

# Promoting integrated healthcare for Hong Kong and Macau residents in the Greater Bay Area during the COVID-19 pandemic

Pearl MC Pai<sup>1,2</sup> \*, MD, FRCP, Joe KM Fan<sup>2,3</sup>, MS (HKU), FRCSEd, William CW Wong<sup>2,4</sup>, MD, FRCP, XF Deng<sup>5</sup>, MBA, XP Xu<sup>5</sup>, MD, CM Lo<sup>2,3</sup>, MS (HKU), FRCSEd

<sup>1</sup> Department of Medicine, The University of Hong Kong–Shenzhen Hospital, Shenzhen, China

<sup>2</sup> School of Clinical Medicine, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong SAR, China

<sup>3</sup> Department of Surgery, The University of Hong Kong–Shenzhen Hospital, Shenzhen, China

<sup>4</sup> Department of Family Medicine, The University of Hong Kong–Shenzhen Hospital, Shenzhen, China

<sup>5</sup> Clinical Service, The University of Hong Kong–Shenzhen Hospital, Shenzhen, China

\* Corresponding author: ppai1@hku.hk

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The coronavirus disease 2019 (COVID-19) pandemic has affected the world health system drastically, almost rendering it beyond recognition. At the height of the pandemic, many patients were unable to access the healthcare they desperately needed because hospitals were overwhelmed and exhausted. Hospitals in many places have been pushed to the edge of collapse, unable to admit patients for essential care or provide outpatient services as part of ongoing chronic disease management.

When the COVID-19 pandemic began in mainland China, many permanent residents of Hong Kong living in Guangdong Province were unable to return home for their clinic appointments under the Hong Kong Hospital Authority (HA) due to quarantine and travel restrictions between Hong Kong and mainland China. In 2020, the Government of the Hong Kong Special Administrative Region (HKSAR), the Shenzhen Municipal Government, and The University of Hong Kong–Shenzhen Hospital (HKU-SZH) agreed to initiate and operate a HA special support scheme under which such patients could use the clinical services available at HKU-SZH to meet their needs.

## Brief overview of The University of Hong Kong–Shenzhen Hospital and its mission

Hong Kong and Shenzhen are separated by the Shenzhen River and are some 35 kilometres apart. The HKU-SZH is a joint project between HKU and the Shenzhen Municipal Government and was formed in 2011 as part of the Chinese health reform.<sup>1</sup> In less than a decade, it has been awarded Australian Council on Healthcare Standards accreditation and was granted the status of a ‘Grade 3A’ hospital (the highest ranking given by the national hospital accreditation system of mainland China) as well as several other prestigious awards. In the 2020 Development Report on Health Reform in China,<sup>2</sup> HKU-SZH has been

noted as having been instrumental in the Chinese health reform. In fact, this is one of the missions that the Hospital was designed and built. Many innovative service models have been introduced, including the primary-secondary care interface and the package fee for family medicine consultation; these have subsequently drawn much attention from other hospitals. Above all, it was expected to integrate the best Western model of healthcare delivery with the best Chinese model, thereby providing a socialistic approach to medicine with Chinese characteristics. The Hospital has been working hard on this and making progress.

## Use of Elderly Health Care Vouchers in The University of Hong Kong–Shenzhen Hospital

In 2009, the Hong Kong SAR Government established the Elderly Health Care Voucher (EHCV) Scheme to support its elderly residents. Those who are eligible currently receive HK\$2000 (equivalent to US\$250) per year. Since October 2015, to increase utilisation of the Scheme, the Hong Kong SAR Government has allowed eligible elderly patients to pay for treatment at HKU-SZH with their EHCVs. Since its launch, HKU-SZH has recorded over 45 000 EHCV patient episodes or outpatient attendances. In the process, the Hospital has established a payment mechanism with the HA for reimbursement, which will likely be useful in the future for similar schemes. The Scheme is in line with the Central Government’s policy of enabling hospitals with similar backgrounds to provide quality healthcare for residents of Hong Kong living in the Guangdong-Hong Kong-Macau Greater Bay Area (GBA).<sup>3</sup>

## Hong Kong SAR Government’s special support scheme and its implementation

In 2020, the Hong Kong SAR Government estimated

that between 18 000 to 38 000 Hong Kong residents living in Guangdong Province were attending HA clinics in Hong Kong for chronic disease management.<sup>4</sup> Because of the travel restrictions during the COVID-19 pandemic, many of them were unable to return to Hong Kong and had to depend on postal delivery of their repeat prescriptions. In late 2020, the HKSAR Government decided to set up the HKSAR Government Special Support Scheme for Hospital Authority Chronic Disease Patients Living in the Guangdong Province to Sustain Their Medical Consultation under COVID-19 (the Support Scheme). Under the Support Scheme, patients who had HA appointments between 17 February 2020 and 31 July 2021 and were unable to return to Hong Kong for their HA appointments because of the pandemic-related travel restrictions were allowed to use the following HA outpatient services at HKU-SZH: family medicine, medical and surgical specialties, ophthalmology, gynaecology, oncology, orthopaedics, paediatrics, and the pain clinics. Each patient received 2000 yuan per year (equivalent to US\$300) which could be used to pay for outpatient investigations and medications at designated clinics at HKU-SZH providing clinical services offered by the HA to carry out the Support Scheme. The expiry date of the scheme was later extended to May 2023.

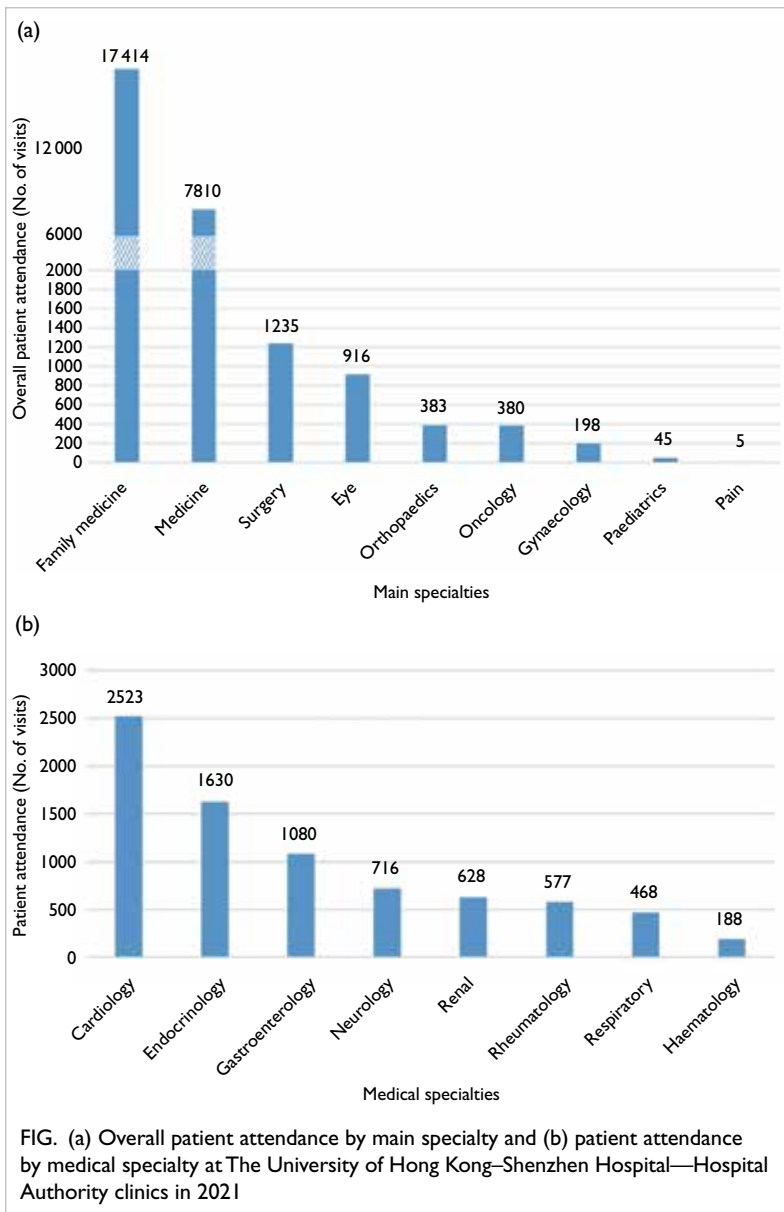
Because the HA and HKU-SZH had been working well together under the EHCV Scheme, HKU-SZH was invited to run the new Support Scheme. To set up the special HKU-SZH–HA clinics, HKU-SZH developed a smartphone application with which patients could request an appointment. When doing so, patients will be asked to upload their HA appointment slips and to authorise HKU-SZH to apply for their electronic health records and access their personal health details from the HA. The application is then checked at the HKU-SZH appointment booking centre before being forwarded to the HA electronically as encrypted data. Once the application is processed by the HA, encrypted copies of the patient's eHealth file will be transmitted to HKU-SZH where a clinic appointment is generated. All these actions are done with the consent of the patients and the secure storage and transmission of the data is supported and protected by information technology infrastructure, cybersecurity and data security laws, and, more recently, by the Personal Information Protection Law of China. The patients must pay a consultation fee of 100 yuan (equivalent to US\$15), similar to mainland residents, as well as any excess charges.

Additionally, a special telephone line and walk-in enquiry desk with Cantonese-speaking staff have been set up. There is also clear signage at the outpatient reception, payment counter, and medication collection window. The logo was designed

using the HA pantone colour, which is familiar to patients from Hong Kong. Each department at the Hospital has selected its most suitable doctors in terms of languages and experience to staff the clinics. It should be noted that many of the Hospital's doctors have been taught and trained in mainland China and therefore have limited English ability. Prior to the opening of HKU-SZH–HA clinics in November 2020, several orientation sessions were held, including a briefing session in which the then-Hospital Chief Executive Professor Chung-mau Lo delivered an encouraging speech. He emphasised the importance of the Support Scheme and explained to the doctors the usual HA clinic process and behaviours and expectations of its patients. The doctors were reminded of the brief nature of many HA clinic letters, their frequent use of abbreviations, and the use of English medication names, and that they might need some time to become familiar with all these.

### **Analysis of implementation of The University of Hong Kong–Shenzhen Hospital–Hospital Authority clinics: a step towards connection and integration**

The HKU-SZH conducted a performance analysis of its HKU-SZH–HA clinics in March 2021, some 5 months after their opening. A total of 11 000 enquires and 10 938 patient episodes or clinic attendances had been recorded in the Hospital under the Support Scheme. The mean age of the patients was  $65.5 \pm 13.5$  years (range, 1–103). The male-to-female ratio was 2.13:1. From 1 January to 31 December 2021, there were 28 386 attendances or patient episodes (Fig a). The most utilised clinics were the chronic disease clinic (17 414 attendances) served by the family medicine physicians, followed by the medical specialty clinics (7810 attendances). Figure b shows the patient distribution among the eight medical specialties; there was good cooperation between the family medicine doctors and specialty doctors for onward referral, which helped to drive up the utilisation of these clinics. The 10 most common conditions for which patients received treatment were hypertension, diabetes, coronary artery disease, ischaemic heart disease, dyslipidaemia, aftercare of post-coronary artery stent, gout, atrial fibrillation, chronic kidney disease, and chronic obstructive pulmonary disease. Feedback from doctors and patients of HKU-SZH–HA clinics was mostly positive. Although the scope of the Support Scheme was rather limited, it was extraordinarily significant. It demonstrated that, despite assorted difficulties, integrated medical care is working and sustaining.



## Experiences shared and humble wishes

The HA has been providing quality yet affordable, and almost free, healthcare services to its patients in Hong Kong. As the GBA becomes increasingly popular as a place for work, living, and retirement for Hong Kong residents, how could the HA health service follow, serve, and protect them when they venture into the GBA and beyond? Their decision whether to relocate to a new residing place in the GBA or not would be very much influenced by the availability and affordability of healthcare there. The successful management of the EHCV Scheme and the Support Scheme by HKU-SZH indicates possible directions for the future, but the additional funding or support required for implementation of similar

schemes might be very costly and warrant serious consideration.

If we were to improve the integrated healthcare delivery at HKU-SZH, the highest priorities would be to streamline the application process for patients, speed up the transmission of patient records between healthcare providers in Hong Kong and Shenzhen, and enable mutual recognition of laboratory and radiology reports to avoid duplicated tests and waste.

## Government plans to connect and integrate medical services in the Greater Bay Area

In October 2020, the General Office of the Chinese State Council proclaimed a directive entitled ‘Implementation Plans on Building Shenzhen into a Pilot Demonstration Zone of Socialism with Chinese Characteristics.’<sup>3</sup> The title is clear enough to convey to the nation what the Central Government wants from and for the nation itself and its people—a model of a modern metropolis within a strong nation under socialism with Chinese characteristics, of which a world-leading health service is an indispensable component. Answering its call, the Shenzhen Municipal Government released its own guideline and the ‘Implementation Plan for the Pilot Comprehensive Reform of Building a Pilot Demonstration Zone of Socialism with Chinese Characteristics in Shenzhen’ (the ‘Pilot Reforms Plan’) to coincide with its 40th anniversary as a Special Economic Zone. Among the most important purposes of the ‘Pilot Reforms Plan’ is to increase cross-border connection and integration of medical services between Hong Kong and Shenzhen, as well as any other borders in the GBA.<sup>5</sup> In short, this is another ‘open for reform’ following the one launched in 1978. In its 11 measures, it asks both sides of the border to relieve the congestion of healthcare in the GBA; promote better circulation of healthcare resources; allow Shenzhen residents to access good and qualified Hong Kong doctors; enable the use of advanced medications from Hong Kong; allow Hong Kong and Macau residents to receive good healthcare in mainland China; simplify the transfer of patients across the border; speed up the evaluation process and approval of health projects; and publicise the successful work of HKU-SZH under the special Support Scheme and the EHCV scheme and its successful payment mechanism. Hopefully as a result, other approved hospitals in Shenzhen may join the integrated medical services and utilise the payment mechanism to provide good and reliable services to Hong Kong residents and their families living in Shenzhen and GBA in the future. Together, the Directive and the Pilot Reforms Plan have covered cross-border connection and integration in every sector of healthcare, extending from teaching, training, and practice of healthcare

workers to medications and hospital management. Here, in the 11 measures mandated, as the challenges for connection and integration have been itemised, something can be done to meet them.

## Connection and integration achieved

Following the proclamation of the Directive and the Pilot Reforms Plan, and under pressure from the pandemic, the following practical actions have taken place. In August 2021, Shenzhen had accredited and granted 37 senior doctors working in HKU-SZH and from Hong Kong the Chinese title of chief physician.<sup>6</sup> It marked the first time Shenzhen had awarded this senior professional title to Hong Kong doctors working in the city. Similarly, the HKU School of Clinical Medicine has awarded honorary titles, such as associate professorships, to doctors from mainland China working in HKU-SZH. These actions have demonstrated some mutual recognition of medical qualifications and competencies. Additionally, the Shenzhen Health Commission has granted limited medical registration to several doctors from Hong Kong and Macau allowing them to practise locally. The implementation of the ‘Hong Kong and Macau Medicines and Devices policy’<sup>7</sup> in November 2021 has been another effort to provide integrated healthcare for Hong Kong and Macau residents living in the GBA. Up to May 2023, under the special permit, 20 drugs and 11 medical devices and reagents have been approved and imported by HKU-SZH for use. It has shared its experience with four other pilot hospitals in the GBA. It has also been asked to develop a standard operating procedure for cross-border connections related to the import of drugs and medical devices which has been proven useful to healthcare workers on both sides.

Medical training of international standard is also taking shape in Shenzhen. Hundreds of HKU medical students used to attend clinical attachment in HKU-SZH until it was disrupted by the pandemic. To speed up the integration of medical training, in September 2021, the Shenzhen Health Commission had approved the development of a pilot specialist training programme by HKU-SZH through the Shenzhen–Hong Kong Medical Specialist Training Centre<sup>8</sup> and with the full support of the Hong Kong Academy of Medicine, the respective specialty Colleges of Hong Kong, and the Shenzhen Medical Doctors Association. A new medical school of The Chinese University of Hong Kong is also under construction in Shenzhen.<sup>9</sup>

The cross-border connection and integration are progressing rapidly in multiple directions and levels. All the measures discussed here, as well as several others, are important and effective in accelerating the pace of cross-border connection and the integration

of medical services in Hong Kong, Shenzhen, Macau, the GBA, and beyond. All signs have shown that not only the connection and integration of medical services are working, but they will also be sustained and sustainable in the long run. The connection and integration programme has yielded good results and been proven successful and rewarding.

## Challenges and sustainability

There are many challenges in the connection and integration programme, including language barriers, varying medical training and backgrounds, differences in culture and governance, and shortage of human resources and funding. So far, these have been confronted and resolved successfully. The large number of episodes of connection and integration discussed above suggests that connection and integration in healthcare have been succeeding, sustained, and striding on within a rather short period of time. The COVID-19 pandemic provided a bitter lesson to the Central Government and its people that a pandemic can harm and destroy a government, regime, metropolis, nation, and people. There is no better defence than good healthcare, and the most expedient and least expensive way to possess it is through continuing and sustainable connection and integration with world class healthcare systems. Although this is a difficult task, it is achievable, especially so in GBA with its abundant resources.

## Promotion of connection and integration under the fifth wave of COVID-2019 in Hong Kong

The fifth wave of COVID-19 in Hong Kong accelerated the pace of forming healthcare connections and partnerships between Hong Kong and mainland China. The mainland Chinese healthcare workers started to arrive in Hong Kong in the middle of March 2022 when the fifth wave of COVID-19 began. A total of 391 medical workers, mainly from Guangdong Province, arrived at the community treatment facility at AsiaWorld-Expo.<sup>10</sup> Within a week, they had learned on the job the Hong Kong nursing standard operating procedure and information technology structure and were working side by side with their HA workmates. Meanwhile, at Lok Ma Chau, some 20000 mainland Chinese workers finished building a massive makeshift hospital within weeks.<sup>11</sup> The mainland Chinese healthcare workers went and served wherever and whenever they were needed. Their knowledge, skill, enthusiasm, good manner, and ethics impressed the patients, their Hong Kong colleagues, and the public. As the fifth wave of COVID-19 faded in Hong Kong and the Chinese healthcare workers were packing to return home, there were many favourable

reports at all levels regarding the support provided by them and the Central Government.<sup>10</sup> The positive experiences and encounters of medical workers on both sides during the COVID-19 pandemic have led to the belief that mutual learning, concern, assistance, and cooperation, between the two different medical systems are achievable and will be helpful in providing quality healthcare in the GBA and beyond. These experiences undoubtedly serve as one of the best ways to promote the programme of connection and integration.

## Summary

Both the Central and the Hong Kong SAR Governments are determined to build a healthy nation and city. Just as the fifth wave of COVID-19 stabilised, Hong Kong's Chief Executive-elect Mr John Lee pledged on 29 April 2022, to develop a better health service and caring society for Hong Kong in his policy manifesto.<sup>12</sup> Meanwhile the Central and Shenzhen Governments have continued to engage in building Shenzhen into a model and modern metropolis in a strong nation under socialism with Chinese characteristics to be followed by future Chinese cities. Hong Kong, Shenzhen, and Macau, the 'Tri-Cities', are asked to enhance their participation in and contribution to the grand development of the GBA. The GBA is expanding and flourishing. Using well of the talent, wisdom, intelligence, experience, and resources of their cities and their residents, Hong Kong will continue to show its caring character, and Shenzhen will develop itself into an ultra-modern metropolis in a strong nation under socialism with Chinese characteristics.

## Author contributions

Concept or design: PMC Pai, JKM Fan, WCW Wong, XP Xu, CM Lo.

Acquisition of data: XF Deng.

Analysis or interpretation of data: PMC Pai, JKM Fan, WCW Wong.

Drafting of the manuscript: PMC Pai.

Critical revision of the manuscript for important intellectual content: All authors.

All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

## Conflicts of interest

All authors have disclosed no conflicts of interest.

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## Ethics approval

The Medical Ethics Committee of The University of Hong Kong-Shenzhen Hospital has waived the need for ethics approval and patient consent for this study.

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