

Waiting time in public hospitals: case study of total joint replacement in Hong Kong

Yee-man Tsui and Ben Y.F. Fong

*School of Professional Education and Executive Development,
The Hong Kong Polytechnic University*

Abstract

Purpose – The purpose of this paper is to review the causes of long waiting time in Hong Kong public hospitals and to suggest solutions in the service, organisational, systems, financial and policy perspectives.

Design/methodology/approach – The paper is a review of waiting time of public hospital services. Total joint replacement, which is one of the elective surgeries in public hospitals, is presented as a case study.

Findings – The average waiting time of semi-urgent and non-urgent patients in the accident and emergency departments of public hospitals is two hours, and that of specialist outpatient (SOP) clinics is from 1 to 144 weeks. For total joint replacement, it is from 36 to 110 months. Measures like Government subsidisation programme for the replacement surgery and employing adequate physiotherapists, Chinese medicine practitioners, clinical psychologists and nurses to reduce the waiting time are suggested. Issues concerning the healthcare system of Hong Kong, such as structural reform, service delivery model, primary care, quality and process management, and policy reviews, are also discussed.

Originality/value – The over-reliance of public services has resulted in long waiting time in public hospitals in Hong Kong, particularly in the emergency services and SOP clinics. However, the consequences of long waiting period for surgical operations, though much less discussed by the media and public, can be potentially detrimental to the patients and families, and may result in more burdens to the already stretched public hospitals.

Keywords Primary care, Waiting time, Total joint replacement, Post-operative care, Avoidable hospitalization, Policy reviews

Paper type Research paper

Introduction

The Hong Kong healthcare system is a dual track system, providing comprehensive medical and health services to the residents by both the public and private sectors. The two sections are complementary in their roles and this structure is a major strength of the local health system. The two sectors share the service loads consistently and “satisfactorily” for decades. The public services, which are heavily subsidised by the Government via taxation, provide nearly 90 per cent of the high cost inpatient services in public hospitals managed by the Hospital Authority (HA). The private sector, operating in a free market model, caters for 70 per cent of outpatient service in 3,500 clinics and medical centres (Chan, 2001; Lee and Gillett, 2010). These sharing of clinical works are known as the two pillars, public and private, of the local healthcare system, which is unique. The two subsystems are working really well for the residents of Hong Kong, where the life expectancy of women and men is on top of the world.

In terms of resources input, only 5.5 per cent of the Gross Domestic Product (GDP) is spent on healthcare, equally born by both the public, i.e. the Government, and the private,



i.e. out-of-pocket expenses by the users, sectors. This is relatively low compared to other developed and developing countries (Food and Health Bureau, 2016). The Food and Health Bureau (the Bureau), headed by the Secretary for Food and Health, sets the policy and allocates resources. The Department of Health (DH) is the Government's health adviser, and the regulatory and licensing authority. DH also provides a series of disease prevention, health protection, treatment and rehabilitation services as well as health education, publicity and specific public health programmes to the community. The HA is a statutory body responsible for the management of all public hospitals. HA provides clinical and rehabilitation services to patients through hospitals, specialist and general clinics, and outreach services.

The public is over-relying on public medical care for obvious reasons of financial consideration. The charges for operations can be enormous in the private sector. The differential is too large for the ordinary people and families. Urgent and serious surgical conditions get immediate attention and are managed and operated on without delay in public hospitals at nominal charges of HK\$180 a day with everything included. The heavily subsidised services have become a structural problem of public hospitals for being seriously overloaded. As a result, there are many problems in the system, including high occupancy rate of beds, long waiting time, patient complaints, exodus and stress of staff, medical incidents, etc. These problems are perpetuated year after year and are becoming "common" news headlines. Solutions do not seem to be in the pipeline.

Waiting time in public hospitals

A long waiting time implies there is an imbalance between the supply and demand. It may prolong the patient suffering from diseases and disabilities (Viberg *et al.*, 2013). Long waiting time in the accident and emergency (A&E) departments of public hospital is now a routine phenomenon, day in, day out. Fortunately, critical, emergency and urgent cases are attended with top priority. The average waiting time for semi-urgent and non-urgent patients in 2014–2016 were around 2 h, and the latest A&E waiting time of Prince of Wales Hospital at mid-night is over 8 h (Hospital Authority, 2018a). This reflects that some public hospitals are seriously operating beyond their capacity, leading to long waiting time for non-emergency patients, which constitutes over half of the A&E attendance. Long waiting time in A&E departments should not have occurred if only A&E cases are entertained, as in the case of specialist services where eye clinics do not see chest problems and so on.

Waiting time of specialist outpatient (SOP) clinic appointments for newly referred cases is also generally very long. The median waiting time varies from 1 to 144 weeks. However, HA has put in place a triage system for new patients at its SOP clinics on the basis of the urgency of the clinical conditions at the time of referral, with reference to the patients' clinical history, the presenting symptoms, the findings from physical examination and investigations, as well as information provided in the referral letter (Legislative Council, 2012). It is a common phenomenon that less serious cases, which have a long waiting period, will seek private care. Often these patients continue to consult the private doctors until the appointment at SOP.

For elective surgery, the waiting time ranges from 1 to 2.85 months in most Western countries as found in an international study (Viberg *et al.*, 2013). However, the waiting time in Hong Kong can be quite long. For example, waiting time for total joint replacement ranges from 36 months, or 3 years, to 110 months, over 9 years. For cataract surgery, it ranges from 9 to 30 months, significantly longer than the 1–4 month in the above-mentioned study. The rationale provided by the HA is that prioritisation of services according to the patients' condition is necessary as the demand from the ageing population exceeds the healthcare services that the public system can supply (Hospital Authority, 2018b). This is not convincing and is not a fair reason because we cannot blame

the elderly for all the service demands. After all, the Government, together with HA, should be responsive to the ever-changing environment and demography in the planning and provision of services.

A long waiting time is often attributed to staff shortage arising from the high turnover rate of frontline healthcare staff in public hospital, due to heavy workload and low incentive to work. Low job satisfaction leads to a low incentive to work, and this is particularly a common phenomenon among nurses in public hospitals, being affected by factors related social support, work demands and work environment. The situation is compounded by other external factors from private hospitals, including attractive remuneration packages and greater opportunities for clinical development (Chan *et al.*, 2013).

Another contributing factor is the uneven distribution of manpower between the public and private sectors, but the public and the media often think there are not enough doctors in the public hospitals. Since its establishment in 1991, HA has increased the doctor population by more than two times. Overall, 60 per cent of the total number of doctors are employed in the public healthcare system to serve 90 per cent of the patient care in hospital care, while 40 per cent of those in private practice only serve the remaining 10 per cent. Increasing intake in the two local medical schools will not address the intrinsic problem in the long run. This is because of the historical structural “division of labour” between the two sectors, reflected by the respective expenditure on health. Over the last few decades, the total expenditure on health in Hong Kong has always been around 5.7 per cent of the GDP, and has been more or less equally contributed or shared by the public and private sectors (Hong Kong Government, 2017). This phenomenon, or “division of labour”, of equal sharing of resources has been very consistent, indicating the “rather constant” distribution of doctors in the two sectors.

On the other hand, the lack of resources is often perceived as a cause of the long waiting time. In fact, public expenditure on healthcare has been increased significantly in the past two decades, from 11 to 17 per cent of the total annual recurrent budget during this period. This is translated to five times increase at market prices. However, the provision of publicly funded healthcare services is still insufficient as the cost of healthcare and technology has escalated and the population is ageing. Uneven distribution of resources among the various clusters in HA is often cited an indirect factor for long waiting time because the “underfunded” hospitals are not able to improve services in response to the increased demands of the local communities. Fortunately, HA has pledged to ensure patients in serious conditions receiving timely treatment (Legislative Council, 2012).

Case study: total joint replacement

Unlike the waiting for the A&E and SOP services, long waiting time of elective surgery for patients can be problematic clinically, psychologically, socially and financially. The case study is chosen for this review because cataract surgery and total joint replacement (TJR) are the two elective surgeries given special attention by the Hospital Authority (2018c) in the official website. There are over 2,000 total knee replacements (TKRs) every year in Hong Kong (Lee *et al.*, 2016). Although HA has already developed five joint replacement centres, the waiting time of TJR in public hospitals is still very long, from 36 to 110 months (Hospital Authority, 2018d). However, the waiting time of total hip replacement (THR) in other developed countries is not more than a year (Viberg *et al.*, 2013).

In the HA Annual Plan 2018–2019, one more joint replacement centre will be established at Tseung Kwan O Hospital to provide 150 additional TJR surgeries in the first quarter of 2019 (Hospital Authority, 2018a). More importantly, the long waiting time may increase the risk of surgery and other health problems while waiting for TJR, particularly for elderly patients. Therefore, reducing the waiting time of TJR is not only to fulfil the demand, but also to reduce the risk and complications.

History of total joint replacement

TJR has over 100 years of history. With the advancement in the materials used and the technologies in surgery, TJR carries fewer complications and is more flexible, as well as more acceptable, to the patients. In the first half of the twentieth century, surgeons tried to use glass as the implant material, but it failed because it could not support the body weight. Then stainless steel was used (Knight *et al.*, 2011).

There are now over 150 models of implants. Each type has a different design regarding whether to keep the ligaments or not (Manner, 2016). The implant materials are metal-on-polyethylene, ceramic-on-ceramic and ceramic/metal mixtures (Knight *et al.*, 2011). Titanium and cobalt-chromium are used as metal parts of the implant since these materials are biocompatible and can last for a long period of time (Manner, 2016). The advancement of techniques has helped the patients to reduce suffering and to avoid the chance of revision TJR.

Indications for total joint replacement

Injuries to the joints, mostly from arthritis, is the common indication for total joint replacement. There are three types of arthritis: osteoarthritis (OA), rheumatoid arthritis (RA) and post-traumatic arthritis (PTA). All are causing chronic joint pain (Foran, 2015). OA is one of the common chronic diseases linked with aging. Lifestyle, weight and repetitive movements also lead to OA (Arthritis Foundation, n.d.a). The cartilage is broken down, resulting in rubbing between the bones. Moreover, severe injuries will also cause damage to the joints. Then symptoms of pain, stiffness and swelling occur (Arthritis Foundation, n.d.b). According to Kaplan *et al.* (2013), 10–15 per cent of people who are aged over 60 may have OA. In a Mainland study of residents aged over 60 in Beijing, there are 42.8 per cent of females and 21.5 per cent of males having radiographic OA of the knees (Zhang *et al.*, 2001). When OA becomes worse, TJR is used to relieve the pain and to enhance the ability of movement. TJR may also improve the ability of the sufferers to continue their works and to carry out self-management after the artificial joint has replaced the damaged joint (Foran, 2015).

Factors leading to long waiting time

Factors leading to long waiting time include the disease pattern, patients' decision, the length of hospital stay (LOS), resources and healthcare manpower. Yan *et al.* (2011) have studied the change of TKR pattern for primary knee OA in Hong Kong. The number of TKRs is increasing from 721 to 1,229 during 2000–2009, but the mean age of patients in each gender are similar. The high-risk group is still the people who are older than 60 years old. With the increasing life expectancy, the number of TKRs for patients over 80 years old is significantly increased.

In the traditional Chinese thinking, people should avoid harming the body received from parents, and this belief might have deterred the elderly patients to have TJR in the past. Currently, people are more open-minded, and fewer people would refuse TJR. Also, the acceptance of surgery in the community is increased as people become more attentive to health. Therefore, the demand of TKR is increasing. The waiting time of TKR in 2000 was 1 to 2 years and was increased to 3 to 4 years in 2011 (Yan *et al.*, 2011). To compare with Canada, the waiting time of TJR over there has remained constant from 2012 to 2017 at an average of 182 days only, although the demand of TJR increases in these years (Canadian Institute for Health Information, 2017). It appears that the waiting time can be “controlled” while the demand is continuously increasing.

LOS is counted from the day of surgery to the day of discharge. It can affect the turnover rate of hospital beds. Shortening LOS helps to increase the number of TJR, and it can reduce the cost per case. Lo *et al.* (2017) reviewed all primary TKR operated at Yan Chai Hospital

Total Joint Replacement Centre from October 2011 to October 2015 with the aim to find out the factors influencing LOS after primary TKR. The results are highly skewed. The mean of LOS is 6.8 days and the median is 6 days, with the range from 3 to 46 days, apparently longer than the 3.1 and 4.4 days, respectively, in countries like the USA and Canada (Hart *et al.*, 2015). However, the LOS is difficult to predict. It is noted that age, bilateral TKR, American Society of Anesthesiologists class 3, complications and the need for blood transfusion, intensive care unit care and urinary catheterization are the factors leading to longer LOS.

The care after surgery, such as bedside nursing, physiotherapy, Chinese medicine, acupuncture and psychological supports, is important in reducing the LOS. A study has found improving wound care, careful implant insertion and adherence to the strict guidelines of anticoagulation can help to avoid complications and delayed discharge. Moreover, the study has also found that LOS of bilateral TKR is only 1.37 days longer than that of unilateral TKR. This practice can significantly reduce the total LOS and the cost of operations (Lo *et al.*, 2017). The support of physiotherapy is also an important factor in LOS. The shortage of physiotherapists is significant, and the manpower gap increases from 12.4 to 21.6 per cent since there is only one University Grants Committee-funded institution providing the physiotherapist programme in Hong Kong (Food and Health Bureau, 2017).

Resources are also key to long waiting time. Some members of the Legislative Council Panel on Health Services think that lack of financial incentive for hospitals is the factor leading to long waiting time for all public hospitals' services (Legislative Council, 2018). When the resources are limited, it is difficult to increase the quota for TJR significantly to fulfil the needs. However, only allocating more resources to TJR alone may not be enough to reduce the waiting time. The healthcare system should be viewed as a whole, particularly with attention to the operations of HA. There is an apparent imbalance among the hospital clusters in the allocation of resources. Under the HA's internal resource allocation system, the underfunded clusters appear to continue to have the problem of shortage of resources (Legislative Council, 2018). It seems that the long waiting time cannot be unsolved. On the other hand, the patients are also responsible in terms of resources. Non-attendance is a known factor of prolonged waiting time of TJR. It is a major problem in health services and often reduces the productivity and efficiency. Such patient behaviour also increases the cost of healthcare service indirectly and is, at the same time, wasting the "limited" public resources (Johnston *et al.*, 2007).

The shortage of manpower in the healthcare sector is the widely known and, at times, burning issue. According to the report of Strategic Review on Healthcare Manpower Planning and Professional Development, published by Food and Health Bureau (2017), shortage of healthcare manpower is present because of the ageing population and the increasing provision of services. Although there is an increasing number in all types of healthcare professionals, with the exception of midwives and listed Chinese medicine practitioners (CMPs), the overall manpower is expected to be insufficient in the medium to long term. Such shortage will prolong the waiting time in most, if not all, clinical services in the public hospitals, and perhaps in the private sector as well.

Consequences of long waiting time

Delay in TJR may affect the patients' physical, social and mental conditions (Yuen, 2014). Long waiting time will increase the burden of health condition. According to Ackerman *et al.* (2011), Health-Related Quality of Life would be worsened during waiting. Over 70 per cent of patients may result in deterioration of pain and fatigue. The patients will suffer from disability for a longer period of time. More than half of participants become less confident in managing their own health. These negative impacts

may not only affect the patients, but their families as well. A local study has shown that 44 per cent of participants with OA agree that OA may affect the family and the close relationships. For the severe conditions, patients will employ domestic helpers and take more days off work, leading to social impacts (Woo *et al.*, 2003). Since OA is an irreversible and degeneration disease, the longer the waiting time, the worse the condition will be, and social impact may be aggravated.

The long waiting time also increases the costs of maintaining the ability of movement and reduction of the suffering (Fielden *et al.*, 2005). Furthermore, the outcome of TJR may also be affected. Hajat *et al.* (2002) found that there is the relationship between the waiting time and the outcome of THR. Patients who receive THR after longer waiting time may have worse Oxford Hip Score before and after the operation. Patients who have lower sociability, which is affected by mental health status, may also result in the worse score (Hajat *et al.*, 2002; Breedveld, 2004). Therefore, reducing the waiting time can lead to a better outcome of TJR and can lessen the burden of patients in the physical, mental, social and financial aspects.

Reducing waiting time for TJR

Subsidisation of total joint replacement – a systems approach

The quality of healthcare service in public and private sectors in Hong Kong is generally similar, but the out-of-pocket fee is highly different (Johnston *et al.*, 2007). Perhaps, the subsidisation of TJR at private hospitals may be a solution to reduce the waiting time of TJR.

The waiting time of TJR in private hospitals is extremely different to that in public hospitals. Telephone interviews were made to private hospitals on 6 February 2018 by one of the authors. Hong Kong Adventist Hospital – Tsuen Wan, Canossa Hospital and Union Hospital answered that after the diagnosis and consultations, it only needed to wait for approximately few days to few weeks for the patient to receive the TJR, depending on the doctor's schedule and the arrangement of operating theatres. In another words, TJR can be performed by quick appointment. Although the waiting time of TJR is short, the operating fee in private hospitals is much higher than that in public hospitals, from about HK \$130,000 to HK\$200,000 (Gleneagles Hong Kong Hospital, 2017; St Paul's Hospital, 2015; Canossa Hospital (Caritas) n.d.; Union Hospital, 2017). However, the long waiting time does not drive people to choose the other expensive options of the healthcare service. People who are on the waiting list of TJR may not have the strong financial potential or desire to transfer from the public to private queue just to have TJR earlier. They tend to stay on the waiting list in public hospitals.

There is a public-private partnership (PPP) initiative called Cataract Surgeries Programme (CSP) for cataract surgery. Patients who are having the longest waiting time on the cataract surgery waiting lists under HA can join CSP to receive the cataract surgery in the private sector. The patients receive the fixed amount of HK\$5,000 of subsidisation and pay no more than HK\$8,000 for the surgery (Hospital Authority, 2018d). As a result, it significantly reduces the waiting time of cataract surgery. In 2008, at the beginning of the CSP, the overall waiting time was 37 months (Hospital Authority, 2013). The current overall waiting time is 17 months (Hospital Authority, 2018d).

As in the CSP, subsidisation of TJR can potentially help to reduce the waiting time of TJR. The selection criteria of target population can be the same as in CSP. The amount of subsidisation can be evaluated from the package charges in private hospitals and the cost of TJR. TJR is classified as ultra-major I by the insurance industry (AXA General Insurance Hong Kong Limited, 2012). The charge of operation for ultra-major I in public hospitals for private cases is between HK\$72,050 and HK\$88,300 (Leong, 2017). Therefore, the charges of TJR package in private hospitals are reasonable.

The Government can consider a subsidy of HK\$90,000 to “eligible” patients from public hospitals for their TJR operations to be carried out in private hospitals. HK\$90,000 is the around 60 per cent of the average charge of TJR package, in line with CSP that subsidises 60 per cent of the total charges of cataract surgery. These patients will pay the shortfall, which is approximately HK\$60,000, depending on the private hospital chosen. However, such amount may still be a substantial financial burden to many public patients. Ancillary measures can be introduced to assist them. Hopefully, the waiting time of TJR in public hospitals can be reduced.

Shortening the length of stay – clinical issues

Physiotherapy. Physiotherapy is essential and is very important after TJR. It is required for every post-operative day to ensure the patients have the ability to walk before discharge (Lo *et al.*, 2017). The demand of physiotherapy is increased due to the large number of patients who need rehabilitation after TJR. It is also related to LOS because it can maximise the functional ability and reduce the complications like hip dislocation and wound infection (Health Quality Ontario, 2005). A systematic review has found that physiotherapy begins within 24 h of surgery can effectively improve the range of motion and reduce LOS at the same time (Henderson *et al.*, 2018). Once the LOS is shortened, the hospital bed is available for other patients to receive TJR, resulting in the reduction of the waiting time. On the contrary, when there is a shortage of physiotherapists, LOS may be prolonged, affecting the waiting time. HA should ensure the patients to begin the physiotherapy on time by increasing the number of physiotherapy sessions as the highest priority.

On the other hand, the long waiting time also requires the support of the physiotherapy to relieve the pain suffered by the patients. The President of Hong Kong Physiotherapy Association has mentioned that physiotherapists are having a heavy workload and the predicted shortage of physiotherapists is over 900 in 2030 (Poon, 2017). As a result, patients with OA may have limited sessions of physiotherapy. Extra private sessions will not be considered by most patients because of the financial and personal issues. For those patients who cannot afford private physiotherapy, the symptoms of degeneration will become more severe. Their ability of self-management is reduced and thus more pressing of receiving TJR. Hence, the authority must investigate the issue of the shortage of physiotherapists and the impacts thus arisen from it. A long-term strategy on the future supports of physiotherapy, particularly in conditions related to TJR, must be formulated, involving stake holders like the Government, the profession, education and training institutions, and all healthcare sectors.

Chinese medicine. Chinese medicine, especially acupuncture, is effective to relieve pain and reduce the dysfunction among patients suffering from OA (Selfe and Taylor, 2008). The Government can subsidise a part of Chinese medicine service, so that the patients can afford the treatments in the private sector. For patients, after TJR, acupuncture can be provided as complementary or integrative medicine. It can effectively reduce pain and improve the ability to receive physiotherapy during the initial post-operative period. It also reduces opioids usage, which has the positive relationship with LOS and may prolong the waiting time (Crespin *et al.*, 2015). Therefore, acupuncture is a good non-medicinal adjunct to reduce the pain and hence the waiting time.

Furthermore, there is the Integrated Chinese-Western Medicine Pilot Programme in HA. It provides the Chinese medicine services to the in-patients who have stroke, cancer or acute low back pain (Hospital Authority, 2014). It is feasible and practical to extend the coverage to patients after TJR. A study has found Chinese medicine, as the recovery treatment after TKR, is effective to improve the recovery rate. There are significant results in relieving pain and reducing the flexion contractures (Yang *et al.*, 2013). Thus, Chinese medicine can help to reduce the LOS, which can be prolonged as a result of the shortage of physiotherapy

services in public hospitals. It can also indirectly reduce the waiting time for TJR. However, most CMPs are working in the private sector (Food and Health Bureau, 2007). HA should employ more CMPs to work in public hospitals.

Psychological support. There is negative impact of mental health arising long waiting time. Furthermore, some of the patients may become depressed and anxious after TJR as in most major operations. The mental wellness affects the recovery rate. Therefore, psychological support is needed before and after TJR. Clinical psychologists can find out about the patients' psychological changes and understands more about the patients' concern. They will help the patients to overcome the hardship and psychological reactions. Thus, it is recommended that clinical Pathway should include psychosocial condition review, particularly during the post-operative period. More psychological support sessions should be provided.

Psychological support is not a routine clinical practice in the local hospitals. An Italian study has shown better mental well-being in patients who have received psychological support. These patients have achieved the physiotherapy objective earlier than those in the control group, and thus reducing the LOS (Tristaino *et al.*, 2015). It is suggested that psychological support should focus on the stress and emotional changes associated with postoperative recovery. Clinical psychologists can help the patients to build up the confidence in rehabilitation and to improve their quality of life. Effectively, the rehabilitative process becomes much more smooth, and thus the psychological support by clinical psychologists will indirectly reduce the LOS.

Reducing waiting time in public hospitals

Improving manpower in public hospitals – organisational consideration

In addition to the measures proposed to reduce waiting time for TJR, there are other commonly discussed suggestions for improving waiting time in public hospitals. The heavy workload in the public hospitals and the attractive remuneration of the private hospitals have resulted in the exodus of and thus high turnover rate of nurses and doctors, leading to a continuing manpower shortage in the public hospitals.

Although there are recommended nurse-to-patient ratios in HA, these standards are often not adhered to and, to some extent, appeared to be “ignored”. There have been recommendations to make the ratios mandatory by legislation. However, such measures may not ease the problems arising from manpower shortage in public hospitals because there are not enough professional staff to be appointed in order to comply with the required staffing ratio.

The vast gap in the charge differential for medical services between the public and private sectors, especially in severe and complicated cases and in chronic conditions requiring long-term care, and the over-reliance on the public health services have continuously imposed a great stress and burden on the public hospitals. More doctors, nurses and other professional and supporting staff are needed to meet the demand. In the private sector, there appears to be a “surplus” of doctors because many of them do not have their time fully utilised. There is an untapped capacity which amounts to a waste of valuable social resources. Continuing efforts and appeals by the Government and HA in promoting PPP have not cultivated much effects to change the situation. Perhaps all the stake holders, including the Government, HA, health professions, academics and the public should jointly work out some practical, sustainable, innovative and integrated service models of care while, at the same time, improving the manpower levels.

Appropriate utilisation of healthcare resources – financial and systems aspects

Reasons of hospitalisation usually fall into five categories: system-related, e.g. unavailability of ambulatory services; medical-related, e.g. medication side effects; physician-related,

e.g. suboptimal monitoring); social-related, e.g. lack of social or home support; and patient-related, e.g. delayed help-seeking (Freund *et al.*, 2013). The bed occupancy rate is high in local public hospitals. The appropriate use of acute hospital beds is a major concern for policy makers and hospital practitioners because hospital care is costly, making up a significant share of the budget in the healthcare system. More importantly, admitting patients to hospitals unnecessarily will subject them to potential harm and affects their daily life. The reported prevalence of inappropriate admissions ranges from 4.7 to 10.7 per cent, and a local pilot study has found a rate of 29 per cent (Leung *et al.*, 2011).

An interview study has found that over 40 per cent of doctors believe that ambulatory service-sensitive hospitalisations can be potentially avoidable. The strategies of stopping such hospitalisations include optimal use of ambulatory services, enhancing the patients' awareness of medication adherence, improving patients' willingness and ability to seek timely help, strengthening the monitoring of high-risk patients and provision of after-hours care (Freund *et al.*, 2013). A multi-centre study has shown that there is a significant inverse association between the rates of avoidable hospitalisation and the accessibility to primary care (Rosano *et al.*, 2013). It is suggested that an increase in accessibility and quality of primary healthcare can effectively reduce hospitalisation.

Appropriate utilisation of the valuable and "scarce" public healthcare resources, and thus reducing avoidable hospitalisation is desirable, particularly in maintaining a sustainable healthcare system (Purdy, 2010). Any misuse of the resources will compromise the effectiveness and quality of the healthcare system. The public should be educated about the correct manner in using subsidised health services and be a responsible citizen, not to abuse the eligible rights. A&E departments are not the suitable place to seek medical attention for general and common ailments. Family doctors and clinics should be appropriately consulted (The Hong Kong Medical Association, 1999).

To reduce the burden of acute hospitals and hence waiting time, it is recommended to make good use of convalescent hospitals, which are much less costly to maintain and are less risky to patients because of the absence of acute and serious cases. In addition, transitional care management within step-down wards, or transitional care units (TCUs), should be introduced in public hospitals in Hong Kong. TCUs provide short-term care beds in the hospital and the duration of stay is set at five days to a maximum of 21 days. TCUs are mainly focussed on the patients of 65 years or above with acute diagnosis and are not suitable to be sent home. In USA, the benefits of TCUs in reducing hospitalisations and readmission rates have been recognised (Care Solutions Group, 2016; Crotty *et al.*, 2005).

Primary care and community medical centres can reduce the burden and relieve resources constraints of public hospitals. Family doctors provide holistic and comprehensive primary care to the community. They are trained and have sufficient knowledge to manage a wide range of general medical problems. They refer patients to specialists when necessary. It has been a world-wide trend to focus on primary and community care, not only to save the public health dollars, but to allow for the appropriate care in the appropriate hands and suitable venue for the right conditions. This is definitely not a movement to demote the role and importance of hospitals. As a matter of fact, 50 per cent of acute surgeries are performed out of hospitals in day surgery centres in Australia (Australian Day Hospital Association, 2016). Somehow, it is disquieting to note that Hong Kong has a high number of beds per capita of 5.2 per 1,000 populations, and this is about 50 per cent higher than most developed countries like Singapore, UK and Australia.

What more can be done?

Medical and health services in Hong Kong are of high standard among the developed societies. However, the public healthcare system is apparently not able to meet the

increasing demand and is always over-stretched, with high bed occupancy rate and long waiting time, despite the fact that the provision of hospital beds is much more than countries of similar economic background.

The Government has been trying to solve the problem in the care delivery system and related issues such as health financing. Unfortunately, there appears to be more discussions than actions. This amounts to a *Laissez-Faire* approach. Often, crisis management with remedial measures is the standard working philosophy. At times, a public apology will have “settled” mistakes like medical incidents in public hospitals. Public consultations are also a means to keep everyone “busy” with health issues, without solutions or implementation plan at the end of the tunnel. Since 1985, there have been at least 11 consultation papers in health reform and related topics.

The famous 1985 Scott Report on the delivery of medical services in hospitals had led to the establishment of the HA with the objectives to solve the overcrowded wards and to better manage the public hospitals (WD Scott & Co., 1985). It appears that the core problems have not been tackled effectively. A review report of HA (the Report) in 2015 recommended delineating the role of individual hospitals within a cluster so as to ensure the coordinated and planned development of all hospitals (Food and Health Bureau, 2015). Delineation was on the agenda in the early history of HA (Gauld, 1998). Moreover, despite the accreditation of HA hospitals by the Australian Council of Healthcare Standards, the services do not seem to have improved.

The report also suggested to implement a comprehensive plan to shorten waiting time for SOP clinics and A&E services with a view to enabling timely access to medical services and minimising cross-cluster variance in waiting time. This reflects that the management of HA has not been taking a proactive approach. They need to be “told”, by the report, what needs to be done to solve problems, many of which are burning issues and are of long-term implications.

Some major forward-thinking recommendations were rightly made by the report for HA to enhance step-down care, to strengthen ambulatory services, to enhance partnership with non-governmental organisations and the private sector, to enhance its service capacity and to review its service delivery model, with the aims of not only to make better use of the resources but also to provide better care for patients. All these measures will result directly or indirectly in the shortening of waiting time in public hospitals, but there is doubt about the timing of the implementation of the recommendations.

In terms of service planning and improvement to avoid or reduce untoward medical incidents, HA should create an organisation-wide culture of quality and safety. All hospitals should adopt the process management approach and the Donabedian model of structure, process and outcome measures. When services are managed with quality, safety, efficiency and effectiveness, the throughput of HA will be increased without additional resources or manpower, resulting in lower bed occupancy rate, shortened length of stay and thus improving waiting time.

The Hong Kong healthcare system overemphasises the treatment of diseases and hospital services, where nearly 90 per cent of public resources are consumed. Primary care has been on the agenda since 1990 by the release of the Report of the Working Party on Primary Health Care. Many procedures and clinical processes, particularly pre-operative tests and post-operative care, can be performed outside the hospitals in the primary care setting. Such arrangements will not only help to reduce the health dollars, but will lessen the burden of public hospitals, resulting in shorter waiting time. However, the development of primary healthcare is really taking its time. After the strategy document on primary care development from the Bureau in 2010, the Steering Committee on Primary Healthcare Development was eventually established by the Government in November 2017 to develop a blueprint for the sustainable development of primary healthcare services.

References

- Ackerman, I., Bennell, K. and Osborne, R. (2011), "Decline in Health-Related Quality of Life reported by more than half of those waiting for joint replacement surgery: a prospective cohort study", *BMC Musculoskeletal Disorders*, Vol. 12 No. 108, pp. 1-9.
- Arthritis Foundation (n.d.a), "Osteoarthritis causes", Arthritis Foundation, available at: www.arthritis.org/about-arthritis/types/osteoarthritis/causes.php (accessed 2 February 2018).
- Arthritis Foundation (n.d.b), "Osteoarthritis treatment", Arthritis Foundation, available at: www.arthritis.org/about-arthritis/types/osteoarthritis/treatment.php (accessed 8 March 2018).
- Australian Day Hospital Association (2016), "Profile of the Australian day hospital association and the day hospital industry", available at: www.dayhospitalsaustralia.net.au/wp-content/uploads/2016/06/ADHA_Profile_Reviewed_Jan_2016.pdf (accessed 13 April 2018).
- AXA General Insurance Hong Kong Limited (2012), "Classification schedule of surgical operations", Civil Service Bureau, available at: www.csb.gov.hk/english/admin/benefits/files/AXA_SSO.pdf (accessed 22 March 2018).
- Breedveld, F.C. (2004), "Osteoarthritis – the impact of a serious disease", *Rheumatology*, Vol. 43 No. S1, pp. i4-i8, available at: <https://doi.org/10.1093/rheumatology/keh102>
- Canadian Institute for Health Information (2017), *Wait Times for Priority Procedures in Canada*, Canadian Institute for Health Information, Ottawa.
- Canossa Hospital Caritas (n.d.), "Joint Replacement Centre", Canossa Hospital (Caritas), available at: www.canossahospital.org.hk/services/joint_e.htm (accessed 4 February 2018).
- Care Solutions Group (2016), "Transitional care management", available at: www.caresolutionsusa.com/services/transitional-care-management/ (accessed 14 March 2016).
- Chan, H.Y. (2001), "Health care delivery and financing in Hong Kong. (Thesis)", The University of Hong Kong, Pokfulam, Hong Kong SAR, available at: http://dx.doi.org/10.5353/th_b3196644
- Chan, Z.C., Tam, W.S., Lung, M.K., Wong, W.Y. and Chau, C.W. (2013), "On nurses moving from public to private hospitals in Hong Kong", *Journal of Clinical Nursing*, Vol. 22 Nos 9-10, pp. 1382-1390.
- Crespin, D.J., Griffin, K.H., Johnson, J.R., Miller, C., Finch, M.D., Rivard, R.L., Anseth, S. and Dusek, J.A. (2015), "Acupuncture provides short-term pain relief for patients in a total joint replacement program", *Pain Medicine*, Vol. 16 No. 6, pp. 1195-1203, available at: <https://doi.org/10.1111/pme.12685>
- Crotty, M., Whitehead, C.H., Wundke, R., Giles, L.C., Ben-Tovim, D. and Phillips, P.A. (2005), "Transitional care facility for elderly people in hospital awaiting a long term care bed: randomised controlled trial", *BMJ*, Vol. 331 No. 7525, p. 1110.
- Fielden, J.M., Cumming, J.M., Horne, J.G., Devane, P.A., Slack, A. and Gallagher, L.M. (2005), "Waiting for hip arthroplasty: economic costs and health outcomes", *The Journal of Arthroplasty*, Vol. 20 No. 8, pp. 990-997.
- Food and Health Bureau (2007), "Report of the strategic review on healthcare manpower planning and professional development", Food and Health Bureau, Hong Kong.
- Food and Health Bureau (2015), "Report of the steering committee on review of Hospital Authority", Hong Kong Government, Hong Kong.
- Food and Health Bureau (2016), "Health expenditure", available at: www.fhb.gov.hk/statistics/en/statistics/health_expenditure.htm (accessed 14 March 2016).
- Food and Health Bureau (2017), "Report of the strategic review on healthcare manpower planning and professional development", Food and Health Bureau, Hong Kong.
- Foran, R.H.J. (2015), "Total knee replacement", OrthoInfo, available at: <https://orthoinfo.aaos.org/en/treatment/total-knee-replacement> (accessed 2 February 2018).
- Freund, T., Campbell, S.M., Geissler, S., Kunz, C.U., Mahler, C., Peters-Klimm, F. and Szecsenyi, J. (2013), "Strategies for reducing potentially avoidable hospitalizations for ambulatory care-sensitive conditions", *The Annals of Family Medicine*, Vol. 11 No. 4, pp. 363-370.

- Gauld, R. (1998), "The further development of the Hong Kong Hospital Authority", *Asian Journal of Public Administration*, Vol. 20 No. 1, pp. 57-78.
- Gleneagles Hong Kong Hospital (2017), "Medical packages", Gleneagles Hong Kong hospital, available at: https://gleneagles.hk/user_uploads/Orth-pricelist-03032017.pdf (accessed 4 February 2018).
- Hajat, S., Fitzpatrick, R., Morris, R., Reeves, B., Rigge, M., Williams, O., Murrar, D. and Gregg, P. (2002), "Does waiting for total hip replacement matter? Prospective cohort study", *Journal of Health Services Research & Policy*, Vol. 7 No. 1, pp. 19-25.
- Hart, A., Bergeron, S., Epure, L., Huk, O., Zukor, D. and Antoniou, J. (2015), "Comparison of US and Canadian perioperative outcomes and hospital efficiency after total hip and knee arthroplasty", *JAMA Surgery*, Vol. 150 No. 10, pp. 990-998.
- Health Quality Ontario (2005), "Physiotherapy rehabilitation after total knee or hip replacement: an evidence-based analysis", *Ontario Health Technology Assessment Series*, Vol. 5 No. 8, pp. 1-91.
- Henderson, K., Wallis, J. and Snowdon, D. (2018), "Active physiotherapy interventions following total knee arthroplasty in the hospital and inpatient rehabilitation settings: a systematic review and meta-analysis", *Chartered Society of Physiotherapy*, Vol. 104 No. 1, pp. 25-35, available at: <https://doi.org/10.1016/j.physio.2017.01.002>
- Hong Kong Government (2017), "Health facts of Hong Kong", Department of Health, available at: www.dh.gov.hk/english/statistics/statistics_hs/files/Health_Statistics_pamphlet_E.pdf (accessed 13 April 2018).
- Hospital Authority (2013), "Provision of cataract surgeries in hospital authority", Legislative Council, available at: www.legco.gov.hk/yr12-13/english/panels/hs/papers/hscb2-1531-1-e.pdf (accessed 20 March 2018).
- Hospital Authority (2014), "The Hospital Authority launches the integrated Chinese-Western medicine pilot programme", Hospital Authority, available at: www.ha.org.hk/chinesemedicine/resources/ICWM.pdf (accessed 13 April 2018).
- Hospital Authority (2018a), "Annual plan 2018-19", Hospital Authority, available at: www.ha.org.hk/haho/ho/ap/AP18-19Eng.pdf (accessed 30 March 2018).
- Hospital Authority (2018b), "Cataract Surgeries Programme (CSP)", Public-Private Partnership, available at: www3.ha.org.hk/ppp/csp.aspx?lang=eng (accessed 15 March 2018).
- Hospital Authority (2018c), "Elective surgery", Hospital Authority, available at: www.ha.org.hk/visitor/ha_visitor_text_index.asp?Content_ID=214172&Lang=ENG&Dimension=100&Parent_ID=10042&Ver=TEXT (accessed 20 March 2018).
- Hospital Authority (2018d), "Waiting time for total joint replacement surgery", Hospital Authority, available at: www.ha.org.hk/visitor/ha_visitor_index.asp?Content_ID=221223&Lang=ENG&Dimension=100&Parent_ID=214172&Ver=HTML (accessed 2 February 2018).
- Johnston, J.M., Leung, G.M., McGhee, S.M. and Castan-Cameo, S. (2007), "Does waiting time for specialist out-patient appointments affect clinic attendance and doctor shopping in Hong Kong?", *Hong Kong Medical Journal*, Vol. 13 No. 4, pp. 37-40.
- Kaplan, W., Wirtz, V.J., Mantel-Teeuwisse, A., Stolk, P., Duthey, B. and Laing, R. (2013), "Priority medicines for Europe and the World 2013 update", World Health Organization, available at: www.who.int/medicines/areas/priority_medicines/MasterDocJune28_FINAL_Web.pdf?ua=1 (accessed 2 February 2018).
- Knight, S.R., Aujia, R. and Biswas, S.P. (2011), "Total hip arthroplasty – over 100 years of operative history", *Orthopedic Reviews*, Vol. 3 No. 2, p. e16, available at: <http://doi.org/10.4081/or.2011.e16>
- Lee, K.H. and Gillett, S. (2010), "Introducing pay-for-performance within Hong Kong's public hospitals", *BMC Health Services Research*, Vol. 10 No. S2, p. A17.
- Lee, Q.J., Mak, W.P. and Wong, Y.C. (2016), "Mortality following primary total knee replacement in public hospitals in Hong Kong", *Hong Kong Medical Journal*, Vol. 22 No. 3, pp. 237-241, available at: <http://doi.org/10.12809/hkmj154712>

- Legislative Council (2012), "Waiting time for public hospital services", Legislative Council, available at: www.info.gov.hk/gia/general/201202/08/P201202080335 (accessed 20 March 2018).
- Legislative Council (2018), "Paper on review of the Hospital Authority prepared by the Legislative council secretariat (updated background brief)", Legislative Council, available at: www.legco.gov.hk/yr17-18/english/panels/hs/papers/hs20180115cb2-656-4-e.pdf (accessed 18 May 2018).
- Leong, C.Y. (2017), "HOSPITAL AUTHORITY ordinance (Chapter 113) – Revision of List of Charges", The Government of the Hong Kong SAR – Gazette, available at: www.gld.gov.hk/egazette/pdf/20172124/egn201721243884.pdf (accessed 22 March 2018).
- Leung, L.P., Cheng, Y.W. and Fan, K.L. (2011), "Evaluation of the appropriateness of acute hospitalisations in Hong Kong", *Hong Kong Journal of Emergency Medicine*, Vol. 18 No. 5, pp. 277-281.
- Lo, C.K., Lee, Q.J. and Wong, Y.C. (2017), "Predictive factors for length of hospital stay following primary total knee replacement in a total joint replacement centre in Hong Kong", *Hong Kong Medical Journal*, Vol. 23 No. 5, pp. 435-440, available at: <http://doi.org/10.12809/hkmj166113>
- Manner, P.W. (2016), "Knee replacement implants", OrthoInfo, April, available at: <https://orthoinfo.aaos.org/en/treatment/knee-replacement-implants/> (accessed 4 February 2018).
- Poon, P. (2017), "Re: feedback on the strategic review on healthcare manpower planning & professional development – physiotherapists", Legislative Council, available at: www.legco.gov.hk/yr16-17/english/panels/hs/papers/hs20170619cb2-1697-1-e.pdf (accessed 12 April 2018).
- Purdy, S. (2010), *Avoiding Hospital Admissions: What Does the Research Evidence Say*, The King's Fund, London.
- Rosano, A., Loha, C.A., Falvo, R., Van Der Zee, J., Ricciardi, W., Guasticchi, G. and De Belvis, A.G. (2013), "The relationship between avoidable hospitalization and accessibility to primary care: a systematic review", *The European Journal of Public Health*, Vol. 23 No. 3, pp. 356-360.
- Selfe, T.K. and Taylor, A.G. (2008), "Acupuncture and Osteoarthritis of the Knee: a review of Randomized, controlled trials", *Family & Community Health*, Vol. 31 No. 3, pp. 247-254.
- St Paul's Hospital (2015), "Reference charges for common surgical procedures (accommodation in standard wards)", St Paul's Hospital, available at: www.stpaul.org.hk/internet/assets/charges/surgical/en_reference.pdf (accessed 4 February 2018).
- The Hong Kong Medical Association (1999), "Press release – HKMA Calls for sensible use of healthcare services", available at: www.hkma.org/english/newsroom/flu.htm (accessed 14 July 2016).
- Tristano, V., Lantieri, F., Tornago, S., Gramazio, M., Carriere, E. and Camera, A. (2015), "Effectiveness of psychological support in patients undergoing primary total hip or knee arthroplasty: a controlled cohort study", *Journal of Orthopaedics and Traumatology*, Vol. 17 No. 2, pp. 137-147.
- Union Hospital (2017), "Charges of common surgery of April to September 2017 in union hospital", Union Hospital, available at: www.union.org/new/english/charges/files/CCSUH_eng.pdf (accessed 4 February 2018).
- Viberg, N., Forsberg, B., Borowitz, M. and Molin, R. (2013), "International comparisons of waiting times in health care – limitations and prospects", *Health Policy*, Vol. 112 Nos 1-2, pp. 53-61.
- WD Scott & Co. (1985), "The delivery of medical services in hospitals: a report for the Hong Kong Government", WD Scott & Co., Hong Kong.
- Woo, J., Lau, E., Lau, C., Lee, P., Zhang, J., Kwok, T., Chan, C., Chiu, P., Chan, K.M., Chan, A. and Lam, D. (2003), "Socioeconomic impact of osteoarthritis in Hong Kong: utilization of health and social services, and direct and indirect costs", *Arthritis Care & Research*, Vol. 49 No. 4, pp. 526-534, available at: <https://doi.org/10.1002/art.11198>
- Yan, C.H., Chiu, K.Y. and Ng, F.Y. (2011), "Total knee arthroplasty for primary knee osteoarthritis: changing pattern over the past 10 years", *Hong Kong Medical Journal*, Vol. 17 No. 1, pp. 20-25, available at: <http://doi.org/10.3892/etm.2017.4799>

- Yang, T.H., Yeh, W.L., Chen, H.Y., Chen, Y.F., Ni, K.C. and Lee, K.H. (2013), "Compare the Traditional Chinese medicine manipulation with rehabilitation on in-patients after total knee arthroplasty", *The Journal of Arthroplasty*, Vol. 28 No. 6, pp. 954-959.
- Yuen, W. (2014), "Osteoarthritis of knees: the disease burden in Hong Kong and means to alleviate it", *Hong Kong Medical Journal*, Vol. 20 No. 1, pp. 5-6.
- Zhang, Y.Q., Xu, L., Nevitt, M.C., Aliabadi, P., Yu, W., Qin, M.W., Lui, L.Y. and Felson, D.T. (2001), "Comparison of the prevalence of knee osteoarthritis between the elderly Chinese population in Beijing and whites in the United States: the Beijing osteoarthritis study", *Arthritis & Rheumatology*, Vol. 44 No. 9, pp. 2065-2071.

Further reading

- Food and Health Bureau (2010), *Primary Care Development in Hong Kong: Strategy Document*, Hong Kong Government, Hong Kong.
- Hong Kong Government (1990), *Health for All, the Way Ahead: Report of the Working Party on Primary Health Care*, Hong Kong Government, Hong Kong.
- Hospital Authority (2008), "Introduction to HA Chinese medicine service. Hospital Authority Chinese Medicine Service Website, available at: www.ha.org.hk/chinesemedicine/clinic/new/intro.asp?lan=en (accessed 13 April 2018).
- Luk, S.C.Y. (2014), "The Politics of health care financing reforms in Hong Kong: lessons of the Tung and Tsang administration", *Public Administration and Policy*, Vol. 17 No. 1, pp. 15-31.

About the authors

Yee-man Tsui holds a Bachelor of Science Degree in Applied Sciences (Health Studies) from the School of Professional Education and Executive Development, The Hong Kong Polytechnic University. She is interested in the healthcare industry and has worked for the pharmaceutical companies as the medical representative, and the sales and marketing assistant. Yee-man Tsui is the corresponding author and can be contacted at: yeeyekaren@yahoo.com.hk

Ben Y.F. Fong is Family Doctor and Specialist in Community Medicine, currently Senior Lecturer, Award Leader in Health Studies and Scheme Leader of Applied Sciences in HK PolyU SPEED. Fong had his medical training at the Royal Prince Alfred Hospital of The University of Sydney, Australia, where he was also awarded the Master of Public Health degree. He has post-graduate qualifications in medical administration, community medicine, family medicine and occupational medicine. In over 30 years of his professional career, he has served in public, private and university healthcare facilities, both in Hong Kong and Sydney. He has commissioned and managed two local hospitals. He has served as Director of University Health Service of a local university and as Deputy Medical Superintendent of Prince Henry Hospital, a teaching hospital of the University of New South Wales, Australia. Academically, Fong has taught medical and Chinese medicine students, and supervised postgraduate candidates in public health and family medicine for years. He has contributed to publications, books, public talks and is a reviewer of local and international journals.

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com