

Pharmacology medical education & integration of pharmacology in the clinical years



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Biography

Kelly Karpa is an Associate Professor in the Department of Pharmacology at Penn State College of Medicine where she directs medical pharmacology instruction. She is secretary/treasurer-elect for the Division of Pharmacology Education within the American Society for Pharmacology and Experimental Therapeutics. The recipient of several prestigious pharmacology educator awards and known for her work in probiotics, Dr. Karpa was selected in 2013 as a Distinguished Educator by her colleagues at Penn State. As a Josiah Macy Faculty Scholar, Dr. Karpa developed an inter-professional curriculum for medical, pharmacy, and nurse practitioner students that focuses on safe and effective medication prescribing. This work was instrumental in her appointment as a director of Penn State College of Medicine's Office for Inter-professional Collaborative Education and Teamwork (ICE-T) where she serves as a bridge across disciplines and brings interprofessional learners together in a variety of learning environments including a newly-created service learning project that reaches a vulnerable population of seniors and disabled individuals and a new inter-professional teaching clinic embedded into a family medicine clerkship.

Abstract

Adverse drug reactions are a leading cause of death in the United States. Safe and effective management of medication regimens is a skill for which recent medical school graduates may be unprepared when they transition to residency. We implemented a pharmacology clinical reasoning curriculum for third year medical students and assessed student competency for evaluating both pharmacotherapeutic appropriateness as well as students' ability to transfer curricular material to management of patients in clinical settings. More recently, this curriculum was expanded by including additional pharmacotherapeutic content areas as well as through inclusion of inter-professional learners.

Students completing the medication optimization curriculum identified 75% more medication-related problems in case assignments compared to baseline. Furthermore, enrolled students were able to transfer their skills to the care of authentic patients. In addition, patient questionnaires indicated

that patients not only felt more knowledgeable about medication parameters as a result of the student-led medication encounter, but the students also helped the patients overcome barriers to medication adherence. In the expanded curriculum, medical students who experienced the course in an interprofessional manner scored higher on medication OSCEs compared to students who had the curriculum unprofessionally, and data collected from focus groups determined that these students had a broader view of factors involved with safe prescribing compared to the cohort who had taken the curriculum with only other medical students. Taken together, our results suggest that additional training in clinical pharmacology aids students in transitioning from having only basic knowledge of drug facts towards optimizing pharmacotherapy for individual patients. Furthermore, our data suggests that pharmacology is an ideal discipline for interprofessional education and enables learners to "see" patients through the eyes of other healthcare providers in ways that can improve patient care.