Pharmacy leadership during emergency preparedness: Insights from the Middle East and South Asia

Effective leadership is essential for ensuring high-quality patient care is provided by balancing authority and responsibility with staff safety, which necessitates multidisciplinary efforts and cooperation.[1] Pharmacy leaders are well positioned to be an integral part of any healthcare system's strategic planning to ensure that continuous, high-quality pharmacy services are provided at all times.

In December 2019, the world witnessed in the city of Wuhan, China, the emergence of a novel member of the coronavirus family—severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)—that causes the highly contagious disease commonly known as coronavirus disease 2019 (COVID-19).

Coronaviruses have caused multiple disease outbreaks in the past, recently including a SARS outbreak in 2003 and the Middle East respiratory syndrome (MERS) outbreak in 2012. Despite COVID-19 being similar to SARS in presentation, patients infected with SARS-CoV-2 can transmit the virus while asymptomatic; in contrast, patients with SARS usually transmitted the infection while severely ill.[2] This fact represents the main challenge with regards to the prevention of SARS-CoV-2 transmission and COVID-19 containment.

The novel coronavirus made its way quickly across borders, reaching more than 100 countries in only a few months and prompting the World Health Organization (WHO) to declare a pandemic in March 2020.[3] As of April 12, 2020, more than 1.6 million cases of COVID-19 had been confirmed, with a death toll of more than 100,000 people worldwide.[4]

Failure to control the spread of COVID-19 caused the global healthcare system to become overwhelmed with unmet needs for medical personnel and medical supplies. Consequently, WHO suggested that governments adopt comprehensive measures to promote physical distancing and infection control measures to "flatten the curve" of SARS-CoV-2 transmission,[5] which resulted in curfews being imposed in several countries.[6] These sequelae created a situation of urgency with direct physical, social, and psychological impacts on healthcare professionals that surpassed the ability of healthcare organizations to contain them. The whole picture matched the definition of "extreme events" and "extreme contexts," as described by Hannah et al.[7]

This article aims to present a framework for crisis management through discussion of various measures and strategies that were implemented by pharmacy leaders in the Middle East and South Asia in response to the COVID-19 crisis.

Overview of strategies

To gather information for this report, email messages were sent to hospital pharmacy leaders in various countries, including the United Arab Emirates (UAE), Kingdom of Saudi Arabia, Jordan, Lebanon, India, and Pakistan. Pharmacy leaders were asked to share examples of strategies implemented within their health systems in response to the COVID-19 crisis. Some of these strategies, as reported by the contacted pharmacy leaders, are summarized here (all the measures described were not uniformly implemented by all represented institutions).

Knowledge sharing. Evidence-based information is an essential component of safe and effective patient care.[8] Emergence of COVID-19 has been associated with several challenges in this area, especially with the lack of evidence-based treatment options. To ensure that credible and evidence-based decisions are made, updated national and international treatment protocols were shared through email and combined in a shared electronic folder accessible by all concerned healthcare personnel.[9,10] Moreover, visual material and flyers to educate staff about appropriate hand hygiene and physical distancing measures were distributed, and guidance on the appropriate use of personal protective equipment (PPE) and extemporaneous preparation of alternatives to hand sanitizers to compensate for shortages were provided.[11-14] Past experiences with crisis management were shared with pharmacy staffs, including experiences during the 2012 MERS outbreak.[15] In addition, staff members were provided with resources such as the WHO hospital readiness checklist,[16] policy recommendations from a US pharmacy association,[17] and US Occupational Safety and Health Administration guidance on preparing workplaces for the COVID-19 pandemic.[18]

Patient safety was given equal importance, with online educational sessions highlighting the recommendations from the Institute for Safe Medication Practices regarding the proper use of metered dose inhalers and safe storage of medications potentially effective against COVID-19.[19]

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Redesigning the pharmacy workflow. Existing workflows had to be modified to promote physical distancing and prevent the spread of infection. To minimize physical interaction, pharmacy caregivers at some institutions were divided into home-based and on-site teams. The home-based teams verified orders, answered patients' queries, and provided support to on-site teams. Other hospitals implemented longer working hours, with more off days, to minimize the chance of exposure among pharmacy staff. In order to ensure that clinical duties were fulfilled while maintaining physical distancing, medication reconciliation and bed-side discharge counseling were performed over the phone, clinical rounds were conducted virtually, and pharmacists in outpatient clinics, such as anticoagulation and heart failure clinics, provided their services through telephone communication.

In some outpatient pharmacies, the numbers of chairs in the waiting areas were reduced to promote physical distancing. All patients were required to use hand sanitizers before entering a pharmacy. In order to reduce the risk of contamination, fingerprint access was deactivated for all devices using biological identification technology, including automated dispensing cabinets.

For outpatients, home delivery of medications was implemented by some hospitals to minimize physical contact in ambulatory care pharmacy settings. When home delivery was not feasible, one health system collaborated with a non-profit organization to facilitate the dispensing of medications from smaller clinics that were easily accessible to the public. Drive-through service was offered in some hospitals where home delivery service could not be implemented in order to allow patients to receive medications and get counseling while staying in their own vehicles.

As for inpatient medication deliveries, in some cases medications sent from a central pharmacy were delivered to the entrance of a patient care unit to be picked up by a trained nurse. Additionally, medications were loaded in ADCs only on designated floors to reduce the number of medication delivery rounds needed per day. These workflow modifications helped minimize staff exposure and helped optimize the use of PPE.

Stock management. Strategies were implemented to maintain adequate stocks of needed therapies and PPE by assuring secure storage, daily monitoring of stocks of medications potentially effective against COVID-19, and PPE use stewardship. One hospital developed a real-time dashboard showing in-stock quantities of medications used for COVID-19 treatment that were accessible within the organization. In addition, a hard-stop alert triggered on ordering and dispensing of any identified as COVID-19 treatments was implemented to ensure appropriate use.

Communication. Effective communication is essential when managing a crisis and is considered one of the pillars of safe patient care.[20,21] However, maintaining effective communication during the COVID-19 pandemic has proved challenging, especially with regard to recommendations to maintain physical distancing. A number of pharmacy leaders adopted measures to overcome this challenge, such as sharing written minutes of multidisciplinary meetings with their teams to ensure clarity of message and daily updates and replacing physical gatherings and daily huddles with virtual meetings. Moreover, the COVID-19 crisis has revealed a potentially effective line of communication within the worldwide healthcare community through social media. Multidisciplinary professional networks on various social media sites have been used as sources for real-time information about the effectiveness of available treatment options, specific patterns and challenges with regard to disease burden and presentation, and supply shortages.

Safety and public responsibility. At several institutions extra measures were taken to protect frontline staff and the public from exposure to infection. These measures included the distribution of appropriate PPE to all frontline staff, with personnel instructed to don scrub suits on facility entry and doff them before leaving, and installation of plastic shields in outpatient pharmacies to provide a physical protective barrier between pharmacist and patient. In confirmed cases of COVID-19, patient profiles were flagged for easy identification by pharmacists performing medication reconciliation or discharge counseling. In an initiative to promote the responsibility of pharmacists in preventing the spread of infection, it was advised to avoid visiting public places in hospital uniform after duty.

Psychological support. In addition to the associated mortality and morbidity, pandemics are usually associated with negative psychological impacts that may last even after the pandemic has ended and can be detrimental to a nation's recovery. Moreover, it is important to address feelings of discrimination experienced by quarantined foreign patients[22]; during the COVID-19 pandemic this has been particularly important in the Persian Gulf region, where the healthcare workforce is quite diverse. Pharmacy leaders should listen to staff members' concerns and take proactive steps to identify those who are at risk for burnout or experiencing psychological distress and offer help and guidance.

In an effort to address feelings of fear and stress, one of the organizations in the Persian Gulf region implemented a hotline for the staff to report any concerns about their mental well-being. Another institution used relaxing music in the workplace to nurture hope in troubled times. To ensure that the staff had access to credible information, periodic data about COVID-19 morbidity and mortality rates, as well as "myth busters" gleaned from the WHO website were shared with the pharmacy staff.[23]

In addition, as a sign of recognition and gratitude, pharmacy leaders in one institution sent daily supportive emails

and mobile messages to all staff members to thank them for their vital work and boost morale.

Continuing education. Pharmacy leaderships have a responsibility to promote the learning and development of their staffs.[24] Factors such as cost, geographical distance, understaffing, and work commitment may affect the ability of staff to commit to continuous learning and education.[25] During a pandemic, the need for concurrent knowledge about the ongoing crisis is imperative. In response to the COVID-19 crisis, many professional organizations granted free access to courses for the pharmacy community about COVID-19 and associated prevention and treatment strategies as well as patient safety concerns. These organizations include the American Society of Health-System Pharmacists,[26] Joint Commission International,[27] UAE's Mohamed Bin Rashid University,[28] the National Association for Healthcare Quality,[29] and the Society of Critical Care Medicine.[30] One of the institutions in the Persian Gulf region reported the use of these programs to maintain and improve the knowledge of its staff, which may present a valid solution for use in future times of crises.

Closing notes

COVID-19 has created challenges in every aspect of life, and its impact on pharmaceutical care provision and pharmacy caregivers is felt everywhere. We hope that this report, which shares knowledge and experience gained by pharmacy leaderships in the Middle East and South Asia, will be useful to pharmacy professionals worldwide. We propose that the leadership framework outlined in this article be considered as one model for emergency preparedness as part of pharmacy department strategic planning to combat the COVID-19 crisis and future crisis situations.

1. Governance, leadership, and direction. In: *JCI Accreditation Standards for Hospitals*. 6th ed. Oakbrook Terrace, IL: Joint Commission Resources; 2017:207-209.
2. Yi Y, Lagniton PN, Ye S et al. COVID-19: what has been learned and to be learned about the novel coronavirus disease. *Int J Biol Sci*. 2020;16(10):1753-1766.
3. World Health Organization. Coronavirus disease 2019 (COVID-19): situation report – 51. www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf. Published March 2020. Accessed April 10, 2020.
4. World Health Organization. Coronavirus disease 2019 (COVID-19): situation report – 83. www.who.int/docs/default-source/coronaviruse/situation-reports/20200412-sitrep-83-covid-19.pdf. Published April 2020. Accessed April 10, 2020.
5. World Health Organization. Coronavirus disease (COVID-19) advice for the public. www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public./ Published March 2020. Accessed April 10, 2020.
6. Wikimedia Foundation, Inc. Curfews and lockdowns related to the 2019–20 coronavirus pandemic. Wikipedia Web site. en.wikipedia.org/wiki/Curfews_and_lockdowns_related_to_the_2019–20_coronavirus_pandemic. Published April 2020. Accessed April 10, 2020.
7. Hannah ST, Uhl-Bien M, Avolio BJ, Cavarretta FL. A framework for examining leadership in extreme contexts. *Leadersh Q*. 2009;20:897-919.
8. Leming-Lee T, Watters R. Translation of evidence-based practice: quality improvement and patient safety. *Nurs Clin North Am*. 2019;54(1):1-20.
9. American Society of Health-System Pharmacists. Assessment of evidence for COVID-19-related treatments: updated 4/17/20. www.ashp.org/-/media/assets/pharmacy-practice/resource-centers/Coronavirus/docs/ASHP-COVID-19-Evidence-Table.ashx. Accessed April 10, 2020.
10. Saudi Center for Disease Prevention and Control. Coronavirus disease 19 (COVID-19) guidelines. Covid19.cdc.gov.sa/wp-content/uploads/2020/03/Coronavirus-Disease-2019-Guidelines-v1.2.pdf.pdf. Published March 2020. Accessed April 10, 2020.
11. Ministry of Health – Kingdom of Saudi Arabia. COVID19 prevention guideline in various languages. www.moh.gov.sa/en/awarenessplateform/VariousTopics/Pages/COIVD-19.aspx. Published March 2020. Accessed April 10, 2020.
12. Stanford Medicine. Global COVID-19 prevention [video online]. www.youtube.com/watch?v=rAj38E7vrS8. Published March 2020. Accessed April 10, 2020.
13. United States Pharmacopoeia Convention. USP response to shortages of garb and personal protective equipment (PPE) for sterile compounding during COVID-19 pandemic. www.usp.org/sites/default/files/usp/document/about/public-policy/usp-covid19-garb-and-ppe.pdf. Published March 2020. Accessed April 10, 2020.
14. United States Pharmacopoeial Convention. Compounding alcohol-based hand sanitizer during COVID-19 pandemic. www.usp.org/sites/default/files/usp/document/about/public-policy/usp-covid19-handrub.pdf. Published March 2020. Accessed April 10, 2020.
15. AlKnawy B. Leadership in times of crisis. *BMJ Leader*. 3(1):1-5.
16. World Health Organization. Hospital readiness checklist. www.euro.who.int/__data/assets/pdf_file/0010/430210/Hospital-Readiness-Checklist.pdf. Published February 2020. Accessed April 10, 2020.
17. American Pharmacists Association. Pharmacists as front-line providers for COVID-19 patient care. www.pharmacist.com/sites/default/files/files/APHA%20Meeting%20Update/PHARMACISTS_COVID19-Final-3-20-20.pdf. Published March 2020. Accessed April 10, 2020.
18. Occupational Safety and Health Administration. Guidance on preparing workplaces for COVID-19. www.osha.gov/Publications/OSHA3990.pdf. Published March 2020. Accessed April 10, 2020.
19. Institute for Safe Medication Practices. Special alert: medication safety alert! https://www.ismp.org/acute-care/medication-safety-alert-march-26–2020. Published March 26, 2020. Accessed April 10, 2020.
20. International Patient Safety Goals. In: *JCI Accreditation Standards for Hospitals*. 6th ed. Oakbrook Terrace, IL: Joint commission resources; 2017:43-45.
21. US Agency for International Development. *Leadership During a Pandemic: What Your Municipality Can Do*. Pan American Health Organization Web site. www.paho.org/disasters/index.php?option=com_docman&view=download&category_slug=tools&alias=518-what-your-municipality-complete-toolkit&Itemid=1179&lang=en. Accessed 2020 Apr 10.
22. Ho CS, Chee CY, Ho RC. Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Ann Acad Med Singapore*. 2020;49(1):1-3.
23. World Health Organization. Coronavirus disease (COVID-19) advice for the public: myth busters. www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters. Accessed April 10, 2020.

24. Wadelin JW, Travlos DV, Janke KK, et al. Current and future opportunities and challenges in continuing pharmacy education. *Am J Pharm Educ*. 2017;81(3):44.
25. Xing W, Ao L, Xiao H et al. Nurses' attitudes toward, and needs for online learning: differences between rural and urban hospitals in Shanghai, East. *Int J Environ Res Public Health*. 2018;15(7):1495. doi:10.3390/ijerph15071495.
26. American Society of Health-System Pharmacists. Coronavirus disease 2019 (COVID-19). www.ashp.org/Pharmacy-Practice/Resource-Centers/Coronavirus. Accessed Apr 10, 2020.
27. Joint Commission International. Coronavirus (COVID-19). www.jointcommissioninternational.org/en/news-and-support/coronavirus/. Accessed Apr 10, 2020.
28. Mohamed Bin Rashid University of Medicine and Health Sciences. Let's break the chain of COVID-19 infection: MBRU Community Immunity Ambassador Program. learn.mbru.ac.ae/courses/covid19. Accessed April 10, 2020.
29. National Association for Healthcare Quality. COVID-19 resource center. nahq.org/education/covid-19-resource-center/. Accessed April 10, 2020.
30. Society of Critical Care Medicine. Critical care for non-ICU clinicians. https://sccm.org/covid19. Accessed April 10, 2020.

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Acknowledgments: The authors thank the following for sharing their institutions' experiences in responding to the COVID-19 pandemic: Mohammad Mousa Tashtoush, Al Ain Hospital, United Arab Emirates; Wajdi Al Alawi, Al Basheer Hospital, Amman, Jordan; Ulfa Usta, American University of Beirut Medical Center, Beirut, Lebanon; Sangita Sudhir, Amrita Institute of Medical Sciences, Kochi, India; Grace Mary John, Believers Church Medical College Hospital, Thiruvalla, India; Ali Y. Saber, International Medical Center, Jeddah, Kingdom of Saudi Arabia; Mohammad Alawagi, King Faisal Specialist Hospital & Research Centre, Riyadh, Kingdom of Saudi Arabia; Saad Jaddoua, King Hussein Cancer Centre, Amman, Jordan; Christian Sawma, Lebanese American University Medical Center, Beirut, Lebanon; Jibran Bin Yousuf, National Institute of Cardiovascular Diseases, Karachi, Pakistan; Omar Akhlaq Butta, Shaukat Khanum Memorial Cancer Center, Lahore, Pakistan; and Salwa Ahsan, Shifa International Hospital, Islamabad, Pakistan.

Disclosures: The authors have declared no potential conflicts of interest.

Keywords: COVID-19, emergency preparedness, leadership, pharmacists, staff development.

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DOI 10.1093/ajhp/zxaa133