

## **Empowering Development Clerkship Preceptors in Advancing Sustainable Clinical Practice through Lifelong Learning: a National Educational Free Program on Pharmacogenomics and Precision Medicine**

The project to enhance the competency of pharmacists in professional training centers, focusing on pharmacogenetics and precision medicine, plays a significant role in promoting lifelong learning for pharmacists. This initiative was established by the School of Pharmacy at Walailak University, led by Dr. Kanuengnit Choochuay and Dr. Aungkana Chuaychai, the Assistant Dean for Professional Affairs, in collaboration with Professor Dr. Chonlaphat Sukasem, a pharmacogenetics expert from Ramathibodi Hospital. This partnership aims to provide pharmacists with advanced knowledge and expertise in pharmacogenetics and precision medicine, thereby improving the quality of care for individual patients.

Pharmacogenetics and precision medicine play a crucial role in tailoring treatments to match the genetic characteristics of each patient. This training program emphasizes providing pharmacists with in-depth knowledge about gene polymorphisms, which influence drug responses, toxicity, and potential adverse effects. Understanding pharmacogenetics helps pharmacists select the most suitable medications for each patient more effectively. Additionally, the program includes training on applying pharmacogenetics in treating various diseases, such as cancer, where targeted therapies are becoming increasingly important. Choosing the right medication for patients enhances treatment effectiveness and ensures greater safety in drug therapy.

Beyond pharmacogenetics, the program emphasizes training in precision medicine, a new approach to patient care that considers not only genetic factors but also environmental and lifestyle influences. Precision medicine helps to enhance treatment effectiveness, reduce the risks associated with inappropriate drug use, and increase the likelihood of successful outcomes.

This training opportunity is available to pharmacists nationwide, particularly those working in hospitals that serve as professional training centres in southern Thailand. These hospitals are key professional networks that support the hands-on training of pharmacy students from Walailak University, including Chumphon Khet Udomsak Hospital, Songkhla Hospital, Maharaj Nakhon Si Thammarat Hospital, Phang Nga Hospital, Phatthalung Hospital, Krabi Hospital, and others. By providing additional training to pharmacists in these hospitals, the program helps improve the quality of student training and enhances the hospital's ability to care for patients effectively.

The training project is strategically divided into two comprehensive phases to ensure that pharmacists receive a thorough and well-rounded education in pharmacogenetics and precision medicine. The first phase spans from 2024 to 2027 and focuses on short-term training

sessions. The totalling 16 hours of instruction is equivalent to one academic credit in short-term training and providing pharmacists with a valuable credential that translates into 15.75 hours of continuous education credits. These credits are crucial for maintaining professional licensure and ensuring that pharmacists remain up-to-date with the latest advancements in their field.

The second phase of the project, scheduled for 2028 to 2030, is more advanced and aims to deepen pharmacists' knowledge and practical skills. During this period, the program will offer a more extensive short-term certificate course that spans four months. This course will go beyond theoretical knowledge, placing a strong emphasis on hands-on practice and experiential learning. Pharmacists will engage in in-depth training that allows them to apply what they have learned in real-world scenarios, particularly in the areas of pharmacogenetics and precision medicine. This phase is designed to ensure that participants not only understand the complex principles of these fields but can also effectively implement them in their daily professional practice.

Importantly, this entire training program is offered free of charge, reflecting a commitment to supporting the lifelong learning of pharmacists and promoting the delivery of high-quality pharmaceutical care across the healthcare system. Upon successful completion of the training and passing the required assessments, participants can obtain a certificate from the Pharmacy Council, which can be used to further their expertise in short-term courses on pharmacogenetics and precision medicine provided by the council.

The competency enhancement project aims to equip pharmacists with up-to-date knowledge and elevate the quality of pharmaceutical services in hospitals across the country. Lifelong learning is crucial for healthcare professionals to stay capable of responding to new challenges in patient care. This project serves as a prime example of how in-depth knowledge can be used to enhance pharmacists' competencies, ultimately benefiting both patients and society in the long run.

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