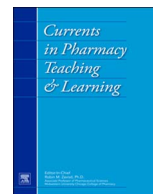




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## Currents in Pharmacy Teaching and Learning

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Experiences in Teaching and Learning

## Pharmacy residents as primary educators within a professional pharmacy elective

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## ABSTRACT

**Background and purpose:** The purpose of this study was to evaluate the impact of a course change from a faculty-led professional pharmacy elective to a primarily pharmacy resident-led course on student satisfaction and learning.

**Educational activity and setting:** In 2014, pharmacy residents were transitioned into primary teaching roles in a drug-induced diseases elective to increase student exposure to residents and different teaching styles. Student learning roles did not change. Course evaluations and grades were compared between the resident-led year and prior year.

**Findings:** There was no significant difference between overall course grades during the resident-led year ( $94.2 \pm 36.6$  in 2014 vs.  $94.1 \pm 2.7$  in 2013;  $p = 0.975$ ). Course evaluations were similar to the previous year and students provided favorable feedback.

**Discussion and summary:** This pharmacy resident-led elective allowed for resident integration in to an interactive professional elective. Student satisfaction with the course remained similar to the previous year and overall course grades did not differ.

## Background and purpose

Teaching experiences, both didactic and experiential, are important components of residency programs. A growing number of available faculty positions and increased need for clinical faculty preceptors may prompt residents to pursue careers in academia or careers with substantial teaching components.<sup>1</sup> Preparation strategies for residents include completion of teaching and learning certificate programs, participation in experiential precepting, and engagement within the classroom.<sup>2</sup>

To assist in the transition, the American College of Clinical Pharmacy (ACCP) has published commentaries and guidelines to help residents prepare for academic life. In 2011, one ACCP commentary laid a foundation for appropriate teaching experiences and suggested techniques for implementation.<sup>2</sup> Use of self-assessment and reflections was noted as an important component of any teaching experience. Building on the 2011 framework, ACCP published guidelines for resident teaching experiences in 2013.<sup>3</sup> These comprehensive guidelines provide expectations in setting goals, delivering lectures, small group facilitation, precepting, and teaching certificate standards. Most recently, ACCP has published minimum qualifications for clinical faculty, addressing residency training, certifications, and prior teaching experiences.<sup>4</sup> Finally, the American Society of Health-System Pharmacists (ASHP) 2014 residency Accreditation Standards include a competency area in teaching, education, and dissemination of knowledge.<sup>5</sup>

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Taken in sum, the importance of teaching experiences during residency training is evident, as is the need for structured mentoring and thoughtful preparation. To date, organized incorporation of pharmacy residents into a curricular course as primary educators has not been extensively described or evaluated. Messinger et al.<sup>6</sup> described the development of a new ambulatory care professional elective by a post-graduate year two (PGY2) pharmacy resident. This elective was met with a favorable student response and improvement in ambulatory care knowledge via pre- and post-surveys. Unfortunately, as a new elective, there were no previous years with which to compare the elective and only one resident was involved in the course. Additionally, a letter to the editor by Zapantis et al.<sup>7</sup> discussed successful incorporation of postgraduate trainees into an elective case-based classroom. Although this initiative was successful, it did not address residents or fellows serving in primary teaching roles beyond that of a discussion leader.

Many pharmacy residents are interested in becoming involved with teaching. Additionally, many residents possess the fundamental tools to integrate into primary teaching roles within a pharmacy elective, such as knowledge base, presentation skills, and classroom engagement. Unfortunately, there is limited information on how pharmacy students' perceptions and learning would respond to this technique. We present the transition of a faculty-led professional pharmacy elective to a primarily pharmacy resident-led course and evaluate its impact on student satisfaction and learning. We also discuss the individual mentoring and development of pharmacy residents as primary educators within the course.

## Educational activity and setting

### *Course design*

Drug-induced diseases (DID) is an elective three-credit hour course offered for third professional year (P3) pharmacy students each fall semester at Butler University College of Pharmacy and Health Sciences. The course meets once a week for three hours. This elective provides students exposure to common and relevant adverse reactions, focusing on identification of the responsible medication and subsequent alteration of the original treatment plan. It is a highly interactive course with a deep focus on student engagement and active learning that has been described previously.<sup>8</sup> In addition to two consistent faculty co-coordinators, a PGY2 pharmacotherapy resident who is co-funded by both the college of pharmacy and a local healthcare system has served as a course coordinator each year for the past five years. Historically, most lectures were taught by these individuals.

### *Intervention*

In fall 2014, pharmacy resident teaching within the course was increased based on student feedback from prior course evaluations and to provide the opportunity for residents to develop teaching skills in a small group setting. Implementation of this change started in summer 2014 with the incoming pharmacy residency class. A brief presentation of the course and expectations for lectures was provided to residents during the Butler University College of Pharmacy and Health Sciences longitudinal teaching program orientation. Interest in participation was elicited through teaching experience preference surveys. Lecture preference was provided to residents with split co-funding from the college of pharmacy and local healthcare systems, followed by non-cofunded PGY2 residents, then finally post-graduate year one (PGY1) residents. Residents participating in the course were held to contract standards for successful completion of the university longitudinal teaching program. Additionally, all residents in this program had either completed, or were in the process of completing the Indiana pharmacy teaching certificate program.<sup>9</sup> As part of the program, residents are required to deliver two separate classroom lectures or educational sessions that are at least 60 min, participate in 15 hours of precepting activities, and develop a teaching portfolio. Teaching in the DID elective was one of many different opportunities available that allowed residents to fulfill part of the didactic teaching requirement. This forum provided the unique opportunity to practice developing active learning activities during a lecture, which may have appealed to residents.

Course coordinators chose to offer all but three lectures to residents to allow for resident observation of lectures. Each resident selected preferred topics to lecture on that had been part of the course's original lecture list. Residents were expected to attend one class led by faculty at the beginning of the semester to obtain an idea of flow and global expectations for class session format. Each resident was partnered with a course coordinator to serve as a mentor for their class session. This involved guidance with selecting readings, creating new learning objectives, developing unique lecture outlines and handouts, and planning active learning activities. In addition to these course coordinator mentors, residents could consult their formal teaching certificate program mentors, although this was not required. Course coordinators provided comprehensive lecture mentorship for the residents. An individualized approach was taken for the mentoring of each resident. No defined checklist was developed; however, residents received the same preliminary information about the lectures. Each lecture was unique and developed by the residents for this specific course. Open lines of communication were kept between the course coordinators, residents, and residents' program directors to ensure deadlines were being met and that residents could keep their commitment. Following completion of the assigned lectures, residents verbally self-assessed the lecture, student engagement, and their performance with the course coordinators. Additionally, each resident received verbal feedback from all course coordinators and written feedback, utilizing the teaching certificate evaluation tool, from the assigned mentor as well as written feedback from students.

Student roles in the course did not change with the intervention, except for resident feedback provision. Assessment strategies remained the same and included assignments, quizzes, and oral case-based presentations. Course faculty remained responsible for course grades, although resident participants helped create and provide feedback on assignments and quizzes. The emphasis on active learning and classroom engagement also persisted.

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