

# **Meeting with Hong Kong Federation of Insurers on Health Protection Scheme**

**28 January 2014**

## ***Agenda***

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### **1. Introduction**

### **2. Estimated HPS Premiums (Individual market)**

#### **2a. Context**

#### **2b. Premium results**

#### **2c. Key assumptions and methodology**

### **3. High Risk Pool**

### **4. Any other questions**

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## Section 1: Introduction

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- This presentation is prepared by FHB, based on its understanding of work done by the Consultant. There is **no new information** in this presentation – all material has been covered in the previous 20+ meetings.
- All findings – especially analytical - must be considered in the context of the **full consultancy report** as a single figure or comment taken can be misleading

## ***Recap of the Consultancy Process on Premium Estimates and High Risk Pool***

<b>Items</b>	<b>Meeting / Date</b>
Data Collection Plan	Working Group (31 Jul 2012) Consultative Group (7 Aug 2012) Project Steering Group (13 Sep 2012)
Model Methodology	Project Steering Group (13 Sep 2012)
Observations from HKFI data	Project Steering Group (17 Dec 2012)
Analysis on PHI Claims and Initial HPS Product Design	Working Group (30 Jan 2013) Liaison Group (31 Jan 2013) Consultative Group (7 Feb 2013)
Premium estimates for the Individual Market (Prelim. Results, methodology and key assumptions)	Working Group (13 Mar 2013) Liaison Group (15 Mar 2013) Consultative Group (21 Mar 2013)
HPS Product Design	Hon Chan KP and HKFI (26 April 2013)
Premium estimates for the Individual Market (Update) and Group Market (incl methodology and assumptions)	Working Group (29 May 2013) Liaison Group (5 Jun 2013) Consultative Group (6 Jun 2013)
High Risk Pool, Projection results, Impact on the Public sector	Project Steering Group (27 Sep 2013) Working Group (3 Oct 2013) Consultative Group (9 Oct 2013)

A project liaison group between PwC and HKFI was formed to discuss technical issues of concerns to the insurance industry. Five meetings were held between 16 Oct 2012 and 5 Jun 2013. The meeting was suspended at the request of HKFI on 7 June 2013.

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## Section 2a: Context

### Re-cap - premium calculations and the “9% increase”

- 1
    - Only considers the premium for **standard risks** for **ward level products**
  - 2
    - Represents an **average** increase. The premium increase will be greater for older ages and for those with their insurance coverage below the market average
  - 3
    - Hypothetical analysis based on the demographics of the 2012 market – ie the same mix of people as the current market
  - 4
    - 9% reflects a **best estimate** within a **range of uncertainty** (from -8% to 45%) – largely dependent on effective cost control mechanisms such as packaged benefit limits
  - 5
    - A **conservative approach** is taken to setting assumptions and wherever possible relying on HK market data as much as possible
- *Some individuals migrating to HPS may face a greater than 9% premium increase – but they will also have the option to keep their existing policy (at no additional premium increase) or migrate with existing exclusions (lesser premium increase)*
  - *Some individuals will have a price change below 9%*
  - *Standard risks have been used as this is the biggest group*

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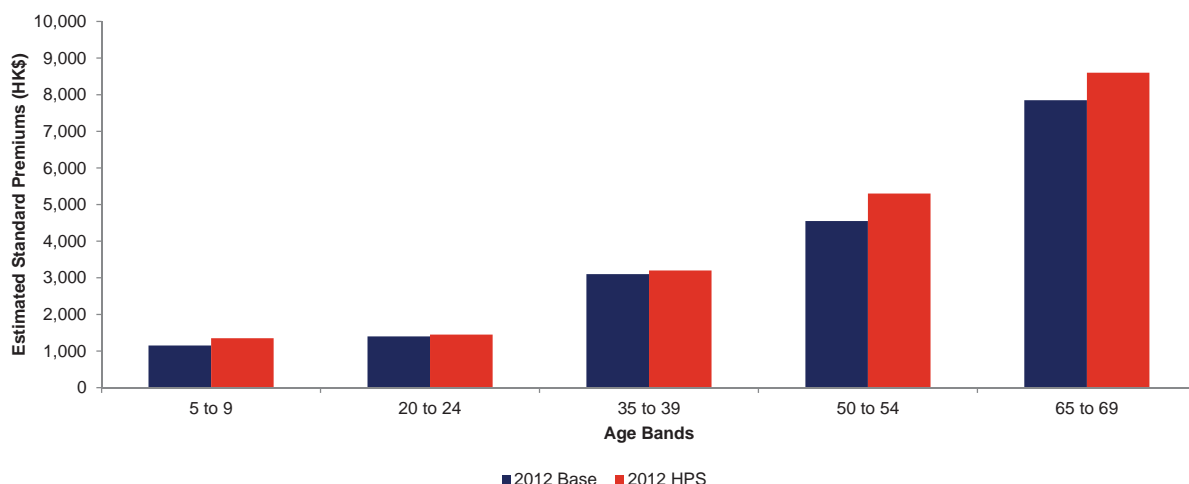
**Section 2b: Premium results**

**Impact on HPS Average standard premium**

Feature	Impact (Mid Scenario)	Potential Range (\$)	Potential Range (%)
<b>2012 base (Before HPS)</b>	<b>\$3,300</b>		
New benefit structure	-\$250 (-8%)	-\$250	-8%
Coverage of pre existing conditions	+\$150 (+5%)	+\$150	+5%
Chemo & radiotherapy	+\$250 (+8%)	+\$150 to +\$350	+5% to +11%
MRI, CT & PET diagnostic tests (30% co-pay)	+\$550 (+17%)	+\$150 to +\$1,400	+5% to +42%
Coverage of endoscopy in ambulatory setting with packaged benefit limits	-\$400 (-12%)	-\$450 to -\$150	-14% to -5%
<b>2012 HPS Premium</b>	<b>\$3,600</b> +\$300 (+9%)	<b>-\$250 to +\$1,500</b>	<b>-8% to +45%</b>

**Section 2b: Premium results**

**2012 Base versus HPS -Standard premiums**



	5 to 9	20 to 24	35 to 39	50 to 54	65 to 69	Average
<b>2012 Base</b>	\$1,150	\$1,400	\$3,100	\$4,550	\$7,850	\$3,300
<b>2012 HPS Product 2 (Mid Scenario)</b>	\$1,350	\$1,450	\$3,200	\$5,300	\$8,600	\$3,600

## Section 2b: Premium results Benefit schedules - 2012

Benefit (Maximum benefit amount)	HPS Product 1	HPS Product 2	HPS Product 3	Common Ward level products
<b>Daily Room &amp; Board</b>	<b>\$550</b> Max 180 days	<b>\$650</b> Max 180 days	<b>\$650</b> Max 180 days	<b>\$600 – \$750</b> Max 90-270 days
<b>Attending Physician's Visit</b>	<b>\$650</b> Max 180 days	<b>\$750</b> Max 180 days	<b>\$800</b> Max 180 days	<b>\$600-\$750</b> Max 90-270 days
<b>Other Specialists' Visit</b>	<b>\$2,000/Admission</b>	<b>\$2,300/Admission</b>	<b>\$3,000/Admission</b>	<b>\$3,500 – \$5,500/Disability</b>
<b>Surgical Limit (Surgeon, Anaesthetist, OT)</b>	<b>\$50,000/Procedure</b> and 40% OOP for inpatient, 20% OOP for clinical surgery	<b>\$58,000/Procedure</b> and 35% OOP for inpatient, 15% for clinical surgery	<b>\$58,000/Procedure</b> and 30% OOP for inpatient, 10% for clinical surgery	<b>\$38,250-\$68,000/Disability</b> for major surgeries
<b>Miscellaneous Hospital Expenses</b>	<b>\$8,000/Admission</b>	<b>\$9,300/Admission</b>	<b>\$11,500/Admission</b>	<b>\$7,480 – \$15,000/Disability</b>
<b>Radiotherapy &amp; Chemotherapy</b>	<b>\$100,000/Disability</b>	<b>\$150,000/Disability</b>	<b>\$200,000/Disability</b>	<b>Some products only.</b> <b>\$6,000-\$15,000/Disability</b> OR <b>\$50,000/ Contract yr</b>
<b>Average Standard Premium (before HPS)**</b>	<b>\$2,900</b>	<b>\$3,050</b>	<b>\$3,150</b>	<b>\$3,300</b>
<b>Average Standard Premium for HPS</b>	<b>\$3,450</b>	<b>\$3,600</b>	<b>\$3,750</b>	<b>NA</b>
<b>Out-of-Pocket percentage</b>	<b>37%</b>	<b>33%</b>	<b>29%</b>	<b>27%</b>

\* Numbers shown are based on Mid scenario \*\* Premium (Before HPS) for HPS Product 1 to HPS Product 3 does not cover radiotherapy and chemotherapy, etc.

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## Section 2b: Premium Results

### Key Risks and Possible Controls

Feature	Risk	Typical Controls used internationally
<b>MRI / CT / PET scan</b>	Both cost and usage could be higher than expected.	<ul style="list-style-type: none"> <li>• Packaged benefit limits</li> <li>• Work with hospitals / doctors to agree clear circumstances under which MRI / CT /PET will be covered</li> <li>• Limited list of hospitals / providers who are allowed to offer 'insured' services. (Ireland)</li> <li>• Consider global contracting limits. (eg: Ireland)</li> <li>• Co-payments</li> </ul>
<b>Chemo / radio</b>	Costs could be higher than predicted	<ul style="list-style-type: none"> <li>• Packaged benefit limits</li> <li>• Cost of chemo drugs themselves may need to be separately identified / priced.</li> <li>• Clarify schedule of cancer drugs which will be covered.</li> </ul>
<b>Endoscopy</b>	Controls required for both cost and usage	<ul style="list-style-type: none"> <li>• Packaged benefit limits</li> <li>• Work with doctors to agree guidelines on colonoscopy (eg: regularity of screening)</li> <li>• Co-payments</li> <li>• Expand availability of benchmarking data at industry level (eg: length of stay; overnight/same day/CS mix)</li> </ul>

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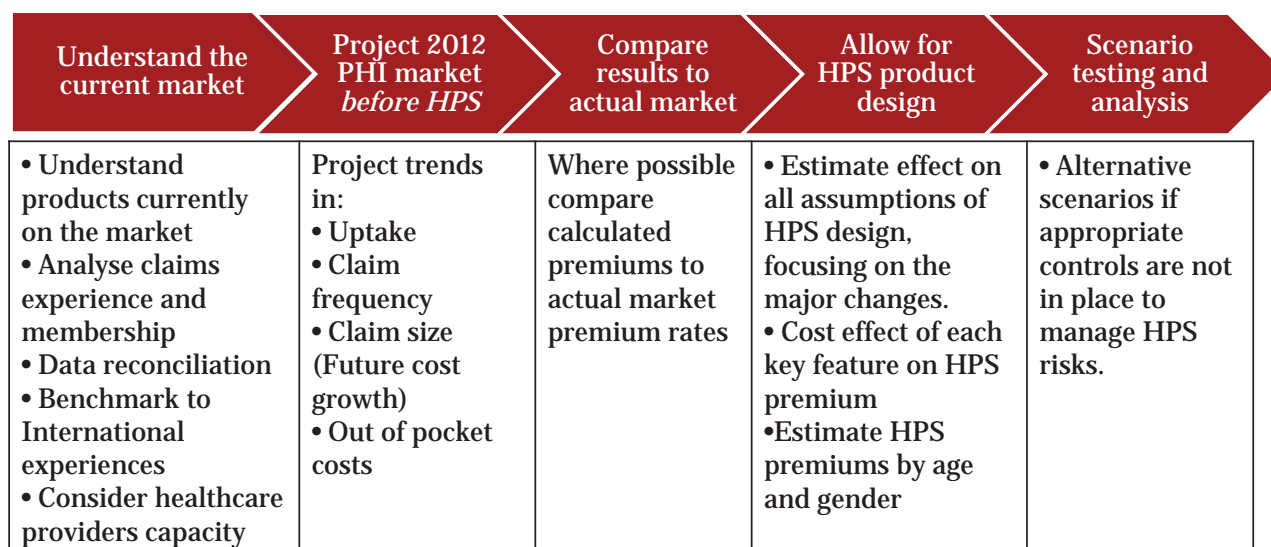
#### 2c. Key assumptions and methodology

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## Section 2c: Methodology and key assumptions

### Approach



Remark: The 2012 HPS Premium reflects the anticipated premium level (in 2012 prices) at the initial stage of HPS implementation when all the impacts are realised.

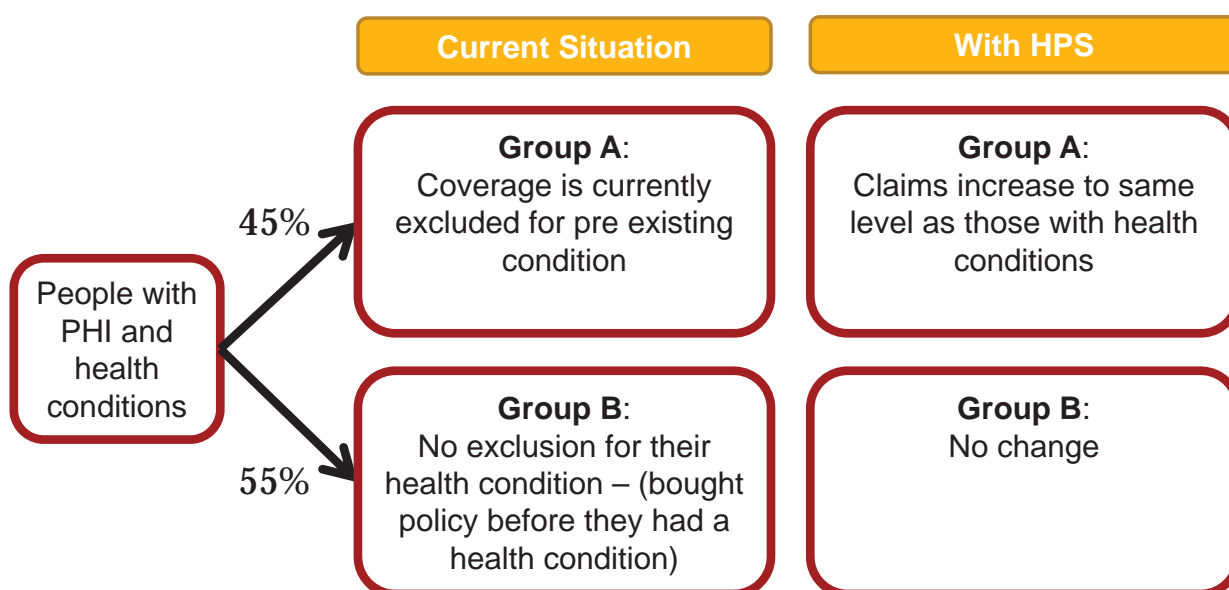
**Section 2c: Methodology and key assumptions**

**Allow for proposed HPS Product design parameters**

HPS Product Key Feature	Impacts on granular assumptions
<b>Minimum requirements regarding benefit structure</b>	Scenario testing on the proportion of costs covered by insurance
<b>Coverage of pre-existing conditions</b>	Focus is on experience of <b>existing members</b> Will increase claim frequency of existing members with health conditions
<b>Coverage of</b> - <b>chemo &amp; radiotherapy</b> - <b>MRI, CT &amp; PET scans</b>	Additional costs. Estimate - claim frequency - Cost per claim
<b>Coverage of ambulatory procedures with packaged benefit limits for common ones</b>	- Fund endoscopies based on cost of clinical surgeries - Increase Claim frequency to reflect broader coverage of ambulatory services
<b>Deductibles</b>	Reduces claim size and frequency; increases out-of-pocket costs

**Section 2c: Methodology and key assumptions**

**Coverage of pre-existing conditions – existing members**



**The impact of covering pre-existing condition for current members is to increase standard premiums by approx 5%**



## Section 2c: Methodology and key assumptions

### Coverage of chemotherapy and radiotherapy

#### Estimate current public sector activity in HK

- From HA (public) data estimate the patterns of usage of chemotherapy and radiotherapy in Hong Kong public hospitals per person with cancer (THS)

#### Scale up for private sector activity

- Use the ratio of Radiology and Clinical Oncology specialist doctors working in public and private settings to estimate total chemo and radiology services

#### Estimate portion covered by HPS

- Estimate portion of cancer cases which will be *eligible for* and *choose to have* treatment in private sector
- Range: 35% to 70%

#### Estimate cost of treatment

- Use benchmarks: HA (public sector), Australian & UK experience
- (Range: Add 15% or 50% to HA cost per service)
- Chemo: \$21,900
- Radio: \$35,000
- Includes self financed drugs

**Including chemotherapy and radiotherapy increases standard premiums by around 8% (Medium estimate)**

## Section 2c: Methodology and key assumptions

### Coverage of high cost diagnostics (MRI, CT & PET scans)

#### Current activity in HK

- No information on current activity in Hong Kong

#### Project private sector activity

- Use age and gender patterns from Australian Medicare statistics to estimate MRI, CT & PET scans per capita in each cohort.
- Scale patterns to reflect typical usage patterns in OECD

#### Estimate cost per scan

- Use Australian experience to estimate MRI, CT & PET costs per scan
- Considered scenarios due to the limitations of available data – US far more expensive

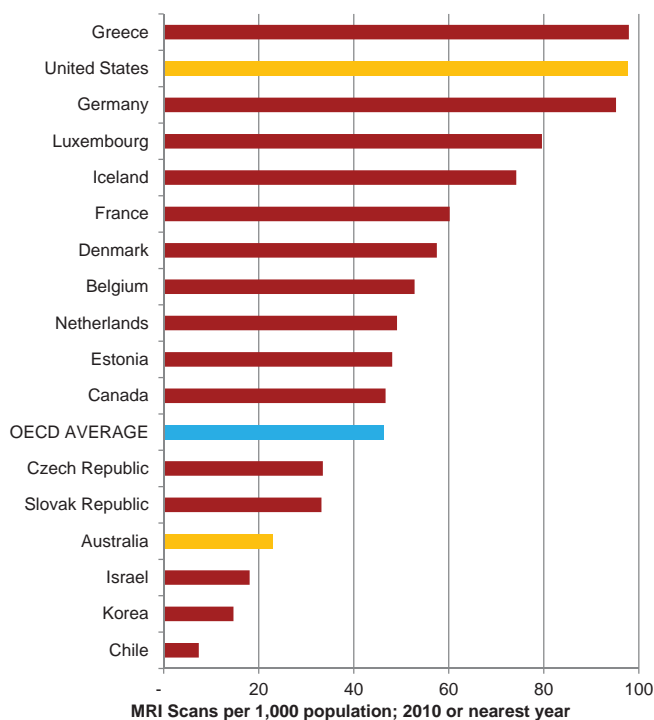
#### Scenario Testing

- Use US experience to scenario test. US allows doctors to earn a referral fee from ordering these tests; strong evidence of over-ordering and high fees

**Covering MRI, CT & PET scans with a 30% cost sharing increases the standard premium by approx 17% (Medium estimate)**

**Section 2c: Methodology and key assumptions**

**Example: MRI usage and costs**



Considerable variation in usage and price.

*Usage per 1,000 population*

Low: 23 (Australia)

Mid: 46 (OECD)

High: 98 (US)

*Price range*

Australia: HK\$3800 - HK\$7000

US: As high as HK\$28,000

Low: HK\$3800

Mid: HK\$5400

High: HK\$7000

OOP == Out-of-pocket co-payments

**Section 2c: Methodology and key assumptions**

**Covering endoscopies with packaged benefit limits in ambulatory settings**

**Price Impact**

- 70% of endoscopies currently covered by individual insurance occur in an inpatient setting.
- By comparison, just 10% of activity in **Australia** occurs as an inpatient overnight procedure
- Assume **85%** of endoscopy activity in *Hong Kong's private sector is funded at clinical surgery rates*

**Demand Impact**

- In 2010, amongst 38,000 endoscopies in conducted in some non-hospital clinics, just 9,300 funded by PHI.
- Assume 70% of these are eligible for PHI once ambulatory settings are covered.  
*35% increase in claim frequency  
All allocated to Clinical Surgeries*
- SCENARIOS:  
*25% increase  
65% increase*

**Covering endoscopy through packaged benefit limits in ambulatory settings decreases HPS premium by 12% (medium estimate)**

## Section 2c: Methodology and key assumptions

### Deductible

Approach	Impact on standard premiums
<p><b>Uses 2010 HKFI claims data to test the relative impact of different deductible levels</b></p>	<p>A \$2,000 deductible would reduce the standard premium by \$350 (10%).</p> <p>A \$5,000 deductible would reduce the standard premium by \$800 (22%).</p> <p>Claim rates reduce because some claims will now fall below the deductible.</p> <p>Given the HPS intends to shift some ambulatory procedures towards clinical surgery settings, deductibles may further reduce claim numbers and the standard premium</p>

## Section 2c: Methodology and key assumptions

### Key modeling uncertainties and risk mitigation

Uncertainty	Discussion	Risk mitigation
<b>Estimating behavioural change</b>	Consumer purchasing decisions in regards of the new product must be estimated using only historical trends and benchmark information	The consumer survey allows PwC to “sense check” the assumptions using direct market information
<b>Impact on and from the private health sector</b>	It is difficult to project possible changes in billing and activity of private hospitals and doctors in response to the HPS	A range of control features is proposed to support the HPS.
<b>Constraint of HKFI claims record data</b>	This data only covers around 25% of the individual market and 85% of the group market.	Frequent liaison with HKFI and insurance sector to seek feedback.
<b>Data on patients and policyholders</b>	There is no data collection which collects the number of inpatient hospitalization policyholders in the current total market.	A number of available data sources have been considered in making the best possible estimate
<b>Costing of new benefits</b>	There is limited Hong Kong specific data available to cost new product benefits such as chemotherapy / radiotherapy and advanced diagnostic tests (MRI, CT and PET scans).	International data has been used and cross checked to Hong Kong statistics where possible.

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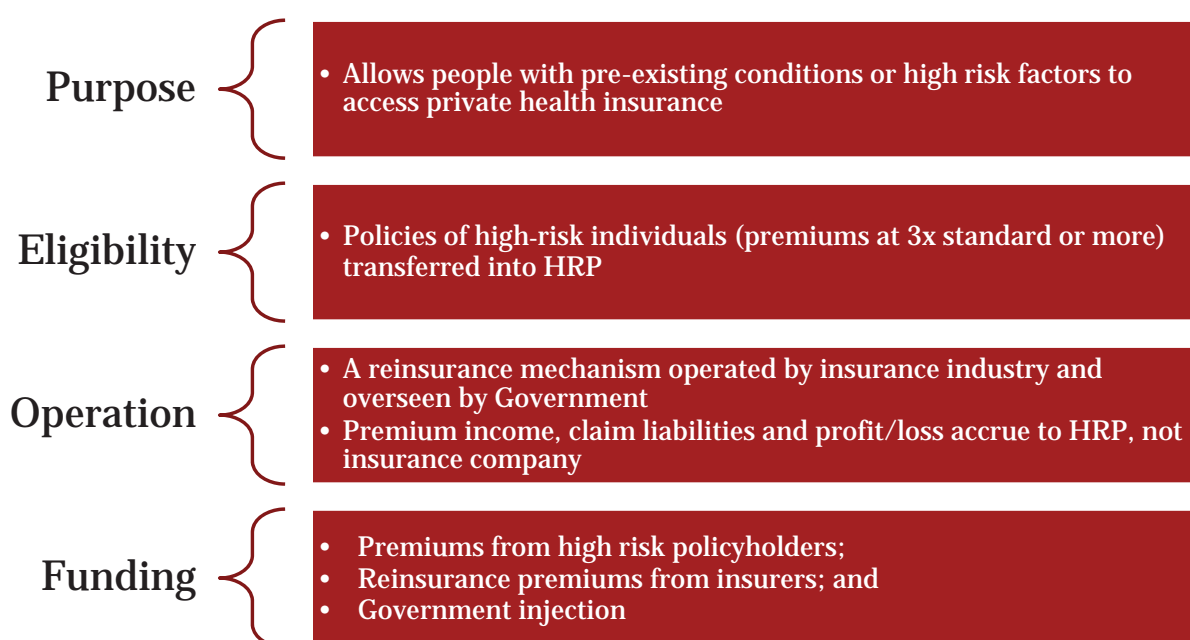
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## Section 3: High risk pool

### Recap of the Second Stage Consultation proposal



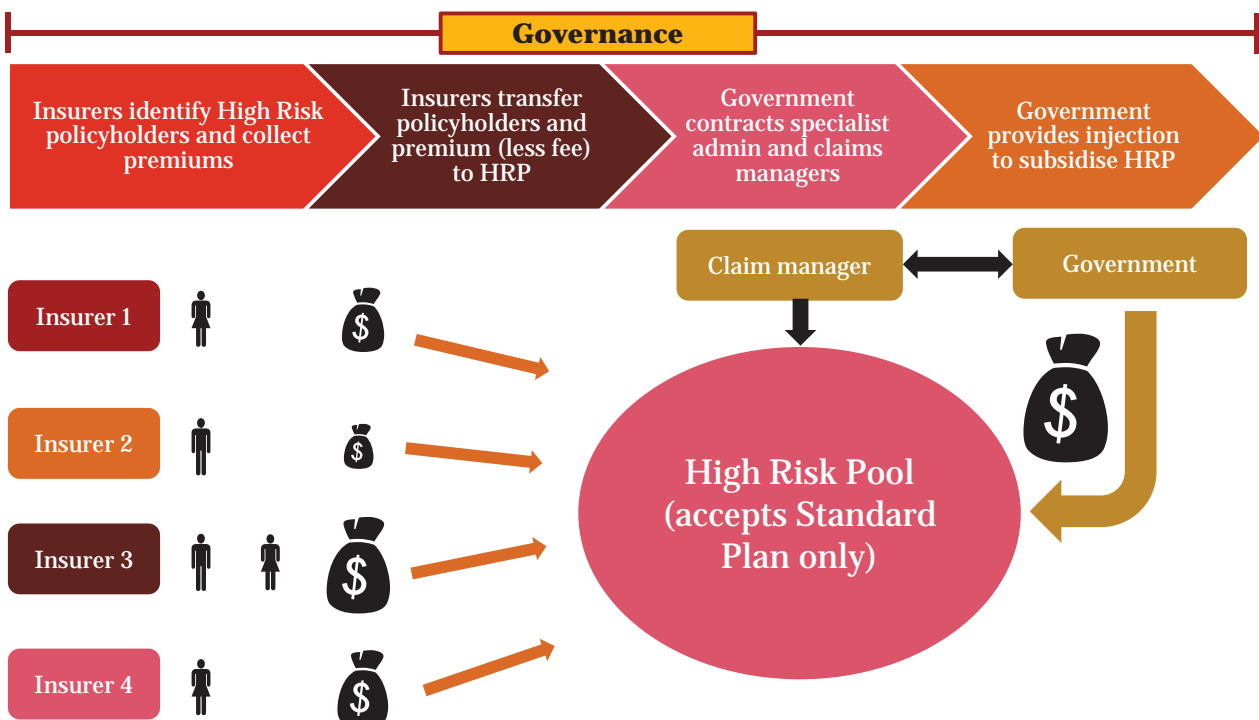
### Section 3: High risk pool

## Review of the proposal

Second Stage Consultation	Current Proposal	Reasoning
Industry operated reinsurance mechanism	Single Pool governed by the Government (and contracted out)	<ul style="list-style-type: none"> <li>No incentive for the industry to manage effectively</li> </ul>
Funded by reinsurance levy, premiums from high risk policyholders and government injection	No reinsurance levy	<ul style="list-style-type: none"> <li>No consensus in the community to have a levy on HPS policies to support the HRP</li> </ul>
Standardized underwriting rules	Use insurers' internal underwriting standards	<ul style="list-style-type: none"> <li>Only feasible way in the short term;</li> <li>Risk dumping manageable.</li> </ul>
No mention of care management	Explore care management opportunities	<ul style="list-style-type: none"> <li>Cost containment and major driver for PHI market development</li> </ul>
No migrants allowed and allow new members up to age 65 only to join	Open to all ages in year 1	<ul style="list-style-type: none"> <li>Allow all high risk individuals to have access to health insurance</li> <li>Cost impact manageable</li> </ul>
Guaranteed acceptance up to age 65	Guaranteed acceptance age reduces to 40 in year 2 onwards	<ul style="list-style-type: none"> <li>Create an incentive for younger people to purchase insurance</li> </ul>

### Section 3: High risk pool

## Recommended approach



### Section 3: High risk pool

#### HRP key assumptions

- a) The most sensitive assumption - average claim cost of a HRP member:
- Analysis of relative claims experience of top 2% of risks in HKFI historical claims data compared to all other claimants. High risk claimant costs are 5x to 7x that of normal risks after allowing for proposed HPS benefit limits.
  - US experience (the federal PCIP) which shows high risk claimants have costs around 10 times that of other claimants. However, US situation is very different, i.e. absence of public healthcare system to fall back, absence of waiting period for people with pre-X condition, and greater readiness of private hospitals to handle complex cases
  - Incorporate the impact of effective care management - net savings of up to 20% (from international research)
  - Assume net claim cost of 6x average risk
- b) Allow a small level of costs to cover procedures not related to pre-existing conditions (1.3x average risk) during the waiting period for pre-existing conditions

### Section 3: High risk pool

#### Summary of results (Mid Scenario)

2016 – 2040 (in 2012 dollars)	Current Proposal
<b>Admin cost – 12.5% of claim costs to operate the scheme</b>	\$2.0 bn
<b>Cost of claims (6x average cost; including net benefit of care management)</b>	\$15.8 bn
<b>Total cost to operate</b>	\$17.8 bn
<b>Premiums collected (3x standard risk)</b>	\$13.5 bn
<b>Cost to Government</b>	<b>\$4.3bn</b>
<b>Members in 2016 (as a % of total PHI)</b>	69,800 (3.6%)
<b>Members in 2040 (as a % of total PHI)</b>	10,900(0.5%)
<b>Total cost per member per annum</b>	\$29,700
<b>Cost to Government per member per annum</b>	\$7,200

Admin cost covers expenses required to operate the HRP (e.g. claims management)

Total expected Government contribution to the HRP **will be \$3.0 bn** if only those with very serious health conditions join the HRP (0.7% of the PHI in 2016 but with a 10x times cost factor).

Early membership is high due to migration and guaranteed acceptance open to all ages in year 1.

Over time membership falls sharply. Insurers' share of high risk claimants grows as their portfolio ages.

#### Notes:

- a) Based on Conversion option only for the Group Market. Cost estimates do not change materially with Full Group HPS option.

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# *Questions?*

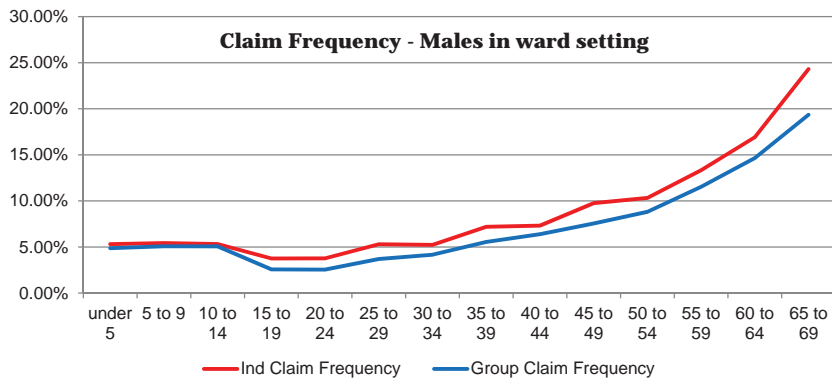
## *Appendix*

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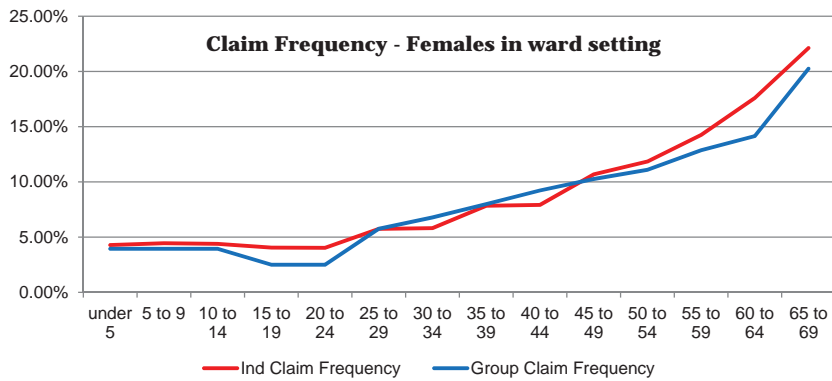
### **Additional Information**

**Appendix: Individual and Group Markets**

**Inpatient claim frequency – males vs females**



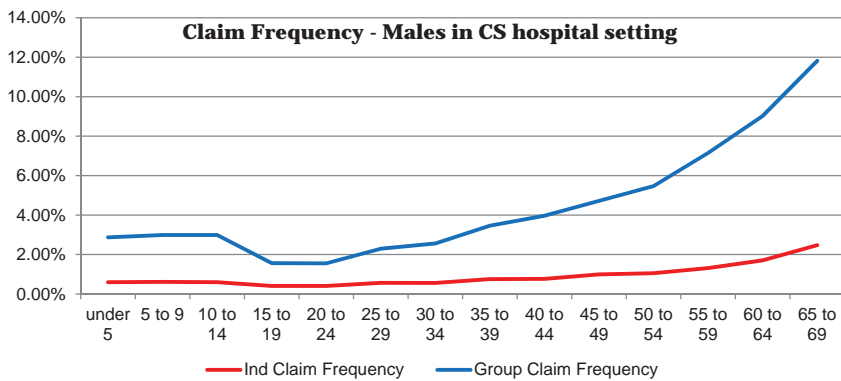
- Individual policyholders are more likely to claim for inpatient services than group policyholders



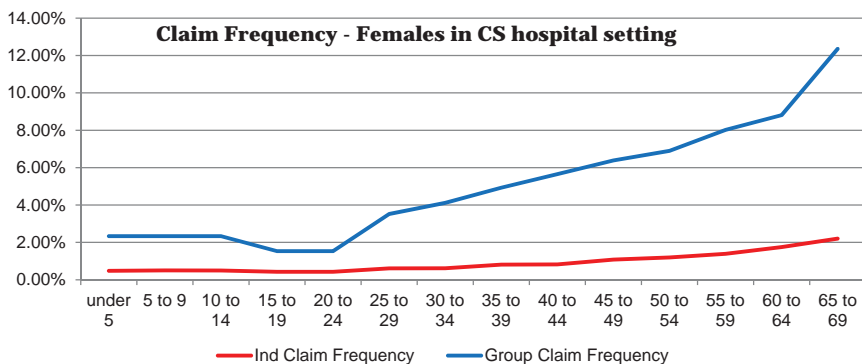
- This difference is more prominent in males than female

**Appendix: Individual and Group Markets**

**Clinical surgeries claim frequency – males vs females**



- Clinical surgery claims are much more common in the group market than the individual market

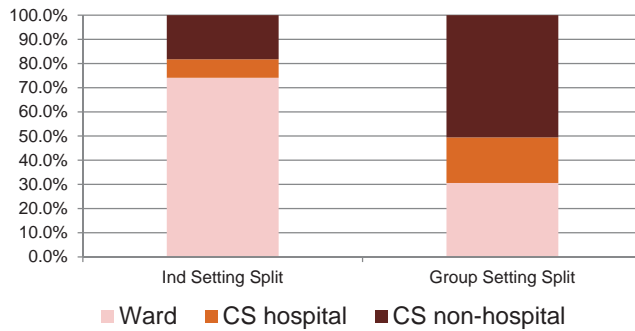


- There is no real difference between males and females for this effect



## Appendix: Individual and Group Markets

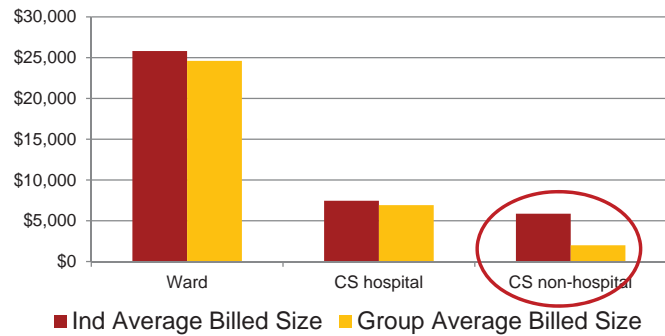
### Proportion of activity in each setting



- Almost **70%** of Group claims are performed as Clinical Surgeries
- **26%** of Individual claims are CS

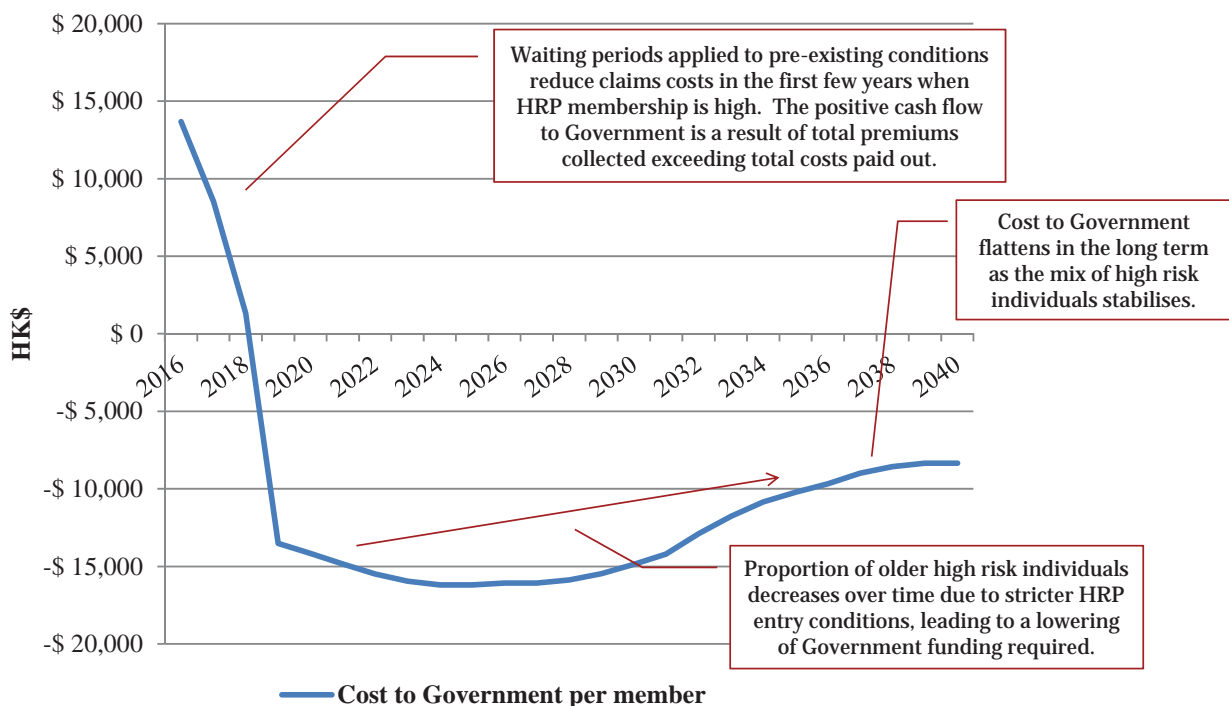
- Average billed size for Group is lower **in all settings**.
- Difference for Non-hospital CS is substantial.

### Average Billed Size in each setting



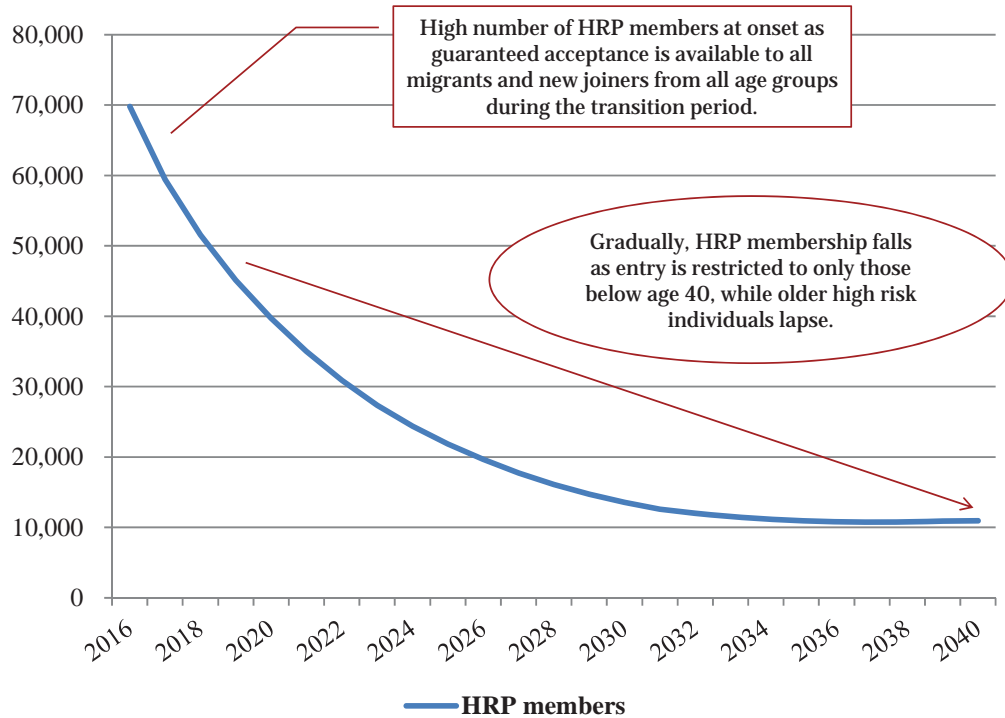
## Appendix: High risk pool

### Cost to Government per member per annum



**Appendix: High risk pool**

**HRP membership (balance)**



**Appendix: High risk pool**

**HRP administration cost benchmarking**

Scheme	Administration Cost (% of Claims)	Comments
US PCIP	9%	<ul style="list-style-type: none"> <li>Significantly larger than HRP (100,000 members) and administered by GEHA, which insures more than 1 million lives.</li> </ul>
US Medicaid	6%-7%	<ul style="list-style-type: none"> <li>Government scheme covering low income earners, so members are relatively higher risk.</li> <li>Medicaid is much larger (50 million members) and as a Government manager, makes no profit. Hence, expect HRP costs to be higher.</li> </ul>
US HMO's	8%-12%	<ul style="list-style-type: none"> <li>Comparable use of 'in network' doctors, but operating in a very competitive market.</li> </ul>
Hong Kong Group PHI Market	23%	<ul style="list-style-type: none"> <li>Expect HRP to be lower as this figure includes underwriting costs and commissions.</li> </ul>
Hong Kong Network Provider	8%-10%	<ul style="list-style-type: none"> <li>Estimate of third party administration cost across both outpatient and inpatient claims.</li> </ul>

**Scenario B and C**

- 12.5 % inclusive of allowance to insurers

**Scenario A:**

- More efficient, competitive market: 11%

## Appendix: High risk pool

### Estimating the number of members in the HRP

Membership of HRP depends largely on eligibility criteria and penetration of HPS (i.e. scenario A – C)

#### Benchmark case (Scenario B)

- Long-term average : 2%
  - Higher percentage at 3.6% in short term to reflect mainly one-off effect of migration and waiver of entry age in year 1;
  - Diminish over time to 0.5% in long term due to the impact of entry age at 40 since year 2 and lifelong guaranteed renewal.
- Migrants
  - Migrants with cancer all go to HRP;
  - For other migrants, assume around 15% of those with health condition go to HRP.
- New entrants
  - Persons with cancer all go to HRP;
  - For other new entrants, assume certain % of those with health condition goes to HRP (% ranges from 55% for young age to 10% for old age).

## Appendix: High risk pool

### Summary of results (Conversion option only)

	Scenario A (with 5x Cost Factor)	Scenario B (with 6x Cost Factor)	Scenario C (with 7x Cost Factor)
<b>Admin cost – 12.5% of claim costs to operate the scheme</b>	\$1.5 bn	\$2.0 bn	\$2.0 bn
<b>Cost of claims</b>	\$13.6 bn	\$15.8 bn	\$15.8 bn
<b>Total cost to operate</b>	\$15.1 bn	\$17.8 bn	\$17.8 bn
<b>Premiums collected (3x standard risk)</b>	\$13.2 bn	\$13.5 bn	\$12.6 bn
<b>Cost to Government (2016 to 2040)</b>	<b>\$1.9 bn</b>	<b>\$4.3 bn</b>	<b>\$5.2 bn</b>
<b>Members in 2016 (as a % of total PHI)</b>	86,400 (4.2%)	69,800 (3.6%)	45,900 (2.7%)
<b>Members in 2040 (as a % of total PHI)</b>	12,900 (0.5%)	10,900 (0.5%)	5,200 (0.4%)