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Experiences in Teaching and Learning

Assessing students' knowledge regarding the roles and responsibilities of a pharmacist with focus on care transitions through simulation

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ABSTRACT

Background and purpose: To evaluate the impact of a pharmacist-focused transitions of care (TOC) simulation on students' perceptions and knowledge of pharmacist roles in the healthcare continuum. **Educational Activity and Setting:** Two simulations, highlighting pharmacist roles in various practice settings, were conducted within the Pharmaceutical Skills courses in the third-year doctor of pharmacy curriculum. Patient cases were built utilizing electronic medical records (EMR). Students' knowledge was assessed before and after the simulations regarding pharmacist involvement in medication reconciliation, reduction in patient readmissions, reduction of inappropriate medication use, roles and communication on an interprofessional team, and involvement with health information technology (HIT) during care transitions.

Findings: Fifty-one third-year pharmacy students were anonymously evaluated prior to and following the simulation to assess changes in knowledge and perceptions during the fall semester. Thirty-two (62.7%) students completed the pre-simulation and 21 (41.2%) students completed the post-simulation assessments, respectively. In the spring semester, 40 (80%) students completed the pre-simulation and 23 (46%) students finished the post-simulation assessments. Students predominately had community pharmacy work experience (n=28, 55%). Overall, students enjoyed the variety of pharmacist-led encounters throughout the simulation and assessments demonstrated an increase in knowledge after the simulations.

Summary: TOC simulations enhance students' understanding of the significant impact that pharmacists have in ensuring continuity of care as members of an interdisciplinary team.

Background and purpose

Care transitions, also known as transitions of care (TOC), occur at many levels, across the entire spectrum of health care and are encumbered with inadequate communication and insufficient care coordination. Patient management during each transition has the potential for positive or negative effects on clinical outcomes.¹ Patients with chronic diseases often require care from multiple

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providers and health care settings based on their condition and needs. Efficient care coordination directly correlates with improved clinical outcomes, prudent use of resources, and cost savings.² The fee-for-service model is rapidly being replaced by a pay-for-performance model, whereby reimbursement is directly related to the efficient use of resources to attain measurable goals.³

Proper care transitions are important in both the outpatient and inpatient settings. Clinics that have elected the Joint Commission's Primary Care Medical Home certification option are required to facilitate all of their patients' transitional needs.⁴ Furthermore, one of the National Patient Safety Goals set by the Joint Commission involves obtaining accurate medication history upon hospital admission. The Affordable Care Act has also established the Hospital Readmissions Reduction Program, which involves readmission measure-related policies. Such strategies reduce hospital compensation for those with excessive 30-day readmission rates for patients with acute myocardial infarctions, heart failure, pneumonia, chronic obstructive pulmonary disease exacerbations, and patients admitted for elective total hip and total knee arthroplasty.⁵ The Joint Commission has identified several root causes for ineffective care transitions including communication breakdowns among care providers, need for patient discharge education, and lack of accountability among providers.⁶ Several evidence-based care transition models have been developed, such as Care Transitions Intervention (CTI), Transitional Care Model (TCM), Better Outcomes for Older Adults through Safe Transitions (BOOST), and Project RED (Re-Engineered Discharge), and are under evaluation to identify best practices to improve patient outcomes.⁶ Although care transitional issues may arise in any setting, current evidence is limited to the inpatient settings and readmission rates.

Considering the emergence of newer payment models, interprofessional, team-based practice and communication have become increasingly imperative, which necessitates the need to establish clear roles, responsibilities, and lean processes to provide effective care transitions. Currently, pharmacists are an underused resource in this continuous process and studies demonstrate the value offered by pharmacists in improving care transitions in the inpatient setting.⁷⁻¹¹ In a review of pharmacists' services in United States (US) hospitals, only 5% reported pharmacist-provided admission medication history and 49% reported that pharmacists provided drug therapy counseling.¹² Evidence supports the benefit of using pharmacists in medication reconciliation processes during care transitions.¹³⁻¹⁷ Furthermore, research shows that general clinical pharmacy services, such as admission medication histories, in-service education, adverse drug reaction management, medication use evaluations, and involvement with patient rounds reduces mortality rates in the hospital setting.¹⁸

There is a strong need for pharmacists to become more involved in care transitions, as the American College of Clinical Pharmacy recently discussed in a white paper detailing current practice and future opportunities for pharmacists.¹ The Center for the Advancement of Pharmacy Education (CAPE) 2013 Educational Outcomes include affective domains encompassing delivery of patient-centered care, problem-solving, patient advocacy, and interprofessional collaboration, which aim to target the future of pharmacy practice and lead to effective care transitions.¹⁹ Similarly, one of the key elements in Standard 10 of the 2016 Accreditation Council for Pharmacy Education (ACPE) guidelines on curriculum design directly addresses the need for students to "gain in-depth experience in patient-centered collaborative care."²⁰ Furthermore, standard 13, pertaining to advanced pharmacy practice experiences (APPE), discusses "...continuity of care...in outpatient (community/ambulatory care) and inpatient (hospital/healthy system) settings"²⁰ to optimize pharmacy experiential curriculum.²⁰ Most training opportunities arise during APPE, possibly introductory pharmacy practice experiences (IPPE), and post-graduate residency training. Students should be exposed to issues and solutions related to care transitions and provide opportunities for them to practice such skills in the classroom setting. Given these reasons, a simulation was developed, utilizing the specialty backgrounds of the faculty team. The purpose was to increase awareness about processes within the healthcare system and enhance student perceptions of potential pharmacist roles in the healthcare continuum.

Educational activity and setting

The care transitions simulations were developed to introduce students to pharmacist roles in various healthcare settings throughout the continuum, as well as enhance familiarity with components of health informatics. Students encountered three simulations within the required pharmaceutical skills course sequence that were designed to apply and integrate principles of pharmacy practice. The first simulation was a pilot in the spring semester of the second year (P2). Subsequent offerings occurred in the fall and spring semesters of the third year (P3) curriculum and are the focus of this paper. Students had already completed their community and ambulatory care IPPE rotations by the start of P3 year, but not all students had completed the institutional IPPE. The patient cases unfolded to encompass multiple practice settings and each iteration afforded increasingly complex scenarios with application of compounded pharmacist tasks (Table 1). Students anonymously completed pre- and post-simulation assessments regarding their knowledge about pharmacists' roles and care transitions (Tables 3 and 4).

There was one simulation each semester that was divided between two class days to accommodate the number of students in the courses. The class was divided into ten academic groups (randomly assigned by college administration), each consisting of five to six students, to rotate through the stations. The simulation was held at the Center for Advanced Medical Learning and Simulation (CAMLs), a state-of-the-art healthcare simulation and training center with high-fidelity manikins and rooms that resemble inpatient (e.g., emergency room and critical care units), outpatient settings (e.g., ambulatory care clinics), and inpatient and outpatient pharmacy settings.

To enhance vertical and horizontal integration of topics, course objectives from the pharmaceutical skills sequence and medical informatics and technology course, which preceded this activity, were considered in the development of the simulation to allow students to apply and build on these skills. Ability-based outcomes from these courses included evaluation of drug information resources and scientific literature, accurate and efficient completion of the prescription verification process, communication skills with patients and healthcare professionals, utilization of electronic medical records (EMR) to manage patient profiles, utilization of

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