

SHORT REPORT

Breaking barriers: Implementing pharmacy-based immunisation training in an unauthorised country for preparedness of potential workforce and enhancing public health

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Abstract

Introduction: In South Korea, pharmacists lack authorisation for immunisation. The imperative for vaccine administration workforce readiness was emphasised by the COVID-19 pandemic. This report aims to share the experiences of implementing pharmacy-based immunisation training with other countries contemplating similar endeavors. **Methods:** Systematic and stepwise approach was applied to implement pharmacy-based immunisation training, which included international faculty collaboration, needs assessment, task force and local support, programme implementation, and feedback assessments. **Results:** Forty-eight participants were certified and expressed high satisfaction with educational content, speaker engagement, and practical training of injection techniques. They also mentioned the opportunity broadened their insights on global pharmacy activity and advocate expanding the scope of pharmacy practice. **Conclusion:** This initiative represents significant efforts in advancing pharmacy education and public health preparedness. The aim is to share the experience and insights from this project to provide a model to the pharmacy community of other countries contemplating similar endeavors.

Introduction

The COVID-19 pandemic highlighted the urgent need to advance pharmacy service, particularly in vaccination efforts, as evidenced in 56 countries globally (International Pharmaceutical Federation (FIP), 2024a). In England, 46% of COVID-19 vaccinations in 2023 were administered by pharmacists in 2023 (Company Chemists' Association (CCA), 2023) and 70% of COVID-19 vaccines were administered at pharmacies in United States of America (USA) by September 2021

(Grabenstein *et al.*, 2022; Singleton *et al.*, 2023). A report showed nearly half (47%) of Australians preferred receiving vaccinations at community pharmacies in 2022 (Company Chemists' Association (CCA), 2023), confirming the pivotal roles of pharmacists in immunisation.

Nonetheless, existing legislation in South Korea prohibits pharmacists from administering vaccines, thereby hindering their involvement. This limit stems from a deep-rooted medical hierarchy and regulatory constraints, despite the nation's the demands on public

health improvement, advanced health medical technology, the demands on public health improvement, and the six-year PharmD education (KPANEWS, 2021a; KPANEWS, 2021b). As a result, while South Korea was lauded globally for efficient COVID-19 testing operations, challenges persisted in vaccination deployment due to difficulties in clinic reservations, vaccine refusal and hesitancy, and healthcare provider burnout (Kim, 2021). Korean pharmacists are only allowed to manage vaccine storage, distribution, dispensing, and post-vaccination counselling, but direct administration remains beyond their scope. Regardless, comprehensive education is essential to prepare pharmacists for future demands and support public health (International Pharmaceutical Federation (FIP), 2024b; American Public Health Association (APHA), 2006).

This report aims to share the implementation process of South Korea's inaugural pharmacy-based immunisation delivery certificate training programme, addressing various challenges to equip its potential immunisation roles.

Description of the programme

Initiation of international lectures and needs assessments

In 2021 and 2022, virtual lectures introducing global pharmacy-based immunisation efforts were delivered to fifth-year PharmD students at Ewha Womans University. These lectures were through a collaboration between the pharmacy faculty in South Korea and the United States (USA). Particularly, the lecture in 2021 invited faculty from other Korean pharmacy schools and members of local pharmacy organisations. The lectures emphasised the expanding roles of pharmacists in global vaccination initiatives and explored collaborative efforts between pharmacy stakeholders and governmental bodies. During the lectures, needs assessments were conducted by facilitating small group discussions with SWOT (strength, weakness, opportunity, and threat) analysis, and it identified the need for immunisation training in Korean pharmacy community, raising awareness, knowledge, skills, and confidence for pharmacy-based vaccination (Rhie *et al.*, 2023; Seo *et al.*, 2022).

Task force group and calls for local support

After confirming the needs, faculty collaborators reached out to local and international organisations, including the American Pharmacists Association (APhA), and received APhA's endorsement to establish

a programme in South Korea. In the meantime, logistical and financial supports were secured through the Ewha Research Institute of Pharmaceutical Sciences (RIPS) and the Korean Academy of Community Pharmacists (KACP). These collaborative efforts led to form a task force composed of pharmacists, pharmacy leaders, faculty champions, and other health professionals.

Course content

The certificate training consisted of a 12-hour self-study module followed by an eight-hour live workshop and post-evaluation. Main content covered vaccine immunology, vaccines, patient communication techniques, adverse reactions, monitoring, and hands-on injection techniques. The live workshop content was held on 9 July 2023, with materials adapted to align with immunisation guidelines from the Korea Disease Control and Prevention Agency (KDCA) and the National Immunisation Programme (NIP) (Korea Disease Control and Prevention Agency & National, 2024; NIP, 2024). We also reviewed the FIP vaccination handbooks and toolkits to meet global education standards (International Pharmaceutical Federation (FIP), n.d.).

Implementation and feedback evaluation

Registration was open to all PharmD students nationwide, with a priority given to sixth-year students during the first three days, after which registration was made available to students of all levels. Registration reached capacity within a week, and 48 students completed the programme out of the initial 50 who registered on a first-come, first-served basis.

One week after the workshop, feedback was conducted through an anonymous online survey, consisting of fifteen 5-point Likert scale questions and three open-ended questions (Appendix 1). Participants (response rate: 64%) reported high satisfaction (scoring \geq four points) across questions, especially regarding the training's coverage of immunisation knowledge, injection techniques practice, and overall engagement by instructors. They also expressed an increase in their awareness of public health responsibilities and advocated expanding pharmacists' scope of practice to include vaccine administration. Areas for improvement (\leq three points) were logistical elements, such as English-language study materials, the distant location of the workshop, and waiting times for injection technique assessments. In open-ended responses, participants expressed a strong sense of excitement about learning new skills and a feeling of making history in a transformative moment to foster positive changes in the pharmacy profession.

Implication and direction

Key contributors to the programme's success were strong partnerships both internationally and locally. Collaboration with APhA, RIPS, and KACP, including faculty champions and dedicated volunteers, facilitated smooth programme implementation. Evidence from other studies indicates that pharmacist-led vaccination programmes are most successful when regulatory frameworks support them, pharmacists receive training, and strong coordination exists between public entities and pharmacy organisations (Marisol *et al.*, 2023; Pauydyal *et al.*, 2021). Countries such as Portugal, the United Kingdom (UK), and the USA have demonstrated success in integrating pharmacists as immunisers with effective legislative adaptations and cross-sectional collaborations (Kirkdale *et al.*, 2017). This paradigm shift has been equally feasible in other countries, such as New Zealand, Canada, Australia, and Poland through concerted advocacy, training and stakeholder engagement (Grzegorzczak-Karolaket *et al.*, 2022). In Asia, the Philippines altered its legislative framework to allow pharmacist-administered COVID-19 vaccines to respond to public health crises (Reeka *et al.*, 2022). Most recently, Singapore's Ministry of Health introduced a pilot initiative for pharmacist-delivered flu vaccinations (The Straits Times, 2024). Despite these advances, previous studies have identified primary barriers that persist, especially in their early stages, including professional conflicts and a lack of regulatory support. Additional challenges include finding ways to resolve the increasing workload and guaranteeing adequate training and reimbursement (Nurfirda *et al.*, 2021). Nonetheless, immunisation education can empower pharmacists to offer improved vaccine-related counselling and thus enhance vaccination rates.

While regulatory restrictions may preclude Korean pharmacists from administering vaccines in the near term, education in immunisation practices could enhance their advisory role, promoting vaccination uptake through enhanced patient counselling.

Decades of sustained efforts have significantly advanced pharmacist-led immunisation worldwide, and it evidences how essential education is in achieving such success. As one example, the APhA developed its certificate training programme in 1996 and trained 360,000 pharmacists by December 2019 (International Pharmaceutical Federation (FIP), 2021). Pharmacists in the USA gained the authority to administer influenza vaccine in 2009 (Centres for Disease Control and Prevention, 2009) and COVID-19 vaccines in 2020 for all 50 states (U.S. Department of Health and Human Services (HHS), 2020). Our initiative was small in scale, but it signalled an important milestone in pharmacy education and practice. Building on strong interests

from participants, the second training is planned for February 2025, which will be open to practising pharmacists and pharmacy faculty, anticipating further impact on expanding pharmacy-based immunisation competencies and readiness.

Conclusion

The inaugural pharmacy-based immunisation training represents a significant step forward for pharmacy education in South Korea. This experience offers a model for other countries contemplating similar endeavours to empower pharmacists to promote vaccination and improve public health outcomes. Encouraged by strong interest from PharmD students, practitioners, and faculty, a second programmed offering is planned, aimed at equipping more members of the pharmacy community for immunisation-related roles.

Conflict of interest

The authors declare no conflict of interest.

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Author contribution

Conceptualisation of programme: SR, HT, SS; methodology: MK, SR, HT, SS; investigation: MK, SR, HT, SS; resources: SR, HT, SS; writing—original draft preparation: SR, HT, SS; writing—edit and revise: MK, SR, HT, SS, BB, JB; supervision: SR, HT, SS; project administration: SR, HT, SS, JB, BB; funding acquisition: SR. All authors have read and agreed to the published version of the manuscript.

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Appendix A: Questionnaire

Item	Questions
5-score Likert	
A. Perspectives on immunisation training	
1.	I support offering immunisation training to pharmacy STUDENTS in South Korea in the future.
2.	I support offering immunisation training to PHARMACISTS in South Korea in the future.
3.	I believe pharmacy STUDENTS' administering vaccines is an important for public health.
4.	I believe PHARMACISTS' administering vaccines is an important for public health.
B. Pre-registration and preparation	
5.	The registration process of the immunisation training was appropriate.
6.	The training materials and supplies were well equipped to aid my learning.
7.	The location was suitable for learning the immunisation training.
C. Self-study modules	
8.	The self-study modules helped me to prepare well for the immunisation training.
D. Live, workshop session	
9.	Live, in-person training session was educational.
E. Faculty and presentation	
10.	The faculty/speakers were knowledgeable and presented the content clearly.
11.	The faculty/speakers were effective in delivering the immunisation training.
F. Injection technique assessment	
12.	Learning injections skills was educational and engaging.
G. Overall impression	
13.	I am excited about becoming more involved in immunisation.
14.	I now feel confident in my knowledge and ability to provide injections.
15.	The immunisation training programme met my expectations.
(Open-ended response)	
16.	What did you like the MOST about the immunisation training program?
17.	How can the immunisation training programme be improved? (Please include any specific details if you selected "Disagree" or "Strongly Disagree" for any question)
18.	Would you recommend this immunisation training programme to other students and pharmacists? (Please provide reason(s) for your response)