IMPROVING HEALTHCARE IN HONG KONG

TRENDS IN HONG KONG’S HEALTHCARE SYSTEM OVER THE NEXT DECADE

How policy makers can respond to the health issues and challenges
Acknowledgements

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Introduction

Hong Kong’s healthcare expenditure has increased by more than 50% from HKD 62,858 million in 2000 to HKD 96,625 million in 2011 over the last 10 years. Rising life expectancy, an ageing population and increasing prevalence of chronic diseases all play an integral role in such dramatic increase.

As healthcare expenditure continues to rise, the current healthcare system will become increasingly under pressure to sustain the existing levels of service, treatment and care that is currently being delivered in Hong Kong. In addition, the chronic shortage of healthcare professionals has created more pressure on Hong Kong’s healthcare system to meet the growing demand in health and care.

This paper has been produced to improve understanding on the emerging challenges Hong Kong’s healthcare system in the future. In the first half of this paper, two statistical analyses are presented on the Hong Kong population in terms of:

- Future trends in NCDs-mortality and;
- Future trends in chronic diseases

In the second half of this paper, based on the findings above, a number of recommendations are made for policy makers and stakeholders around potential responses to the future healthcare trends in Hong Kong.

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2Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression. The 4 main types of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. (http://www.who.int/topics/noncommunicable_diseases/en/, World Health Organization)
3Mortality data indicate numbers of deaths by place, time and cause. (http://www.who.int/topics/mortality/en/, World Health Organization)
4Chronic diseases, such as heart disease, stroke, cancer, chronic respiratory diseases and diabetes, are by far the leading cause of mortality in the world, representing 60% of all deaths. (http://www.who.int/chp/en/, World Health Organization)
Analyses and findings

Projection of leading causes of NCD-mortality in Hong Kong by 2025

A projection of NCD-mortality in Hong Kong by 2025 was called out using two decades of mortality data. This data was retrieved from the Census and Statistics Department to project the future trends of disease burden in Hong Kong. Since the analysis was focused on NCD-mortality, mortality data on pneumonia and septicemia and other causes non-related to NCD were excluded from the findings below to avoid confusion.

As detailed further in the Appendix, exponential modeling was used to project the trends in NCD-mortality in Hong Kong forward to the year 2025.

As shown in Table 1.1, in 2025, the leading causes of NCD mortality will be cancer (+35%), followed by heart diseases (+36%) and dementia (+349%). The significant increase of dementia over the next decade could be largely attributed to the increasingly ageing society in Hong Kong. As shown in Table 1.1, dementia will move from the 6th to 3rd leading cause of mortality by 2025, with the highest percentage change, a 349% increase. Likewise, ageing could also been seen as an important risk factor for the significant increase in cancer and heart diseases-related mortality.
Trends in Hong Kong’s healthcare system over the next decade

The leading causes of NCD-mortality have also been ranked according to the overall percentage increase below in Table 1.2. Alongside dementia, diabetes mellitus saw the second highest increase as a cause of mortality. Despite mortality due to diabetes mellitus being relatively low compared to other NCDs such as cancer and heart disease, it is worth noting the fact that such disease is generally one that a patient lives with for many years, during which increases his/her prevalence of co-morbidities and thus likely to place a significant cost burden on the healthcare system.

<table>
<thead>
<tr>
<th>LEADING CAUSES OF NCD MORTALITY</th>
<th>Mortality figures in 2013</th>
<th>Mortality figures in 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEMENTIA</strong></td>
<td>999</td>
<td>4,483 (↑349%)</td>
</tr>
<tr>
<td><strong>DIABETES MELLITUS</strong></td>
<td>360</td>
<td>669 (↑86%)</td>
</tr>
<tr>
<td><strong>DISEASES OF HEART</strong></td>
<td></td>
<td>5,834 (↑36%)</td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td>13,589 (↑35%)</td>
</tr>
<tr>
<td><strong>NEPHRITIS NEPHROTIC SYNDROME AND NEPHROSI</strong></td>
<td>1,589</td>
<td>1,940 (↑22%)</td>
</tr>
</tbody>
</table>

1Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression. The 4 main types of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. (http://www.who.int/topics/noncommunicable_diseases/en/, World Health Organization)

Classification of diseases and causes of deaths were based on The International Statistical Classification of Diseases and Related Health Problems (ICD) 10th Revision from 2001 onwards. For the purpose of ranking the causes of deaths, disease groups had also been redefined based on the ICD 10th Revision, with the addition of new disease groups. (Vital Statistic-Mortality, 2012. Census and Statistics Department, Hong Kong. 2015. Available from http://www.healthyhk.gov.hk/phweb/plain/en/health_info/vit_stat/mortality/)

3Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentrations of glucose in the blood, which in turn damage many of the body’s systems, in particular the blood vessels and nerves. (http://www.who.int/mediacentre/factsheets/fs138/en/, World Health Organization)
Projection of leading chronic diseases in Hong Kong by 2025

A projection on the morbidity\(^6\) of chronic diseases was also conducted to predict the future growth trends of chronic diseases in Hong Kong. The main source of data was the Thematic Household Survey (THS) conducted in various years between 2000 and 2012. As detailed further in the Appendix, these surveys examine the prevalence of chronic health conditions within respondents in Hong Kong.

As shown in Table 2.1, hypertension, diabetes mellitus and high cholesterol will remain the top three most common chronic diseases between 2012 and 2025. More importantly, these conditions demonstrated a major percentage increase between 2012 and 2025, highlighting the future pressure on the whole health system as a result of the increasing total number of people living with these diseases.

Having cancer and diabetes mellitus will increase by more than 140% in 2025, patients living with either cancer or diabetes will take up a good proportion of the Hong Kong population of more than 1 million. Continuous requirements for drugs, treatments and other health complications caused by these diseases imply significant usage of healthcare resources in these diseases, in addition to the costs per patient to treat cancer is especially high, effective monitoring and management of the disease in the community is extremely important to keep costs under control.

Taken together, the overall number of people in Hong Kong with a chronic condition will increase by 36%, from 1,896,100 in 2012 to 2,582,061 in 2025.

<table>
<thead>
<tr>
<th>CHRONIC DISEASES</th>
<th>2012 Mortality Figures</th>
<th>2025 Mortality Figures</th>
<th>Increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>739,990</td>
<td>1,288,489</td>
<td>↑74%</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>337,600</td>
<td>821,433</td>
<td>↑143%</td>
</tr>
<tr>
<td>High Cholesterol</td>
<td>261,200</td>
<td>570,444</td>
<td>↑118%</td>
</tr>
<tr>
<td>Cancer</td>
<td>75,700</td>
<td>184,394</td>
<td>↑144%</td>
</tr>
<tr>
<td>Heart Diseases</td>
<td>135,100</td>
<td>177,571</td>
<td>↑31%</td>
</tr>
<tr>
<td>Asthma</td>
<td>58,300</td>
<td>64,750</td>
<td>↑11%</td>
</tr>
<tr>
<td>Stroke</td>
<td>40,300</td>
<td>29,542</td>
<td>↑27%</td>
</tr>
</tbody>
</table>

\(^6\)Morbidity is defined as any departure, subjective or objective, from a state of physiological or psychological well-being. In this sense, sickness, illness and morbid conditions are similarly defined and synonymous. (http://www.who.int/kobe_centre/ageing/ahp_vol5_glossary.pdf A Glossary of Terms for Community Health Care and Services for Older Persons, World Health Organization)
Trends in Hong Kong’s healthcare system over the next decade

Insights

The analyses and findings provide strong indications on the public health problems to be faced by Hong Kong people in the next decade, as well as the areas policy makers should look into when addressing these health issues in managing the local healthcare system.

Dementia-related mortality will rise by 349% in 2025

According to the analyses, cancer, heart diseases and dementia will be the top 3 causes of NCD-mortality in 2025. The drastic percentage increase in dementia (+349%) from 6th to 3rd gives a strong warning signal for policy makers to further examine the impact of dementia on the public health, as well as the individual, caregivers, families and the society. Currently, despite the costs to treat dementia is not in a high expenditure area, it is worth noting its potential impact on the overall healthcare expenditure involved with dementia in the next decades if the percentage increase persists.

Significant percentage increase in number of patients living with diabetes and cancer in 2025

The rate of increase in morbidity is a key driver for increasing expenditure since patients living with the disease are the ones with the most interactions within the healthcare system, and therefore greater attention should be given to diabetes mellitus and cancer. With the number of people suffering from cancer rising by 144% by 2025, in addition to the expensiveness of treating cancer, the overall expenditure will account for a significant proportion in the healthcare system. Likewise, people suffer from diabetes mellitus will increase by similar percentage at 143% by 2025, together with a substantial increase of mortality rate by 86%, it is likely to account for the highest healthcare expenditure among other leading chronic diseases.

The most common chronic diseases are closely related to unhealthy lifestyles

The three most common chronic diseases: hypertension, diabetes mellitus and high cholesterol are closely related to an unhealthy lifestyle. It is worth noting that by the year 2025, around one-sixth and one-tenth of the Hong Kong population will have hypertension and diabetes mellitus respectively.

With an average of over 100% increase among these 3 most common chronic diseases in the next decade, it highlights how an unhealthy lifestyle such as poor dietary habits and lack of physical activities have become the major risk factors to worsening public health.

The government plays a vital role in improving the health of Hong Kong people

Amidst the global phenomenon of aging population and increasing life expectancy in the next decades, to tackle the challenges ahead and keep the rising healthcare expenditure under control, Hong Kong healthcare system has the opportunity to help improve the health of the society by promoting public awareness and strengthening healthcare delivery through enhanced and targeted resources allocation and preventive measures.
Recommendations

The analyses of the trends of disease mortality and chronic diseases not only suggest the emerging challenges of the existing healthcare system but also provide some directions for policy makers to allocate healthcare resources in areas which require more attention.

Greater focus could be given to dementia, diabetes mellitus and heart disease in terms of encouraging prevention through screening, educational and behavior change programmes. Helping patients to better manage chronic disease themselves will also reduce unnecessary hospitalizations as a result of exacerbations of their condition.

As healthcare expenditure will rise along with increasing disease prevalence, stronger attention should be given to chronic conditions such as diabetes mellitus, hypertension and cancer within overall health system budgeting, planning and care pathway management, as these conditions will account for the majority of the total healthcare expenditure within the system.

A number of recommendations are discussed below to encourage discussion between the Hong Kong government and stakeholders within the local healthcare system about priorities in healthcare policy, planning and delivery. The recommendations below highlight two main areas of focus:

I. Health promotion and prevention policies (P.9)

II. Healthcare delivery and social support (P.10)
I. Health promotion and prevention policies

Tighten advertising regulations on food and beverages with high fat, sugar and salt to children

The Hong Kong government should strengthen its role in public health with campaigns that support and create a healthy lifestyle. In terms of policy making, the government may consider taking reference from Singapore, which adopted the “Responsible Advertising to Children” initiative to control negative influences on unhealthy eating on children under 12 years old\(^\text{10}\), implementing guidelines to restrict advertising of food and beverages with high fat, sugar and salt to children.

**Strengthen disease surveillance work**

To tackle increasing healthcare expenditure in the long term, comprehensive disease surveillance programmes, such as more frequent health status surveys of residents and promotion of mass screening and early screening of chronic diseases, are effective means to avoid delayed diagnoses and treatments. The data collected from health surveys will not only inform future policy making, but will also be useful as a benchmark for monitoring and evaluating of health issues and priorities. Furthermore, sharing such data through public media will help raise public awareness on existing and potential health problems.

**Implement dementia-focused healthcare policies**

The government may consider the ways it has improved hypertension care and put forth provision of subsidies on dementia screening, consultation and medications to encourage timely diagnoses and treatments. As early diagnosis is proven to help delay disease progression, reduced treatments will lower overall medical costs in the long term.

II. Healthcare delivery and social support

Examine the potential to create specialized medical facilities in Hong Kong

To comply with the increasing demand for chronic diseases, the government may take reference from the UK to establish more specialized facilities, such as stroke hospitals which aim to improve patient prognosis and service efficiency through more centralized and efficient resource allocation. At the same time, specialized hospitals are proven to help alleviate the pressure in terms of bed availability in unspecialized hospitals and workload of doctors.

Strengthen primary care provision, supporting better community-based care

To further reduce the burden of public healthcare, the government should strengthen primary care. Home-based primary care is proven as an effective strategy to reduce hospital use due to multiple co-morbidities and serious medical conditions of the elderly. Besides, the idea of mobile care to make healthcare more accessible will help reduce the risks of delayed treatments. The government may consider adopting the practice of evidence-based medicine (EBM) in clinics which is proven to be useful in promoting population health from other studies.

Social support towards dementia care

To address the high increase of people living with dementia in the next decade, a comprehensive and holistic approach is recommended to support people with the disease as well as their families and caregivers. Apart from allocating more resources in developing medical facilities for dementia, the government should also look into social services and community programs which could help ease social isolation and the risk of depression of people with dementia, especially those who are living alone. To provide further social support for their families and caregivers, the government should look into dementia day care, community programs and all possible means of support to alleviate their burden and stress.
Looking to the future

This paper is a contribution to the ongoing debate and discussion regarding the sustainability of Hong Kong’s healthcare system. Every organization and individual within that system has a role to play in ensuring that end-users and the wider public continue to receive high quality and affordable healthcare.

Within the paper, the projection of mortality trends and chronic disease prevalence helps the Government and other stakeholders in the healthcare system to recognise the major health issues at stake in Hong Kong and, at the same time, strengthen preventative and control measures on specific health problems, helping to allocate finite resources in a more efficient manner.

Healthcare organizations from the public and private sector both play an important role in delivering a sustainable healthcare system in Hong Kong. Greater collaboration between public and private sectors will play an important role in delivering a sustainable healthcare system in the Hong Kong that can respond to the challenges of an ageing society and the associated increased demand on that system. To foster such collaboration, more discussion between all participants of Hong Kong’s healthcare system is needed. Only through such discussion can the most effective and efficient solutions for Hong Kong be developed and put into practice locally.
Appendix: methodologies and data source

In the following the methodology and the data source being used in the projection of NCD-mortality, the morbidity of chronic diseases and the healthcare expenditure are explained.

In the first analysis (Table 1.1 and 1.2) on the mortality trends in Hong Kong, mortality from disease burden was extracted from 1981-2014 and was then used to implicate the increasing NCD prevalence in 2015-2025. The mortality figures were retrieved from The Census and Statistics Department of Hong Kong government, which were based on the number of “registered deaths”. Four methodologies were used to project these figures which include linear, logarithmic, exponential modeling and population growth modeling. To identify the most accurate methodology for projections, these four methodologies were used to project the mortality in 2012, 2013 and 2014 per causes of deaths. The calculated values were compared with the official figures to test the most accurate modeling. Exponential modeling had the greatest accuracy in 2012-2014 when tested and thus being used for the prediction of mortality in 2025. However, exponential modeling does not address external factors such as changes in lifestyle and dietary habits of the population as well as changes in healthcare policies during the projection period.

In the second analysis (Table 2.1) about the morbidity trends of the most common chronic diseases, to calculate the projected figures, morbidity figures from 2000 to 2011 were retrieved from the Census and Statistics Department of Hong Kong’s Thematic Household Survey (THS) report which covered around 95% the Hong Kong residential population. Four methodologies were used in the projection including linear, logarithmic, exponential modeling and population modeling. The calculated figures were compared to the official figures in 2012 to test which methodology was the most accurate for particular diseases. Then, the most accurate methodologies for each disease were used to project morbidity in 2025. Logarithm modeling and exponential modeling were found to be the most accurate in predicting the morbidity rates when compared with official figures from 2012.
