

# Pharmaceutical Health Services, Medicines and Practices available at Airport-based Pharmacies; implications for the future

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## Commentary

### **Airport based pharmacies; products, services and challenges essential for patients in a global travel landscape**

#### **Abstract**

The role of airport pharmacies has grown in recent years to provide a range of services to travelers including OTC and prescription medicines as well as advice on prevention of infectious and other diseases. Prevention, including protective equipment, is especially important during pandemics as seen with the recent COVID-19 pandemic. In addition, offering vaccinations where appropriate. However, this is not universal and there are currently no acknowledged guidelines for pharmacists operating within airports. In addition, research into their role as well as potential ways to improve this is lacking. This is a concern with community pharmacists playing a valuable role during the COVID-19 pandemic. Potential ways forward including greater research into their activities to enhance their role and address challenges. These include issues of brand names and language, as well as encouraging travel pharmacy in future university curricula. In addition, producing guidelines for their activities and monitoring their implementation. This can help build a greater role for their services benefiting airport staff and travelers in the future.

#### **1. Main body**

Airports are intricate, multifunctional hubs that offer travelers a range of amenities, including departure gate lounges, airline lounges, restaurants, shops, entertainment venues, meeting spaces, leisure resources, and other activities before, during, and after transit [1].

Along with these amenities, many modern airports also now contain pharmacies and clinics for those seeking medical or health care [2]. The health of travelers is a crucial component of travel especially for the elderly, chronically ill, newborn, pregnant or disabled [3]. Pharmacists at airport pharmacies can assist travelers by offering health advice, medicines and essential consumables including personal protective equipment as well prevention including immunization in a convenient and accessible location [4]. This is especially important during long-haul flight layovers, medical emergencies and epidemics [2, 5]. Consequently, airport pharmacies have the potential for playing a critical role in meeting the health needs of travelers. This includes

1. **Convenience:** If a pharmacy is on site, travelers can conveniently access the required medications and health-related products without leaving the airport. This can save time and reduce stress, particularly for those with tight schedules.
2. **Emergency Preparedness:** In the event of an emergency, travelers may forget to bring necessary medications or medical supplies. Having an airport pharmacy nearby can provide quick access to these items, potentially saving lives.
3. **Accessibility for All:** For travelers with mobility difficulties or other limitations, airport pharmacies provide easy access to prescription medicines and medical supplies, ensuring they are not inconvenienced or disadvantaged while on their journey.
4. **Travel Vaccinations:** Many countries have specific vaccine requirements for travelers, and airport pharmacies can provide these vaccines to protect travelers against illnesses and diseases during their travels.
5. **Time-Sensitive Medications:** Some medications require strict adherence to a specific regimen, and airport pharmacies can help travelers maintain their treatment schedule while away from home.

Currently, the International Civil Aviation Organization documents the requirements for airport medical services and their application to address relevant medical and health-related needs [6]. However to date, there appears a limited number publications regarding the availability of pharmacy services at significant domestic and international airports compared with publications documenting pharmacy-managed travel services before flights [7-10]. Consequently, we sought to investigate the types of professional services, medications and procedures available at airport pharmacies to provide future guidance.

Overall, we believe airport pharmacies should offer a range of products and services to meet the specific needs of passengers. These include prescription medicines, travel-related items, medical supplies, and immunizations as well as information about nearby medical facilities. To cater to the needs of travelers, airport pharmacies should stock a range of healthcare products. Based on the experiences of the Authors the items that airport pharmacies should stock, along with the reasons for this, include:

1. **Over-the-counter (OTC) medicine:** Airport-based pharmacies should have a variety of commonly used OTC drugs available for sale. These should include cold and flu medication, travel sickness remedies, painkillers and antihistamines. These medications can help travelers manage minor illnesses and health-related issues while away from home.
2. **Prescription drugs:** Airport pharmacies should be able to fill travelers' prescriptions, particularly those with chronic diseases or who may have forgotten to pack their medications. It is important to note though that laws governing the filling of prescriptions for travelers may vary from country to country.
3. **Travel-related products:** Travelers frequently forget to pack some items or may be required to purchase products in travel-sized containers. Airport pharmacies should stock travel-sized toiletries, insect repellents, sunscreen, and other similar items.
4. **Medical equipment:** Travelers may occasionally require medical equipment such as CPAP machines, nebulizers, or oxygen tanks. Airport pharmacies should offer a range of medical devices for rent or purchase.
5. **Travel vaccinations:** Airport pharmacies should be able to provide necessary travel vaccinations, as some countries have strict entry requirements. They should also be ready

to offer advice on any additional immunizations that are recommended for the destination country as well as advice on ways to avoid getting an infection. This is particularly important during mass gatherings such as the Hajj and other festivals [11], and builds on the fact the community pharmacists have emerged as one of the primary sites for prevention and control during global infectious disease outbreaks including COVID-19, helping as well to dispel some of the misinformation [12-15].

6. **Information and documentation:** Airport pharmacies should provide information about local medical services as well as any necessary paperwork for transporting medications across international borders.

Aside from delivering medications and advice regarding taking them, pharmacists can also counsel patients on their illnesses and the need for the medicines recommended or prescribed, undertake blood pressure checks, blood glucose monitoring, and temperature checks as well as offer smoking cessation guidance and health advice across different age groups and needs [16]. This is seen as beneficial for travelers especially if they are in a rush, fall ill, or experience minor medical issues at the airport before, during or after a flight.

The provision of immunizations by pharmacists and the uptake of those vaccinations by travelers have yielded promising results in several studies [17, 18]. This is helped by the fact that pharmacists are permitted to deliver vaccines in their areas of expertise, including those for travel, in several countries including Switzerland, Canada, the UK, and Denmark [19]. However, it is worth noting that offering these travel vaccines through airport pharmacies necessitates a clear protocol. This includes required training and facility specifications as well as planning for emergencies including anaphylaxis brought on by vaccines. In addition, it would not be possible for airport pharmacies to administer travel vaccinations that need numerous doses. The short period between the administration of vaccines and the risk of travel-based exposure would also make it difficult for airport pharmacies to provide many of the immunizations that are unique to travel.

These potential activities of pharmacists in airports are in addition to taking part with particular aspects during airport emergency medical crises [5]. According to a report published by the Gold Coast International Airport Pharmacy, pharmacists were involved in the recent COVID-19 epidemic and offered guidance on relevant protocols and preventions, up-to-date medical news, COVID-19 safety measures, and help with calming anxious passengers [20]. Airport pharmacies can also be helpful in providing basic medications, PPE and hand sanitizers, as well as advising on health and hygiene precautions during pandemics. However, currently there doesn't appear to be sufficient clarity regarding the pharmacist's responsibility in airport pharmacies during emergencies and disasters. According to a Gosadi, et al. (2014) among employees at a Saudi Arabian airport, health and non-health workers lacked sufficient knowledge of public health emergencies, which needs urgent addressing [21]. However, to the best of our knowledge, pharmacists who work in airport pharmacies have not been the subject of comparable

studies with a greater focus on safeguarding the safety and welfare of passengers [6]. This needs to be addressed going forward.

With respect to prescription and other medicines, it is important to note that pharmaceutical availability may vary between countries due to different regulations and product availability, and airport-based pharmacies may not have access to all medications [4]. Airport pharmacies are equipped to handle patients who have prescriptions or drugs from foreign countries in various ways, including:

1. Providing guidance: The pharmacy staff can offer advice to patients on how to manage their prescription medications while traveling, including any restrictions or requirements that may be in place in the country they are visiting.
2. Offering information: If a patient runs out of their prescription medication while traveling, the pharmacy staff can inform them about the availability of similar medications in the destination country and potentially how to access them
3. Refilling prescriptions: Depending on the medication and local laws, the pharmacy may be able to refill prescriptions from other countries or offer a comparable medicine to help the patient manage their condition while abroad if this is possible
4. Scheduling a doctor's appointment: Sometimes, the pharmacy may need to receive additional information about the medication or prescription from the patient's physician in their resident country or their insurance company and subsequently help schedule a visit if pertinent.
5. Assisting with documentation: Travelers carrying medications across borders may need to provide specific documents. The pharmacy staff can explain these procedures to patients and provide any necessary paperwork where they can.

However, one of the main differences between airport-based pharmacies and traditional pharmacies is their physical space and staff. Airport-based pharmacies are typically situated in a smaller space with a smaller inventory and fewer staff. This can affect the range of products and services they offer. Due to their limited resources, airport-based pharmacies might not carry as many medicines and products as a traditional pharmacy, and they might have fewer employees on hand to answer queries or offer guidance. Another factor that sets airport-based pharmacies apart is their operating hours. As many airports operate 24/7, airport-based pharmacies may need to be open early in the morning and late at night to accommodate travelers' schedules. This can result in different business hours than typical pharmacies. Additionally, airport-based pharmacies may have to comply with specific airport regulations and security measures that traditional pharmacies may not encounter.

## **Challenges of International Travel and the impact on Airport Pharmacies**

Whilst there are some differences because of the special requirements of travelers, airport pharmacies typically offer many of the same goods and services as a conventional pharmacy.

However, the viability of airport pharmacies is influenced by a number of factors. These include the airport's location, passenger traffic, and availability of resources for businesses including

personnel at all times the airport is open. The longevity of airport pharmacies can vary depending on the economic climate and the airport's specific circumstances. While some airport pharmacies may have operated for many years, others may be more sporadic due to rent, competition, or other economic conditions. In addition, while some larger airports may have multiple pharmacies scattered throughout the airport as this is a viable option, others may not have any due to the economics of the situation. Generally, larger airports tend to have more amenities, including pharmacies, while smaller airports may have fewer options. However, the availability of pharmacies at an airport can change over time due to factors such as demand and other external factors.

The sustainability of airport pharmacies can be impacted by changes in consumer behavior, economic conditions, and competition. To remain viable, airport pharmacies need to adapt to new circumstances by introducing new services and products, implementing eco-friendly practices, and developing new marketing strategies. Overall, airport pharmacies must remain flexible and responsive to the changing needs of travelers and the airport industry to ensure their long-term sustainability.

Governments can also play a significant role in supporting airport pharmacies as part of their emergency preparedness plans. Airport pharmacies can be crucial in emergencies, such as natural disasters, pandemics, or terrorist attacks, by providing essential medical care and supplies to those affected. Governments can aid airport pharmacies by providing financial support to stock essential drugs and supplies. They can also provide assistance and resources to help train pharmacy staff on emergency response procedures and provide guidance on how to collaborate with other emergency responders and healthcare providers. This can include the provision of certifications in travel health and applicable procedures associated with operating airport pharmacies. Alongside this, additional research is necessary to examine future opportunities at airport pharmacies and how pharmacists can better support travelers' health, building on the current evidence base [7-10]. This can evolve into the creation of practice guidelines for pharmacists in airports, similar to the situation in the community. Guidance can include operational guidelines during epidemics, pandemics, and infectious disease outbreaks, incorporating preventive operations and safety precautions as well as assistance and support during health emergencies. In addition, the establishment of standards to govern pharmacy premises in airports, the scope of practice in travel health at airport pharmacies, and policies for assisting and communicating with travelers from various countries and cultures. We will be monitoring these developments.

Alongside this, governments can mandate the inclusion of pharmacies in airports as part of licensing or operational standards, enhanced by recent pandemics and infectious disease outbreaks such as the recent Monkeypox outbreak. This ensures that travelers have access to necessary medical treatment, supplies, and advice and that airports are equipped to handle emergencies.

## CONCLUSION

In conclusion, in the context of international travel, airport-based pharmacies have an increasing role to play. They should prioritize comprehensive pharmaceutical services and technological integration to meet current and future needs of travelers. There also needs to be collaboration among pharmacy schools, governments, and health authorities to ensure pharmacy personnel working at airports have sufficient knowledge to meet the needs of travelers including agreed guidance. Guidelines should cover key aspects including medication handling, storage, and dispensing as well as collaborative efforts to promote health initiatives including preventive care, awareness campaigns, and education. This should include the latest advice from the World Health Organization, particularly useful during the COVID-19 pandemic as well as the recent Monkeypox infections.

Pharmacies can also leverage current technology to enhance the customer experience. For example, airport-based pharmacies can implement smartphone apps for prescription refills and health information, self-service kiosks for efficient prescription distribution, or virtual pharmacy consultations. As a result, pharmacy schools should adapt their curricula to include specific education on these topics. Furthermore, pharmacy schools can establish partnerships with airport pharmacies to offer students hands-on training experiences. This may involve rotations, internships, or other experiential learning programs that expose students to the distinct dynamics of pharmacy practice in airport settings. These are the goals of the future.



## References

1. Del Chiappa G, Loriga AS. Analysing determinants of travellers' expenditures for food and beverage services at airports. *Mercati Competitivita'*. 2019;2:127–147. doi:10.3280/mc2-2019oa8135
2. Makino T, Asano Y, Takuhiro K, et al. International airport and emergency medical care. *J Nippon Med Sch*. 2002;69(2):185–191. doi:10.1272/jnms.69.185
3. International Air Transport Association (IATA). *Medical Manual*. Geneva: International Air Transport Association; 2008.
4. Kc B, Alrasheedy AA, Leggat PA, Molugulu N, Mohamed Ibrahim MI, Khatiwada AP, et al. Pharmacies in the Airport Ecosystem and How They Serve Travelers' Health and Medicines Need: Findings and Implications for the Future. *Integr Pharm Res Pract*. 2022;11:9-19
5. Dove DB, Del Guercio LR, Stahl WM, Star LD, Abelson LC. A metropolitan airport disaster plan—coordination of a multihospital response to provide on-site resuscitation and stabilization before evacuation. *J Trauma*. 1982;22(7):550–559. doi:10.1097/00005373-198207000-00005
6. International Civil Aviation Organization (ICAO). *Airport Preparedness Guidelines for Outbreaks of Communicable Disease*. Montreal: International Civil Aviation Organization; 2009.
7. Kc B, Alrasheedy AA, Leggat PA, Mohamed Ibrahim MI, Christopher CM, Sapkota B, et al. Types and outcomes of pharmacist-managed travel health services: A systematic review. *Travel Med Infect Dis*. 2023;51:102494.
8. Hurley-Kim K, Goad J, Seed S, Hess KM. Pharmacy-Based Travel Health Services in the United States. *Pharmacy (Basel)*. 2018;7(1).
9. Houle SK. Pharmacy travel health services: current perspectives and future prospects. *Integr Pharm Res Pract*. 2017;7:13-20.
10. Evans D. Impact of Pharmacy Based Travel Medicine with the Evolution of Pharmacy Practice in the UK. *Pharmacy (Basel)*. 2018;6(3).

11. Alahmari AA, Khan AA, Alamri FA, et al. Hajj 2021: Role of Mitigation Measures for Health Security. *Journal of Infection and Public Health* 2022 and Alamri FA, Khan A, Badokhan AH, et al. Common Health Complains Among Pilgrims during Manasik El Hajj; Season 1439H (2018)
12. Hedima EW, Adeyemi MS, Ikunaiye NY. Community Pharmacists: On the frontline of health service against COVID-19 in LMICs. *Res Social Adm Pharm.* 2021;17(1):1964-6.
13. Cadogan CA, Hughes CM. On the frontline against COVID-19: Community pharmacists' contribution during a public health crisis. *Res Social Adm Pharm.* 2021;17(1):2032-5.
14. Kibuule D NL, Sefah IA, Kurdi A, Phuong TNT, Kwon H-Y, Godman B. Activities in Namibia to limit the prevalence and mortality from COVID-19 including community pharmacy activities and the implications. *Sch Acad J Pharm.* 2021;5:82-92.
15. Schellack N, Strydom M, Pepper MS, Herd CL, Hendricks CL, Bronkhorst E, et al. Social Media and COVID-19—Perceptions and Public Deceptions of Ivermectin, Colchicine and Hydroxychloroquine: Lessons for Future Pandemics. *Antibiotics.* 2022;11(4):445.
16. DeHart RL. Health issues of air travel. *Annu Rev Public Health.* 2003;24 (1):133–151. doi:10.1146/annurev.publhealth.24.100901.140853
17. El-Kurdi R, Rhodes LA, Sauls AD, et al. Assessing barriers to patient acceptance of pharmacist-provided recommendations for international travel. *J Am Pharm Assoc.* 2019;59(4):S72–S76. doi:10.1016/j. japh.2019.04.021
18. Leuthold C, Bugnon O, Berger J. The role of community pharmacists in travel health and vaccination in Switzerland. *Pharmacy.* 2018;6 (4):125. doi:10.3390/pharmacy6040125
19. Rosado H, Bates I. *An Overview of Current Pharmacy Impact on Immunisation: A Global Report.* The Hague: International Pharmaceutical Federation (FIP); 2016.

20. O'Malley M. Coping with COVID-19 in an airport pharmacy [Internet]; 2022. Available from: <https://www.australianpharmacist.com.au/>. Accessed November 5, 2022.
  
21. Gosadi IM, Al-Hazmi AM, Fadl AA, Alharbi KH, Swarelzahab MM. Evaluation of knowledge and behavior of workers in Prince Mohammed International Airport in Western Saudi Arabia regarding public health emergency measures applied during Hajj season 2014. *Saudi Med J.* 2015;36(4):456–462. doi:10.15537/smj.2015.4.10908