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隨着政府在2023年3月1日撤銷強制佩戴口罩的要求，香港從2019冠狀病毒病疫情中復常。「安心出行」流動應用程式、「疫苗通行證」和「香港健康碼」已完成其任務。政府亦分別於2022年12月29日和2023年1月30日起不再發出密切接觸者的檢疫令和感染人士的隔離令。香港與內地於2023年2月初全面通關。這些里程碑都是香港抗疫的標記。

回顧過去三年的歷程，由於疫情發展、疾病控制措施和用戶需求迅速變化，資訊科技系統往往要在極緊迫的時間內完成設計和構建。這幾年間，衛生署轄下的衛生資訊與科技辦公室一直努力不懈，建立多個資訊科技系統，協助抗擊疫情。

With the lifting of mask mandate on 1 March 2023, Hong Kong has by and large resumed normalcy from COVID-19. The LeaveHomeSafe mobile application, the Vaccine Pass, as well as the Hong Kong Health Code have completed their missions. Quarantine orders for close contacts and isolation orders for infected persons are also no longer issued starting from 29 December 2022 and 30 January 2023 respectively. Normal travel between Hong Kong and the Mainland was fully resumed in early February 2023. All these milestones recorded Hong Kong's fight against the COVID-19 epidemic.

Recounting the journey in the past 3 years, as the epidemic situation, disease control measures and users' requirements were rapidly changing, the information technology (IT) systems needed to be designed and built under extreme time pressure. The Health Informatics and Technology Office (HITO) of the DH worked relentlessly in the past few years to build a number of IT systems to battle against COVID-19.





## 目標 Objectives

透過各資訊科技系統，能有效使用直接從數據提供者（例如旅客、感染人士或醫療服務提供者）取得的準確數碼資料、以快速及安全的方式處理海量的數據流量和使每個工作點都能夠使用單一來源的數據集，以便能加快籌備和推行各層面的公共衛生行動和全港性的疾病控制措施。

資訊科技系統為衛生防護中心和衛生署有關服務單位的多項職能提供核心支援，包括港口衛生控制、2019冠狀病毒病確診者的流行病學調查和管理、接觸者追蹤、檢疫、隔離、醫學監測、化驗所檢測、監管執法及風險傳達。系統亦為出入境旅客和一般公眾提供服務。

此外，這些資訊科技系統以實時和安全的方式管理，及讓不同持份者（如醫院管理局及隔離和檢疫設施的管理人員）均能分享所需的實用數據。

Various IT systems aimed to empower the use of accurate digital data obtained directly from data providers like travellers, infected persons or healthcare providers, manage a colossal amount of data flow in a fast and secure manner and enable each working point to utilise the single source of dataset, so that public health actions and territory-wide disease control measures at all levels can be expeditiously devised and rolled out.

The IT systems provided core support to a wide array of functions of the CHP and related service units of the DH, including port health control, epidemiological investigation and management of COVID-19 confirmed cases, contact tracing, quarantine, isolation, disease surveillance, laboratory testing, law enforcement monitoring and risk communication. The systems also provide service to inbound or outbound travellers and the public.

Besides, the IT systems managed and allowed sharing of useful data among a spectrum of stakeholders, such as the Hospital Authority (HA) and parties managing isolation and quarantine facilities, in a real-time and secure manner.





## 處理入境旅客 Handling Inbound Travellers



在2019冠狀病毒病疫情的最初期，所有入境旅客必須在邊境管制站填寫紙本健康申報表。衛生署港口衛生科的人員需要即場以人手收集和檢查表格，並在表格上標記編號和收集日期。這種方法不但耗費大量人手，而當旅客被證實是2019冠狀病毒病確診者時，要從大量的紙本文件中尋回有用的資訊作個案調查和接觸者追蹤極之欠缺效率，亦不可能及時編制統計數據作跨境疫情管控。

At the initial stage of the COVID-19 epidemic, all inbound travellers were required to fill in paper health declaration forms at boundary control points. Staff of the Port Health Division (PHD) of the DH had to collect, check, mark serial numbers and collection dates on the forms collected on the spot manually. The process was not

only labour intensive, but also highly inefficient in retrieving useful information from the huge piles of paper for case investigation and contact tracing when a traveller was confirmed to be a COVID-19 case. Timely Compilation of statistics to facilitate cross-boundary epidemic control was also impossible.





有見及此，衛生資訊與科技辦公室於短時間迅速開發了「電子健康申報表」系統。該系統於2020年1月29日在廣深港高鐵西九龍站率先試行。「電子健康申報表」系統隨後於2020年3月8日引入香港國際機場，並於2020年3月21日起在其他邊境管制站使用。

入境旅客填寫「電子健康申報表」系統所需的資料後，系統會發出一個有顏色的二維碼。入境旅客可把二維碼保存在流動裝置中以便向各個管制站的港口衛生科人員展示，以加快整個入境流程。新系統獲得到多方的廣泛認可，包括管制站人員及市民。

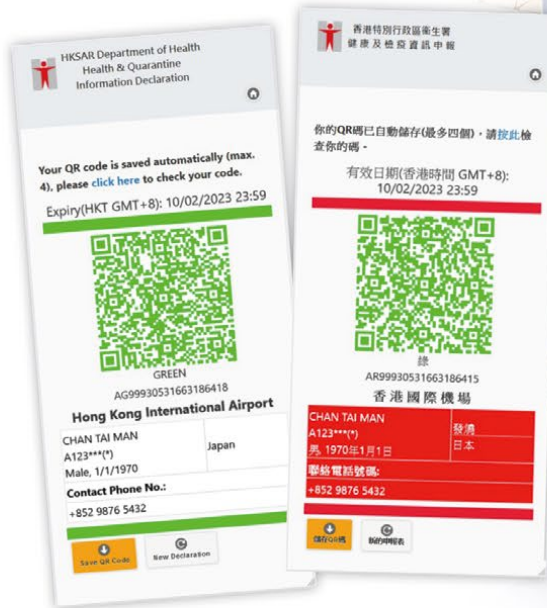
「電子健康申報表」其後提升為「健康及檢疫資訊申報系統」，並於2020年5月21日投入運作。系統提升後具備新功能，包括自動發出強制檢疫令及支援入境旅客等候「檢測待行」（即旅客須等待檢測結果後才能放行）的流程。前線人員亦可以運用相同的數據集，向入境旅客暢順地執行各種港口衛生控制措施。新功能有助識別同行旅客、配對他們的2019冠狀病毒病化驗結果和確保適時放行呈陰性檢測結果的入境旅客，節省了大量的人手工作。



In view of this, the HITO developed in a short period of time the 'Electronic Health Declaration Form' (eHDF) system, which was first put into pilot use on 29 January 2020 at the Guangzhou-Shenzhen-Hong Kong Express Rail Link West Kowloon Station. The system was then introduced at the Hong Kong International Airport (HKIA) on 8 March 2020 and at other boundary control points from 21 March 2020 onwards.

After inbound travellers filled in the information required on the eHDF system, a coloured Quick Response (QR) code would be generated. Inbound travellers could keep the QR code in their mobile devices and present them to the PHD staff at various control points so as to expedite the entire arrival process. The new system gained wide acceptance by various parties, including staff at control points and members of the public.

The eHDF was later upgraded to the 'Health & Quarantine Information Declaration System' (eHDF&eQO), which was put into use on 21 May 2020. New functions incorporated into this augmented system include allowing automatic issuance of compulsory quarantine orders, and supporting the Test-and-Hold workflows for inbound travellers (i.e. inbound travellers have to wait for test results before release). Frontline staff could use the same dataset to seamlessly manage various port health control measures for inbound travellers. The new functions helped identify the collateral of travellers, match their COVID-19 laboratory test results and ensure timely release of inbound travellers once the negative test results were received. As a result, a vast amount of manual efforts was saved.



過去三年，隨着疫情演變，港口衛生措施政策亦須迅速調整，當中包括更改收集和檢查外遊記錄的準則、2019 冠狀病毒疫苗接種的要求、出發前的核酸或快速抗原測試的流程、檢疫安排及地點、檢疫酒店預訂及交通流程等。這些變更促使各系統須要進行多次緊急更新。衛生資訊與科技辦公室一直盡心盡力在極緊迫的時間內實行有關更新。

在陸路口岸方面，「健康及檢疫資訊申報系統」連接廣東省的「粵康碼」及澳門的「健康碼」，讓離境或入境旅客在自願的情況下自動填寫電子健康申報表。該系統亦可查核這些跨境碼系統之間已驗證的陰性核酸檢測結果。此外，「健康及檢疫資訊申報系統」亦可核對入境旅客是否符合「回港易」及「來港易」計劃的資格，並支援香港陸路邊境管制站的快速入境檢查流程。

自2022年8月起，入境旅客亦可於「健康及檢疫資訊申報系統」自行下載強制檢疫令及臨時疫苗通行證，無需前往香港國際機場由港口衛生科管理的服務櫃檯辦理手續，大大提高他們逗留香港的便利性。

在衛生資訊與科技辦公室和港口衛生科的專業和緊密合作下，所有功能都在非常緊迫的時間內成功推出。各項系統開發和提升均有助港口衛生控制措施更有效，用戶體驗更流暢。

In the past three years, there were rapid changes to the epidemic situation and adjustments in policies for port health measures. Examples included changes to the criteria for collecting and checking travel history, criteria for COVID-19 vaccination, logistics for pre-departure polymerase chain reaction nucleic acid test (PCR) or rapid antigen test (RAT), quarantine arrangements and sites, booking of quarantine hotels and transport logistics, etc. These changes required urgent enhancements of the systems. The HITO had always made all-out effort to implement the enhancements under extreme time pressure.

At land boundary control points, the eHDF&eQO interfaced with the Guangdong's Yuekang Code and Macao's Health Code to enable voluntary and automated form filling for outbound or inbound travellers. It also supported checking of validated negative PCR test results between these cross-border code systems. Besides, the eHDF&eQO could check inbound travellers' eligibility under the Return2HK and Come2HK Schemes as well as support fast track immigration clearance at Hong Kong's land boundary control points.

Starting from August 2022, inbound travellers could also download the compulsory quarantine orders and provisional vaccine passes themselves through the eHDF&eQO without going through the PHD manned counters at the HKIA. These greatly increased their convenience of staying in Hong Kong.

With the professional and intensive collaboration between the HITO and the PHD, all functions were rolled out successfully under very pressing and tight schedules. These developments and enhancements had contributed to effective port health control and smooth user experience.





# 檢疫 Quarantine

衛生資訊與科技辦公室在2020年7月知悉竹篙灣檢疫中心在處理密切接觸者資料時遇到困難後，隨即成立一隊資訊科技團隊，並聯絡在竹篙灣檢疫中心工作的醫務人員及民安隊職員，了解他們日常工作流程和需要。衛生資訊與科技辦公室迅速地與管理層及營運層面的不同持份者共同進行多次實地考察和會議，以制定配合他們執行職務的功能。

「檢疫中心管理系統」於2020年8月推出，為點對點隔離措施提供自動化功能。「檢疫中心管理系統」讓檢疫中心的入住登記、房間使用監察和房間分配更改等功能自動化。這些即時資訊有助檢疫中心順暢運作，而檢疫中心不同崗位的職員也能夠及時了解檢疫中心的最新情況。與其他2019冠狀病毒病資訊科技系統一樣，「檢疫中心管理系統」在整個2019冠狀病毒病疫情期間亦因應迅速變化的抗疫措施持續進行優化。



Knowing the difficulty in managing the information for close contacts under quarantine at the Penny's Bay Quarantine Centre (PBQC) in July 2020, the HITO immediately formed an IT team and approached staff of the medical posts and Civil Aid Service (CAS) staff working at the PBQC to get to know their workflow and requirements in day-to-day operations. A number of site visits and meetings were swiftly conducted together with various stakeholders at both management and operational level to help formulate the system functions needed to tie in with their operations.

In August 2020, the 'Quarantine Centre Management System' (QCMS) was launched, which automated end-to-end quarantine measures. The QCMS automated the check-in registration, room occupancy monitoring and room allocation changes of the Quarantine Centres (QCs). The instant information enabled smooth operation of the QCs. Officers from different posts at the QCs could timely know the latest conditions of the QCs. Same as other COVID-19 IT systems, the QCMS was enhanced throughout the COVID-19 epidemic to tie in with the changes to the epidemic measures.





為處理入境旅客被確定為密切接觸者及需要進行檢疫的情況，「檢疫中心管理系統」與「健康及檢疫信息申報系統」建立了系統連接。當入境旅客於檢疫中心進行入住登記時，檢疫中心工作人員可自動從「健康及檢疫資訊申報系統」中取得入境旅客的資料，大大節省輸入資料的時間。

「檢疫中心管理系統」亦與「2019冠狀病毒病個案處理及資訊分享平台」（「個案平台」）連接以取得密切接觸者的資料，以便檢疫中心的人員提前作出各項安排（例如檢疫中心分配、房間分配和交通安排），令密切接觸者的入住過程更流暢和快捷。

「檢疫中心管理系統」亦連接衛生防護中心轄下的公共衛生化驗服務處的「化驗所資訊管理系統」。「檢疫中心管理系統」支援檢疫中心的醫務人員為檢疫人士採集核酸檢測的樣本，向「化驗所資訊管理系統」提交檢疫人士的核酸檢測要求，並收取檢測結果。

透過「化驗所資訊管理系統」與「特定群組檢測計劃系統」（此系統支援全港性免費核酸檢測）的系統連接，「化驗所資訊管理系統」能把核酸檢測結果自動傳送至「特定群組檢測計劃系統」，然後發出短訊給檢疫人士。由於感染人士能及時取得核酸檢測結果，他們便可迅速轉介至醫院隔離和接受治療。

As there were cases where inbound travellers were identified as close contacts and required to undergo quarantine, a system interface was set up between the QCMS and the eHDF&eQO. Information of inbound travellers could be automatically retrieved from the eHDF&eQO upon their admission to the QCs, thereby saving a great deal of efforts on data input.

The QCMS was also connected with the 'COVID-19 Case Handling and Information Sharing Portal' (Case Portal) to obtain data of close contacts. It allows time for staff at the QCs to make prior arrangements such as assignment to the QCs, room allocation and transportation for a smoother and faster admission process for close contacts.

System interfaces were built between the QCMS and the Laboratory Information System (LIS) of the Public Health Laboratory Services Branch (PHLSB) of the CHP. The QCMS supported medical posts in the QCs to collect the PCR specimens from the confinees, submit the PCR test requests to and obtain the PCR test results from the LIS.

Through a system interface between the LIS and the Target Groups Testing Scheme (TGTS) system which supported territory-wide free PCR test operations, the LIS passed the PCR test results automatically to the TGTS system for generating short message service (SMS) to the confinees. With the improvement in obtaining the PCR test results in a timely manner, infected persons could be referred to a hospital for isolation and treatment promptly.





## 個案管理的資訊樞紐 Information Hub for Case Management

接觸者追蹤是阻截病毒傳播的基礎。在第三波疫情期間，政府加強人手以加快調查個案和追蹤接觸者。自2021年1月以來，政府設立了多個個案追蹤辦公室，為大量2019冠狀病毒病確診個案進行接觸者追蹤的工作。「個案平台」在2020年12月開始運作，旨在連接相關政府部門和機構（包括醫院管理局和化驗所等）及衛生署的相關資訊系統，以電子方式集中收集追蹤接觸者所需的資訊，並簡化以往單靠人手操作的資料收集、輸入和共享的程序。

「個案平台」是一個記錄所有2019冠狀病毒病個案和密切接觸者資訊的中央數據庫。「個案平台」亦支援數據收集、整合、避免數據重覆、驗證和分析，有助個案追蹤辦公室調查個案、追蹤接觸者、發出檢疫令和隔離

Contact tracing is fundamental to halt the spread of the virus. During the third wave of the epidemic, the Government strengthened manpower support to speed up case investigation and contact tracing. Since January 2021, the Government established a number of Contact Tracing Offices (CTOs) to conduct contact tracing for a huge number of confirmed COVID-19 cases. Launched in December 2020, the Case Portal aimed to link up relevant Government departments and organisations (including the HA, laboratories, etc.) and relevant information systems of the DH to collect information required for contact tracing centrally and electronically. It streamlined the procedures for information collection, input and sharing, which previously had been conducted manually.

The Case Portal served as the central registry of all COVID-19 cases and close contacts information. The Case Portal also supported data collection, integration, de-duplication, verification and analysis, which assisted the CTOs in investigating cases, tracing contacts, issuing quarantine orders and isolation orders and arranging admission of positive cases to hospitals of the HA. To coordinate and orchestrate anti-epidemic work, relevant Government

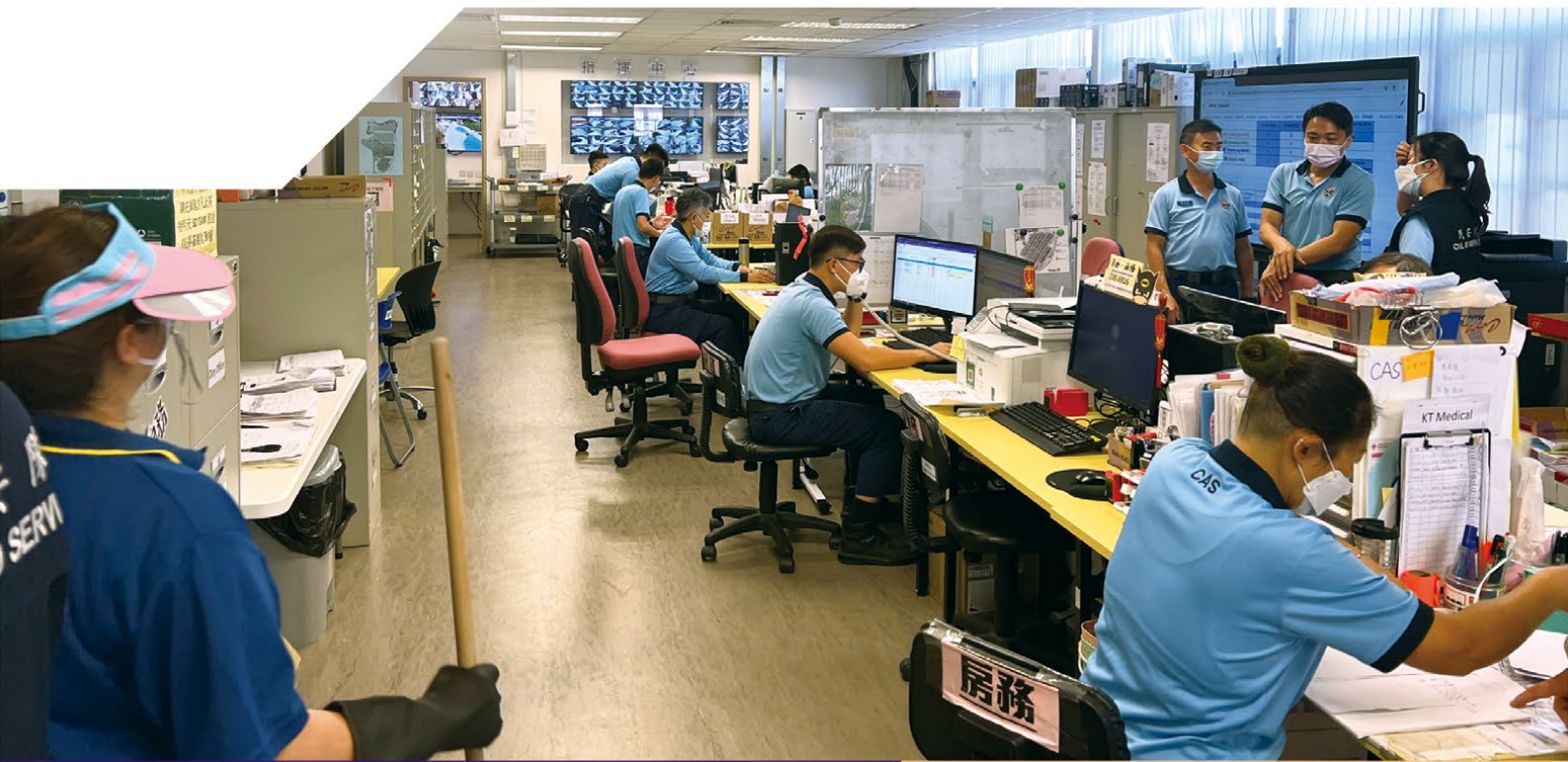


令及安排檢測陽性個案入住醫院管理局轄下的醫院。參與個案追蹤辦公室行動的相關政府部門可透過「個案平台」，共同分享及使用整個疾病控制工作流程中的重要資訊，以統籌和協調抗疫工作。

「個案平台」也向由地政總署開發的「地理空間資訊平台」提供2019冠狀病毒病個案資訊。「地理空間資訊平台」標示污水檢測結果和建築物的強制檢測結果，以便個案追蹤辦公室、醫務衛生局和其他相關政府部門清楚知悉香港2019冠狀病毒病的最新情況。

departments participating in the CTO operations could jointly share and use essential information in the entire disease control workflow via the Case Portal.

The Case Portal also provided COVID-19 case information to the Geospatial Information Portal (GIP) developed by the Lands Department. The GIP plotted sewage testing results and compulsory testing results for buildings to facilitate the CTOs, the Health Bureau and other relevant Government departments to visualise the latest situation of COVID-19 in Hong Kong.



## 隔離 Isolation

2022年初出現第五波疫情，2019冠狀病毒病個案急劇增加，竹篙灣檢疫中心的檢疫設備轉換為社區隔離設施。其後，更多社區隔離設施迅速投入服務以應付龐大的隔離需求。

During the fifth wave of the pandemic in early 2022, the number of COVID-19 cases increased drastically. Quarantine facilities in PBQC were converted to community isolation facilities (CIFs). Subsequently, more CIFs were provided quickly to meet the huge demands for isolation.





為了讓這些社區隔離設施暢順運作，衛生資訊與科技辦公室於2022年2月推出名為「社區隔離設施管理系統」的新系統。「社區隔離設施管理系統」為隔離人士提供電子登記、電子分配和管理房間、登記入住和退房及監察入住率等功能。

「檢疫中心管理系統」和「社區隔離設施管理系統」

均在2022年4月與新開發的「服務記錄系統」建立系統連接，以優化這些設施的登記入住流程。由於檢疫中心及社區隔離設施面積廣大，前線人員可採用流動科技，透過流動裝置進行一站式房間登記、即場房間分配和房間入住登記，避免入住人士在檢疫中心及社區隔離設施的接待處排隊等候。入住人士可快捷地在房間安頓。整合的「服務記錄系統」、「檢疫中心管理系統」和「社區隔離設施管理系統」獲廣泛應用，竹篙灣和啟德社區隔離設施的運作亦有所提升。



To support smooth operation of the CIFs, the HITO launched the new system 'Community Isolation Facility Management System' (CIFMS) in February 2022. The CIFMS offered functions such as electronic registration of persons under isolation, electronic room allocation and management, room check-in or check-out and room occupancy monitoring.

In April 2022, both the QCMS and CIFMS had interfaced with another new 'Service Logging System' (SLS) to re-engineer check-in procedures in these facilities. Since the QCs and CIFs spanned a huge plot of land, frontline staff could use mobile devices to perform registration at the room, on-site room allocation and room check-in in one go with adoption of mobile technology. These avoided queuing up at the QCs' and CIFs' reception area. Incoming persons could settle down in their rooms quickly. The integrated SLS, QCMS and CIFMS were widely used and had enhanced operational efficiency of the CIFs at Penny's Bay and Kai Tak.







## 大型撤離行動 Mass Evacuation

為應對因住宅樓宇出現垂直或橫向傳播而須進行大型撤離行動，當局有迫切需要提升向居民發出檢疫令和處理大量居民入住檢疫中心的效率。

為支援居民大型撤離行動，衛生資訊與科技辦公室於2022年2月和2022年9月分階段推出提升版的「檢疫中心管理系統」。有關提升旨在簡化居民從現場登記到入住檢疫中心的整個流程。

第一階段的主要目的是支援檢疫中心專責小組在現場運作工作站處理居民登記，而第二階段旨在支援使用流動裝置作上門登記。其主要功能包括使用身份證明文件掃描器或平板電腦的相機鏡頭登記居民資料、在現場發出檢疫令、以短訊通知居民交通安排、採用流動裝置簽到以記錄登車情況、列印手帶以便識別居民，以及在入住檢疫中心之前取得其電子檢測結果等。

提升版的「檢疫中心管理系統」通過採用流動裝置、二維碼和光學字元識別等技術支援執行大型撤離行動，大大提升即時記錄資訊及與不同單位共用資訊的功能，與居民有效溝通和提升收集居民資訊的準確性。



In light of large-scale evacuations from residential buildings arising from occurrence of vertical or horizontal transmissions, there was a pressing need to improve the efficiency of issuing quarantine orders to residents and handling massive intake of residents in the QCs.



To support the mass evacuation of residents, the HITO launched the enhanced QCMS by phases in February 2022 and September 2022. The aim of the enhancement was to streamline the entire workflow from registration of residents on the field to admission to the QCs.

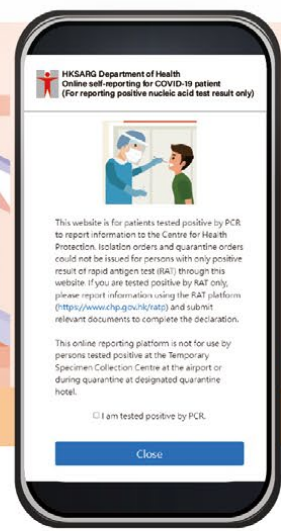
The main objective of Phase One was to support the QCs Task Force to operate booths for registration of residents on the field. The objective of Phase Two was to support door-to-door registration using mobile devices. The core functions involved registering residents' information using identity document scanners or the camera of tablets, issuing quarantine orders on the field, notifying residents of the transportation arrangement through SMS, taking attendance using mobile devices upon boarding of vehicle, printing wristbands for easy identification of residents and collecting electronic test results prior to admission to the QCs.

With the use of technology such as mobile devices, QR codes and Optical Character Recognition (OCR), the enhanced QCMS facilitated execution of mass evacuation with great improvements to the timely recording of information, sharing of information among various parties, effective communication with residents and increased accuracy of data collected from residents.



# 2019冠狀病毒 快速抗原測試 陽性結果人士 申報系統

## 患者呈報個案 Case Reporting by Patients



在2022年年初，2019冠狀病毒病第五波疫情爆發，期間大量個案在社區出現，確診數目呈幾何式上升。為協助衛生防護中心進行流行病學調查和追蹤接觸者，並向感染人士及其密切接觸者提供適時支援，衛生資訊與科技辦公室於2022年2月23日推出「傳染病公眾平台」。核酸檢測呈陽性的人士可透過此平台直接向衛生防護中心提供他們和同住接觸者的資料，從而加快數據收集、跟進行動和發出隔離令及檢疫令。

政府於2022年2月25日宣布，未經核酸檢測的快速抗原測試陽性個案，同樣被視為確診個案。鑑於這項新政策，衛生資訊與科技辦公室於2022年3月7日推出「2019冠狀病毒病快速抗原測試陽性結果人士申報系統」。市民可直接向衛生防護中心呈報快速抗原測試呈陽性的結果，以便衛生防護中心迅速跟進個案，市民亦可及時收到隔離令或檢疫令和獲得支援。

感染人士在完成初步呈報後會收到短訊，他們可以透過短訊內的連結下載由衛生防護中心發出的隔離令。衛生防護中心根據所收集的資料便可盡快為感染人士跟進。

由於2019冠狀病毒病的個案在第五波疫情時急劇上升，衛生資訊與科技辦公室擴大了兩個申報系統的處理能力並設置了虛擬等候室服務，確保這些系統在處理大量個案呈報的情況下仍能運作暢順。即使每日新增個案超過五萬宗，感染人士仍能迅速和順利地向衛生防護中心呈報。



There was an exponential increase in cases with multiple community outbreaks during the fifth wave of the COVID-19 epidemic in early 2022. The HITO launched the 'Communicable Disease Public Interface' on 23 February 2022 to facilitate the CHP to carry out epidemiological investigation and contact tracing and to provide timely support for infected persons and their close contacts. Persons who had PCR positive results could directly report their personal and close contacts' information to the CHP through the interface. The data collection, follow-up actions and issuance of isolation and quarantine orders were expedited.

The Government announced on 25 February 2022 that persons with RAT positive results were considered to be confirmed cases without confirmation by a PCR test. In view of the new policy, the HITO rolled out the 'Declaration System for individuals tested positive for COVID-19 using Rapid Antigen Test' on 7 March 2022 so that the public could report their RAT positive results directly to the CHP. In doing so, the CHP could follow up the cases rapidly while the public could receive timely isolation or quarantine orders and support.

After completing initial reporting, infected persons would receive a SMS with a link to download their isolation orders issued by the CHP. Based on the data collected, the CHP could conduct prompt follow-up actions for the infected persons.

In view of the upsurge of COVID-19 cases during the fifth wave, the capacity of the two self-reporting systems had been expanded. They were also equipped with virtual waiting room service to ensure a satisfactory system response under the overwhelming number of cases. Infected persons could report their cases to the CHP in a rapid and smooth manner even when the daily new cases exceeded 50,000.



## 付費核酸檢測 Paid PCR Test

因應旅遊或工作用途，市民可在認可私營化驗所進行自費的2019冠狀病毒病核酸檢測。

衛生資訊與科技辦公室於2020年12月推出「付費檢測系統」，方便政府認可的本地檢測機構上傳其客戶的自費核酸檢測結果。共有34間認可私營化驗所參與「付費檢測系統」。

「付費檢測系統」與政府資訊科技總監辦公室開發的「電子疫苗接種及檢測紀錄系統」連接，並向「電子疫苗接種及檢測紀錄系統」提供自費核酸檢測的結果。市民可以在「電子疫苗接種及檢測紀錄系統」查看和下載其檢測記錄，以作旅遊或其他用途。

此外，「付費檢測系統」亦與「個案平台」連接，為自費核酸檢測結果陽性的人士，自動在「個案平台」開立個案記錄。這措施大大提高了衛生防護中心處理個案的效率和準確性。

For travelling or work purposes, the public could conduct self-paid COVID-19 PCR tests from recognised private laboratories.

In December 2020, the HITO launched the 'SARS-CoV-2 Nucleic Acid & Antibody Test Result Input System' (Paid Test System). It facilitated local testing institutions recognised by the Government to upload paid PCR test results of their clients. A total of 34 recognised private laboratories joined the Paid Test System.

The Paid Test System was linked with the 'COVID-19 Electronic Vaccination and Testing Record System' (eVT) developed by the Office of the Government Chief Information Officer (OGCIO) to provide paid PCR test results to the eVT. The public could check and download their testing records for travelling or other purposes by the eVT.

Moreover, the Paid Test System was connected with the Case Portal to facilitate automatic creation of case records for positive paid PCR test results. This greatly enhanced the efficiency and accuracy of case handling by the CHP.

**COVID-19 Electronic Testing Record (Self-Paid Test)**

陳一 / CHAN YAT  
男 Male  
Date of Birth 01-01-1980  
Hong Kong Identity Card D888443(A)  
Other passports or travel documents E40591735 / H12345678904  
Test Result Report Date 05-01-2023 10:40  
Specimen Collection Date 03-01-2023 10:40  
Test Result **Negative**  
Specimen Throat Swab Only

**2019冠狀病毒病電子檢測紀錄(自費檢測)**

陳一 / CHAN YAT  
男 Male  
出生日期 01-01-1980  
香港身份證 D888443(A)  
其他護照或旅遊證件 E40591735 / H12345678904  
檢測結果報告日期 05-01-2023 10:40  
樣本採集日期 03-01-2023 10:40  
檢測結果 **陰性**  
樣本 咽喉拭子





# 2019冠狀病毒病疫苗 COVID-19 Vaccination



接種疫苗是其中一個最有效控制傳染病的方法。自2021年2月起，政府在全港推行2019冠狀病毒病疫苗接種計劃，為全港居民提供免費疫苗接種服務。所有2019冠狀病毒病疫苗接種記錄都是電子化，並集中儲存在2019冠狀病毒病疫苗接種中央數據庫。接種者在接種疫苗後除了收到接種疫苗的紙本記錄外，亦可以透過「電子疫苗接種及檢測記錄系統」或「醫健通」流動應用程式下載個人的電子疫苗接種記錄。

## 2019冠狀病毒病疫苗接種異常事件呈報

為加強對接種2019冠狀病毒病疫苗後的監測工作，衛生資訊與科技辦公室於2021年2月為衛生署藥物辦公室推出「2019冠狀病毒病疫苗接種異常事件網上呈報系統」。醫護人員可在網上呈報病人在接種2019冠狀病毒病疫苗後的懷疑異常事件。藥物辦公室可以運用相關數據進行評估和制定風險管理策略。

Vaccination is one of the most effective measures against infectious diseases. Since February 2021, the Government had implemented a territory-wide COVID-19 Vaccination Programme free-of-charge for all Hong Kong residents. All COVID-19 vaccination records are digital and centrally stored in the Central COVID-19 Vaccination Database. In addition to receiving a paper vaccination record after vaccination, recipients could download their electronic vaccination records via the eVT or the eHealth mobile application.



## COVID-19 Vaccine Adverse Event Reporting

To enhance post-authorisation COVID-19 vaccine surveillance activities, the HITO rolled out the 'COVID-19 Vaccine Adverse Event Online Report System' for the Drug Office of the DH in February 2021. Healthcare professionals could report online suspected adverse events of their patients after COVID-19 vaccination. The Drug Office may make use of relevant data for assessment and formulation of risk management strategies.





## 疫苗通行證 Vaccine Pass



政府在2019冠狀病毒病疫情期間推出「疫苗通行證」，進入指定場所的人士必須符合相關的疫苗接種要求。他們須要向場地工作人員出示「疫苗通行證」的二維碼以作檢查。市民可使用「安心出行」流動應用程式獲取本地2019冠狀病毒病電子疫苗接種記錄，製成「疫苗通行證」的二維碼。

為方便在外地接種2019冠狀病毒病疫苗的人士取得「疫苗通行證」，衛生資訊與科技辦公室開發了另一系統，讓有關人士申報非本地2019冠狀病毒病疫苗接種記錄。有關人士完成申報便會得到一個附有申報已接種疫苗的二維碼，以作「疫苗通行證」之用。有關人士可透過兩個途徑申報及取得「疫苗通行證」二維碼，即到指定的香港郵政局申請，或透過互聯網作網上自我申報。

With the introduction of Vaccine Pass during the COVID-19 epidemic, persons entering specified premises must fulfill the relevant vaccination requirements. They were required to present a Vaccine Pass QR code to venue staff for checking. The public could use the LeaveHomeSafe mobile application for retrieving their electronic local COVID-19 vaccination record to generate their Vaccine Pass QR code.

In order to facilitate persons who received COVID-19 vaccination overseas to obtain a Vaccine Pass, the HITO developed another system for declaration of non-local COVID-19 vaccination. Upon completion of declaration, a QR code with declared vaccination administered would be generated for Vaccine Pass purpose. There were two channels for those persons to declare and obtain a Vaccine Pass QR code, namely application at designated Hongkong Post Offices and online self-declaration through the Internet.







## 執法 Law Enforcement

政府在疫情期間先後實施四項具有定額處罰機制的新法例，分別是《預防及控制疾病（規定及指示）（業務及處所）規例》（第599F章）、《預防及控制疾病（禁止羣組聚集）規例》（第599G章）、《預防及控制疾病（佩戴口罩）規例》（第599I章）及《預防及控制疾病（對若干人士強制檢測）規例》（第599J章）。違反規例人士須繳付定額罰款。

衛生資訊與科技辦公室為衛生防護中心轄下的緊急應變及項目管理處開發了「定額罰款資訊系統」，以便有效執行上述法例。

執法工作涉及多個政府部門。「定額罰款資訊系統」自動收集香港郵政、繳費靈繳費服務、自動櫃員機及電子銀行的繳款記錄。各政府部門可快捷地查核繳款情況及適時採取跟進行動，如發出繳款通知書及抗辯通知書和就個案提出檢控等。

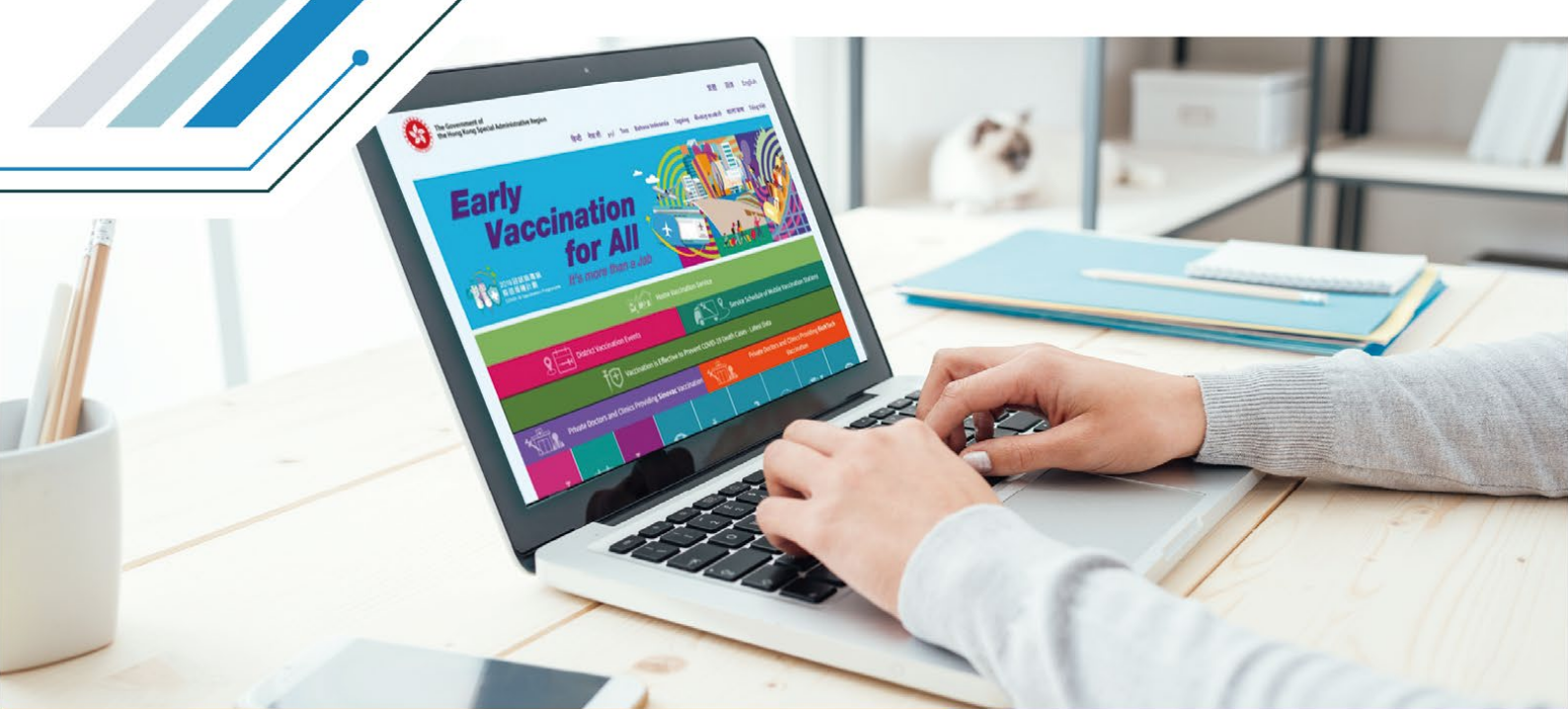
「定額罰款資訊系統」亦連接司法機構的資訊科技系統，讓資料一目了然，支援個案轉介及判決。

Four new regulations with a fixed penalty regime had been successively put into force during the epidemic. These were the Prevention and Control of Disease (Requirements and Directions) (Business and Premises) Regulation (Cap. 599F), the Prevention and Control of Disease (Prohibition on Group Gathering) Regulation (Cap. 599G), the Prevention and Control of Disease (Wearing of Mask) Regulation (Cap 599I) and the Prevention and Control of Disease (Compulsory Testing for Certain Persons) Regulation (Cap 599J). Offenders were liable to a fixed penalty.

The HITO developed the Fixed Penalty Information System (FPIS) for the Emergency Response and Programme Management Branch of the CHP to support efficient enforcement of the said regulations.

Enforcement work involved various Government departments. The FPIS automatically collected payment records from the Hongkong Post, Payment by Phone Service (PPS), Automated Teller Machine (ATM) and e-Banking. Various Government departments could review the payment status promptly and take follow-up actions in a timely manner, such as issuing demand notices and dispute notification forms and taking out prosecution.

To support case referrals and judgments, the FPIS was also connected to the Judiciary's IT system to facilitate browsing of data.



# 風險傳達 Risk Communication

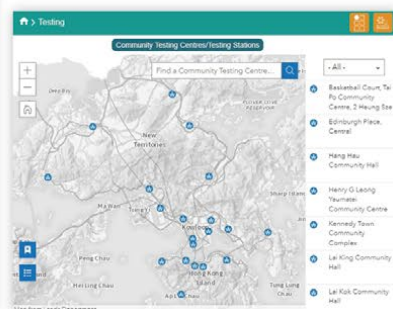
為確保市民能及時取得正確的2019冠狀病毒病相關資訊，政府分別於2020年2月及2021年1月推出2019冠狀病毒病疫情及2019冠狀病毒病疫苗接種計劃的專題網站。

因應快速變化的疫情發展和抗疫措施，兩個專題網站的資訊不斷更新，以便市民取得最新資訊。2019冠狀病毒病疫情的專題網站內亦設有一個「本地情況互動地圖儀表板」（互動地圖），以便有效地發佈香港疫情的最新地理分佈資訊。該互動地圖由發展局、地政總署和一群來自智慧城市聯盟的義工共同開發和管理。

除傳統渠道外，政府亦應用最新科技（包括聊天機器人）方便市民搜尋有關資訊。2019冠狀病毒病的WhatsApp聊天機器人的內容持續更新豐富，方便市民獲取所需資訊，例如有關2019冠狀病毒病檢測、檢測結果呈陽性人士須知和2019冠狀病毒病疫苗接種等。

To ensure the public can obtain COVID-19 related information accurately and promptly, the Government launched two thematic websites with one for COVID-19 epidemic and the other for COVID-19 Vaccination Programme in February 2020 and January 2021 respectively.

In response to the rapid changes to the epidemic situation and anti-epidemic measures, the information on the two thematic websites was updated round-the-clock so that the public could obtain the latest information. There was also an Interactive Map Dashboard (Dashboard) on the COVID-19 epidemic thematic website for effective dissemination of the latest geographical information of the epidemic in Hong Kong. The Dashboard was jointly developed and managed by the Development Bureau, Lands Department and a group of volunteers from the Smart City Consortium.



In addition to traditional channels, the Government also applied latest technologies, such as a chatbot, to facilitate the public to search for relevant information. Content of the COVID-19 WhatsApp Chatbot was progressively enriched, allowing the public to easily obtain relevant information such as those about COVID-19 testing, instructions for those who tested positive and COVID-19 vaccination.





Filter by:

Data Providers

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Data Categories

Health

Formats

Order by: Popularity

### Data in Coronavirus Disease (COVID-19)

Department of Health

The following files provide important data related to the Coronavirus Disease (COVID-19).

Health

CSV

API Available

### Daily count of vaccination by age groups

Health

## 開放數據 Open Data

為使2019冠狀病毒病相關資訊更廣泛傳播並方便市民使用相關資訊，衛生防護中心和衛生資訊與科技辦公室提供2019冠狀病毒病的相關數據，予政府資訊科技總監辦公室的公共資料網站「資料一線通」（data.gov.hk）。發佈2019冠狀病毒病開放數據使私營機構、學術界和各類機構能夠開發與2019冠狀病毒病相關的流動應用程式和工具，並為相關數據的使用方式提供更大靈活性。

To facilitate wider dissemination and the use of COVID-19 related information by the public, the CHP and HITO supported provision of COVID-19 related data to the Public Sector Information Portal (data.gov.hk) of the OGCIO. The release of COVID-19 open data enabled the private sector, academia and various agencies to develop COVID-19 related mobile applications and tools. It also provided greater flexibility on the usage of related data.





## 前瞻 Way Forward

在對抗2019冠狀病毒病疫情的三年期間，決策者和持份者均視資訊科技是不可或缺和非常強效的工具，可用以提高營運效率和質量、支援管理大量數據及向不同持份者和市民作風險傳達。

2019冠狀病毒病的資訊科技解決方案得以成功實現，有賴穩健而反應迅速的資訊科技團隊、清晰的業務和數據流程、適當使用科技如雲端平台和二維碼、高層人員的鼎力支持和靈活的系統設計以應對不斷變化的情況和需求。

我們衷心感謝衛生署全體同事和所有抗疫工作人員的無私奉獻。衛生資訊與科技辦公室將繼續與衛生署各服務單位緊密合作，強化和創建有效用的資訊科技系統，從而為市民帶來更大裨益和便利。

In this 3-year battle against the COVID-19 epidemic, decision makers and stakeholders recognised that IT was indispensable and was a very potent tool to enhance operational efficiency and quality, support mass data management and risk communication with different stakeholders and the public.

The successful delivery of COVID-19 IT solutions relied on robust and swift IT teams, decisive business and data flow, suitable use of technologies like cloud platform and QR codes, strong support from senior management and flexible system design to cope with ever changing situations and requirements.

We are deeply grateful to the selfless devotion of all DH colleagues and anti-epidemic workforce. To bring greater benefits and convenience to the public, the HITO will continue to work closely with different service units of the DH to augment and innovate useful IT systems.