders in the Hong Kong health care system, in particular, the Hospital Authority, the Hong Kong Federation of Insurers, and a few private hospitals.

Organisation of this Report

The Scheme comprises a protection component ("Protection Scheme") and a savings component to help policyholders save for post-retirement medical expenses ("Savings Scheme").

The body of this report outlines the proposed Protection Scheme and Savings Scheme.

Appendix A illustrates how the benefit limits, deductibles, and coinsurance would apply to different hospital bills.

Appendix B looks at variations in features of the proposed Scheme and well as alternative Scheme designs that we examined.

Appendix C provides a technical discussion on how the illustrative premium rates were determined.

Appendix D provides an outline of how packaged charging of medical services may work in practice and the issues involved.

Appendix E provides a list of common types of Procedural Diagnoses Related Groups ("DRG") in HA.

Appendix F provides the higher illustrative benefit limits for hospital inpatient packages of procedures with complications and comorbidities.

Appendix G provides comparison of the proposed Scheme against other relevant market products.

Limitations

Milliman does not intend to benefit any third party recipient of its work product or create any legal duty from Milliman to a third party even if Milliman consents to the release of its work product to such third party.

Where this report is distributed, it should be distributed in its entirety.

In order to understand and rely upon Milliman's work, this report must be read in its entirety. All recipients of the Milliman report should understand that the Milliman work product is a complex, technical analysis, and that Milliman recommends all recipients be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

The recommended Scheme design should be viewed as a high level illustration of a Scheme for the government to consider for public consultation. It is not a detailed blueprint for Scheme implementation.

The premium rates shown in this report are intended to be illustrative and should not be relied on by insurance companies. These premium rates include estimates of medical costs that are subject to uncertainty. Actual experience may vary from estimates, perhaps significantly.

In addition, there is significant uncertainty in setting the assumptions at the extreme elderly ages, e.g. age 85 and above. There is no existing insured experience at this age. We had to supplement Hong Kong experience with overseas experience. We have also referenced the experience of HA, but even HA experience is based on a very small population, particular with regards to males aged 85 and above.

SECTION 2: OVERVIEW OF THE PROTECTION SCHEME

BENEFIT FEATURES

The Scheme design is based on the premise that the access to public health care services would absolutely be unaffected by Scheme participation. In other words, the Scheme members would continue to enjoy same freedom and same level of subsidy as other people in using public health care services.

The covered benefits are broadly divided into three categories:

- Hospital inpatient and ambulatory procedures
- Outpatient services relating to the hospital admission or ambulatory procedure
- High cost outpatient treatment

The primary purpose is to cover hospital inpatient care. However, ambulatory procedures are covered because many inpatient procedures can be performed in an ambulatory setting. As a bonus, selected outpatient services relating to the hospital admission or ambulatory procedures would also be covered. At the moment, radiotherapy and chemotherapy are covered as high cost outpatient treatment. In the future, this could be extended to include other high cost items.

Exhibit 2.1 on the next page illustrates the benefits covered under the base standardised Scheme product ("Base plan") and an illustrative top up plan. The functions of the Base and top up covers are discussed later in this section of the report.

Under the Scheme, hospitals would be encouraged to quote packaged charges. Currently at least one private hospital offers over 70 packages with fixed prices. The Scheme products would have benefit limits for each type of package so that members will know exactly how much would be covered by the insurer versus paid out-of-pocket by the member. Where the hospital does not offer a package, the itemised benefit limits would apply. Packaged pricing based on DRG has been used in several countries around the world, including the USA and Australia.

The benefit limits for the hospital inpatient and ambulatory packages in Exhibit 2.1 are examples and purely illustrative. Before implementation, the benefit limits should

be refined so that, even for the same diagnoses, packaged charges and benefit limits are increased for more complex cases. A good starting point for reference would be the DRG system used by HA. Also, the Scheme supervisory body, hospitals, and insurers should coordinate the package prices and benefit limits so that unanticipated out-of-pocket costs to the member is minimised.

Examples of how the various benefit limits, deductibles, and coinsurance would apply to a hospital bill are included in Appendix A.

The reader should note that the benefit limits indicated are the "budgets" provided to cover the various medical costs. The member would be required to pay a portion of the budgeted amount, in the form of a coinsurance payment. For example, for chemotherapy, the budget under the Base plan is $200,000. The member is expected to pay 20% of the chemotherapy costs, i.e. up to $40,000, while the insurer will pay up to $160,000.

The member can select from a choice of deductibles of $0 (i.e. no deductible), $5,000, $10,000, and $15,000. The deductible operates like an excess in motor insurance, where the policyholder pays for the first $10,000 of the hospital bill, for example, and the insurer pays for the remainder subject to any other coinsurance. The deductible would be counted towards calculation of applicable coinsurance thresholds for the remaining bills so that the insured would not bear double co-payment for the same amount (see Appendix A for illustrative calculation). The deductible reduces the premiums significantly, while still providing insurance protection against large medical bills (see premium rates in Exhibit 2.2).

Exhibit 2.1: Benefit limits for Base plan and illustrative top up plan

Plan Type	Base	Bronze Top Up
Hospital Inpatient and Ambulatory Procedures		
Room Type	Ward	Ward
Benefit limits where hospital offers a package		
Examples of hospital inpatient packages (uncomplicated cases[1])		
▪ *Hernia Procedures*	$22,000	$28,000
▪ *Haemorrhoid Procedures*	$30,000	$34,000
▪ *Appendicectomy*	$35,000	$40,000
▪ *Laparoscopic Cholecystectomy*	$40,000	$45,000
▪ *Percutaneous Transluminal Coronary Angioplasty ("PTCA") (Stents are covered separately under Surgical Implant benefit)*[2]	$90,000	$100,000
▪ *Laparoscopic Anterior Resection of Rectum + Colostomy*	$112,000	$125,000
Examples of ambulatory procedure packages		
▪ *Haemorrhoid Procedures*	$7,000	$8,000
▪ *Endoscopic Retrograde Cholangiopancreatography ("ERCP")*	$10,000	$11,000
▪ *Cataract Procedures*	$13,000	$15,000
▪ *Hernia Procedures*	$13,000	$15,000
▪ *Extracorporeal Shockwave Lithotripsy ("ESWL")*	$15,000	$17,000
Benefit limits where hospital does not offer a package		
Room & Board limit (daily), maximum 180 days	$550	$700
Doctor's visit (daily)	$650	$800
ICU R&B limit (daily)	$2,000	$3,000
Surgical limit (Surgeon, anaesthetist, op theatre) per procedure[3]	$50,000	$70,000
Specialist fee per admission	$2,000	$2,500
Miscellaneous hospital expenses per admission	$8,000	$10,000
Surgical Implant (subject to approved list of implants)	Per implant schedule	Per implant schedule
Coinsurance (first $10K/next $90K/subsequent) per admission / amb. proc.	20%/10%/0%	20%/10%/0%
Outpatient services related to hospital inpatient or covered ambulatory procedure		
Specialist consultation, per consultation Maximum 3 consultations per admission / amb. proc.	$600	$700
Specialist outpatient investigations[4], per admission/amb. proc.	$5,000	$6,000
Advanced diagnostic imaging tests[5], per admission/amb. proc.	$5,000	$6,000
Coinsurance	20%	20%
High cost outpatient services		
Radiotherapy or chemotherapy, per disability[6]	$200,000	$200,000
Coinsurance	20%	20%

Notes:

1. The benefit limits illustrated are for uncomplicated cases. The benefit limits would be higher for cases with complications and comorbidities (see Appendix F for examples).
2. An additional payment for stents would be paid under the Surgical Implant benefit. The payment would be subject to a schedule with different limits for different types of implants. An illustrative benefit limit for stents is $22,000 per stent.
3. Subject to surgical schedule.
4. Examples: endoscopy, colonoscopy, gastroscopy.
5. Examples: MRI, PET scan, CT scan
6. Base plan subject to formulary set by Scheme supervisory body. Top up products may have broader formulary.

Benefit limits: Packaged Charge Limits vs. Itemised Benefit Limits

Insurers have traditionally relied on itemised limits as a way to cap their liability on large claims and, to an extent, protect themselves against the financial risk of possible excessive charging by medical providers. However, because of the multiple limits and uncertain provider charges, the policyholder may be uncertain as to how much of the hospital bill will be covered by the insurer.

To reduce the uncertainty of out of pocket costs to the member:

- The Scheme would encourage hospitals to provide more packaged charges. At least one private hospital already provides over 70 packages ranging from circumcisions to coronary artery bypass grafts.

- The Scheme product would have a packaged benefit limit.

- With the knowledge of the packaged charge from the hospital and the packaged benefit limit from the insurer, the member would know exactly how much she/he would need to pay out of pocket.

There are a few points to note on packaged charges:

- The packaged benefit limits exclude the cost of implants, such as stents in the PTCA example illustrated in Exhibit 2.1. The cost of implants would be covered by a separate additional benefit limit that would vary with the type of implant and subject to a 20% coinsurance.

- Otherwise, the packaged benefit limits cover all costs, including the doctor's or surgeon's fees. In some cases, the hospital may agree to a fixed price, but the doctor may not. In this case, the member has a choice of i) asking the doctor to provide an indicative price so the member at least has a rough feel for the out-of-pocket costs, ii) selecting another doctor who is willing to charge a fixed price.

Hospitals will not be able to offer packaged charges for all types of diagnoses. For example, the hospital length of stay for stroke and brain trauma patients can be highly unpredictable and hospitals may not be able or willing to absorb such risks. For these types of admissions, the itemised benefit limits illustrated in Exhibit 2.1 would apply.

For some type of procedures, some hospitals may choose to offer packages while others may not. There are a few approaches to deciding how packaged benefit limits and itemised benefit limits would apply in this case, including:

- On a case-to-case basis, applying packaged benefit limits when packaged charges are available and applying itemised benefit limits where they are not. In this way, the charging structure is consistent with the product benefit structure. However, some observers argue that this would not provide any incentive for private providers to adopt packaged pricing, unless there is clear demand from patients for packaged pricing and there is sufficient competition amongst hospitals and doctors to compel them to do so.

- Applying packaged benefit limits to all private providers as long as one private provider provides a package. Or, taking this one step further, packaged benefit limits could be applied to diagnoses or procedures where, based on analysis of past cases, it can be shown that it is financially viable for private providers to offer packaged charges. This creates more pressure for private providers to offer packaged charges. However, if a packaged benefit limit is applied to a case where the hospital is charging on an itemised basis, then, in principle, patients who are more complex than average are more likely to incur higher out-of-pocket costs, which may not be acceptable to the public. To an extent, this can be addressed by designing the packaged benefit limits so that they increase with complexity.

Base and Top Up Covers

The Base plan benefit limits have been set to be sufficient to cover general ward expenses at a standard private hospital for most procedures using a 2010 cost basis, with no out-of-pocket costs other than the intended coinsurance and deductibles for most diagnoses. However, the benefit limits are not sufficient to cover high cost, complex diagnoses, particularly those requiring inter-disciplinary care. It is the government's intention for such types of care to remain with HA. Members aiming to seek complex care at private hospitals should purchase top up covers, or access subsidised HA services to which should remain universally accessible for Hong Kong residents.

The Base plan would be a standardised product that all participating insurers must make available to the public. Insurance companies would be free to design and sell top up products, as long as the scope of coverage and benefit limits are not less than that of the Base plan.

We have kept the Base plan benefit limits relatively low because:

- Some employers only provide coverage around the Base plan level, or even lower (see Appendix G). We do not want to exclude these employers from the Scheme by making the Base plan benefit limits too high.

- We want to encourage individuals and employers in general to participate in the Scheme. Any plan that provides benefits at least as generous as the Base plan and offers consistent terms and conditions would qualify as an approved Scheme product. By setting the Base plan benefits at a low level, the majority of existing plans would qualify as Scheme products with some minor tweaks to the terms and conditions (see Exhibit 2.3 at the end of this section). In some cases, some tweaking of benefits may be required (e.g. to include chemotherapy cover).

  We refer to the concept discussed above as an integrated top up approach, which makes it easier for members to understand how much cover they are purchasing. An alternative would be a supplementary top up approach, where members would be purchasing a Base plan and a supplementary top up plan that provides additional benefits; to understand how much cover has been purchased, the member would have to add up the limits of the two plans, which some members of the public may find confusing.

The Bronze top up plan benefit limits illustrated in Exhibit 2.1 would be sufficient to cover general ward expenses at average to higher cost private hospitals, but perhaps not the most expensive private hospitals. We would expect insurers will offer not only Bronze top up plans with even higher benefit limits than those we have illustrated, but also:

- Top up products that may have lower or even no coinsurance. While it is not the intention of the Scheme to have products without coinsurance, the Scheme cannot stop the open market or overseas insurers from issuing supplementary non-Scheme products designed specifically to cover any coinsurance imposed by the Scheme.

- "Silver" and "Gold" top up plans that would be sufficient to cover stays in semi-private and private rooms.

- Perhaps specialist outpatient, general practitioner, and maternity cover

- Other enhancements such as emergency repatriation costs

Key Terms and Conditions

No Claim Discount ("NCD")

Individual Scheme members would be entitled to discounts on the standard published premiums, based on the number of consecutive claim-free years:

- 10% discount if no claim in the past one year, on renewal of the policy
- 20% discount if no claim in the past two years
- 30% discount if no claim in the past three years
- The NCD resets to 0% at next insurance policy renewal, i.e. no discount, upon making a claim

In order to attract people to enrol when young, the 30% NCD would be available at all times for people aged below 30.

The NCD is not applicable to group plans.

Coverage of pre-existing conditions

First time buyers of PHI enrolling in the Scheme would have their pre-existing medical condition covered according to the following sliding scale:

- Not covered in first policy year
- 25% of medical costs covered in second policy year
- 50% of medical costs covered in third policy year
- 100% of medical costs covered in fourth policy year, and thereafter

PHI policyholders migrating to the Scheme may already have been making claims for particular medical conditions; these conditions will continue to be covered without a waiting period when the policyholder migrates to the Scheme. However, some of these policyholders would also have had pre-existing medical conditions when they first purchased PHI, and their insurers might never have covered the medical costs related to these medical conditions. These pre-existing conditions would be subject to the same three-year waiting period, consistent with first-time buyers who also have never had their pre-existing conditions insured.

Guaranteed renewal of coverage for life

Scheme members would have the right to renew the policies. Insurance companies would not have the right to cancel the policy unless the policyholder has misrepresented specific material facts when purchasing the policy, submitted fraudulent claims, or has failed to pay the required premiums.

There would be no maximum age of insurance.

Maximum age at entry

The individual must be aged 65 or younger when joining the Scheme. Individuals are encouraged to not wait until they are old before joining the Scheme.

An exception would be made for a 12-month period after the Scheme is launched, where there would be no limitations on the entry age but the premium loading for those aged 65 and above would not be capped in order to balance the need for cost control and containing anti-selection. This is to provide an opportunity for the entire Hong Kong population to participate in the Scheme.

Portability

Scheme members would be entitled to switch insurers without prejudice, i.e. without having to serve an additional waiting period and without re-underwriting by the new insurer.

When switching plans, the member's existing Scheme plan may be either an individual or group plan.

The portability requirement would apply to Base and Bronze-level top up products, which make up the vast majority of the products currently purchased in the market. The portability requirement would not apply to high-end products, for example, such as those providing rich worldwide cover at a cost of tens of thousands of dollars. However, insurers would be free to offer portability on all products, not just Base and Bronze-level products. Those who own Scheme compliant high-end products will always have the right to purchase the Base plan and Bronze top up products without prejudice.

Premium rate increases

Premium rate increases would be in accordance with guidelines to be agreed between the Scheme regulator/administrator and the insurance industry. We expect these guidelines will be taken into consideration:

- Medical inflation
- Trends in utilisation
- Inflation in operating costs

The underlying principle would be that insurance companies would require a rationale basis for increasing premium rates. Yet the guideline should be carefully promulgated in order to avoid compromising on the need to maintain the incentive for insurers to control cost and enhance efficiency.

These guidelines would apply to individual insurance and any standardised group products. They would not apply to tailor-made group products.

Some leeway may be required during the first few years after the implementation of the Scheme, because insurance companies will be covering pre-existing conditions for the first time and there will be significant uncertainty in how much this will cost. If insurers do not have the reassurance that they will be able to fully adjust premium rates upwards if they under-price the risk at the outset, then there is a risk insurers may collectively take a conservative approach at the outset.

Benefit limit increases

The Scheme supervisory body would increase the benefit limits of the Base product on a regular basis (perhaps every one to three years) to ensure that the benefit limits remain relevant and adequate to cover the cost of private care.

Exclusions

The general exclusions that would apply include:

- Services that are not reasonable and medically necessary
    - E.g. services that are not medically indicated, such as investigations or laboratory tests that are not related to the diagnoses for which the patient is admitted

- Services performed for the comfort of the patient
    - E.g. hairdressing, unless necessary
- Experimental procedures
- Maternity
- Drug addiction, alcoholism, drunk driving
- Cosmetic surgery, birth control and infertility treatment
- Specialist outpatient and general outpatient care unless related to the covered ambulatory procedure or hospital admission
- Dental care or dental surgery unless necessitated by injury caused by an accident
- Allied health services such as occupational and physical therapy

We have specifically excluded primary care, i.e. specialist outpatient and general outpatient visits from the Base plan, because:

- The use of primary care is discretionary. For a voluntary individual product, this can be easily subjected to abuse and anti-selection, i.e. those who tend to go often to the doctor for even the most minor ailments would more likely purchase the product.

- Primary care is a high frequency, low cost event. Insurance is designed to pool the risks for low frequency, unpredictable high cost events.

- The government's financing challenge rests mostly with inpatient care, and not primary care.

We have also excluded maternity cover from the Base plan because:

- The benefit is prone to anti-selection, i.e. people who purchase maternity cover are almost certainly going to have a baby. This makes the premium extremely expensive. Some insurers in the market do offer maternity cover as an option for individual PHI and the cost of the premiums is around 80% of the benefit. For example, if the benefit were for $50,000, the premium charged would be $40,000. In addition, there is usually a 12-month waiting period, which would mean the policyholder would need to pay two years' premiums before making a claim.

- Including maternity in the Base plan would deter those who are not planning to have babies from joining the Scheme.

Instead, these covers could be provided as part of top up covers.

Premium Rates, Underwriting, and Premium Loadings

The premium rates for the Base plan for different levels of deductible are illustrated in Exhibit 2.2. These premium rates do not include commissions and other acquisition costs.

Exhibit 2.2: Base plan annual premium rates, net of commission and acquisition costs (in 2010 price level)

Age	After 30% NCD Deductible				Before NCD Deductible			
	$0	$5K	$10K	$15K	$0	$5K	$10K	$15K
00-01	1,450	950	700	500	2,070	1,360	1,000	710
02-04	1,100	750	550	450	1,570	1,070	790	640
05-09	700	500	400	350	1,000	710	570	500
10-14	550	450	350	300	790	640	500	430
15-19	800	600	500	400	1,140	860	710	570
20-24	1,100	850	650	550	1,570	1,210	930	790
25-29	1,200	950	750	600	1,710	1,360	1,070	860
30-34	1,400	1,100	900	750	2,000	1,570	1,290	1,070
35-39	1,650	1,300	1,100	900	2,360	1,860	1,570	1,290
40-44	2,050	1,650	1,400	1,150	2,930	2,360	2,000	1,640
45-49	2,450	2,000	1,650	1,400	3,500	2,860	2,360	2,000
50-54	2,750	2,200	1,900	1,600	3,930	3,140	2,710	2,290
55-59	3,200	2,650	2,300	1,950	4,570	3,790	3,290	2,790
60-64	3,900	3,250	2,850	2,500	5,570	4,640	4,070	3,570
65-69	4,700	3,950	3,500	3,000	6,710	5,640	5,000	4,290
70-74	5,400	4,550	4,000	3,450	7,710	6,500	5,710	4,930
75-79	6,650	5,550	4,900	4,250	9,500	7,930	7,000	6,070
80-84	8,800	7,300	6,400	5,500	12,570	10,430	9,140	7,860
85+	10,500	8,700	7,550	6,400	15,000	12,430	10,790	9,140

We expect, on average, over 90% of members (around 97% at younger ages and down to 65% at age 85+) will be able to maintain the 30% NCD from year to year if opting for a $0 deductible, and an even higher proportion would enjoy the 30% NCD if opting for higher deductibles.

To encourage people to join the Scheme, we propose that government provides premium rebates for a limited period, so that anyone joining within 12 months of the launch of the Scheme will start off immediately at the 30% NCD level.

In addition, to provide ongoing encouragement for young people to join the Scheme, we propose that anyone under age 30 continue to be entitled to start at the 30% NCD when they are joining the scheme, even after the 12-month period.

The reader should note that the premium rates are illustrative and the uncertainty is particularly significant at the older ages. There is very little Hong Kong-specific data on the elderly insured population, and there is even very little HA data on those aged 85 and above. We had to supplement Hong Kong data with overseas data at the older ages. Certainly, actual experience may be significantly different than that illustrated. We discuss our methodology and assumptions in Appendix C.

Freedom to rate and underwrite, but with limits on premium loadings

Insurers would be free to set premium rates for the Base and top up products because:

- The underlying philosophy is to allow free market forces to act, with the government monitoring for signs of any market failures.

- Inconsistencies in pricing between the Scheme and the open market will lead to price arbitrage and financial failure of the Scheme in the long run. Consumers have a choice of Scheme and non-Scheme or open market products not only in Hong Kong, but overseas. Insurers are free to underwrite and determine what it sees as the correct price for each individual in accordance with the individual's health status. If there are artificial restrictions on the Scheme premium rates, then there will be price arbitrage and anti-selection against the Scheme. Those under-priced by the Scheme relative to the market will join the Scheme, while those over-priced by the Scheme will purchase from the open market. The Scheme would end up with a portfolio of under-priced policies, leading to financial failure in the long run.

Insurers would be allowed to underwrite individuals and determine the appropriate loadings over and above their published standard premiums. However, the loadings would not be allowed to exceed 200%. In other words, no individual would pay more than three times the standard published premium rate for the relevant age and gender, except those new entrants aged 65 or above specially accepted during the initial promotion period of scheme implementation.

There would be no premium rate or underwriting restrictions for group insurance. Benefit designs are usually tailor-made to each employer and claims experience can vary significantly from one employer to another, as do premium rates, which tend to more closely reflect the underlying claims experience of the particular employer. In other words, there is much less cross subsidy between healthy and unhealthy groups compared to between healthy and unhealthy individuals with individual PHI.

Upgrading products

There are a few different scenarios where members may want to upgrade their products to enhance their benefits:

- The member may have purchased a Base plan when aged 25, but at age 30 may want to upgrade to a Bronze top up plan because she/he now has more disposable income.

- The member may have purchased a plan with a deductible, but now wants to move to a plan without a deductible. For example, the member may have purchased a high deductible plan to supplement employer PHI coverage, but has now retired[2]. Or the member may have moved overseas for a few years, and purchased a high deductible plan just to maintain her/his Scheme membership, but has now returned to Hong Kong.

- The member has developed a serious medical condition, and would now like to increase the benefit limits. This is a form of anti-selection.

To address these scenarios, we would recommend:

- Members be allowed to upgrade their plans, by one level, once every five years without re-underwriting. One level means moving from Base to Bronze top up, or from Bronze top up to Silver top up, for example. Switching from a deductible plan to a non-deductible would also be considered as an upgrade.

- Members would otherwise have the right to upgrade at any time, but would be subject to re-underwriting. The member would be able to continue making claims on any existing medical conditions under the benefit schedule of the old product. These medical conditions would be fully covered under the new upgraded product after the three-year waiting period and partially covered in years two and three.

No doubt, these rules will have to be tweaked after consultation with various stakeholders, and also during the course of the operation of the Scheme.

[2] If the employer were participating in the Scheme, then this argument would be redundant because under the Scheme portability rules, employees would have the right to "transfer" their employer coverage to an individual policy upon retirement.

Other Terms and Conditions

Geographic coverage

The Base product would limit coverage to Hong Kong private hospitals and doctors. However, policyholders would be able to seek approval from insurers to have a particular overseas procedure covered, prior to the treatment.

Insurers would be allowed to waive the overseas restriction either on a claim-by-claim basis, for specific policyholders, and even for the entire portfolio.

Insurers would also be allowed to sell top up plans that cover overseas treatment without restriction.

Coordination of benefits

Scheme products (including top up covers) would be the last payer relative to other insurance policies. Other insurance policies include non-Scheme PHI policies, travel insurance policies, personal accident policies that cover actual medical expenses, employee compensation insurance, and motor insurance.

Scheme Products vs. Existing PHI Products

Exhibit 2.3 summarises the value proposition of the Protection Scheme compared to existing products.

Exhibit 2.3: Key feature of the Protection Scheme vs. existing PHI

	Scheme	Existing PHI
Guaranteed renewal for life	Offered by all participating insurers	Offered by half the major insurers
Coverage of pre-existing medical conditions	25% covered after 1 year, 50% covered after 2 years, and 100% covered after 3 years of Scheme membership.	Not covered for individual PHI. Covered for some group PHI policies.
Guaranteed issue	Participating insurers must accept all applications for individual insurance.	Insurer can decline to cover an applicant.
Premium loading	An insurer may not load any individual policyholder by more than 200% of its standard published rate.	No restrictions on the premium an insurer can charge a policyholder.
Portability	Scheme coverage can be transferred from group insurance to individual insurance and between individual insurance covers without re-underwriting or resetting of the waiting period.	Not portable for individual PHI. Portability from group insurance to individual insurance offered by selected insurers.
Certainty of out-of-pocket ("OOP") costs	Greater certainty where the hospital offers a packaged charge.	Provider charges are uncertain, while the benefit limits of insurance products can be confusing.
Premium rate increases	Subject to guidelines agreed between the Scheme supervisory body and the insurance industry	At the sole discretion of the insurer
No claim discount	Up to 30% no claim discount if member has not made a claim for 3 consecutive years.	Offered only by some insurers.
Standardised terms and conditions	The Scheme supervisory body will work with the industry to adopt a uniform set of key terms and conditions.	Wording and interpretations may vary from one insurer to another.

SECTION 3: OVERVIEW OF SAVINGS SCHEME

Possible Approaches

Health care costs and insurance premiums are expensive at the older ages and increase exponentially during a period when individuals are retired and drawing on their savings. Individuals would need to budget a portion of their post-retirement savings in order to afford the relatively high premium rates at these ages. Otherwise, we would expect a high proportion of policyholders to lapse their PHI covers when they retire and fall back to HA. The effect of old-age lapsation on the sustainability and viability of the Scheme would compound amidst an ageing population.

In designing the Savings Scheme, the key issues are:

- The savings structure. Hong Kong people are not averse to saving for post-retirement living expenses, including medical expenses. However, they do not like to be told how to save. For this reason, we have structured the possible savings approaches along the lines of "degrees of freedom" ("DOF"), which is summarised in Exhibit 3.1

- The form and level of incentives provided by the government. Every Hong Kong resident has a right to highly-subsidised HA services, and pays very low user fees for HA services. On the other hand, the cost of PHI is very high at the older ages. It is therefore not surprising that less than 5% of the population above age 65 have PHI cover. To improve the penetration rates at the older ages, the government will have to provide meaningful incentives for the population to save and maintain PHI cover at the older ages.

Exhibit 3.1: Possible Savings Schemes approaches

Scheme Feature	"Degrees of Freedom"		
	Low	Medium	High
Explicit Funding Target	100% of expected cost of post-retirement PHI premiums	50% of expected cost of post-retirement PHI premiums	None
Contribution Pattern	Stipulated, but adjusted periodically if necessary so that the long term funding target is met	Not applicable, as long as minimum fund balance is maintained	No restriction
Funding Vehicle	Insurance company	Savings account / MPF	No restriction
Investment Restrictions	Funds that offer stable or guaranteed returns	Wide range of approved funds	No restriction
Qualifying Criteria	Must be Protection Scheme member	Must be Protection Scheme member if aged 30 and above	No specific requirements on length of membership, but level of rebate dependent on length of Protection Scheme membership
Possible Incentives	Notional government contributions to savings	Combination of notional government contributions and post-retirement premium rebates	Post-retirement premium rebates

The main differences between the three possible approaches in Exhibit 3.1 are the savings structure and the explicit target funding level:

- For the Low DOF savings approach, the member is required to explicitly save towards 100% of the expected cost of post-retirement premiums (up to the Base plan level) in order to receive the government incentives, which would be a notional savings contribution by the government. The member would therefore see his or her own contributions accumulating with investment returns and the government's share of contributions accumulating beside it. A contribution plan is set out so that the sum of the member's and government's contributions is sufficient to pay for the Protection Scheme premium after retirement.

- For the High DOF savings approach, we implicitly assume individuals will save on their own. The government's role is not to tell individuals how to save, but encourage savings by offering incentives in the form of premium rebates on post-retirement Protection Scheme premiums.

- The Medium DOF savings approach is a hybrid of the Low and High DOF savings approaches. 50% of the expected cost of post-retirement Scheme Protection premiums would be formally funded through the savings Scheme

with some savings contributions from the government. The other 50% is assumed to be saved by the individual outside of the Scheme, incentivised by some rebates on premiums.

For the Low DOF approach, government incentives would take the form of savings contributions, for the High DOF approach it would be premium rebates, while for the Medium DOF it would be a combination of the two. Under all three approaches, the amount of incentive provided by the government may be the same in dollar terms, and set at a level so that the net amount paid by the individual for Scheme Protection cover at the older ages is affordable, all else being equal. In practice, the different approaches may attract different numbers and profile of people and produce different financial results.

The various other features of the Low, Medium, and High are in some cases interchangeable, and we discuss these features below.

Contribution Pattern

The Low DOF approach assumes there will be a pre-defined contribution pattern. This may not be a fixed dollar amount per year (like life insurance policies), but may need to be lower at the younger ages and higher at the older ages, as the earnings of an individual usually increases with age. The pre-defined contribution pattern may also need to be adjusted if, say, medical inflation turns out to be higher than expected.

The Medium DOF does not stipulate a definitive contribution rate, but a minimum fund balance, which builds up over time towards the target funding level. The minimum fund balance would be set at a low level at the younger ages to recognise that income levels at the younger rates will be relatively low. Also, at this age, with a long investment time horizon, they may choose to invest in riskier assets so the minimum fund balance requirement is set at a low level to allow for possible fluctuations in the market values of investments.

Investment Restrictions and Funding Vehicle

The key differentiator here is the range of investment options given to members. We would expect Scheme members would want to be given as many investment options as possible. However, some observers are concerned that individuals may inappropriately select risky investments without realising it; these observers would

prefer the range of investment options to be restricted to relatively safe investments with stable investment returns.

The High DOF approach has no restrictions whatsoever on how the funds are invested or with whom.

The Low DOF approach, on the other hand, would restrict the choice of investments to funds that offer "smoothed" returns. Typically these are offered by insurance companies. In years where investment returns are relatively high, the insurance company may not credit the full amount of investment return to the member, but keep some of this in reserve. In years where the investment returns are relatively low, the insurance company may draw on this reserve in order to maintain the stable investment return that has been credited in the past. Together with a prescribed contribution rate, the package would look like a typical insurance policy. However, today, banks also offer capital stable funds, sometimes with guaranteed minimum investment returns, so the choice of investment vehicles need not necessarily be restricted to insurance companies.

The Medium DOF approach could function along the lines of the MPF, and could even take the form of a second MPF account dedicated to medical savings, albeit on a voluntary basis. The member could allocate his/her money to a wide range of different types of funds.

Note that investment management charges should be expected to be a little higher under the Low DOF approach due to the higher risk associated with a guarantee of returns. As the guarantee is reduced or eliminated, the administrative charge should be lower.

Qualifying Criteria

The criteria to qualify to receive government incentives could range from:

- Must be a Protection Scheme member at all times.

- Must be a Protection Scheme member above a certain age, say age 30. Some individuals may not value protection at a young age, but do see the value of savings toward the future. Or in some cases, perhaps the parents may even want to start saving for their children, but do not see the value of PHI for their children.

- Strictly speaking, no explicit requirement to be a Protection Scheme member, although someone who has never been a Protection Scheme member would not receive any savings incentives and those who are members would receive rebates in proportion to their length of membership.

Other Savings Scheme Features

- Use of Funds
    - The funds are designed to be accumulated until retirement, when they can be gradually drawn upon to pay for post-retirement premiums.
    - However, the rules could be modified to allow withdrawal to pay for pre-retirement Scheme premiums if the individual becomes unemployed, for example.
- Withdrawal Benefits
    - If the member chooses to leave the Scheme or dies, the member or his/her estate would receive the member's fund balance, but not the government's portion of the contributions. The member would have "no gain, no loss" on withdrawal, although the investment fund or insurer may apply its customary charges on fund withdrawal.
    - Surrender benefits would not be applicable to the High DOF approach.

Which Savings Scheme Approach?

If the public is given a choice of the three approaches, we expect the least appreciated would be the Low DOF approach, because other than choosing the insurer, there would be very little choice of investments. Also, in the context of saving to pay for Scheme premiums thirty or forty years in the future, the investment risk also includes the risk of long term investment returns lagging medical inflation, which could well be the case for funds that offer stable returns or even guaranteed minimum returns ("low risk, low return").

In choosing between the Medium DOF and High DOF approaches, the key question is whether a formal savings structure is required. This in turn would depend on:

- What is the risk that some members will not have the discipline to save?

- For those who do have adequate savings, what is the risk of them changing their minds and using their savings for another purpose?

    - With the Medium DOF approach, individuals would see the government's savings incentives accumulating next to their savings balance. This could make the value of the savings incentives tangible. The member would be forfeiting this sum of government contributions if the member leaves the Scheme.

    - The same could be done with the High DOF approach, where in the policy renewal notification, the member would see the coming year's premium, the amount of rebate from the government, and the value of future rebates. The member would see that she or he would be giving up not just next year's rebate but those of future years' as well, if the member leaves the Scheme.

      However, this may still not be as tangible as a fund balance, which the member would likely be keeping a close eye on. Perhaps, the acid test would be whether a member would better remember the government's savings contribution fund balance or the value of future rebates.

Another consideration in deciding between the Medium and High DOF approach is the administrative cost:

- In our interviews with stakeholders, the issue of high MPF charges arose frequently whenever we discussed the Savings Scheme. Under the Medium DOF approach, the government and financial institutions may want to establish a common understanding of how much of the fixed costs of developing and maintaining the MPF administration infrastructure would be passed onto the Savings Scheme. Certainly the Savings Scheme would help defray some of the MPF's fixed costs, but it should also not absorb a disproportionate amount of the existing fixed costs.

- With the High DOF approach, the administrative costs would be minimal. The administration would only involve working out the premium rebate entitlements of each member, which can be done by the insurers, and the insurers communicating the amounts to the Scheme supervisory body.

SECTION 4: RISKS AND CONTROL KNOBS

Overview

This section of the report examines some of the issues and risks that the Scheme may face, which are:

- Limited Scheme membership
- Policyholder moral hazard
- Provider moral hazard
- Price arbitrage
- Anti-Selection
- Persistency at older ages
- Private provider capacity
- Competition amongst providers
- Competition amongst insurers
- Falling back to HA

At the end of this section of the report, we attempt to identify and prioritise the risks that are most likely to affect the viability of the Scheme and keep it from achieving its objectives.

Limited Scheme Membership

If the public response to the Scheme is lukewarm and the number of members is limited, then:

- All the effort and investment put into the Scheme, including developing IT systems and setting up the Supervisory body would not be justified.

- There may be an inadequate spread of risks to develop an actuarially sound risk pool, especially when the Scheme will be accepting high risk individuals with pre-existing conditions.

There are two sources of potential members: i) the 2.3 to 2.4 million existing lives with PHI cover and ii) the uninsured population.

To attract existing PHI policyholders, we have tried to create a value proposition so that both existing individual policyholders and employers would ask themselves, "Why not?" We believe migrating to the Scheme could be as simple as renewing the existing policies onto an almost identical policy but with a Scheme badge, because we have designed the Base policy so that most policies in the market already provide higher benefit limits. As long as they adopt the standardised terms and conditions, the existing PHI policies would almost automatically qualify as Scheme products, which offer superior features:

- Partial coverage of pre-existing conditions after 12 months, and full coverage after three years.
- Guaranteed renewal for life
- Portable benefits
- Greater certainty of out-of-pocket costs with packaged charges
- Appeals mechanism via the arbitration panel
- Premium rate increases in accordance with guidelines

In addition the government may offer incentives in terms of:

- 30% NCD for existing members who chose to migrate over to the Scheme within 12 months of the launch of the Scheme, if they have not made a claim in the last 12 months.

- Qualification for savings incentives or premium rebates at the older ages.

As long as the Scheme has the support of the insurance companies and intermediaries, we do not see why existing policyholders would choose not to migrate to the Scheme.

To attract first-time policyholders, the government may provide premium rebates so that these new members start off with a 30% NCD.

We think the above features may also be sufficient to attract those who are currently "sitting on the fence" to purchase PHI through the Scheme. However, this may be a small group of people, while most of the uninsured may have already decided to rely on HA because of the low user fees.

At the end of the day, the Scheme may well end up with two million members, but most of them may have already had PHI cover to start with.

Policyholder Moral Hazard

One of the often mentioned and observed problems with health insurance is the "buffet" mentality, where after paying a fixed premium the policyholder may have the incentive to consume as much health care services as desired, even if not strictly medically necessary.

To overcome this we have introduced coinsurance into the design of the Base product, so that the member remains financially engaged in the decision as to whether a particular procedure or test is medically necessary and consider the cost-benefits of that procedure or test.

Also, the control knobs to avoid provider moral hazard may also help to control policyholder moral hazard, as they encourage providers to advise patients on what courses of treatment of procedures are medically necessary.

Provider Moral Hazard

Without proper controls, insurance can be a "blank cheque" issued to health care providers, inadvertently encouraging over-prescription of services. To safeguard against this, we recommend the following control knobs as starting points. Individual insurance companies may choose to implement additional control knobs of their own, which may give them a competitive advantage if this results in better customer service or lower premium rates.

- Benchmarking of key performance indicators ("KPI") and quality measures amongst private hospitals, and also between private hospitals and HA. However, care should be taken in adjusting for the severity of the patients as HA tends to have a disproportionate share of patients with more serious medical conditions.

  The KPIs need not be exhaustive, but could focus on specific problem areas (e.g. number of endoscopies per 100 patients) and the number of KPIs could be expanded or reduced over time, as necessary.

- Clinical audits of hospitals performed at regular intervals. This would involve medical staff from the Scheme supervisory body reviewing a selection of

medical charts[3] from private hospitals and comparing the course of treatment provided against best-practice clinical protocols.

- Applying medical necessity criteria. Insurance companies currently have clauses in their policy contracts stating that they will only indemnify patients for medical services that are medically necessary. However, "medical necessity" can sometimes be a grey area leading to either inappropriate declinature of the claims or inappropriate provision of medical services and payment of the claims.

  We recommend the formation of an arbitration panel specifically for reviewing the medical necessity of cases and deciding who should bear the cost of the services in question. The arbitration panel should comprise individuals with and without medical backgrounds, and an individual with a legal background.

  The arbitration panel should not be used to establish the definition of medical necessity. The definition should be established by the Scheme supervisory body together with the insurers and private health care providers. The arbitration panel should apply their expertise to the resolution of disputes only.

  For more common diagnoses, decisions can be made with reference to best-practice clinical protocols. For more complicated cases, the arbitration panel could also seek advice from overseas medical practitioners who are experts in that particular field.

  We expect there to be resistance to an arbitration panel of this sort from various parties. However, if the public money, via Scheme incentives, is being used to partially finance the expansion of the private health care market, some level of control is necessary as there can be insatiable demand for the supply of health care services when the costs have been pre-paid. As one Hong Kong doctor put it, "There is no end to the amount of investigations that can be performed."

Clinical protocols would play an important role in all of the above. To be adopted in practice, this would need to reflect a combination of consensus among doctors in Hong Kong (i.e. reflecting Hong Kong practice) and research on what is best practice

[3] The medical chart documents the patient's medical diagnosis and the care delivered during the hospital stay. This may include the patient's medical history, medical encounters, orders and prescriptions, test results, and progress notes.

as documented in medical literature and clinical trials (which may be useful, if Hong Kong practice is not entirely in line with evidence-based best practices).

It is important that the Scheme does not encourage "cook book" medicine. The clinical protocols are certainly useful as guidelines, as a checklist for medical practitioners, as tool for reducing unwarranted variation in care between providers, and perhaps even as a tool to keep doctors up to date on the latest evidence-based medical practices. However, although the protocols may be applicable to uncomplicated or typical patients, there will be patients where the protocols may not be applicable, i.e. there will certainly be exceptions.

Compiling medical protocols is an arduous task. However, it has already been done in other countries, and Hong Kong can build upon established protocols. Also, the protocols do not need to be comprehensive. As a start, we would suggest the development of clinical protocols for medical conditions where there is the most unwarranted variation in care. We expect in terms of volume of cases, this would involve the simpler medical procedures. The number of protocols could then be expanded over time based on the cost-benefit of including specific additional medical conditions.

Price Arbitrage

As mentioned earlier, the Scheme products would be competing against other PHI products in Hong Kong and even abroad. As such, participating insurers would need to be given the freedom to price and avoid policyholders arbitraging between the two systems.

For example, if we restricted Scheme insurers to charging community rates, where all members pay the same premium rate, then the relatively young and the relatively healthy would opt to purchase a PHI product from the open market while the relatively old and relatively unhealthy would purchase a Scheme product. The community rate represents an average of the two, and would clearly be inadequate. The Scheme would be financially unsustainable.

There is also a risk of price arbitrage if the cost of HRP reinsurance is so high that it compromises the ability of the Scheme products to compete with the open market products. Otherwise, a substantial number of healthy lives may quit the Scheme to avoid the burden of cross-subsidising the unhealthy lives in the HRP. Then there

would be a disproportionate number of unhealthy lives in the Scheme, making it financially unsustainable.

Anti-Selection

The Scheme covers pre-existing medical conditions, while existing PHI products do not. As such, there is a risk that the Scheme will attract a disproportionate number of individuals with pre-existing conditions. The premium that would need to be charged would be higher than that in the open market, making the Scheme less attractive to healthy lives.

To manage this risk, we recommend:

- A waiting period, i.e. the sliding scale coverage of pre-existing conditions after 12 months and full coverage after three years, as described in Section 2.

- The establishment of a High Risk Pool, which we describe further below

High Risk Pool ("HRP")

Insurers would be allowed to underwrite and charge individuals up to three times their standard premium. Any individuals that would otherwise be assessed a premium higher than this would be reinsured with the HRP.

The HRP would be funded by:

- Premiums paid by the high risk individuals, i.e. three times the standard premium, less the marginal costs of the insurer, such as commission paid and a portion of the administrative costs. Insurers would not be allowed to retain premiums to cover fixed costs or meet profit targets on the high risk lives.

- Reinsurance premiums paid by insurers, which would be a percentage of all individual Scheme premium income.

If these amounts are deemed to be insufficient, there are a few options to increase the funding for the HRP:

- Inject government funding

- Increase the amount of premium paid by the HRP, i.e. increase the maximum premium payable from three times to, say, four times the standard premium, although this may not be socially or politically tolerable.

- Increase the reinsurance premium, although this could make the Scheme premium uncompetitive relative to the open market, making it difficult for the Scheme to attract healthy lives.

- Tweak the design of the Scheme and enhance any marketing campaigns to attract more healthy lives to join the Scheme

One insurer could be appointed by the industry to maintain the record keeping of the HRP, noting that all the policy and claims processing, and customer servicing would still be done by the individual insurers. The cost of maintaining these records should be marginal since the HRP administrator would already have the necessary IT systems to maintain the records of its own Scheme members. These marginal costs would be covered by the HRP.

The HRP would apply only to new individual members and existing PHI policyholders migrating over to the Scheme, if the migrating individual chooses to be re-underwritten in order to cap his/her premiums at three times the standard premium (there may be some existing individuals who are paying more than three times the standard premium of the insurer).

The HRP would not apply to group or employer plans, as group plans mostly do not face anti-selection risk. There is scope to include small groups where there is potential for anti-selection, although small employers may opt to purchase individual policies for their employees and insurers could provide group discounts.

Some stakeholders have raised the concern that insurers may try to "game" the HRP and "dump" all the high risk individuals into the pool, to maximise potential government or public funding of the Scheme. However:

- The aim of the HRP is to make PHI cover available to the unhealthy.

- If insurers artificially increase the premiums of individuals past the "three times standard premium" threshold to push them into the HRP, these insurers would simply be foregoing potential profit by ceding excessive premiums to the HRP.

We expect insurers would, as far as possible, aim to retain the premiums collected so as to cover its fixed costs. However, there is a risk that insurers would try to find convenient ways and means to avoid enrolling high risk individuals. The Scheme supervisory body would need to monitor this.

Persistency At Older Ages

The PHI penetration rates in Hong Kong drop from around 53% at around age 40 to less than 5% at the elderly ages, which is natural given the high cost of PHI at the elderly ages while HA user fees are extremely low. This poses two potential risks for the Scheme:

- Selective lapsation. The relatively healthy members, who may never have made a claim, may feel they are not getting value for money and may choose to lapse their policy. On the other hand, those who have been making claims will feel they are getting value for money and continue to stay in the Scheme. If this occurs over an extended period of time, the Scheme will end up with a disproportionate number of unhealthy lives and premiums will need to be increased for the fewer healthy lives left in the Scheme to pay for the medical costs of the same number of unhealthy lives. This in turn encourages more healthy lives to lapse, leading to a "death spiral" for the Scheme.

- The impact of this Scheme may be so marginal that the need for the Scheme becomes questionable. Because penetration rates of the working population are already high, we think it will be difficult to further increase the penetration rates at the working ages significantly. Furthermore, the impact of the Scheme would not be noticeable if the majority of these lives drop their PHI cover when they retire. If that is the case, then one would question why bother with the Scheme in the first place?

To manage these risks:

- We have recommended the NCD system illustrated in Section 2. Consumer market research shows that those that do not make claims see this as being equitable. The experiences of some insurers indicate that NCD systems help to reduce lapse rates.

- One possible option, if necessary, is for the entry requirements into the HRP could be modified so that if the Scheme as a whole is facing significant

selective lapsation, then some of the costly individuals in the Scheme (but not yet in the HRP) could be placed in the HRP. In other words, the HRP could be open to not only new entrants, but also to existing individuals with premium loading. In principle, the government could be asked to play a supporting role, because if the Scheme collapses, these high risk individuals would fall back to HA.

- We recommend the Savings Scheme be put in place and sufficient incentives be provided to encourage individuals to save for their post-retirement Scheme premiums and stay in the Scheme through their older ages.

  The biggest impact the Scheme can potentially make is at the older ages, where the penetration rates are less than 5%.

Private Provider Capacity

In recent years, it has become increasingly difficult to book a private hospital bed. If the Scheme causes a large shift of hospital admissions from HA to the private sector, then significant queues will form at private hospitals and the value of the Scheme will be questioned. Also, if demand outstrips the supply of private services, this will raise the private medical charges and hence private health insurance premium, making the scheme less attractive. Constraint on the supply side would also limit the scope of inviting new entrants to the provider market, thereby affecting the level of private provider competition in the market and the ability of the Scheme to control provider moral hazard.

There are a few initiatives that will help:

- A number of private hospital medical directors have told us that up to 30% of current private hospitals admissions are for procedures that can actually be done on an outpatient basis. This is consistent with the occupancy rate of 64% reported by private hospitals in 2009, which measures occupancy in terms of whether the bed is occupied at midnight. 36% of hospitals beds were therefore empty at midnight, but two to three patients occupied these beds during the day. This occurs mainly because many insurance policies currently cover these procedures only if there is an admission.

  To address this issue, the Scheme will explicitly cover these procedures in an outpatient setting, as long as the procedures are medically necessary.

Assuming a hospital is able to operate optimally at an occupancy rate of 85% without compromising quality, this could potentially free up 21% of total beds for inpatient cases requiring overnight stay.

- The government has identified four plots of land to build four new private hospitals. The government can monitor the situation and plan the number of beds that will come online in the coming years in order to meet the demand for private beds.

As a last resort, HA also has a supply of private beds and perhaps these could be made available, if necessary.

In terms of private doctors, the private sector has traditionally recruited doctors from HA. If there were a shift of patients from HA to the private sector, there would likely also be a shift of doctors. Overall, this is less so a Scheme-specific issue, but a general issue of the government and relevant medical bodies ensuring there are sufficient doctors, nurses, and other medical staff to meet the needs of the Hong Kong population.

Competition Amongst Providers

As mentioned above, competition amongst providers ultimately will depend on whether the supply of private services continues to lag demand. The long-term solution would be ensuring there is sufficient private capacity to meet the demand.

To supplement this, and to facilitate the working of market forces, we recommend:

- Encouraging providers to adopt packaged charging as far as possible, recognising that this may not be feasible for some types of diagnoses. As it is, there appears to be a trend of hospitals offering more packages for different types of admissions, with at least one hospital offering more than 70 packages. We suggest that this trend be encouraged. This idea is not without its challenges, which we discuss further in Appendix D.

- Benchmarking provider charges between hospitals, including HA hospitals.

Competition Amongst Insurers

One question raised by some stakeholders is if the PHI industry is competitive. If not, any government incentives provided may simply enhance the profits of insurance companies.

We do not consider this to be a material risk because there are well over 40 insurance companies currently selling PHI in Hong Kong, without significant concentration of business around just a few companies. The market is extremely competitive and our understanding is the profit margins are generally very thin.

We expect the Scheme to create an environment that is no less competitive:

- Every participating insurer would be required to make available the Base plan with standardised terms and conditions, so prices between companies will be directly comparable.

- The Base product and its prices would also serve as a benchmark for top up products.

- We recommend that the Schemes supervisory body set up a "product exchange" or website where the public can easily compare the products available in the market.

- Participating insurers would be required to report on the financial position of these products explicitly, so members will know how much of the premiums they pay actually go towards paying for medical costs, as opposed to other expenses, such as administration costs and commissions.

- To provide choice to members and ensure intermediaries are adding value, members would be allowed to buy directly from the insurer at a discounted rate.

There is a possibility that the entire industry may adopt standard premium rates for the Base products, so there would be no price competition in this area, and instead push the sales of top up products where they do compete on price. To avoid this, insurers should provide a separate accounting of the Base product so the public can gauge the reasonableness of the industry's standard Base premium rate.

In the unlikely event that the PHI industry transforms itself from what is currently a highly competitive market into an oligopoly, the government may wish to consider creating a public insurer as a benchmark operator. However, we stress that we consider this an unlikely scenario and this route should only be considered as a last resort.

Falling Back to HA

PHI policyholders in Hong Kong may still go back to HA despite having PHI cover because:

- Their PHI benefit limits may be inadequate to cover the cost of care in a private hospital.

- Unless the benefit limits are clearly sufficient by some margin, the combination of uncertain charges by the provider and the complicated itemised benefit limits found in PHI products make it difficult for the policyholder to work out how much he or she will pay out-of-pocket.

To encourage those with Scheme PHI to not fall back to HA:

- We have set the benefit limits for the Base plan so that they are adequate for care in the general ward of a standard private hospital. Also, we recommend that benefit limits of the Base product be adjusted regularly to ensure they remain adequate over time.

- The Scheme would encourage providers to make available more packaged charges, which would reduce the uncertainty of out-of-pocket costs.

We do note that the Base plan has not been designed to be sufficient to cover the cost of complex admissions, particularly those requiring inter-disciplinary care. The government's strategic direction is for these services to remain with HA. However, the member may choose to purchase top up cover and enhance the benefit limits for complex care.

The Base plan design includes the option of deductibles to make the premiums more affordable. We do note that if deductible plans were allowed, there would be a higher chance that the insured persons with deductibles would fall back to HA, especially in cases where the charges incurred are small. Although, if the relatively low-cost

deductible plans are not allowed, then it is possible that this segment of the population would never purchase PHI.

Assessment of Risks

Our overall assessment of the risks is summarised in Exhibit 4.1.

The net risk illustrated takes into consideration the likelihood and impact of the risk under consideration. The various categories of net risks are defined as follows:

- "High" refers to risks where the control knobs need to be in place and a final risk assessment needs to be made before the Scheme is launched. Careful forward planning and proactive risk management is required.

- "Moderately High" refers to risks where there is a relatively high chance of the risk occurring, and if left unattended the Scheme will not be able to achieve its objectives and the Scheme may not be viable in the long term. These risks have to be constantly monitored and managed, and the control knobs evolved over time.

- "Moderate" refers to risks where we think effective control knobs are available. Moderate tweaking of these control knobs may be sufficient.

- "Moderately Low" refers to a risk that is not insignificant, but risk at hand is technical in nature and relatively easy to manage (as opposed to a risk where managing the risk involves changing behaviour or culture). The Moderately Low rating reflects our level of confidence in the proposed control knobs.

- "Low" refers to risks that we consider to be not material, mainly because the likelihood of these risks occurring is low.

Exhibit 4.1: Likelihood and impact of key risks illustrated in descending order

	Likelihood	Impact	Net Risk
Persistency at older ages*	Mod. High	Mod. High	Mod. High
Competition amongst providers	Mod. High	Mod. High	Mod. High
Provider moral hazard	Mod. High	Mod. High	Mod. High
Private provider capacity	Moderate	High	Moderate
Limited Scheme membership	Mod. Low	High	Moderate
Anti-Selection	Moderate	Mod. Low	Mod. Low
Policyholder moral hazard	Moderate	Mod. Low	Mod. Low
Competition amongst insurers	Low	High	Low
Price arbitrage	Low	High	Low
Falling back to HA	Low	Moderate	Low

* Assumes a situation where there are no meaningful government savings incentives

We have measured the impact of these risks in terms of failure to achieve the Scheme objectives, as outlined in Section 1, and repeated below:

- Encourage take-out of medical insurance and savings plans among the population and improve their sustained access to affordable and value-for-money private healthcare services, in order to provide choice to those who are able and willing to pay, and induce their making greater use of private services as an alternative to public services.

- Improve transparency about service standards and price levels in the PHI and health care markets, with a view to encouraging standardised product development and offerings, promoting market competition, and enhancing consumer protection and confidence.

We have also used the ongoing financial viability of the Scheme as a criterion.

The categorisation of these risks is judgmental and we outline the arguments for our classifications below. Overall, even with the appropriate control knobs in place, there are a few risks that may stop the Scheme from achieving its objectives to its fullest intentions. However, we do not see any one risk jeopardising the final viability of the Scheme in the short term.

- Persistency at older ages

    - We have suggested several control knobs, but ultimately, some form of government incentive will be required to encourage members to stay on the Scheme through the older ages. In the absence of meaningful government incentives to reduce the cost of Scheme premiums at the older ages, it is very likely lapse rates will remain high at the older ages. In this case, the impact of the Scheme would be extremely marginal and would likely not provide noticeable relief to public health care financing, in which case the purpose of the Scheme would be questioned.

- Competition amongst providers

    - Because the supply of private hospital services currently lags demand, there is a high risk that the private hospitals will not have any incentive to adopt packaged pricing and service benchmarking in a meaningful fashion.

    - Failure to do so may mean i) the Scheme may not be able to differentiate itself sufficiently from non-Scheme products, apart from any government incentives and ii) the Scheme may not meet its objectives in terms of improving the transparency of the private health care delivery market, at least not significantly. This may not compromise the financial viability of the Scheme in the short term, but it may compromise the sustainability of the private sector and the Scheme in the long run if private medical cost becomes unaffordable, especially relative to HA.

    - We believe participation will hinge on individual negotiations between the Scheme supervisory body, private providers, and insurers. The number of packages with fixed charges offered by private hospitals and types of benchmarks may be modest at the outset, but this is something the Scheme supervisory body can continue to develop over time. Ultimately, the ability to achieve the Scheme's objectives to its fullest extent would likely be dependent on the balance of supply and demand for private hospital services, and the political strength of the Scheme supervisory body.

    - Overall, we rank this risk higher than the risk of inadequate private provider capacity (see discussion further below), because even if there

is adequate private provider capacity, it does not guarantee providers will adopt packages charging and benchmarking to the satisfaction of the Scheme objectives.

- Provider moral hazard

    - There appears to be an over-prescription of non-medically necessary services in the private sector, particularly in terms of investigations such as endoscopies, gastroscopies, and colonoscopies. The risk of this continuing to occur in the Scheme is high, unless the arbitration panel and clinical protocols (at least for selected diagnoses) are put in place and can effectively change practices.

    - However, there may be stiff resistance to this from the medical fraternity, and so the medical fraternity must be involved in the setting up and development of these control knobs from the outset, without compromising the effectiveness of the end product.

    - Certainly, this will not be an easy task. We do not think failure to implement these control knobs will jeopardise the financial viability of the Scheme in the short run, because this is already the environment in which PHI operates. However, if left uncontrolled, the moral hazard risk may jeopardise the sustainability of the private provider sector and the Scheme in the longer term if premium rates become unaffordable.

- Private provider capacity

    - Currently, the supply of private hospital services appears to be lagging demand. If the Scheme shifts admissions from HA to private hospitals, this will exacerbate the situation and potentially create queues at private hospitals and dissatisfaction amongst Scheme members. In addition, this will compromise the ability to execute other provider-related control knobs in a meaningful manner.

    - The control knobs of encouraging medically-appropriate shifting of patients from an inpatient setting to an outpatient setting, and building new private hospital beds should be able to address the situation. The supply of doctors, and nurses and other key medical personnel would likely not be a problem in the private sector as the manpower from HA would likely follow the patients to the private sector. The patient to manpower ratio across Hong Kong would remain unchanged.

However, there is a risk that too much manpower moves from HA to the private sector relative to the shift in patients. The Scheme would be criticised if this leaves HA with inadequate manpower. This will require careful planning on the part of the government, HA, and the relevant medical associations.

- Limited Scheme membership

    - If the Scheme attracts "too few" members, then the Scheme would be seen as a failure and all the time and money spent developing the Scheme would be seen as being a waste of public money.

    - However, we think the likelihood of this is moderately low because there are currently 2.3 to 2.4 million existing lives with PHI. As long as the Scheme has the support of the insurers and the intermediaries, we believe the design of the Scheme will make it an easy decision for existing PHI policyholders to migrate to the Scheme and the migration process will entail little to no inconvenience.

    - However, increasing the overall size of the PHI population, i.e. getting the uninsured to join the Scheme will be more difficult because the cost of assessing HA is so cheap and those who have not already purchased PHI may be set on staying with HA. At the end of the day, the Scheme may be able to achieve its objective of improving the transparency, market conduct, and competitiveness of private insurance and private providers, but it may not be able to increase the overall PHI penetration rate significantly.

- Anti-selection

    - Having taken into consideration the waiting period imposed on the coverage of pre-existing medical conditions, there is still a moderate chance of anti-selection.

    - However, the impact can be controlled as insurers would be allowed to underwrite and charge unhealthy individuals up to three times the standard premium, and the government would inject funds into the High Risk Pool, if necessary.

- This should allow the Scheme to compete with the open market PHI products to attract the relatively healthy lives, which make up the majority of the Hong Kong population.

- The degree of anti-selection can be monitored and the various control knobs can be adjusted as necessary (e.g. adjusting the waiting period and the maximum premium that can be charged to an unhealthy individual).

- Policyholder moral hazard

  By and large, we do not see this as a significant risk because acute inpatient hospital case is generally not subject to policyholder moral hazard; very few individuals enjoy being operated on or staying overnight in a hospital. One exception is perhaps investigations and tests that are currently performed in an inpatient setting so that existing PHI, which covers only hospital inpatient costs, pays for these charges. We have put a number of control knobs in place to address this:

  - We believe to a large extent, policyholder moral hazard in the context mentioned is driven by provider moral hazard. The control knobs used to address provider moral hazard would therefore also address policyholder moral hazard.

  - The Base plan includes elements of coinsurance so that the patient remains financially engaged in the decision of whether to have a particular test or procedure performed, although we do note that while it would not be the Scheme's intention, there is no way to avoid insurers in Hong Kong or even overseas from selling products that cover the coinsurance under the Scheme.

- Competition amongst insurers

  - The current PHI market appears to be extremely competitive. As the Scheme would introduce greater transparency, and facilitate comparison-shopping by introducing Base standardised products and a product exchange, we think there is very little risk of the Scheme being less competitive than the current market.

- Price arbitrage

    - If price arbitrage were to occur, the Scheme would not be sustainable for very long. However, there is almost no chance of price arbitrage, as Scheme insurers would be free to underwrite and set premium rates.

    - We do note there is a risk of price arbitrage if the cost of HRP reinsurance is so high that it compromises the ability of the Scheme products to compete with the open market products. Otherwise, a substantial number of healthy lives may quit the Scheme to avoid the burden of cross-subsidising the unhealthy lives in the HRP. Then there would be a disproportionate number of unhealthy lives in the Scheme, making it financially unsustainable. It is for this reason we recommend the government step in and inject funds into the HRP if necessary.

    - One other risk would be if insurers form an oligopoly and intentionally set relatively high premiums rates to sabotage the Scheme. This would only occur if the PHI market did not see any benefits from the Scheme for themselves and their customers. As has been done over the course of our study, the government and eventually the Scheme supervisory body will continually need to engage in open discussions with the insurers (as with all other stakeholders) and develop a balanced view of how to develop the Scheme.

- Falling back to HA

    - The likelihood of Scheme members going back to HA for services is unlikely, as we expect the entire publicity campaign of the Scheme would centre on choice and access to private hospital care in a better regulated environment with more certainty. There should be no doubt as to value of the Scheme and the intentions of the individual to access private care, if the individual purchases the Scheme product. One exception may be perhaps the lower income population segments (who may still choose to join the Scheme) and the elderly, where the affordability of the premiums may come into question and they may lapse their policies in the absence of any incentives to stay.

    - Besides, the scheme products are designed with the principle of indemnifying the cost of treatment. This differs fundamentally from some existing private health insurance products that do not follow the

principle of indemnity, such as hospital cash plans and catastrophic cash plans, which are payable to the insured even if he/she uses HA services. The buyers of Scheme products thus should have a lesser tendency to fall back to HA.

- During the government's publicity campaign, it must be made clear to potential buyers that the Base plan is designed to access the general ward of a standard private hospital. To access more expensive private hospitals or better room accommodation, the consumer would need to purchase a top up plan. A member may feel "short-changed" if the member goes to a more expensive private hospital, but only bought a Base plan. The risk of this should be low, as we expect most insurers will try to promote the top up covers, rather than the Base product.

- On an ongoing basis, the scope of coverage and benefit limits of the Base product would need to be regularly reviewed to ensure it remains relevant to the scope and cost of services in private sector.

- Another potential risk is that members may use HA services in order to preserve their NCD. This would be unlikely at the pre-retirement ages, where the premiums are relatively low, and the net financial gain from going to private hospital (i.e. hospital costs less premiums paid after losing NCD) will likely still outweigh the inconvenience of joining the HA queue. The risk may be more significant at the older ages where the premiums are higher, but this depends on the extent of premium rebates the government will provide at the older ages. In most part, we do not expect the impact at the older ages to be significant because the majority of admissions at the older ages come from repeat patients. It would not make sense for these patients to continue to pay a relatively high premium and still queue at HA, while their insurance cover affords them repeated access to private hospitals. If these individuals were frequenting HA, then it would make more sense for them to lapse their policies and stop paying the high premiums.

  Nevertheless, this does raise another potential scenario, i.e. if the queues at HA reduce in the future, perhaps as a result of the Scheme, then there is a risk that members will withdraw from the Scheme and return to HA.

- If deductible plans were allowed, there would be a higher chance that the insured persons with deductibles would fall back to HA, especially

in cases where the charges incurred are small. Although, if the relatively low-cost deductible plans are not allowed, then it is possible that this segment of the population would never purchase PHI.

SECTION 5: SUPERVISORY STRUCTURE

Overview

A supervisory structure would need to be put in place to:

- Govern Scheme implementation
- Supervise Scheme operation
- Monitor Scheme achievements

Having taken into consideration the existing supervisory mechanisms that are in place in Hong Kong, we propose that the supervisory functions be divided amongst three entities:

- Prudential regulation of insurers, supervised by the Office of the Commissioner of Insurance ("OCI") or the Independent Insurance Authority ("IIA", i.e., the OCI if it becomes a statutory body).

- Quality assurance of health care providers, supervised by the Department of Health

- Scheme administration, supervised by a new governmental agency, preferably an independent statutory body ("Scheme Supervisor")

We discuss these various functions in further detail in this section of the report.

Prudential Regulation

This primarily involves:

- Ensuring the insurance company is sufficiently capitalised

- Ensuring the insurance company has sufficient premium and claim reserves to meet its obligations to insurers

As the OCI already regulates all insurance companies and performs this role, it would make sense that it retains this function with respect to the Scheme because:

- The vast majority of insurance companies in Hong Kong sell other forms of insurance, in addition to health insurance, so it is important that the insurer as a whole is solvent.

- It is also important for prudential standards be consistent across different product lines.

- OCI already has the manpower and experience; there is no need to duplicate the infrastructure elsewhere.

As insurance companies will likely use the same distribution channels to sell Scheme products as well as other insurance products, it would also make sense for the regulation of intermediaries to continue to come under OCI.

However, supervision of Scheme products would come under the Scheme Supervisor as the OCI currently does not carry out product regulation. We would expect OCI and the Scheme Supervisor to work together closely. If the Scheme products are not financially viable, it may jeopardise the financial health of the insurance company and compromise its ability to meet its commitments on other insurance products.

Provider Quality Assurance

This would involve:

- Collecting benchmarking information from hospitals
- Performing clinical audits

The Department of Health currently licenses and regulates private hospitals. It already collects information from private hospitals and performs audits to various degrees. It would therefore be a natural extension to include the Scheme-specific functions mentioned above.

However, this would likely entail additional manpower and training, particularly with respect to performing the clinical audits.

This would involve:

- Supervising Scheme implementation
    - Monitoring and fostering the development and adoption of packaged charging by providers and insurers.
    - Monitoring initial enrolment initiatives and cultivating support from insurers, providers, and intermediaries in promoting the Scheme
- Supervising ongoing Scheme operations
    - Monitoring market conduct, such as enrolment and sales practices, appropriate payment of claims in line with terms and conditions, compliance with premium rate increase guidelines, and ongoing adoption and modifications to packaged charging.
    - Administration of the appeals mechanism and arbitration panel
    - Information gathering and benchmarking
    - Maintaining a product exchange
    - Maintaining a provider exchange, where members can compare and contrast the performance and quality of providers, based on agreed indicators
    - Administration of government incentives

The Scheme Supervisor's ultimate goals are to ensure the long-term sustainability of the scheme and avoiding market failure. The Scheme Supervisor would need to advise the government of any policy changes required to achieve these goals.

We note there is a danger of over-regulation, which may distort market forces or may create onerous compliance requirements, leading to excessive regulatory costs for the government and excessive compliance costs for hospitals and insurers with little benefit.

The Scheme Supervisor should ideally be an independent statutory body so that it can act quickly and decisively. If this statutory body cannot be easily established and if OCI does become a statutory body (in the form of the IAA), then perhaps the Scheme Supervisor role should take the form of a specific department, perhaps a dedicated PHI department, within the IAA. Currently, the OCI does have separate departments for life insurance and general insurance regulation, but not for PHI.

Savings Scheme

If the government eventually decides on the "high degree of freedom" option, then there would be no formal savings structure and the Scheme Supervisor's role would be restricted to administration of the premium rebates to elderly retired Scheme members.

However, if the Savings Scheme involves a formal savings structure, then this will involve regulation of the savings and the investment vehicles. Given the Hong Kong public's preference for greater freedom in choosing how to invest their money, the supervisory repercussions will likely span a broad range of financial instruments and financial institutions. In this case, it would be convenient to piggyback on the existing MPF regulatory infrastructure.

SECTION 6: GOVERNMENT INCENTIVES

Overview

This section of the report highlights the areas where government incentives may be applicable, namely:

- One-off premium rebates so that first time buyers of PHI start off at the 30% No Claim Discount ("NCD") level, for a limited time period ("30% NCD Free Pass"). Similarly, this offer would be extended to existing PHI policyholders migrating to the Scheme, but only to those who have not made a claim in the last 12 months.
- Financial support for High Risk Pool ("HRP"), where necessary
- Incentives to encourage savings for post-retirement Scheme premiums
- Tax deductions

30% NCD Free Pass

We are proposing that an NCD system be introduced whereby a member who does not make claims receives discounts off the published premium. This discount builds up at 10% per consecutive claim-free year, up to a maximum of 30%. We propose that the cost of offering the NCD be reflected in the published premium set by the insurers, implying that those with claims would pay more than average premium while those without claims would pay less.

To encourage the population to join the Scheme, we propose that:

- Those who do not have PHI be given the 30% NCD discount status when they join the Scheme. If they make a claim the following year, they would fall to the 0% NCD discount level. If they do not make a claim, they would remain on the 30% NCD discount level

- Existing PHI policyholders who have not made a claim in the last 12 months be given the 30% discount status when they join the Scheme

This free 30% NCD Pass would be available for a limited time only:

- Perhaps for six months for first time PHI buyers; the deadline to purchase creates awareness and urgency. This type of strategy (i.e. imposing a deadline) appears to have worked well in Australia where it managed to increase the proportion of the population with PHI from around 34% to 44%, within the deadline period.

- Perhaps up to 12 months for existing PHI policyholders, as they may want to see through the remaining term of their existing policies before joining the Scheme.

We expect most policyholders do not make any claims and most policyholders would eventually get the 30% NCD anyway. That means new healthy policyholders would be paying more than they need to in the early years, while they build up towards the 30% NCD level, making it relatively expensive for new policyholders. However, in a competitive market, this is unlikely, as:

- Insurers could determine their premium rates, anticipating a flow of new members who are "over-paying," so that the published rates can be lowered. In this case, those on 30% NCD would also be based on the lower premiums.

- Even after the deadline, insurers could start off new healthy policyholders (after an underwriting assessment) at the 30% NCD level, and less healthy individuals at other levels. In effect, while less healthy lives may even be paying more than the standard 0% NCD premiums due to premium loadings, healthier than average new entrants may paying less than the standard 0% NCD rate.

Ultimately, insurers will need to set premiums such that after the NCD, premiums collected are sufficient to cover claims and expenses. As most individuals will ultimately receive the 30% NCD, this means that existing policyholders (the majority of whom have not made any claims) currently on a PHI plan with no NCD system cannot expect a 30% discount on their existing premium rates; if all else were unchanged, they would pay premiums that are only slightly lower than what they currently pay. To illustrate this point consider a situation where:

- We introduce an NCD system to an existing portfolio, which currently does not operate an NCD system, i.e., those that make claims and those that do not pay the same premium. There are no changes to any terms and conditions or benefits other than the introduction of the NCD system.

- Our objective is to collect the same amount of premiums overall to cover the claims and expenses, which remain unchanged

With the NCD system, the few that make claims will not receive the NCD. The vast majority, who do not make claims, will pay slightly lower premiums than currently, because the few who make claims are now contributing slightly more to the overall premiums collected.

Consequently, the cost of the providing the 30% NCD to the healthy is zero. At the other extreme, the cost of providing the 30% NCD to the unhealthy (or chronic claimants) is 30% of the premium. Overall, the cost of the 30% NCD Free Pass is the cost of providing the 30% NCD to those who are expected to make claims over the next two to three years. The proportion of policyholders involved is relatively small, and so that cost of these rebates to the government will very likely be less than 5% of premiums (perhaps significantly less). This cost should be verified as part of the reported titled "Assessment of the long term implications of the Health Protection Scheme".

We have also proposed that all new members aged under 30 also start out at the 30% NCD level. The proportion of lives making claims at these ages are so low, we expect an adjustment to the premium rate by 0.5% to 1% would be sufficient to cover the cost. As such, we recommend that this be priced into the premium rate and not be subsidised by the government.

Financial Support for the HRP

As mentioned earlier when discussing the HRP as a control knob in Section 4, the government would step in only when existing funding for the HRP is inadequate.

This would occur if there were too many high risk lives enrolled in the HRP relative to the overall Scheme membership, such that the reinsurance costs increase to an extent it starts to make the Scheme premium rates uncompetitive, relative to products in the open market. At this point, the government would need to inject some funding

into the HRP to keep the reinsurance premiums reasonable and the Scheme premium rates competitive.

In all likelihood, these high risk individuals would probably be existing patients of HA. So in a sense, the government would already have been funding these high risk individuals anyway.

Without government funding as a safety net, the Scheme would be at risk of financial failure if a disproportionate number of unhealthy lives join the Scheme.

Incentives to Save

As mentioned in Section 3, the government could provide a combination of savings contributions and premium rebates, depending on the approach to savings adopted. Using this approach for a Savings Scheme will encourage individuals to save for post-retirement Scheme Protection premiums and encourage continued enrolment in the Scheme,

Without the savings incentives, we expect most Scheme members will lapse their policies when the premiums become expensive at the older ages, as evidenced by the low PHI penetration rates we currently see in the market at the older ages. This is not surprising given the elderly always have HA as a safety net. Without savings incentives, we do not expect the Scheme will have a material impact on the mix of public-private admissions and public-private health care expenditure.

Given that the government already subsidises care for most of the elderly in Hong Kong via HA, providing savings incentives may prompt those who can afford it, to also put in their own money to purchase PHI at the older ages. In the long run, this would increase the amount of private money financing elderly care, relative to public money.

Tax Deductions

In the report titled "Local Market Situation and Overseas Experience of Private Health Insurance and Analyses of Stakeholders' Views", a number of stakeholders suggested tax deductibility of Scheme premiums as a government incentive.

We are not in favour of this because only around 20% of the Hong Kong population pays income tax and a tax deduction may be viewed as being regressive, i.e. favouring those with relatively high incomes who probably already have PHI coverage.

Also, a minor consideration was raised by a number of stakeholders, who indicated that one of the strengths of Hong Kong is its relatively simple tax code. If Scheme premiums are tax deductible, then there may be arguments for other types of insurance to also be tax deductible, which in turn may lead to a laundry list of other items.

Plans Eligible for Government Incentives

One of the issues to be addressed is which products qualify for the incentives. For example, if 25% premium rebates were provided by the government at the older ages, would this, at one extreme, be given only to Base plan policyholders, or at the other extreme, would all Scheme-approved products (including high-end expensive products) receive the 25% rebate?

Our recommendation is to provide the Base-plan level of rebate to all Scheme-approved products. We expect this would be viewed as being equitable because, apart from age, gender, and health status, each person would receive the same dollar amount of incentive regardless of socio-economic standing. The rebates would be calculated off a set of benchmark premiums rates for the standard Base plan.

We describe below how this principle could be applied to the various forms of possible incentives.

30% NCD Free Pass

The government incentive should be set so it will fully fund the cost of providing the 30% NCD discount to Base plan members, including those who are expected to make claims. However, this would not be sufficient to fund the full 30% NCD for all members purchasing top up plans.

The majority of individual PHI policyholders in the market have plans around the Bronze top up level illustrated in Exhibit 2.1. The premium rate for this product is around 15% higher than that for the Base plan. We broadly estimate government incentives set at the Base level would be short by less than 0.75% of the Bronze top

up premium. We expect insurance companies should be able to fund this difference, or at the very least offer the full 30% discount to the healthy Bronze Top Up members, which we estimate would make up more than 90% of Bronze Top Up members. The remaining less healthy members should still find the Scheme attractive because their pre-existing conditions would be covered under the Scheme, while under existing PHI, they are not. In the long run, they would benefit more from the Scheme compared to the healthy members.

The same argument holds true for top up plans that are even more expensive than the Bronze Top Up. In fact, consumers in this bracket are less price-sensitive; we do not expect a price difference of 10% or 20%, or even 30% in the first year of insurance will make much difference to their decision to purchase, as long as their pre-existing conditions are covered.

Financial Support for the HRP

Government funding of the HRP would be restricted to Base plan level of benefits. This means that for top up plans the premiums accounted for in the HRP would be restricted to the equivalent Base plan premium charged by the ceding insurer, and the benefit covered by the HRP would be limited to the scope of services and benefit limits of the Base plan[4]. The insurer could retain the excess premiums and excess benefits of the top up plan, or the industry could establish a secondary high risk pool.

We do not expect the administration to be onerous because the benefit limits are standardised for the Base plan and insurance companies often report claims gross (full claim amount under the top up plan) and net of reinsurance (claim amount less the "Base plan portion," which is accounted for in the HRP). The same administrator could administer the HRP and secondary high risk pool.

Again, we expect the most common top up plan to be around the Bronze top up level. If say, benefit limits are roughly 25% higher than on the Base plan, then this means 25% of the risk is retained by the individual insurer. This may be seen as an acceptable level of risk and the industry may feel it does not even need a secondary high risk pool.

[4] In addition a "ward adjustment factor" would also apply to convert semi-private room charges, for example, if the patient went to a semi-private room, to Base plan equivalent general ward level charges. The factors would be specified by the Scheme.

Savings Incentives

We expect the majority of members will purchase the Bronze top up level of cover, and would probably like to maintain this level of cover into the older ages, if the incentives provided are attractive enough (although some may choose to downgrade upon retirement).

This would suggest that in terms of setting the savings incentives, although the incentives may be expressed as a percentage of the Base plan benchmark premiums, the amount of incentive may also be set with the Bronze top up members in mind. Some may argue the Base plan members would be "over-subsidised," but we believe this to be a moot point because there is no way to know the optimal level of incentive. It may well be that those on the Base plan may be of lower income and would require a larger incentive (as a percentage of premiums) to be convinced to stay in the Scheme.

At this juncture, we would like to remind the reader that, although we expect the Bronze top up level of plan to be the most popular, the role of the Base plan is to keep the premium rates affordable while providing sufficient benefit coverage to access private care. Without the Base plan, the Scheme would be at risk of excluding the lower-middle income groups.

An Additional Benchmark for Determining Incentives

Despite the arguments presented above, members on Bronze top up plans may be disgruntled because some of them are not receiving the same level of government incentives, at least in proportion to their premiums or Scheme benefits. If, for example, there is social or political pressure to provide 30% NCD to all Bronze-level top up members, then the government may need two levels of incentives: one for those who purchase the standard Base plan, and another for those who purchase a Bronze top up product or higher. In the latter case, the government incentives would need to be based on a set of benchmark Bronze top up premium rates.

Similarly, for the HRP, the government would need a set of benchmark Bronze top up benefit limits.

APPENDIX A: ILLUSTRATION OF BENEFITS PAID

Overview

In general, the benefit payment is determined as follows:

1. Determine Approved Amount. The hospital bill is checked against the scope of coverage and the benefit limits or "budget." Some of the services provided may not be covered if not medically necessary. Some items may have charges exceeding the benefit limit, and the excess charges will not be covered. After deducting such charges, we get the Approved Amount.

2. The deductible is applied to the Approved Amount.

3. The coinsurance is applied to the Approved Amount. The coinsurance is 20% of the first $10,000 and 10% of the next $90,000. However, the coinsurance is not applicable to the portion of the bill where a deductible applies. For example, if the Approved amount is $25,000 and there is a $10,000 deductible, the 20% coinsurance does not apply to the first $10,000 (since the member is paying 100% of this) but 10% coinsurance applies to the remaining $15,000

We illustrate how the Base plan benefit limits are applied in the following cases:

Case 1: Hernia

- Illustrates how the benefit limit is increased when there is a complication and the impact of a deductible.
- 1a: An uncomplicated case and actual charges fall within the benefit limit.
- 1b: A case with complications, where actual charges fall within an increased benefit limit.
- 1c: An uncomplicated case, where the member purchases a policy with a $10,000 deductible.

Case 2: Percutaneous Transluminal Coronary Angioplasty ("PTCA")

- 2a: Illustrates a case where the actual charges exceed the benefit limit, and the application of the Surgical Implant benefit limit.
- 2b: Illustrates the same case as Case 2a, but with surgery performed in the third policy year and caused by pre-existing medical conditions.

Case 3: Migraine/Epilepsy

- A case where itemised limits apply.

Case 1: Hernia

		Case 1a Without Complication	Case 1b With Complication	Case 1c Uncomplicated with Deductible
Charges vs. Benefit Limit	Actual Charge	$ 20,000	$ 32,000	$ 20,000
	Benefit Limit	$ 22,000	$ 35,200[3]	$ 22,000
Approved Amount[1]		$ 20,000	$ 32,000	$ 20,000
Paid by member	Deductible	N/A	N/A	$ 10,000
	Coinsurance	$ 3,000[2]	$ 4,200[4]	$ 1,000[5]
	Charge Exceeding Benefit Limit	N/A	N/A	N/A
	Total	$ 3,000	$ 4,200	$ 11,000
Paid by Insurer		$ 17,000	$ 27,800	$ 9,000

Notes

1. Approved amount is the lower of actual charge and benefit limit.
2. Coinsurance: 10,000 x 20% + (20,000 – 10,000) x 10% = 3,000
3. The benefit limit for the package is increased for more complicated cases.
4. Coinsurance: 10,000 x 20% + (32,000 – 10,000) x 10% = 4,200
5. Coinsurance: (20,000 – 10,000) x 10% = 1,000

Case 2: PTCA

The case below illustrates a scenario where the hospital may offer a package, but the doctor and the anaesthetist are not willing to offer a package. In this example, the packaged benefit limit would still apply (the trigger being the hospital package), and the total of the hospital's package charge and the professional fees (i.e. doctor's surgical and daily visit charges, and the anaesthetist's charges) exceed the benefit limit. The patient has the option of choosing another doctor that is willing to offer a package or charge a fee so that the overall costs of the admission comes within the Base plan budget / benefit limit.

In addition, Case 2b illustrate the situation where the surgery is due to a pre-existing condition. The member is in the third policy year and so the amount paid by the insurer is reduced by 50%.

		Case 2a	Case 2b
Actual Charge	Hospital Package	$20,000	$20,000
	Professional Fees[1]	$80,000	$80,000
	Stents	$22,000x2	$22,000x2
	Total	$144,000	$144,000
Benefit Limit	Excl. Stents	$90,000	$90,000
	Stents	$22,000 per stent[2]	$22,000 per stent
Approved Amount	Excl. Stents[3]	$90,000	$90,000
	Stents	$22,000x2	$22,000x2
	Total	$134,000	$134,000
Paid by Member	Deductible	$10,000	$10,000
	Coinsurance[4]	$9,000	$9,000
	Charge Exceeding Benefit Limit	$10,000	$10,000
	Amount not covered due to pre-ex condition	$0	$57,500
	Total	$29,000	$86,500
Paid by Insurer[5]		$115,000	$57,500

Notes

1. Professional fees include surgeon's fee, anaesthetist's fee and doctor's visits.
2. The benefit limit per stent would be as per an Approved Surgical Implant Benefit Limit Schedule, which in this case we assume to be $22,000 per stent. There would be no limit to the number of stents as long as it is medically necessary.
3. Approved Cost Excl. Stents is the lower of the actual charge of Hospital Package + Professional Fees and the Benefit Limit Excl. Stents.
4. Coinsurance: (100,000 – 10,000) x 10% = 9,000; 20% coinsurance does not apply because the member is paying for 100% of the first $10,000 as a deductible.
5. Case 2b is 50% of Case 2a because this case is due to a pre-existing condition. In the third policy year, the insurer covers 50% of what it would normally pay.

Case 3: Migraine/Epilepsy

		Case 3
Length of Stay		41 days
Actual Charge	Room & board per day	$ 550
	Surgeon's fee	$ -
	Anesthetist's fee	$ -
	Operating theatre fee	$ -
	Physician inpatient visit per day	$ 650
	Misc. hospital expenses	$ 10,000
	Total	$ 59,200
Benefit Limit	Room & board per day	$ 550
	Surgeon's fee	$ 50,000
	Anesthetist's fee	
	Operating theatre fee	
	Physician inpatient visit per day	$ 650
	Misc. hospital expenses	$ 8,000
Approved Amount	Room & board	$ 22,550
	Surgeon's fee	$ -
	Anesthetist's fee	$ -
	Operating theatre fee	$ -
	Physician inpatient visit	$ 26,650
	Misc. hospital expenses	$ 8,000
	Total	$ 57,200
Paid by Member	Deductible	N/A
	Coinsurance[1]	$ 6,720
	Amount Exceeding Limit[2]	$ 2,000
	Total	$ 8,720
Paid by Insurer		$ 48,480

Notes

1. Coinsurance = 10,000 x 20% + (57,200 – 10,000) x 10%
2. This comes from actual charges for Miscellaneous Hospital Expenses ($10,000) exceeding the benefit limit ($8,000).

APPENDIX B: ALTERNATIVE SCHEME DESIGNS AND FEATURES EXAMINED

Alternative Scheme Designs

Some alternative Scheme designs were discussed at various levels, but ultimately not adopted.

- Base 1. A standardised low-cost provider product, which costs around 25% less than a typical Bronze-level product with a daily room and board limit of around $700 (see Base 2 below). These designs were focused on providing a low-cost product to the middle and lower-middle income groups, and to the elderly to encourage the take up of PHI.

    - A low-cost provider product. The role of the low-cost provider could be played by the potential four new private hospitals; however, there is too much uncertainty at the moment as to the final shape and form of these hospitals. Another alternative would be for HA to provide more private beds or privatise some HA hospitals; however, this did not fall within the parameters of the Scheme design.

    - "Limited PHI Product." This would not provide comprehensive coverage, but restrict coverage to specific diagnoses or procedures. For example, the product could cover procedures where the waiting time in HA is longer than three months, say. This would draw those that can afford to pay more out of the HA queue. However, it was decided that using HA waiting times as a criterion was not practical because HA's waiting times are extremely fluid and difficult to measure.

      Another option was to specifically list the procedures to be covered, which would include procedures where there is a long waiting time at HA. However, with a list of 200 covered procedures, say, there would be a good chance of the policyholder and private providers misunderstanding whether the procedure in question is covered or not, and potentially misrepresentation or misunderstanding of the scope of coverage at the point of sale.

- Base 2. A higher-level standardised Bronze-level product (with daily room and board limit of around $700), which would provide a benchmark for the most popular products currently sold in the market.

However, it was felt that having two levels of standardised products, Base 1 and Base 2, would be too confusing for the public. Ultimately, we settled on the Base product illustrated in this report, which falls between Base 1 and Base 2, and offers entry-level, modest benefit limits, while allowing access to general ward care in a fairly standard private hospital.

Alternative Features

Waiting period on pre-ex conditions

We examined waiting periods for pre-existing conditions from various countries, such as USA, UK, Ireland, and Australia. Each country has a slightly different health care delivery environment and PHI market structure making it not directly relevant to Hong Kong.

Ultimately, the UK appears to be the most relevant example for us to consider. Most PHI policies in the UK have a two-year waiting period on pre-existing conditions, and insurers do not appear to suffer from anti-selection, or at least not noticeably. However, at the same time, waiting times at the public hospitals in the UK have reduced significantly over the years and almost all procedures have a waiting time of less than two years.

In Hong Kong, we are told there is a list of procedures, such as joint replacements and cataract surgery, where the waiting times at HA can be more than two years. We therefore considered:

- A waiting period of three years, but feedback from various committees and the Consumer Council was that this was too long.

- A general waiting period of two years and a waiting period of three years for a specific list of procedures, where the waiting times at HA exceed two years. However, this was felt to be i) potentially confusing to policyholders because the waiting times at HA are extremely fluid and the list of procedures may change from time to time and ii) potentially divisive in that some patients

groups may argue there is discrimination against specific types of diagnoses and procedures.

Ultimately, we agreed to adopt the HKFI's proposal. Those who are trying to anti-select against the Scheme would have to pay 100% of the cost of the pre-existing conditions in the first year, 75% in the second year, 50% in the third year, and 0% in fourth year and thereafter. This would deter widespread anti-selection, while still providing increasing coverage after one year, for those who are willing to pay the coinsurance. Such an approach has been used in the USA to manage anti-selection risks on maternity benefits with reasonable success.

Benefit limits

We have considered various approaches to structuring the benefit limits.

- Removal of itemised limit, with only a room and board limit and an annual limit. This would make it easier for policyholders to work out how the limits apply to the hospital bill. However, there is concern that the product would be open to the risk of excessive charging without a separate limit of professional fees, such as specialist consultation and surgical fees. This type of structure is used in a few countries in the region, and the medical costs for these products are at least 10% higher than those of products with inside limits. As our objective in designing the Base product is to keep the premium as low as possible, we have retained the inside limits.

  In the future, the removal of itemised limits can be considered if insurers and providers have detailed fee schedule agreements.

- Apply packaged benefit limits comprehensively across all types of admissions and ambulatory procedures. We considered using the Diagnoses Related Group ("DRG") system currently used by HA as a starting point. This system has different payments rates for different diagnoses. In addition, for a given diagnoses, the payments are increased for more complex cases. Even then, we felt that a lot more work would be required because:

  - Even if payments increase with complexity, within each level of complexity the benefit level is still fixed. Within that level of complexity relatively complex patients would have a higher chance of exceeding the benefit limit, which should not be the intention of the

product design. While it may be acceptable for an institution to take on this risk, we do not expect hospitals to offer packages for all types of admissions, and so the risk may end up with the individual patient.

- It will take time to develop a Scheme specific DRG system that is unambiguous and comprehensive. Many DRG systems were initially developed for case-mix funding, e.g. for governments to pay hospitals according to the mix of patient types and medical conditions. Because they were designed to be applied at an institutional level, the DRGs are typically quite compact, with perhaps 300 to 400 diagnoses to describe all types of admissions, before allowing for level of complexity. As a result, the description of some codes may be quite broad (e.g. "mouth procedures") and many procedures can fall into the "Other" catchall category, which may be too vague to be applied as a benefit limit when talking about a particular patient and how much that patient needs to pay out-of-pocket.

Benefit limit increases

We have recommended the benefit limits of the Base product be increased periodically so that they remain adequate to cover the cost of private hospital care over time. The Scheme Supervisor would decide the amount of the increase.

We considered auto-indexing the benefit limit increases, using a measure of medical inflation and utilisation trend as an index. This may be useful if there is fear that decisions on benefit increases may be subject to political interference. However, it is difficult to measure these trends and it is important to understand what is driving these trends. For example, if the trends are unreasonably driven by procedures that are not medically necessary, then the solution is not to increase the benefit limits but to try to address the reasons for the unnecessary procedures.

Cost sharing

The proposed cost sharing structure for hospital admissions and ambulatory procedures is 20% of portion of the hospital bill that is less than $10,000 and 10% for the next $90,000.

The cost sharing was set higher for the lower bill sizes because:

- This is where much of the abuse occurs, particularly with investigations such as endoscopies.

- A lot of the procedures at the lower prices levels, even if medically necessary, can be done in an ambulatory setting at lower cost (i.e. less cost sharing) to the patient.

Another approach would have been to apply the 20% (or higher) coinsurance percentage directly to investigations and procedures that are commonly abused, while other services have a coinsurance of 10%. However, it may be confusing to the member, as the member would need to remember which particular procedures attract a 20% coinsurance. Also, this may discriminate against patients who genuinely require such investigations.

Haemodialysis

We considered including haemodialysis as one of the expensive outpatient services to be covered. However, we concluded that the risk of anti-selection is high and including this benefit could potentially add $500 to the annual premium, which would make the Base premiums much too high to compete with other products in the market.

At the moment there are more than 3,000 patients receiving peritoneal dialysis at HA. If, say, 2,000 of these patients purchased the Base plan to receive haemodialysis, this would add around $200,000 per haemodialysis patient a year in medical costs to the Scheme and even more to premiums, to cover commissions, administration costs and profits to the insurer. If it were the intention of the government to contract out haemodialysis treatment of HA patients to the private sector, it would be more cost-effective to do this directly, perhaps using a voucher system.

Portability

Our recommendation is that the portability requirement extends to Base and Bronze-level top up products, which cover the vast majority of existing PHI policies in the market. Insurers would be free to compete to offer portability terms on higher-end top up products.

The alternatives would be to narrow the Scheme requirement to only apply to Base products, or on the other hand, broaden it to include all Scheme products.

No Claim Discount

We have recommended an NCD scale that accumulates to a maximum of 30% after three consecutive claim-free years of insurance. This was introduced because market research and other sources of feedback indicated that this is a feature that consumers value. Also, we wanted to create a means to attract new PHI buyers to the Scheme, in this case, the government providing time-limited premium rebates so that new policyholders start off at the 30% NCD level, i.e. the 30% NCD Free Pass. At the 30% NCD level, we expect the Base plan premium will be cheaper than any other PHI product available in the market, or at least highly competitive.

However, if the government decides not to introduce these rebates, then we would suggest reducing the NCD scale to perhaps 15% or 20% as a maximum with increments of 5% each claim-free year. This would reduce the cost of entry to new buyers who may have to start out at 0% NCD, if the government (to all lives) and insurers (at least to healthy lives) are not willing to provide higher NCD entry levels.

The NCD scale we propose assumes a member who makes a claim will drop to 0% NCD. However, this can always be modified, say, so that those who make a one-off claim (e.g. a broken arm) are not penalised, although even without this being a Scheme requirement, insurers can also compete by offering NCD waivers to preferred customers.

Premium rate increases

We have recommended that premium rate increases be subject to guidelines agreed between the Scheme Supervisor and the insurance industry. Insurers would need to file their premium rate increases with the Scheme Supervisor, demonstrating the reasons for the increases and that they comply with the guidelines. The insurer would not require prior approval from the Scheme Supervisor before implementing the premium increases, but the Scheme Supervisor has the right to audit the submission, at any time, to ensure the figures provided present a true and fair picture.

Other alternative arrangements are:

- Approval is required from the Scheme Supervisor before the insurer can sell the new premium rate. This may avoid any embarrassing situations where the premium rates have to be later retracted after they are sold, if the rate increases are found to be inconsistent with the guidelines. However, the number of

submissions may overwhelm the Scheme Supervisor and may delay the timing of premium rate adjustments that may be critical to maintaining profitability for some insurers. Also, the "prior approval" requirement may be misconstrued as a form of price control.

Having said that some element of prior approval or close communication may be required in the early years of the Scheme, so that the Scheme Supervisor and the insurers have a mutual understanding of how the guidelines are to be applied and how the rate filling process works in practice.

- Auto-indexation of premiums, according to a prescribed index reflecting medical inflation and utilisation trends. However, it will be very difficult (perhaps virtually impossible) to find an index that is consistently appropriate. Also, claims experience can vary significantly from one insurer to another, as can the extent of premium rate increase required.

<u>High Risk Pool ("HRP")</u>

The financial health of the HRP and the level of anti-selection occurring across the Scheme would need to be monitored and the parameters under which the HRP operates may need to be adjusted from time to time.

For example, at the outset the HRP would essentially only be accessed by new individuals joining the Scheme, who are medically underwritten and have premium loadings that would otherwise exceed the maximum threshold. However, because the Scheme offers lifetime guaranteed renewable cover, another risk facing the Scheme is anti-selective lapsation at the older ages, i.e. a large number of healthy lives lapsing leaving a disproportionate number of unhealthy lives in the Scheme. This is a significant risk if the government does not provide any savings incentives. If anti-selective lapsation at the older ages threatens the viability of the Scheme, then the Scheme may need to consider allowing all high risk individuals' access to the HRP, including those who started out healthy but became unhealthy over the course of Scheme membership. Otherwise, the Scheme may collapse and all the elderly members will be back to HA.

APPENDIX C: PREMIUM RATE METHODOLOY AND ASSUMPTIONS

Overview

The premium rates are calculated according to the following formula, which are based on the past claims experience of an insured population, trended to reflect 2010 utilisation and cost experience under the Scheme:

$$\text{Premium rate} = \frac{\text{Existing expected medical claim costs} + \text{Loading for pre-existing conditions} + \text{Administration expenses}}{(1 - \text{profit margin} - \text{HRP reinsurance rate}) \times (1 - \text{NCD loading})}$$

Existing Expected Medical Claim Costs

Existing expected medical claim costs were generally calculated using Milliman's Hong Kong Health Cost Guidelines ("HK HCG"), which reflects the claims experience of the existing insured population. This includes the utilisation of public and private health care service providers.

There is limited medical insurance data on the elderly in Hong Kong. We augmented the HK HCG by extrapolating the relative changes of local health care utilisation by age at the older ages based on Milliman's UK HCG, as the rate of increase in hospitalisation costs with age appears to be broadly similar over the working ages between the insured populations in Hong Kong and UK.

Loading for Pre-existing Conditions

The existing medical costs are increased by 5% to allow for the overall cost of covering unknown pre-existing conditions of existing PHI policyholders migrating to the Scheme, (while pre-existing conditions declared by new policyholders would be priced separately through a premium loading), as the Scheme covers pre-existing conditions, which are excluded in the current individual PHI products. This

assumption is highly judgmental, and takes into consideration USA experience and how this may differ in Hong Kong, namely:

- Under the Scheme, insurers will be allowed to apply premium loadings for new members, if necessary.

- Under the Scheme, 100% of the costs of pre-existing condition will be covered only after three years. Insurers will have time to monitor the pre-existing condition claims in the earlier years and tweak the loading as necessary.

- We believe, because of several factors, existing insurers are already inadvertently paying for some claims involving pre-existing conditions.

- Those with pre-existing conditions are already receiving care from HA and some may choose to continue their treatment at HA.

This 5% figure implicitly assumes there is no anti-selection when those with existing PHI choose to migrate to the Scheme. This may be an acceptable assumption if the government provides premium rebates to the migrating policyholders who have not made claims in the last 12 months, so that they start in the Scheme with a 30% NCD. In other words, there is an attraction for existing healthy lives to migrate to the Scheme, in addition to the unhealthy lives wanting to have their pre-existing conditions covered under the Scheme.

Administration Expenses

The administration expenses are assumed to be 5% of claims costs and around $140 per Scheme member per year. This does not take into account commissions and related acquisition costs. It also does not explicitly take into account any one-off development costs that the insurers may incur such as upgrading IT systems. The administrative expense levels were derived with reference to the US experience by type of function and broad Hong Kong expense benchmarks or rules-of-thumb.

NCD Loading

This is loading so that the net monies collected from members after No Claim Discounts are sufficient to cover the claims and other expenses in a mature portfolio.

In other words, the loading covers the cost of the NCD. The loading ranges from almost 30% at the younger ages (i.e. where almost all policyholders are expected to received the full 30% NCD) to 22% at the older ages.

HRP Reinsurance Rate

This is the reinsurance premium required to fund the High Risk Pool ("HRP"), which is assumed to be 2% of Scheme premiums. The actual reinsurance rate will depend on the size of the HRP relative to the size of the overall Scheme, the competitiveness of Scheme products vs. market products in attracting the healthy lives relative to the unhealthy lives, and the amount of HRP funding support from the government.

Profit Margin

This is assumed to be 5% of gross premiums, but will ultimately depend on market forces.

APPENDIX D: PACKAGED CHARGING

Overview

The Scheme would need to develop a standardised system for classifying packages. Since part of the reason for packages is to benchmark private hospitals with HA, it would make sense to use the DRG system currently being used by HA as a starting point.

Hospitals would be free to choose which of these standardised packages they would like to offer. Hospitals and doctors would be free to set their prices.

We propose that each hospital register their packages (including the packaged charge and the number of doctors participating in the package at that hospital) with the Scheme Supervisor. The Scheme Supervisor would make this information available on its website and also inform participating insurers of any new packages offered.

Every participating insurer would be required to provide a benefit limit for each package on the consolidated list. Insurers would be free to set their own benefit limits. However, the benefit limits for a package would need to vary by whether the procedure, for example, is being performed in an ambulatory setting, and or in an inpatient setting. Even in an inpatient setting, the benefit limit would be higher if there are complications or comorbidities.

When Do Packaged Benefit Limits Apply and When Do Itemised Benefit Limits Apply?

When a member goes to a hospital, the first two questions the member should ask are:

1. Is there a package for my medical condition?
2. Can I be treated as an outpatient to minimise my coinsurance?

If the hospital does not offer a package, then:

- The member can go to another hospital that offers a package, by referencing the Scheme Supervisor's website or calling her/his insurance company for the information.

- The member can continue with that hospital, but without a package, the itemised benefit limits would apply. This means the patient has less certainty about how much the provider will charge and less certainty about the out-of-pocket costs.

In other words, the packaged benefit limits would apply where there is a package, and the itemised benefit limits would apply where one is not available. If there is a mismatch, for example if the packaged benefit limits are applied when the charges are itemised, then the patient is at risk if the length of hospital stay is much longer than expected. The patient may have been better off if the itemised benefit limits had applied.

The alternative would be to apply a packaged benefit limit to all hospitals as long as even just one hospital offers a package. This would create pressure for all hospitals to offer packages. However, it would also create a lot of dissatisfaction amongst members if, ultimately, there really is only one hospital offering the package, while the majority of patients have packaged benefit limits being applied to itemised charges.

Participation of Providers

We expect the Scheme would need to work closely with the hospitals to at least offer the public a meaningful number of packages before the Scheme is launched. As mentioned earlier, there is already at least one private hospital offering 70 packages. The number of packages could be increased over time, as hospitals get more comfortable with the revenue stream from packaged charges. In cooperation with the government, the proposed four new private hospitals may also play a major role in increasing the number of packages available in the private sector.

It is likely that most doctors will initially choose not to participate in the hospital packages. In this case, we propose that the packaged benefit limits still apply, as long as the hospital is willing to offer a package excluding doctors' fees. In this way, the budget available to cover the doctor's charges is the difference between the packaged benefit limit and the hospitals package excluding doctors' fees. The patient, again, has a few options:

- Negotiate with the doctor so that her/his fees fall within the budget.
- Go to another doctor that is willing to participate in hospital's package.

Possible Implementation Issues

As mentioned earlier, the DRGs could be used as a starting point. However, the Scheme Supervisor, hospitals, and insurers would need to work closely to ensure they are all comfortable with how the packages are defined. The DRGs were designed for the case-mix funding of hospitals rather than determining benefit payments to individual policyholders. As such, some of the DRG classifications can be a bit too broad, e.g. "mouth procedures." Also, the packages will need to be reviewed regularly to make sure they are up to date with the latest medical practices and technology.

There would need to be user-friendly IT systems to guide and help medical staff and insurance company staff assign the correct code to the various procedures, including applying the correct level of severity. The private hospital and insurance industry can probably draw on HA's experience in this respect, and this will hopefully streamline some of the capital investment and staff training involved.

During the early years post-implementation, there will likely be some intentional (upcoding) and unintentional miscoding of treatment provided. Certainly packaged charging is something that requires time to work out the teething problems.

APPENDIX E: EXAMPLE OF COMMON TYPES OF PROCEDURAL DRG IN HA

Example of Common Types of Inpatient Procedural DRG in HA (Not all procedures are covered by the Scheme in the study)

NERVOUS SYSTEM
Craniotomy
Cranial & peripheral nerve procedures
Spine procedures
EYE
Intraocular & lens procedures
EAR, NOSE, MOUTH & THROAT
Sinus & mastoid procedures
Tonsil & adenoid procedures
Salivary gland procedures
RESPIRATORY SYSTEM
Non-complex respiratory system procedures
Long term mechanical ventilation without tracheostomy
Moderately complex respiratory system procedures
CIRCULATORY SYSTEM
Percutaneous cardiovascular procedures
Cardiac catheterisation
Cardiac pacemaker & defibrillator device replacement
Permanent cardiac pacemaker insertion
Cardiac defibrillator & heart assist system insertion
DIGESTIVE SYSTEM
Complex intestinal procedures
Appendiceal procedures
Anal procedures
Inguinal & femoral hernia procedures
HEPATOBILIARY SYSTEM & PANCREAS
Laparoscopic cholecystectomy
Pancreas & liver procedures
Cholecystectomy except laparoscopic
MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE
Hip & femur procedures except major joint
Major lower extremity joint & limb procedures
Upper extremity procedures

SKIN, SUBCUTANEOUS TISSUE & BREAST
Breast procedures
ENDOCRINE, NUTRITIONAL & METABOLIC SYSTEMS
Thyroid, parathyroid & thyroglossal duct procedures
URINARY TRACT
Urethral & transurethral procedures
Upper urinary tract procedures
Bladder & lower urinary tract procedures
MALE REPRODUCTIVE SYSTEM
Transurethral prostatectomy
FEMALE REPRODUCTIVE SYSTEM
Uterine & adnexal procedures
Dilation & curettage, intrauterine & cervical procedures
CHILDBIRTH
Cesarean delivery
BLOOD, BLOOD FORMING ORGANS, IMMUNOLOGICAL SYSTEM
Bone marrow transplantation - allogenous
Bone marrow transplantation - autologus

Example of Common Types of Ambulatory Procedural DRG in HA (Not all procedures are covered by the Scheme in the study)

NERVOUS SYSTEM
Electroencephalography
Spinal tap & injection
EYE
Cataract procedures
Moderately complex external eye procedures
Moderately complex laser eye procedures
EAR, NOSE, MOUTH & THROAT
Dental procedures
Middle ear procedures
Non-complex mouth & tongue procedures
RESPIRATORY SYSTEM
Bronchoscopy
Pulmonary function tests
Respiratory therapy procedures
CIRCULATORY SYSTEM
Echocardiography
Cardiac catheterisation
Coronary angioplasty & other cardiovascular percutaneous procedures
DIGESTIVE SYSTEM
Colonoscopy
Non-complex upper gastrointestinal endoscopy
Sigmoidoscopy & complex anoscopy
Inguinal & femoral hernia procedures
HEPATOBILIARY SYSTEM & PANCREAS
Endoscopic biliary tract procedures
Laparoscopic cholecystectomy
Percutaneous liver & biliary tract procedures
MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE
Non-complex hand & wrist procedures
Musculoskeletal diagnostic & therapeutic procedures
SKIN, SUBCUTANEOUS TISSUE & BREAST
Non-complex skin procedures
Non-complex non-mastectomy breast procedures
Complex skin procedures
ENDOCRINE, NUTRITIONAL & METABOLIC SYSTEMS
Diagnostic endocrine procedures

URINARY TRACT
Dialysis
Cystoscopy & non-complex urinary tract endoscopy
Flow & other diagnostic urinary tract studies
Urinary tract extracorporeal shockwave lithotripsy
MALE REPRODUCTIVE SYSTEM
Male genital diagnostic & therapeutic procedures
Circumcision
Moderately complex prostate & scrotal contents procedures
FEMALE REPRODUCTIVE SYSTEM
Dilation & curettage, intrauterine & cervical procedures
Laparoscopic gynaecologic procedures
Endoscopic & non-complex gynaecologic procedures
BLOOD, BLOOD FORMING ORGANS, IMMUNOLOGICAL SYSTEM
Transfusion & therapeutic bone marrow procedures
MYELOPROLIFERATIVE SYSTEM & POORLY DIFFERENTIATED NEOPLASMS
Chemotherapy for breast or ovary malignancy
Chemotherapy for colon malignancy
Chemotherapy for lung & bladder malignancy

APPENDIX F: ILLUSTRATION OF HIGHER PACKAGED BENEFIT LIMITS TO ALLOW FOR COMPLICATIONS AND COMORBIDITIES

The following benefit limits for the hospital inpatient packages are examples and illustrative. The higher benefit limits for procedures with complications and comorbidities are mainly based on the relativity of complexity for complicated procedures to the uncomplicated procedures.

	Uncomplicated	Complexity Level 1	Complexity Level 2
Hernia Procedures	$22,000	$35,200	$90,000
Haemorrhoid Procedures	$30,000	$36,000	$51,000
Appendicectomy	$35,000	$42,000	$60,000
Laparoscopic Cholecystectomy	$40,000	$68,000	$108,000
Percutaneous Transluminal Coronary Angioplasty ("PCTA") (Stents are covered separately under Surgical Implant benefit)	$90,000	$135,000	$234,000
Laparoscopic Anterior Resection of Rectum + Colostomy	$112,000	$179,000	$426,000

APPENDIX G: COMPARISON OF BASE PLAN AGAINST OTHER RELEVANT MARKET PRODUCTS

The following is a comparison of the Scheme Base plan against other relevant market products. All benefit limits are per admission, unless stated otherwise.

It illustrates how the Base plan is positioned to provide the minimum amount of coverage to allow access to private hospitals. PHI plans that offer benefits that are lower than this would not qualify as a Scheme product.

	Scheme (Base Plan)	Substandard Group Plan	Standard Low Cost Group Plan	Low Cost Individual Plan	Typical Bronze Individual Plan
Features					
Guaranteed renewal for life	Yes	N/A	N/A	No	Some[1]
Coverage of pre-existing medical conditions	Yes	Some	Some	No	No
Guaranteed issue	Yes	Yes	Yes	No	No
Cap on premium loading	Yes	No	No	No	No
Portable from group insurance to individual insurance	Yes	Some	Some	N/A	N/A
Portable among insurers	Yes	No	No	No	No
Premium rate increase guidelines	Yes	No	No	No	No
No claim discount	Yes	N/A	N/A	Some	Some
Standardised terms and conditions	Yes	No	No	No	No
Benefit Limits					
Benefit Limits where hospital offers a package					
Packaged benefit limits	Yes	No	No	No	No
Benefit Limits where hospital does not offer a package					
Room & Board limit (daily)	$550	$350	$500	$500	$700
Maximum number of days	180	45	45	60	90
Doctor's visit (daily)	$650	$350	$500	$500	$700
ICU R&B limit (daily)	$2,000	$350	$500	$500	$3,000
Surgeon's fee		$20,000	$30,000	$30,300	$40,000
Anesthetist's fee	$50,000	$6,000	$9,000	$12,100	$14,000
Operating theatre fee		$6,000	$9,000	$12,100	$14,000
Specialist fee	$2,000	$0[2]	$0[2]	$3,850	$2,500
Miscellaneous hospital expenses	$8,000	$5,000	$6,000	$5,250	$10,000
Coinsurance (first $10K/next $90K/subsequent) per admission	20%/10%/0%	No	No	No	No

Notes

1. "Some" refers to "offered by some insurers".
2. Specialist fee is not covered in standard packaged group plans but can be offered for tailor-made group plans