



Short Communication

Development of an interprofessional third-year (P3) student rotation in pediatric asthma clinics

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Abstract

Background: A pediatric asthma-focused Introductory Pharmacy Practice Experience (IPPE) was developed during which pharmacist-trained third-year (P3) pharmacy students provided asthma-focused patient education to patients and families at pediatric asthma clinics. To assess the impact of this novel experience, students' perceptions regarding the experience and satisfaction of families receiving education were assessed.

Basic procedures: Students completed pre-rotation and post-rotation surveys to gather perspectives of the value of this learning experience, confidence working with an interprofessional team and providing patient education, and areas for improvement of the IPPE. Patient family members evaluated the impact of the student-led education via a survey measuring their perceived understanding of asthma, asthma medications, and proper device technique, as well as satisfaction.

Main findings: In total, 23 students participated in the IPPE over three semesters and completed pre-surveys and post-surveys (100% response rate). For survey items assessing confidence in patient care skills, there was statistically significant improvement from pre-IPPE to post-IPPE ($p < 0.05$). All students agreed or strongly agreed that the orientation prepared them for the IPPE and they recommend this experience to other students. In total, 81 patients were seen by the students in the first semester of the IPPE, and 45 patient families completed surveys (56% response rate). Overall, 95% of patient families would meet with the student again if given the opportunity.

Principal conclusions: This independent IPPE resulted in a positive experience for both students and patient families. Survey results showed improvement in student confidence after this unique rotation experience as well as patient family satisfaction with student-led asthma education.

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Introduction

Proper education is necessary to promote effective medication use by patients. Many disease states, including

asthma, require individualized education to both patients and family member caregivers to ensure appropriate management.¹ Pharmacists are in an ideal position to provide education on inhalation technique and use of asthma medications and devices.² This has been demonstrated through evidence showing the effectiveness of pharmacist education and management of asthma patients resulting in improvements in inhalation technique, reductions in

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emergency room visits, and increases in disease control.^{2–6} Limitations to pharmacists getting involved in asthma education and management have been described, with a primary restriction being adequate time to devote to the education and care.⁷

To enhance the care provided to patients and create a robust learning experience, many colleges of pharmacy are developing Introductory and Advanced Pharmacy Practice Experiences (IPPEs and APPEs) that empower students to serve as pharmacist extenders in a variety of care settings. These models involve formal student training on protocols and methods for care and allow students to act independently in real-world care settings. This strategy aligns with the 2016 Accreditation Council for Pharmacy Education (ACPE) Standards that describe learning objectives focused on communication, patient advocacy, interprofessional collaborations, leadership, and self-awareness.⁸ It also allows for expansion of pharmacist-provided education and care to patients through students as pharmacist extenders. This approach overcomes oft-cited barriers to pharmacist-provided medication education and management: time and need for additional personnel.^{7,9} Pharmacy student-led patient education has shown improvement in knowledge and behaviors in elderly adults receiving education on over-the-counter products, increased knowledge of transmission, prevention, and management of Hepatitis B virus-infected patients, reduced readmission rates in patients discharged on anticoagulant medications, enhanced diabetes screening and management, and improved asthma knowledge in children.^{10–15}

With the health care system becoming more integrated, it is imperative that pharmacists possess the skills to provide interprofessional care. Student skills and confidence have the potential to increase when they serve as pharmacist extenders in interprofessional settings. Development of interprofessional skills and confidence has been facilitated in health care professional students through service learning, simulations, and patient cases.^{16–18} A study in health sciences students found learning as part of an interprofessional team in a clinical setting more valuable than online modules or classroom-based discussions.¹⁹

To address gaps in patient asthma education, lack of available pharmacist time, and provide a robust, interprofessional learning environment, a novel ambulatory care IPPE was developed that offers third-year (P3) pharmacy students the opportunity to provide asthma-focused patient education independent of a pharmacist at pediatric asthma clinics. This article describes this independent IPPE, reports on students' perceptions of the IPPE and skills obtained through this experience, and shares results of evaluations conducted to determine satisfaction of families receiving student-provided education as part of the IPPE.

Methods

At The Ohio State University (OSU) College of Pharmacy, students engage in IPPEs throughout the first, second,

and third years of the Doctor of Pharmacy (Pharm.D.) program. In the third year, one of the required experiences involves focused learning through a 16-hour, 4-week rotation in an ambulatory care setting. This novel pediatric asthma-focused ambulatory care IPPE engages students in the clinic workflow one half-day per week during their 4-week rotation and is distinct from other ambulatory care IPPEs that provide a more generalist experience. The IPPE students' primary preceptor is an ambulatory care clinical pharmacist who specializes in pediatrics. After being trained by the clinical pharmacist, the students are legally supervised by pediatrician providers at the asthma clinics, which fosters student independence as the only pharmacy representatives present at the clinics during the experience. This unique preceptorship design was approved by college personnel and the Board of Pharmacy, as it was deemed acceptable that students, being trained on a limited, focused issue such as asthma, could counsel patients under supervision of a physician.

Interested students are recruited via an application process that consists of a letter of intent and curriculum vitae reviewed by the IPPE coordinators in the experiential department at OSU and the pharmacist preceptor. Students are chosen based on their schedule availability, desire to work independently, desire to improve patient communication skills, and interest in working with an interdisciplinary team. The 4-week block rotation involves orientation during week 1, active participation at the clinics during weeks 2–4, and a formal evaluation conducted by the pharmacist preceptor during week 4 with physician feedback on each student.

Orientation consists of a 4-hour training session where the ambulatory care clinical pharmacist trains third-year students using an interactive, case-based Pharmacy Student Asthma Learning and Training (PSALT) manual. This manual reviews the pathophysiology and treatments for asthma, device use and medication administration, and asthma action plans. The manual also contains the tools and handouts the students need in order to teach patients and families while in clinic. P3 students at OSU have already completed their pulmonary therapeutics and pharmacology module prior to this IPPE experience, so the manual provides review of these concepts. Once the manual is reviewed, students are given access to the institution's electronic medical record (EMR) (EPIC[®], Verona, WI) and are taught how to navigate through the EMR and document their encounters. A progress note template is used by the students in the EMR for ease and uniformity. After these two components of the orientation are finished, students engage in a mock asthma education session to assess their ability, confidence, and comfort in providing education to patients and families independently. Feedback is provided to each student after the mock session, with a focus on opportunities for development. At the completion of this thorough training, students are deemed ready to participate at one of the designated clinics by the pharmacist preceptor.

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