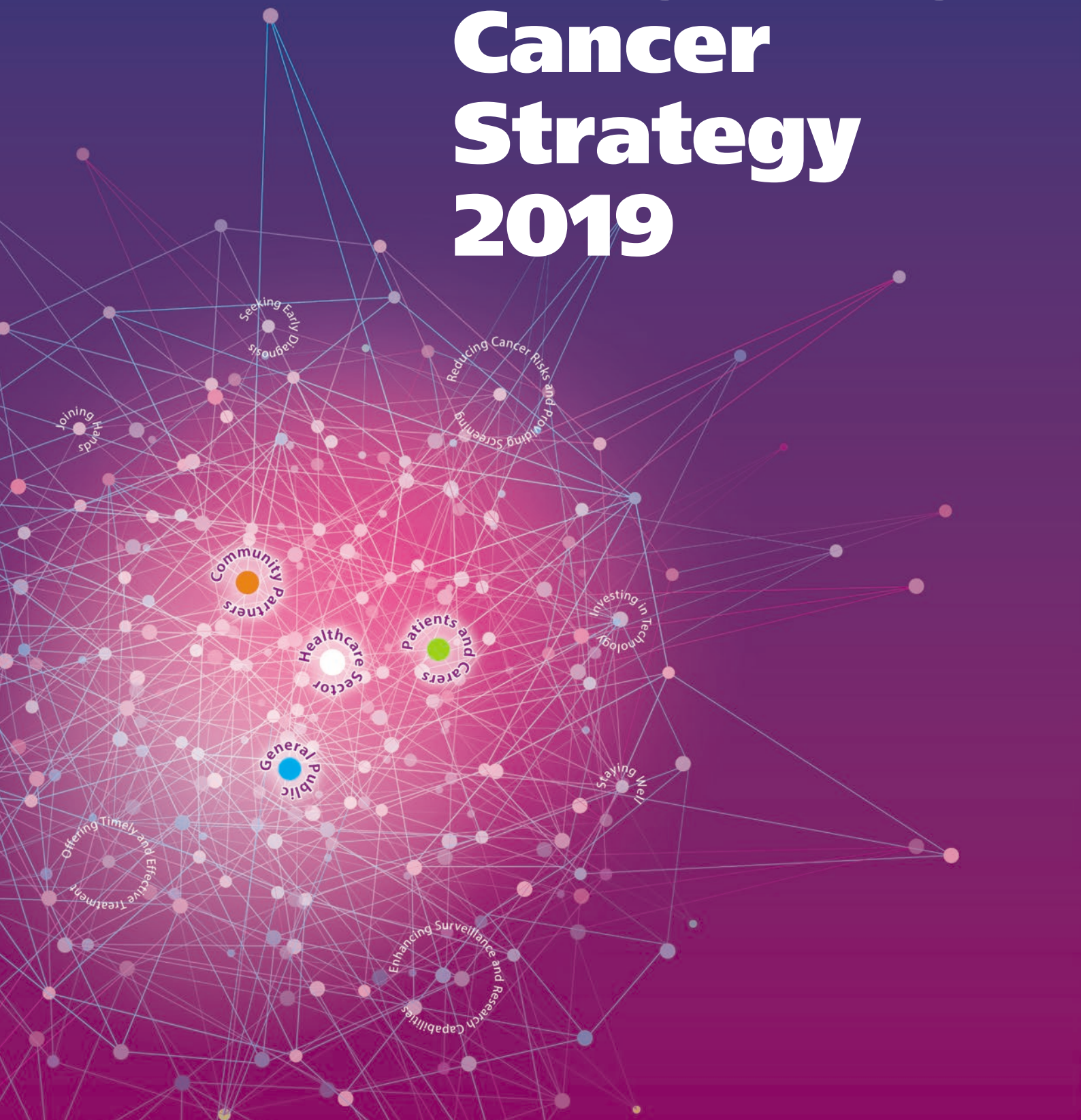


Hong Kong Cancer Strategy 2019



衛生署
Department of Health



食物及衛生局
Food and Health Bureau



醫院管理局
HOSPITAL
AUTHORITY

This publication has been translated into Chinese. If there is any inconsistency or ambiguity between the English version and the Chinese version, the English version shall prevail.

The Government of the Hong Kong Special Administrative Region

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Foreword



Prof. Sophia CHAN Siu-chee, JP
Secretary for Food and Health

Cancer is the top killer in Hong Kong. On average, cancer took the lives of over 35 individuals from their loved ones every day in the past five years. With a growing and ageing population, the number of new cancer cases and related healthcare burden is set to rise. Nevertheless, from 1981 to 2018, the overall age-standardised mortality rates for all cancers have gradually decreased after an initial steady state. Medical advances have made possible earlier diagnosis and more effective treatments. Lifestyle changes are also instrumental to the prevention of certain cancer types.

The Government of the Hong Kong Special Administrative Region is clearly committed to stepping up the prevention and control of cancer and the support for cancer patients and their carers. It is our goal to reduce the hit rate of cancer, to provide the most effective and timely cancer screening and treatment to all in need, to offer the most reassuring support services to survivors and their carers, and to build up our capacity – through surveillance, investment in technology, building alliances with patient groups, research, etc., in the collective fight against this disease.

The Hong Kong Cancer Strategy is the first attempt to offer a holistic plan for cancer prevention and control for Hong Kong. The strategy seeks to provide more appropriate and timely intervention to people with and without symptoms of cancer at a population level, reducing the agony and anxieties amongst the affected and ultimately enhancing their quality of life.

Through the Hong Kong Cancer Strategy, we identify service gaps and set strategic priorities and direction for possible stages throughout a patient's complex journey, from prevention and screening, early detection and diagnosis,

treatment, survivorship, to palliative care. We take on a greater role in making available resources to support people living with cancer. We review how cancer-related policies should be more effectively supported through collection of data, technology, as well as research. Evidence-based cancer control actions will be implemented in a focused, coordinated, proactive and accountable manner, in collaboration with healthcare partners, cancer survivors and the wider community.

Cancer represents one of the most important types of non-communicable diseases (“NCD”). As such, the Hong Kong Cancer Strategy complements the Government’s Strategy and Action Plan to prevent and control NCD, promulgated through the document *“Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong”*.

I take the opportunity to express my gratitude to all experts and professionals who have generously contributed your time and efforts in drawing up this document. Indeed, cancer prevention and care require multi-disciplinary efforts in order to meet the needs of the target groups, cancer patients and their families and carers.

The launch of this Hong Kong Cancer Strategy is an important milestone in our united fight against cancer. It is neither the end nor the beginning. Through the collective efforts of the Government and the Hospital Authority, alongside the valuable contribution of the private healthcare sector and civil society, we want to instill hope in the community that cancer is preventable and curable. We will strive to optimise treatment and post-treatment services within bounds.

While forging ahead with the Hong Kong Cancer Strategy, we will be tackling in parallel other pressing issues such as manpower planning and training needs of the healthcare sector. Safeguarding the health for the community is a tall order indeed. With the professionalism, dedication and wisdom of all our stakeholders, however, I have confidence that we will be making a difference.

Preface



Dr Constance CHAN Hon-ye, JP
Director of Health

Cancer is the second leading cause of death globally and is an important public health issue in Hong Kong. It claimed nearly one-third of the total deaths in the local population in 2018. Given the ageing population and changes in lifestyle, the number of new cancer cases is expected to increase further in coming decades.

Prevention is better than cure. As cancer and other non-communicable diseases (“NCD”) share many common risk factors like smoking, alcohol consumption, unhealthy diet, lack of physical activity, overweight and obesity, promoting adoption of healthy lifestyle is the primary strategy for prevention of NCD including cancer. On this front, the Government had launched the *“Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong”* in May 2018 and multi-sectoral actions throughout the life course were emphasised. The Department of Health (“DH”) will continue to work in collaboration with various sectors to promote healthy lifestyle. On top of the universal hepatitis B virus vaccination, the DH will also introduce human papillomavirus vaccination targeting Primary Five school girls from the 2019/20 school year for preventing cervical cancer.

In addition to primary prevention, the DH has launched screening programmes for cervical cancer and colorectal cancer, and will continue to implement evidence-based screening programmes at a population level.

Fighting against cancer requires concerted effort from various sectors. Everyone can make a difference to prevent and control cancer. Let us all work hand in hand to improve the health of all in Hong Kong!

Preface



Dr LEUNG Pak-yin, JP
Chief Executive, Hospital Authority

The healthcare scene in Hong Kong has been going through significant changes in the past as a result of the fast growing and ageing population and increasing complexity of diseases. Facing the formidable challenges presented by the high rising service demand, collaboration with different stakeholders is key to the sustainable development of healthcare services in Hong Kong.

Cancer, as the top killer in Hong Kong, is posing huge and growing burden to the healthcare system. Such burden also includes the high cost of cancer care not only for the patients but also the society as a whole. To reduce such burden, an effective system that promotes prevention as well as early detection and timely treatment is indispensable.

Working along the Government's direction of stepping up the prevention and control of cancer and the support for cancer patients and their carers, the Hospital Authority ("HA") has formulated specific strategies along the cancer care journey to attain early detection and diagnosis, timely and effective cancer treatment, and seamless transitional care for cancer survivors and end-of-life patients in this Hong Kong Cancer Strategy. In parallel, the HA is developing a Strategic Service Framework for Cancer Services to ensure that the development of cancer services in the HA aligns with the future direction of cancer services in Hong Kong as a whole.

Sustainable and quality cancer service requires joint effort from the public and private healthcare sectors as well as non-governmental organisations. I look forward to the continuing collaboration with different stakeholders in actualising this Cancer Strategy in the years to come, and building a healthier community together.

Vision and Mission

Our vision is to reduce cancer burden in the local population, improve the quality of life and survivorship of cancer patients.

Our mission is to –

- (a) reduce the incidence and mortality of cancer in Hong Kong;
- (b) adopt a holistic approach for the care of cancer patients;
- (c) improve the quality of life of cancer patients through better access to evidence-based prevention, screening, early detection and diagnosis, effective treatment and care as well as palliative care;
- (d) transform the concept of care for survivors and perceive cancer as a chronic illness; and
- (e) capitalise on innovation and technology, surveillance system, scientific research, as well as partnership and resources in the community to support policy making and service delivery.

Chapter 1: Cancer in Hong Kong

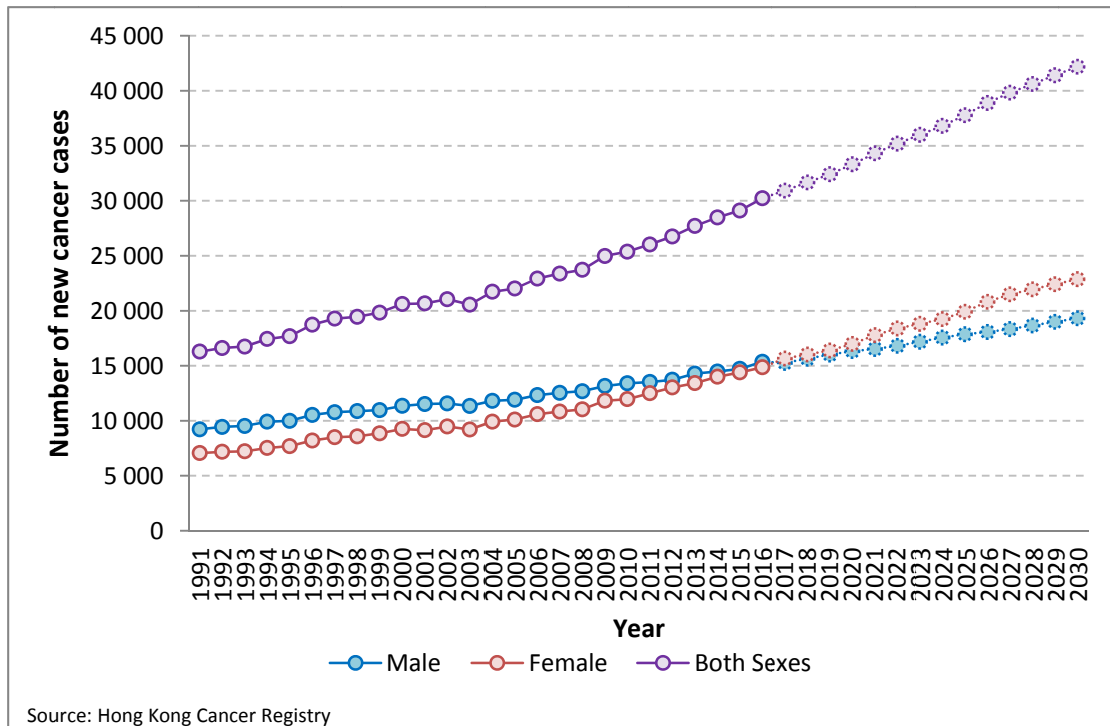
Cancer Epidemiology

- 1.1 Cancer is one of the major non-communicable diseases (“NCD”) in Hong Kong. The cancer incidence has been on a rising trend, increasing at an average rate of about 2.9% per annum in the past decade. The number of new cancer cases in Hong Kong hit a historical high of 31 468 in 2016.
- 1.2 A total of 17 030 cancers are currently estimated to have occurred in males and 16 250 in females in 2018, giving a male to female ratio of 1.05 to 1.¹ A more pronounced increase in cancer numbers, commensurate with the increase in the projected female population, will very likely reverse the current gender difference in the number of newly diagnosed cancers in the coming few years. This will be particularly obvious in the middle age groups in which new cases of cancer in women will substantially outnumber men.
- 1.3 With the prevailing trends in incidence and population structure, the annual number of new cancer cases is projected to increase by around 35% to more than 42 000 by 2030 from current level (Figure 1).²

¹ Due to the time required for cancer data collection, compilation, analysis and quality control, there is a time gap of 22 months in the presentation of data (which is a common phenomenon recognised in other countries). The number of new cancer cases in 2018 is estimated based on actual incidence data in 2016. The numbers for each cancer type are estimated by summing up the products of the age-specific incidence rates in 2016 and the number of population in the same age subgroup in 2018. All estimates are rounded to the nearest 5.

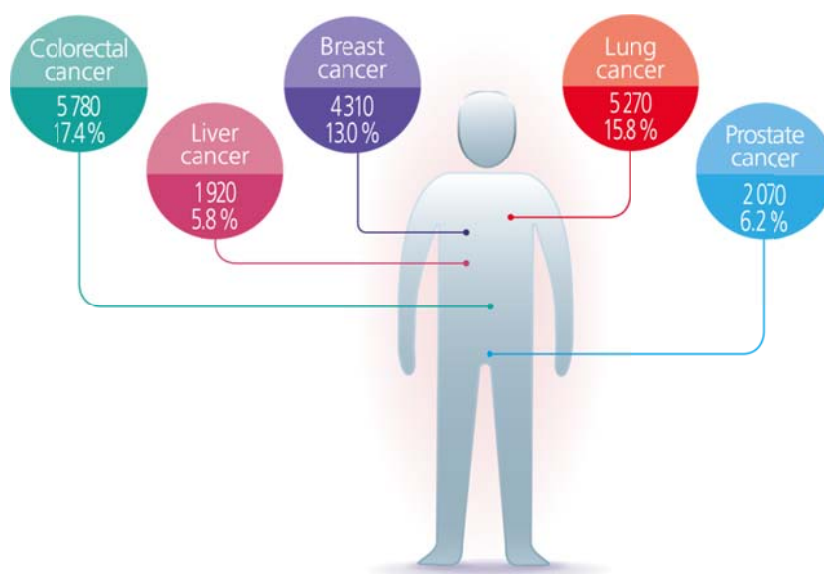
² Due to the classification of children and adolescent cancers (age<20) is different from that of adult cancers; and, typically, non-melanoma skin cancers (“NMSC”) are mostly curable with early diagnosis and the registrations for NMSC are likely to be less complete and less accurate than other cancer sites across time, these two categories are excluded in the projection of cancer incidence.

Figure 1. Number of new cancer cases and projections to 2030*



1.4 The five most frequent cancers diagnosed for both genders combined in 2018 are estimated to be colorectal cancer, lung cancer, breast cancer, prostate cancer and liver cancer. These five leading cancers comprised over half (58.1%) of all cancer new cases (Figure 2). More details of these five cancers are at **Annex 1**.

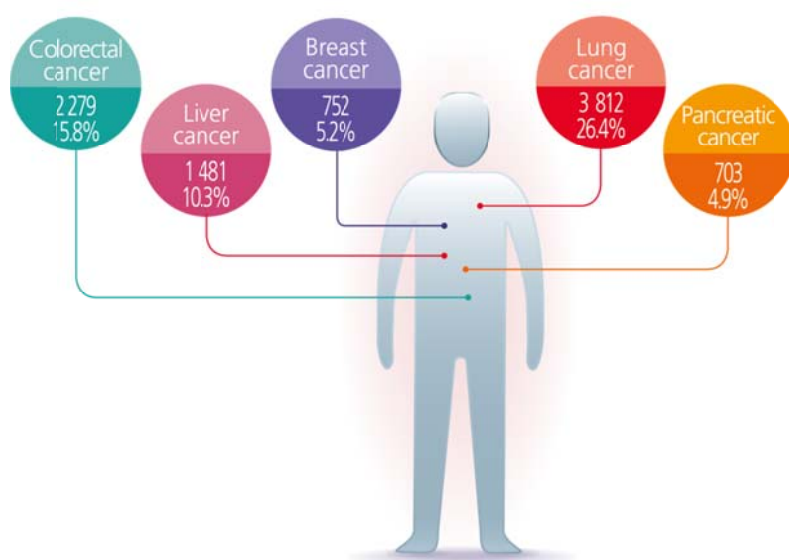
Figure 2. Five leading diagnoses of cancer new cases, 2018*



* Provisional figures

1.5 Cancer is the top killer in Hong Kong. In 2018, cancer claimed 14 446 lives, accounting for about one third of the total deaths in the local population. Among all, lung cancer, colorectal cancer and liver cancer topped the list and made up 52.4% of all cancer deaths (Figure 3).*

Figure 3. Five leading causes of registered cancer deaths, 2018*



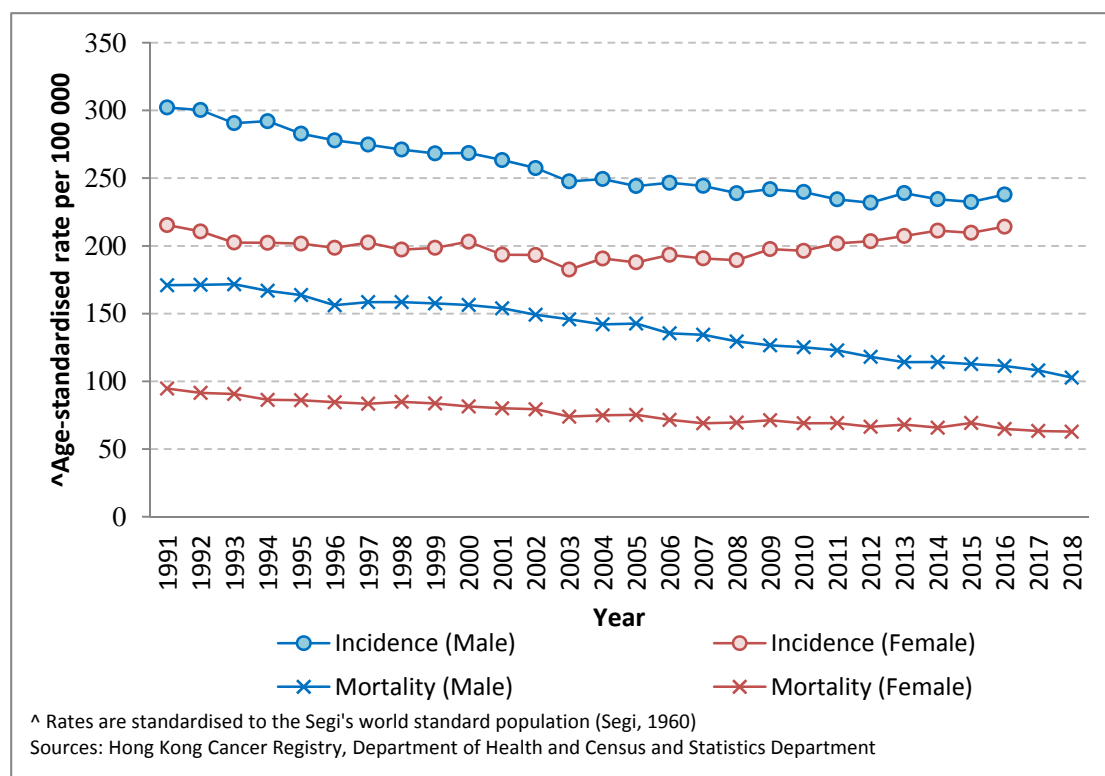
1.6 Cancer is primarily a disease of older people. Almost two-thirds of newly diagnosed cancers projected in 2018 and 80% of cancer deaths in 2018 related to those aged 60 and above.* The median age at diagnosis of cancer in 2016 was 67 years for male and 61 years for female. The median age at death due to cancer was 72 years for both male and female in 2018.*

1.7 While the number of new cancer cases has continued to increase largely as a result of a growing and ageing population, a steady decline in the age-standardised cancer incidence rate has been observed for men over the past quarter century, with a reversal of decreasing trend for women observed in the past ten years or so (Figure 4).

1.8 Both the age-standardised mortality rate for men and that for women had a downward trend during the above period but the rate in women appears to be levelling off in the past ten years (Figure 4).

* Provisional figures

Figure 4. Age-standardised incidence and mortality rates of all cancers by sex



1.9 Based on figures on inpatient discharges and deaths collected by the Department of Health (“DH”), a rough estimation of the relative proportion of cancer care provided in the public versus private sector can be made. In 2017, about 10% of all recorded inpatient discharges and deaths were related to cancer. There were around 200 500 inpatient discharges and deaths from the Hospital Authority (“HA”) hospitals due to cancer and the corresponding figures from private hospitals were over 22 600. The relative proportion is therefore about 9 to 1.

Governance, Partnerships and Stakeholders

1.10 Hong Kong has in place an effective infrastructure that has stood the test of time to provide cancer prevention, diagnosis, treatment, support and care services as well as surveillance and research activities.

1.11 Apart from the Food and Health Bureau (“FHB”) which oversees the overall formulation of policies and allocation of resources, the Cancer Coordinating Committee, chaired by the Secretary for Food and Health, advises on the planning and development of cancer prevention and control strategies. Implementation of the policies is supported by –

- (a) the Hong Kong Cancer Registry (“HKCaR”), the Government-recognised agency tasked to provide wide-spectrum surveillance data, including through partnership with private healthcare providers, to sustain a complete population-based cancer registry;
- (b) the DH, the Government’s health adviser and agency to execute healthcare policies and statutory functions;
- (c) the HA, at which nearly 90% of new cancer patients had attended in Hong Kong within the first six months of cancer diagnosis; and
- (d) the Research Office of the FHB, which administers and disburses fund to support health and medical research including cancer research.

Annex 2 provides more background on the above players in the public sector.

- 1.12 While the Government has a leading role in taking the agenda forward, successful prevention and control of cancers relies on collaborative efforts by everyone in the community. Creation of partnerships will enhance effectiveness through mutually beneficial relationships, and build upon trust and complementary capacities of partners from different disciplines and sectors including public, private, academia, professionals and non-governmental organisations (“NGOs”).
- 1.13 The involvement of stakeholders of all related sectors including patients, families, carers and patient support groups and at all levels of the decision-making process, is equally important to enable active participation and commitment of key players for the benefit of the programme. The Government will enhance communication with and engagement of relevant stakeholders including the medical sector, NGOs and patients groups in implementing this cancer strategy.
- 1.14 This is the first cancer strategy of Hong Kong for implementation from 2020 onwards. The Government will conduct review of the Strategy at a regular interval, targeting at the achievement of the expected outcomes.

Chapter 2: Surveillance System

Direction

- 2.1 The availability of comprehensive cancer data is essential to the planning of cancer services across the territory and to assess and monitor the impact of local cancer control programmes at population level.
- 2.2 The Hong Kong Cancer Registry (“HKCaR”), as the Government-recognised agency tasked to provide wide-spectrum surveillance data, will expand its role in the surveillance of cancers and the tracking of trends in local cancer burden by improving the use, efficiency and scope of cancer data and reporting system.

Strategies

A. *Improving the quality of cancer data*

- 2.3 The HKCaR seeks to enhance the data collection of more prevalent cancers and the comprehensiveness of data including staging information and survival rates according to stage and/or by histology. The HKCaR will also strengthen the collection and compilation of specific clinicopathological data that affects the prognosis of different types of cancers for cancer surveillance. In the budget year 2019-20, \$3 million has been earmarked to enhance the deliverables of the HKCaR to support its surveillance function.
- 2.4 The HKCaR will work closely with cancer experts to enable complete and accurate staging information for the ten prevalent cancers, including cancers of the colorectum, breast, cervix, corpus uteri, ovary, prostate, nasopharynx, thyroid, lung and liver. The HKCaR is building partnership with private healthcare providers to sustain a complete and high coverage of cancer data in Hong Kong. To this

end, agreements have been reached between a number of private hospitals and the HKCaR to support and contribute data to an official territory-wide surveillance system.

- 2.5 In the long run, the Government may consider a review of the governance of the HKCaR and scope of cancer information to be compiled for the whole territory to facilitate research, service planning and development.

B. Allowing greater access to cancer surveillance data

- 2.6 Under this strategy, the cancer information system of HKCaR will transform complete, timely and high-quality data of different levels into valuable information that is easily accessible. Such information will be disseminated to policy makers, researchers and healthcare providers to support public health, healthcare planning and research. It will be made available to the general public to better understand the status and burden of cancer in Hong Kong.

Expected Outcome by 2025

- 2.7 The HKCaR seeks to achieve the following –
- (a) shorten the current time lag in the reporting of annual cancer statistics from 22/23 months to 20 months;
 - (b) capture, compile and report high-quality stage data for the ten prevalent cancers;
 - (c) compile and report stage-specific survival rates of the ten prevalent cancers; and
 - (d) expand access to the data through a dedicated website which would include fact sheets, bulletins and interactive access to databases used for local cancer surveillance.

The website of the HKCaR (www3.ha.org.hk/cancereg) provides statistics such as the ten most common cancers in Hong Kong and fact sheets on various cancers. Its interactive systems provide access to local cancer incidence and mortality statistics according to self-selected parameters.

Chapter 3: Prevention and Screening

Direction

3.1 Prevention is better than cure. Prevention and screening of cancer, as one of the non-communicable diseases (“NCD”), share several overarching principles as advocated in the *“Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (“SAP”)*³ –

- (a) **upstream approach** – about 40% of cancers can be prevented through adoption of healthy lifestyle including no smoking, avoiding alcohol consumption, having a balanced diet and engaging in regular physical activity;^{4,5}
- (b) **evidence-based strategies** – strategies and practices for the prevention and screening of cancer need to be based on the latest scientific evidence, and/or best practices. The Cancer Expert Working Group on Cancer Prevention and Screening (“CEWG”) is the platform for reviewing overseas and local scientific evidence and making recommendations on cancer prevention and screening that are appropriate to local situation;
- (c) **primary healthcare focused** – healthcare services are being redesigned to place greater emphasis on primary care, health communication, disease prevention, screening, etc.; and
- (d) **empowerment of people and communities** – the public should be informed of what they can do to prevent and control cancer, and empowered to gain control over decisions and actions that influence health. Through more effective health

³ For details of other overarching principles and approaches in tackling NCD, please refer to the SAP which is available at https://www.chp.gov.hk/files/pdf/saptowards2025_fullreport_en.pdf.

⁴ Spring, B., Moller, A., & Coons, M. (2012). Multiple health behaviours: overview and implications. *Journal of Public Health*, 34(suppl 1): i3-i10.

⁵ Ezzati, M. (2004). *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors*. Geneva: World Health Organization.

communications, we seek to encourage health-seeking behaviour and sharpen health-management skills.

Strategies

A. *Reducing risk factors for cancer prevention*

- 3.2 Cancer prevention is an essential component of all cancer control plan as about 40% of all cancers can be prevented.^{4,5} Reducing exposure to risk factors is the key strategy of cancer prevention.
- 3.3 Cancer prevention must be considered in the context of activities to prevent other chronic diseases, especially those with which cancer shares common risk factors, such as cardiovascular diseases, diabetes, and chronic respiratory diseases. Common risk factors underlying these conditions include tobacco use, alcohol use, dietary factors such as low fruit and vegetables intake, physical inactivity, overweight and obesity. These risk factors contribute to a variety of cancer types such as lung, colorectal and breast which are prevalent in Hong Kong. Other important cancer risk factors include hepatitis B virus (“HBV”) infections, human papillomavirus (“HPV”) infections, exposure to environmental and occupational carcinogens as well as exposure to radiation, etc.
- 3.4 Strategic actions aimed at reducing the levels of exposure to the following major risk factors in the population will have a huge impact on cancer burden -
- (a) **tobacco**, through its various forms of exposure, constitutes the main cause of cancer related deaths worldwide among men, and increasingly among women. Tobacco causes a variety of cancer types, such as lung, oesophagus, larynx, oral cavity, bladder, kidney, stomach, cervix and colorectum. Reducing tobacco use is one of the key strategies for cancer prevention, through implementing a comprehensive mix of interventions including protecting non-smokers from tobacco smoke exposure with

further expansion of statutory no smoking areas, strengthening regulatory control to include e-cigarettes and other new smoking products, enforcing bans on advertising, imposing tax on tobacco products, implementing mass media campaign and providing effective smoking cessation service;

Exposure to tobacco includes active smoking, breathing second-hand tobacco smoke (passive or involuntary smoking) and smokeless tobacco. Worldwide, tobacco use was estimated to cause more than seven million deaths per year and is responsible for approximately 22% of cancer death.^{6,7} In Hong Kong, tobacco dependence is a chronic disease responsible for nearly 6 900 deaths a year. The latest reported prevalence of daily cigarette smoking is 10.0%.⁸

(b) **physical inactivity, obesity and dietary factors** play an important role as the causes of cancer.⁹

(i) **Physical inactivity** is a major contributor to the rise in the rates of overweight and obesity in many parts of the world. Moreover, some researches suggest that it independently **increases the risk of more than ten cancers like liver, prostate, colorectal, breast and uterine cancers**. Regular physical activity reduces the risks of multiple cancers by contributing to weight control. Among dietary factors related to excess body weight, reduction of consumption of sugar sweetened beverages and high-fat food items should be a high priority.

(ii) High consumption of **red meat**, especially processed meat, is associated with risk of **colorectal cancer** which is the commonest cancer in the recent few years in Hong Kong. In this regard, promotion of having a balanced diet and

⁶ World Health Organization. Tobacco. Available at: <https://www.who.int/news-room/fact-sheets/detail/tobacco>.

⁷ World Health Organization. Cancer. Available at: <https://www.who.int/news-room/fact-sheets/detail/cancer>.

⁸ Census and Statistics Department, HKSAR. Thematic Household Survey Report No. 64, Available at <https://www.statistics.gov.hk/pub/B11302642018XXXXB0100.pdf#page=13>

⁹ Because all these factors are intimately interconnected at the individual and contextual levels, estimating the specific contribution of each of these risk factors is difficult and might underestimate the cumulative potential risk.

reduction of consumption of red and processed meat could reduce the risk of colorectal cancer.

- (iii) Ensuring an adequate intake of **fruit and vegetables** should further **reduce risk for a variety of cancer types such as oral cavity, oesophagus, stomach and colorectum.**
- (iv) There is evidence to show that the **intake of nitrosamines in preserved food** like salted fish can increase the risk of **nasopharyngeal cancer (“NPC”)** which is more prevalent in the southern part of China including Hong Kong. Reinforcing the importance of the avoidance on consumption of foods containing nitrosamines helps reduce the risk of NPC.

In this connection, appeals for the community to practise a healthy lifestyle, including but not limited to engaging in regular physical activities and healthy eating, has been one of the approaches of the Department of Health (“DH”) in the prevention of NCD including cancer;

According to the Population Health Survey (“PHS”) 2014/15, 13.0% of local adults aged 18 or above had insufficient physical activity as defined by the World Health Organization (“WHO”), while the proportion of population aged between 15 and 84 who were overweight and obese were 20.1% and 29.9% respectively. Physical inactivity is estimated to be the principal cause for approximately 21% to 25% of breast and colorectal cancer.

- (c) **alcohol** is a Group 1 carcinogen classified by the International Agency for Research on Cancer and causes many cancer types including **cancer of oral cavity, pharynx, larynx, oesophagus, liver, colorectum and breast.** There is no safe level of drinking in terms of cancer risk. Risk of cancer increases with the amount of alcohol consumed. Strategic actions for reducing harmful use of alcohol include enforcing regulations to prohibit the commercial sale and supply of intoxicating liquor to minors, strengthening public education on harmful effects of drinking, as well as advocating the use of alcohol screening and brief intervention to reduce alcohol intake in primary care setting;

For 2010, alcohol-attributable cancers were estimated to be responsible for 337 400 deaths worldwide, predominantly among men, with liver cancer accounting for the largest proportion of deaths among different tumour types.¹⁰ According to the PHS 2014/15, 50.4% of the local population aged 15 or above drank alcoholic beverages occasionally (i.e. drank in three days or less a month) and 11.1% drank regularly (i.e. drank at least once a week) in the 12 months preceding the survey.

- (d) **chronic HBV infection** (also called chronic hepatitis) is a major cause of **liver cancer**, in this locality. The most cost-effective strategy for preventing primary liver cancer is universal vaccination with the hepatitis B vaccination which has been part of the Hong Kong Childhood Immunisation Programme (“HKCIP”) since 1988. The Steering Committee on Prevention and Control of Viral Hepatitis was set up in July 2018 to draw up a local strategy to effectively prevent and control viral hepatitis. Strategic actions for reducing exposure to hepatitis B infection include continuing the universal hepatitis B vaccination and monitoring its coverage rate;

HBV causes about 52% of the world’s primary liver cancer, resulting in nearly 340 000 deaths per year.¹¹ HBV infections also interact with exposure to aflatoxin (through consumption of contaminated food) in increasing the risk of liver cancer. In Hong Kong, HBV causes about 80% of liver cancer.

- (e) **HPV** is the world’s commonest sexually transmitted viral infection of the reproductive tract and also **causes cancers of the cervix, oral cavity, oropharynx, etc.** HPV vaccination which has been shown to provide protection against HPV infections is an effective strategy for reducing the incidence of cervical cancer.

¹⁰ World Health Organization. Cancer Prevention. Available at: <https://www.who.int/cancer/prevention/en/>.

¹¹ World Health Organization. Cancer Control Knowledge into Action - Prevention. WHO Guide for Effective Programmes. Available at: https://www.who.int/cancer/publications/cancer_control_prevention/en/

Resources have been allocated to expand the HKCIP to cover vaccination against HPV. Starting from the 2019/20 school year, eligible female primary school students of suitable ages will be provided with HPV vaccination to prevent cervical cancer; and

According to the WHO, HPV infects an estimated 660 million people per year and is estimated to cause almost all cases of cervical cancer, 90% of anal cancers and 40% of cancers of the external genitalia.¹¹ In Hong Kong, cervical cancer was the seventh commonest female cancer with 510 new cases in 2016, accounting for 3.3% of all new female cancer cases. HPV-16, 18, 31, 33, 45, 52 and 58 also accounted for about 90% of cases of cervical cancer and all the above seven genotypes are included in the 9-valent HPV vaccine.

- (f) **environmental pollution** of air, water and soil with carcinogenic chemicals accounts for 1% to 4% of all cancers. Exposure to carcinogenic chemicals in the environment can occur through drinking water or pollution of indoor and ambient air. Exposure to outdoor air pollution in general, and specifically **to particulate matter**, causes **lung cancer** and diesel engine emission is still widespread in different parts of the world. **Occupational cancers** are concentrated among specific groups of the working population who are exposed to several **well-recognised carcinogens such as asbestos, polycyclic aromatic hydrocarbons and heavy metals**. Therefore, cancer prevention can be conducted in partnership with other relevant government bureaux/departments and non-health sectors (such as urban planning, transport and environment), by advocating and promoting multiple co-benefits. For example, promoting physical activities can achieve physical and mental health benefits, energy saving, cleaner air and addressing climate change. The “Walk-in-HK” initiative by the Transport and Housing Bureau, “Hong Kong 2030+” initiative especially reinventing the public realm and the promotion of active design by the Development Bureau and the Planning Department are other relevant initiatives.

B. Providing population-based cancer screening based on evidence

- 3.5 Other than primary prevention, screening as a tool for secondary prevention is effective against some cancers such as cervical cancer and colorectal cancer. Cancer screening aims to detect early cancers or to identify precancerous disease in apparently healthy (asymptomatic) individuals, so that treatment can be carried out early and more effectively.
- 3.6 The CEWG regularly reviews international and local evidence and makes recommendations on cancer prevention and screening applicable to the local setting. So far, the CEWG has made recommendations on prevention and screening for nine selected cancers, namely cervix, colorectum, breast, prostate, lung, liver, nasopharynx, thyroid and ovary. The latest recommendations are summarised at **Annex 3**.

The CEWG adopted the Wilson and Jungner principles, which has been advocated by the WHO, as guiding principles in its deliberations for population based screening –

- (a) the condition sought should be an important health problem;
- (b) there should be an accepted treatment for patients with recognised disease;
- (c) facilities for diagnosis and treatment should be available;
- (d) there should be a recognisable latent or early symptomatic stage;
- (e) there should be a suitable test or examination;
- (f) the test should be acceptable to the population;
- (g) the natural history of the condition, including development from latent to declared disease, should be adequately understood;
- (h) there should be an agreed policy on whom to treat as patients;
- (i) the cost of case-finding (including diagnosis and treatment of patients diagnosed) should be economically balanced in relation to possible expenditure on medical care as a whole; and
- (j) case-finding should be a continuing process and not a “once and for all” project.

3.7 From the public health perspective, the Government must carefully assess a number of factors when considering whether to introduce a population-based screening programme for a specific cancer, such as local prevalence of the cancer, accuracy and safety of the screening tests, effectiveness in reducing incidence and mortality rates, feasibility of implementation of a screening programme, the capacity of the healthcare system with respect to resources, manpower and infrastructure, and public acceptance. The overriding concern is whether screening does more good than harm to society. Based on the above principles, over the years, the Government has launched screening programmes, namely the Cervical Screening Programme (“CSP”) and the Colorectal Cancer Screening Programme (“CRCSP.”)

The CSP was launched in March 2004 in collaboration with private and public sector to prevent cervical cancer. Over the years, the cervical cancer has been on a decreasing trend and stabilised in recent years. In December 2017, the DH launched a three-year pilot scheme to strengthen cervical cancer screening services and cancer preventive education among low-income groups through non-governmental organisations under the Community Care Fund.

The CRCSP was launched, as a pilot programme initially in September 2016 and regularised in August 2018, by using a public-private partnership model to subsidise asymptomatic Hong Kong residents aged between 50 and 75 in phases to undergo screening tests to prevent colorectal cancer, the commonest cancer in Hong Kong.

3.8 As regards population-based mammography screening proposed by some groups for the prevention of breast cancer, particularly for asymptomatic women at average risk, the Government and the medical sector need to gather more research findings and data to ascertain the appropriateness to implement population-based breast cancer screening for this group of women in Hong Kong. In this connection, the Government has commissioned The University of Hong Kong to conduct a study on risk factors associated with breast cancer for local women so as to help formulate the future strategies

for breast cancer screening in Hong Kong. Funded by the Health and Medical Research Fund (“HMRF”), the study aims at developing a breast cancer risk prediction model for Hong Kong, identifying risk factors among the local population through a case-control study, as well as building a comprehensive tissue bank and clinical database. Upon completion of the study, the research should develop a personalised risk stratification tool for breast cancer in local women as well as determine and quantify potential breast cancer risk factors. The study is expected to be completed in the latter half of 2019. The Government will review and consider the type of screening to be adopted for women of different risk profiles, having regard to the scientific evidence and outcome of the study.

- 3.9 In light of the above, we will continue to review the scientific evidence on the effectiveness and efficacy of screening on cancers by the CEWG and to promote the CSP and CRCSP to encourage the uptake rate.

C. Strengthening primary healthcare services

- 3.10 Primary care, being the first level of care in the whole healthcare system, is the first point of contact in a continuing healthcare process and provides person-centred care that is comprehensive, continuing and coordinated. It covers a wide range of services, including health promotion, prevention of acute and chronic diseases (including cancers), health risk assessment and disease identification, treatment and care of acute and chronic diseases, self-management support, as well as supportive and palliative care for end-stage diseases or disabilities.
- 3.11 A good primary care system would contribute to cancer prevention through adoption of a healthy lifestyle including avoidance of smoking and drinking, adequate exercise, and healthy diet, as well as early identification of cancers and their risk factors through primary, secondary and tertiary prevention strategies. Those identified with cancer risks will be referred to network family doctors and prompt referral to specialists for treatment as appropriate.

3.12 The Government is committed to strengthening primary healthcare development and established the Steering Committee on Primary Healthcare Development in November 2017 to formulate the development strategy and devise a blueprint for primary healthcare services. A Primary Healthcare Office was set up under Food and Health Bureau in March 2019. The Government will be setting up District Health Centre (“DHC”) Networks in all 18 districts of Hong Kong, and district-based primary healthcare services will be enhanced through medical-social collaboration and public-private partnership. Reducing cancer-related risk factors is one of intended objectives of the first DHC to be set up in Kwai Tsing District around the third quarter of 2019.

Expected Outcome by 2025

3.13 We seek to achieve the following –

Targets for reducing risk factors¹²

- (a) a 25% relative reduction in risk of premature mortality from NCD including cancers;
- (b) at least 10% relative reduction in prevalence of binge drinking and harmful use of alcohol among adults and in the prevalence of drinking among youth;
- (c) a 10% relative reduction in prevalence of insufficient physical activity among adolescents and adults;
- (d) a 30% relative reduction in prevalence of current tobacco use in persons aged 15 or above;
- (e) a halt to the rise in obesity;

¹² For local NCD monitoring including cancers, a set of targets has been adopted in the SAP published in 2018. The baseline selected by the WHO for all global voluntary targets is 2010. However, due to local data availability, the baseline adopted by Hong Kong for each target may vary, with the most recent available data adjacent to 2010 being selected.

Targets for vaccination

- (f) vaccination coverage of hepatitis B vaccine maintained at $\geq 95\%$;
- (g) interim target of 70% coverage for completion of two doses of HPV vaccination among the first cohort;¹³

Targets for cancer screening

- (h) a 10% relative increase in coverage for cervical cancer screening;¹⁴ and
- (i) a 30% relative increase in coverage for colorectal cancer screening.¹⁵

¹³ Target will be reviewed after the first two years of implementation.

¹⁴ It refers to percentage of women aged between 30 and 49 in Hong Kong who had been screened for cervical cancer at least once by cervical smear test.

¹⁵ It refers to percentage of asymptomatic persons aged between 50 and 75 in Hong Kong who had ever received colorectal cancer screening, namely Faecal Occult Blood Test/ Faecal Immunochemical Test or colonoscopy.

Chapter 4: Early Detection and Diagnosis

Direction

- 4.1 Earlier detection and diagnosis simplify treatment courses and improve survival rates.

The Hospital Authority (“HA”) has been the major public provider of cancer-related detection, diagnosis, treatment, and other care services. While this and the following chapters will present the directions and strategies of the HA, other service providers in the private sector are encouraged to work towards similar goals.

Strategies

A. Providing early risk assessment and enhancing the referral communication for suspected cancer cases from private/primary healthcare doctors

- 4.2 Early health risk factor assessment starts in the community. The District Health Centres identify clients' risk factors associated with cancers, which include unhealthy diet, inadequate exercise, alcohol consumption and smoking behavior, etc. and provide health promotion and disease prevention programmes for risk factor management to reduce their risk of cancer and encourage them to stay healthy.
- 4.3 At present, the HA provides around 90% of inpatient services in Hong Kong; around 68% and 10% of outpatient services and inpatient services are supported by private hospitals and clinics respectively. Some cancer patients are referred to the HA for further investigation and treatment via referral letter after consultation with private/primary healthcare doctors. As the referral letter contains important information for screening, its comprehensiveness is crucial

for HA's follow-up. To facilitate the referral process, the HA will explore enhancing the communication with private sector regarding new referrals from primary care settings to the HA.

- 4.4 Also, having noticed the international trend to introduce genome sequencing technology to identify disease risk, the HA is working on a Strategic Service Framework for Genetic and Genomic Services to enhance its services, including the provision of modern genetic and genomic tests for diagnosis/prognosis as early screening of family members of specific high-risk groups of cancer patients, particularly those with hereditary cancer syndromes.

B. Enhancing the triage system and streamlining the diagnostic procedures for new referrals

- 4.5 Population ageing has added to pressure on the waiting time for receiving diagnosis and treatment in the HA hospitals. The HA will keep striving to enhance its triage system, streamline its diagnosis procedures and augment its service capacity.
- 4.6 Currently, the triage system for new suspected cancer referrals varies across clusters due to the difference in the setting and service provision of individual hospitals. The HA will seek to achieve greater efficiency by stepping up collaboration among clusters and within the HA. Through adopting an enhanced triage mechanism and sharing of best practice, the disparities across clusters and within HA are expected to be minimised.
- 4.7 At present, patients with suspected diagnosis of cancer will first be seen by respective specialists in outpatient clinics for evaluation and diagnosis, with priority to receive necessary investigations according to urgency of their clinical conditions. The HA will develop cancer-specific checklists to formalise standard investigations with a view to improving the timeliness and efficiency according to their cancer likelihood.

- 4.8 Moreover, to enhance the service quality and facilitate early diagnosis, the HA will pilot the streamlined cancer-specific diagnostic service through collaborating with different disciplines, under which a wide variety of assessments and investigations for cancer (for example, clinical assessment, X-ray/computed tomography (“CT”) Scan, blood test and endoscopy) will be coordinated. Early diagnosis will be achieved through shortening the intervals between each diagnostic/staging procedures and minimising the frequency for patients visiting hospitals/clinics for receiving different clinical investigations. As it is noted that some special diagnostic investigations/tests are only provided in designated hospitals based on their strength and expertise, the coordination will be further improved through implementing cluster-based protocols or operation manual to ensure that these services are provided in a cooperative and coordinated manner.
- 4.9 The HA’s Clinical Management System has built in a “Cancer Note” which is a clinical record designed specifically to assist Cancer Case Managers (“CCM”) to manage and follow up cases involving breast and colorectal cancers. Profile tracking according to clinical protocol will help improve patient safety with early notification or alert on abnormal findings. Also, an integrated review of investigation results, including pathology reports and bio-chemical results, will streamline the clinical workflow so as to reduce the risk of overlooking results or delaying treatment. The HA will enhance its Information Technology (“IT”) system to support patients’ profile tracking and facilitate integrated review of investigation results across different clinical systems.
- 4.10 Early diagnosis and timely treatment is critical for cancer cases in improving the clinical outcomes and addressing patients' concerns. Among the leading cancers, breast, colorectal and nasopharynx cancers (“NPC”) are commonly started with a pathological confirmatory diagnosis. The waiting time from decision to treat (“DTT”) to start of radiotherapy (“RT”) of cancer patients requiring radical RT; and the waiting time for patients with breast, colorectal and NPC receiving first treatment after diagnosis will continue to be

monitored.¹⁶ These monitoring parameters are selected based on disease burden, the effectiveness of intervention, and the availability of reliable and automated data regarding the intervention. The HA will explore to extend the monitoring to cover more cancer types.

- 4.11 Looking forward, the HA will enhance endoscopy service to manage waiting list by adding more colonoscopy sessions and oesophago-gastro-duodenoscopy (“OGD”) sessions. At the same time, the HA will review and refine the ratio of cancer new cases to follow up cases in Specialist Outpatient Clinics (“SOPC”) session so as to augment SOPC's capacity in taking up new cases.

C. Exploring collaboration with the private sector

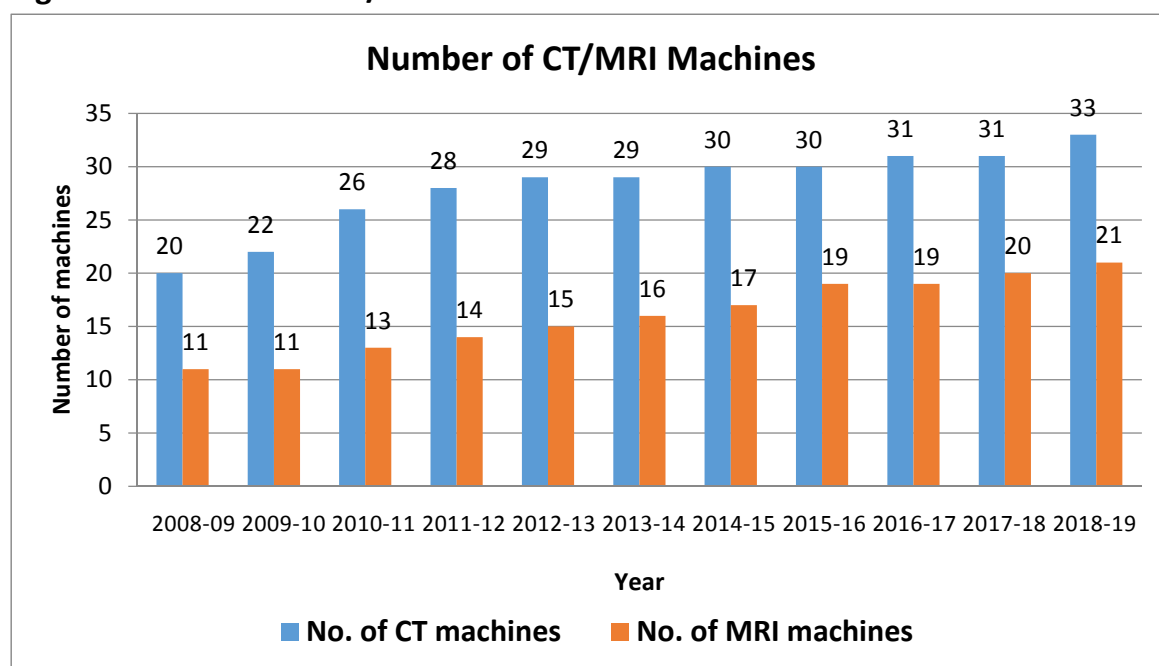
- 4.12 The HA has long-valued collaborations with the private sector in expanding healthcare service and choices for our patients. For instance, with the increase in cancer cases and demand for radiological imaging services, the HA has rolled out a Public-Private Partnership Programme “Project on Enhancing Radiological Investigation Services through Collaboration with the Private Sector” since 2012. Patients fulfilling specific clinical criteria can be referred to the private sector for radiological diagnostic examinations as part of their cancer care.
- 4.13 To facilitate the referral between the HA and private sector for more timely diagnosis and treatment for patients, the HA will look into the possibility of strengthening communication with the private sector and continue to identify scope for collaboration with non-governmental organisations (“NGOs”) and private sector to enhance service capacity in diagnosis.

¹⁶ In 2017-18, the waiting time from DTT to start of RT for 90th percentile for cancer patients requiring radical RT was 28 days while the waiting time at the 90th percentile for patients with colorectal cancer, breast cancer and nasopharyngeal cancer to receive their first treatment after diagnosis were 74 days, 65 days and 56 days respectively. The HA does not have relevant statistics on the waiting time for other types of cancer.

D. Introducing new technology to facilitate cancer diagnosis

4.14 The HA has been acquiring imaging machines to augment its service capacity. Since 2012-13, two Positron Emission Tomography (“PET”) machines have been installed in the HA. The total number of CT and Magnetic Resonance Imaging (“MRI”) machines in use in recent years is set out below (Figure 5).

Figure 5. Number of CT/MRI machines in the HA



4.15 Imaging modality will be enhanced and strengthened based on clinical needs. Examples of common imaging modality include CT Scan, MRI and PET scan. The HA will make use of new technology to advance diagnostic services. Specifically, the HA will -

- (a) improve the service capacity through installing additional advanced imaging machines and introducing new technologies; and
- (b) build the infrastructure to support the processing of massive volume of clinical data and deploy Artificial Intelligence (“AI”) applications to support clinical service or operation (e.g. explore the feasibility of using imaging AI to provide decision support on chest X-ray).

Expected Outcome by 2025

- 4.16 The HA seeks to achieve the following –
- (a) introduce a cancer-specific checklist to help patients receive investigations in a more timely manner and confirm the diagnosis at an earlier stage;
 - (b) pilot the streamlined cancer-specific diagnostic service for selected cancer type(s);
 - (c) support patient profile tracking and facilitate an integrated review of investigation results across different clinical systems with the support of IT; and
 - (d) establish the big data and machine learning infrastructure for image AI development and clinical AI service deployment for operation.

Chapter 5: Timely and Effective Treatment

Direction

- 5.1 Through building up an effective integrated service model that offers innovative and modernised cancer services, we seek to improve patient outcome, reduce morbidity and mortality.

Strategies

A. Better supporting individual patients by providing optimal and patient-centred treatment/care

- 5.2 Due to the rising cancer incidence and prevalence, as well as the complexity of cancer care provision, the Hospital Authority (“HA”) is challenged by an escalating service demand. To meet the challenges and achieve better outcome for cancer patients, the HA has started the formulation of a Strategic Service Framework for Cancer Services (“Cancer SSF”). The Cancer SSF aims to set out the directions, and guide the development of a service model and its corresponding system infrastructure for the HA’s cancer services over the next five to ten years. The service model will cover services for cancer patients in the HA, along the care pathway from symptom presentation, diagnosis, treatment, to survivorship care. In particular, the Cancer SSF will focus on cross-specialty and cross-disciplinary collaboration and cancer service organisation at cluster level.
- 5.3 The HA services are organised into seven clusters based on location. Most of the cancer services in the HA (e.g. diagnostic radiology, pathology, endoscopy, surgery, radiotherapy, chemotherapy and palliative care) are mainly provided in regional hospitals or cancer centres, and some diagnostic radiology and endoscopy as well as palliative care services for cancer patients are provided at other cluster hospitals.

5.4 The Cancer Case Manager (“CCM”) programme implemented by the HA in 2010-11 for patients with breast or colorectal cancer has proven to have improved care coordination during the complex patient journey. Although multi-disciplinary team (“MDT”) clinics/meetings are available for selected cancer types, existing CCM service only covers breast and colorectal cancers. There is room to expand the coverage of the CCM programme as well as the support by allied health professionals. The HA will revisit the role of CCM as a care coordinator who navigates the patient along the patient journey and facilitates the coordination of the diagnostic process and treatment. By standardising the patient care pathway via the CCM programme for different cancer types, service accessibility for cancer treatment is expected to be further improved. With the promising and positive feedback of the programme, the HA will explore the extension of the CCM services to other cancers.

5.5 At the same time, the provision of cancer care services in the HA will adopt a holistic patient-centred approach with MDT to address patients’ social and psychological needs throughout the cancer journey, as well as the needs of their families and carers.

Doctors, nurses, medical social workers, clinical psychologists, radiation therapists, medical physicists, physiotherapists, occupational therapists, dietitians, other allied health professionals, spiritual workers and volunteers work as a team to provide holistic care.

5.6 Besides western medicine treatment for cancer, it is noted that cancer patients would also seek Chinese Medicine (“CM”) as aid to the treatment. The Government has announced in the Chief Executive’s 2018 Policy Address that CM would be incorporated as a part of the healthcare system in Hong Kong. The Government will provide defined subsidised CM services via the CM development framework which comprises the Chinese Medicine Hospital (“CMH”) to provide inpatient and outpatient services, 18 CM Centres of

Teaching and Research¹⁷ (“CMCTRs”) at the district level to provide outpatient services and Integrated Chinese-Western Medicine (“ICWM”) treatment services in defined public hospitals. The CMH which is targeted to commence operation in late 2024 would explore providing CM services and the ICWM services for cancer patients. CM will therefore continue to play an important role in our healthcare system including cancer treatment services.

B. Augmenting service capacity and improving service coordination

- 5.7 Cancer treatment is becoming more complex and the treatment planning process is increasingly demanding on the time and effort of the clinical workforce including doctors, nurses and allied health professionals. The Government and the HA are very concerned about the healthcare manpower situation in public hospitals. Taking into account the growing service demand and the manpower situation, the HA has formulated various measures to strengthen its workforce including the recruitment of non-locally trained doctors through the limited registration mechanism, providing specialist training to doctors in public hospitals, and retaining expertise through enhancing the remuneration package and promotion opportunities of healthcare staff. The HA will provide training to all professionals to equip them with updated knowledge and skills for cancer care.
- 5.8 The HA has been reviewing its manpower deployment plans to facilitate the provision of integrated service through an MDT approach so that patients could receive a more timely and effective treatment. Cancer treatments such as chemotherapy are offered by clinical oncologists, medical oncologists and other specialties in the HA, while palliative care for cancer patients is offered by both oncology and medical palliative care teams. There is room for

¹⁷ Entrusted by the Government since 2003 and with Government’s subsidy, the HA has established 18 CMCTRs, one in each district, to promote the development of “evidence-based” CM and provide training placements for graduates of local undergraduate programmes in CM. These CMCTRs operate under a tripartite collaboration model, involving the HA, non-governmental organisations (“NGOs”) and the three local universities offering undergraduate programmes in CM. The NGOs are responsible for the running and day-to-day operation of the CMCTRs. The CMCTRs are currently providing general CM consultation service and other CM services such as acupuncture, bone-setting, tui-na, etc.

improvement on the collaboration of relevant specialties and disciplines. An integrated patient care and treatment approach will be organised through a pathway-driven, cluster-based, disease-specific and multi-disciplinary approach to streamline patient care and optimise resource utilisation. In this way, multi-disciplinary services involving clinical, medical, surgical and haematological oncologists to deliver surgical treatment and systemic therapies including chemotherapy, targeted therapy, hormonal therapy and immunotherapy will be collaborated closer across disciplines within cluster with a better coordination.

- 5.9 As some cancer patients do not require acute or emergency cancer services, it is considered that treatment at ambulatory centres may be more appropriate. Moreover, some patients prefer to receive care and treatment at ambulatory centres closer to residential place. The HA will explore to setup satellite chemotherapy centres in other cluster hospitals and enhance the capacity of existing ambulatory cancer services to improve accessibility for cancer patients and alleviate their need for transfer to designated oncology centres in regional hospitals.

C. Providing more and better drugs and treatment

- 5.10 The HA has all along been regularly evaluating new drugs and reviewing existing drugs in the HA Drug Formulary (“HADF”) based on an evidence-based approach, following the principles of safety, efficacy and cost-effectiveness of drugs. The cancer drugs available in the HADF are broadly comparable with those of reference countries, such as England, Scotland and Australia, in terms of coverage. For the period of 2010-11 to 2018-19 (as of February 2019), 54 cancer drugs for treatment of 24 types of cancers had been incorporated into the HADF as general/special drugs or covered by the safety net. As of February 2019, there were 109 drugs available in the HADF for treatment of various types of cancer.
- 5.11 Immunotherapy drugs for treating four types of cancers, namely skin cancer, renal cell cancer, lung cancer as well as head and neck cancer

are listed as self-financed items in the HADF. The HA will continue to regularly review the list of drugs in the HADF to include new cancer drugs or reposition existing drugs into different categories, and to enhance funding support for self-financed drug items through the established mechanisms.

- 5.12 The HA welcomes every opportunity to collaborate with pharmaceutical industry to formulate patient access programmes in providing affordable, sustainable and appropriate support for patients and would continue to ensure equitable access to cost-effective drugs of proven efficacy and safety in the HA hospitals and clinics. Under the programmes, the HA and different parties would contribute to the drug costs in specific proportions within a defined period, or the drug treatment costs to be borne would be capped, with a view to facilitating patients' early access to specific drug treatments.
- 5.13 To expedite the introduction of new drugs into the safety net coverage of Samaritan Fund ("SF") and Community Care Fund ("CCF") Medical Assistance Programmes, the HA has, since 2018, increased the frequency of the prioritisation exercise from once to twice a year for including self-financed drugs, having regard to the latest development of evidence, in the safety net.
- 5.14 With a view to alleviating the financial burden of patients and their families, the Government and the HA have introduced measures in early 2019 to enhance the means test mechanism for SF and CCF Medical Assistance Programmes. The enhancement measures include modifying the calculation of annual disposable financial resources for drug subsidy application by counting only 50% of the patients' household net assets, and refining the definition of "household" adopted in financial assessment.
- 5.15 To provide an optimal service to cancer patients, pharmacists and nurses will participate in the assessment and follow-up sessions to provide a holistic and integrated service to patients undergoing drug therapies.

D. Modernising and developing treatment facilities, technology and infrastructure

- 5.16 A possible way to alleviate the pressure on manpower while offering quality service is to make good use of modernised technology and medical equipment. The HA is keen to introduce evidence-based advanced or new technology in a timely manner for different treatment modalities to uphold the standard of care, and minimise treatment related morbidity. For instance, for radiotherapy, the relevant technology includes treatment planning/delivery system, and high precision radiotherapy machine; for surgery, robotic surgery; and for systemic treatment, the application of immunotherapy. To offer better radiotherapy service, the HA has installed more advanced Linear Accelerator (“LINAC”) facilities in recent years, which is a type of linear particle accelerator which customises high energy X-rays or electrons to conform to a tumour’s shape and destroy cancer cells while sparing surrounding normal tissue. As of February 2018, there were 28 LINACs installed to provide radiotherapy service in the HA. Based on the projected service demand, the HA will increase the number and replace existing LINAC facilities to newer models.
- 5.17 The treatment capacity will be increased in tandem with the rolling out of the first and second Ten-year Hospital Development Plan (“HDP”). \$200 billion has been earmarked for the first Ten-year HDP, which is expected to provide over 6 000 additional public hospital beds and more than 90 additional Operating Theatres. \$270 billion has been earmarked for the second Ten-year HDP. The HA will further evaluate and incorporate the service demand on cancer services into the HDP as appropriate. Upon the completion of the second Ten-year HDP, there would be over 9 000 additional beds and other facilities that will largely meet the projected service demand up to 2036. With additional manpower and resources, the HA will continue to enhance radiotherapy capacity by expanding the extended-hour Radiotherapy Service to more clusters, increase the capacity of specialist outpatient services of Clinical Oncology and day

chemotherapy service, as well as increase the number of inpatient beds in hospitals as appropriate.¹⁸

Expected Outcome by 2025

5.18 The HA expects to deliver the following –

- (a) for effective and equitable treatment –**
 - (i) continue to review and expand the coverage of cancer drugs in the HADF;
 - (ii) develop service model for satellite chemotherapy centre and pilot the model in selected cluster(s);
- (b) for a holistic patient-centred approach in cancer treatment –**
 - (i) develop and launch additional CCM Programmes;
 - (ii) roll out nurse clinics and clinical pharmacist service for cancer services in all clusters; and
- (c) for expediting the upgrading and acquisition of medical equipment for cancer treatment –**
 - (i) introduce advanced medical technology for cancer treatment (e.g. treatment planning and delivery system, and robotic surgery) in all clusters;
 - (ii) increase the number of and upgrade LINAC facilities according to the projected service demand;
 - (iii) reserve extra space in new hospital/oncology centres to facilitate the installation of advanced medical equipment and facilities; and

¹⁸ For example, under the first Ten-year HDP, Phase 1 redevelopment of Grantham Hospital will include the provision of a new oncology centre, additional beds and three additional operating theatres; the expansion of United Christian Hospital will develop an oncology centre to provide one-stop services including radiotherapy, chemotherapy and psychosocial care to cancer patients in Kowloon East. Oncology services will also be provided in the New Acute Hospital in Kai Tak Development Area. These three projects are planned to be completed by 2025. Besides, initial planning work has commenced for the second Ten-year HDP. At this stage, new oncology centres are expected to be provided under the redevelopment of Princess Margaret Hospital and redevelopment of Prince of Wales Hospital Phase 2 (Stage 2) projects, both aimed to be completed by 2035.

(d) for enhancing treatment capacity –

- (i) roll out the Ten-year Hospital Development Plan as quickly as possible, to establish oncology centre, enhance radiology services and increase the number of Operating Theatres, etc. in Grantham Hospital, Kwong Wah Hospital, Prince of Wales Hospital (Phase 2), Tuen Mun Hospital and United Christian Hospital.¹⁹

¹⁹ Expect to be completed in 2027

Chapter 6: Technology and Support

Direction

- 6.1 The delivery of a holistic approach to patient care should be underpinned by operational excellence and effective use of resources across the board. As the first step, we would focus on capitalising modern technology in the prevention and control of cancer and making best use of resources in supporting patients and carers in navigating their pathways.

Strategies

A. *Investing in state-of-the-art technologies*

- 6.2 Advances in pharmaceuticals and the medical field could save life and improve quality of life. There should be a balance in the consideration of timely introduction of new technology for cancer care and the careful scrutiny of the effectiveness when applied in the local context.
- 6.3 The Hospital Authority (“HA”) will optimise the use of the \$5 billion earmarked by the Government for the HA to upgrade and acquire medical equipment (including those for cancer treatment), the HA will consult its Coordinating Committees (“COCs”)/Central Committees (“CCs”) of different clinical areas to ensure that the allocation will strike a balance between replacing aged equipment and the adoption of state-of-the-art equipment. The Department of Health and the HA will regularly review and assess the need for up-to-date technology in complementing their services.
- 6.4 Health technology assessment, a multifaceted and systematic review of the application of a health technology including the safety, clinical efficacy and effectiveness, cost, cost-effectiveness, organisational

implications, social consequences and legal and ethical considerations, will be conducted so as to ensure the appropriate use of technology (including through training) and the efficient allocation of resources. For example, modernisation and addition of linear accelerators, computed tomography scanners and magnetic resonance imaging scanners with more advanced functionalities can improve the diagnosis and treatment of cancer patients. Besides, the HA will plan for the diffusion of advanced technology such as additional robotic surgery system to augment minimal invasive surgical services and Next Generation Sequencing technology to benefit cancer patients.

B. Developing an online resource hub to provide accurate and reliable health information related to carers

- 6.5 Coping with the diagnosis and treatment of cancer must be a stressful experience. With a view to alleviating some of the worries and anxieties, we intend to develop an online resource hub so that the public (particularly patients and carers) will be informed of what to do when one is diagnosed cancer, what resources materials are available, and what support groups can offer help, etc.

C. Pooling together community resources to maximise benefits to patients and carers

- 6.6 There are different community groups providing cancer-related services. We plan to create a “Cancer Network of Partners” – an engagement platform involving community partners to better coordinate all key resources available such that community efforts can be aligned, service gaps identified and service enhancements offered. Through better coordination, we envisage that we could meet more macro objectives and achieve economies of scale, avoid services duplications, and minimise mismatch in services provided and patients’ needs.
- 6.7 Promoting partnership with patients to provide patient-centred care is one of the key strategic directions of the HA. The HA established Patient Resources Centres (“PRCs”) in every cluster in supporting

patients and their families/carers, including facilitating the networking between patient and patient groups for mutual support. PRCs including Cancer Patient Resource Centres (“CPRCs”) in the HA serve as hospital focal points in engaging the community, and liaising with patients and carers for enhancing support during the process of care according to service needs. As at December 2018, there are over 220 patient groups under HA's liaison network at the corporate or cluster/hospital levels, including more than 40 cancer-related patient groups.

- 6.8 CPRCs are established in six Clinical Oncology Centres and United Christian Hospital. The CPRCs provide free resources and services for cancer patients, including a cancer information library, professional counselling services, rehabilitation workshops, peer support activities, services which provide information and assistance to newly-diagnosed patients, as well as rehabilitation or palliative support for those who are going through other stages of the cancer journey. The service scope and effectiveness of the CPRCs will be reviewed and enhanced.
- 6.9 The HA has developed a Smart Patient Website to provide a one-stop electronic platform with information on disease management and community resources to support patients in self-management. It provides comprehensive disease information and practical tips on self-care for patients, including those with cancers. Local and overseas supporting organisations and other community resources are available on the website for strengthening information support to cancer patients.
- 6.10 With the establishment of an engagement platform with community partners, the service gap and role of different parties in the community will be better defined. As such, the utilisation of resources can be maximised without overlapping. With the provision of integrated information regarding cancer support services on the online resources hub, and community groups to take up a prominent role of delivering cancer services, cancer patients will have better knowledge of when and how to seek help and opt for suitable services.

Expected Outcome by 2025

6.11 We seek to achieve the following –

- (a) upgrade and acquire medical equipment of different clinical areas and introduce evidence-based advanced or new medical technology for different treatment modalities;
- (b) create a dedicated online resource hub to enhance health communications and to serve as a centralised directory to inform the public of cancer-related resources; and
- (c) set up a platform involving the civil society with a view to working towards optimal models in benefitting more cancer patients and carers.

Chapter 7: Survivorship and Palliative Care

Direction

- 7.1 With the ageing population and treatment advancement, the survival rates of most cancers have improved over the years with more patients living with and beyond cancer. We need to identify and prioritise cancer survivorship needs and strengthened support to this growing population seeking to improve the quality of life of the survivors and their families.

Strategies

A. Taking care of cancer patients in primary care settings

- 7.2 Cancer survivors whose risk of cancer recurrence has dropped to a low level may receive care in a primary care setting such as having periodic check-ups in a nurse clinic or Family Medicine clinics.

B. Initiating a refer-back mechanism for quick access to the Hospital Authority's cancer care team

- 7.3 A structured refer-back mechanism will be set up to allow fast tracking patients from primary care to specialist care by the Hospital Authority's ("HA's") cancer care team whenever needed, e.g. when relapse occurs or when there are complications. The success of this transitional care pathway will be underpinned by one-stop coordination and collaboration between the HA's cancer care team and family medicine physicians, either at the HA or in the community. The HA will develop and pilot such collaboration model. Enhancement of psychosocial support and allied health outreach services will also be explored in the longer term.

C. Engaging community partners to reinforce medical-social collaboration

- 7.4 Quality of life for cancer survivors should be observed and improved. An important goal is to support them in the community by reinforcing medical-social collaboration and empowerment. These involve engaging and collaborating with community partners, cancer support/patient groups and other relevant stakeholders to provide better support to both the patients and their families. There is also a need to enhance cancer literacy of the public so as to transform the concept of care for survivors and perceive cancer as a chronic illness.

D. Establishing a sustainable service model for cancer survivors

- 7.5 There is currently a lack of unified surveillance and survivorship protocols, and specific rehabilitation programmes for those with long term morbidities. To better coordinate the survivorship care, the HA will identify and prioritise their needs, and develop strategies and a holistic care model that will lead to improved quality of life.
- 7.6 The HA will review and align existing service provision for survivors, including revisiting the role of different disciplines and collaboration among specialties for the scope of care and follow-up in cancer survivorship. Nurses, allied health professionals and medical social workers will be engaged for the development of a comprehensive service model for cancer survivors. A structured rehabilitation and supportive programme will be developed to ensure timeliness of the support and care received, including appropriate transition to the community and palliative care services.
- 7.7 The HA will set up nursing coordinators to facilitate survivorship care, which includes providing support to most Multi-disciplinary Teams (“MDTs”) and Family Medicine, facilitating referrals, and providing guidance, psychosocial support and education to patients. Patients will be empowered; and medical-social collaboration (e.g. non-governmental organisations (“NGOs”) and patient support groups) will be reinforced.

E. Enhancing palliative support for end-of-life patients

- 7.8 Patients with life-limiting conditions are in need of palliative care, aiming to provide timely and holistic care to address their physical, psychosocial and spiritual needs, and to be given the opportunity to participate in the planning of their end-of-life care with a view to improving the patient's quality of life till the end of their life journey.
- 7.9 Patients approaching the end-of-life tend to have higher utilisation of hospital services such as Accident and Emergency attendances and acute admissions, which may not be entirely necessary. As such, emphasis should be placed on the collaboration among different specialties along the care continuum from hospital to community settings, with optimal involvement of the HA, community partners and the welfare sector. It is important to provide ambulatory and community palliative care support to patients and their families/carers in order to facilitate care in place and reduce unnecessary hospitalisation.
- 7.10 The HA will strive to step up day care, home care, support to residential care homes, and community partnership to support terminally-ill cancer patients. In particular, the support to residential care homes of the elderly residents with terminal illness through expanding the end-of-life care programmes will also be enhanced. The HA will continue to review and enhance related services by building up capacity and networking with community partners to meet patients' need.
- 7.11 The HA has since September 2014 commenced the Integrated Chinese-Western Medicine ("ICWM") Pilot Programme in designated hospitals to gather experience on the ICWM. Cancer palliative ICWM services is one of the four disease areas being tested out in two designated public hospitals under the Pilot Programme.²⁰ With the Government's commitment in developing Chinese Medicine ("CM") in Hong Kong and recognising of CM as part of Hong Kong's healthcare system, the HA will continue to review ICWM treatment

²⁰ Currently, HA patients will pay an additional \$200 per day for receiving the ICWM services.

services in its hospitals. The Chinese Medicine Hospital will explore the feasibility of providing a CM centric cancer palliative service.

- 7.12 Apart from other clinical means to allow terminally-ill patients to have more options of their own treatment and care arrangements, the Government is planning to consult the public in 2019 on arrangement of advance directives and the relevant end-of-life care.

Expected Outcome by 2025

- 7.13 The HA seeks to achieve the following in terms of helping survivors stay healthy in the community –
- (a) empower patients by developing a medical-social collaboration model;
 - (b) introduce a fast-track refer-back mechanism so that cancer survivors can have ready access to the HA's cancer care team if need be;
 - (c) define the role and scope of MDT support, including allied health services for survivorship;
 - (d) establish and pilot the collaboration model for Oncology Specialist Outpatient Clinic and Family Medicine Clinic/General Outpatient Clinic for survivorship;
 - (e) enhance structured rehabilitation and supportive care programme for survivors; and
 - (f) enhance palliative care support for patients approaching end-of-life.

Chapter 8: Research

Direction

- 8.1 Through generation of scientific knowledge derived from local and global research, as well as translating such knowledge into clinical practice, we aim to provide more and better evidence to support cancer prevention, diagnosis, treatment and survivorship, as well as formulation of evidence-based health policy, to reduce cancer incidence, morbidity, mortality, and to improve the quality of life of patients.

Strategies

A. *Setting priority for cancer-related research*

- 8.2 Research Council, which governs the Health and Medical Research Fund (“HMRF”), will accord higher funding priority to studies on cancer-related areas. An Expert Advisory Panel (“EAP”) on cancer has been set up under the Research Council to make recommendations to advance science and to shape the research agenda of the HMRF. At the first meeting in September 2018, the EAP agreed to adopt the following thematic priorities on cancer-related studies –
- (a) epidemiology studies on cancer risk factors that can help formulate strategies for primary prevention;
 - (b) use of appropriate screening strategies for early identification and treatment of cancer;
 - (c) development of novel diagnostic tools, new treatment modalities including robotic surgery, chemotherapy and radiotherapy to reduce mortality and morbidity;

- (d) development and evaluation of cancer survivorship care delivery to address long-term and late effects of cancer;
- (e) applied research in genetics and genomics for personalised medicine, in particular target therapies for different tumours; and
- (f) application of big data analytics to examine clinical information for better management of cancer patients.

Besides, another EAP was set up on implementation science to promulgate research addressing strategies to implement health promotion, prevention, screening, early detection, and diagnostic interventions, as well as effective treatments, clinical procedures, or guidelines in existing care systems. EAPs will regularly review and refine the thematic priorities according to the latest scientific development and technology advancement. The HMRF will allocate funding based on EAPs' recommendation.

The HMRF provides funding opportunities to Hong Kong-based researchers in the academic, public and private sectors. Investigator-initiated projects are supported through annual open call applications guided by the thematic priorities (including cancer-related priorities). In the application rounds for investigator-initiated studies from 2012 to 2017, the HMRF has supported 237 cancer-related studies accounting for 21.0% of all funded projects. These researches focused on liver cancer (27.4%), nasopharyngeal carcinoma (12.2%), breast cancer (9.3%), colorectal cancer (9.2%), lung cancer (7.6%), leukemia (5.9%) and ovarian cancer (4.2%). A large proportion of the studies (41.4%) investigated the prevalence, risk factors, and mechanisms for causing cancer. Many of these studies were molecular or genetic studies, with a view to identifying potential targets for diagnostics and development of new cancer drugs. About one third (30.8%) of the studies addressed new treatment modalities or evaluation of existing treatment options. About one fifth (21.9%) of the projects studied cutting-edge science in diagnosis and prognosis including various biomarkers in predicting tumour progression and treatment outcome. Studies on prevention strategies accounted for 1.3% among all funded cancer projects.

The Government has allocated \$10 billion to establish the *InnoHK* Clusters at the Hong Kong Science Park, and has already received a myriad of proposals from world-leading universities and research institutes. *Health@InnoHK*, among which, will focus on healthcare research, including for instance drug discovery, personalised medicine, molecular diagnostics, vaccine development, alternative medicine, etc. It is believed that boosting healthcare research will bring about breakthroughs in the diagnosis and treatment of cancer and other diseases.

The Hong Kong Science and Technology Parks Corporation is supporting research and development activities of more than 120 biomedical companies in Hong Kong Science Park. These companies are developing molecular diagnostics, medical devices, advanced therapy products and traditional Chinese Medicine for commercialisation. The ecosystem therein is supplying early detection technologies, from medical and cell imaging to gene panels and genome sequencing, for precision medicine in Hong Kong. There are also Phase I and II clinical trials examining new advanced therapy products to treat cancers such as prostate, skin and blood cancers.

The Research Grants Council (“RGC”) attaches great importance to supporting the research work conducted by the higher education sector and applies equal support to all types of academic research. In 2018, more than 40 cancer-related projects are funded by the RGC.

8.3 In addition, the HMRF has provided funding to support the infrastructure of the two Phase I Clinical Trials Centres (“CTCs”) with total funding of \$80 million for five years to conduct early phase clinical trials. Since January/February 2014, the two Centres have commenced trials on safety, pharmacology and efficacy of various treatment for a range of cancers including liver, lung, breast, colorectum, kidney and other solid tumours. Additional funding of \$100 million will be provided, starting from May 2019 for five years, to the two Phase I CTCs for development of novel pharmaceutical products including those treating different cancers.

8.4 The newly-established Hong Kong Children’s Hospital serves as a tertiary referral centre for complex, serious and uncommon

paediatric cases requiring multidisciplinary management, such as cancers, congenital heart diseases and renal failure. It provides diagnosis, treatment and rehabilitation services for patients with relevant clinical needs from birth to 18 years of age territory-wide. Dedicated infrastructure such as research laboratories and clinical trial centre have been planned in the Hong Kong Children's Hospital to facilitate close collaboration with the medical faculties of The University of Hong Kong and The Chinese University of Hong Kong for pursuing basic and translational research in paediatric and genetic diseases, which may include children cancers.

- 8.5 Genomic medicine is an important sphere in contemporary medicine and scientific research. The Government will set up the Hong Kong Genome Institute to implement the Hong Kong Genome Project ("HKGP"), under which around 40 000 to 50 000 whole genome sequencing would be performed. The pilot phase of the HKGP would cover patients with hereditary cancer and their family members, among others. Through the establishment of a genome database, HKGP will help promoting genomic medicine research which may contribute to diagnosis and guiding treatment for cancers.

B. Providing scientific evidence to inform and evaluate cancer-related policy

- 8.6 Sound research will be an integral part in the policy making process. Two large-scale studies addressing specific issues on colorectal cancer and breast cancer are on-going. The former assesses the overall performance of the Colorectal Cancer Screening Pilot Programme, including its effectiveness and cost-effectiveness, satisfaction of users and service providers, change in public understanding, perception, acceptance and equitable use of screening. The aim of the latter study is to formulate a risk prediction model for breast cancer in Hong Kong using a case-control study approach under which a comparison is made between women with and without breast cancer. It also aims to find out the relationship between risk factors (such as age, body mass index and other personal characteristics, physical activity, family history of

breast cancer, and history of benign breast disease.) and breast cancer development.

- 8.7 Moreover, the HMRF also commissioned a population-based cohort study to examine the chemo-protective effects of aspirin against multiple cancers. The study will assess whether the long-term use of aspirin is associated with the risk reduction on cancer incidence and mortality, and to evaluate the benefits of aspirin outweigh its potential risks of bleeding events by examining clinical records of a cohort of more than 600 000 patients. To tackle tobacco-related harms, a major risk factor for cancer, a three-year study has been commissioned to evaluate the impact of tobacco control policies in Hong Kong. The study aims to establish a systematic survey to determine the effectiveness of existing tobacco control measures and to recommend new measures in line with the research findings. In the coming years, the HMRF will continue to commission other research to address specific policy needs.

C. *Building capacity to nurture local researchers to conduct cancer-related research*

- 8.8 The Research Fellowship Scheme (“RFS”) under the HMRF would support researchers or healthcare professionals in their early to mid-career, to enhance their skills in public health or health services research. Funding support will be provided for successful applicants to attend local or overseas training programmes which can help equip them with knowledge and skills to become independent researchers. Additional funding will be provided for an original research project with high translational potential within short-to-medium timeframe and association to the training programme. To tie in with the *“Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong”*, in the 2018 round of application, higher priority has been accorded to applications addressing risk factors such as smoking, alcohol drinking, unhealthy diet and physical inactivity which are associated with various types of cancers.

Expected Outcome by 2025

- 8.9 The HMRF seeks to achieve the following -
- (a) support about 300 investigator-initiated research and health promotion projects in the next six years for better prevention and control of cancer; and
 - (b) support about 30 awardees in the next six years under the RFS addressing the risk factors of cancer.

Five Leading Cancers in Hong Kong

(1) Colorectal Cancer

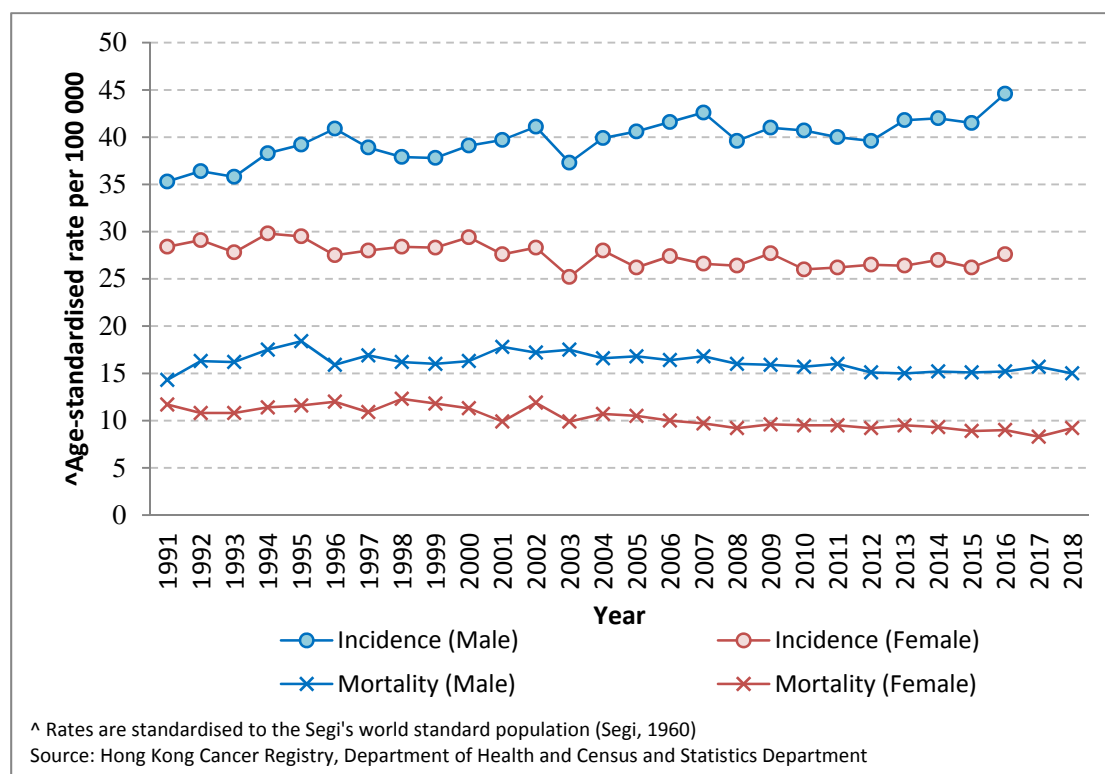
(incidence ranked 1st in 2016, mortality ranked 2nd in 2018)*

Cancer epidemiology

1. Colorectal cancer is the commonest cancer in Hong Kong. It accounted for 17.3% of all new cancer cases diagnosed in Hong Kong in 2016.
2. In 2016, there were 5 437 new cases of colorectal cancer, with 3 169 cases of male and 2 268 cases of female, the majority of which was people aged over 50. The median age at diagnosis of colorectal cancer was 68 in male and 69 in female. The age-specific incidence rates increased significantly from age 50 onwards. It is more common in males. The male to female ratio was about 1.4 to 1 in 2016.
3. Colorectal cancer is the second leading cause of cancer deaths in Hong Kong. In 2018, a total of 2 279 people died from this cancer, accounting for 15.8% of all cancer deaths.*
4. After adjusting for the effect of population ageing by using age-standardised rates, the incidence rates increased in men and decreased slightly in women from 1991 to 2016, while the mortality rates for both sexes have slightly decreased over the years (Figure 6).

* Provisional figures

Figure 6. Age-standardised incidence and mortality rates of colorectal cancer



Prevention, education and awareness raising

5. Risk factors for colorectal cancer include low fibre intake, high consumption of red meat and processed meat, lack of physical activity, obesity, alcohol consumption and smoking.
6. Individuals with the following risk factors are at increased risk of colorectal cancer –
 - (a) some hereditary bowel diseases, e.g. familial adenomatous polyposis (“FAP”) or Lynch Syndrome;
 - (b) long history of inflammation of the bowel, e.g. ulcerative colitis;
 - (c) history of colonic polyps; and

(d) family history of colorectal cancer, particularly in first-degree relatives (i.e. parents, siblings or children).

7. To reduce the chance of getting colorectal cancer, one should eat more food rich in fibre, eat less red meat and processed meat, have regular physical activities, maintain a healthy body weight and waist circumference, and abstain from drinking alcohol and smoking.

Early detection and screening

8. Early colorectal cancer may have no symptoms. Common symptoms of colorectal cancer may include change in bowel habits, blood or mucus in stool, persistent urge after passing stool, abdominal discomfort, or weight loss and tiredness with unknown reason. An individual with symptoms should promptly seek medical advice.
9. Separately, since colorectal cancer arises predominantly from precancerous adenomatous polyps developed over a long latent and asymptomatic period, it is one of the few cancers that can be effectively prevented through well organised and evidence-based screening.
10. When considering screening, people are classified into “average risk” and “increased risk” groups. According to screening recommendations made by the Cancer Expert Working Group on Cancer Prevention and Screening (“CEWG”), people with “increased risk” refer to individuals who have a significant family history, such as those with a first-degree relative diagnosed with colorectal cancer at the age of 60 or below; or those who have more than one first-degree relatives diagnosed with colorectal cancer irrespective of age at diagnosis; or those who have first-degree relatives diagnosed with hereditary bowel diseases. People with “average risk” refer to individuals aged between 50 and 75 who do not have the aforesaid family history.

Check out **Annex 3** for the detailed recommendations of the CEWG in respect of the five cancers set out in this Annex.

Screening for general population at average risk

11. Since 2010, the CEWG recommends that people at average risk aged between 50 and 75 should consult their doctors to consider one of the following screening methods –
 - (a) annual or biennial faecal occult blood test (“FOBT”);
 - (b) sigmoidoscopy every five years; and
 - (c) colonoscopy every ten years

12. Since September 2016, the Government has launched a Pilot Programme to provide subsidised screening in phases to average risk Hong Kong residents aged between 61 and 70. Participants would first receive subsidised Faecal Immunochemical Test (“FIT”), a new version of FOBT, from enrolled primary care doctor and if the FIT result is positive, would receive subsidised colonoscopy examination service from enrolled colonoscopy specialist. In August 2018, the Pilot Programme was regularised and named as “Colorectal Cancer Screening Programme” (“CRCSP”) which would progressively extend its coverage to Hong Kong residents aged between 50 and 75 in accordance with the CEWG’s screening recommendation.

Screening for individuals at increased risk

13. In 2017, the CEWG updated the colorectal cancer screening recommendations for individuals at increased risk, with the key change relating to the interval for colonoscopy screening among individuals with significant family history of colorectal cancer but without mutated gene. At present, the screening recommendations for increased risk individuals are as follows –

- (a) for carriers of mutated gene of Lynch Syndrome, the CEWG recommends screening for colorectal cancer by colonoscopy every one to two years from the age of 25 onwards;
 - (b) for carriers of mutated gene of FAP, the CEWG recommends screening by sigmoidoscopy every two years from the age of 12; and
 - (c) for individuals with one first-degree relative diagnosed with colorectal cancer at the age of 60 or below or more than one first-degree relatives with colorectal cancer, irrespective of age at diagnosis, colonoscopy should be performed every five years beginning at the age of 40 or ten years prior to the age at diagnosis of the youngest affected relative, but not earlier than the age of 12.
14. For colorectal cancer patients with identifiable genetic mutations (i.e. the Lynch Syndrome and FAP), the CEWG recommends two-tier screening for their family members. Genetic testing should first be conducted followed by endoscopic examination at specified and shorter intervals if genetic test is positive. This is to reduce the number of unnecessary investigations among those with strong family history but without proven gene mutation to reduce the risk of potential complications arising from repeated endoscopic procedures.
15. At present, patients with colorectal cancer and their first-degree relatives may be referred for genetic counselling and testing provided in certain centres run by –
- (a) the Hereditary Gastrointestinal Cancer Genetic Diagnosis Laboratory of The University of Hong Kong;²¹
 - (b) Clinical Genetic Services of the Department of Health (DH);²² and
 - (c) the private sector. While referral criteria for testing may differ between these testing services, commonly adopted criteria include

²¹ <http://www.patho.hku.hk/colonreg.htm>

²² https://www.dh.gov.hk/english/main/main_cgs/main_cgs.html

strong family history, occurrence of multiple cancers in a single individual, early onset of disease, presence of pathogenic mutation in the cancer predisposition gene and/or clinically suspected hereditary cancer syndrome.

16. The service model for screening this group of high risk individuals and families will be further discussed.

Diagnosis, treatment and care

17. As a substantial proportion of the patients with colorectal cancer is now curable, a timely multi-disciplinary management is the key to success. Patients with early disease have a high rate of cure with surgery alone while selected patients may require chemotherapy and/or chemoradiotherapy in the perioperative setting. On the other hand, advancement in diagnosis and treatment has created an unprecedented opportunity of cure even in the metastatic setting: those with limited number and extent of metastasis should be considered for aggressive local therapy in addition to conventional systemic therapy and this approach has proven survival benefit. The remaining patients with widespread metastatic disease should be treated in a personalised manner guided specific patient and tumour factors.
18. A further step forward is to anticipate the increased number of patients being diagnosed with early disease who need immediate access to cancer service as a result of the screening. The role of Cancer Case Managers is to facilitate the diagnostic and treatment process. On the other hand, as there are molecular biomarkers which are known to be useful to disease management, international guidelines of molecular biomarkers should be introduced in a timely manner to the public sector. The strategy in introducing relevant molecular diagnostic service will also be explored.

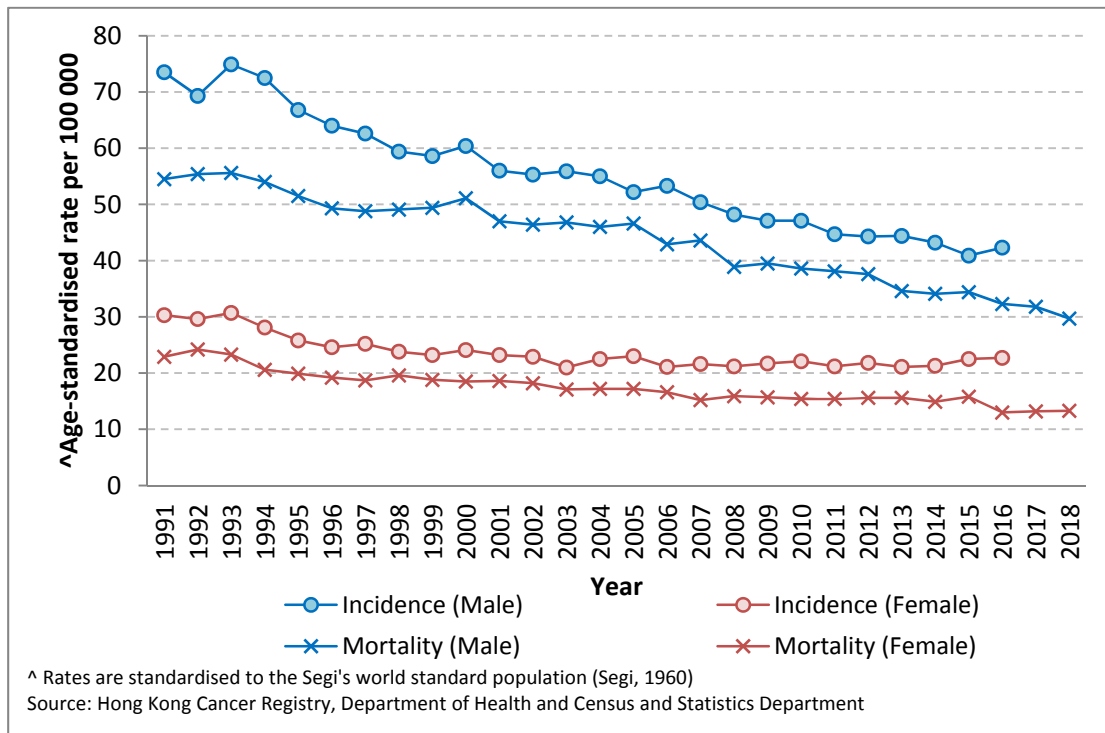
(2) Lung Cancer

(incidence ranked 2nd in 2016, mortality ranked 1st in 2018*)

Cancer epidemiology

19. Lung cancer is the second commonest cancer in men and the third commonest in women, after breast cancer and colorectal cancer. It accounted for 15.7% of new cancer cases in 2016.
20. In 2016, there were 4 936 new cases of lung cancer, with 3 086 cases of males and 1 850 cases of females, the majority of which was people of age over 50. Lung cancer was also the first leading cause of cancer deaths in Hong Kong. In 2018, a total of 3 812 people died from this cancer, accounting for 26.4% of all cancer deaths.* The age-standardised incidence rates had a downward trend in men between 1991 and 2016 and levelled off in women in recent years, while the age-standardised mortality rate for both sexes also had a downward trend (Figure 7).

Figure 7. Age-standardised incidence and mortality rates of lung cancer



* Provisional figures

Prevention, education and awareness raising

21. The risk factors for lung cancer are well recognised and include –
- (a) smoking or inhaling second hand smoke;
 - (b) air pollution, including outdoor and indoor;
 - (c) exposure to radon gas (a kind of radioactive gas that is released from rocks and soil and accumulates in the buildings);
 - (d) occupational exposure to certain chemicals or building materials (e.g. asbestos, arsenic, chromium, nickel, etc.);
 - (e) radiation exposure;
 - (f) family history of lung cancer; and
 - (g) weaken immunity, e.g. being infected with human immunodeficiency virus.
22. To reduce the chance of getting lung cancer, the single most important prevention strategy is to avoid smoking and second hand smoke. Besides, it is also important to observe the relevant Ordinances such as Occupational Safety and Health Ordinance (Cap. 509) and Air Pollution Control Ordinance (Cap. 311) to reduce exposure to carcinogenic substances in workplaces and daily environment.

Early detection and screening

23. The symptoms of lung cancer may not be easily noticed at an early stage. Common symptoms include persistent cough, coughing up blood-stained sputum, repeated chest infections, hoarseness, chest discomfort or pain when coughing or taking a deep breath and non-specific symptoms like loss of appetite and weight. One should see a doctor as soon as possible if any of the above symptoms develop.

24. Common lung cancer screening tests include chest X-ray, sputum cytology and low-dose computed tomography (“LDCT”). All screening tests have their limitations and they are not 100% accurate. Individuals who consider lung cancer screening should be adequately informed about the benefits and risks. The current scientific evidence is that routine screening for lung cancer with chest X-ray or sputum cytology is not recommended for both general and high risk population. There is also insufficient evidence to recommend for or against lung cancer screening by LDCT in asymptomatic persons or as mass screening.
25. In any case, smoking is the major risk factor for lung cancer and smokers should quit smoking and consult doctors about the need for lung cancer screening.

Diagnosis, treatment and care

26. With the advancement of genetic medicine, technologies and medications, the management landscape of lung cancer has been changing. For patients with early and locally advanced lung cancer who are potentially curable, the treatment aim is to cure the disease by means of radical surgery, radical radiotherapy or combination of surgery, radiotherapy and chemotherapy and to maintain the functional health of the survivors. A significant proportion of metastatic lung cancer are treatable, for which the treatment goals are to prolong the survival and improve quality of life by various systemic cancer treatments and radiotherapy based on the histology, genetic diagnostics and patient’s physical condition. When the disease is beyond cure and treatment, timely holistic family-centred palliative care will be offered for symptom control and family support.
27. The majority of lung cancer patients in Hong Kong are managed by various clinical units of the Hospital Authority (“HA”) along their cancer care journey including clinical oncology, cardiothoracic surgery, respiratory medicine, medical oncology and palliative medicine with support from pathology, radiology and allied healthcare professionals. With current resource and workflow, working up cases with lung nodules for early diagnosis of lung cancer can be challenging. Hence, the

referral and diagnostic pathway especially radiological investigation and tissue biopsy should be streamlined. Besides, there are rapid developments in molecular biomarkers for managing lung cancer patients, e.g. EGFR, ROS1 for targeted therapy and PD-L1 for immunotherapy. Timely introduction of various advanced diagnostic technologies, cost-effective anti-cancer therapies and coordinated and multi-disciplinary care are important in the management of patients with lung cancer.

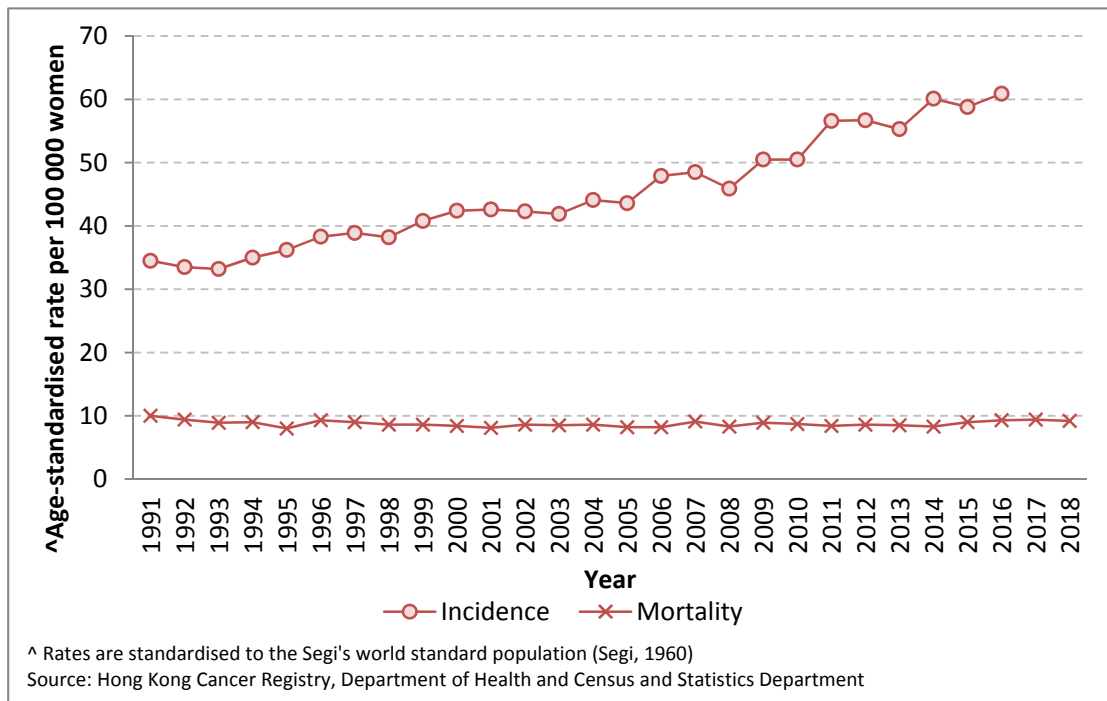
(3) Breast Cancer

(incidence ranked 3rd in 2016, mortality ranked 4th in 2018*)

Cancer epidemiology

28. Breast cancer is on the rise in the past few decades and the disease burden affect females disproportionately. In 2016, there were 4 108 new cases of female breast cancer and 15 new cases of male breast cancer diagnosed. It was the commonest cancer among females in Hong Kong (26.6% of all new cancers in females diagnosed in 2016) and the third leading cause of cancer deaths among females in Hong Kong in 2018* (749 deaths or 12.5% of all cancer deaths in females). The age-standardised incidence rate of female breast cancer had an upward trend for the period between 1991 and 2016 while the age-standardised mortality rate did not change significantly (Figure 8).

Figure 8. Age-standardised incidence and mortality rates of female breast cancer



* Provisional figures

Prevention, education and awareness raising

29. Most of the risk factors for female breast cancer are related to lifestyle, which include –
- (a) lack of physical activity;
 - (b) alcohol consumption;
 - (c) obesity after menopause;
 - (d) advancing age;
 - (e) no childbirth, late first live birth (after the age of 30) or no breastfeeding;
 - (f) early menarche (before the age of 12) or late menopause (after the age of 55);
 - (g) history of breast, ovarian or endometrial cancer;
 - (h) history of benign breast conditions or lobular carcinoma *in situ*;
 - (i) receiving hormonal replacement therapy; and
 - (j) using combined oral contraceptives.
30. Further, women with family history of breast cancer or ovarian cancer, especially with first-degree relative (i.e. mother, sister or daughter) diagnosed with breast cancer before the age of 50, or those with confirmed carrier (or family history) of certain gene (e.g. *BRCA1* or *BRCA2*) mutations and a history of receiving radiation therapy to the chest before the age of 30 are considered at increased risk of breast cancer.
31. To reduce the chance of getting breast cancer, members of the public, with women in particular, are recommended to have regular physical activities, avoid alcohol drinking and maintain a healthy body weight and waist circumference. If possible, they are advised to have childbirth at an earlier age and breastfeed each child for a longer duration.

Early detection and screening

32. The symptoms of breast cancer may not be easily noticed at an early stage and include presentation with breast lump, change in the size or shape, skin texture of the breast or nipple or even development of rash around, or in-drawing of, or discharge from the nipple. In some cases, there may also be new and persistent discomfort or pain in the breast or armpit and new lump(s) or thickening in the armpit. Therefore, women are advised to stay breast aware and be familiar with the normal look, feel and cyclical changes of their breasts so as to seek advice from doctor as soon as unusual changes in the breast are noticed.
33. Mammography is a widely used screening tool which is an X-ray examination of the breasts. At present, there is insufficient scientific evidence to recommend for or against population-based mammography for local asymptomatic women at average risk in Hong Kong. Women at moderate risk of breast cancer should discuss with doctors the pros and cons of breast cancer screening before making an informed decision about mammography screening every two to three years. Women at high risk (e.g. carriers of confirmed *BRCA1* or *BRCA2* gene mutations, those with family history of breast cancer or ovarian cancer, and those with history of receiving radiation therapy to the chest before the age of 30) should seek doctor's advice for annual mammography screening and starting age for screening.
34. All screening tests have their limitations and they are not 100% accurate. There are false-positive and false-negative results. Given the lack of justification from the public health perspectives as supported by scientific evidence, the Government at present does not have plans to introduce a population based mammography screening programme. The Government and the medical sector need to gather more research findings and data to explore whether it is appropriate to implement population-based breast cancer screening for asymptomatic women at average risk in Hong Kong. Before a conclusion is drawn, all women who consider taking breast cancer screening should be adequately informed about the benefits and risks.

35. At present, mammography screening for women at increased risk of breast cancer is available in –
- (a) DH: three Women Health Centres and ten Maternal and Child Health Centres on a sessional basis and women with abnormal mammographic findings will be referred to specialists for follow-up. The DH's Clinical Genetic Service accepts referral for genetic counselling and testing service for patients and family members with suspected hereditary breast and ovarian cancer syndrome;
 - (b) Local non-governmental organisations (“NGOs”) : NGO like Hong Kong Hereditary Breast Cancer Family Registry has established the Hong Kong Hereditary and High Risk Breast Cancer Programme since 2007 which is a multi-disciplinary breast care programme (including genetic counselling and testing) to help identify high risk groups and data collection; ^{23,24} and
 - (c) Private sector: the practice and protocols for screening modalities may vary

Diagnosis, treatment and care

36. Breast cancer has been the commonest cancer among women in Hong Kong since 1994, with an increase of around 5% in number annually. In half of them, the onset age is between 40 and 55. Modern breast cancer management emphasises early diagnosis, multi-disciplinary approach incorporating precision medicine, as well as personalised therapy recognising patient's unique physical and psychosocial needs. Surgery is the mainstay of treatment in achieving cure for breast cancer, with Systemic therapy and Local Regional Radiotherapy as adjuvant or neoadjuvant therapy to improve the overall outcome of the patient.

²³ <https://www.asiabreastregistry.com>

²⁴ <http://www.hrbc.org/eng/index.htm>

37. As the number of cases with breast symptoms and breast cancer cases are on the rise, an effective triage system for new referrals, selecting out the high-risk patients for streamlined diagnostic workup is necessary. Again, the timely introduction and development of molecular diagnostics e.g. HER2 and related targeted therapy are important. The expertise in the management of complicated case, e.g. cases requiring breast reconstruction and surgery for recurrent/locally advanced cancer should be built up. As the long term survival for breast cancer patients is good, survivorship programme including facilities and protocol for surveillance should be developed.

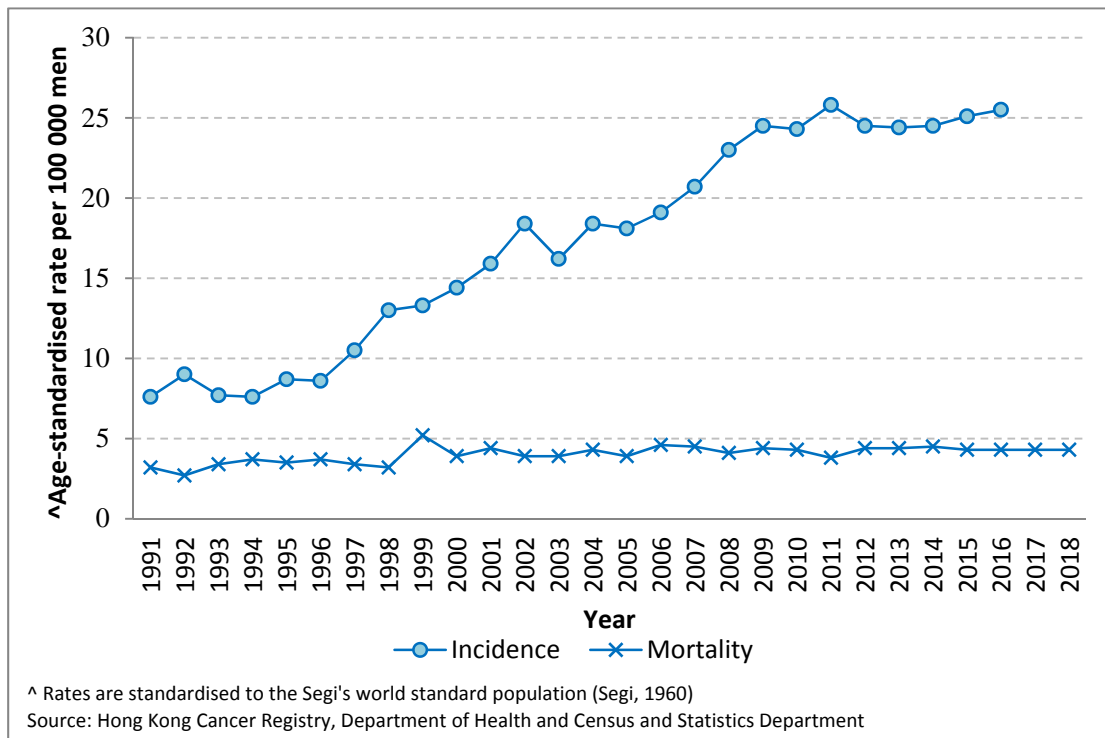
(4) Prostate Cancer

(incidence ranked 4th in 2016, mortality ranked 7th in 2018^{*})

Cancer epidemiology

38. Prostate cancer recorded the largest increase in incidence rate among the common male cancers in Hong Kong over the past two decades. In 2016, 1 912 new cases of prostate cancer were diagnosed, making it the third commonest cancer in men that accounted for 11.9% of all new cancer cases in males that year. Also, prostate cancer is the fourth leading cause of male cancer deaths in Hong Kong in 2018, causing death to 466 men which was 5.5% of male cancer deaths in the same year.* Both the age-standardised incidence and mortality rates for the period between 1991 and 2016 showed an upward trend, although the magnitude of change is less in the latter (Figure 9).

Figure 9. Age-standardised incidence and mortality rates of prostate cancer



* Provisional figures

Prevention, education and awareness raising

39. The causes for prostate cancer are not yet fully understood. However, several risk factors for prostate cancer are identified, which include advancing age, a family history of prostate cancer (especially in first-degree relatives like father, brother or son), being African American and obese.
40. In general, adopting a healthy lifestyle (e.g. regular physical activities, maintaining a healthy body weight and waist circumference, having well balanced diet and avoiding smoking and alcohol consumption) may lower risk of prostate cancer.

Early detection and screening

41. Early prostate cancer often goes unnoticed as it usually has no symptoms. Common presentation of prostate cancer includes difficulty or delay in urination, slow or weak stream of urine, urinary frequency especially at night, blood in urine and pain in the lower back, pelvis and hips. Since most of these symptoms are very similar to those of benign prostatic hyperplasia which is not cancer, one should consult a doctor as soon as possible if the above symptoms develop.
42. Two common screening tests for prostate cancer are digital rectal examination (“DRE”) and prostate-specific antigen (“PSA”) test. If the screening test is abnormal, further diagnostic investigation is needed. DRE and PSA test have their limitations and they are not 100% accurate. One should discuss with the doctor about the benefits and potential risks about screening to make an informed choice.
43. At present, there is insufficient scientific evidence to recommend for or against population-based prostate cancer screening for asymptomatic men in Hong Kong. Men at increased risk of prostate cancer (e.g. with first-degree relative diagnosed with prostate cancer before the age of 65) should consider seeking advice from doctors about their screening need and approach. The PSA test should start at an age not earlier than 45 until 70, and the interval should not be more frequent than once every two years.

Diagnosis, treatment and care

44. With the advancement of technology, biomarkers and medications, the management landscape of prostate cancer has been changing. The accurate diagnosis and staging of prostate cancer has been markedly improved by serum biomarkers, Magnetic Resonance Imaging (“MRI”) and fusion ultrasound and MRI targeted biopsy. Hence, introducing more specific markers such as Prostate Health Index and enhancing the availability of advanced imaging will increase the accuracy and positive yield of prostate biopsies and reduce unnecessary invasive procedures.
45. For patients with very low risk prostate cancer, active surveillance is the management of choice while for the other risk groups, robotic radical prostatectomy, radical radiotherapy or a combination of both could be adopted with the aim of complete cure of the disease. For metastatic prostatic cancer patients who can survive for years, the treatment goals are to prolong the survival and improve quality of life by various systemic cancer treatments with or without radiotherapy based on the site of metastases and patient’s physical condition. When the disease is beyond cure and effective control, timely holistic family-centred palliative care will be offered for symptom control and family support.

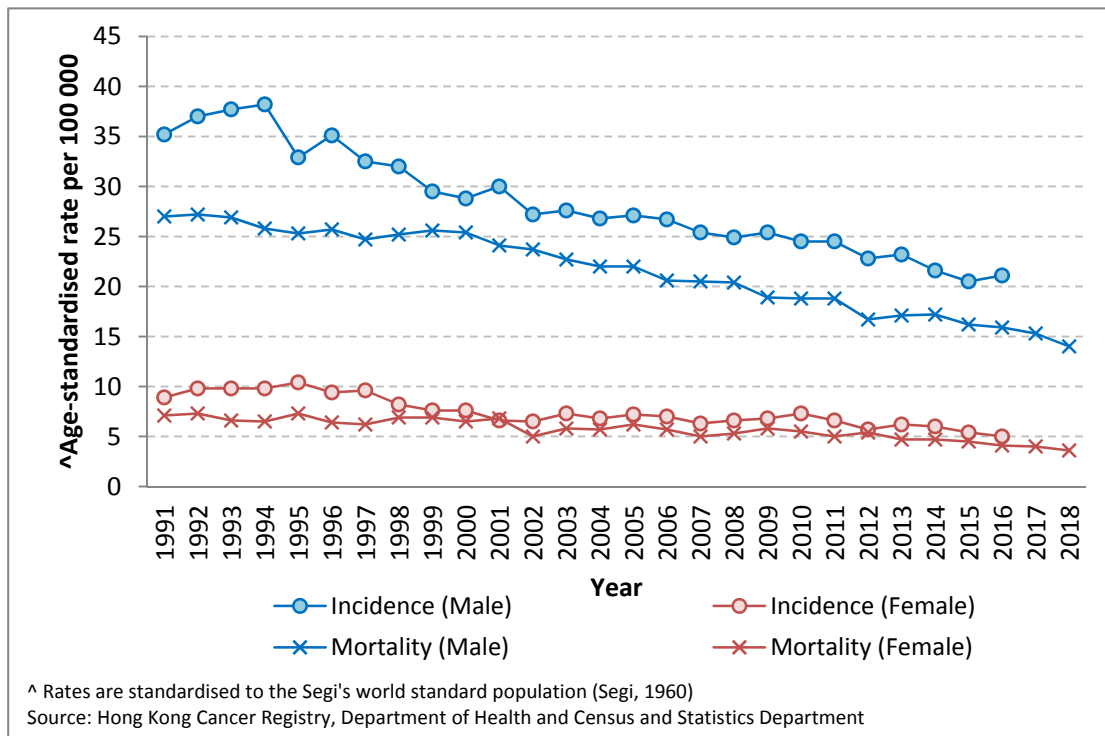
(5) Liver Cancer

(incidence ranked 5th in 2016, mortality ranked 3rd in 2018*)

Cancer epidemiology

46. In 2016, there were 1 810 new cases of liver cancer (5.8% of all new cancer cases), ranking it the fifth commonest cancer in Hong Kong. Among them, 1 391 cases were males and 419 cases were females. Liver cancer was the third leading cause of cancer deaths in Hong Kong. In 2018, a total of 1 481 people died from this cancer, accounting for 10.3% of all cancer deaths.* Both the age-standardised incidence and mortality rates for both sexes between 1991 and 2016 had a downward trend (Figure 10).

Figure 10. Age-standardised incidence and mortality rates of liver cancer



* Provisional figures

Prevention, education and awareness raising

47. Major risk factors identified for liver cancer include chronic infection with hepatitis B virus (“HBV”) and hepatitis C virus (“HCV”), cirrhosis, alcohol consumption and ingestion of food contaminated with aflatoxin (a toxin found in some food, such as mouldy peanuts and grains), although other risk factors like diabetes, obesity, smoking and certain hereditary conditions such as haemochromatosis, glycogen storage disease and Wilson’s disease are also implicated. Locally, HBV vaccination has been given to all babies born since 1984 as an important preventive measure.

Early detection and screening

48. Usually, early stage of liver cancer has no symptoms and may not be easily noticed. Common symptoms include unexplainable weight loss, skin and eye yellowing, nausea, dark urine, abdominal pain and swelling. Hence, one should consult a doctor as soon as possible if the above symptoms develop.
49. To reduce the chance of getting liver cancer, it is important to get vaccinated against HBV, avoid drinking alcohol and tobacco smoking. Avoidance of unprotected sexual intercourse, sharing needles and food possibly tainted with aflatoxins and maintaining healthy diet and body weight would also help reducing the risk of developing liver cancer.
50. Two more widely-adopted tests for liver cancer screening are alpha-fetoprotein (“AFP”) test and abdominal ultrasonography (“USG”). However for AFP test, the blood AFP level is frequently normal during early stage and it could also be raised in conditions other than liver cancer, rendering it not very reliable for detecting small liver cancer. The performance of abdominal USG is more operator dependent and could be affected by factors like abdominal fatness. Therefore, it may not be able to detect small liver tumour and may be used in conjunction with the AFP test to give more informative results.

51. Currently, the CEWG considered that routine liver cancer screening is not recommended for persons at average risk. At the same time, people with chronic HBV or HCV infection or liver cirrhosis regardless of the cause are at increased risk of hepatocellular carcinoma. Depending on certain criteria such as age, family history, presence of cirrhosis and other clinical parameters, some subgroups are at higher risk and should consider receiving periodic cancer surveillance (e.g. every six to 12 months) with AFP and USG. People with chronic HBV or HCV infection, or liver cirrhosis should thus seek advice from doctors to determine their need for and approach of cancer surveillance.

Diagnosis, treatment and care

52. Liver cancer can be diagnosed by imaging alone (like contrast-enhanced computed tomography (“CT”), Magnetic Resonance Imaging (“MRI”), and treatment strategy depends on disease staging, hence diagnostic facility forms an important part of disease management. Most liver cancer patients present late and have poor prognosis. For those with early operable disease, surgery is the mainstay of curative treatment. In selected patients, liver transplant may also offer chance of cure. For the majority of patients, treatment is largely of palliative intent. There are a variety of palliative treatment modalities offered by different specialties (like transarterial chemoembolisation (“TACE”), radiofrequency ablation (“RFA”), drug treatment e.g. targeted therapy and immunotherapy). A multi-disciplinary team approach for management decision and coordination is important. Palliative care is also important for liver cancer in view of the high mortality and most patients will develop symptoms during late phase. The capacity and expertise in managing liver cancer cases, including oncology, diagnostic and interventional radiology, liver surgery and liver transplant should be strengthened. After all, as there are effective treatments for hepatitis B and selected hepatitis C, the overall management of this group of patients should be further enhanced to reduce the development of complications including liver cancer.

Governance and Executive Agents in the Public Sector

(A) Food and Health Bureau

1. The Food and Health Bureau (“FHB”) is responsible for the overall policy formulation and resource planning for Hong Kong’s healthcare system. It ensures these policies are implemented effectively and in a timely manner to protect and promote public health and provide lifelong holistic care to every citizen, while ensuring that no one will be denied adequate treatment due to a lack of means. For cancer control, the FHB oversees a wide spectrum of activities covering cancer surveillance, risk factor reduction, health promotion, cancer screening, quality treatment, palliative care and research executed through the Department of Health (“DH”), the Hospital Authority (“HA”) and the Research Office (“RO”), in collaboration with stakeholders and partners outside the Government.

(B) Cancer Coordinating Committee

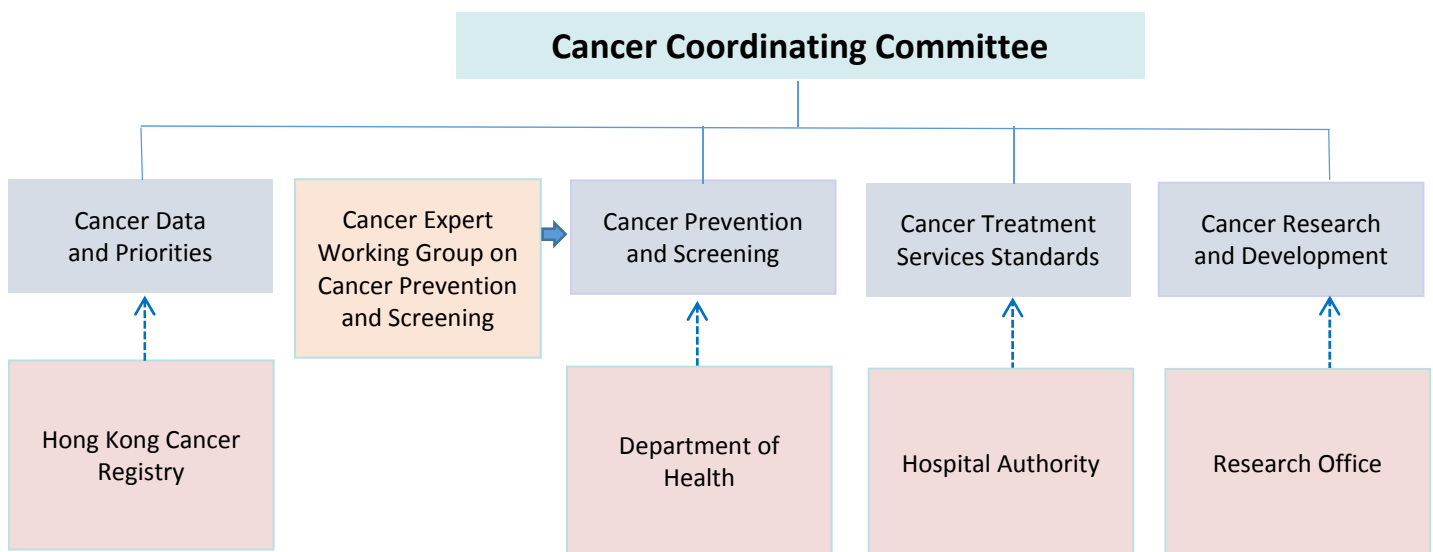
2. In 2001, the FHB established a high-level Cancer Coordinating Committee (“CCC”) to steer the direction of work and advise on the strategies for cancer prevention and control. The CCC is chaired by the Secretary for Food and Health (“SFH”) with membership drawn from the government, non-governmental and academic sectors comprising experts from various fields of clinical medicine and public health.²⁵ The membership of the CCC is set out at Appendix A of this annex. Under the CCC, the Cancer Expert Working Group on Cancer Prevention and Screening (“CEWG”) was set up in 2002. Its role has been to review local and

²⁵ The terms of reference of the CCC –

- (a) to steer the direction of work on cancer prevention and control;
- (b) to advise on the planning and development of cancer prevention and control strategies;
- (c) to receive reports from the four functional areas, namely cancer prevention and screening, treatment, surveillance and research;
- (d) to oversee the work of the CEWG; and
- (e) to assess recommendations of the CEWG and facilitate their implementation.

international scientific evidence, assess and formulate local recommendations for cancer prevention and screening. Its membership comprises public health practitioners, clinicians, and research experts from public, private and academic sectors.²⁶ The membership of the CEWG is set out at Appendix B of this annex. The CCC annually reviews cancer epidemiology, developments in service provision and planning to address evolving needs, considers and endorses new or revised recommendations put forward by the CEWG, and considers plans and outcomes of cancer-related research funded by the FHB.

Organisational Structure of Cancer Coordinating Committee since August 2014



²⁶ The terms of reference of the CEWG is –

- (a) to review the scientific evidence on effectiveness and efficacy of primary prevention and screening intervention on cancers;
- (b) to assess primary prevention and screening interventions on cancers currently practised in Hong Kong as related to the scientific evidence;
- (c) to formulate guidelines for cancer primary prevention and screening in both clinical and community settings; and
- (d) to recommend strategies for implementation of the guideline and monitoring/evaluation of mechanism(s) for performance.

(C) Hong Kong Cancer Registry

3. The Hong Kong Cancer Registry (“HKCaR”) is a population-based cancer registry responsible for overseeing cancer surveillance and providing a framework for assessing the impact of cancer on the community. Its main mission is to collect and report the local cancer incidence and mortality rates, by collecting, consolidating and validating basic demographic data, information on the topography and histology of all cancers diagnosed in Hong Kong, according to the standards depicted by the International Agency for Research on Cancer of the World Health Organization (“WHO”). Analyses of these information demonstrate variations in cancer pattern over time, thus providing a basis for comparative geographical, epidemiological and clinical research, as well as supporting cancer control services in planning, monitoring and service evaluation.

(D) Department of Health

4. The DH is the Government’s health adviser and agency to execute healthcare policies and statutory functions. It safeguards the community’s health primarily through a range of promotional, preventive and health protection services. The DH provides primary healthcare services through a network of Maternal and Child Health Centres (“MCHCs”), Student Health Service Centres, Women Health Centres and Elderly Health Centres; and executes public health control functions through a number of Chest Clinics, Social Hygiene Clinics and Integrated Treatment Centre free of charge or at heavily subsidised rates.
5. The DH also actively promotes healthy diet across the life course, encourages regular physical activity for all, implements effective tobacco control measures and educates the public on alcohol-related harm using a variety of means regarding cancer control. All along, the DH has promoted primary cancer prevention through various health promotion, education and protection efforts in collaboration with community partners, so as to reduce the burden of cancer. Some examples are provided as follows –

- (a) promoting the adoption of a healthy lifestyle: the DH has been advocating adherence to a balanced and healthy diet, doing regular physical activity, avoiding smoking and alcohol drinking, maintaining healthy body weight and waist circumference, and encouraging exclusive breastfeeding, etc. In December 2018, the DH launched a one-year territory-wide “*Healthy Hong Kong 2025 | Move for Health*” Campaign, which aims to raise the public's awareness on and participation in healthy living, and to encourage the public to increase their physical activity to build an active lifestyle and prevent non-communicable diseases (“NCD”). The DH is providing funding of up to \$250,000 in 2019-20 to encourage each District Council to organise community health promotion activities aimed at prevention and control of NCD at the district level;
 - (b) implementing tobacco control measures: the Tobacco and Alcohol Control Office (“TACO”) under the DH has been safeguarding public health by discouraging smoking, containing the proliferation of tobacco use and minimising the impact of passive smoking on the public through publicity, education, legislation, enforcement, taxation and smoking cessation;
 - (c) discouraging alcohol consumption: the TACO helps enforce the statutory regime to prohibit commercial sale and supply of alcohol to minors, and prohibit minors from drinking alcohol on licensed premises, as laid down in the Dutiable Commodities (Liquor) Ordinance (Cap. 109B); and
 - (d) vaccinating against Hepatitis B virus: the DH has been offering free immunisation to children up to the age of five at MCHCs.
6. The DH also regularly monitors the trend of health behaviours among the local population that may predispose to or protect against cancer development, and monitors the effectiveness of health promotion and cancer prevention actions through ongoing monitoring and evaluation activities. As the major provider of childhood immunisation services, the DH provides hepatitis B vaccination to babies and will introduce human papillomavirus vaccination to female students starting from the

2019/20 school year. The Cervical Screening Programme was launched in 2004, in collaboration with healthcare professionals in the public, private and non-governmental sectors, achieved an ever screening coverage of 62.9% among women aged between 30 and 49 who had been screened for cervical cancer by cervical smear test.^{27,28} To increase screening uptake among low-income groups, the DH embarked on a pilot scheme in December 2017 to strengthen cervical cancer screening services and cancer preventive education among low-income groups through non-governmental organisations (“NGOs”) under the Community Care Fund. Regarding colorectal cancer screening, the screening coverage is about 28% in 2015.²⁹ To curb the burden of colorectal cancer, the DH launched the colorectal cancer screening programme as a pilot in September 2016 and it has been regularised since August 2018 to cover persons aged between 50 and 75 in phases. The DH’s Women Health Service continues to offer mammography screening to women assessed in accordance with the CEWG’s recommendation to be at increased risk of developing breast cancer. Promotion of breast awareness, breastfeeding and healthy lifestyle remains the key strategy for breast cancer prevention among women of average risk. In minimising population exposure to hazards in the environment which may pose a cancer risk, the DH plays a health advisory, advocacy and promoter role, working in collaboration with other government bureaux/departments, agencies and NGOs, through policy formulation, regulation, capacity building and public education.

²⁷ In Hong Kong, women aged between 25 and 64 who ever had sex are recommended to receive regular cervical cancer screening. According to the Population Health Survey (“PHS”) 2014/15, about 60% of women aged between 25 and 64 had ever had cervical cancer screening while over 47% had been screened within the past three years.

²⁸ It refers to the proportion of women aged between 30 and 49 screened for cervical cancer at least once as deployed by the WHO for reporting of the coverage of cervical screening programme.

²⁹ According to the PHS 2014/15, 28% of asymptomatic persons aged between 50 and 75 in Hong Kong had ever received colorectal cancer screening through faecal occult blood test or colonoscopy or both.

(E) Hospital Authority

7. The HA, established in December 1990, is responsible for managing all public hospitals in Hong Kong. It is accountable to the Government through the SFH, who formulates overall health policies for Hong Kong. The HA, with over 78 000 staff (full time equivalents), manages 43 hospitals/institutions, 49 Specialist Outpatient Clinics and 73 General Outpatients Clinics in seven clusters as at 31 December 2018. As at 31 March 2018, the HA has some 28 000 beds, catering for nearly 90% of inpatient healthcare needs in Hong Kong.
8. Under the HA, cancer service is organised and operated through –
 - (a) a cluster-based approach comprising seven HA clusters (under which there is a total of six oncology centres). The redevelopment project at United Christian Hospital (“UCH”), where the 7th oncology centre will be located, is targeted to be completed in 2023 tentatively; and
 - (b) a coordinated cross-specialty (including oncology, medicine, surgery, radiology, pathology, etc.) and cross-disciplinary service system.
9. At the corporate level, the HA Central Committee on Cancer Service and Coordinating Committee (“COC”) in Clinical Oncology and other key COCs form a multi-disciplinary coordinating platform for advising the service gaps and priorities for cancer service. With regard to the collaboration of cancer services and development in the private sector, the HA has implemented the “Project on Enhancing Radiological Investigation Services through Collaboration with the Private Sector” since May 2012. Target patients from 11 selected cancer groups (subject to clinical eligibility screening) are offered a choice to receive computed tomography (“CT”)/Magnetic Resonance Imaging (“MRI”) examinations from participating service providers under full subsidy.
10. In 2017, the HA published the Strategic Service Framework for Palliative Care to guide the development of the HA’s palliative care service over next five to ten years, for both adult and paediatric patients. Currently, palliative care services are provided in all HA clusters in the forms of in-patient service, ambulatory service (home care, out-patient, day hospice) and bereavement service.

11. In view of the growing demand and complexity of the cancer services, the HA is developing a Strategic Service Framework for Cancer Services. It aims to identify areas for improvement, guide the development of service model and system infrastructure for cancer services in HA over the next five to ten years.
12. To further enhance the service capacity, the HA will continue to increase the Operating Theatre (“OT”) sessions to augment the capacity for cancer operations by building up facilities and increase in manpower (e.g. OT block in Tuen Mun Hospital) and augment radiotherapy and chemotherapy service capacity.
13. In addition, the HA will commission the seventh oncology centre in UCH upon completion of its redevelopment which is scheduled for 2023 to meet the local needs in Kowloon East.
14. The HA will collaborate with government departments, NGOs and private stakeholders to support patients and their carers throughout cancer care journey.

(F) Research Office

15. The RO was set up in the FHB to administer and disburse funds from the Health and Medical Research Fund to support cutting-edge science on health and medical research including cancer, and evidence-based health promotion projects in the community.

Membership of Cancer Coordinating Committee (2018 - 2021)

Chairperson :	Secretary for Food and Health
Deputy Chairperson :	Director of Health
Non-official Members :	Dr Alex CHAN Chak-lam Dr Michael CHAN Ho-ming Prof. Francis CHAN Ka-leung Dr Karen CHAN Kar-loen Dr Angus CHAN Ming-wai Prof. Anthony CHAN Tak-cheung Dr Ashley CHENG Chi-kin Dr Samuel KWOK Po-yin Dr Ava KWONG Prof. Cindy LAM Lo-kuen Dr June LAU Sze-man Prof. Gabriel Matthew LEUNG Prof. Raymond LIANG Hin-suen Prof. Roger NGAN Kai-cheong Dr Nelson SIU Shing-shun Dr Thomas TSANG Ho-fai Dr YAU Chun-chung Dr Kenny YUEN Ka-ye
Ex-officio Members :	Deputy Secretary for Food and Health (Health)1, Food and Health Bureau Controller, Centre for Health Protection Consultant, Research Office, Food and Health Bureau Director (Cluster Services), Hospital Authority Director, Hong Kong Cancer Registry
Secretary :	Consultant Community Medicine (Non-Communicable Disease)

Membership of Cancer Expert Working Group on Cancer Prevention and Screening

(2018 - 2021)

Chairman :	Dr Thomas TSANG Ho-fai
Co-chairman :	Controller, Centre for Health Protection
Members :	Dr Kate ALLEN
	Dr Karen CHAN Kar-loen
	Dr Miranda CHAN Chi-mui
	Dr David CHAO VK
	Prof. Annie CHEUNG Nga-yin
	Dr Cecilia FAN Yuen-man
	Dr Edwin HUI Pun
	Dr Dennis IP Kai-ming
	Dr LAM Ka-on
	Dr LAW Chun-key
	Prof. LAW Wai-lun
	Dr Herbert LOONG Ho-fung
	Dr WONG Kam-hung
	Prof. Martin WONG Chi-sang
	Dr Rebecca YEUNG Mei-wan
	Dr Anthony YING Chi-ho
Secretary :	Consultant Community Medicine (Non-Communicable Disease)

Current Recommendations from Cancer Expert Working Group on Cancer Prevention and Screening on Screening for Nine Selected Cancers

Cancer	For asymptomatic population at average risk	For persons at increased risk
A. Colorectal cancer (“CRC”)	<p>1. Individuals aged 50 to 75 years should consider screening by one of the screening methods including:</p> <p>(a) annual or biennial faecal occult blood test (“FOBT”); or</p> <p>(b) sigmoidoscopy every five years; or</p> <p>(c) colonoscopy every ten years.</p>	<p>2. For carriers of mutated gene of Lynch Syndrome, the Cancer Expert Working Group on Cancer Prevention and Screening (“CEWG”) recommends screening for CRC by colonoscopy every one to two years from age 25 onwards.</p> <p>3. For carriers of mutated gene of familial adenomatous polyposis (“FAP”), the CEWG recommends screening by sigmoidoscopy every two years from age 12.</p> <p>4. For individuals with one first-degree relative diagnosed with CRC at or below 60 years of age, or more than one first-degree relatives with CRC irrespective of age at diagnosis, colonoscopy should be performed every five years beginning at the age of 40 or ten years prior to the age at diagnosis of the youngest affected relative, but not earlier than 12 years of age.</p> <p>* Recommendation on genetic testing for CRC: For CRC patients with identifiable genetic mutations, two-tier screening by genetic testing followed by endoscopic examination can be offered to their family members to reduce the number of unnecessary investigations, as well as to reduce the risk of potential complications.</p>

Cancer	For asymptomatic population at average risk	For persons at increased risk
B. Lung cancer	<p>For general or high risk populations:</p> <ol style="list-style-type: none"> 1. Routine screening for lung cancer with chest X-ray or sputum cytology is not recommended. 2. There is insufficient evidence to recommend for or against lung cancer screening by low dose computed tomography (“LDCT”) in asymptomatic persons or for mass screening. 	
C. Breast cancer	<ol style="list-style-type: none"> 1. There is insufficient evidence to recommend for or against population-based mammography screening for asymptomatic women at average risk in Hong Kong. 2. There is insufficient evidence to recommend regular breast self-examination as a screening tool. Women are advised to be breast aware (be familiar with the normal look and feel of their breasts) and visit doctors promptly if suspicious symptoms appear. 3. There is insufficient evidence to recommend clinical breast examination. 4. Individuals considering breast cancer screening should be adequately informed by doctors about the benefits and harms. 	<ol style="list-style-type: none"> 5. Women at moderate risk (i.e. family history of only one first-degree female relative with breast cancer diagnosed at ≤50 years of age, or two first-degree female relatives diagnosed with breast cancer after the age of 50 years) should discuss with their doctors the pros and cons of breast cancer screening before deciding whether to start screening by mammography every two to three years. 6. Women at high risk (e.g. confirmed carriers of <i>BRCA1</i> or <i>BRCA2</i> deleterious mutations, family of breast or ovarian cancer) should seek advice from doctors; and <ol style="list-style-type: none"> (a) have mammography screening every year; (b) begin screening at age 35 or ten years prior to the age at diagnosis of the youngest affected relative (for those with family history), whichever is earlier, but not earlier than age 30; and (c) for confirmed carriers of <i>BRCA1</i> or <i>BRCA2</i> deleterious mutations or women who had radiation therapy to chest for treatment between age ten and 30 years, consider additional annual screening by MRI.

Cancer	For asymptomatic population at average risk	For persons at increased risk
D. Prostate cancer	<ol style="list-style-type: none"> <li data-bbox="367 302 807 728">1. There is insufficient scientific evidence to recommend for or against population-based prostate cancer screening in asymptomatic men by Prostate-Specific Antigen (“PSA”) and/or Digital Rectal Examination (“DRE”). <li data-bbox="367 795 807 1220">2. For asymptomatic men considering prostate cancer screening, the CEWG encourages them to discuss with their doctor about individual circumstances and make informed decision on whether or not to go for prostate cancer screening. 	<ol style="list-style-type: none"> <li data-bbox="823 302 1458 896">3. Men at increased risk, including African American men or those with one or more first-degree relatives diagnosed with prostate cancer before age 65, should consider seeking advice from doctors regarding the need for and approach of screening. While the screening blood test to be considered is PSA, the DRE may also be done as part of screening. The PSA screening should start at an age not earlier than 45 until age 70, and the interval should not be more frequent than once every two years.
E. Liver cancer	<ol style="list-style-type: none"> <li data-bbox="367 1299 807 1556">1. Routine screening with alpha-fetoprotein (“AFP”) or ultrasonography (“USG”) for asymptomatic persons at average risk is not recommended. 	<ol style="list-style-type: none"> <li data-bbox="823 1299 1458 1971">2. People with chronic hepatitis B virus (“HBV”) or hepatitis C virus (“HCV”) infection, or cirrhosis regardless of cause are at increased risk of hepatocellular carcinoma (“HCC”). Depending on certain criteria such as age, family history, presence of cirrhosis and other clinical parameters, some subgroups are at higher risk and should consider receiving periodic surveillance (e.g. every six to 12 months) with AFP and USG. People with chronic HBV or HCV infection, or liver cirrhosis should thus seek advice from doctors to determine their need for and approach of cancer surveillance.

Cancer	For asymptomatic population at average risk	For persons at increased risk
F. Cervical cancer	<ol style="list-style-type: none"> 1. Women aged 25 to 64 who ever had sexual experience are recommended to have cervical cancer screening by cytology every three years after two consecutive normal annual smears. 2. Screening may be discontinued in women aged 65 or above if three previous consecutive smears within ten years are normal. 3. Women at or above 65 years of age who have never had a cervical smear should have the test. 	<ol style="list-style-type: none"> 4. Women aged 21 to 24 who ever had sexual experience and with risk factors for human papillomavirus acquisition/persistence or cervical cancer (e.g. early first sexual intercourse, multiple sexual partners, tobacco use) are considered at increased risk. They may be screened by cytology every three years after two consecutive normal annual smears, depending on doctor's assessment. 5. Other women at high risk of developing cervical cancer may require more frequent screens based on doctor's assessment.
G. Nasopharyngeal cancer ("NPC")	<ol style="list-style-type: none"> 1. There is insufficient evidence to recommend a population-based NPC screening programme for asymptomatic people using IgA against specific Epstein-Barr virus ("EBV") viral antigens and EBV DNA test. 	<ol style="list-style-type: none"> 2. Family members of NPC patients may consider seeking advice from doctors with relevant expertise before making an informed decision about screening.

Cancer	For asymptomatic population at average risk	For persons at increased risk
H. Thyroid cancer	1. Screening for thyroid cancer is not recommended in asymptomatic persons at average risk.	2. Persons at increased risk, including those with a history of head or neck irradiation in infancy or childhood, familial thyroid cancer or family history of multiple endocrine neoplasia type 2, should consider seeking advice from doctors regarding the need for and approach of screening.
I. Ovarian cancer	1. Screening for ovarian cancer is not recommended in asymptomatic women at average risk.	2. Women at increased risk, such as with strong family history of ovarian/ breast cancer or inherited deleterious gene mutations (e.g. <i>BRCA1</i> , <i>BRCA2</i> , Lynch Syndrome), should consider seeking advice from doctors for assessment of their ovarian cancer risk and the need for and approach of screening.

Abbreviations

AI	Artificial Intelligence
AFP	Alpha-fetoprotein
Cancer SSF	Strategic Service Framework for Cancer Services
CC	Central Committee
CCC	Cancer Coordinating Committee
CCF	Community Care Fund
CCM	Cancer Case Manager
CEWG	Cancer Expert Working Group on Cancer Prevention and Screening
CM	Chinese Medicine
CMCTRs	CM Centres of Teaching and Research
CMH	Chinese Medicine Hospital
COC	Coordinating Committee
CPRCs	Cancer Patient Resource Centres
CRC	Colorectal Cancer
CRCSP	Colorectal Cancer Screening Programme
CSP	Cervical Screening Programme
CT	Computed tomography
CTCs	Clinical Trials Centres
DH	Department of Health
DHC	District Health Centre
DRE	Digital Rectal Examination
EAP	Expert Advisory Panel
EBV	Epstein-Barr virus
FAP	Familial adenomatous polyposis
FHB	Food and Health Bureau
FIT	Faecal Immunochemical Test
FOBT	Faecal occult blood test
HA	Hospital Authority
HADF	HA Drug Formulary
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HKCaR	Hong Kong Cancer Registry

HKCIP	Hong Kong Childhood Immunisation Programme
HKGP	Hong Kong Genome Project
HMRF	Health and Medical Research Fund
HPV	Human papillomavirus
ICWM	Integrated Chinese-Western Medicine
IT	Information technology
LDCT	Low-dose computed tomography
LINAC	Linear Accelerator
MCHC	Maternal and Child Health Centres
MDT	Multi-disciplinary Team
MEN2	Multiple Endocrine Neoplasia type 2
MRI	Magnetic Resonance Imaging
NCD	Non-communicable diseases
NGOs	Non-governmental organisations
NMSC	Non-melanoma skin cancers
NPC	Nasopharyngeal cancer
OT	Operating Theatres
PET	Positron Emission Tomography
PHS	Population Health Survey
PRCs	Patient Resources Centres
PSA	Prostate-specific antigen
RCHE	Residential Care Homes of the Elderly
RFA	Radiofrequency Ablation
RFS	Research Fellowship Scheme
RGC	Research Grants Council
RO	Research Office
SAP	Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong
SF	Samaritan Fund
SFH	Secretary for Food and Health
SFI	Self-financed items
SOPC	Specialist Outpatient Clinics
TACE	Transarterial Chemoembolisation
TACO	Tobacco and Alcohol Control Office
UCH	United Christian Hospital
USG	Ultrasonography
WHO	World Health Organization

Useful Links

Surveillance:

- Hong Kong Cancer Registry
<http://www3.ha.org.hk/cancereg/>

Prevention and Screening:

- Towards 2025 : Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong
<https://www.change4health.gov.hk/en/saptowards2025/publications.html>
- Information about Cancer at Website of the Centre for Health Protection
<https://www.chp.gov.hk/en/healthtopics/content/25/31932.html>
- Cervical Screening Programme
<https://www.cervicalscreening.gov.hk/eindex.php>
- Colorectal Cancer Screening Programme
<https://www.colonscreen.gov.hk/en/public/index.html>

Patient Care and Support:

- Smart Patient Website
<http://www21.ha.org.hk/smartpatient/SPW/en-US/Home/>

Research:

- Health and Medical Research Fund
<https://rfs2.fhb.gov.hk/english/welcome/welcome.html>

