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Review

Pharmacists roles and responsibilities during epidemics and pandemics in Saudi Arabia: An opinion paper from the Saudi Society of clinical pharmacy

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ABSTRACT

On the 2nd of March 2020, Kingdom of Saudi Arabia confirmed its first case of the coronavirus's newly emerging strain, causing coronavirus disease 2019 (COVID-19). Soon after, the number of confirmed cases started to increase nationally. In light of the emerging outbreak, all healthcare professionals, including pharmacists, began to function with maximum capacity and efforts. The Saudi Society of Clinical Pharmacy (SSCP) acknowledges the substantial impact pharmacists can play during outbreaks. Based on the existing scientific knowledge during this outbreak, the SSCP established an expert writing task force to conceptualize and draft the proposed recommendations that highlights the roles and responsibilities of pharmacists during epidemics and pandemics. The SSCP writing task force issued 28 recommendations. In addition to the national and institutional guidelines, these recommendations could serve as guidance for the impacted entities.

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1. Introduction

In December 2019, an alarming epidemic of unexplained etiology occurred in Wuhan City, Hubei Province, China (Cucinotta and Vanelli, 2020). The World Health Organization (WHO) described the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) as the infective agent, causing the coronavirus disease 2019 (COVID-19). The WHO classified COVID-19 as a pandemic on the 11th of March 2020. (Cucinotta and Vanelli, 2020). Kingdom of Saudi Arabia (KSA) took several proactive preemptive measures to limit the spread of the outbreak (Yezli and Khan, 2020). For instance, on the 27th of February 2020, KSA declared that it would immediately suspend entry for individuals wishing to conduct religious activities (Barry et al., 2020). Moreover, on the 8th of March, the Saudi Ministry of Education announced the suspension of the academic year and closure of schools and universities. On the 20th of March, the Ministry of the Interior halted domestic and international transportation channels and a curfew was imposed from 7 pm, which was extended to be a 24-hour lockdown recently (Barry et al., 2020). Previous evidence showed that the pharmacist's skills and knowledge both in community and hospital settings might allow them to play a significant role during natural disasters and epidemics (Aruru et al., 2020).

The Saudi Society of Clinical Pharmacy (SSCP), established in 2018, aims to provide scientific guidance, recommendation, and insights for clinical pharmacists working in KSA. It works under the umbrella of the Saudi Health Commission for Health Specialties (SCFHS) which is a governmental scientific body founded by virtue of a royal decree. The SCFHS is responsible for governing the healthcare practices, supervising professional health-related programs, and licensing processes. The SSCP believes that the role of pharmacists is important during circumstances such as epidemics and pandemics.

2. Constructing the recommendations

The writing task force was selected by the SSCP to conceptualize the first draft of the recommendations. These recommendations were drafted based on the currently available evidence that highlights the best practices regarding pharmacist's roles during emergency situations. Following that, these recommendations were shared with pharmacy profession stakeholders via the society social media platforms. The writing task force issued 28 recommendations after receiving the feedback from the stakeholders.

3. The aim of the recommendations

These recommendations aim to provide the pharmacy profession community with several insights regarding the pharmacist's roles and responsibilities in the community, supply chain, and healthcare settings based on existing scientific knowledge during this outbreak. It also reinforces to the other healthcare providers and national organizations the importance of pharmacists' participation and role in decision making during these circumstances.

4. Recommendations

Recommendation 1: We urge the Saudi Center for Disease Prevention and Control (CDC) and the Ministry of Health (MoH) to continue to utilize pharmacists' expertise in prevention and treatment during epidemic and pandemic situations. The World Health Organization (WHO) recommends including pharmacists in the infection prevention and control of epidemics and pandemics (Sakeena et al., 2018). Pharmacists receive extensive education and training in appraising emerging evidence, and the Saudi CDC and MOH could utilize their expertise in conceptualizing, appraising, and drafting prevention and treatment protocols. Their role is integral in analyzing national and international therapeutic options for the management of any emerging outbreak due to their rapidly advancing clinical experience.

Recommendation 2: We urge all healthcare institutions to involve pharmacists in emergency preparedness and disaster planning during epidemic and pandemic situations. Pharmacists can play an integral role in providing patient-focused services such as developing comprehensive care plans, therapeutic drug monitoring, and provide evidence-based recommendations (Song et al., 2020). Due to the diverse nature of the pharmacy profession, pharmacists are working in different healthcare sectors such as the MoH, Saudi Food and Drug Administration (SFDA), pharmaceutical industry, community pharmacies, primary healthcare centers and hospitals. Their involvement in the emergency planning during an emerging epidemic or pandemic situations is essential and integral.

Recommendation 3: Pharmacists should take a proactive role in the development, implementation, and adherence to institutional and national guidelines related to the emerging outbreak such as COVID-19. As stated previously, pharmacists play a fundamental role in the development and implementation of institutional and national guidelines, protocols, and clinical pathways (Thompkins et al., 2019). Previous evidence showed that 50% of the published clinical practice guidelines between January 1, 2010, and December 31, 2016, had at least one pharmacist as a member of on its writing panel (Thompkins et al., 2019). Pharmacist's interventions and involvement are associated with higher rates of adherence to these clinical practice guidelines (Horning et al., 2007).

Recommendation 4: We urge pharmacy department directors to ensure that pharmacy practice settings are capable of maintaining full functionality during epidemic and pandemic situations. It is the responsibility of pharmacy directors to ensure that all patients are receiving adequate pharmaceutical care services during epidemics and pandemics. This includes setting cost-effective plans to ensure the quality of care delivered to all patients, including infected and uninfected patients. One of the suggested modalities to ensure adequate functionality is to change the staffing shifts to 12 h shifts instead of short staffing hours and have all staff only enter through separate entrances to the facility, separate from the public entrances. Reducing the frequency of shift changes or turnover of staff would limit the spread of infection to a smaller number of individuals if exposures were to occur. Pharmacy directors should ensure the continuity of pharmacy business and consider the need for the following:

- Review of annual leave arrangements and vacancies in key areas and implementing conservative policies to ask that all unwell staff remain at home.
- Rearrange the pharmacist schedule staff and resources to preparedness activities.
- Prepare contingency plans to surge staff in the event of high rates of absenteeism as staff become unwell with the expected respiratory tract infections including COVID-19 or are required to stay home to care for family.
- Role substitution or redeployment of staff at higher risk of infection. For example, redeploying immunocompromised staff to back-of-house functions without direct patient contact.
- Optimize the delivery of telehealth via reorganization of duties that individual pharmacists could fulfill while working from home with remote access to the institution computer system
- Training all pharmacy staff on the proposed emergency preparedness activities.

Recommendation 5: We call on all pharmacists to refrain from dispensing any of the medications that have been linked to the management of particular pandemic without a valid and authenticated prescription during epidemic and pandemic situations. To reduce the risk of running short on supportive care and essential medications in the community settings, our front-line community pharmacists are encouraged to contact prescribing clinicians to discuss prescriptions with weak supporting evidence to manage certain infections such as COVID-19. Also, they should educate and encourage their patients and customers, not to overstock over the counter medications (OTC) such as antipyretics and decongestants as these create artificial supply shortages. Moreover, in both inpatient and outpatient settings, pharmacists are urged to adhere to the national rules of dispensing any prescriptive medications without a valid prescription. They can also suggest therapeutic substitutions and modify the patients' treatment plan in collaboration with their primary care providers when the need arises in case of a shortage of certain medications.

Recommendation 6: All pharmacy and supply chain directors shall implement a list of alternative vendors of essential medications, medical devices, and contracted services, and a strategy to address related shortages and ensure enough supply of all medications used for critical and life-threatening conditions during epidemic and pandemic situations. Proper communication and transparency regarding shortages from supply-chain management and regulatory bodies involving out-of-stock or short supply medications and the availability of alternatives are crucial. Creating a continuously updated backup list of vendors and pharmaceutical companies can be beneficial. In the case of national emergencies, the SFDA may be required to identify and extend the shelf-life of certain critical medications proactively to avoid unwanted shortage (Badreldin and Atallah, 2020). Pharmacists should avoid discarding expired medications related to the direct treatment or symptom management of the pandemic or epidemic. Instead, they may sequester the medications in the event that SFDA can extend the shelf-life of the medications or permit their use in the absence of other unexpired stock.

Recommendation 7: Community pharmacists should be trained to screen pharmacy customers for signs and symptoms of infections such as COVID-19 and provide the most appropriate action plan in suspicious cases as per the Saudi CDC guidance. In order to reduce the risk of exposure to and transmission of infections such as COVID-19, community pharmacies should develop a screening system to screen customers/patients before entering into the pharmacy.

Recommendation 8: we urge the policymakers at the MoH to involve trained community pharmacists to administer vaccines to the public to reduce the burden on the healthcare system and

improve vaccine coverage when vaccines become available for a specific epidemic or pandemic such as COVID-19. Recent evidence showed that community pharmacists can reduce the time to achieve 80% single-dose vaccine coverage during pandemics. Therefore the utilization of trained community pharmacists to administer vaccines to the public should be integrated into the pandemic vaccine response plan (Schwerzmann et al., 2017).

Recommendation 9: We urge all healthcare institutions to seek the voluntary assistance of qualified unemployed or retired but licensed pharmacists and technicians during epidemic and pandemic situations. During these unprecedented times, the pharmacy workforce could be negatively impacted as some pharmacists, and pharmacy technicians may be affected by the infection, get quarantined, or get deployed to other locations. This may affect the workflow and, hence, seeking assistance from qualified unemployed or retired pharmacists or pharmacy technicians may help minimize the impact of any shortage in the pharmacy workforce. Policymakers should define the capacity of their roles and responsibilities in order to maximize their voluntary effort.

Recommendation 10: We call upon all pharmacy policymakers and directors to provide licensed pharmacy technicians with expanded authority during epidemic and pandemic situations. Pharmacist's level of practice could be maximized during epidemics and pandemics by providing licensed pharmacy technicians with expanded authorities under the pharmacist's supervision to relieve pharmacists from technical duties and make them available to support healthcare teams caring for patients with the emerging infection such as COVID-19. Technicians should receive the appropriate education to match their expanded authority and privileges.

Recommendation 11: All pharmacists should proactively maximize the use of virtual and online platforms in order to educate the public regarding infection prevention measures during epidemic and pandemic situations. Pharmacists are equipped with skills during their training to provide patient education related to public health matters. There are several ways pharmacists can help in educating the public during epidemics and pandemics. This could be done by participating in virtual awareness campaigns, writing electronic newsletters, or blogs. Developing digital brochures, booklets regarding essential infection prevention measures, and helpful resources that can be shared through social media and other digital platforms. Launching online educational sessions and recorded videos are also examples of proactive public health education modalities (Strand and Miller, 2014). Also, pharmacists can form local or regional message boards between each other to share experience and ask questions of others to seek solutions to common and repetitive problems encountered during the treatment of the pandemic or address drug shortages issues and alternative treatments.

Recommendation 12: Pharmacists should provide evidence-based recommendations to patients and healthcare providers according to the MOH and Saudi CDC and institutional guidelines during epidemic and pandemic situations. Implementation of evidence-based medicine has been shown to provide the best medical care at the lowest cost. Providing evidence-based recommendations to patients and healthcare providers is one of the pharmacist's key responsibilities. These recommendations should be in alignment with the most current MOH, Saudi CDC and institutional guidelines (Lewis and Orland, 2004).

Recommendation 13: All pharmacists should use their expertise and knowledge during epidemic and pandemic situations to proactively clarify misconceptions and rumors to the public and direct them to reliable resources. Using social media platforms, pharmacists should educate the patients and the public by going back to the official, reliable resources such as the Saudi CDC guidance and MoH guidelines and websites.

Recommendation 14: We recommend that all healthcare institutions implement an easy-to-refill solution to minimize potential and unnecessary exposure during epidemic and pandemic situations. Strategies should be implemented to eliminate or reduce the risk of exposure during the refilling process, such as drive-thru and home delivery of medications, encouraging electronic prescriptions, and extending the refilling period for patients with chronic disorders. This should not impact the counseling service, which is integral in preventing hospitalization due to patient's lack of sufficient information regarding their medications. We urge all pharmacists to use virtual platforms to conduct patient counseling and medication reconciliation.

Recommendation 15: Pharmacy directors should develop guidance for staff monitoring for any potential signs of infection during epidemics and pandemics. Pharmacy directors should ensure including policies that incorporate complying with self-reporting and self-quarantine for all pharmacy staff. They also should implement mechanisms for reporting both illness and absenteeism during epidemic and pandemic situations.

Recommendation 16: Pharmacy directors should develop policies and procedures for employees returning to work after recovering from the emerging infection during epidemic and pandemic situations. These policies and procedures should incorporate guidance for any returning employee to ensure the safety of his or her colleagues, including the number of allowed business days that could be missed and modality of gradual incorporation of returning staff in daily schedules.

Recommendation 17: We recommend restricting the presence of any unnecessary staff during epidemic and pandemic situations. Social distancing is a significant determinant in limiting the spread of any emerging infection such as COVID-19 and other viruses. For this reason, we urge all pharmacy policymakers to implement departmental safe-movement solutions for the pharmacy staff during epidemic and pandemic situations.

Recommendation 18: We urge all pharmacy policymakers and directors to implement policies to monitor the availability of surgical masks, N95 respirators/powered air-purifying respirators (PAPRs), alcohol-based hand disinfectants and gloves during epidemic and pandemic situations. Policymakers and directors must ensure the safety of the employees by developing policies and procedures that address the ordering, storage, utilization, and supply monitoring of surgical masks, N95 respirators/powered air-purifying respirators (PAPRs) and other supplies including alcohol-based hand disinfectants and gloves during epidemic and pandemic situations. The policies should also include the importance of mask fit testing for those who come in direct contact with droplet/airborne precaution patients, i.e., pharmacists attending codes.

Recommendation 19: We urge all pharmacy policymakers and directors to ensure that enough personal protective equipment (PPE) is provided to all pharmacists and pharmacy staff at risk of exposure during epidemic and pandemic situations. Due to the expected high demand for PPE during epidemics and pandemics, we urge policymakers and healthcare executives to ensure that all staff including pharmacy personnel are equipped with appropriate PPE, especially if they are working in high volume settings, which may increase their risk of exposure to potentially infected individuals. There should be a constant evaluation of the risk related to pharmacist-related activities to ensure the dynamics of supplying them with PPE. Evaluations should include a process for PPE conservation that may include re-use of PPE, including face masks after decontamination processes. Gloves, long-sleeved gowns, and face masks should be granted for any pharmacy staff working with an infected individual.

Recommendation 20: Pharmacy directors should prioritize critical services based on essential institution-wide operations

during epidemic and pandemic situations. A stepwise approach should be implemented in each pharmacy in order to prioritize pharmacy provided critical services. This approach should be implemented to help provide essential services in a timely manner.

Recommendation 21: Pharmacy staff should be trained on critical pharmacy workflow procedures. Many pharmacy staff may become infected or quarantined during epidemics and pandemics. In the meantime, the workflow should not be impacted. For this reason, a training plan with operation and reference manuals should be in place for staff taking over the roles and responsibilities of other staff members, including administrative, clinical, distribution, and inventory management functions during epidemic and pandemic situations.

Recommendation 22: We urge all quarantined pharmacy staff to provide technical support and deliver telehealth services whenever possible to minimize burnout on-duty staff during epidemic and pandemic situations. It is essential to utilize telehealth to provide pharmaceutical services to increase patient access to care. This includes activating telehealth in pharmacist run clinics and counseling services.

Recommendation 23: Given the overwhelming nature of daily patients' rounds during the epidemic, we urge pharmacists to continue to be extra vigilant by making sure that their patients are receiving the most rational and appropriate medication management including dosing adjustment, drug therapy monitoring, adverse drug reactions, drugs compatibilities, and drug interactions management. During pandemics such as COVID-19, certain patients may be required to be isolated and treated as inpatients while others may be admitted into the intensive care unit (ICU) due to its complications. Pharmacists are urged to follow-up on the patients' status, modify the treatment plan, adjust the medications, and perform proper therapeutic drug monitoring when deemed necessary. In addition, and as a result of the development of several national and international guidelines for the management of certain epidemics or pandemics, caution should be advised regarding drug-drug interactions during the initiation of new medications.

Recommendation 24: Pharmacists should collaborate with all healthcare teams, including physicians and nurses, to minimize unnecessary contact between caregivers and potentially infected patients during epidemic and pandemic situations. Adopting clustered-care principles as best practices, such as switching patients from short-acting to long-acting alternatives and bundling medication administration times during epidemic and pandemic situations, should reduce the number of times the nurse enters the patient's room. Similarly, by performing proper medication reconciliation, the pharmacist and the healthcare team can identify the needed medications, making it easier to optimize the patient's therapeutic plan also, if the patient has polypharmacy, by eliminating duplicate therapy or unnecessary medications thus aiding in the reduction of nurse exposure to the potentially infected patient.

Recommendation 25: We urge pharmacy profession leaders to create communication channels that function effectively during epidemic and pandemic situations. It is essential to create a channel of communication through pharmacy profession leaders by establishing a system of sharing information with partners and stakeholders to avoid medication shortages and to overcome the unavailability of medication in any of the affected institutions. This communication is crucial during this time, and it is mainly the responsibility of the pharmacy leaders. It should be done primarily by creating a comprehensive contact list to identify everyone in the chain of communication (e.g., the Medication supply chain in each institution), maintaining an up-to-date primary and secondary list for everyone in the chain of communication, determining when and what type of information can be shared with the comprehensive contact list and identifying the proper communication plat-

forms, such as a hotline, automated text messaging, email, social media, online and group messaging applications, and a website, to help disseminate information to internal and external partners.

Recommendation 26: We recommend modifying all pharmacy meetings modalities and utilize electronic and virtual modalities during epidemic and pandemic situations. Regular and standing meetings should continue to move forward during epidemics and pandemics to prevent any delay in decision making. Virtual platforms are another way to proceed with meetings as it is an easy and convenient modality, and it enforces the concept of social distancing.

Recommendation 27: We urge all pharmacy departments to share their experience and report it to the MOH and the Saudi CDC during epidemic and pandemic situations. It is vital to create a portal where pharmacy departments can share their experiences and concerns. Therefore, with the interest of the public health in mind, we encourage all healthcare institutions to report their experience to the MoH and Saudi CDC. The MoH and the Saudi CDC should streamline and generate the necessary regulations and recommendations based on these reports.

Recommendation 28: Pharmacists are encouraged to initiate/participate in building registries and effectively contribute to research and clinical trials in epidemic and pandemic situations. Pharmacists can play a significant role in building registries. Creating disease registries can be a beneficial way to understand the nature of the disease across different geographic locations as they can aid in recognizing risk factors and prognosis of diseases and identify the impact of therapeutic management on diverse patient populations (Akazawa et al., 2018).

5. Conclusion

These 28 recommendations establish safety goals for pharmacists and protect the integrity of the healthcare system. They direct pharmacists to the best optimal use of resources, time, and shared information with the ultimate goal of ensuring the optimal access to and quality of care for everyone living in Saudi Arabia.

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