

## CORRESPONDENCE

# Mitigate risks of medication interruption due to COVID-19 for elderly with chronic diseases

Chronic conditions are the leading causes of death and disability worldwide.<sup>1</sup> According to the definition by Taiwan National Health Insurance Administration (NHI), refill prescriptions for chronic diseases are those given to patients who are diagnosed by physicians but are under stable condition with no need to adjust medication in the short run. Physicians can issue 3-month or longer refill prescriptions for patients with chronic diseases; there are currently 100 types of chronic diseases.<sup>2</sup>

COVID-19 virus can be transmitted to others within minutes of exposure and mortality rate among elderly with chronic diseases is higher than for other age groups.<sup>3-5</sup> It is important to ensure mitigation risk of COVID-19 virus infecting the elderly who visit the hospital for refill prescription; it also has an impact on whether patients are willing to come back to the hospital where they got the prescription for long-term treatment.

Kaohsiung Municipal Ta-Tung Hospital (KMTTH) is a regional teaching hospital with 428 beds and serves averagely 2845 daily prescriptions; 94.9% of patients had not yet used reservation service by the end of 2019. The elderly still went to the hospital and waited for the medicines.

Since COVID-19 outbreak, the rate of patients with prescriptions for chronic diseases returning for medicines shows a downward trend. Compared with the same period last year, before January, and during mid-January to mid-February, there were no statistically significant differences between patients' genders, clinical departments visited, or residence ( $P > .05$ ). However, there was a statistically significant decrease in the old elderly patients (aged above 75) returning to hospital for medicines ( $P = .002$ ) (Table 1).

Out of concern over infection by COVID-19 patients in hospital, elderly patients with prescriptions for chronic diseases stopped coming back to the hospital for medicines, causing medication

**TABLE 1** Difference analysis of rate of geriatrics back to the hospital for medicines with prescriptions for chronic diseases

Time period variables	Before outbreak of SARS-CoV-2		At early stage of outbreak of SARS-CoV-2		After "outdoor dispensary counters" service		
	January 1, 2019 to January 22, 2019	January 1, 2020 to January 22, 2020	January 23, 2019 to February 24, 2019	January 23, 2020 to February 24, 2020	February 25, 2019 to March 31, 2019	February 25, 2020 to March 31, 2020	Pvalue**
Gender							.227
Male	3762 (47.4%)	3922 (47.1%)	5404 (47.6%)	4733 (48.3%)	5945 (51.7%)	5512 (50.9%)	
Female	4177 (52.6%)	4405 (52.9%)	5954 (52.4%)	5059 (51.7%)	5554 (48.3%)	5319 (49.1%)	
Age							.272
65-69	2096 (26.4%)	2309 (27.7%)	3056 (26.9%)	2692 (27.5%)	3050 (26.5%)	2909 (26.9%)	
70-74	2027 (25.5%)	2071 (24.9%)	2650 (23.3%)	2453 (25.1%)	2872 (25.0%)	2782 (25.7%)	
75+	3816 (48.1%)	3947 (47.4%)	5652 (49.8%)	4647 (47.5%)	5577 (48.5%)	5140 (47.5%)	
Clinical departments							.888
Internal medicine	4418 (55.6%)	4666 (56.0%)	6448 (56.8%)	5410 (55.2%)	6472 (56.3%)	6127 (56.6%)	
Surgery department	463 (5.8%)	545 (6.5%)	631 (5.6%)	557 (5.7%)	660 (5.7%)	625 (5.8%)	
Other departments	3058 (38.5%)	3116 (37.4%)	4279 (37.7%)	3825 (39.1%)	4367 (38.0%)	4079 (37.7%)	

(Continues)

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TABLE 1 (Continued)

Time period variables	Before outbreak of SARS-CoV-2		At early stage of outbreak of SARS-CoV-2			After "outdoor dispensary counters" service			
	January 1, 2019 to January 22, 2019	January 1, 2020 to January 22, 2020	January 23, 2019 to February 24, 2019	January 23, 2020 to February 24, 2020	P value**	February 25, 2019 to March 31, 2019	February 25, 2020 to March 31, 2020	Pvalue**	
Straight-line distance between residence and KMTTH (km)					.706			.822	.946
<3 km	4909 (61.8%)	5125 (61.5%)	7084 (62.4%)	6122 (62.5%)		7113 (61.9%)	6695 (61.8%)		
>3 km	3030 (38.2%)	3202 (38.5%)	4274 (37.6%)	3670 (37.5%)		4386 (38.1%)	4136 (38.2%)		

\*Goodness-of-fit test.

\*\*P < .01.

interruption, resulting in further risks of change in medical conditions. Therefore, KMTTH set up "outdoor dispensary counters for fast drug receipt" on February 25, 2020 in well-ventilated locations outside the hospital. With or without reservation in advance, patients or their relatives can get drugs for the second and third months dispersed by the pharmacists as long as they show a valid NHI Smart Card and the original physicians' prescriptions in accordance with rules and regulations by the NHI. Those drugs are dispensed and stored at the pharmacy before delivery Good Dispensing Practice for ensuring fill a prescription accuracy and storage safety.

One month after the dispensary counters measure was implemented, by April 1, 2020, compared with the same period the previous year, there were no statistically significant differences ( $P > .272$ ) in the number of elderly patients with chronic diseases returning to the hospital for medicines, their genders, clinical departments visited or their residences.

Based on the analysis above, for reducing the impact of COVID-19 on elderly with chronic diseases and mitigating risk of prescription drugs shortage, to set up outdoor dispensary counters for drug receiving without need to enter hospital should be one of the requisite measures for drug dispensing services during epidemics.

## CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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