

# The immunization training and certification for pharmacists and integration of immunization topics in the pharmacy curriculum: The Philippine experience

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## ABSTRACT

The Immunizing Pharmacist Certification Program of the Philippine Pharmacists Association, Inc. took seven years before finally being accredited in March 2021 as a consequence of stakeholders' collaboration and legal mandates. Levels 1 to 3 of the program are conducted online due to the pandemic, while Level 4 involves a face-to-face supervised skills assessment. Aside from accredited training and certification, the Philippine Pharmacy Act requires essential topics on immunization to be integrated in the pharmacy curriculum. The Philippine Association of Colleges of Pharmacy has successfully incorporated these topics in the identified first to third year courses. Fourth year students may take mock skills assessment prior to internship if they plan to eventually become immunizing pharmacists. Immunization certification programs in Southeast Asia differ per country, with some having none. Hence, pharmacy leaders are strongly encouraged to implement similar certification programs in their countries to advance and benefit the pharmacy profession and society.

**Key words:** Immunizing Pharmacist Certification Program, Philippine Pharmacy Act, immunizing pharmacist, pharmacy curriculum

## 1. Conceptualization and Development of the Immunizing Pharmacist Certification Program

During his visit to the Philippines last 2014, Dr. Luc Besancon, then Chief Executive Officer of the International Pharmaceutical Federation (FIP), challenged the Philippine Food and Drug Administration (FDA) and the Philippine Pharmacists Association (PPHA) to train Filipino pharmacists to administer vaccines in community pharmacies. The purpose of which is to increase the people's access to immunization, since community pharmacies are the most accessible sources of essential medicines, including vaccines. An initial stakeholder consultation was conducted to solicit the opinions of health professionals and gain their support in the development of a training and certification program for immunizing pharmacists. The consultation was attended by representatives from various practice areas, such as, the community pharmacies, the industry, the academe, and even the nurses group. The subsequent conduct of an independent survey showed no significant opposition even among doctors.

From 2015 to 2016, training modules for the program were developed by faculty members from the College of Pharmacy, University of the Philippines Manila. With the

legislation of the Philippine Pharmacy Act, or Republic Act (RA) 10918, in 2016, the roles of Filipino pharmacists expanded to include the administration of adult vaccines, provided that they receive the required training and certification, and that immunization-related topics are incorporated in the pharmacy curriculum. This new law served as the legal basis for the development of the program, as it now authorized Filipino pharmacists to become vaccinators as well.

The training of the core trainers from the University of the Philippines Manila began in 2017 and was expanded the following year. Faculty members from the Philippine Association of Colleges of Pharmacy (PACOP) were initially tapped as regional trainers for two reasons: aside from training the practitioners in the regions of the country to be immunizers themselves, they can also teach pharmacy students in courses that deal with immunization in their respective schools, which is in fulfillment of the provisions in the Philippine Pharmacy Act. Discussions were then held with the FDA, Department of Health (DOH), and Professional Regulation Commission (PRC) for the alignment of the program with other provisions of RA 10918 pertinent to immunization. A concept paper on the program

was endorsed to the Board of Pharmacy, incorporating the necessary revisions. After years of hard work and collaborative efforts, on March 15, 2021, the PRC, through its Resolution No. 05, Series of 2021, finally accredited the Immunizing Pharmacist Certification Program (IPCP) as the training program for the certification of immunizing pharmacists, and PPhA as the training provider. In April 2021, a ceremony was held to formally begin the IPCP and confer the certificates to the first group of immunizing pharmacists in the Philippines, which include five US-certified immunizing pharmacists: Karen Grace Romero, Arlene Si, Enrique Romero II, Richard Pineda, and Jennifer Apuan; and other immunizing pharmacists belonging to the group of core trainers: Imelda Peña, Yolanda Robles, Shiela May Nacabu-an, Margarita Gutierrez and Edwin Ruamero Jr.

The development of the IPCP was not easy, and numerous challenges were encountered along the way. First, there were no certified immunizing pharmacists in the Philippines when this program was proposed in 2014; hence, no one could be tapped to serve as trainers. Fortunately, Ms. Karen Romero, who just came back from the United States at that time, brought her knowledge and experiences as a US-certified immunizing pharmacist, and became instrumental in the development of the program. Second, in 2014, the Philippine Pharmacy Act has yet to be passed. As such, there was an underlying fear of whether the immunization program would be fully supported and accepted as there was no legal mandate yet—only an advisory from the FDA instructing the PPhA to train community pharmacists to administer vaccines in the pharmacy to promote access to vaccines. Concerns regarding support and acceptance from doctors for a pharmacist-based immunization program were also present. This, however, was addressed through an initial stakeholder meeting, and fortunately received positive feedback from the majority of the stakeholders. Third, there were no guidelines in place. These then had to be created from scratch so that a smooth implementation of the training program can be ensured. Fourth, after the legislation of RA 10918, the PPhA needed to comply with regulatory requirements to become an accredited integrated professional organization. With this, pertinent documents were submitted to various agencies to accomplish the accreditation process, and a concept paper was also prepared, as required by the Board of Pharmacy, which was revised and presented several times. Lastly, with the recent approval of the IPCP last March 2021, under the leadership of its national program manager, Bryan Posadas, the program had to be offered virtually due to the COVID pandemic situation as face-to-face training was restricted. To address such restrictions, PPhA has partnered with an online platform provider, the CPDTalks Inc., for the delivery of Levels 1-3 of the program. This has been the system in place until early this year where PPhA now has its own online platform for the delivery of the IPCP.

## **2. The Immunizing Pharmacist Certification Program (IPCP)**

The PPhA's IPCP was mostly patterned, with some modifications, from the American Pharmacist Association (APhA)'s Pharmacy-Based Immunization Delivery Certificate Training Program (CTP), as this served as the standard for the program being developed. The IPCP has four levels: (1) Level 1 provides 16 hours of self-paced online modules that discussed the general principles on vaccination and the pharmacy-based immunization program. This level has seven modules which gave an overview of immunology, vaccine preventable diseases, storage and handling of vaccines, operating a pharmacy-based immunization program, and blood-borne pathogens and needlestick injuries. A post-test is administered after completing all modules. (2) Level 2 provides 16 hours of facilitated online modules, accessible from the DOH's website, about COVID-19 vaccination training, including a post-test. Its 8 modules cover topics on profiling and data management, supply and cold chain management, risk communication, addressing barriers to vaccination, managing adverse events following immunization (AEFI), and immunization waste management. (3) Level 3 is an 8-hour pre-clinical skills training and assessment session which provides a simulation of the immunization process in the pharmacy. This level also includes coaching by the core trainers and return demonstration by the trainees prior to the assessment. (4) Lastly, level 4 is the supervised clinical skills assessment, where trainees will be supervised by a physician or a certified immunizing pharmacist, as they administer vaccines to patients. Levels 1 to 3 may be conducted virtually, especially during the current pandemic, but Level 4 should be done face-to-face since it requires the supervision of a physician or a certified immunizing pharmacist. Trainees who have passed the assessments and completed all the requirements will then be certified as immunizing pharmacists (Philippine Pharmacists Association, 2021).

Unlike the four-level, 48-hour program of the IPCP, the APhA's CTP only consists of three levels, offering a 20-hour program consisting of self study and live seminar before the completion of skills assessment and post-seminar activities (University of Florida, n.d.). Additionally, APhA trains pharmacists to administer vaccines via the following routes: subcutaneous, intramuscular, intranasal, and intradermal (American Pharmacist Association, n.d.), while IPCP trainees are only trained for now to administer intramuscularly and subcutaneously, which are the two most common routes for administration of adult vaccines covered in the pharmacy law.

## **3. Benefits and Significance of the IPCP**

Pharmacists can gain numerous competencies by undergoing the IPCP. The program has the following learning competencies: injection preparation and administration, com-

munication and collaboration, patient screening/counseling, waste management, critical thinking and decision-making, vaccine supply and cold chain management, inventory management, data management, risk communication, AEFI management and reporting, research, and compliance to regulatory requirements. These competencies will prepare them to become immunizing pharmacists and provide immunization services in their respective community pharmacies. Doing so would provide convenience and easy access for people seeking immunization given the proximity and flexible operating hours of community pharmacies (FIP, 2016; Yemeke et al., 2021). Particularly in the Philippines, certified immunizing pharmacists can also opt to provide immunization services for adult vaccination in any FDA-licensed drugstores, which can be a good opportunity to increase patient demand for pharmacy services. With the increased number of certified immunizing pharmacists, vaccination rates among adults may increase as vaccines become more accessible (FIP, 2016; Yemeke et al., 2021). With the ongoing COVID-19 pandemic, immunizing pharmacists can contribute to addressing the current public health emergency, especially with the enactment of RA 11525 or the COVID-19 Vaccination Program Act, which authorized DOH-trained pharmacists to administer COVID-19 vaccines. This can help bolster the country's COVID-19 immunization program, and thus protect the public from COVID-19.

The development of the program also served to foster collaboration with government agencies, like the FDA, DOH, PRC, and the Commission on Higher Education (CHED). Feedback gathered from stakeholders can be a rich source of data to serve as the basis for research, policy-making, and future improvements in the program itself.

In the FIP's 2016 global report on current pharmacy impact on immunization, the Philippines was one of the countries listed where pharmacists were reported to provide immunization services. This showed the progress of the pharmacy profession in the country and its contributions to the global public health agenda. The training program can strengthen the effort to improve vaccination coverage globally, and thus decrease the spread of communicable diseases. With the reduced incidence of communicable diseases, antibiotic misuse and resistance can also be reduced, making vaccines a crucial element in the fight against antimicrobial resistance. Through the IPCP, pharmacists can become more involved in activities which decrease disease burdens and promote vaccine effectiveness and safety (FIP, 2022). Hence, it should be ensured that immunizing pharmacists are well-trained, equipped with the needed skills and competencies, and empowered to deliver safe and efficient immunization services.

#### 4. Integration of Immunization Topics in the Pharmacy Curriculum

There were three (3) key players which contributed to the integration of immunization topics in the pharmacy curriculum and its successful implementation. First, government agencies, specifically CHED, formulated the policies, standards, and guidelines for pharmacy education, while the PRC accredited the PPhA as the training provider. Second, professional associations, through the PPhA, designed the framework for the integration of immunization topics into the pharmacy curriculum, coordinated with pharmacy schools on this matter, and trained the faculty members to be immunizing pharmacists and assessors of student skills in the identified relevant courses. Third, pharmacy schools, through PACOP, will very soon implement the revised pharmacy curriculum.

The following are the components of the framework on the integration of immunization topics in the pharmacy curriculum: (1) The immunization topics mandated by relevant laws and guidelines, such as RA 10918, RA 11525, and CHED Memorandum Order (CMO) No. 25 Series of 2021, were reviewed and identified. The Philippine Pharmacy Act requires that the topic on the safe administration of vaccines be made part of the pharmacy curriculum. RA 11525 mandates the training of pharmacists to administer COVID-19 vaccines to further the vaccination program of the country. CMO no. 25 s. 2021 sets the policies, standards, and guidelines for the Bachelor of Science Pharmacy Program which integrated immunization techniques, safe administration of vaccines, and AEFI as mandatory topics in the pharmacy curriculum. (2) In line with the CHED memorandum, the courses where these mandatory immunization topics can be integrated into were identified. A non-exhaustive list of topics relevant to immunization and the courses identified where these topics can be integrated is shown in Table 1. (3) The option for taking the mock skills assessment is offered to fourth year pharmacy students, who want to become immunizing pharmacists after becoming a licensed pharmacist. (4) Faculty members who will handle the courses with the integrated immunization topics, will have to undergo training and certification as immunizing pharmacists. Their training will have emphasis on what to teach and how to assess the techniques and skills of students. (5) Another component in the framework is the mechanism for the certification of students at the institution level. (6) Instructional design of courses including the syllabi, were developed by the PACOP and guided by the Integration Team of the PPhA. (7) Standardized teaching materials, such as, modules, videos, and lectures, will be developed by the IPCP team to ensure that the teaching of the courses with the integrated immunization topics will be standardized in all schools. (8) BLS training and certification can be taken outside of the university, usually from accredited training

**Table 1. Non-exhaustive list of immunization topics that can be integrated in the course syllabi**

<b>Courses</b>	<b>Topics relevant to immunization</b>
1. Perspectives in Pharmacy	<ul style="list-style-type: none"> <li>• Introduction to Immunizing Pharmacist</li> <li>• Competencies of an Immunizing Pharmacist</li> <li>• Roles of pharmacist in vaccination sites</li> </ul>
2. Introduction to the Health System	<ul style="list-style-type: none"> <li>• Health situation in the Philippines</li> <li>• Immunization Program benefits and impact on public health</li> <li>• Main targets of the Immunization Program</li> </ul>
3. Introduction to Pharmacy Administration, Management and Leadership	<ul style="list-style-type: none"> <li>• Considerations in establishing Pharmacy-Based Immunization Services</li> <li>• General principles of management (planning, organizing, staffing, directing, controlling)</li> </ul>
4. Public Health Pharmacy	<ul style="list-style-type: none"> <li>• Pharmacy in immunization</li> </ul>
5. Human Physiology & Pathophysiology	<ul style="list-style-type: none"> <li>• Immunology</li> <li>• Anatomy of the muscular system</li> <li>• Pathophysiology: Shoulder Injury Related to Vaccine Administration (SIRVA)</li> <li>• Adult vaccine immunization techniques</li> <li>• First aid / BLS training</li> <li>• Epinephrine administration</li> </ul>
6. Dispensing 2	<ul style="list-style-type: none"> <li>• Immunization techniques</li> <li>• Pharmacy-based immunization service (PBIS)</li> <li>• Special topics on immunization (use of consent forms/waivers, protection and liability of immunizing pharmacists and drugstores)</li> <li>• AEFI management</li> <li>• Sterile preparation &amp; compounding</li> <li>• Patient counseling</li> </ul>

sites that issue certificates as a BLS provider.

In their first to third year, pharmacy students will take courses with integrated topics on immunization. These courses will provide them with relevant knowledge and skills on the safe administration of vaccines, though the return demonstration part will be done without the use of needles. Oranges or injection pads can be used as demonstration materials. For students who want to become immunizing pharmacists, they may take the mock skills assessment in their fourth year prior to internship. This assessment will be made optional and shall be conducted only by a certified immunizing pharmacist faculty member. In the assessment, students will work in pairs to demonstrate the entire process from patient care to injection administration using sterile normal saline solution until documentation. After passing the skills assessment, the school will issue an institutional certificate. After graduation and passing the licensure exam, the newly licensed pharmacist may present the institutional certificate to the PPhA along with the other requirements, such as, the BLS certificate and the proof of Hepatitis B vaccination. They can directly proceed to the Level 3 skills assessment and Level 4, after which PPhA can confer the certificate as Immunizing Pharmacist.

Being able to integrate a national immunization training and certification program into the pharmacy curriculum can favorably influence the knowledge and skills students acquire during their undergraduate years. To achieve a more desirable effect, it is important to account for both the faculty and student workload as well as incorporation of such subjects into the curriculum so that acquisition of knowledge and skills can be optimized (Marcum et al., 2010).

## 5. Certification Programs in Other Countries

The certification programs for immunizing pharmacists in the United States and the United Kingdom are presented below to serve as a comparison as these countries are the benchmark in the delivery of pharmacist-based immunization services. The current roles of pharmacists in immunization in selected Asian and Southeast Asian countries were also reviewed. Among Southeast Asian countries, only those with available data were included in this article. It should also be noted that among Southeast Asian countries, only the Philippines has a legal mandate that authorizes pharmacists to administer vaccines.

### 5.1. United States

In the United States, the growing public health need and acceptance of pharmacists as immunizers led to the development of the APhA's Pharmacy-Based Immunization Delivery CTP in 1996 (FIP, 2016). The CTP aims "to prepare pharmacists with comprehensive knowledge, skills, and resources necessary to provide immunization services to patients across the life span" (APhA, n.d.). It is a practice-based curriculum with three learning levels, providing 20 hours of training on hand-on injection technique, clinical evaluation of indications and contraindications of vaccines, and the recognition and treatment of emergency reactions to vaccines. The program is divided into three components: (1) 12-hour self-study online modules with case studies and an assessment; (2) 3-hour live seminar with a final exam; and (3) hands-on assessment of injection techniques. Upon completion of the program, the trainees will be awarded with

a Certificate of Achievement, which will only be valid with a written proof of current Cardiopulmonary Resuscitation or Basic Cardiac Life Support certification. While all 50 states allow pharmacists to administer influenza vaccines, the scope of pharmacist's authority to vaccinate, in terms of the type of vaccine, route of administration, and the patients' age, still varies across the states since it is determined by each state's laws regulating the practice of pharmacy.

### 5.2. *United Kingdom*

Accreditation of immunizing pharmacists in the United Kingdom makes use of the Declaration of Competence (DoC) system, in which pharmacists undergo a self-assessment framework to test their skills and competence before being able to deliver pharmacy services (FIP, 2016). The DoC is a three-part system consisting of (1) the self-assessment framework containing the key competencies in providing the service, (2) recommended learning and assessment which is heavily linked to the core and service-specific competencies, and (3) the DoC declaration wherein pharmacists must sign to assure that they have gained sufficient competency in providing the service (Centre for Pharmacy Postgraduate Education, 2021). A practical training course for injection technique and BLS must first be completed before taking the DoC. Such accreditation is handled by various professional organizations like the National Pharmacy Association, private companies (e.g. Alliance Healthcare, Sonar Informatics, Pharmacy Patient Group Direction), and other education and training courses (FIP, 2016). Starting 2022, an alternative option, the Flu vaccinator competency assessment tool, was developed to evaluate vaccinator competency, and can be completed through self-assessment or with a supervisor (Pharmaceutical Services Negotiating Company, 2022).

The Human Medicines Regulations (HMRs) 2012, the legislation related to medicines, was recently revised to legally authorize pharmacists to administer influenza and COVID-19 vaccinations for a limited period of time, supposedly only until April 1, 2022. However, after public consultation last December 2021, this provision was made permanent by the UK government, effective April 1, 2022 (Human Medicines Regulations, 2012; Wickware, 2022); thus, extending the roles of pharmacists in immunization services. Furthermore, in line with the revised HMRs, community pharmacy contractors are also permanently permitted to administer vaccination services even outside their normal registered pharmacy premises. A setup like this allows flexibility as pharmacists are able to vaccinate more people without disrupting normal pharmacy services, reaching as well those residing in care homes who have limited mobility. This setup was previously used during the influenza program last 2020 to 2021 to boost vaccination rates and was widely implemented from 2021 to 2022 (Department of Health and Social Care, 2022).

### 5.3. *China*

Pharmacists in China are only involved in limited immunization activities, including information and advice provision to the public, and assessment of high risk patients on their vaccination. Pharmacists' involvement in the health workforce is viewed with limited acceptance and support by the government and health system. As such, the availability of proper training and certification for pharmacy professionals is very limited (FIP, 2016; FIP, 2020).

China's National Immunization Programme, a government and academic organization under the WHO-led project Vaccine Safety Net, contributes to immunization-related issues by controlling and eliminating vaccine-preventable diseases, and promoting vaccine awareness and use. This generally provides immunization-related resource materials and information to the public and healthcare professionals (World Health Organization, 2020).

### 5.4. *Japan*

Similar to China, pharmacists in Japan are not allowed by law to administer vaccines to the public and are only restricted to immunization-related activities such as distribution of vaccination materials and provision of information to the public. They also do not have access to patients' vaccination records (FIP, 2020).

### 5.5. *Indonesia*

In the FIP's 2020 global survey, it was reported that pharmacy-based immunization is available in Indonesia, and pharmacists have full access to vaccination records, but at that time, they were not yet authorized to vaccinate. Only other healthcare professionals were allowed to administer vaccines in pharmacies. However, with the onset of the COVID-19 pandemic, pharmacists are now authorized to administer vaccines (FIP, 2022). Indonesian pharmacists generally have a good attitude toward the expansion of their roles in immunization, but the lack of regulation, competency, equipment, and skills training, as well as the high workload on conventional services, are perceived as barriers to providing immunization services (Nurfirda et al., 2021).

### 5.6. *Malaysia*

Before the COVID-19 pandemic, pharmacists were not authorized to administer vaccines and were restricted to roles such as vaccine advocacy, public education, and vaccine adverse events reporting (Al-lela et al., 2012). Pharmacists are also granted reading access to the immunization record books for babies and children up to 6 years old (FIP, 2020). Some schools included immunization courses in their pharmacy curriculum, although this is not yet the case for all pharmacy schools in the country (Al-lela et al., 2012; Yemeke et al., 2021). During the COVID-19 pandemic, the Malaysian Community Pharmacy Guild (MCPG), which represents community pharmacies in the country, proposed to

the country's Ministry of Health to include pharmacists as vaccinators to increase vaccination uptake (Beh, 2022). With the positive feedback of the Ministry of Health, the MCPG then partnered with University of Nottingham Malaysia and other companies to organize the COVID-19 Vaccination Training Programme (VTP). The VTP consists of four modules, covering topics on vaccine administration and storage, injection techniques, pre- and post-vaccination counseling, and basic life support. The training program includes a practical and clinical assessment at certified premises. Finally, on February 11, 2022, pharmacists who have completed the training program were authorized to administer COVID-19 vaccines (Beh, 2022).

### 5.7. Singapore

Currently, Singapore does not have its own immunization training and certification program, but rather partners with APhA and plans to join other countries providing the expanded role of pharmacists in immunization. The Ministry of Health (MOH) of Singapore has recognized gaps in disease prevention and called to improve preventive care through the partnership of the National University of Singapore (NUS) Department of Pharmacy with APhA to deliver pharmacy-based immunization delivery certificate training programs to the country. NUS is the only institution for pharmacy professional education in Singapore and serves as the first licensed partner of APhA in Singapore. The APhA CTP aims to provide accreditation services for immunizing pharmacists in Singapore based on national educational standards for immunization training from the CDC (National University of Singapore, n.d.). Without any legal mandates supporting pharmacy-based immunization, Singapore uses the APhA CTP and guidelines from CDC to ensure that immunizing pharmacists, who show enthusiasm to be trained, acquire the necessary skills and competencies to render immunization services (Lum et al., 2021). Singapore is currently expecting pharmacy-based vaccination policies to be passed soon, which would allow pharmacists to administer flu vaccines (FIP, 2020).

### 5.8. Thailand

Pharmacy-based immunization is not available in Thailand, but pharmacists have access to vaccination records (FIP, 2020). The main roles of pharmacists in immunization are limited to vaccine storage and distribution (Rutchanagul & Sangnimitchaikul, 2022).

### 5.9. Vietnam

In Vietnam, there is currently no law which explicitly authorizes pharmacists to administer vaccines (Yemeke et al., 2021). Law No. 105/2016/QH13 or the Law on Pharmacy also prohibits the retailing of vaccines in drugstores.

## 6. Future direction

Currently in the Philippines, instructional materials for some of the course topics in the pharmacy program are still being developed. Training of faculty members as immunizing pharmacists will begin soon, so that they too will be able to train their students and assess their skills. With the recent changes and developments, it is also necessary to keep the program up-to-date. As such, any feedback and constructive criticism received will be incorporated into the program so that it can be further improved.

Pharmacy-based immunization services among community pharmacies in the country have been initiated in chain and independent drugstores under the supervision of the certified immunizing pharmacists from the IPCP. The government has intensified efforts by supporting the provision of these services in various communities to promote access to vaccines especially at this time of the pandemic.

As pharmacists continue to expand their roles in the modern world, this will bring about the advancement of the pharmacy profession and the betterment of public health. The active involvement of pharmacists in immunization is vital in attaining a world free of vaccine-preventable diseases. Although many challenges remain before pharmacy-based immunization becomes the norm in the country, the support of the government, the dedication of pharmacy leaders and educators, and the successful implementation of the IPCP will be instrumental to achieving this end. Other countries are also encouraged to implement an immunization training and certification program for pharmacists, and support the expansion of their role as immunizers. It is only with the active involvement in immunization of pharmacists from all over the world that a healthier world free from vaccine-preventable diseases can be attained.

### Conflict of Interest

Author declares no significant conflict of interest.

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