


Community Pharmacy Policy and Procedures: Immunization Services

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ABSTRACT

Objectives: This study aims to highlight the unique and crucial role of the Immunization Services policy in Community pharmacy practice, a significant new initiative in Saudi Arabia. **Methods:** This study conducted a comprehensive narrative review of Community pharmacy policy and the procedures of the Immunization Services system. The search process involved thorough literature searches in databases such as PubMed, Medline and Google Scholar, covering specific Immunization Services policies and procedures in Community pharmacy practice from the 1960s until October 2021. The search was conducted in English and included a narrative review, systemic review, Meta-analysis and guidelines. All hospital or community pharmacy services and the national and international policies of general immunization services in hospital practice were included in the search term. The Community Pharmacy Immunization Services Committee was formulated and consisted of various expert members, including clinical pharmacists, drug information pharmacists and clinical Immunization Services specialists. The guidelines of the policy draft by one member and the second member were reviewed and corrected. The third revision, a crucial step in the policy development process, was carried out by the Immunization Services specialist, who ensured the accuracy and effectiveness of the policy. The topic emphasizes the Community Pharmacy Immunization Services policy and procedures. **Results:** The competency of the Community Pharmacy Immunization Services policy consisted of various items. These have included the Immunization Services Committee, Pediatrics Immunization, Adults Immunization, Immunization Medication Errors Reporting System, Vaccines Adverse Drug Reactions Reporting System and Vaccines Drug Quality Reporting System. Besides, Immunization of high-risk patients, vaccine storage and preparation and administration. **Conclusion:** The Immunization Services policy in Community pharmacy practice is a groundbreaking initiative that has the potential to significantly improve public health in Saudi Arabia, bringing hope for a healthier future.

Keywords: Immunization, Services, Policy, Community pharmacy, Competency, Saudi Arabia.

INTRODUCTION

The community pharmacy provides various services, including but not limited to dispensing medicine, nutrition and herbal remedies, patient education, distribution of medications and healthcare devices, smoking cessation and immunization services.¹⁻⁵ Immunization services are essential to public health and decrease the morbidity and mortality of vaccinated diseases. In the 20th century, mumps cases decreased from an annual average of over 162,000 to 2,528 in 2010.⁶ Similar decreases are observed in nearly all vaccine-preventable diseases after the invention of vaccines and widespread Immunization.⁶ Immunization consists of the storage of vaccines, vaccine distribution, patient counseling of vaccinations and administration of vaccines based on local and international standards. Document vaccination patients' schedules, pharmacist intervention to vaccinate patients and reporting of vaccination adverse drug reactions^{7,8} Those services must understate education and postgraduate training and might be included in postgraduate community pharmacy programs. Pharmacists must receive Occupational Safety and Health Administration (OSHA) training before administering immunizations, updated annually.⁹ More than 175,000 pharmacists in the United States are trained to provide vaccinations.⁶

During 2008-2009, hospitalizations and emergency room visits due to rotavirus decreased by 88%, resulting in estimated cost savings to the healthcare system of \$278 million.¹⁰ Immunizations are vital for improving public health and decreasing healthcare costs. Influenza vaccination rates nearly doubled when pharmacists in a rural clinic reviewed patients' charts and recommended influenza vaccines to high-risk patients.¹¹ The immunization services provided by Saudi community pharmacies started after the COVID-19 pandemic, including the COVID-19 vaccine, then expanded to cover all vaccinations scheduled.^{12,13} Various studies discussed the role of pharmacy in immunization services and knowledge or willingness to provide immunization services.¹²⁻¹⁶ Other research focused on one vaccine prevention strategy.⁶ Some studies focused on the impact of community pharmacist engagement through immunization services.^{9,17-25} However, more literature is needed about the policy and procedures for immunization services at Saudi community pharmacy services.^{26,27} The current review explores these policies and procedures.

MATERIALS AND METHODS

It was a comprehensive narrative review of new views on community pharmacies' Patient and Immunization Services policy and procedures. Litterateur searched various databases, including PubMed, Medline and Google Scholar, about specific topics related to Community pharmacy policy and procedures. The search period is from the 1960s until October 2024. The term is in English and They included Full-text Full text, Case Reports, Classical Articles, Clinical Conferences, Clinical Studies, Clinical Trials, Clinical Trials, Phase I, Clinical Trials, Phase II, Clinical Trials, Phase III, Clinical Trials, Phase IV, Clinical Trial, Veterinary, Government Publication, Guideline, Meta-Analysis, Observational Study, Randomized Controlled Trial, Review, Systematic Review, Humans, English. All community pharmacy services are included in a search term. The community pharmacy services included a point of sale at a community pharmacy, human resources, education and training, a compounding center, a community pharmacy store and clinical community pharmacy services. Besides, the national and international guidelines of general community pharmacy practice policy and procedures in a community setting²⁸⁻³⁵ These included the American Pharmaceutical Association, the American Society of Health-System Pharmacists (ASHP),²⁸⁻³⁰ and other literature^{9,17-25,31-35} The Community Pharmacy Policy and Procedures committee was formulated and consisted of various expert members. That includes clinical community pharmacists, expert community pharmacists and Immunization Services pharmacist specialists. The policy guidelines were drafted by one member, reviewed and corrected by the second member and the third revision by the Immunization Services pharmacist specialist. The Immunization Services at Community Community Pharmacy consisted of various topics, including the Immunization Services Committee, Pediatrics Immunization, Adults Immunization, immunization medication errors reporting system, vaccines adverse drug reactions reporting system and vaccines drug quality reporting system. It also includes the immunization of high-risk patients, vaccine storage and preparation and administration.

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Translations

Community pharmacy[MeSH Terms]: "pharmacies"[MeSH Terms].

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RESULTS AND DISCUSSION

- The pharmacist suggested following the policy and procedures for Immunization Services for Community Pharmacy.
- The community pharmacy assigns a pharmacist or community pharmacy technician to provide community pharmacy immunotherapy services.
- The community Community pharmacy should set up a strategic plan for Immunization Services and an annual plan and revise them periodically.
- The Immunization Services pharmacist should assess Immunization Services for the community based on the guidelines and publication.
- The score level should be determined based on the assessment. An actor should be set singly and assessments should be made entirely.
- All Community pharmacy staff should take education and training courses in Community pharmacy Immunization Services according to published policies and procedures.
- The Community pharmacy should distribute pharmacist policy and procedures for Community pharmacy Immunization Services to all Community pharmacy employees, who should receive special training based on published procedures.
- The pharmacist Immunization Services follow the specific published procedures and local and international guidelines of the Immunization Services committee, Pediatrics Immunization, Adults Immunization, immunization medication errors reporting system, vaccines adverse drug reactions reporting system, vaccines drug quality reporting system, vaccines drug quality reporting system. Besides, Immunization of high-risk patients, vaccine storage and preparation and administration.
- When dispensing vaccines, the pharmacist should follow the steps below: The pharmacist should check the patient’s history of immunization and vaccine administration, as well as their current diseases and medications.
- The pharmacist should check the immunization administration and dose-related instructions.
- The pharmacist should check about the last laboratory of vital signs, if possible and another necessary test.

- The pharmacist should check the allergy history of vaccines and the level of allergy severity.
- The pharmacist should search evidence-based indications and approved SFDA indications for the vaccines either before dispensing.
- The pharmacist should check the patient’s liver function and renal status before taking cosmetics.
- The pharmacist should double-check about pregnancy and lactation for women before ordering the vaccines.
- The pharmacist should double-check any vaccines, medications, laboratory, or nutrition-immunization interactions and any current disease interactions.
- The pharmacist might dispense and administer the vaccine’s frequency and doses based on patient age, pediatric or adult, or orderly.
- The pharmacist should make counseling based on international standards.
- The pharmacist provides the counseling material about vaccines.
- If a vaccine reaction occurs, the pharmacist should document it and send a copy to the SFDA and the manufacturer.
- The Immunization Services pharmacist should set a quality management plan for Community pharmacy Immunization Services and related key performance indicators according to published guidelines and procedures.

CONCLUSION

Immunization services have had positive clinical and economic outcomes for patient care. As these services have expanded, community pharmacy services have also developed. Policymakers have recognized the importance of your role and have shifted the responsibility for immunization from hospitals and primary healthcare facilities to community pharmacy services. Community pharmacists have impacted clinical outcomes and helped reduce the healthcare system’s economic burden. Your efforts in implementing immunization services, which include scheduled adult and pediatric vaccinations, vaccine administration, storage of vaccines, vaccination documentation, monitoring and documentation of any vaccine-related problems, have been crucial. As a result, the policy and procedures for immunization services have been favorably implemented in community pharmacy practice.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

MOH: Ministry of Health; **KSA:** Kingdom of Saudi Arabia; **SFDA:** Saudi Food and Drug Authority; **OSHA:** Occupational Safety and Health Administration; **COVID-19:** Corona Virus Diseases of 2019; **ASHP:** American Society of Health-System Pharmacists.

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REFERENCES

1. Christensen DB, Farris KB. Pharmaceutical care in community pharmacies: practice and research in the US. *Ann Pharmacother.* 2006;40(7-8):1400-6. Epub 2006/07/27. Doi: 10.1345/aph.1G545. PubMed PMID: 16868221.
2. van Mil JW. Pharmaceutical care in community pharmacy: practice and research in the Netherlands. *Ann Pharmacother.* 2005;39(10):1720-5. Epub 2005/09/08.

- Doi: 10.1345/aph.1G141. PubMed PMID: 16144881.
3. Westerlund LT, Björk HT. Pharmaceutical care in community pharmacies: practice and research in Sweden. *Ann Pharmacother.* 2006;40(6):1162-9. Epub 2006/06/01. Doi: 10.1345/aph.1G680. PubMed PMID: 16735653.
 4. Alanazi AS, Alfadl AA, Hussain AS. Pharmaceutical Care in the Community Pharmacies of Saudi Arabia: Present Status and Possibilities for Improvement. *Saudi J Med Med Sci.* 2016;4(1):9-14. Epub 2016/01/01. doi: 10.4103/1658-631X.170881. PubMed PMID: 30787688; PubMed Central PMCID: PMC6298263.
 5. Hasan S, Sulieman H, Chapman CB, Stewart K, Kong DC. Community pharmacy services in the United Arab Emirates. *Int J Pharm Pract.* 2012;20(4):218-25. Epub 2012/07/11. doi: 10.1111/j.2042-7174.2011.00182.x. PubMed PMID: 22775518.
 6. Weidman-Evans E, Mohundro BL. IMMUNIZATION SERVICES. COMMUNITY AND CLINICAL PHARMACY SERVICES.97.
 7. Aldajani FN, Aldosari M. Pharmacist-led vaccination services in the Middle East. *J Pharm Policy Pract.* 2023;16(1):171. Epub 2023/12/29. Doi: 10.1186/s40545-023-00664-8. PubMed PMID: 38155347; PubMed Central PMCID: PMCPC10755951.
 8. Alsabbagh MW, Church D, Wenger L, Papastergiou J, Raman-Wilms L, Schneider E, *et al.* Pharmacy patron perspectives of community pharmacist-administered influenza vaccinations. *Res Social Adm Pharm.* 2019;15(2):202-6. Epub 2018/05/05. doi: 10.1016/j.sapharm.2018.04.015. PubMed PMID: 29724679.
 9. Rosado H, Bates I. An overview of current pharmacy impact on immunization global report. 2016.
 10. Singhal PK, Zhang D. Costs of adult vaccination in medical settings and pharmacies: an observational study. *Journal of Managed Care Pharmacy.* 2014;20(9):930-6.
 11. Rha B, Tate JE, Payne DC, Cortese MM, Lopman BA, Curns AT, *et al.* Effectiveness and impact of rotavirus vaccines in the United States-2006-2012. Expert review of vaccines. 2014;13(3):365-76.
 12. Alshahrani SM, Orayj K, Alqahtani AM, Alfatease A, Alshahrani A, Ibrahim ARN. Attitude and Willingness to Get COVID-19 Vaccines by a Community Pharmacist in Saudi Arabia: A Cross-Sectional Study. *Patient Prefer Adherence.* 2022;16:2821-34. Epub 2022/10/27. doi: 10.2147/PPA.S379309. PubMed PMID: 36284545; PubMed Central PMCID: PMCPC9588287.
 13. Meraya AM, Syed MH, Shabi AA, Madkhali HA, Yatimi YA, Khobrani KY, *et al.* Assessment of community pharmacists' knowledge, attitudes and willingness to provide vaccination services in Saudi Arabia. *PLoS One.* 2024;19(5):e0304287. Epub 2024/05/28. Doi: 10.1371/journal.pone.0304287. PubMed PMID: 38805488; PubMed Central PMCID: PMCPC11132504.
 14. Brackett A, Butler M, Chapman L. Using motivational interviewing in the community pharmacy to increase adult immunization readiness: A pilot evaluation. *J Am Pharm Assoc (2003).* 2015;55(2):182-6. Epub 2015/01/24. doi: 10.1331/JAPhA.2015.14120. PubMed PMID: 25615903.
 15. Houle SKD. Making it happen: Strategies to incorporate vaccinations into community pharmacy practice. *Can Pharm J (Ott).* 2019;152(6):427-9. Epub 2019/11/26. Doi: 10.1177/1715163519877906. PubMed PMID: 31762858; PubMed Central PMCID: PMCPC6851646.
 16. Al Aolola N, Alsaif R, Alhabib H, Alhossan A. Community needs and preferences for community pharmacy immunization services. *Vaccine.* 2020;38(32):5009-14. Epub 2020/06/17. doi: 10.1016/j.vaccine.2020.05.060. PubMed PMID: 32540273.
 17. Snapp A, Gatewood SS, Kaefer TN, Nadpara P, Goode JR. Reprint of: A retrospective review of the impact of Immunization eCare plans in a community-based pharmacy setting. *J Am Pharm Assoc (2003).* 2024;64(4S):102178. Epub 2024/08/11. Doi: 10.1016/j.japh.2024.102178. PubMed PMID: 39127945.
 18. Goad JA, Taitel MS, Fensterheim LE, Cannon AE. Vaccinations administered during off-clinic hours at a national community pharmacy: implications for increasing patient access and convenience. *Ann Fam Med.* 2013;11(5):429-36. Epub 2013/09/11. Doi: 10.1370/afm.1542. PubMed PMID: 24019274; PubMed Central PMCID: PMCPC3767711.
 19. Huston SA, Ha DR, Hohmann LA, Hastings TJ, Garza KB, Westrick SC. Qualitative Investigation of Community Pharmacy Immunization Enhancement Program Implementation. *J Pharm Technol.* 2019;35(5):208-18. Epub 2019/10/01. Doi: 10.1177/8755122519852584. PubMed PMID: 34752512; PubMed Central PMCID: PMCPC6706950.
 20. Heaton PC, Altstadter B, Hogue C, Poston S, Ghaswalla P. The impact of community pharmacy utilization of immunization information systems on vaccination rates: Results of a clustered randomized controlled trial. *J Am Pharm Assoc (2003).* 2022;62(1):95-103 e2. Epub 2021/11/13. Doi: 10.1016/j.japh.2021.09.010. PubMed PMID: 34764037.
 21. Snapp A, Gatewood SS, Kaefer TN, Nadpara P, Goode JR. A retrospective review of the impact of Immunization eCare plans in a community-based pharmacy setting. *J Am Pharm Assoc (2003).* 2024;64(2):577-81. Epub 2023/12/28. Doi: 10.1016/j.japh.2023.12.019. PubMed PMID: 38151203.
 22. Taddio A, Morrison J, Gudzak V, Logeman C, McMurtry CM, Buccini LM, *et al.* CARD (Comfort Ask to Relax Distract) for community pharmacy vaccinations in children affects immunization stress-related responses and satisfaction. *Can Pharm J (Ott).* 2023;156(1 Suppl):27S-35S. Epub 2023/02/10. Doi: 10.1177/17151635221137682. PubMed PMID: 36756630; PubMed Central PMCID: PMCPC9899969.
 23. Bazzell B, Kelling S, Diez H, Klein K. Identifying Opportunities for Improvement in Safety and Efficacy of Community Pharmacy Immunization Programs. *J Pharm Pract.* 2019;32(4):428-33. Epub 2018/03/01. Doi: 10.1177/0897190018761410. PubMed PMID: 29486666.
 24. Pattin AJ, Sherman L. Experiences Among African American Community Members With Pharmacy-Based Immunization Services in Detroit, Michigan. *J Pharm Technol.* 2018;34(6):259-65. Epub 2018/12/01. Doi: 10.1177/8755122518801288. PubMed PMID: 34860913; PubMed Central PMCID: PMCPC6231280.
 25. Perman S, Kwiatkowska RM, Gjini A. Do community pharmacists add value to routine immunization programs? A review of the evidence from the UK. *Journal of Public Health.* 2018;40(4):e510-e20. Epub 2018/02/21. Doi: 10.1093/pubmed/fdy021. PubMed PMID: 29462344.
 26. Ali M. ALSHAHRANI AAA, Raneem ALNEFAIE, Nada MOHAMMED, Afnan Turki ALHAMYANI, Ohoud Helal AL SWAT, Saad S. ALQAHTANI Community Pharmacist's Background, Barriers and Competence towards Counselling and Administering COVID-19 Vaccines and Policymaker's Responsibilities. *Lat Am J Pharm* 2023;42(1):105-13.
 27. Chadi A, Thirion DJG, David PM. Vaccine promotion strategies in community pharmacy addressing vulnerable populations: a scoping review. *BMC Public Health.* 2023;23(1):1855. Epub 2023/09/24. Doi: 10.1186/s12889-023-16601-y. PubMed PMID: 37741997; PubMed Central PMCID: PMCPC10518112.
 28. ASHP guideline: minimum standard for pharmaceutical services in ambulatory care. American Society of Health-System Pharmacists. *American Journal of Health-System Pharmacy: AJHP: Official journal of the American Society of Health-System Pharmacists.* 1999;56(17):1744-53. Epub 1999/10/08. doi: 10.1093/ajhp/56.17.1744. PubMed PMID: 10512507.
 29. ASHP guidelines on a standardized method for pharmaceutical care. American Society of Health-System Pharmacists. *American Journal of Health-System Pharmacy: AJHP: Official journal of the American Society of Health-System Pharmacists.* 1996;53(14):1713-6. Epub 1996/07/15. doi: 10.1093/ajhp/53.14.1713. PubMed PMID: 8827240.
 30. American Society of Hospitals P. ASHP guidelines on documenting pharmaceutical care inpatient medical records. *American Journal of Health-System Pharmacy: AJHP: Official journal of the American Society of Health-System Pharmacists.* 2003;60(7):705-7. Epub 2003/04/19. doi: 10.1093/ajhp/60.7.705. PubMed PMID: 12701556.
 31. Alomi YA, Alghamdi SJ, Alattyh RA. National Medication Errors Reporting System at the Ministry of Health in Saudi Arabia. *Pharmacology, Toxicology and Biomedical Reports.* 2019;5(1):4-7. doi: 10.5530/ptb.2019.5.2.
 32. Ahmed Alomi Y. National Pharmacy Practice Programs at Ministry of Health in Saudi Arabia. *Journal of Pharma & Pharmaceutical Sciences.* 2015;1(2):17-8. doi: 10.24218/vjpps.2015.10.
 33. Alomi YA. National Medication Safety Program at the Ministry of Health in Saudi Arabia. *Journal of Pharmacovigilance.* 2015;03(05). doi: 10.4172/2329-6887.1000e145.
 34. Ahmed Alomi Y, Shorog E, Alshahrani A, Alasmay S, Alenazi H, Almutairi A, *et al.* National Survey of Pharmacy Practice at MOH Hospitals in Saudi Arabia 2016-2017: Drug Monitoring and Patients Education. *Journal of Pharmacy Practice and Community Medicine.* 2018;4(1s):s17-s22. doi: 10.5530/jppcm.2018.1s.14.
 35. Alomi YA, Alghamdi SJ, Alattyh RA, Elshenawy RA. The evaluation of the pharmacy strategic plan in the past 2013-2016 and forecasting of new vision 2030 at the Ministry of Health in Saudi Arabia. *Journal of Pharmacy Practice and Community Medicine.* 2018;4(2).