

**For information  
on 21 January 2020**

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

**Development of Cancer Services in Public Hospitals**

**PURPOSE**

This paper briefs Members on the planning for enhancement of cancer services in public hospitals, in particular on manpower support and modernisation of medical equipment.

**STRATEGIC SERVICE FRAMEWORK FOR CANCER SERVICES**

2. In view of the overall rising trend in incidences of cancers and the growing cancer burden of the local population, the Government promulgated the Hong Kong Cancer Strategy (“Cancer Strategy”), the first holistic plan for cancer prevention and control for Hong Kong, in July 2019 with the aim of reducing the hit rate of cancer by laying down the direction in seven aspects, namely cancer surveillance, prevention and screening, early detection and diagnosis, timely and effective treatment, technology and support, survivorship and palliative care as well as cancer research.

3. In line with the priority and direction stipulated in the Cancer Strategy, the Hospital Authority (“HA”) published the Strategic Service Framework for Cancer Services (“Cancer SSF”) in December 2019 as a guidance to the planning and development of the HA’s adult cancer services for 2020 to 2030. Through the process of identifying service gaps and room for improvement, the HA sets out five strategic directions to enhance adult cancer services, including cluster-based and networked cancer services, timely access to cancer diagnostic services, equitable and integrated cancer treatment services, seamless transitional care for cancer survivors, as well as strengthened data-driven performance monitoring and evaluation for continuous quality improvement. The Cancer SSF outlines the strategies and key enablers required to improve the service model and build the system infrastructure in the hope that all cancer patients would receive timely, coordinated and patient-centred care in their cancer journey.

## **STRATEGIES FOR STRENGTHENING THE WORKFORCE**

### ***Manpower Situation***

4. The management of cancer is becoming more complex. The choice of treatment depends upon various factors including cancer type, location of the tumour and stage of the disease, as well as the patient condition. Therefore, the whole treatment planning and delivery process is increasingly demanding on the time and effort of a multi-disciplinary workforce including doctors, nurses, allied health professionals and supporting staff. There is a wide variety of clinical assessments and investigations for cancer which are provided across different specialties. For common cancers like breast and colorectal cancers, diagnostic investigations such as clinical assessment, imaging, blood test and endoscopy are often required, which would need joint support from various clinical specialties such as pathology, radiology, oncology, surgery and medicine. Subject to different treatment types, not only clinical oncologists but also surgeons or other specialists have a role throughout the cancer treatment pathway.

5. The HA has been facing the challenges of surging demand for cancer services and manpower shortage. The figures on the manpower strength of doctors by specialty and the attrition rate of full-time doctors by specialty from 2016-17 to 2018-19 are at **Annex A** and **Annex B** respectively.

6. The HA understands that sustainable quality service necessitates the unfailing support of healthcare professionals and supporting staff. Taking into account the growing service demand and the manpower situation, the HA has formulated a series of measures in both recruitment and staff retention to strengthen its workforce.

### ***Measures to enhance and retain manpower***

7. The HA has been implementing a series of recruitment strategies to strengthen the workforce. For recruitment of local graduates, the HA has increased the number of Resident Trainee posts to recruit and provide specialist training to all qualified local medical graduates. Regarding the recruitment of part-time staff, the HA continues to introduce further flexibility in employing part-time staff for short-term flexible engagement on need and ad-hoc basis through the establishment of Locum Office. Besides, the HA will continue to recruit non-locally trained doctors under the Limited Registration (“LR”), and to communicate and further liaise with various stakeholders,

including the Medical Council of Hong Kong and Hong Kong Academy of Medicine, to facilitate the arrangement of specialist training and internship training of LR doctors.

8. The HA also introduced different schemes to further alleviate manpower issues. For example, the HA has been re-employing suitable retired/retiring staff upon their retirement or completion of contract at/beyond their normal retirement age. Various Special Honorarium Scheme enhancement measures are also in place to support service provision during winter influenza season when surge in service demand is anticipated.

### ***Enhancement of cancer services amid manpower challenges***

9. Despite the manpower shortage in public hospitals, demands for cancer services in Hong Kong keep surging. The HA strives to formulate strategies to meet the increasing service demand by augmenting the capacity of cancer services.

10. For diagnostic services, the HA plans to increase the service capacity for Computed Tomography (“CT”), Magnetic Resonance Imaging (“MRI”), Positron Emission Tomography (“PET”) and mammography through increasing the number of medical equipment and extending service hours. Furthermore, the HA will increase the number of sessions for endoscopy services. For cancer treatments, the HA will continue to increase the numbers of operating theatre sessions and oncology beds, extending service hours for radiotherapy, as well as augmenting the service capacity at chemotherapy nurse clinic.

11. In order to further enhance the cancer services, the HA will adopt a multidisciplinary approach to provide integrated cancer treatment services to cancer patients. For example, the HA is planning to establish multidisciplinary clinics for systemic anti-cancer therapy with the involvement of doctors, nurses and pharmacists. Besides, the HA plans to recruit more Cancer Case Managers (“CCM”) and to launch additional CCM programmes to benefit more cancer patients. To better cater for the psychological needs of cancer patients, the HA will recruit additional Assistant Social Work Officers to offer psychological support to patients in their cancer pathways.

### **STRATEGIES FOR MODERNISING MEDICAL EQUIPMENT**

12. As the aging population has added pressure on the waiting time for patients to receive cancer diagnosis and treatment in public hospitals, it is essential for the HA to make good use of modernised technology and medical equipment, in addition to the various strategies for strengthening manpower, in order to maintain the provision of

quality service. The HA strives to provide more efficient cancer services by augmenting its service capacity as well as enhancing healthcare quality by acquiring advanced medical technology.

13. The Government has earmarked \$200 billion and \$270 billion respectively for implementing the first and second Ten-year Hospital Development Plans to augment the HA's service capacity, which involve establishing new oncology centres, enhancing radiology services, increasing the number of operating theatres, etc. We have also earmarked \$5 billion for the HA to acquire medical equipment, including the introduction of advanced medical equipment and technology for cancer treatment. Assessment of new purchases to upkeep and modernise equipment is an ongoing process. The HA will ensure that the technology standard is up-to-date, and will provide training for staff to ensure that they are well equipped to handle the equipment with new technology.

***Providing more efficient cancer services by augmenting service capacity***

14. The HA procures from time to time a wide variety of new and replacement medical equipment items to meet operational needs. In view of the growing demand for cancer services in public hospitals, the HA has been acquiring imaging machines and treatment facilities to augment its service capacity in cancer diagnosis and treatment.

15. For cancer diagnosis, the numbers of CT and MRI machines in use in the HA have reached 33 and 23 in 2019-20 respectively. Since 2012-13, two PET machines have been installed in the HA. The HA plans to further improve the service capacity by installing additional imaging machines and introducing more advanced modalities or functionalities based on clinical needs.

16. The HA also plans to introduce Next Generation Sequencing ("NGS") to enhance diagnostic efficiency. NGS is a high throughput technology that can interrogate multiple genetic targets in the clinical specimens. It may replace several existing molecular platforms and achieve higher diagnostic sensitivity with shorter turn-around-time. This technology is applicable to cancer investigation, such as solid tumors and blood cancers, as well as microbiological studies and other subspecialties in pathology.

17. For cancer treatment, the HA is keen to introduce evidence-based advanced or new technology in a timely manner for different treatment modalities to increase the service capacity and uphold the standard of care. Taking radiotherapy service as an

example, it is observed that cancer treatment is becoming more complex and time-consuming in the treatment planning process which indicates the need for more clinical workforce such as doctors, nurses and allied health professionals. To overcome this challenge, the HA will explore the introduction of Smart Treatment Planning System to reduce the time for producing treatment plans. This system can also automatically generate a large number of plans for defined clinical goals and combination of treatment techniques.

18. At the same time, the HA has been installing more advanced Linear Accelerator (“LINAC”) facilities, 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 at 31 December 2019, 28 LINACs have been installed to provide radiotherapy service in the HA. Based on the projected service demand, the HA will continue to acquire and replace existing LINAC facilities to newer models.

19. The HA is also exploring the feasibility of establishing big data and machine learning infrastructure to support the processing of massive volume of clinical data and deploy Artificial Intelligence applications to support clinical service or operation.

### ***Enhancing healthcare quality by acquiring advanced medical technology***

20. Capitalising modern technology can not only better prevent cancer but also enhance treatment quality. The HA is planning for the diffusion of advanced technology in cancer services, such as advanced treatment planning and delivery system to improve treatment outcomes, additional robotic surgery system to augment minimal invasive surgical services and NGS technology to benefit cancer patients.

21. Modernisation and addition of linear accelerators will be equipped with new features, e.g. new patient identification system can enhance patient safety; function of surface guided positioning and monitoring facilitates patient setup and helps monitor patient movement during treatment; new visual coaching system has a small LED monitor mounted over patient’s head. Patients can visually observe and follow their breathing pattern to reach the appropriate breath hold level. Together with the diffusion of CT scanners of high-end advanced model with more versatile comprehensive features and capabilities for acute settings, such radiotherapy and radiology equipment can improve the diagnosis and treatment of patients including cancer patients.

22. Digital polymerase chain reaction (“dPCR”) is a quantitative PCR method that provides ultrasensitive and absolute nucleic acid quantification. It has higher precision and sensitivity that can monitor subtle changes in target levels which is not detectable by real-time PCR. dPCR is very useful in blood cancer monitoring and assessment of minimal residual disease. It is critical for risk stratification and modification of treatment plan, such as decision for stem cell transplantation. In 2019-20, two additional MRI scanners have been put into service and two new dPCR will be acquired in the HA.

### **WAY FORWARD**

23. To align with the Government’s commitment to enhancing prevention and control of cancer, the HA published the Cancer SSF in December 2019 which sets out the future direction of adult cancer services for the next five to ten years. Facing the growing demand for cancer services in public hospitals, the HA will continue to formulate and implement various measures to strengthen the workforce, and modernise medical equipment with the aim of providing optimal and efficient services to cancer patients.

### **ADVICE SOUGHT**

24. Members are invited to note the content of the paper.

**Food and Health Bureau  
Hospital Authority  
January 2020**

**Manpower Strength of Doctors by Specialty from 2016-17 to 2018-19<sup>1,2</sup>**

<b>Specialty</b>	<b>2016-17 (as at 31 March 2017)</b>	<b>2017-18 (as at 31 March 2018)</b>	<b>2018-19 (as at 31 March 2019)</b>
Accident & Emergency	479	488	506
Anaesthesia	422	418	428
Clinical Oncology	150	151	153
Ear, Nose, Throat	93	95	97
Family Medicine	583	596	597
Intensive Care Unit	138	139	143
Medicine	1 288	1 299	1 342
Obstetrics & Gynaecology	213	217	221
Ophthalmology	164	160	162
Orthopaedics & Traumatology	342	346	341
Paediatrics	349	354	393
Pathology	216	223	234
Psychiatry	349	347	351
Radiology	295	290	292
Surgery	670	694	674
Others (e.g. Hospital Management / HA Head Office)	32	40	28
<b>Total</b>	<b>5 783</b>	<b>5 858</b>	<b>5 963</b>

<sup>1</sup> The manpower figures are calculated on full-time equivalent basis including permanent, contract and temporary staff in the HA. Individual figures may not add up to the total due to rounding.

<sup>2</sup> Doctors exclude Interns and Dental Officers.

**Attrition (Wastage) Rate of Full-time Doctors by specialty  
from 2016-17 to 2018-19<sup>1,2,3</sup>**

<b>Specialty</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Accident & Emergency	4.5%	4.8%	5.1%
Anaesthesia	4.4%	7.0%	8.6%
Clinical Oncology	6.1%	6.0%	9.3%
Ear, Nose, Throat	6.5%	2.2%	11.7%
Family Medicine	5.5%	6.8%	6.6%
Intensive Care Unit	1.4%	3.6%	2.8%
Medicine	4.5%	5.0%	4.1%
Obstetrics & Gynaecology	4.5%	9.2%	8.0%
Ophthalmology	6.7%	10.6%	8.8%
Orthopaedics & Traumatology	5.6%	5.5%	10.2%
Paediatrics	5.8%	4.3%	5.7%
Pathology	8.6%	6.0%	2.6%
Psychiatry	6.4%	7.3%	5.3%
Radiology	5.2%	10.1%	8.4%
Surgery	3.9%	4.1%	7.9%
Others (e.g. Hospital Management / HA Head Office)	6.1%	0.0%	7.3%
<b>Overall</b>	<b>5.1%</b>	<b>5.8%</b>	<b>6.4%</b>

<sup>1</sup> Attrition (Wastage) includes all types of cessation of service from the HA for permanent and contract staff on headcount basis.

<sup>2</sup> Since April 2013, attrition (wastage) for the HA full-time and part-time workforce has been separately monitored and presented i.e. Full-time Attrition Rate (Wastage) and Part-time Attrition (Wastage) Rate respectively.

<sup>3</sup> Doctors exclude Interns and Dental Officers.