

# Optimizing Pharmaceutical Care For COVID-19 Patients: Pharmacist's Intervention in Disaster Management Zone, Tuanku Mizan Armed Forces Hospital

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## ABSTRACT

The emergence of COVID-19 in Malaysia has led to the establishment of a Disaster Management Zone (DMZ) in Tuanku Mizan Armed Forces Hospital (TMAFH) by the Malaysian Armed Forces. Equipped with 250 beds, electrical supply, oxygen and vacuum ports and other medical support facilities, DMZ had become a full-fledged COVID-19 Category 4 and 5 ward in July 2021. During the operation of DMZ from 9 July 2021 to 27 August 2021, pharmacists were actively engaged in the daily operation of DMZ. A total of 129 prescription errors were identified and documented. Different types of prescribing errors and their frequencies detected were as follows: wrong frequency (31.8%), wrong dose (23.5%), wrong drug selection (18.6%), wrong duration (11.6%), missed dose (8.5%), polypharmacy (4.7%), drug interaction (0.8%) and wrong patient (0.8%). Interventions were done by pharmacists to address all these errors. This shows that pharmacists have an important role in optimizing pharmaceutical care for patients during a pandemic.

**Keywords** : COVID-19, Pharmacists, Prescription Errors, Pandemic, Role

## INTRODUCTION

The outbreak of COVID-19 which started in the city of Wuhan, China was declared by the World Health Organization (WHO) as a pandemic on 11 March 2020 due to its unexpected high speed and large magnitude of transmission<sup>1</sup>. This pandemic nevertheless had major negative impacts on Malaysia, as daily cases of COVID-19 kept increasing causing a public health crisis.

The Malaysian Armed Forces (MAF) had mobilized its capabilities in order to manage the national pandemic emergency with newer roles being created as the situation worsened. One of them was to expand its Tuanku Mizan Armed Forces Hospital (TMAFH) with additional 250 beds and convert its Disaster Management Zone (DMZ) into becoming a full-fledged COVID-19 Category 4 and 5 wards in July 2021.

DMZ was set up in the basement parking of TMAFH. The parking lot was designed to be able to be converted into makeshift wards, hence it was equipped with electrical supply, oxygen and vacuum ports and other medical support facilities to ensure its full preparedness towards any biological or chemical disaster. As the COVID-19 cases in Klang Valley were worsening, the DMZ was tasked to curb the acute shortage of beds faced by public hospitals, particularly Kuala Lumpur Hospital, Sungai

Buloh Hospital and other medical centres in the Klang Valley, to treat COVID-19 patients. The DMZ was staffed not only from the armed forces itself, but also medical personnel from the Ministry of Health Malaysia.

## PHARMACEUTICAL CARE DURING A PANDEMIC

According to the American Society of Health-System Pharmacists (ASHP), pharmaceutical care is defined as the direct, responsible provision of medication-related care for the purpose of achieving definite outcomes that improve a patient's quality of life<sup>2</sup>. These outcomes are defined as cure of a disease, elimination or reduction of a patient's symptomatology, arresting or slowing of a disease process, or preventing a disease or symptomatology.

During the operation of DMZ, the roles of pharmacists were not only limited to prescription screening and dispensing medications. In fact, the pharmacists were also actively involved in daily ward rounds in DMZ which brought a positive impact on patients' therapeutic outcome. During ward rounds, the medication chart of each patient will be reviewed for its safety, efficacy, and appropriateness by examining drug and patient related factors. Conducting medication review is a key role for pharmacists in DMZ as part of the multidisciplinary approach to patient care and any drug related problems will be discussed with doctors to optimize the pharmacotherapy of the patient.

## PRESCRIPTION ERRORS EXPERIENCED DURING DMZ OPERATIONS

During pharmacists' involvement in the operation of DMZ from 9 July 2021 to 27 August 2021, all prescription errors identified by pharmacists were documented and calculated manually. At the end of DMZ operation, a total of 129 prescription errors were identified and interventions were given to address these prescription errors immediately. These errors are shown in Table 1. The most common type of error is wrong frequency which accounted for 31.8% of all the prescription errors. Other common errors identified are wrong dose (23.2%), wrong drug selection (18.6%) and wrong duration (11.6%). These errors are the same as other studies in which wrong frequency, wrong dose and wrong drug selection are the common errors identified<sup>3,4</sup>. Most of the errors occurred due to lack of up-to-date information on COVID-19 management by doctors since the guideline was frequently updated from time to time as new evidence emerged. Besides, there was a lack of standardized patient management because many doctors were from different hospitals with different clinical practices. The pharmacists had carried out

multiple sessions with doctors and nurses to ensure the safety, efficacy and high quality use of medications.

**Table 1: Types of prescription errors**

Type of error	N (%)
Wrong frequency	41 (31.8)
Wrong dose	30 (23.2)
Wrong drug selection	24 (18.6)
Wrong duration	15 (11.6)
Missed dose	11 (8.5)

**CONCLUSION**

It is without a doubt that pharmacists had played an important role in optimizing patient care during the operations of DMZ by providing intervention to the pharmacotherapy which ultimately led to improvement of clinical outcomes of patients. However, as drug therapies are an important part of medical care, it inevitably contributes to prescribing errors and other drug-related problems. Thus, pharmacists need to make themselves more available to doctors, and doctors need to utilize the unique clinical knowledge of pharmacists when managing the patient. This multidisciplinary approach will help to provide better care to the patient.

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