



Research Article

PHARMACY VACCINATIONS FROM A PUBLIC HEALTH PERSPECTIVE

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ABSTRACT

Pharmacy vaccinations refer to the administration of vaccines by pharmacists at retail pharmacies, rather than by traditional healthcare providers such as doctors or nurses. Pharmacies can be utilized to implement vaccination programs that target specific populations, such as the elderly or those with chronic illnesses. These programs can be tailored to the unique needs of these populations and can help to ensure that they receive the appropriate vaccinations promptly. The main advantage of utilizing pharmacies for vaccinations is that they are often more accessible and convenient for individuals than traditional healthcare settings, which leads to increased vaccination rates, which is crucial in controlling the spread of infectious diseases during an outbreak. Additionally, pharmacy-based vaccination programs can also be a cost-effective solution for governments and insurance companies, as pharmacies can negotiate better prices with vaccine manufacturers and streamline the administration process. Furthermore, by providing vaccinations in pharmacies, individuals can receive vaccinations without having to go to a hospital or clinic, which can help to reduce the strain on these healthcare settings. Pharmacies can also be an important resource for marginalized communities who may have limited access to traditional healthcare settings.

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INTRODUCTION

The importance of vaccinations in preventing the spread of infectious diseases is well-established. However, the role of pharmacies in administering these vaccinations, particularly during epidemic outbreaks, is an often-overlooked aspect of public health (Poudel *et al.*, 2019). Pharmacy vaccinations refer to the administration of vaccines by pharmacists at retail pharmacies, rather than by traditional healthcare providers such as doctors or nurses. These vaccines can include those recommended for routine immunization, such as the flu shot, as well as those recommended during outbreaks of epidemic diseases.

From the evidence gathered by Isenor & Bowles (2018), pharmacy vaccinations have become increasingly popular in recent years due to the convenience and accessibility they offer to individuals. In the same light, Andrade *et al* (2021) note the contribution of Pharmacy-based vaccination programs in increasing the vaccine administration rate in the Covid-9 era. This paper will examine the economic and social implications of pharmacy vaccinations for epidemic diseases and argue that they are a crucial factor in maintaining the overall health and well-being of communities. In the same quest, this paper will discuss the benefits and challenges of pharmacy vaccinations, as well as the role of pharmacists in promoting and administering vaccines to the public.

DISCUSSION

Pharmacy Vaccination Programs

Pharmacies can be utilized to implement vaccination programs that target specific populations, such as the elderly or those with chronic illnesses. These programs can be tailored to the unique needs of these populations and can help to ensure that they receive the appropriate vaccinations on time. For example, programs can be implemented that target the elderly population. The elderly are at a higher risk of complications from infectious diseases, and they must receive vaccinations in a timely manner. According to Schmit & Penn (2017), pharmacies can provide vaccinations for influenza, pneumococcal disease, and shingles, which are particularly important for this population. These programs can also include education and awareness campaigns to inform the elderly about the importance of vaccinations and how to access them. Similarly, programs can be implemented that target individuals with chronic illnesses. These individuals may have weakened immune systems and are at a higher risk of complications from infectious diseases. Pharmacies can provide vaccinations for influenza, pneumococcal disease, and tetanus, which are particularly important for this population. These programs can also include education and awareness campaigns to inform individuals with chronic illnesses about the importance of vaccinations and how to access them (Isenor *et al.*, 2016a; Isenor *et al.*, 2016b). Additionally, pharmacy-based vaccination programs can also be implemented in

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collaboration with other healthcare providers, such as primary care physicians. For example, physicians can refer their patients to a nearby pharmacy for vaccinations and the pharmacy can also send reminders to patients when it's time to receive a booster shot.

Economic Considerations

Accessibility and convenience: Pharmacies play a vital role in the distribution and administration of vaccines during epidemic outbreaks. One of the main advantages of utilizing pharmacies for vaccinations is that they are often more accessible and convenient for individuals than traditional healthcare settings (Grzegorzczak-Karolak *et al.*, 2022). Pharmacies are typically located in easily accessible locations, such as shopping centers and community centers, which makes it easier for people to receive vaccinations (Rusic *et al.*, 2022). Bay *et al.* (2016) note that this can lead to increased vaccination rates, which is crucial in controlling the spread of infectious diseases during an outbreak.

Reduced cost: The increased vaccination rates that result from utilizing pharmacies can ultimately lead to reduced healthcare costs. When more people are vaccinated, the likelihood of a widespread outbreak is significantly reduced, which means that fewer people will require medical treatment (Bartsch *et al.*, 2018). This can help to alleviate the strain on hospitals and clinics during outbreaks, as fewer people will need to be hospitalized. In addition, vaccines are cost-effective, as they prevent more expensive medical treatments.

Pharmacy-based vaccination programs can also be a cost-effective solution for governments and insurance companies. According to Bartsch *et al.* (2018), one of the main reasons for this is the ability of pharmacies to negotiate better prices with vaccine manufacturers. Pharmacies purchase vaccines in bulk and can often negotiate better prices than individual healthcare providers. This can result in significant cost savings for governments and insurance companies, as the cost of vaccines is a major expense in any vaccination program.

Another way in which pharmacy-based vaccination programs can be cost-effective is by streamlining the administration process (Schwerzmann *et al.*, 2017). When vaccines are administered at a pharmacy, there is often less need for additional medical professionals or facilities. This can be especially beneficial in areas where there is a shortage of healthcare providers or facilities. For example, in rural areas where there may be few doctors or clinics, pharmacies can provide an important source of vaccinations. Similarly, in urban areas, pharmacies can help to reduce the burden on overworked hospitals and clinics by providing vaccinations to individuals in the community.

Reduced strain: By providing an additional point of access for vaccinations, pharmacies can help to alleviate the strain on healthcare systems during outbreaks. Hospitals and clinics can become overwhelmed during outbreaks, which can lead to long wait times and limited availability of appointments. By providing vaccinations in pharmacies, individuals can receive vaccinations without having to go to a hospital or clinic, which can help to reduce the strain on these healthcare settings.

Social considerations

Marginalized communities: Pharmacies can be an important resource for marginalized communities who may have limited

access to traditional healthcare settings. These communities may include individuals who are low-income, homeless or living in rural areas. According to Vanderpool *et al.* (2019), these individuals may face barriers such as transportation difficulties, lack of childcare, or language barriers that make it difficult for them to access traditional healthcare settings. By providing vaccinations in pharmacies, Schwerzmann *et al.* (2017) point out that these marginalized communities can receive the same level of protection against infectious diseases as those who have more access to healthcare. Pharmacies are typically located in easily accessible locations, such as shopping centers and community centers, which makes it easier for people to receive vaccinations (Percy *et al.*, 2020). This can help to increase vaccination rates in these communities, which is crucial in controlling the spread of infectious diseases during an outbreak.

Reduced Health Disparity: The increased vaccination rates that result from utilizing pharmacies can also help to reduce health disparities and promote greater equity in public health (Kirkdale *et al.*, 2017). Health disparities are a significant problem in many communities, and they are often the result of social and economic inequalities. For example, marginalized communities, such as low-income or minority populations, may have less access to healthcare and may be less likely to receive vaccinations. This can lead to higher rates of infectious diseases in these communities and can contribute to a cycle of poor health and economic disadvantage.

By providing vaccinations in pharmacies, marginalized communities can receive the same level of protection against infectious diseases as those who have more access to healthcare (Kirkdale *et al.*, 2017; Burson *et al.*, 2016). Pharmacies are often located in convenient, easily accessible areas and are open during extended hours. This makes it easier for individuals in marginalized communities to receive vaccinations without having to take time off work or school. Additionally, the cost of vaccinations may be lower at a pharmacy than at a traditional healthcare provider, making them more affordable for individuals who may not have insurance or who have high deductibles.

Online Scheduling: many pharmacies have begun to offer online scheduling and vaccination reminders, which can help to increase vaccination rates by making it easier for individuals to schedule appointments and remember to receive their vaccinations (Michel *et al.*, 2021). This can be especially beneficial for individuals who may be at higher risk of contracting an infectious disease, such as the elderly or those with certain chronic health conditions. According to Daniel *et al.* (2021), many pharmacies are now able to offer a wide range of vaccinations, including those for flu, HPV, and shingles. This further expands the accessibility and convenience of vaccinations for marginalized communities.

Specific needs: pharmacy-based vaccination programs can also be tailored to the specific needs of marginalized communities which consequently increases satisfaction (Burt, Hattingh & Czarniak, 2018). For example, programs can be implemented that target specific populations, such as the elderly or those with chronic illnesses. These programs can be tailored to the unique needs of these populations and can help to ensure that they receive the appropriate vaccinations promptly.

Associated Challenges

Limited access to vaccines: One of the biggest challenges facing pharmacy-based vaccination programs is limited access to vaccines. Pharmacies may not have the same level of access to vaccines as hospitals or clinics, which can limit the types of vaccinations they can offer. Additionally, pharmacies may not have the resources to store and transport vaccines, which can further limit their ability to offer certain vaccinations.

Staffing and training: Pharmacies may need to hire and train additional staff to administer vaccinations, which can be costly and time-consuming (Bushell, *et al.*, 2020). According to Calo *et al* (2019), pharmacies may also need to provide additional training to existing staff to ensure they are able to safely and effectively administer vaccinations. This can be a significant barrier for some pharmacies, particularly those with limited resources.

Insurance and reimbursement: Pharmacies may have difficulty getting reimbursement from insurance companies for administering vaccinations, which can be a financial burden (Calo *et al.*, 2019). This is often because the reimbursement rates for vaccinations administered in pharmacies are lower than those for vaccinations administered in hospitals or clinics. Additionally, some insurance companies may not cover vaccinations administered in pharmacies, which can make it difficult for patients to afford the vaccinations.

Limited patient education and counseling: Pharmacies may not have the resources or staff to provide patients with adequate education and counseling about vaccinations, which can lead to a lack of understanding and acceptance of vaccinations (Doucette *et al.*, 2019). This is particularly concerning when it comes to more complex vaccinations, such as HPV or Hep B, where more education is needed to help patients make informed decisions about getting vaccinated.

Limited patient follow-up: Pharmacies may not have the resources or staff to follow up with patients to ensure they receive all recommended vaccinations and to monitor for any potential side effects (Poudel *et al.*, 2019). This is important because some vaccinations require multiple doses or booster shots, and patients may need to be reminded to come back for additional vaccinations. Additionally, monitoring for side effects is important to ensure that patients are not experiencing any adverse reactions to the vaccinations.

Data Management: Pharmacies may not have the resources or staff to properly manage data on patients getting vaccinated and keeping track of their vaccination records. This, according to Poudel *et al* (2019), can lead to confusion and errors in tracking patient vaccination status, which can result in patients not receiving all recommended vaccinations or receiving unnecessary vaccinations. Additionally, improper handling of patient data can also lead to breaches of privacy, which can cause serious problems for patients and pharmacies.

Limited Infrastructure for Cold Storage and Handling of Vaccines: Pharmacies may not have the infrastructure to store and handle vaccines properly in all regions. Vaccines require strict temperature controls to maintain their effectiveness, and pharmacies may not have the equipment or facilities to store vaccines at the proper temperature (Poudel *et al.*, 2019). This can lead to vaccines being wasted or becoming ineffective,

which can be costly for pharmacies and can limit the number of patients that can be vaccinated.

Limited ability to handle patients with multiple comorbidities: Patients with multiple comorbidities may require additional care and monitoring when receiving vaccinations. According to Poudel *et al* (2019), pharmacies may not have the resources or staff to properly care for these patients, and may not be able to provide the necessary follow-up care to ensure that patients are not experiencing any adverse reactions. This can limit the number of patients that can be vaccinated in pharmacies, and can also lead to poorer outcomes for patients with multiple comorbidities.

CONCLUSION

Pharmacy vaccinations can play a crucial role in preventing the spread of infectious diseases during epidemic outbreaks. Pharmacies can be utilized to implement targeted vaccination programs for specific populations such as the elderly or those with chronic illnesses, providing convenience and accessibility. Additionally, pharmacy-based vaccination programs can lead to reduced healthcare costs and alleviate the strain on healthcare systems during outbreaks. They can also be a cost-effective solution for governments and insurance companies and provide access to marginalized communities who may have limited access to traditional healthcare settings. However, there are also challenges to be addressed such as the need for education and awareness campaigns to inform the public about the importance of vaccinations and how to access them, as well as the need for collaboration with other healthcare providers.

References

1. Andrade, J., Slaby, M., DeAngelis, J., Connors, J., Truong, J., Ciaramella, C., & DiGregorio, R. (2021). Implementation of a pharmacist-led COVID-19 vaccination clinic at a community teaching hospital. *American Journal of Health-System Pharmacy*, 78(12), 1038-1042.
2. Bach, A. T., & Goad, J. A. (2015). The role of community pharmacy-based vaccination in the USA: current practice and future directions. *Integrated Pharmacy Research and Practice*, 67-77.
3. Baroy, J., Chung, D., Frisch, R., Apgar, D., & Slack, M. K. (2016). The impact of pharmacist immunization programs on adult immunization rates: a systematic review and meta-analysis. *Journal of the American Pharmacists Association*, 56(4), 418-426.
4. Bartsch, S. M., Taitel, M. S., DePasse, J. V., Cox, S. N., Smith-Ray, R. L., Wedlock, P., ... & Lee, B. Y. (2018). Epidemiologic and economic impact of pharmacies as vaccination locations during an influenza epidemic. *Vaccine*, 36(46), 7054-7063. doi: 10.1016/j.vaccine.2018.09.040
5. Burson, R. C., Buttenheim, A. M., Armstrong, A., & Feemster, K. A. (2016). Community pharmacies as sites of adult vaccination: a systematic review. *Human vaccines & immunotherapeutics*, 12(12), 3146-3159.
6. Burt, S., Hattingh, L., & Czarniak, P. (2018). Evaluation of patient satisfaction and experience towards pharmacist-administered vaccination services in Western Australia. *International Journal of Clinical Pharmacy*, 40, 1519-1527.

7. Bushell, M., Frost, J., Deeks, L., Kosari, S., Hussain, Z., & Naunton, M. (2020). Evaluation of vaccination training in pharmacy curriculum: preparing students for workforce needs. *Pharmacy*, 8(3), 151.
8. Calo, W. A., Shah, P. D., Gilkey, M. B., Vanderpool, R. C., Barden, S., Doucette, W. R., & Brewer, N. T. (2019). Implementing pharmacy-located HPV vaccination: findings from pilot projects in five US states. *Human Vaccines & Immunotherapeutics*.
9. Daniel, C. L., Lawson, F., Vickers, M., Green, C., Wright, A., Coyne-Beasley, T., ... & Turberville, S. (2021). Enrolling a rural community pharmacy as a Vaccines for Children provider to increase HPV vaccination: a feasibility study. *BMC Public Health*, 21, 1-10.
10. Doucette, W. R., Kent, K., Seegmiller, L., McDonough, R. P., & Evans, W. (2019). Feasibility of a coordinated human papillomavirus (HPV) vaccination program between a medical clinic and a community pharmacy. *Pharmacy*, 7(3), 91.
11. Grzegorzczak-Karolak, I., Zglińska-Pietrzak, A., Weremczuk-Jeżyna, I., & Kałucka, S. (2022). Evaluation of patient experiences regarding pharmacist-administrated vaccination and attitude towards future additional pharmacy services in Poland. *Vaccines*, 10(9), 1479.
12. Isenor, J. E., & Bowles, S. K. (2018). Evidence for pharmacist vaccination. *Canadian Pharmacists Journal/ Revue des Pharmaciens du Canada*, 151(5), 301-304.
13. Isenor, J. E., Edwards, N. T., Alia, T. A., Slayter, K. L., MacDougall, D. M., McNeil, S. A., & Bowles, S. K. (2016). Impact of pharmacists as immunizers on vaccination rates: a systematic review and meta-analysis. *Vaccine*, 34(47), 5708-5723.
14. Isenor, J. E., Killen, J. L., Billard, B. A., McNeil, S. A., MacDougall, D., Halperin, B. A., ... & Bowles, S. K. (2016). Impact of pharmacists as immunizers on influenza vaccination coverage in the community-setting in Nova Scotia, Canada: 2013-2015. *Journal of Pharmaceutical Policy and Practice*, 9(1), 1-6.
15. Kirkdale, C. L., Nebout, G., Megerlin, F., & Thornley, T. (2017, January). Benefits of pharmacist-led flu vaccination services in community pharmacy. In *Annales pharmaceutiques francaises* (Vol. 75, No. 1, pp. 3-8). Elsevier Masson.
16. Michel, D. E., Iqbal, A., Faehrmann, L., Tadić, I., Paulino, E., Chen, T. F., & Moullin, J. C. (2021). Using an online nominal group technique to determine key implementation factors for COVID-19 vaccination programmes in community pharmacies. *International journal of clinical pharmacy*, 43(6), 1705-1717.
17. Percy, J. N., Crain, J., Rein, L., & Hohmeier, K. C. (2020). The impact of a pharmacist-extender training program to improve pneumococcal vaccination rates within a community chain pharmacy. *Journal of the American Pharmacists Association*, 60(1), 39-46.
18. Poudel, A., Lau, E. T., Deldot, M., Campbell, C., Waite, N. M., & Nissen, L. M. (2019). Pharmacist role in vaccination: Evidence and challenges. *Vaccine*, 37(40), 5939-5945.
19. Rusic, D., Nanasi, D., Bozic, J., Jurcev Savicevic, A., Leskur, D., Seselja Perisin, A., ... & Bukic, J. (2022). Attitudes of Community Pharmacy Service Users towards Vaccination Programs in Pharmacy: A Cross-Sectional Survey-Based Study in Croatia. *Pharmacy*, 10(6), 167.
20. Schmit, C. D., & Penn, M. S. (2017). Expanding state laws and a growing role for pharmacists in vaccination services. *Journal of the American Pharmacists Association*, 57(6), 661-669.
21. Schwerzmann, J., Graitcer, S. B., Jester, B., Krahl, D., Jernigan, D., Bridges, C. B., & Miller, J. (2017). Evaluating the impact of pharmacies on pandemic influenza vaccine administration. *Disaster Medicine and Public Health Preparedness*, 11(5), 587-593.
22. Vanderpool, R. C., Stradtman, L. R., & Brandt, H. M. (2019). Policy opportunities to increase HPV vaccination in rural communities. *Human Vaccines & Immunotherapeutics*, 15(7-8), 1527-1532.

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