

REPORT

MODIFICATION OF HOSPITAL AMBULATORY PHARMACY PATIENT FLOW IN RESPONSE TO THE COVID-19 PANDEMIC AT A HOSPITAL IN TAIWAN

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Abstract. Coronavirus disease 2019 (COVID-19) has spread world-wide. In this paper we report the changes made to patient flow at the out-patient pharmacy, Kaohsiung Veterans General Hospital, Taiwan in order to reduce pharmacy waiting patient density to reduce staff and patient risk for contracting and transmitting infection. We used out-door patient pharmacy waiting, which reduced patient density. Further studies are needed to determine efficacy and patient acceptance of this new system.

Keywords: COVID-19; preventive strategies; hospital ambulatory pharmacy

In 2019, the Coronavirus Disease 2019 (COVID-19) epidemic caused by the novel coronavirus, SARS CoV-2, first emerged in Wuhan, China, followed by worldwide spread of this infection (Zhu *et al*, 2020). The first case of COVID-19 in Taiwan was detected on 21 January 2020

(Cheng *et al*, 2020b). The Taiwan Centers for Disease Control took aggressive action to control and prevent spread of COVID-19 infection (Taiwan CDC, 2020); most hospitals in Taiwan implemented strategies to prevent contraction and transmission of COVID-19 in the hospital (Cheng *et al*, 2020a).

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Kaohsiung Veterans General Hospital (KSVGH) is a public teaching hospital in southern Taiwan. The average number of outpatient clinic visits is about 4,000 patients per day. The inpatient capacity is 1,500 beds and there are 3,562 staff members.

On 10 February 2020, KSVGH moved the medication-refill pharmacy waiting area outside with a dedicated service counter facing this outside area. Medication refill patients can pick up their medicines through this counter without entering the outpatient clinic building (Fig 1). This same service counter also serves patients seen at the quarantine clinic. The medicines for the quarantine clinic patients are delivered to them without having direct contact with the employee.

On 17 February 2020, patients began to be able to request medication via the internet, using a dedicated phone line or by visiting the outdoor facing medication refill counter described above. At the same time, advertisements in the public media published a QR code that could be scanned via mobile phone to allow the subject to order their medications online (Fig 2). These new methods of access were advertised through social media, via digital signs and on our website in order to reduce unnecessary hospital visits.

When patients arrive at the outdoor pharmacy, their National Health

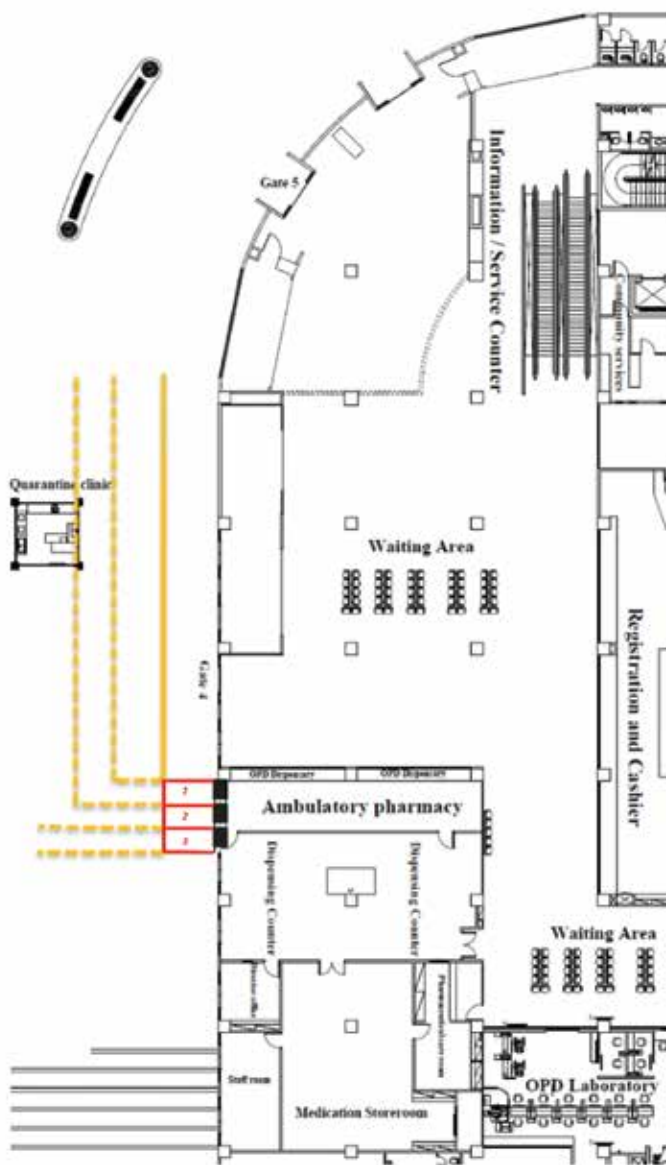


Fig1- Kaohsiung Veterans General Hospital (KSVGH) layout showing the outdoor pharmacy in front of the outpatient building.

Insurance Bureau insurance cards are scanned through an integrated circuit (IC) card reader for patient identification. Pharmacists supervise and deliver all medications to patients via the dedicated window after confirming information

KSVGH Chronic Diseases Prescription Refill Notice



Patients for **chronic disease prescription second or third refills**, please use the **online reservation service**, and bring your **IC cards** to the **right side of Outpatient Department Hall** for refills at **8:30-20:00 (Mon-Fri)**



Face towards the Outpatient Department, turn right and head straight to the **【 Outdoor refill station 】**

Fig 2-Chronic diseases prescription refill notice at Kaohsiung Veterans General Hospital (KSVGH).



Fig 3-Seating at the outpatient waiting area.

about each patient and their medications. On 20 February 2020, we also established the out-door methadone pharmacy service for providing medications for opiate replacement therapy. Despite heavy containment efforts, some patients with COVID-19 might have only mild symptoms and might wait to receive their medication at the out-door pharmacy. Therefore, we emphasized social distancing both inside and outside the hospital (Wilder-Smith and Freedman, 2020). Patients were directed to keep one meter apart; floor markers were placed a meter apart and markings were made on the seats to show patients where to sit and wait (Fig 3). The number of patients filling a second or the third refill of a prescription using the out-door pharmacy service exceeded more than 15,000 during the first month. The decrease in ambulatory pharmacy density in the hospital helped to significantly reduce the pressure of epidemic prevention and control.

At the time of writing, the number of ambulatory pharmacy services was stable and reasonably well controlled. We hope this intervention will continue to help effectively control and prevent COVID-19 transmission; and will be an example for other medical institutions.

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