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
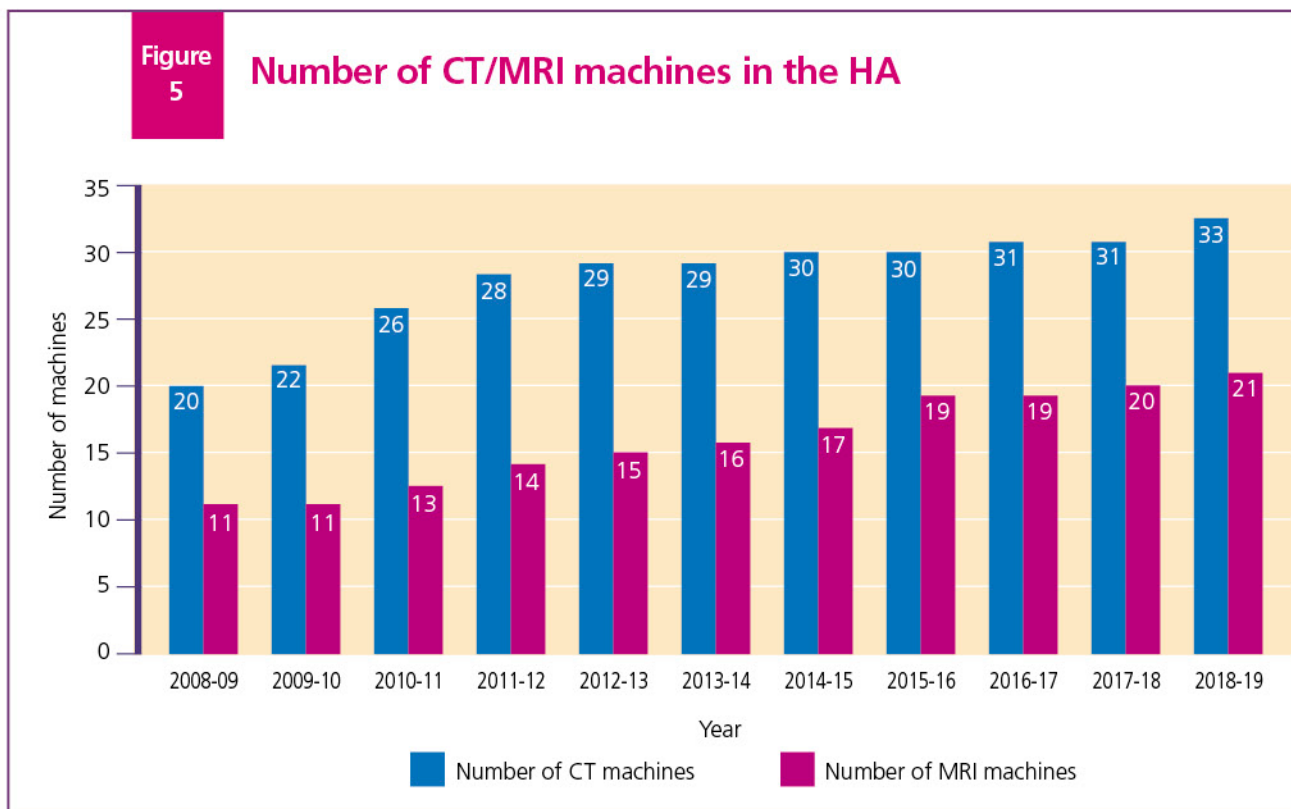
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[16] In 2017-18, the waiting time from DTT to start of RT for 90th percentile for cancer patients requiring radical RT was 28 days while the waiting time at the 90th percentile for patients with colorectal cancer, breast cancer and nasopharyngeal cancer 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.

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.

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

Year	Number of CT machines	Number of MRI machines
2008-09	20	11
2009-10	22	11
2010-11	26	13
2011-12	28	14
2012-13	29	15
2013-14	29	16
2014-15	30	17
2015-16	30	19
2016-17	31	19
2017-18	31	20
2018-19	33	21

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.