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# **The Determinants of Post-Pandemic Medical Inflation: An Analysis of Private Insurance Claims Data in Hong Kong**

## **Executive Summary**

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# **Study on the Determinants of Post-Pandemic Medical Inflation: An Analysis of Private Insurance Claims Data in Hong Kong**

## **Objectives**

Commissioned by the Hong Kong Federation of Insurers (HKFI), this study examines possible drivers of post-pandemic medical expenditures in Hong Kong's private insurance sector. Using private insurance claims from 2019 and 2023, this study quantifies post-pandemic changes in claim frequency (N), average bill amount per claim (bill average) and aggregate expenditures (total billed) across inpatient and outpatient services. This study seeks to identify the key post-pandemic drivers of escalating inpatient and outpatient medical expenses in Hong Kong, assess the relative impact of demographic, clinical, and systemic factors on medical expenses, project the implications of rising healthcare expenses, and provide actionable insights for policymakers, insurers, employers, and healthcare providers to mitigate expenditure escalation.

## **Methodology and Data**

Datasets include information on both inpatient and outpatient claims, segmented by benefit category, billed amount, and policy type (group versus individual), Voluntary Health Insurance Scheme (VHIS) status, provider network status (panel versus non-panel), and demographic variables (age and gender). The total number of claims analysed, including both inpatient and outpatient claims, for the years 2019 and 2023 were 9,798,876 and 10,284,581 respectively. A combination of descriptive and inferential statistical methods is used to analyze trends and differences in medical expenditure.

## **Results**

### Overall Claims

1. The overall increase in health care spending (from 2019 to 2023) in the private health insurance sector was unusually high at 61 percent, averaging 13 percent compounded per year over the four-year period.
2. The main driver of the unusually high rate of increase comes from the increase in the number of Inpatient Plans claims.

### Claims from Inpatient Plans

3. The average claim frequency from Inpatient Plans increased by 68 percent for the period, with some benefit categories exceeding 100 percent. The claim frequency increase for claims between \$5,000 and \$15,000 was around 80 percent, and the increase for claims above \$100,000 was over 100 percent.
4. The rate of increase in the average bill per claim was modest, at around 5 percent, in part due to a large increase in the number of smaller claims, mainly from day procedures.
5. The rate of increase for the number of Room and Board claims was low (24 percent over 4 years), corroborating the observation that the increase in claims for Inpatient Plans comes mainly from day procedures.

### Claims from Outpatient Plans

6. The average claim frequency from Outpatient Plans decreased by 3 percent for the period. The decrease comes mainly from the decrease of 19 percent in claim frequency for generalists. However, the rate of increase in the number of claims from Chinese Medicine Practitioners (39 percent), Physiotherapists (41 percent) and Chiropractors (66 percent) was quite high over the four-year period. There appears to be a change in consumer preference, with more seeking care from Chinese Medicine Practitioners, Physiotherapists, Chiropractors, and, to a smaller extent, Specialists. It is also worth noting that the average bill per claim in 2023 for Chinese Medicine

Practitioners (\$480), Physiotherapists (\$646), Chiropractors (\$875) and Specialists (\$925) was much higher than that of Generalists (\$387).

7. The increase from the average bill per outpatient claim for the period was modest (28 percent), except for X-Ray/Laboratory claims (68 percent).

#### Top Conditions from Inpatient Plan Claims

8. Digestive system disease (gastritis and duodenitis) and viral warts were the top two conditions with the highest claim frequency in 2023, followed by viral diseases, benign tumors, ear disorders, cataract, hemorrhoids, diseases of the nose and nasal sinuses, abdominal pain, and breast cancer. They were also the top conditions in terms of the total claimed amount.
9. For the very top condition - digestive system disease - other study in Hong Kong (RTHK, 2025) has shown that gastro-colonoscopy constituted a large portion of such claims.
10. For the two top claims, they appeared to be procedures that are more susceptible to consumer and/or provider behavior rather than related to changes in the health status of the population due to ageing or changes in disease patterns in the population.
11. A very significant increase in diagnostic tests is observed in terms of claim frequency for inpatient plans (and the average bill claim for outpatient plans).

#### Demographics: Age and Gender

12. As expected, expenses rose sharply with age, with the 75+ group incurring the highest average bills.
13. Expenses for the top conditions generally also increased with age for both inpatient and outpatient services.
14. Females tended to claim significantly more frequently than males, although males' average inpatient cost was higher than females'.

Plan Types: Group vs Individual Plans; VHIS vs non-VHIS plans; Panel Providers vs non-Panel Providers

15. Claims from Group Plans were significantly lower than claims from Individual Plans, even after controlling for age differences. This is true for both inpatient and outpatient claims. The bill average for Individual Inpatient Plans in 2023 was \$31,194, while the bill average for Group Inpatient Plans was only \$19,077, roughly 38 percent lower. The bill average for Individual Outpatient Plans in 2023 was \$1,191, while the bill average for Group Outpatient Plans was only \$594, roughly 50 percent lower. For the top two illnesses under Day cases (Viral Warts and Digestive System Disease, which were observed to be a major contributor to expenditure escalation), it is observed that the Bill average for these two conditions were so much lower for Group Plans, resulting in substantially lower Total Bill expenses, even though the number of claims from Group Plans for these conditions were much higher than from Individual Plans.
16. Claims from Panel providers were also significantly lower than claims from non-Panel providers, even after controlling for age differences. This is true for both inpatient and outpatient claims. The bill average for Inpatient Plans from Non-Panel Providers in 2023 was \$28,557, while the bill average for Inpatient Plans from Panel Providers was only \$16,146, roughly 43 percent lower. The bill average for Outpatient Plans from non-Panel providers in 2023 was \$718, while the bill average for Outpatient Plans from Panel Providers was only \$356, roughly 50 percent lower. For the top two illnesses under Day cases (Viral Warts and Digestive System Disease), it is observed that both the Bill average and the number of claims for these two conditions were so much lower for Panel Providers Plans, resulting in very substantially lower Total Bill expenses.
17. Claims from individual VHIS plans were marginally lower than claims from individual non-VHIS plans, even after controlling for age differences. The bill average for VHIS Inpatient Plans in 2023 was \$29,344, while the bill average for Non-VHIS Inpatient Plans was \$32,181, roughly 10 percent higher. For the top two illnesses under Day cases (Viral Warts and Digestive System Disease), it is observed that while the Bill average for these two conditions were marginally lower for VHIS Plans, the number of claims for these two conditions from VHIS Plans were very much higher than that from non-VHIS Plans, resulting in very substantially higher Total Bill expenses for these two conditions.

## **Conclusions**

This study clearly indicates that overall health insurance claims increased very substantially after the pandemic. The overall increase amounted to a double-digit increase every year. Such an increase, if it continues at the same rate, will raise serious questions about private health insurance affordability for employers and individuals. This will also cause problems for insurance companies and, indirectly, for public hospitals as well.

This study also shows that post-COVID health expenditure increases were driven primarily by increases in utilization, especially by increases in inpatient plans' day procedures, some of which appear to be elective in nature or are for early detection purposes. Setting lower spending limits and/or requiring co-payments for some of these procedures might mitigate the situation, but not likely to be able to completely revert back to pre-COVID levels.

As for outpatient claims, there appears to be a shift in consumers' preferences in outpatient visits, with more seeking more expensive care (relative to General Practitioners) from Chinese Medicine Practitioners, Physiotherapists, Chiropractors, and Specialists. This trend is not likely to be reversed in view of the ageing population, with more suffering from chronic conditions that can be effectively managed by Physiotherapists and Chinese Medicine Practitioners.

The study also shows that there are significant differences in terms of the average bill per claim for different types of plans. Health expenditures were substantially lower for Group Plans (compared with Individual Plans), and for plans with panel providers (compared with non-panel providers). The differences were rather big. For individual VHS Plans, the average bill was marginally lower than those from individual Non-VHS Plans. Greater use of Panel Providers, and for individual plans to adopt certain Group Plan features could go a long way to mitigate the expenditure increase situation.

The age factor contributes significantly to health expenditure increases. This factor is almost certain to continue and exacerbate, given the speed of population ageing in Hong Kong in the near future.

In short, the findings of the Study suggest a rather alarming trajectory for health care expenditure and the associated premium in the private health insurance sector unless effective measures are being put in place in the near future. Stakeholders – individuals, employers, insurers, providers, and Government -- need to urgently get together to work out a way forward with the goal of ensuring long-term affordability and sustainability of the private health insurance market in Hong Kong.