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Legislative Council Panel on Health Services
Subcommittee on Issues Relating to the Support for Cancer Patients

Prevention and Screening of Cancer

PURPOSE

This paper briefs members on the current situation of cancer in Hong Kong and the measures implemented by the Government on prevention and screening of cancer.

BACKGROUND

Current Situation in Hong Kong

2. Cancer is a major public health issue in Hong Kong and the burden of cancer on public health has been increasing. In 2016, there were 31 468 newly diagnosed cancer cases. The most common cancers were colorectal cancer (17.3%), lung cancer (15.7%), breast cancer (13.1%), prostate cancer (6.1%) and liver cancer (5.8%). In 2017, there were 14 354 cancer deaths. The leading five causes of cancer deaths were lung cancer (27.1%), colorectal cancer (14.9%), liver cancer (10.8%), breast cancer (5.0%) and pancreas cancer (4.8%).

3. In view of a growing and ageing population, the number of new cancer cases and related healthcare burden are expected to increase further. Nonetheless, the age-standardised incidence ("ASI") rate for all cancers, which is a measure of the risk of developing cancer after accounting for the influence of age, has been falling slightly in males while the initial decline of ASI rate in females observed in the early years has reverted to an upward trend in the last decade. The age-standardised mortality rates for both genders have been decreasing.

Cancer Coordinating Committee

4. The Government attaches great importance to cancer prevention and control. As early as 2001, the Government established the Cancer Coordinating Committee ("CCC"). Chaired by the Secretary for Food and Health and comprising members who are cancer experts, academics, doctors in public and private sectors, as well as public health professionals, the CCC formulates strategies on cancer prevention and control and steers the direction of work covering prevention and screening, surveillance, research and treatment.

5. The Cancer Expert Working Group on Cancer Prevention and Screening ("CEWG") set up under the CCC regularly reviews international and local evidence and makes recommendations on cancer prevention and screening applicable to the local situations.

6. In addition to the CEWG, the structure of the CCC (**Annex A**) also comprises the Department of Health ("DH"), the Hong Kong Cancer Registry ("HKCaR"), the Hospital Authority ("HA") and the Research Office of the Food and Health Bureau which oversee cancer surveillance, treatment and research respectively and directly report to the CCC.

PREVENTION AND CONTROL

Primary Prevention of Cancer

7. Cancer prevention must be considered in the context of activities to prevent other chronic diseases, especially those which share the common risk factors with cancers, such cardiovascular diseases, diabetes, and chronic respiratory diseases. Common risk factors underlying these conditions include tobacco use, alcohol use, dietary habits such as low fruit and vegetable intake, physical inactivity, overweight and obesity. These risk factors contribute to a variety of cancers such as lung, colorectal and breast which are prevalent in Hong Kong. Other important cancer risk factors include Hepatitis B virus infections, Human Papilloma Virus ("HPV") infections, and exposure to environmental and occupational carcinogens, as well as exposure to radiation, etc. According to the World Health Organization ("WHO"), about 40% of cancers can be prevented by avoiding or modifying risk factors and implementing existing evidence-based

prevention strategies.

8. An individual's risk of developing cancer can substantially be reduced through adoption of healthy lifestyles. To address the burden including cancers on society, the Government launched *"Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong"* ("SAP") with a focus on four non-communicable diseases ("NCDs") (namely cardiovascular diseases, cancers, chronic respiratory diseases and diabetes) and four common behavioural risk factors (namely unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol). The main principles and approaches in tackling NCDs include –

(a) **adoption of upstream approach** – about 40% of cancers can be prevented through adoption of healthy lifestyles, including having a balanced diet, engaging in regular physical activity; quitting smoking, and avoiding alcohol;

(b) **strengthening of primary healthcare –** healthcare services including health promotion, disease prevention, screening, etc. should be revitalised and reprioritised;

(c) **adoption of evidence-based measures –** strategies and practices for the prevention and screening of cancer need to be based on the latest scientific evidence and / or best practices. The CEWG is the platform for reviewing overseas and local scientific evidence and makes recommendations on cancer prevention and screening that is applicable to local situations; and

(d) **enhancing self-care capacities of people and communities –** through best practices and effective communications, public and community are provided with appropriate skills and opportunities to assume responsibility and participate in self-care. They get control over actions that influence health and involved in activities for prevention and control of cancer.

9. All along, the Government has promoted primary cancer prevention through various efforts on health promotion, education and protection, 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, e.g. having a balanced healthy diet, doing regular physical activity, avoiding smoking and alcohol drinking, maintaining healthy body weight and waist circumference, encouraging exclusive breastfeeding, etc. The DH in December 2018 launched "Healthy Hong Kong 2025 | Move for Health", a one-year territory-wide 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 up an active lifestyle in order to prevent NCDs. Besides, in 2019, the DH will provide funding up to $250,000 to each District Council under the "Community Engagement Funding Scheme" for organising community health promotion activities at the district level;

(b) implementing tobacco control measures to safeguard 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) imposing a statutory regulatory regime to prohibit commercial sale and supply of alcohol to minors, in addition to the prohibition of minors from drinking alcohol on licensed premises as laid down in the Dutiable Commodities (Liquor) Ordinance (Cap. 109B);

(d) vaccination against Hepatitis B virus – free immunisation to children up to five years old at Maternal and Child Health Centres ("MCHCs") of the DH;

(e) vaccination against HPV – the DH has included HPV vaccination into the Hong Kong Childhood Immunisation Programme as a public health strategy for prevention of cervical cancer. Starting from the 2019/20 school year, the first dose of HPV vaccine will be given via outreach by the DH's School Immunisation Teams to Primary Five female students at their schools, and a second dose will be given to the girls when they reach Primary Six in the following school year; and

(f) reducing environmental and occupational exposure to carcinogens

through collaboration of relevant government departments such as the Environmental Protection Department and the Labour Department.

10. The Government has been deploying a range of communication channels to convey health messages to the public and has been in liaison with community partners, women groups and non-governmental organisations ("NGO") for promotion of cancer prevention.

Screening as a Tool for Secondary Prevention

11. Apart from 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 cancers early or to identify precancerous disease in apparently healthy (asymptomatic) individuals, so that treatment can be carried out more effectively.

12. The CEWG mentioned in paragraph 5 above adopted the list of criteria below promulgated by the WHO for instituting a screening programme as guiding principles in considering population-based screening –

(a) the condition sought should be an important health problem;

(b) there should be an accepted treatment for patients with recognized disease;

(c) facilities for diagnosis and treatment should be available;

(d) there should be a recognizable 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.

13. Based on the above considerations, not all screening methods justify with evidence a population-based screening programme. Furthermore, all screening tests have their limitations as they are not 100% accurate. They include false positive and false negative results, leading to the possibility of over-diagnosis and over-treatment. Individuals considering cancer screening tests (including commercially available screening tests) should seek advice from doctors for assessment of the need and obtain full information on the potential benefits and harms of having the test before making an informed decision. At present, the CEWG has made recommendations on prevention and screening for nine selected cancers, namely cervical, colorectal, breast, prostate, lung, liver, nasopharyngeal, thyroid and ovarian cancers, and the details[1] are at **Annex B**.

14. 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 principle is whether screening does more good than harm to the society.

15. As regards population-based mammography screening 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 explore whether it is appropriate to implement population-based breast cancer screening for this group of women in Hong Kong. In this regard, 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

[1] These recommendations are uploaded on the website of the Centre for Health Protection at http://www.chp.gov.hk/en/content/9/25/31932.html .

cancer screening in Hong Kong. The study is expected to be completed in the latter half of 2019. The aim of the 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 relations between risk factors (such as age, body mass index and other personal characteristics, physical activity, family history of breast cancer, history of benign breast disease, etc.) and breast cancer development. The Government will review and consider what type of screening is to be adopted for women of different risk profiles, having regard to the scientific evidence and the outcome of the study.

Screening Programmes Launched by the Government

16. Based on the above principles, the Government has launched territory-wide screening programmes for cervical cancer and colorectal cancer.

Cervical Screening Programme

17. The territory-wide Cervical Screening Programme ("CSP") was launched by the Government in March 2004, in collaboration with healthcare professionals in the public and private sectors and NGOs, to facilitate and encourage women to receive regular cervical cancer screening. The CSP has established a computerised central registry called Cervical Screening Information System for storing the screening records of registrants for issue of reminders and facilitating continuity of follow-up services.

18. The CSP encourages women aged between 25 and 64 who ever had sex to receive regular screening by cytology every three years after two consecutive normal annual smears. Women aged 65 or above who ever had sex and have not received routine screening over the past 10 years, even after menopause, no sex for years or with sterilisation done, should be screened. Women aged between 21 and 24 who ever had sex and have risk factors (such as multiple sex partners, smoking and weakened immunity) should consult their doctors about the need for cervical cancer screening.

19. The major service providers under the CSP include the MCHCs and Woman Health Centres of the DH, NGOs and private healthcare service

providers. The MCHCs of DH provide subsidised cervical cancer screening to the public[2]. There are about 100 000 attendances for cervical screening service per year in the MCHCs. In December 2017, the DH launched a Community Care Fund Pilot Scheme on Subsidised Cervical Cancer Screening and Preventive Education for Eligible Low-income Women.

Colorectal Cancer Screening Pilot Programme

20. In September 2016, the Government launched a three-year Colorectal Cancer Screening Pilot Programme ("Pilot Programme") to provide subsidised screening service to asymptomatic Hong Kong residents aged between 61 and 70 for prevention of colorectal cancer. The screening workflow comprises two stages. Participants will first undergo the subsidised Faecal Immunochemical Test ("FIT") provided by enrolled primary care doctors. If the FIT result is positive, the participant will receive subsidised colonoscopy service provided by enrolled colonoscopy specialist to find out the cause of occult bleeding in stool. The Pilot Programme was then regularised in August 2018 and is being implemented in three phases to subsidise asymptomatic Hong Kong residents aged between 50 and 75 to undergo screening for early detection of colorectal cancer.

WAY FORWARD

21. The Government will continue to promote healthy lifestyles as the main strategy for prevention of NCDs including cancer and will keep in review the latest recommendations on cancer screening.

ADVICE SOUGHT

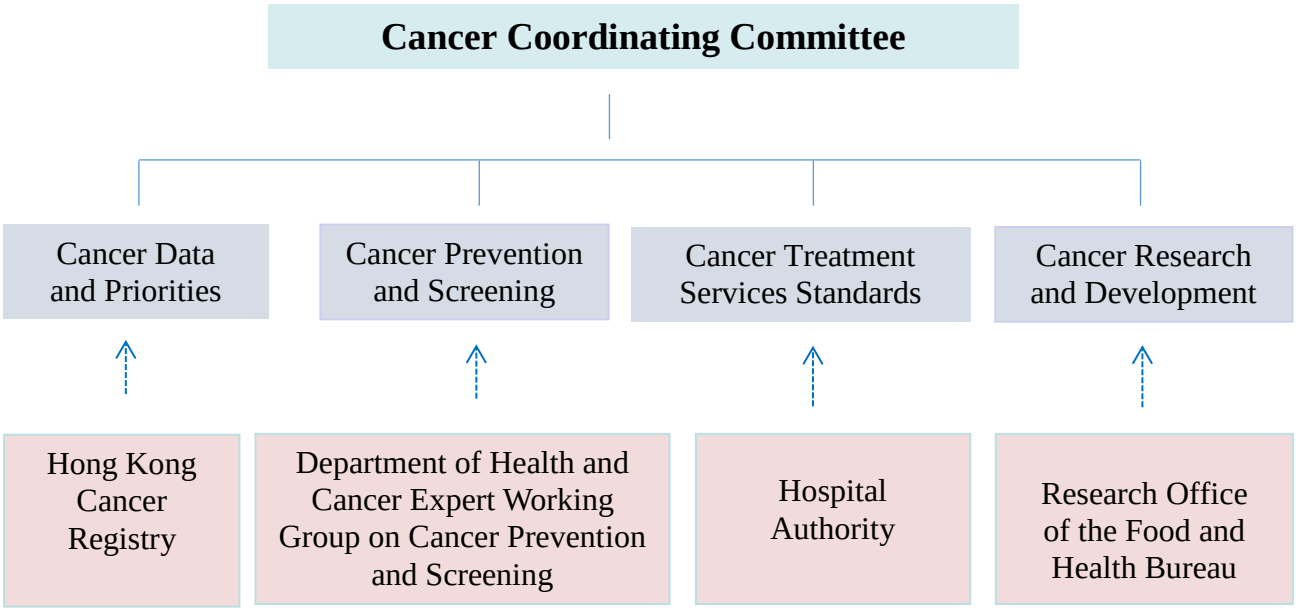
22. Members are invited to note the contents of the paper.

[2] Fees are waived for women who are in receipt of the Comprehensive Social Security Assistance, holders of waivers of medical charges under the Medical Fee Waiving Mechanism of Public Hospitals and Clinics, or Level 0 voucher holders of the Pilot Scheme on Residential Care Service Voucher for the Elderly.

Food and Health Bureau
Department of Health
May 2019

Annex A

Organisational Structure of
Cancer Coordinating Committee since August 2014



Annex B

Latest Recommendations on Screening for Nine Selected Cancers
Made by Cancer Expert Working Group on Cancer Prevention and Screening ("CEWG")

Cancer	For asymptomatic population at average risk	For persons at increased risk
A. Cervical cancer	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 10 years are normal. 3. Women at or above 65 years of age who have never had a cervical smear should have the test.	4. Women aged 21 to 24 years who ever had sexual experience and with risk factors for HPV acquisition / persistence or cervical cancer (e.g. early fist sexual intercourse, multiple sexual partners, tobacco use etc.) 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.

Cancer	For asymptomatic population at average risk	For persons at increased risk
B. Colorectal cancer	1. Individuals aged 50 to 75 years should consider screening by one of the screening methods including : (a) annual or biennial faecal occult blood test ("FOBT"); or (b) sigmoidoscopy every five years; or (c) colonoscopy every 10 years.	2. For carriers of mutated gene of Lynch Syndrome, the CEWG recommends screening for colorectal cancer ("CRC") by colonoscopy every one to two years from age 25 onwards. 3. For carriers of mutated gene of familial adenomatous polyposis ("FAP"), the CEWG recommends screening by sigmoidoscopy every two years from age 12. 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 10 years prior to the age at diagnosis of the youngest affected relative, but not earlier than 12 years of age. * 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.

Cancer	For asymptomatic population at average risk	For persons at increased risk
C. Breast cancer	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.	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 *BRCA1/2* deleterious mutations, family of breast / ovarian cancer) should seek advice from doctors; and (a) have mammography screening every year; (b) begin screening at age 35 or 10 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 *BRCA1/2* deleterious mutations or women who had radiation therapy to chest for treatment between age 10 and 30 years, consider

Cancer	For asymptomatic population at average risk	For persons at increased risk
		additional annual screening by MRI.
D. Prostate cancer	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"). 2. For asymptomatic men considering prostate cancer screening, 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.	3. Men at increased risk, namely 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. Lung cancer	For general or high risk populations : 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.	

Cancer	For asymptomatic population at average risk	For persons at increased risk
F. Liver cancer	1. Routine screening with alpha-fetoprotein ("AFP") or ultrasonography ("USG") for asymptomatic persons at average risk is not recommended.	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 6-12 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.
G. Naso-pharyngeal cancer	1. There is insufficient evidence to recommend a population-based nasopharyngeal cancer ("NPC") screening programme for asymptomatic people using IgA against specific Epstein-Barr virus ("EBV") viral antigens and EBV DNA test.	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 (MEN2), 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. BRCA1/2, Lynch Syndrome), should consider seeking advice from doctors for assessment of their ovarian cancer risk and the need for and approach of screening.