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Integration of collaborative medication therapy management in a safety net patient-centered medical home

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Abstract

Objective—To describe the integration of collaborative medication therapy management (CMTM) into a safety net patient-centered medical home (PCMH).

Setting—Federally qualified Health Care for the Homeless clinic in Richmond, VA, from October 2008 to June 2010.

Practice description—A CMTM model was developed by pharmacists, physicians, nurse practitioners, and social workers and integrated with a PCMH. CMTM, as delivered, consisted of (1) medication assessment, (2) development of care plan, and (3) follow-up.

Practice innovation—CMTM is integrated with the medical and mental health clinics of PCMH in a safety net setting that serves homeless individuals.

Main outcome measures—Number of patients having a CMTM encounter, number and type of medication-related problems identified for a subset of patients in the mental health and medical clinics, pharmacist recommendations, and acceptance rate of pharmacist recommendations.

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Previous presentations: American College of Clinical Pharmacy Annual Meeting, Anaheim, CA, October 18–21, 2009, and American Pharmacists Association Annual Meeting, Washington, DC, March 12–15, 2010.

Results—Since October 2008, 695 patients have had a CMTM encounter. An analysis of 209 patients in the mental health clinic indicated that 425 medication-related problems were identified (2.0/patient). Pharmacists made 452 recommendations to resolve problems, and 384 (85%) pharmacist recommendations were accepted by providers and/or patients. For 40 patients in the medical clinic, 205 medication-related problems were identified (5.1/patient). Pharmacists made 217 recommendations to resolve the problems, and 194 (89%) recommendations were accepted.

Conclusion—Integrating CMTM with a safety net PCMH was a valuable patient-centered strategy for addressing medication-related problems among homeless individuals. The high acceptance rate of pharmacist recommendations demonstrates the successful integration of pharmacist services.

Keywords

Medication therapy management; patient-centered medical home; collaborative care

Homeless people face many challenges above and beyond those of the general population as they seek health care. They are likely to be uninsured and have inadequate access to primary care and medications, which leads to overuse of emergency department services and unplanned hospitalizations.^{1–11} Further, homeless individuals are extremely vulnerable to medication-related problems. Unstable living environments negatively affect their ability to maintain medication regimens and store medications.¹² Conditions common in homeless people, such as substance abuse and mental health disorders, are predictors of poor adherence to medication regimens.^{11,13–16} Homelessness also has been reported to predict nonadherence to psychotropic, human immunodeficiency virus/acquired immunodeficiency syndrome, and tuberculosis drug regimens.^{7,13,15} Homeless individuals often obtain health care services in the safety net setting, where many use inter-professional health care teams to provide care.^{17–19} Incorporating pharmacists as members of the health care team is one potential strategy for addressing medication-related problems.

Interprofessional models of care such as the patient-centered medical home (PCMH) model have been implemented in the safety net setting as a means to effectively allocate resources and improve access and continuity of care.^{17–19} Although medications are the primary therapeutic intervention for chronic disease management, pharmacists rarely have been included as members of these teams. The Health Resources and Services Administration (HRSA) recognized the importance of pharmacist services and implemented the Patient Safety and Clinical Pharmacy Services Collaborative in 2008. The collaborative encourages HRSA-supported entities to integrate pharmacist services into their care delivery models. The Patient-Centered Primary Care Collaborative also highlighted the need for medication management and has indicated that optimizing medication use is a critical factor in achieving the vision of the PCMH model.²⁰

Objective

This report describes the implementation and initial outcomes associated with a patient-centered collaborative medication therapy management (CMTM) program that is integrated with a PCMH in a safety net setting.

Innovative practice description

Daily Planet medical home

Daily Planet is a HRSA-funded Health Care for the Homeless clinic that serves adults primarily. Its mission is to provide accessible, comprehensive, and integrated quality health services to the citizens of the Greater Richmond Metropolitan area. All Daily Planet patients

(n = 4,594) have an income 200% or less of the poverty level, and 95% are uninsured. The majority (52%) of patients are black, 29% white, 16% Hispanic, 2% Asian American, and 1% other. The majority of patients are male (54%). Daily Planet provides services in five areas: primary care, mental health, vision, dental, and case management. Case management includes coordinating treatment plans among health care providers and facilitating access to resources such as housing, job placement programs, and benefits eligibility. Daily Planet is in the process of obtaining recognition as a PCMH as part of HRSA's Patient-Centered Medical/Health Home Initiative.

Daily Planet and the Virginia Commonwealth University (VCU) School of Pharmacy established an academic–community partnership in 2005.²¹ Initially, two pharmacist faculty members piloted the provision of medication education in the mental health clinic. In October 2008, a CMTM model was developed and implemented to address medication-related problems and enhance medication-related health outcomes.

CMTM model

The CMTM model is integrated into the mental health and medical clinics of the Daily Planet PCMH. Patients with one or more chronic diseases and taking two or more chronic medications are eligible for participation. Patients are referred to CMTM by a health care provider. The CMTM model is a modification of the medication therapy management (MTM) core elements, version 2.0.²² Figure 1 depicts the responsibilities of pharmacists in the CMTM/PCMH model.

Process of care

Medication assessment—The medication assessment is a systematic process by which medication regimens are reconciled, patient information is acquired to assess the appropriateness of medication therapy, and medication-related problems are identified. Patients' laboratory results, which are included in the patient electronic medical record, also are examined to monitor response to medications.

Development of care plan—Pharmacists work with patients and providers to develop a care plan for the resolution of any medication-related problems. A personal medication record is generated and serves as the comprehensive record of the patient's prescription and over-the-counter medications, herbal remedies, and immunizations. The personal medication record (printed list of medications) is provided to the patient and updated at subsequent visits as needed. The patient-centric medication action plan documents the list of actions to resolve medication-related problems that were identified during the medication therapy review. The pharmacist provides medication education and medication adherence counseling, which includes training in medication adherence aids such as pill boxes. The plan is documented in the electronic medical record. The plan also is used to track the outcomes associated with the management plan.

Follow-up—The pharmacist is accountable for following up with patients and/or providers to address all unresolved medication-related problems after each visit. Each unresolved medication-related problem is reassessed at subsequent visits, and the action plan is revised as necessary until resolution is achieved.

CMTM is documented in a pharmacist note in Daily Planet's electronic medical record system (eClinicalWorks). Providers also use eClinicalWorks to communicate drug information questions and patient management issues. The system also facilitates research because it allows the pharmacist note to be customized and structured for extraction of outcomes data.

Personnel and resources

The mental health clinic personnel include one psychiatrist, two nurse practitioners, and six behavioral health therapists for a total of 7.125 full-time equivalents (FTEs). Clinical pharmacists provide services on 2 half-days in the mental health clinic (total 0.2 FTEs). The medical clinic personnel include one primary care physician, three part-time nurse practitioners, and one full-time licensed practical nurse (total 3.0 FTEs). From July 2009 to June 2010, a pharmacist fellow (A.K.K.) provided CMTM on 6 half-days in the medical clinic (total 0.6 FTEs). Currently, a clinical pharmacist provides services on 2 half-days in the medical clinic and devotes extra time to administering Daily Planet's influenza immunization program (total 0.4 FTEs). All pharmacists providing CMTM have completed an accredited community pharmacy residency. A combination of grants and in-kind contributions from the VCU School of Pharmacy are used to provide funding for pharmacist services at Daily Planet. Clinical pharmacists have two offices with computer access: one in the medical clinic and one in the mental health clinic. Funding is currently being sought to expand pharmacist services in the medical and mental health clinics.

Outcome measures

We report the results from a retrospective analysis of the number and type of medication-related problems identified during CMTM in the mental health and medical clinics, as well as pharmacist recommendations and acceptance rate of pharmacist recommendations. The categories of medication-related problems and pharmacist recommendations are listed in Tables 1 and 2.

Results

Since October 2008, various components of CMTM have been provided to 695 patients (1,005 encounters) in the Richmond community. An analysis of 209 patients who received CMTM in the mental health clinic revealed that 425 medication-related problems were identified (2.0/patient). A total of 452 recommendations to resolve the problems were made by pharmacists, and 384 (85%) pharmacist recommendations to resolve the problems were accepted by providers and/or patients.

An analysis of 40 patients who received CMTM in the medical clinic also was conducted. A total of 205 medication-related problems were identified (5.1/patient). A total of 217 recommendations to resolve the problems were made by pharmacists, and 194 (89%) pharmacist recommendations to resolve the problems were accepted by providers and/or patients. Tables 1 and 2 summarize the type and number of problems and recommendations in the mental health and medical clinics.

Discussion

Pharmacists in collaboration with other health care providers are in an ideal position to optimize medication-related outcomes for patients with chronic diseases.^{23–26} Successful pharmacist patient care models, which are precursors to CMTM, have been documented in both community and ambulatory care settings.^{27–30} Based on these previous positive outcomes and our experience with CMTM, the integration of a pharmacist in a safety net medical home model is a useful strategy for addressing medication-related problems. Homeless individuals often have poor access to health care services and difficulty obtaining medications because of cost.^{1,4,12,14} Therefore, that ineffective drug therapy and medication nonadherence were common problems is not surprising. A comprehensive medication assessment can identify these problems, and a model such as the CMTM/PCMH model described in this report can help resolve the problems in a timely manner. Medication

adherence also was a concern, which corroborates previous reports among homeless people.^{7,13,15} Reasons for nonadherence need to be further explored because multiple factors (e.g., cost, adverse effects, patient beliefs about medication use) could be contributors. This information would help develop patient-centered solutions that improve medication adherence. The high acceptance rate of pharmacist recommendations demonstrates the interprofessional nature of the CMTM model.

Provider buy-in and feedback were critical to the development and integration of the CMTM model. The initial phases of development were very dynamic, and we had to be flexible in CMTM delivery as we learned how to best meet medication needs for the clinic. Unique challenges to medication use also existed in our patient population, including medication storage and nonadherence resulting from competing priorities such as shelter and food.

As pharmacists expand their roles in patient-centered care activities, sustainability of services will be an ongoing challenge. The traditional fee-for-service payment system does not facilitate compensation for pharmacist services. Despite the availability of Current Procedural Terminology billing codes for face-to-face pharmacist-provided MTM, compensation has been limited. The high number of uninsured patients in the safety net setting also limits opportunities for compensation. Adoption of a standard process of care with defined roles and responsibilities of the pharmacist in a PCMH and expected outcomes may expedite this process. The American Pharmacists Association/National Association of Chain Drug Stores Foundation MTM framework²² and the Patient-Centered Primary Care Collaborative document²⁰ are tools that can provide guidance to develop these standards.

As we pursued funding for CMTM, we noticed that many potential funders associated pharmacists with only the dispensing function. Although this can be frustrating, it also was an opportunity for our team to educate community stakeholders about the role of the pharmacist in patient-centered care models such as PCMH. Opportunities in health care reform regarding MTM and PCMH may help the pharmacy profession redefine its image from working behind the counter to being the medication expert on the health care team.

Future opportunities

The CMTM/PCMH team has begun to reach out to community pharmacists to facilitate coordination of medications for homeless patients throughout the community. As this evolves, a definitive role for the community pharmacist is expected to emerge. Interprofessional education opportunities for pharmacy, nursing, and medical students also are beginning to become available. A prospective study of the impact of CMTM on medication-related health outcomes, such as medication-related hospitalizations and emergency department visits, will begin.

Conclusion

Integration of CMTM within a safety net PCMH is a patient-centered strategy for addressing medication-related problems among homeless individuals. The high acceptance rate of pharmacist recommendations demonstrates the successful integration of CMTM. Additional research is needed to further define pharmacists' roles and responsibilities and expected outcomes as members of interprofessional health care teams. This information will be helpful in understanding how pharmacists can be incorporated in health care reform opportunities related to MTM and PCMH.

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At a Glance

Synopsis

Daily Planet, a Health Resources and Services Administration–funded Health Care for the Homeless clinic, and the Virginia Commonwealth University School of Pharmacy developed and implemented a collaborative medication therapy management (CMTM) model to serve homeless patients in the Richmond, VA, community. Various components of CMTM have been provided to 695 patients (1,005 encounters), with an analysis revealing that 425 medication-related problems were identified among 209 patients receiving CMTM at Daily Planet’s mental health clinic. A total of 452 recommendations to resolve the problems were made by pharmacists, 85% of which were accepted by providers and/or patients. Another analysis showed that 205 medication-related problems were identified among 40 patients at the medical clinic. Pharmacists made 217 recommendations to resolve the problems, 89% of which were accepted.

Analysis

Sustainability of services will be an ongoing challenge as pharmacists’ roles in patient-centered care expand. The traditional fee-for-service payment system does not facilitate compensation for pharmacist services. Despite the availability of Current Procedural Terminology billing codes for one-on-one pharmacist-provided medication therapy management (MTM), compensation has been limited. Adopting a standard process of care with defined roles and responsibilities of the pharmacist in a patient-centered medical home (PCMH) and expected outcomes may expedite this process. Opportunities in health care reform regarding MTM and PCMH may help the pharmacy profession redefine its image from merely performing dispensing roles to being the medication expert on the health care team.

Figure 1. Key components of CMTM

Abbreviation used: CMTM, collaborative medication therapy management.

The patient is at the heart of all services at Daily Planet. CMTM services provided directly to the patient by the pharmacist are represented on the left. CMTM services that are coordinated with Daily Planet and community pharmacists and providers are listed on the right. The green circles represent points of coordination within the patient-centered medical home at Daily Planet, whereas the blue circles represent points of coordination in the community.

Table 1

Type and number of problems identified in the mental health and medical clinics

Type of problem	Mental health clinic No. (%)	Medical clinic No. (%)
n	209	40
Ineffective drug therapy	115 (27.1)	13 (6.3)
Need for education ^a	114 (26.8)	122 (59.5)
Medication nonadherence	110 (25.9)	39 (19.0)
Adverse effects	52 (12.2)	3 (1.5)
Needs additional drug therapy	25 (5.9)	20 (9.8)
Unnecessary drug therapy	8 (1.9)	3 (1.5)
Potential or actual drug–drug interaction	1 (0.2)	3 (1.5)
Drug–disease interaction	NA	2 (1.0)
Total number of problems	425 (100.0)	205 (100.1) ^b

Abbreviation used: NA, not applicable.

^a A problem was categorized as need for education when the patient was referred to collaborative medication therapy management (CMTM) for an education-specific reason, the pharmacist identified a lack of understanding during the CMTM encounter, or the patient explicitly asked for medication- or disease-related education.

^b Percentages do not add up to 100% due to rounding.

Table 2

Type and number of pharmacist recommendations in the mental health and medical clinics

Type of recommendation	Mental health clinic No. (%)	Medical clinic No. (%)
Education ^a	196 (43.4)	142 (65.4)
Change dose	92 (20.4)	7 (3.2)
Restart drug	61 (13.5)	24 (11.1)
Change drug	41 (9.1)	4 (1.8)
Add drug	27 (6.0)	20 (9.2)
Discontinue drug	12 (2.7)	8 (3.7)
Monitoring for safety or efficacy	12 (2.7)	9 (4.1)
Change dosage form	4 (0.9)	NA
Referral to outside provider	4 (0.9)	2 (0.9)
Change schedule/duration	3 (0.7)	1 (0.5)
Total number of recommendations	452 ^b (100.3) ^c	217 ^b (99.9) ^c

Abbreviation used: NA, not applicable.

^a Education recommendations varied according to patient need. Education provided included patient-centered strategies for managing adverse effects of medications, medication adherence counseling, disease-related education, and education regarding nonpharmacological treatment (e.g., nutrition, exercise).

^b Some problems had more than one recommendation.

^c Percentages do not add up to 100% due to rounding. In 2011, efforts to expand the availability of adult vaccines, including pneumococcal and hepatitis B vaccines, also are under way, and a comprehensive adult vaccination program will be implemented.