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## Currents in Pharmacy Teaching and Learning

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Experiences in Teaching and Learning

## Development and evaluation of an elective course that incorporates a standard medication therapy management certificate program

Karleen Melody\*, Elizabeth M. Harris, Anisha B Grover<sup>1</sup>

Philadelphia College of Pharmacy at University of Sciences 600 S 43rd St. Box # 34 Philadelphia, PA 19104, United States

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## ABSTRACT

**Background and purpose:** To describe the development and evaluation of a medication therapy management (MTM) elective that incorporates a nationally recognized certificate training program (CTP) by assessing changes in perceived abilities and values among student pharmacists, knowledge of course material, and performance conducting MTM services. Student satisfaction with course content and delivery model was also evaluated.

**Educational activity and setting:** University faculty developed a didactic elective course to provide third-professional year student pharmacists with the opportunity to meet the learning objectives of the American Pharmacists Association (APhA) “Delivering Medication Therapy Management Services” CTP. Additional learning activities developed by course faculty included supplemental didactic content, reinforcement exercises, simulated patient interactions, self-reflections, and detailed faculty assessment and feedback. Pre- and post-course surveys collected information about student perceptions and values. Course grades for quizzes, midterm, follow-up, and final comprehensive medication review (CMR) assessments were retrospectively analyzed to assess student performance. Student satisfaction with course content and delivery methods was assessed via a survey.

**Findings and discussion:** Student-reported perceived abilities improved across all survey items and there was high baseline agreement with MTM value statements. Quiz results suggested student achievement of course objectives. Student performance improved in most grading domains from the midterm to final assessment. A majority of students were satisfied with the course content and delivery methods.

**Summary:** Evaluation of student perceived abilities and values, performance, and satisfaction support the successful incorporation of the MTM CTP along with faculty-developed supplemental content and activities into a longitudinal elective course in the pharmacy curriculum.

## Background and purpose

The Medicare Prescription Drug, Improvement, and Modernization Act, also known as the Medicare Modernization Act (MMA), initially defined medication therapy management (MTM) as a set of services that may be delivered by a pharmacist and that is designed to ensure the appropriate use of prescription drugs to optimize therapeutic outcomes through improved medication use and reduce the risk of adverse events.<sup>1</sup> In 2005, the American Pharmacists Association (APhA) and the National Association of Chain Drug Stores (NACDS) Foundation created a framework for the implementation of MTM services within a community pharmacy setting.<sup>2</sup>

\* Corresponding author.

E-mail addresses: [k.melody@uscience.edu](mailto:k.melody@uscience.edu) (K. Melody), [e.harris@uscience.edu](mailto:e.harris@uscience.edu) (E.M. Harris), [anisha.grover@temple.edu](mailto:anisha.grover@temple.edu) (A.B. Grover).

<sup>1</sup> Dr. Grover is presently at Temple University School of Pharmacy, 3307 North Broad Street Philadelphia, PA 19140.

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This document presented a model involving five core elements, including medication therapy review (MTR), personal medication record (PMR), medication-related action plan (MAP), intervention and referral, and documentation and follow-up.<sup>2,3</sup> An MTR, also known as a comprehensive medication review (CMR), is a systematic process of collecting patient-specific information, assessing medication therapies to identify medication-related problems (MRPs), developing a prioritized list of MRPs, and creating a plan to resolve them.<sup>2,3</sup> It can be either comprehensive or targeted to a specific MRP and is structured to enhance the patient's knowledge of their medications, address any problems or concerns, and empower patients and/or caregivers to take an active role in the management of their medications and health.

Throughout the past 14 years, schools and colleges of pharmacy have implemented several strategies for better preparing student pharmacists to optimize medication use and continue contributing to cost savings through the provision of MTM services.<sup>4-7</sup> To increase the visibility of successful educational initiatives involving MTM, APhA, and the American Association of Colleges of Pharmacy (AACCP) published several documents highlighting strategies, outcomes, and barriers involved with existing programs.<sup>8-10</sup> Existing efforts to incorporate MTM into pharmacy curricula involve various learning levels and include required and elective didactic courses, introductory pharmacy practice experiences (IPPEs), and advanced pharmacy practice experiences (APPEs).<sup>4,11-14</sup> Additionally, an array of formats used to teach the material includes simulation, laboratory activities, lectures, and interactions with real patients.<sup>5-7,11-14</sup>

Two separate studies demonstrated a perception among student pharmacists that the provision of MTM services was an important factor in advancing the profession of pharmacy and providing patients with a higher level of care.<sup>15,16</sup> One of these studies found that, despite having the knowledge, skills, and intention to provide MTM services, only 37% of student participants expressed willingness to take initiative to implement an MTM program if their employer did not already offer the services.<sup>16</sup> This suggests a need for increased student confidence with service implementation.

Existing literature suggests that barriers related to comfort level and confidence also exist among pharmacy school graduates. A 2009 study found that pharmacists were most comfortable with educating patients about over-the-counter (OTC) products and reviewing a medication profile for MRPs; however, pharmacists were less comfortable providing services involving higher-level skills, such as developing a MAP and educating patients about disease prevention services.<sup>17</sup>

In an effort to address these barriers and provide advanced training, APhA developed a national certificate training program (CTP) entitled "Delivering Medication Therapy Management Services."<sup>18</sup> This program provides in-depth, hands-on training in areas such as evaluating complicated medication regimens, identifying and prioritizing MRPs, developing and implementing interventions, documenting activities, learning about business models and billing strategies, and making high-level recommendations to patients, caregivers, and healthcare professionals. The course format requires participants to complete 10 hours of self-study pre-work, including achievement of at least 70% on an open-book self-study examination, followed by an eight-hour live seminar that involves content delivered by trained faculty, reinforcement exercises, written patient cases, and active discussion. This program was initially designed for practicing pharmacists and involves a post-seminar requirement to conduct three CMRs, followed by submission of an attestation statement signifying successful completion. Because student pharmacists lack the depth and breadth of clinical experience acquired by practicing pharmacists, a subsequent version of the CTP, entitled "Delivering Medication Therapy Management Services: With Case Review," was designed to ensure sufficient practice of these skills. Following the completion of the live portion of this program, participants must complete five CMRs and upload all supporting documentation, to demonstrate completion and competence. Learners who successfully complete all of the aforementioned requirements receive a certificate of achievement. This program provides an opportunity for knowledge and skill enhancement, which can increase the comfort level and confidence of future pharmacists.

The incorporation of the various APhA CTP into pharmacy curricula has been described previously in the literature.<sup>11,12,19,20</sup> Faculty at the University of Tennessee designed a required MTM course offered to third-year pharmacy (P3) students that incorporates the APhA MTM CTP and involves lectures, cases, and activities with web-based delivery platforms.<sup>11</sup> Faculty identified a curricular gap and subsequently created a supplemental lecture that differentiated the levels of MTM services, ranging in scope from a targeted medication review (TMR) to more extensive services, such as a CMR and comprehensive medication management. An open-ended qualitative survey administered after this lecture revealed five major themes, one of which describes students' perceived value of MTM to address unmet patient needs.

Another study by Poole et al.<sup>12</sup> incorporated the MTM CTP into a P3 required pharmaceutical care course. Faculty rearranged the order of topics in the CTP and developed supplemental topics including medication reconciliation, anticoagulation, adherence, consulting pharmacy, access and health disparities, TMRs, and pharmacokinetic consults. Formative assessments included completing TMRs, follow-up visits for a longitudinal patient, and five patient consult visits. Two summative assessments in the form of a CMR utilizing simulated patient cases were administered as midterm and final evaluations. Pre- and post-survey results and assessment of student grades demonstrated improved student proficiency with providing MTM and increased confidence and competence.

### *Rationale and objectives*

To increase student access to this CTP and address the specific expectation for MTM competence that is defined within the Accreditation Council for Pharmacy Education (ACPE) 2016 Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree, faculty designed a 14-week longitudinal elective course that incorporates all of the components from the traditional CTP.<sup>18,21</sup> Although the student-centric version requires completion of two additional CMRs following the live seminar and submission of all associated documentation, the content remains the same in both versions of the CTP. To bridge the gap in experience and provide additional practice opportunities, faculty customized the course by developing

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