

CHAPTER 7 COST EFFECTIVENESS AND SERVICE MANAGEMENT

OVERVIEW

7.1 As a statutory body providing public hospital services in Hong Kong, HA is required, under section 4c(vi) of the HA Ordinance (Cap 113), to ensure its accountability to the public for the management and control of the public hospitals system. How to deliver service at a cost-effective manner and manage service through an optimal service delivery model are therefore important topics for HA to address. This chapter reviews the approaches adopted by HA on cost effectiveness and service management.

COST EFFECTIVENESS

Background

7.2 HA is the major healthcare service provider in Hong Kong, providing over 90% of inpatient medical care and 31% of primary care²⁸. In 2013-14, of the 7.2 million population in Hong Kong, around 3.1 million used HA's services. With its key role in the Hong Kong healthcare system, HA's total expenditure amounted to \$49.6 billion in 2013-14 which represented some 2.3% of the Gross Domestic Product of Hong Kong. Hong Kong is rated as the most efficient healthcare system among the 48 economies covered in a study conducted by Bloomberg in 2013. Hong Kong compares favourably with other developed countries in important health indices such as infant mortality rate and life expectancy at birth²⁹.

7.3 HA has put in place performance management mechanisms to ensure its accountability to the public for the management and control of the public hospitals system as required under the HA Ordinance (Cap 113). HA has accordingly developed appropriate performance management tools to -

- (a) measure service performance;

²⁸ Based on "Thematic Household Survey Report No. 50" Census & statistics Department, January 2013.

²⁹ Based on "Demographic Trends in Hong Kong 1981 – 2011" published by Census & Statistics Department, (<http://www.censtatd.gov.hk/hkstat/sub/sp150.jsp?productCode+B1120017>), Hong Kong's infant mortality rate in 2011 was 1.3 while that for Singapore, Sweden, Switzerland and Germany was 2.0, 2.1, 3.8 and 3.6 respectively. The life expectancy at birth for Hong Kong for both sexes in 2011 (80.5 years for male and 86.7 years for female) also compare favourably to advanced economies such as Japan and Sweden.

- (b) identify areas with effective and efficient performance as well as areas requiring improvement; and
- (c) provide reference on service planning and resource allocation.

7.4 There are three major performance monitoring tools in HA –

- (a) *COR*: The Controlling Officer’s Report (COR) of the annual Estimates of Expenditure for the Health Branch of FHB, which forms part of the Government’s annual Estimates of Expenditure, sets out HA’s key activity targets and indicators in support of policy objectives related to public healthcare services. In this respect, HA’s performance is measured against pre-set targets and, where applicable, performance pledges.
- (b) *KPIs*: HA has a wide range of quantitative KPIs. They reflect the outcome of major initiatives taken and drive service improvement through performance benchmarking. More details about the KPIs are covered in the ensuing section.
- (c) *Performance monitoring of funded programmes*: Performance outcome of initiatives receiving funding is measured against pre-set targets or deliverables formulated through the annual planning exercise.

7.5 There are both internal and external aspects of performance monitoring in HA. Internal performance monitoring measures include the following –

- (a) *At Board level*: Quarterly reports on the achievement of annual plan targets are submitted to the HA Board at its open meetings, while progress reports on KPIs are submitted to the HA Board at monthly interval.
- (b) *At HAHO level*: KPIs, including service targets covered in the COR of FHB, are reported to the Directors’ Meeting³⁰ at monthly intervals.
- (c) *At Cluster level*: Quarterly reports on the performance of KPIs and funded programmes are submitted to the Cluster Management

³⁰ The Directors’ Meeting is a weekly forum for HA’s top management to discuss and consider matters of strategic and significant implications in HA. It is chaired by the Chief Executive/HA with all Directors and Heads and CCEs as members. It is also attended by the HA Chairman.

Meeting³¹, which is the major platform for HAHO to monitor cluster performance.

7.6 Externally, HA provides FHB with a Quarterly Progress Review Report which summarises HA's service performance on KPIs and progress of funded programmes. To the public, apart from the service targets covered in FHB's COR, HA also publishes its targets for major funded programmes in the HA Annual Plan. The HA Annual Report also provides an overview on HA's performance for the year under report. Moreover, as a major public organisation, HA is answerable to enquiries from the legislature, district councils, media and members of the public concerning service performance.

KPIs

Major objectives of the KPI System

7.7 Before the formal establishment of HA's KPI framework, performance monitoring in HA was primarily based on the service targets contained in the COR which reflected HA's input, output and cost of the services. In order to define and measure progress towards organisational objectives and priorities, HA developed a set of KPIs in 2008 to measure service performance, particularly in the aspects of quality and efficiency.

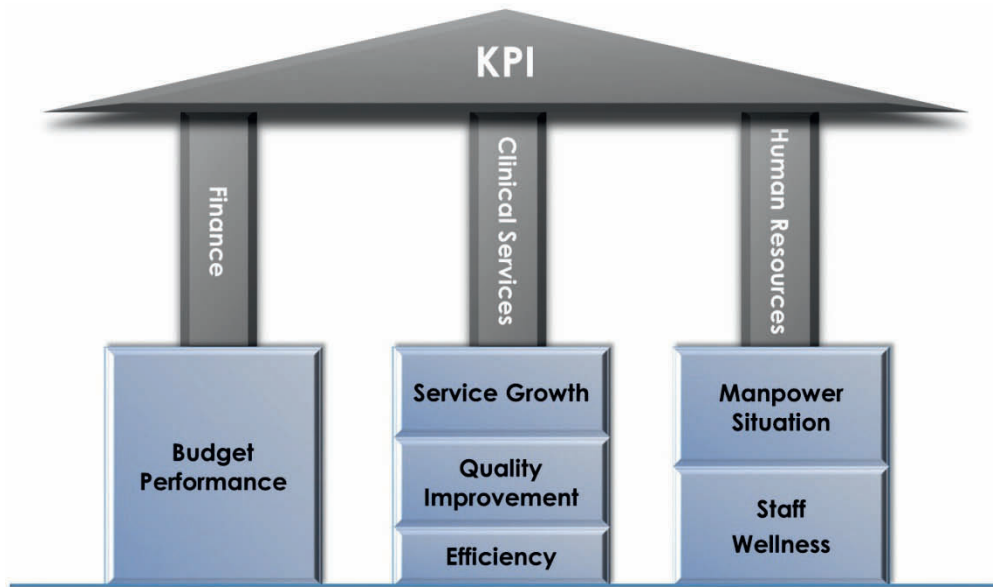
7.8 The major objectives of HA's KPIs are to –

- (a) provide a mechanism for strategic monitoring, taking into consideration corporate priorities;
- (b) identify areas to drive service improvement continuously; and
- (c) enhance accountability on resources spent.

The KPI Framework

7.9 As illustrated in the diagram below, there are three pillars under HA's KPI framework, namely clinical services, human resources and finance.

³¹ Cluster Management Meeting is a meeting chaired by the Chief Executive/HA with individual cluster to monitor its performance and advise on strategic or priority issues in relation to cluster's services.



7.10 For clinical services, the three key dimensions for monitoring are service growth, quality improvement and efficiency, which are regarded as the fundamental elements for assessing clinical service performance. For human resources management, the major dimensions are manpower situation and staff wellness which can help HA track the human resources situation so that a stable workforce can be maintained for effective delivery of services. For finance, the major dimension for monitoring is budget performance which ensures that HA's spending is contained within resources obtained. A list of the KPIs is at **Annex 8**.

7.11 Each of the three pillars is supported by a collection of KPIs. HA selects the KPIs with regard to a number of criteria, including the availability of automated data that is reliable and comparable across clusters, relevance to the overall KPI framework, impact on service outcome and cost efficiency, and burden of diseases in clinical services. The KPIs can be broadly classified into three types according to their functions –

- (a) KPIs with pledge and target, e.g. waiting time for A&E attendance for Triage categories I, II and III;
- (b) KPIs to benchmark and drive improvement across clusters, e.g. waiting time for treatment of different diseases (like Cancer and Cataract Surgeries), outcome of treatment (like percentage of diabetes mellitus and hypertension patients with specified clinical conditions); and
- (c) KPIs to reflect outcomes of major initiatives for monitoring and reporting, e.g. average length of stay for psychiatric inpatients,

waiting time for total joint replacement and cataract surgeries.

Interpretation of KPI reports and Driving for service improvement

7.12 KPIs provide important management information that sheds light on HA's performance in key service areas by facilitating self and cross-cluster comparison. This helps identify areas that warrant deliberation and formulation of enhancement and improvement plans by management teams at hospital cluster and HAHO levels.

7.13 Experience shows that the KPIs have brought about reductions of performance variation between clusters, as well as improvement on HA's overall services. Some examples are illustrated below –

(a) Percentage of patients indicated for surgery on hip fracture with surgery performed \leq 2 days after admission through A&E

The cluster with the lowest performance improved from 50.0% for the period from July 2008 to June 2009 to 66.1% for the period from April 2013 to March 2014; and the HA overall average improved from 63.0% to 70.7% in the same period; and

(b) Percentage of Diabetes Mellitus patients with HbA1c³² < 7%

The cluster with the lowest performance improved from 29.0% for the period from July 2008 to June 2009 to 56.8% for the period from April 2013 to March 2014; and the HA overall average improved from 33.8% to 48.9% in the same period.

7.14 To ensure that the KPI framework and the KPIs selected are kept abreast of service directions and priorities, HA conducts regular review of the framework and individual KPIs³³. HA has also conducted an internal audit on its KPI Framework in late 2013 and found that it has adopted an appropriate and systematic approach in the development of its KPIs. This approach, combined with the established structures and processes for consultation, reporting and monitoring, helps ensure that HA's KPI system has largely achieved its stated objectives.

³² HbA1c refers to glycosylated haemoglobin which is a form of haemoglobin to measure the level of blood glucose over prolonged period of time. It is an important measurement for the effective control of blood glucose level for diabetes mellitus patients.

³³ A KPI Review Working Group chaired by HA's Director (Cluster Services) was established in 2010 to conduct such regular review.

EVALUATION ON COST EFFECTIVENESS

Views from the Public Engagement Programme

7.15 During the Public Engagement Programme, stakeholders who have expressed views on the subject generally agreed that it was important to have a mechanism to ensure cost effectiveness of HA's operation. Some considered that the role of HA Board should be enhanced as a managing board in order to manage and monitor HA's performance more effectively. Some clinical staff, on the other hand, voiced concerns that KPIs had added burden to their workload with many reporting requirements and administrative duties so generated.

SC's Considerations

7.16 The SC notes HA's efforts in performance management and the major performance monitoring tools in place including COR, KPIs, and the performance outcome monitoring of funded programmes.

7.17 SC Members consider that the purpose of drawing up KPIs is to drive improvement and achieve corporate goals. In order for the KPIs to be useful, the SC sees the importance for the HA Board to play an active role in setting key standards and targets and monitor the performance. This is particularly the case when the HA Board is a managing board which has to lead HA's operation and continuously drive better performance.

7.18 While the SC agrees that the KPI system has been useful for driving service improvements and facilitating alignment in cluster performance, some Members comment that the quantitative nature of some individual KPIs might inadvertently encourage comparison, and at times competition, across clusters thereby causing stress on frontline staff in attaining the KPI targets.

7.19 Members also note that while the COR focuses on HA's key activity targets and indicators in support of policy objectives and measures throughput and cost of HA's services, KPIs are introduced to measure *key* performance aspects in terms of quality and efficiency through performance benchmarking. As KPIs are intended to measure *key* performance aspects, they should be limited in number and general in nature for easy comprehension for both staff and the community. While HA could develop more sophisticated indicators like dashboards to facilitate internal management, it should have a simple set of KPIs for overall performance monitoring and public accountability purposes.

7.20 In particular, the KPIs should be refined and enhanced so as to help inform the management on areas for examination and improvement to better

address service demand and management, as well as facilitate service planning and resource allocation.

7.21 On the whole, the SC considers that HA's existing KPI system is a useful and essential performance monitoring tool, though there is room to refine individual KPIs to better address service demand and management, facilitate service planning and resource allocation, and drive best practices.

RECOMMENDATION

7.22 **Recommendation 7:** the SC recommends that –

- (a) The HA Board, being a managing board, should play a more active role in setting key standards and targets to –
 - (i) monitor the overall performance and service provision for public accountability; and
 - (ii) facilitate management decision to improve performance and drive best practices; and
- (b) HA should enhance and refine the KPIs in 2015 to better address service demand and management, facilitate service planning and resource allocation, and drive best practices among various specialties, hospitals and clusters.

SERVICE MANAGEMENT

Background

7.23 The volume of services provided by HA is enormous, with annual attendance at A&E amounting to 2.2 million, SOPC 7.0 million and number of patient days (including inpatient and day inpatient services) 8.0 million in 2014-15. Apart from the need to ensure cost effectiveness of HA operation, the SC also recognises the importance to consider the way HA manages its service given the enormity in volume as well as coverage. This includes, in particular, the way HA ensures the quality of the service and the effectiveness of the service delivery mode in the light of the changing service needs and medical development.

Service Quality

7.24 “To use hospital beds, staff, equipment and other resources efficiently to provide hospital services of the highest possible standard within the resources obtainable” is the commitment of HA enshrined in section 4 of the HA Ordinance (Cap 113). Continuous improvement of professional and service quality is therefore one of HA’s missions.

7.25 To this end, HA established the Division of Quality and Safety in 2006 at HAHO level to explicitly lead the development of clinical quality assurance systems and coordinate their implementation across HA. Clusters have also set up mirroring structures in the following years to drive the implementation of safety and quality systems and improve the quality of care in their respective hospitals.

7.26 HA’s overall strategies and approach in ensuring professional and service quality focus on the following domains –

- (I) People
- (II) Facilities
- (III) Technology
- (IV) Systems
- (V) Service Access

(I) People

7.27 HA commits to delivering quality healthcare service through supporting its workforce with education and training opportunities. HA is the major training ground for undergraduates and interns of medical, nursing, and allied health disciplines. It also collaborates with HKAM to provide accredited training for both basic and higher medical trainees. For nurses and other clinical professions, HA provides the platform for clinical practicum offered by universities and other tertiary institutes. Details of HA’s work on training have been set out in Chapter 6.

Clinical Management Teams

7.28 Through its well-structured clinical management teams, HA executes robust clinical governance for continuously assuring and improving the quality and standards of its services.

7.29 A clinical management team is a structured assembly of multi-disciplinary healthcare professionals providing medical services to patients

under a team approach. Such an approach allows close supervision of staff in their daily practices as well as provides a mechanism for peer review of performances, based on which duties can be assigned according to an individual's experience and competence. The clinical management team is also responsible for conducting quality assurance activities such as mortality and morbidity meetings and clinical audits.

7.30 The heads of all clinical management teams within an individual clinical specialty are represented in their respective HA-wide COC, which, together with CC, work to improve professional care. One notable example of how COCs/CCs take the lead in clinical governance is the Surgical Outcome Monitoring and Improvement Programme. That programme is an organisation-wide clinical outcome monitoring programme conducted annually under the leadership of COC(Surgery). Audits and evaluations of different kinds are also conducted in other specialties, e.g. outcome evaluation of Integrated Discharge Support Programme for Elderly Patients led by the Geriatrics Subcommittee under COC(Internal Medicine), Management of Intensive Care Unit Services audit led by COC(Intensive Care Unit), etc. Clinical indicators that can help inform the level of performance and draw attention to areas warranting improvement are also developed by COCs/CCs and some have subsequently been incorporated into HA's KPIs, e.g. HbA1c level in diabetic care.

Credentialing

7.31 Modern healthcare has become increasingly complex and technology laden and many of the latest interventions demand sophisticated skills and competence. Credentialing is considered another valuable tool to ensure service quality on top of the existing clinical governance system.

7.32 Credentialing refers to the formal process used to verify the qualifications, professional training, clinical experience and other relevant professional attributes of healthcare professionals for the purpose of forming a view about their competence and professional suitability to provide safe, high quality healthcare. The defining of the scope of practice follows credentialing. It refers to the mechanism to define an individual healthcare professional's practice based on credentials, competence and performance.

7.33 In April 2014, the Medical Services Development Committee of the HA Board endorsed the proposed framework for credentialing and defining scope of practice in HA to promote patient safety and professional competence. The framework outlines HA's approach of adopting activity-based credentialing, under which specific procedures/intervention will have their credentialing criteria, in terms of qualifications and training and experience requirements. Professional

staff fulfilling the relevant criteria will be allowed to perform the concerned procedures/intervention independently. Given their established role in clinical governance, there is an advantage for COCs/CCs to be actively engaged in selecting procedures for credentialing and designing credentialing requirements, while HAHO sets the policy, prioritises procedures for credentialing and approves credentialing submissions at corporate level.

7.34 With the above framework developed in due course, HA will engage professional staff and work with cluster credentialing committees to develop priorities and agenda of credentialing. HA is also maintaining communication with HKAM and the Professional Colleges during the process.

(II) Facilities

7.35 People aside, HA also continuously improves its facilities to serve the community better and to cater for the foreseeable increase in demand and service needs.

Increasing Capacity, Hospital Redevelopment and Construction

7.36 HA modernises its facilities and increases the bed capacity having regard to factors such as the growing and ageing population in Hong Kong, changes in demand for public healthcare services, the standards required of modern medical equipment and the wear and tear of existing healthcare facilities. The number of beds provision in HA has increased from 27,041 in 2010-11 to 27,645 in 2014-15, mainly in pressure areas like KEC and NTWC.

7.37 Apart from increasing bed capacity, HA also plans for and pursues redevelopment of existing hospitals. HA reviews the conditions of the structures and facilities of its public hospitals annually. The outcome of the annual review informs the order of priority and estimates of expenditure for implementing minor maintenance and improvement works in the coming years. Over the years, funding approvals were obtained from the Legislative Council to carry out a number of major capital works in public hospitals, such as expansion, redevelopment and refurbishment of existing hospitals including the Queen Mary Hospital, United Christian Hospital, Kwong Wah Hospital and Caritas Medical Centre. Moreover, projects to construct new hospitals, such as the Tin Shui Wai Hospital and the Hong Kong Children's Hospital, are underway. The Government has also announced in the 2015 Policy Address that it would pursue the construction of a new acute general hospital in the Kai Tak Development Area.

High Volume Centres

7.38 New facilities can bring new concepts that could better serve the community. For public services with high demand, such as cataract surgery, the specialty of Ophthalmology has worked to find measures to shorten waiting time for the service. Amongst these was the development of designated Cataract Surgery Centres. The first Cataract Surgery Centre set up at the Grantham Hospital is equipped with a purpose-built operating theatre designed to cater for operations performed in an ambulatory setting. The unique design of the facility allows significant reduction in the turnover time between operations, resulting in efficiency gain and increased throughput. With the success of the Grantham Hospital Cataract Surgery Centre, the second centre was set up at the Tseung Kwan O Hospital.

7.39 The total joint replacement centres at the Hong Kong Buddhist Hospital and the Yan Chai Hospital were set up under the same high volume centre concept. In light of the success of these centres and to cater for the increasing demand for joint replacement surgery, a third centre at the Pok Oi Hospital was established in 2014-15, and a fourth one at the Alice Ho Miu Ling Nethersole Hospital will be set up in 2015-16.

Other Facility Enhancements

7.40 Enhancing facilities for patients with special needs is another focus of HA's service quality improvement. To comply with the United Nations Convention on the Rights of Persons with Disabilities, HA has improved its barrier free access in all newly constructed facilities, as well as existing facilities with major renovations designed and completed after December 2008.

7.41 Additionally, after the epidemic of SARS in 2003, HA has worked to ensure that isolation facilities within its hospitals are up to standard to prevent transmission of infectious diseases that are airborne in origin. As of December 2014, HA has 680 isolation rooms with a capacity of 1,457 isolation beds.

(III) Technology

7.42 HA strives to modernise technology to improve patient care through more precise diagnosis, less invasive intervention and more effective treatment. The SC reckons that technological enhancement can also help increase HA's productivity and efficiency.

Novel Technologies

7.43 The SC notes that HA has introduced many novel technologies over the last decade. These include Robotic-Assisted Prostatectomy, Spine Navigation Surgery, and frameless radiotherapy. Moreover, HA also conducts ongoing reviews and efforts to reinforce its Drug Formulary to include new drugs that are more effective and with less side effects. Examples include target treatment for cancer patients, new generation epileptic drugs, etc.

Digital Medicine

7.44 Apart from medical science, there are other areas of technological advancement that contributes to quality improvement in HA's clinical care. For example, the Filmless HA project which adopts the latest digital technology allows clinicians to view radiological images via the Clinical Management System and Electronic Patient Records platform. Benefits are multi-fold –

- (a) overall operational efficiency is increased and the turn-around time is shortened, thereby reducing patients' waiting time;
- (b) improved image availability and capability provides better support for making clinical decisions; and
- (c) occupational safety is enhanced as the conventional labour intensive processes associated with older technologies could now be eliminated.

Technology Assessment

7.45 The rapid development in medical research has resulted in proliferation of new technologies in the areas of equipment, drugs, medical devices and digital medicine. New health technologies have great potential benefits but not all such technologies are evidence-based and cost-effective. Inappropriate introduction and use of new technologies may create risk and burden to patients. They can also often be expensive, imposing a heavy strain on healthcare resources.

7.46 HA has therefore put in place a robust assessment mechanism to support evidence-based decision-making in considering whether a new technology should be adopted. There are technology committees under COCs and at the cluster level to provide a platform to deliberate safety and efficacy issues, the strategy of technology adoption and the procurement of suitable medical equipment. HAHO plays a coordinating role in these discussions.

(IV) Systems

7.47 HA has also put in place systems to identify, analyse and manage risk.

Clinical Risk Assessment

7.48 HA implemented the Sentinel Event Policy in 2007 to strengthen the reporting and management of serious medical incidents. This Policy was extended into the Sentinel and Serious Untoward Event Policy in 2010. The Policy defines sentinel event as an “unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof” and serious untoward event as an “unexpected occurrence which could have led to death or permanent harm”.

7.49 Sentinel events, serious untoward events and other medical incidents are reported through HA’s Advance Incident Reporting System, a web-based electronic platform which has streamlined the capture, analysis and follow-up of such incidents. With the support of the Advance Incident Reporting System, incident demographics and other related data can be analysed to identify opportunities to prevent recurrences of the incidents.

7.50 All sentinel events/serious untoward events are investigated. HA will set up a Root Cause Analysis panel to identify root causes and contributing factors of reported incidents, and make recommendations for improvement and risk management. Being an accountable and transparent organisation, HA reports all sentinel event/serious untoward events in a quarterly newsletter that is available to both staff and the public. HA also organises half-yearly Patient Safety Forums for staff to foster mutual learning and sharing.

Complaint Handling

7.51 HA has a two-tier complaint system to handle patient complaints. All complaints are handled initially by the hospital/clinic concerned. Complainants who are not satisfied with the outcomes could appeal to the central Public Complaints Committee of the HA Board for review.

7.52 The Public Complaints Committee is responsible for deciding all appeal cases. It comprises members from different sectors of the community, who are non-executives and are not employees of HA. By virtue of its independence, the Public Complaints Committee handles all complaints fairly and impartially and would also make recommendations to HA. Details of the complaint handling system and relevant statistics are published in the Annual

Report on Public Appreciation, Feedback & Complaints Management for public information.

Hospital Accreditation

7.53 HA launched the Pilot Scheme of Hospital Accreditation (Pilot Scheme) in 2009 in collaboration with The Australian Council of Healthcare Standards, an international accrediting agent. The Pilot Scheme (first phase) was completed in 2011 with five public hospitals attaining full accreditation. The Pilot Scheme laid the foundation for HA's development of a set of internationally accredited Hong Kong standards and the nurturing of the first batch of local surveyors for accreditation. HA has launched the second phase of the Pilot Scheme and expects that a total of 20 HA hospitals will be accredited upon its completion by 2015.

7.54 Hospital accreditation has helped HA modernise and benchmark itself against international best practices on many fronts. One notable improvement was in the area of instrument disinfection and sterilisation. Others include the phasing out of the practice of reusing higher risk single use devices, the introduction of document control, surgical instrument tracking and tracing, and care planning and evaluation.

(V) Service Access

7.55 Timely access to clinical services is an issue of clinical as well as community concern. As far as the domain of service access is concerned, waiting time for A&E, elective surgeries, radiological investigations, cancer treatment and SOPC are amongst the areas attracting the greatest attention among the community.

Demand Problems

7.56 Waiting time is essentially the result of demand and capacity imbalance. The increasing healthcare demand is attributed to Hong Kong's ageing population and rising prevalence of chronic illnesses. Inadequate gatekeeping at the primary care level also adds pressure on the public hospital system in Hong Kong.

Capacity Issues

7.57 Medical manpower shortage remains a crucial factor for the existing waiting time problem concerning HA services. Although the situation will begin to alleviate when the number of local medical graduates increases from 250 to 320

and 420 in 2015 and 2018 respectively, the shortage will likely remain in certain specialties such as ophthalmology and anaesthesia, where the staff turnover rate is high. Moreover, by 2020, the projected number of retiring doctors in HA will increase to around 70, which is three times as much as around 20 in 2014. Sub-specialisation in modern medicine has also brought along new demand-capacity imbalance in, for example, the field of clinical genetics and infertility treatment.

Governance and Monitoring

7.58 HA currently monitors waiting time through the COCs of relevant specialties. HAHO plays a coordinating role and oversees the development of strategies and their implementation. Waiting time statistics are included in HA's KPIs, reportable to and monitored by Cluster Management Meeting and the HA Board. Those with significant disease burden and public concern are also required to be reported to FHB under the COR.

Measures to Manage Waiting Time

7.59 HA has been implementing measures to manage waiting time, including the following –

- (a) *Retention and Attraction of Medical Staff:* HA has introduced initiatives for staff retention including implementation of new career structure; enhancement of promotion prospects; enhancement of training opportunities; and recognition of excessive overnight call duties. Supporting workforce including phlebotomist services and clerical support have also been strengthened to alleviate the workload of medical staff.
- (b) *Temporising Measures:* HA has engaged about 330 part-time clinicians to assist in providing services as of March 2014. The Special Honorarium Scheme has also been enhanced to facilitate operation of extra service sessions to meet operational needs of individual hospitals. Since 2012, HA has commenced the recruitment of non-local doctors to practise with limited registration in HA as one of the additional measures to address the manpower shortage.
- (c) *Designated Centres:* As mentioned before, by setting up designated high volume centres for cataract surgery and total joint replacement, the notional waiting time for cataract surgery in HA has been reduced from over 44 months to below 16 months and the number of joint

replacement operations per year has increased by 75% to about 2,800 cases from 2008-09 to 2013-14.

- (d) *PPP*: By using a co-payment model, HA first adopted PPP in 2008 for patients requiring cataract surgeries and has been successful in bringing down the cataract surgery waiting time. The Tin Shui Wai Primary Care Partnership Project engages private practitioners in the region to provide primary care services for HA patients in the locality. This successful model is now being extended to other parts of Hong Kong under the General Outpatient Clinic PPP (GOPC PPP) Programme. Piloted in Kwun Tong, Wong Tai Sin and Tuen Mun since the first quarter of 2014, the GOPC PPP Programme aims to help HA manage demand for GOPC service, enhance patient access to primary care services, provide choice to patients for receiving primary care services from the private sector, promote family doctor concept, and foster the development of the territory-wide electronic health record. Meanwhile, the Pilot Project on Enhancing Radiological Investigation Services through collaboration with the private sector allows patients to have radiological scans in chosen private service providers to expedite their care process. The programme is well received and the eligibility coverage has been extended from four to eleven cancer groups. The Haemodialysis PPP increases HA's dialysis service capacity and enhances patients' choices of location for receiving treatment. In 2014-15, 200 HA patients received the service in six community haemodialysis centres.
- (e) *Enhance Transparency*: HA recognises the importance of enhancing transparency in waiting time to enhance public accountability and confidence. HA has by phases uploaded SOPC waiting time information on HA's website, covering all eight major specialties (namely ENT, Gynaecology, Medicine, Ophthalmology, Orthopaedics & Traumatology, Paediatrics, Psychiatry and Surgery) since 30 January 2015. The information will facilitate patients' understanding of the waiting time situation in HA and assist them to make informed decisions when considering whether they should pursue cross-cluster treatment.
- (f) *Cross-Cluster Collaboration*: To let more patients benefit from cross-cluster referral arrangement according to patients' preferences, HA has reminded frontline staff to accept new case bookings from patients residing in other clusters. In February 2015, HA has launched a poster on the procedures and practice on the booking of first appointment at SOPC for the information of both the public and

staff. Apart from allowing patients to voluntarily book appointments at SOPCs in other clusters, HA has, since 2012, enhanced cross-cluster collaboration by establishing a centrally coordinated mechanism to facilitate pairing-up patients in clusters of longer waiting time with clusters of shorter waiting time. Patients with appropriate clinical conditions waiting in a suitable specialty of a cluster will be invited to attend SOPC in another cluster with shorter waiting time. So far, the cross-cluster collaboration is being implemented in the specialties of ENT, Gynaecology, and Ophthalmology.

- (g) *Collaboration with Family Medicine:* Noting that many patients referred to SOPC could indeed be dealt with at primary care level, HA explored using Family Medicine to help attend to these patients. One successful example is the Low Back Pain clinic. Patients referred to SOPC suffering from low back pain are screened and managed by Family Medicine Specialists. Using protocolised care, many patients can be discharged within a few visits, while those with sinister conditions are referred to SOPC in an expedited manner.
- (h) *Improved Management Tool:* HA has developed an electronic referral system to facilitate clinicians in making referrals to SOPC. The information collected also helps better business analytics and keeping track of patient needs. To help improve queue management in each SOPC, HA has also developed a new management tool to provide comprehensible visual analysis of the queuing pattern.

Evaluation on Service Quality

Views from the Public Engagement Programme

7.60 In the Public Engagement Programme, the area that stakeholders were most interested in as far as service quality is concerned was the level of or accessibility to services. Some considered that the long waiting time, particularly for SOPC services, was the most important problem of HA. Others found A&E and inpatient services insufficient as well and the resulting long time that a patient had to wait at A&E departments before getting admitted into an inpatient ward (the “access block” problem) was unsatisfactory. Some attributed the difficulties in alleviating the waiting time problem to the lack of coordination and the perceived “sectarianism” among specialty services or clusters.

7.61 In the public fora, attendees raised a number of specific views on HA’s services, ranging from the telephone appointment system in GOPC to the

drug dispensary services. Generally speaking, while they appreciated the quality of services provided by HA, they called for enhanced level of services in various aspects in order to meet the rising demand.

SC's Considerations

7.62 The SC notes that HA is already taking measures on professional and service quality and the initiatives are comprehensive covering the relevant key aspects of people, facilities, technology, system and service access. However, Members receive the clear views raised by stakeholders on waiting time and access block and their strong request for improvement measures. In particular, the long waiting time for SOPC services in selected specialties and the disparity of the waiting time among clusters have been an ongoing concern of the public. For instance, the 90th percentile waiting time for routine cases in Orthopaedics and Traumatology is more than two years and has often been cited as an area of concern. SC Members have also got first-hand experience of the waiting situation and congestion in certain hospitals when they conducted visits to the seven clusters and selected public hospitals during the Public Engagement Programme. The SC considers that variance in waiting time among clusters may have aggravated the perception of “sectarianism”. The SC thus identifies service access as one of the top priority issues that HA should address.

7.63 All in all, while HA's efforts to improve the quality and level of services are commendable, the SC is of the view that there are areas on waiting time and access block that HA needs to do more.

Recommendation

7.64 **Recommendation 8:** the SC recommends that –

- (a) HA should implement a comprehensive plan to shorten waiting time for SOPC and A&E services with a view to enabling timely access to medical services and minimising cross-cluster variance in waiting time; and
- (b) HA should coordinate with relevant specialties to address the serious access block problem in A&E Departments in concerned hospitals.

Mode of Service Delivery

7.65 The comprehensive spectrum of acute, rehabilitation and community healthcare services of HA are delivered mostly by multi-disciplinary teams and spanning different stages of care, from primary care and specialist care through to

end-of-life care and across different settings. The key services include the following –

- (a) *Primary Care* – primary care services are delivered mainly through HA’s GOPCs and Community Health Centres developed in recent years. As at December 2014, 71 GOPCs and two newly launched Community Health Centres (in Tin Shui Wai and Tung Chung) are in operation. The services are primarily targeted at the elderly, low income families, and patients with chronic illnesses.
- (b) *SOPCs* – there are currently 47 SOPCs delivering specialist consultation, treatment and investigation for patients referred by GOPCs or private practitioners as well as patients discharged after in-patient care. All cases newly referred to SOPCs are triaged to ensure that patients with urgent conditions requiring early intervention are treated with priority.
- (c) *Hospital Care* – there are currently 42 public hospitals/institutions in HA supplying a total of around 27,600 beds mainly for the delivery of acute and convalescent care. Among these, 17 are acute hospitals each with an A&E Department to provide consultation and treatment to patients requiring emergency service.
- (d) *Community Care* – HA also delivers a range of community-based outreach services to provide support for discharged patients, in particular elderly patients, to help them recover in the community. These include the Community Nursing Service, Community Geriatric Assessment Team Service, Community Psychiatric and Psycho-geriatric Services, and Community Allied Health Services.

Key Challenges in Service Delivery

7.66 Two major trends in the demographic structure and disease epidemiology of Hong Kong are posing great challenges to HA in its service delivery. These two key challenges are ageing population and rising incidence of chronic diseases.

Ageing Population

7.67 Our population is ageing fast. In 1993, 9% of our population was aged 65 or above. The number increased to 15% in 2014 and is expected to rise further to 26% in 2031 and 30% in 2041.

7.68 The impact of the fast growing elderly population on HA services is illustrated below –

- (a) Older people require more healthcare services, particularly the public services which are highly subsidised. In 2012, elderly people (aged 65 or above) made up around 14% of the Hong Kong population, yet they accounted for about 37% of the GOPC attendances and around 50% of all hospital bed days in HA;
- (b) The relative risk of an elderly person being hospitalised in general specialties is about four times that of a non-elderly person according to HA data;
- (c) Elderly patients have longer cumulative hospitalised days than non-elderly patients. For general specialties' inpatient services, the average hospitalised days is 14.2 per year for elderly patients and 6.0 per year for a non-elderly patient; and
- (d) Total resources spent on elderly patients (aged 65 or above) amounted to around 46% of HA's total expenditure in 2013-14.

7.69 Given the above, the SC notes that the demand for and cost of HA services will rise as the number of older patients continues to increase, particularly for inpatient services.

Burden of Chronic Diseases

7.70 Concomitant with population ageing is an increasing occurrence of chronic illnesses. Analysis of leading causes of death indicates that cancer, diseases of the heart, pneumonia, cerebrovascular diseases, respiratory diseases, and renal diseases are the main causes of mortality in the elderly population, accounting for almost 80% of deaths in this age group in 2013³⁴. In addition, diabetes mellitus and hypertension are two other chronic diseases that are common risk factors for heart disease and stroke and contribute to a large proportion of inpatient days. All of these, save for pneumonia, are chronic conditions, and they pose a major burden to the healthcare system.

7.71 It is projected that between the period from 2012 to 2017, the number of patients treated for diabetes mellitus in HA will increase by 29% from 427,000 to 549,000; the increase for those with hypertension is 29%, from 1,163,000 to

³⁴ Source: "Number of Deaths by Leading Causes of Death by Sex by Age in 2013", website of the Centre for Health Protection <http://www.chp.gov.hk/en/data/4/10/27/340.html>

1,498,000. For patients with coronary heart disease, the projected increase is 26%, from 205,000 to 258,000.

Service Models in Response to Ageing Population

7.72 To ensure the service delivery could be innovated and improved to be more attuned to meeting the expanding and evolving needs of the ageing population, HA has formulated a Strategic Service Framework for Elderly Patients to guide the future development and delivery of healthcare services for older persons.

Risk-stratified Care

7.73 Formulated through a highly interactive and broad engagement approach and published in 2012, the Strategic Service Framework for Elderly Patients emphasises wellness of patients. It aims at minimising the need for hospital admission and readmission as the new models of medical care for older patients. This involves strengthening of multi-disciplinary integrated care, patient and carer empowerment, and collaboration with community stakeholders. The focus is on providing appropriate care based on the stratified risk of individual patients according to their conditions –

- (a) For the large volume of older patients with early, mild and stable chronic diseases, the focus of healthcare delivery is on supported self-care through patient education and empowerment. HA has also reserved elderly quotas for GOPC services for patients aged 65 or above to cater for their episodic illnesses and to enhance their accessibility to primary care services;
- (b) As regards older patients with multiple chronic diseases, more holistic and structured care is provided through an integrated disease management approach. This entails the development of coordinated services for multidisciplinary management of the chronic conditions with discharge support and regular follow-up at an ambulatory or outpatient setting; and
- (c) For the comparatively smaller group of highly complex older patients who have severe impairments arising from complications, more intensive care is delivered through enhanced care coordination in the form of case management. This involves the coordination of a wide spectrum of healthcare, social care, and support services for high risk patients requiring multi-professional intervention, as elaborated in the following paragraphs.

Integrated Care for High Risk Older Patients

7.74 HA has developed an “integrated care model” that enables targeted use of resources on elderly patients identified with high risk and those with complex needs requiring more intensive management. Coordinated care and support will be provided on need basis. Key components of the model are as follows –

- (a) Early comprehensive assessment of older patients admitted to Medical wards is conducted by designated staff (usually nurses) so as to identify their care and social support needs. High risk older patients who are likely to have unplanned readmission are also identified;
- (b) The designated staff will perform early discharge planning and formulate individualised care plans for the high risk older patients with multi-disciplinary input so that post-hospital support would be delivered in subacute, ambulatory and community settings based on the patients’ needs;
- (c) For patients suffering from functional decline (e.g. as a result of stroke or falls) and in need of more intensive rehabilitation and comprehensive geriatric care, they may be referred to the Geriatric Day Hospitals for rehabilitation therapy, medical consultation and nursing care as required through a multi-disciplinary approach. As for patients who require continual intensive rehabilitation and care at home after discharge, community-based allied health and nursing services will be arranged to deliver them with comprehensive and coordinated outreach services based on a case management approach;
- (d) For older patients who require social support upon discharge, HA has partnered with NGOs through contractual arrangement for the latter to provide timely home support services. Services include personal care, home-making and modification, provision of meals, transportation, “elder sitter” services, escort, and transitional residential respite care;
- (e) For patients living in old age homes who are frail and at high risk of unplanned readmission, the Community Geriatric Assessment Teams will provide outreach services of comprehensive multi-disciplinary care at the old age homes. Community Geriatric Assessment Teams

will also provide training and support to the old age home staff to enhance their skills in taking care of the elderly residents;

- (f) HA has also taken measures to engage older patients and their carers to enable them to participate and make shared decisions related to their care. This is achieved through supported self-management (e.g. medication management) via the Community Health Call Centre and SmartPatient website; and by working with NGOs to provide patient education and empowerment; and
- (g) There are also improved service networks with community partners, including General Practitioners, NGOs, the Department of Health's Elderly Health Service, and the Social Welfare Department to enhance service continuity and appropriate transitional care for older patients.

Service Models in Response to Burden of Chronic Diseases

7.75 Recognising that poorly controlled chronic diseases will lead to complications while optimal management will delay disease progression and improve the quality of life for patients and carers, HA has adopted a chronic diseases management model focusing on the following inter-linked elements –

- (a) Proactive multi-disciplinary teams for provision of comprehensive care based on disease-based protocols;
- (b) Self-management support for better health outcomes by empowering patients to manage their own health; and
- (c) Mobilising community resources to meet the needs of patients.

Multidisciplinary Team Providing Protocol-driven Care

7.76 HA has set up multi-disciplinary teams comprising nurses and allied health professionals at selected GOPCs in all clusters to identify early complications and delay disease progression for chronic disease patients, particularly those with diabetes mellitus and hypertension. Patients will receive structured assessment, risk stratification and targeted interventions by the multi-disciplinary teams led by primary care doctors. The assessment and intervention process, known as the Multi-disciplinary Risk Factor Assessment and Management Programme, is guided by disease-based protocols developed for standardisation of care. Programme evaluation has revealed positive clinical outcome and greater satisfaction among patients. HA will extend this service

delivery model to cover chronic disease patients attending the SOPCs in the coming years.

Self-management Support

7.77 HA collaborates with NGOs in the delivery of a patient empowerment programme to improve chronic disease patients' knowledge of the diseases and enhance their self-management skills. A multi-disciplinary team of healthcare professionals has developed different sets of teaching aids and materials for common chronic diseases and provided training for the staff of participating NGOs to organise and deliver the patient empowerment programme. The programme currently covers high prevalence chronic illnesses like diabetes mellitus and hypertension. HA is considering extending it to cover other common chronic diseases such as heart disease and chronic respiratory disease.

Mobilisation of Community Resources

7.78 HA has established collaborative networks with local NGOs and community partners to provide comprehensive care support for chronically ill and older patients who are living in the community. For example, besides providing telephone support for disease monitoring, the Community Health Call Centre facility at the Tang Shiu Kin Hospital also links high risk older patients and chronic disease patients to ambulatory and community care services, including primary care clinicians and NGOs. The programme currently covers older patients and those patients with diabetes mellitus. HA will continue to explore the use of Community Health Call Centre service to support patients with other types of chronic disease so as to optimise its role.

7.79 As mentioned in paragraph 7.59(d) among the PPP initiatives, HA also implements a new GOPC PPP Programme on a pilot basis in Kwun Tong, Wong Tai Sin and Tuen Mun to subsidise clinically stable patients having hypertension with or without hyperlipidemia, and later diabetes mellitus patients who are currently under the care of GOPCs, to have their chronic conditions and episodic illnesses followed up by private doctors participating in the programme. Through this programme, patients can be looked after by a chosen family doctor in the community for monitoring of disease and continuity of care. HA will explore to extend the programme to other needy districts based on evaluation results of the programme.

Capacity Development to Cater for Growing Service Demand

7.80 It is projected that HA has to increase its service throughput by an average of at least 2% every year in order to cater for the increasing demand. Compared to end March 2014, it is estimated that an additional of 2,300 and 8,800 public hospital beds will be needed by 2021 and 2031 respectively as the population ages at an accelerated pace in the next two decades.

7.81 In response, HA has increased the provision of around 580 additional beds in the three years from 2012-13 to 2014-15. With the one-off grant of \$13 billion approved by the Legislative Council Finance Committee in late 2013 for HA to improve and upgrade its facilities through minor works projects over the next ten years, HA will provide an additional of around 800 beds in the coming years.

7.82 At the same time, HA has been implementing and planning a number of hospital development and redevelopment projects as mentioned in paragraph 7.37.

Cluster Clinical Services Plans

7.83 To guide the hospital development and redevelopment projects, HA formulates Clinical Services Plans on a cluster basis to map out the respective future service delivery models of a cluster and delineate the roles of each hospital within the cluster. HA has taken the opportunities to incorporate new service models to respond to population ageing and increasing burden of chronic diseases, as well as to minimise the need for unnecessary hospitalisation.

7.84 HA prepares Clinical Services Plans through a structured and extensive process of staff engagement and consultation. It takes due account of the special features and environment of each cluster and set out their clinical strategies and service models. Clinical Services Plan was first drawn up for HKWC in 2013, and then for KEC in 2014, while clinical services planning is currently underway for KCC and NTEC.

7.85 Using the HKWC Clinical Services Plan as an example, the new service models emphasise a major shift in service delivery towards ambulatory care services such as day surgery. It also highlights the merits of enhancing subacute care to help reduce the need for acute services.

Ambulatory Care Model

7.86 Ambulatory care model embodies a new philosophy that complex, sophisticated health services can be provided in ambulatory settings that are more orientated to the needs of patients. The evolution of minimally invasive procedures and the technologies enable complex procedures to be performed without the need for an overnight admission.

7.87 Under the ambulatory care model, services are organised in such a way that individual patients can see their healthcare team in a single visit, or at the very least during the course of one day, and that their multiple health issues can be addressed by a multidisciplinary approach. In addition to assessment, treatment and investigation, a team may also offer advice on self-management such as fall prevention, exercise, nutrition, vision, degenerative joint disease, etc. which will contribute to better management of diseases and minimising unnecessary hospitalisation.

Subacute Care

7.88 As transpired in the completed Clinical Services Plan for HKWC, there is also an orientation towards subacute or step-down care such as convalescent and rehabilitation services for patients who no longer require acute care. This direction on the one hand helps relieve the pressure on acute hospitals, and on the other hand highlights the importance to have a clear definition of roles of various hospitals within a cluster, particularly with regard to subacute care like rehabilitation services and palliative services.

7.89 For example, in the HKWC Clinical Services Plan, the role of Tung Wah Hospital and Grantham Hospital with regard to the provision of subacute services for their respective districts has been enhanced which would help alleviate the workload pressure of Queen Mary Hospital being the major acute hospital in the cluster. Tung Wah Hospital is positioned as a subacute hospital for the Central and Western District with a focus on rehabilitation for patients with multiple morbidities as well as ambulatory services. As for Grantham Hospital, it will serve as an academic ambulatory care centre and will provide subacute services for the Southern District.

7.90 Ward patients in Queen Mary Hospital who no longer require acute care but still need a certain extent of inpatient medical attention and nursing intervention will be transferred to Tung Wah Hospital or Grantham Hospital depending on their district of residence. Other suitable patients in need of subacute care may also be transferred directly to these two hospitals from the Medical Assessment and Planning Unit to be set up in Queen Mary Hospital,

which is a short-stay unit providing rapid assessment and, if necessary, acute intervention for emergency patients presenting to the A&E department. This arrangement will help facilitate early discharge from acute care and reduce the need for unnecessary admission to an acute hospital.

Evaluation on Mode of Service Delivery

Views from the Public Engagement Programme

7.91 Stakeholders in general found that it was necessary for HA to consider ways to manage the significant demand for healthcare services. Some considered that ageing population and increasing chronic diseases highlighted the need for HA to enhance its work on rehabilitation services and extended care services. HA could also strengthen step-down care and community partnership such as collaboration with the welfare sector to minimise the need for admissions to hospitals. Enhancing patient support through, for example, services of day centres or home visits could facilitate early discharge of patients with stable medical condition and alleviate the overcrowded Medical wards. Some considered that the collaboration should be extended to the private sector so as to make use of the capacity of the latter through introduction of more PPP programmes.

7.92 Some found that GOPC services should be enhanced so as to alleviate the pressure on A&E Departments. HA should draw up plans to monitor the service demands in different point of service delivery and adjust and enhance service capacity as appropriate. New service delivery model through, say, reviewing the arrangement for acute and convalescent wards, should also be considered to cater for the medical needs of elderly patients. Meanwhile, the working relationship between HA and the Department of Health should be strengthened so as to provide better services for the public.

SC's Considerations

7.93 The SC notes that the model of service delivery adopted by HA has been evolving and that HA has been mindful of the need to adjust and develop the model in response to the changing environment, particularly the key challenges of population ageing and increasing burden of chronic diseases. Facing with these challenges, the SC reckons that there are areas that HA could work on further.

7.94 SC Members consider that it is important to have a plan to provide comprehensive medical care for patients. This is particularly important for elderly patients as there has already been a very high utilisation of public hospital services at present and that elderly patients are more prone to hospitalisation

which usually lasts for a longer period than that of non-elderly patients. In this connection, the SC is of the view that HA should explore ways to provide a coordinated step-down care at the community level for easing the burden of public hospital services. Members also note the importance of more coordination and cooperation among public (notably HA and the Department of Health) and private healthcare service providers as well as the welfare sector with a view to tapping any spare capacity in the private sector and ensuring holistic support for discharged patients in general and elderly patients in particular. Also, PPP programmes are areas where HA should explore more in order to utilise the capacity of the private sector in easing the burden on public sector.

7.95 To assess whether HA's services are sufficient or effective, the views of the service recipients (i.e. patients) are indispensable. The SC considers that HA should put in place effective mechanisms to take into account patients' feedback in formulating its service plans as well as improvement measures where necessary.

Recommendation

7.96 **Recommendation 9:** the SC recommends that –

- (a) HA should enhance its service capacity and review its service delivery model to better prepare itself to meet the challenges of the ageing population;
- (b) Specifically, HA should enhance step-down care, strengthen ambulatory services, and enhance partnership with non-governmental organisations and the private sector with a view to providing comprehensive healthcare and support for patients, in particular elderly patients;
- (c) HA should actively work with the Department of Health and the welfare sector on healthcare services to promote and enhance primary care and rehabilitation services in non-hospital setting. The objective of this new model of care is not only to make better use of the resources but also to address the needs and provide better care for patients, in particular elderly patients, in an ageing society; and
- (d) HA should ensure an effective mechanism is in place to take into account patients' feedback for service planning and improvement.