Know your medicine: A novel student-led community service learning program

Crystal K. Howell[a,b], Kelly R. Reveles[a,b], Leroy C. Knodel[a,b], Nancy R. Pattyn[a], Christopher R. Frei[a,b,*]

[a] College of Pharmacy, The University of Texas at Austin, Austin, TX
[b] Pharmacotherapy Education and Research Center, School of Medicine, University of Texas Health Science Center at San Antonio, San Antonio, TX

ARTICLE INFO

ABSTRACT

Introduction: The objective of this article is to describe the efforts of the student pharmacist organization called Know Your Medicine (KYM) as they conduct medication therapy management (MTM) for older adults and underserved communities.

Methods: Patients brought medications, immunization records, and health concerns to KYM events during academic years 2012–2013 and 2013–2014. Student pharmacists performed health screenings, created personalized medication records (PMR), made recommendations, created personal action plans (PAP), and conducted follow-up phone calls.

Results: Student pharmacists provided MTM services for a total of 107 patients. The mean duration of a KYM appointment was 62 ± 21 min, and student pharmacists provided a mean of 3.5 ± 2.1 recommendations per patient. Patients had a mean age of 78 ± 11 years, 4.5 ± 3.2 disease states, 6.9 ± 4.6 prescriptions, 1.9 ± 1.9 OTC medications, and 2.8 ± 2.6 vitamins or herbals. At the time of the follow-up phone call, a mean of 2.6 ± 1.9 recommendations per patient had been followed.

Discussion and conclusions: Student pharmacists successfully implemented a new MTM program for older adults and underserved communities. This program can serve as an example of how other pharmacy colleges and schools might implement MTM training and real-world MTM experience for their student pharmacists.

Introduction

In the United States, nearly 50% of all adults have taken a prescription medication in the last 30 days.[1] Furthermore, adverse drug events affect about two million hospital stays and account for over one million emergency department and 3.5 million physician office visits annually.[2] In 2003, the Medicare Modernization Act (MMA) recognized the need for medication therapy management (MTM) and identified pharmacists as resources for these services.[3] The goal of MTM is to avoid adverse drug events and enhance therapeutic outcomes by optimizing medication use through MTM services such as health assessments, comprehensive medication reviews, and patient education.[4]

Pharmacist-provided MTM programs have demonstrated improvements in clinical outcomes and reductions in medication

* Corresponding author at: Pharmacotherapy Education and Research Center School of Medicine, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, MC 6220, San Antonio, TX 78229, USA.

E-mail addresses: crystal.howell@emoryhealthcare.org (C.K. Howell), kdaniels46@utexas.edu (K.R. Reveles), knodel@uthscsa.edu (L.C. Knodel), nancy.pattyn@utexas.edu (N.R. Pattyn), freic@uthscsa.edu (C.R. Frei).

costs.[5] Patients have also experienced improvements in chronic conditions, such as asthma and dyslipidemia.[6] Finally, in one study, patients who underwent pharmacist-provided telephone MTM saved an average of $681 per year.[7]

While the benefits of pharmacist-led MTM are well-known, a 2007 article by Urmie et al.[8] found that only 7% of graduating student pharmacists strongly agreed that they intended to provide MTM services post-graduation. The authors highly encouraged further implementation of MTM into pharmacy curricula to prepare, train, and motivate student pharmacists to conduct MTM post-graduation.[8]

New accreditation standards may serve as the catalyst for this change. MTM training is listed as a specific key element in the Accreditation Council for Pharmacy Education (ACPE) 2016 Standards.[9] Standard 25.8 lists MTM as an important part of advanced pharmacy practice experience (APPE) preparedness. Standard 25 also states that "competence in these areas [including MTM] is assessed prior to the first APPE." (section on clinical sciences/pharmacotherapy) further emphasizes the need for MTM as "a required element of the didactic doctor of pharmacy curriculum."

MTM should be introduced early in the pharmacy curriculum. Some schools now include MTM training in their curricula and community outreach programs; however, most efforts have concentrated on providing exposure to, and involvement in, MTM services during APPEs in the fourth professional year. Many pharmacy schools do provide some MTM exposure earlier through simulated patient cases.[10–16] Others provide this experience through community outreach, such as the MTM outreach program established through a University of Arizona College of Pharmacy contract with the MTM program, Mirixa®, in 2006. The program has since been adopted by schools such as the University of Washington School of Pharmacy.[17] The new standards now call for MTM competency prior to the first APPE; therefore, swift changes in these trends are expected.

Know Your Medicine (KYM) is a student pharmacist organization that conducts MTM for older adults and underserved communities as a part of community outreach. Analysis of de-identified data gathered during this program was considered "exempt research" by the Institutional Review Board of The University of Texas at Austin. This article will describe the structure of the program, the KYM MTM event process, the addition of an MTM training program, revisions to the KYM MTM event process, financial support for the program, and finally, assessment and evaluation of the program.

Methods

Structure

At The University of Texas at Austin College of Pharmacy (UT COP), MTM is taught by pharmacist faculty members as a formal, semester-long course in the P3 year. By the end of the semester, student pharmacists have completed a minimum of 80 hours in a community pharmacy providing MTM and receive an American Pharmacists Association (APhA) MTM certification. This course was established prior to the development of the student-led MTM program that is the focus of this article.

In addition to the semester-long MTM course, students at the college are also required to complete two hours per semester of community-service learning (CSL) activities for each of their first three years in the doctor of pharmacy program. These are strategic learning activities whereby students complete meaningful community service while learning to care for patients. Students may choose from numerous options to satisfy these hours; some elect to pursue additional MTM activities.

In 2011, student pharmacists at the UT COP developed a new MTM program called "Know Your Medicine" (KYM) as a public outreach effort to allow students to perform MTM for older adults and underserved populations. KYM was initially formed as a committee within the college's American Pharmacists Association-Academy of Student Pharmacists (APhA-ASP) student chapter. After rapid growth, it became recognized as its own student pharmacist organization at the college and university level. Today, KYM holds a prominent position in the UT COP as the only student organization in the college that is completely dedicated to hosting MTM events. The organization strives to hold at least one event per semester on each of the college's four campuses.

All 125 student pharmacists in each class train at the UT COP's main campus in Austin for the first two years of pharmacy school. Some students move to other affiliated cities/regions throughout the state, including El Paso, San Antonio, and the Rio Grande Valley during their third year. Student pharmacists from any year may participate in the program. Highest participation occurs with students in their first three years of their degree program. If a student claims CSL credit for the hours they participating with KYM, then their participation is recorded; however, many students volunteer for the organization in excess of the minimum CSL credit hour requirement. These additional volunteer hours are not recorded.

In 2012, students began conducting KYM events at the main UT COP campus in Austin under the mentorship of UT COP pharmacist faculty members. These faculty members used the core elements of MTM provided by APhA and the National Association of Chain Drug Stores (NACDS) Foundation as their guiding principles.[4] In 2013, KYM events further spread to the other three UT COP campuses (El Paso, San Antonio, and the Rio Grande Valley), and a student and faculty research team was formed with the primary objective of assessing the progress and potential benefits of the program.

KYM MTM event process

Third year (P3) student pharmacists who held KYM chair or regional coordinator positions at the college's four campuses approached staff persons at community centers by e-mail or in person to determine interest in MTM events. Initially, there were no patient inclusion/exclusion criteria. As the program was developed, the focus evolved toward patients who were older adults and/or from underserved communities. Some facilities requested a promotional presentation to the patients themselves. In these cases, a slide presentation explained the event proceedings and the benefits to patients. If the facility was willing to host the event, the KYM