Implementation of a Medication Therapy Management Intervention in Ambulatory Care Settings:
Experiences and Lessons Learned From the MyRx Pilot

Developed by:
The AHRQ Health Care Innovations Exchange
Medication Therapy Management Learning Community

September 2016
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Acknowledgments

This report, Implementation of a Medication Therapy Management Intervention in Ambulatory Care Settings: Experiences and Lessons Learned From the MyRx Pilot, is the product of collaboration and contributions from multiple parties. This case study would not have been possible without the support of many individuals. We thank the following contributors:

The Agency for Healthcare Research and Quality (AHRQ), which provided funding for this project through Contract No. HHS/A29020110001C. The Promoting Medication Therapy Management for At-Risk Populations Learning Community was supported by AHRQ through its administration of the Health Care Innovations Exchange. In particular, we thank Mary P. Nix, MS, PMP, Health Scientist Administrator and Project Lead of the Innovations Exchange, as well as Phillip E. Jordan, MA, Public Health Analyst, U.S. Department of Health and Human Services, and former Project Lead of the Innovations Exchange. We also appreciate the leadership and support of AHRQ Director Andrew Bindman, MD, and Center for Evidence and Practice Improvement Director Arlene Bierman, MD, MS.

Leadership and core teams, who guided the learning community activities. Specifically, we thank: Co-Chairs, Aisha Morris Moultry, PharmD (Texas Southern University, Houston, TX) and Joy P. Alonzo, ME, PharmD (University of Houston, Houston, TX); MyRx Implementation Team Members, Gabby Foytick, MA (Spring Branch Community Health Center, Houston, TX); Uche Anadu Ndefo, PharmD; and Portia Davis, PharmD (Texas Southern University); Core Team Members, Emmily Simmons, PharmD (Houston Area Community Services, Houston, TX); Eve Gardner, MBA (Healthy York Network, York, PA); and Chris Toni, RPh (Hope Dispensary of Greater Bridgeport, Bridgeport, CT). Furthermore, we thank Spring Branch Community Health Center for serving as the pilot site for the medication therapy management intervention.

Learning community member sites, for continuously supporting the community’s activities. Their leadership and the local personnel involved were invaluable. In particular, we thank: Yaquela Barece, LVN (AccessHealth, Houston, TX); Monica Robinson Green, PharmD (Harris Health System, Houston, TX); Cynthia Johannes-Beecher, MSA, RPh; and Barbara McNeal, PharmD (Healthy York Network); Rosemary Botchway and Hoai-An Truong, PharmD, MPH (Primary Care Coalition of Montgomery County, Silver Spring, MD); Sherri D. Onyiego, MD, PhD, FAAFP, AAHIVS; and Adlia Ebeid, PharmD, BC-ADM, RPh (San José Clinic, Houston, TX); Rachna Bharti, MD; and Daniela Bazan, PharmD (University of Texas Rio Grande Valley/University of Texas at Austin College of Pharmacy Cooperative Pharmacy Program, Edinburg, TX); Santhi Masilamani, PharmD, CDE, MBA; and Susan Abughosh, PhD (University of Houston); and Minal Thakkar, PharmD (Walgreens Pharmacy, Houston, TX).
Guest speakers and contributors, for sharing their expertise with the learning community. These individuals include: Todd D. Sorensen, PharmD; and Mark Loafman, MD, MPH (Alliance for Integrated Medication Management); Kristin L. Reiter, PhD; and Paula H. Song, PhD (University of North Carolina at Chapel Hill); Jamie C. Barner, PhD (University of Texas at Austin); Amanda Garner, PharmD; and M. Lynn Crismon, PharmD (Texas Health and Human Services Commission); Kim Roberson, PharmD (Texas Pharmacy Association); Steven W. Chen, PharmD (University of Southern California School of Pharmacy); Michael Hochman, MD, MPH (AltaMed Health Services); Sandra Leal, PharmD, MPH, CDE (SinfoniaRx); RADM Pamela Schweitzer, PharmD, BCACP (U.S. Public Health Services); Rose Calhoun, BSN, Med (Texas Children’s Health Plan, Inc.); Lee Ann Kroon (TOMAGWA HeathCare Ministries, formerly with the San Jose Clinic); Anita M. Stanford, MSN, RN; and Hillary Blackburn, PharmD (Dispensary of Hope); Lindsay O’Brien, MPA (AmeriCares); Joann Fisher, BS (FamilyWize Community Service Partnership); Molly J. Ekstrand, RPh, BCACP, AE-C (Park Nicollet Health Services); Jennifer L. Rodis, PharmD, BCPS, FAPhA (Ohio State University College of Pharmacy); and Barbara Pryor, MS, RD, LD (Ohio Department of Health).

Prepared by: Westat
Executive Summary

The U.S. Agency for Healthcare Research and Quality (AHRQ) created the Health Care Innovations Exchange to speed the implementation of new and better ways of delivering health care. The Innovations Exchange supported AHRQ’s mission to produce evidence to make health care safer, higher quality, more accessible, equitable, and affordable, and to work with the U.S. Department of Health and Human Services and other partners to make sure that the evidence is understood and used.

In an effort to support the adoption and spread of innovations, the Innovations Exchange sponsored the Medication Therapy Management Promoting Medication Therapy Management for At-Risk Populations (MTM LC). Building upon a previous innovation called the Managing Your Medications (MyRx) Medication Adherence Program, the MTM LC met regularly to discuss the adaptation of the innovation at Spring Branch Community Health Center (SBCHC) in Houston, TX. The 14-member organizations met regularly over a 2-year period to accomplish four aims:

1. Perform a quality improvement initiative to pilot test the team-based MyRx program in SBCHC clinics.
2. Improve medication adherence among patients with uncontrolled diabetes treated in ambulatory care settings.
3. Prevent and reduce potential medication-related errors prior to discharge from clinic visits.
4. Leverage the expertise of MTM LC members to enhance lessons learned about the pilot program.

This case study represents the collective work of the MTM LC. The MTM LC documented the lessons learned from the MyRx pilot program, which fall into five main categories:

- Organizational structure,
- Patient enrollment,
- Patient engagement,
- Data collection and evaluation, and
- Program sustainability.

Many of the lessons learned also include information and insights from MTM members and experts in other settings, under the heading “Lessons From the Field.”

The document’s overall goal is to provide a resource to help guide future adoption and implementation of MTM interventions such as the MyRx program. Target audiences include the MTM LC’s member organizations, as well as other organizations and clinicians seeking to implement MTM programs in ambulatory care settings, such as primary care organizations, federally qualified health centers (FQHCs), FQHC look-alikes, charitable care clinics, and charitable pharmacies.

This case study document is not intended to provide a comprehensive toolkit for MTM implementation efforts. Also, the statements in this document are intended to serve as suggestions for information purposes only.
Introduction to Case Study and Overview of the Medication Therapy Management Learning Community

This case study represents the collective work of the Medication Therapy Management Learning Community (MTM LC), a quality improvement initiative sponsored by the Agency for Healthcare Research and Quality (AHRQ) Health Care Innovations Exchange. The document distills the expertise, knowledge, and experiences of the members of the MTM LC between October 2014 and September 2016, and has a two-fold purpose:

- To discuss potential solutions that mitigate barriers to implementation of MTM programs, based on the Managing Your Medications (MyRx) pilot program experience and input from the MTM LC members, and

- To provide lessons learned and anecdotal stories from the MyRx pilot program to highlight “real-world” experiences in implementing an MTM program in an ambulatory clinic setting.

The document’s overall goal is to provide a resource to help guide future adoption and implementation of MTM interventions such as the MyRx program. Audiences that may benefit from this document include the MTM LC’s member organizations, as well as other organizations and clinicians seeking to implement MTM programs in ambulatory care settings, such as primary care organizations, federally qualified health centers (FQHCs), FQHC look-alikes, charitable care clinics, and charitable pharmacies.
Background

In October 2014, AHRQ Health Care Innovations Exchange established three learning communities (LCs) to improve the quality of health care delivery by addressing challenges that AHRQ identified in three high-priority areas. The Innovations Exchange defined an LC as a select group of potential adopters and stakeholders who engage in a shared learning process to facilitate adaptation and implementation of innovations featured in the Innovations Exchange.

The LC that focused on “Promoting Medication Therapy Management for At-Risk Populations” (the MTM LC) recognized that clinicians in ambulatory care settings face challenges in providing care to patients with low socioeconomic status who have chronic conditions. These patients often face challenges in understanding how to take their medications appropriately and being actively engaged in self-managing their health conditions. The MTM LC focused on addressing these challenges by incorporating pharmacists within the primary care team to provide comprehensive medication therapy management to patients.

The MTM LC built upon a previous innovation called the MyRx Medication Adherence Program, which consists of a bundle of MTM interventions that were independently tested using comparative effectiveness research methodology. The interventions included pharmacist medication reviews, health education to improve health literacy, health counseling using motivational interviewing, and followup calls at scheduled intervals.

Based on that prior work, and in collaboration with Texas Southern University (TSU) College of Pharmacy and Health Sciences, three affiliated clinics of the Spring Branch Community Health Center (SBCHC)—a federally qualified health center (FQHC) in Houston—served as sites for a quality improvement initiative to adapt and pilot test the MyRx program in an ambulatory clinic setting.


By August 2015, the MTM LC consisted of 14 organizations, including four FQHCs, two academic institutions, two health systems, two health care coalitions, one charity pharmacy, one charity clinic, one community pharmacy, and one cooperative pharmacy program (Appendix A). The membership consisted of pharmacists, researchers, primary care clinicians, and administrators. MTM LC members valued learning from the MyRx experience, provided insights on challenges, and served as dissemination partners. The MTM LC met regularly to pursue four aims:

1. Perform a quality improvement initiative to pilot test the team-based MyRx program in SBCHC clinics.

2. Improve medication adherence among patients with uncontrolled diabetes treated in ambulatory care settings.

3. Prevent and reduce potential medication-related errors prior to discharge from clinic visits.

4. Leverage the expertise of MTM LC members to enhance lessons learned about the pilot program.

The MTM LC held monthly membership meetings, core team and leadership meetings, and in-person meetings in Houston (in September 2015 and April 2016). These meetings were designed to review the MyRx pilot program at SBCHC, identify strategies for improving the program, and discuss issues, trends, and challenges that relate to MTM implementation. Please note that this case study document is not intended to provide a comprehensive how to guide/toolkit for MTM implementation.

Also, even though many of the lessons in this document are phrased as imperative sentences, these statements are intended to serve as suggestions for information purposes only. The inclusion of such statements does not constitute endorsement or recommendation by the U.S. Government, the Department of Health and Human Services (HHS), or AHRQ. As an agency of the U.S. Government, AHRQ cannot endorse or appear to endorse any specific commercial products or services. The opinions expressed in this document are those of the MTM LC members and do not reflect the official position of HHS or AHRQ.

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Value of Medication Therapy Management for At-Risk Patients in Ambulatory Care Settings

Defining Medication Therapy Management and Its Role in Patient Care

According to a U.S. Agency for Healthcare Research and Quality (AHRQ) report on outpatient medication therapy management MTM interventions, such services are intended to address polypharmacy, preventable adverse drug events, medication adherence, and medication misuse. In line with that report, the AHRQ Health Care Innovations Exchange identified MTM as a high-priority area.

Eleven national pharmacy organizations in 2004 adopted a consensus definition of MTM, describing it as a service that “encompasses a broad range of professional activities and responsibilities within the licensed pharmacist’s, or other qualified health care provider’s, scope of practice.” As defined by the American Pharmacists Association, which facilitated development of the consensus definition, MTM “is a service or group of services that optimize therapeutic outcomes for individual patients. Medication therapy management services include medication therapy reviews, pharmacotherapy consults, anticoagulation management, immunizations, health and wellness programs and many other clinical services. Pharmacists provide medication therapy management to help patients get the best benefits from their medications by actively managing drug therapy and by identifying, preventing, and resolving medication-related problems.”

Up to 75 percent of adult patients are non-adherent to their medication regimens, a deficit that points to a great need for MTM services, particularly in at-risk populations.

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At-risk populations include patients of ethnic minority communities, those with disparate socioeconomic status, the elderly, and those with chronic and complex health conditions. Patients with health conditions that require care from several clinicians and the use of multiple medications often experience difficulty managing their medications. These factors are especially significant in elderly patients. Minors also tend to have lower levels of education, limited access to health care, and lower health literacy, all of which make management of their medications more difficult. In compiling the 2003 National Assessment of Adult Literacy, the U.S. Department of Health and Human Services documented disparities in health literacy by racial/ethnic groups, with 24 percent of Black adults, 41 percent of Hispanic adults, and 13 percent of other (Asian, Native American, and multi-racial non-White) adults categorized as having “below basic health literacy,” compared with 9 percent of White adults. The Institute for Safe Medication Practices has described pharmacists as an underutilized component of the health care team, and has suggested that pharmacists can play a key role in keeping patients safe with respect to their use of medications. Pharmacists are among the most readily accessible health care providers and have been ranked consistently among the top three most trusted professions in surveys of U.S. citizens. Given this level of trust and accessibility, patients are often comfortable discussing health and medication issues with pharmacists, and regularly look to pharmacists for health education. By providing thorough instruction on appropriate medication use, pharmacists can effectively provide patients with the knowledge needed to help keep them safe. In addition, pharmacists can improve the initial collection of patient medication information and communicate that to the patient’s clinician, reduce inappropriate polypharmacy use or duplication of therapy, and ensure that essential medications are included in a patient’s care plan. Having a pharmacist as part of the care team also provides an opportunity to develop inter-professional relationships and collaboration with pharmacy students and medical residents.

Evidence of the Benefits of Medication Therapy Management in At-Risk Populations

The value of MTM services has been documented in studies conducted in a variety of health care settings, with diverse patient populations coping with multiple chronic and complex disease states. Overall, the evidence suggests that MTM programs can be of great benefit for patients at high risk for medication non-adherence. Although implementation of MTM in ambulatory care has faced challenges, such as a lack of financing mechanisms and limited acceptance of this form of inter-professional collaboration among primary care clinicians, there is growing evidence that MTM can improve the quality of care and health outcomes in ambulatory settings. This section offers examples of evidence that the use of MTM can improve medication adherence, improve health outcomes, and achieve cost savings.

Improved Medication Adherence

Studies of the impact of MTM services on medication adherence have shown that patients who adhere to their prescribed medication regimens are more likely to successfully achieve related care goals. A 2014 meta-analysis of 44 studies assessed the effect of MTM interventions in patients with chronic illnesses, and found that MTM interventions improved medication appropriateness and adherence. In a systematic review and meta-analysis of 15 studies that assessed pharmacists’ interventions on hypertension control, 8 of the studies showed significant improvements in systolic and diastolic blood pressures in the pharmacist-intervention groups.


Improved Health Outcomes

In a randomized, pragmatic clinical trial, 166 patients with uncontrolled hypertension who were enrolled in an MTM service for 9 months had a significantly greater reduction in systolic blood pressure at 6 months, compared with a control group (-7.1 [19.4] vs. +1.6 [21.0] mmHg). In a two-stage, randomized controlled trial of telephonic MTM to reduce hospitalization in patients receiving home health services, pharmacists and support staff (technicians) called 895 patients during a 60-day period to review medication regimens. The MTM intervention helped prevent hospitalizations; and for patients with the lowest risk profile, the intervention group was three times less likely to be hospitalized compared with a usual care group.

Cost Savings

The cost of medication-related morbidity and mortality in the United States was estimated to be $177.4 billion in 2000. In a study of Medicare Part D beneficiaries with diabetes, heart failure, and chronic obstructive pulmonary disease, poor medication adherence was associated with increases in Medicare costs ranging from $49 to $840 per patient per month. In a study of 186 MTM patients who received MTM services through an accountable care organization, total per-patient health expenditures decreased from $11,965 to $8,197, which translated to a return on investment of $12 for $1 spent.

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Overview of the Original MyRx Program and Its Adaptation for an Ambulatory Care Setting

Faculty at the Texas Southern University (TSU) College of Pharmacy and Health Sciences in Houston developed the original Managing Your Medications (MyRx) Medication Adherence Program as a way to provide medication reconciliation and education for community-dwelling minority seniors in home settings. The program grew out of the participation of TSU faculty in the Patient-Centered Care Collaboration to Improve Minority Health. That initiative, funded by the Office of Minority Health, Department of Health and Human Services, explored how comparative effectiveness research could be used to reduce health disparities.25

Aisha Morris Moultry, PharmD, MS, Associate Professor of Pharmacy Practice at TSU, and her colleagues received grant funding to develop and test the MyRx program in four affordable housing complexes. With the assistance of Harris Health System Department of Community Services’ Health Educators, the MyRx program offered culturally and linguistically tailored medication management and health education to seniors with hypertension and/or diabetes. Consultant pharmacists visited patients in their homes to perform a medication assessment and reconciliation, check their blood pressure, offer personalized education, and develop a care plan. Later, health educators hosted group sessions at the residential facilities to focus on healthy eating, physical activity, and stress management.

The pharmacists called patients at home after the sessions to follow up on the care plan and answer questions. This initial test of the MyRx program lasted less than 3 months in early 2013 due to funding limitations. The program results during this time period indicated an increase in seniors’ knowledge about diabetes, improved medication adherence, and reductions in hemoglobin A1c. However, the program’s impact on weight and hemoglobin A1c levels following the short-term intervention were not significant. The work of Dr. Moultry and her colleagues was summarized in a profile published by the AHRQ Health Care Innovations Exchange (Appendix B).26


MyRx Components

The original MyRx program, as well as the adapted MyRx program that was implemented at the three Spring Branch Community Health Center (SBCHC) clinics, included a bundle of four evidence-based components:

1. Pharmacist medication reviews,
2. Health education to improve health literacy,
3. Health counseling using motivational interviewing, and
4. Followup calls at scheduled intervals.

Each of the four components had been tested separately by independent researchers and proven effective in randomized clinical trials.\textsuperscript{27,28,29,30}

Adaptation of MyRx at Spring Branch Community Health Center

The original MyRx that was tested by Harris Health System was a home-based intervention focused on an elderly patient population. That approach had the disadvantage that pharmacist-recommended interventions were often delayed because clinicians were not on-site and thus could not approve the interventions promptly. Based on that experience, the adapted MyRx program at the SBCHC clinics focused on providing all of the bundled services during patient visits to the clinic and through telephone followup. This protocol had the advantage that the providers practiced at the clinics, so clinicians could immediately review and approve pharmacist-recommended interventions, and the pharmacist could then incorporate changes to the patient’s MTM plan. Individual patient visits with the pharmacist would be scheduled to coincide with each patient’s scheduled visit with his or her primary care clinician at a SBCHC clinic, an approach that also was designed to facilitate inter-professional collaboration and promote patient engagement and participation in the program.

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In collaboration with the TSU College of Pharmacy and Health Sciences, the three SBCHC clinics (Hillendahl, Pitner, and West Houston) served as pilot sites for implementing the adapted MyRx program. SBCHC is a primary care organization in West Houston that began providing care in 2004 and was designated as a federally qualified health center (FQHC) in 2005. The clinics serve more than 12,000 patients annually, primarily serving a low-income population, half of whom have an income at or below 200 percent of the Federal poverty level.

Members of the SBCHC patient population are predominantly Hispanic individuals who generally speak Spanish as their preferred language, have limited health literacy, and face challenges with social service needs. Further, SBCHC primarily serves a self-pay patient population, who may often experience challenges in keeping followup appointments and adhering to a medication regimen.

**Staffing Model**

Prior to the start of the pilot program, the SBCHC clinics did not have a pharmacist on-site or a medication therapy management (MTM) protocol in place. The addition of MTM services was expected to address a service gap that resulted from the limited time available to provide patient education, particularly related to medications, due to heavy caseloads. On average, SBCHC clinicians spend 15 minutes with each patient during a visit.

The pilot program focused on primary care teams in the specialty of family medicine. The project team recruited and trained two bilingual pharmacists and six pharmacy students. The pharmacists, who were full-time employees of larger retail pharmacies with experience in disease state management in a clinic setting, agreed to work part-time at the SBCHC sites and provide MTM services to MyRx patients during defined time periods.

**Implementation Protocol**

The medication therapy management learning community (MTM LC) adapted the original MyRx program to include protocols for:

- Integrating the pharmacist into the primary care team,
- Modifying clinical workflow so the pharmacist visit would be scheduled following the primary care clinician visit, and
- Facilitating inter-professional communications by scheduling “huddles” at intervals during each work day when the pharmacist and the primary care clinician could discuss patient care concerns and recommendations.

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The overarching objective of the MyRx pilot program was to facilitate pharmacist interventions, which included recommendations for changes in drug therapy, lifestyle, lab testing, or other aspects of patient care. Based on the information obtained during in-person patient visits and followup calls, the pharmacists made recommendations that were then reviewed for approval by primary care clinicians. In order to facilitate this process, the TSU team developed a protocol outlining how the pharmacists would coordinate with the primary care team, as well as how the pharmacists would engage and interact with patients throughout the MyRx program. The pharmacists and primary care clinicians participated in a collaborative practice agreement that specified the role of the pharmacists as a member of the primary care team.

The TSU team developed forms to facilitate their interactions with patients. For example, the first appointment form guided pharmacists through a systematic method of collecting baseline data about patients. The form also helped guide the pharmacists in asking patients about their knowledge, attitudes, and beliefs regarding diabetes. After completing patient visits, the pharmacists would consult with the primary care clinician on duty to discuss the patients seen and make recommendations regarding their care. There were additional forms for followup phone calls and followup in-person visits.

The TSU team conferenced with the pharmacists (via email, phone, and/or in-person) at intervals during the 6-month intervention phase in order to obtain their feedback, assess strengths and weaknesses, and get their perspectives on program challenges and opportunities. These interactions occurred weekly during initial implementation, and moved to biweekly and monthly as the intervention progressed.

The discussions proved fruitful and led to refinements of the pilot implementation protocol. (See Appendix C for a detailed description of the protocol.)

Patient Population
The pilot program at SBCHC began with the goal of implementing an adapted MyRx program for use in adults with uncontrolled diabetes. In the original MyRx program, the pharmacists focused on hypertension and diabetes in a patient population that consisted of seniors living in residential units. The decision to focus the adapted MyRx pilot program on diabetes was based on the high prevalence of diabetes in SBCHC’s patient population, a pattern that reflects the disproportionately high diabetes disease burden in racial and ethnic minority groups as well as in populations with low socioeconomic status. In 2014, the year prior to the pilot program, 48 percent of the patients with diabetes treated at SBCHC clinics did not have adequate control of their diabetes, with an estimated 200 patients having hemoglobin A1c (HbA1c) levels exceeding 8 percent. Periodic measurement of HbA1c provides information about a patient’s average blood glucose levels. Achieving an HbA1c level below 7 percent is
a widely used primary outcome goal in the treatment of patients with diabetes. Reductions in HbA1c can lead to significant declines in mortality, cardiovascular events, and other complications of diabetes.

Patients identified for participation in the MyRx pilot program at SBCHC met the following criteria:

- Were 18 years of age or older,
- Had a confirmed diagnosis of diabetes mellitus,
- Had a HbA1c level above 8 percent, and
- Did not visit the clinic within 2 months prior to enrollment in the program.

Each patient served as his/her own control, with the initial HbA1c used for the baseline assessment and the post-intervention HbA1c collected at the end of the intervention.

Patient Monetary Incentives

Another change in the MyRx protocol at the SBCHC clinics involved patient monetary incentives. The original MyRx program tested by Harris Health System offered patients a modest monetary incentive to participate throughout the program. In contrast, patients at the SBCHC clinics did not receive any monetary incentive to participate in the MyRx pilot program.

Objectives of the MyRx Program

The MyRx program at SBCHC was designed to pilot test the team-based MyRx MTM program in order to:

- Improve medication adherence among patients with uncontrolled diabetes.
- Prevent and reduce medication-related errors prior to discharge from clinic visits.

The program had these short-term process objectives:

- Monitor patient enrollment and engagement.
- Learn how individual members of the interdisciplinary team interact with each other.
- Track patient adherence to the treatment plan and care.
- Document the training of the care team.
- Track patient satisfaction with the treatment plan and care.

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The program had these long-term outcome objectives:

- Achieve control of HbA1c (below 7%) among enrolled patients.
- Increase patient self-management of diabetes and other chronic conditions.
- Encourage clinician behavior and culture change that leads to more interdisciplinary team-based care within a primary care setting involving pharmacists.
- Evaluate the efficiency of pharmacist involvement in patient care.

Results of the MyRx Pilot Program

SBCHC was able to enroll 57 patients into the MyRx pilot program and retain 38 of those patients throughout the entire 6-month pilot test period. During the pilot program, pharmacists provided more than 230 interventions, including recommending lifestyle modifications to patients and suggesting drug therapy changes to the patients’ primary care clinicians. Results from the MyRx pilot program showed that patients who received one-on-one counseling from a pharmacist had greater changes in HbA1c compared to patients who did not participate in the program. On average, there was a 15.2 percent reduction in the participating patients’ reported HbA1c levels during the 6-month pilot program. Patients who received one-on-one counseling from a pharmacist also experienced positive changes in their knowledge about diabetes and their medication adherence.

See Appendix D for additional information about the MyRx pilot program outcomes.

Conclusion

The 38 MyRx program patients who returned to the clinic for their followup visit benefited from the intervention, as demonstrated by the average reduction in their HbA1c levels. Along with having an impact on patients’ care, pharmacists increased the awareness among primary care clinicians of the services that the pharmacists could provide. This resulted in more non–diabetes-related consultations with the pharmacists.

Although the MyRx pilot program was successful in reducing overall HbA1c levels in the enrolled patients, the program did encounter challenges with implementation, including the following:

- Enrolling a target number of patients originally based on the percentage of patients meeting the eligibility criteria for the program,
- Retaining patients throughout the entire 6-month pilot period, and
- Ensuring that patients completed the established protocol that designated four followup phone calls and a final in-person visit with the pharmacist.

See Section IV for a detailed discussion of these challenges and suggestions for overcoming them based on lessons learned from the MyRx experience and other field experiences.
Lessons Learned From the MyRx Experience

The medication therapy management learning community (MTM LC) documented lessons learned from the MyRx pilot program in order to leverage the expertise and knowledge of the learning community, with the goal of improving future adoption and implementation of the MyRx program, as well as providing valuable information to support the implementation of similar MTM programs. As described below, the lessons address topics in five main categories: organizational structure, patient enrollment, patient engagement, data collection and evaluation, and program sustainability. Many of the topics also include information and insights from MTM members in other settings, under the heading “Lessons From the Field.”

Lessons Learned: Organizational Structure

The MyRx pilot experience and the work of the MTM LC yielded lessons regarding the organizational structure that is required for MTM implementation. The lessons address challenges related to obtaining leadership support, developing an effective staffing model, and building an inter-professional environment.
Obtaining Leadership Support

MyRx Experience:
Prior to the MyRx implementation, Spring Branch Community Health Center (SBCHC) was already involved in quality improvement activities and reporting requirements that created incentives to implement an MTM program aimed at improving care and outcomes for patients with diabetes. SBCHC was required to submit publicly accessible reports to the government on clinic outcomes, and had grants focused on caring for patients with uncontrolled diabetes that involved reporting on activities and outcomes for such patients. Further, SBCHC was considering incorporating an onsite pharmacy in the clinical setting and wanted to explore how including a pharmacist in the primary care team could improve patient care.

Lessons Learned:
• Communicate the value of the program, from both quality and cost perspectives. A key reason that the MyRx program received support from SBCHC’s leadership was that it provided an opportunity for SBCHC to pilot test a quality improvement intervention that could improve the care provided to patients with uncontrolled diabetes, and consequently, improve SBCHC’s outcomes. In order to obtain buy-in from an organization, implementers should make a business case that communicates the potential value proposition of an MTM program, and ensure that the program aligns with the organization’s mission and goals.

Lessons From the Field:
• Develop a comprehensive business plan for the MTM initiative. Ms. Rose Calhoun, Director of Quality and Outcomes Management at Texas Children’s Health Plan, suggests creating a business proposal that communicates how your MTM initiative will affect the organization’s bottom line, and that addresses how the MTM services will be funded, the systematic changes needed to conduct the MTM services, and the anticipated improved clinical outcomes. Presentation of the proposal should be adapted to the key decisionmaker audience: When speaking to the chief executive officer, the presentation should discuss profits, expansion, innovation, and recognition for the organization. The chief financial officer is responsible for the organization’s budget and project expenses, so the presentation should cover the financial plan and methods for controlling costs. The chief information officer is focused on systems requirements and the chief medical officer is interested in anticipated improvements in quality outcomes, so the presentation should emphasize those aspects of the MTM initiative.
Create a business proposal that communicates how your MTM initiative will affect the organization’s bottom line, and that addresses how the MTM services will be funded, the systematic changes needed to conduct the MTM services, and the anticipated improved clinical outcomes.

—Rose Calhoun

- Ensure that the MTM initiatives align with the organization’s priorities. Molly Ekstrand, RPh, BCACP from Park Nicollet notes that implementers must demonstrate that the MTM program will align with the organization’s priorities. The MTM program should target areas where an organization has a gap in care that aligns with medication-related outcomes. Further, the MTM program should target areas that will provide the right care to the right patient at the right time.

Developing an Effective Staffing Model

MyRx Experience:
Initially, the MyRx program at SBCHC was to include hiring one full-time pharmacist to be available during all clinic hours. However, due to cost constraints, two pharmacists participated in the MyRx program as part-time employees of SBCHC, with each pharmacist allocating 4 hours per week to meet with patients. This adaption created challenges for patient enrollment because in-person visits had to be scheduled based on the pharmacists’ availability at the clinics.

Second- and third-year pharmacy students who volunteered to contribute to the MyRx program conducted followup phone calls and assisted with data collection. The students served as interns and obtained Introductory Pharmacy Practice Experience (IPPE) service learning hours or rotation hours. The MyRx program did not need to hire new employees or perform background screenings, which the TSU College of Pharmacy conducted routinely as part of the student enrollment process. Under pharmacist supervision, the students followed scripts to conduct the followup phone calls. However, because of the limited hours when the pharmacist was available as well as the demanding schedules of the pharmacy students, there were limited opportunities for the students to conduct the followup phone calls. Consequently, the pharmacists had to conduct many of the followup phone calls themselves instead of the pharmacy students.
Lessons Learned:

- **Having a full-time pharmacist on-site facilitates patient participation and MTM implementation.** In-house pharmacy staff can assist with patient enrollment and, if employed full time, can interact with primary care clinicians during the entire clinical work schedule.

- **Explore the use of pharmacy students.** Consider allowing pharmacy students to serve as interns and provide a limited range of MTM services. Doing so can reduce MTM program costs and provide students with valuable practice experience. However, implementers should anticipate that students may not be available to perform all planned duties. Options for addressing this issue include having the MTM pharmacist conduct the followup calls when necessary, and assigning tasks, such as data collection, to other project staff as needed. Fourth-year pharmacy students in particular usually have a minimum number of practice hours they should complete as part of their graduation requirements. Participating in an MTM program can help fulfill this requirement.

- **Optimize pharmacist time to interact with patients.** If implementers are limited to using part-time pharmacists, they should ensure that the pharmacists are available at those times during the week when the participating patients are most likely to visit the clinic. Implementers should aim to delegate as many non-pharmacy-related tasks as possible to others so that pharmacists can maximize professional MTM interactions with patients.

Lessons From the Field:

- **Consider options for building MTM teams that are appropriate for the clinical environment.** For example, an MTM team might include a pharmacist, a pharmacy resident, and a clinical pharmacy technician. Ten such teams were developed for a program led by the University of Southern California School of Pharmacy and funded by the Centers for Medicare & Medicaid Services, in which clinical pharmacy services were integrated into safety-net clinics to help improve medication adherence and safe and appropriate use of prescription drugs. In another setting, the MTM team at the San Jose Clinic in Houston includes one full-time and two part-time pharmacists, one pharmacy tech, one patient assistance program coordinator, pharmacy staff or volunteers, TSU faculty, and pharmacy residents.

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• **Leverage academic partnerships for MTM services when possible.** M. Lynn Crismon, Pharm.D., BCCP, FCCP, Dean of the College of Pharmacy at the University of Texas at Austin, has suggested that pharmacy schools develop relationships with FQHCs in order to address challenges in finding clinical practices where students can obtain pharmacy practice experience. Dr. Susan Abughosh, from the Department of Pharmaceutical Health Outcomes and Policy at the University of Houston’s College of Pharmacy, notes that such partnerships provide an opportunity for pharmacy students to learn MTM-related skills, such as motivational interviewing, while serving as a low-cost resource for implementing beneficial MTM services. In Edinburg, TX, an academic-clinic partnership that formed in 2001 helps provide care to patients. The University of Texas at Austin’s Cooperative Pharmacy, in collaboration with the University of Texas-Rio Grande Valley, provides opportunities for students in south Texas to have access to practical clinical pharmacy experiences. This program trains knowledgeable pharmacists who are well versed in the language and culture of the people who live along the U.S.-Mexico border. The program recruits perspective students from south Texas; and more than 80 percent of pharmacy graduates have remained in the Rio Grande Valley area. In an effort to reduce readmissions, the pharmacy program developed a transition of care program to help patients transition from the inpatient to the outpatient setting by providing discharge counseling. The program also helps patients with access to medications.

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**Pharmacy schools should develop relationships with FQHCs in order to address challenges in finding clinical practices where students can obtain pharmacy practice experience.**

—M. Lynn Crismon

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**Building an Inter-Professional Environment**

**MyRx Experience:**

Prior to launching the MyRx pilot program, the pharmacists received training from the TSU team regarding their roles and responsibilities, and received employee onboarding training from the SBCHC administrative team. The organizational training helped familiarize the pharmacists with the workflow and operations at SBCHC.
The MyRx protocol called for brief meetings ("huddles") between the primary care clinician and pharmacist at the end of each work-day. During this interaction, the pharmacist debriefed the clinician about the patient, and discussed any recommendations about patient medications before the patient left the office; therefore, the clinician could review and approve any medication changes during the patient’s in-person visit with the pharmacist. When possible, the pharmacist’s consultative visits were scheduled during hours when clinicians were performing administrative duties. This arrangement ensured that the pharmacist would have access to clinic rooms and could promptly confer with each patient’s primary care clinician.

Although the pharmacist-clinician interactions were included in the MyRx protocol, pharmacist interactions with other clinic staff were not specified. Further, there was no systematic training of all SBCHC staff regarding the MyRx program and no formal initiative to inform staff about how pharmacists were being incorporated into SBCHC primary care teams. As a result, schedulers for the MyRx program did not consistently prioritize the in-person visits of those who were eligible for the MTM program. Further, some clinicians were initially hesitant about accepting pharmacist recommendations about patient care.

Lessons Learned:

- **Provide focused training to MTM pharmacists.** Formally educating pharmacists about the implementation protocol as well as about clinic operations can improve their understanding of their duties and clarify expectations regarding their work performance.

- **Demonstrate the value of MTM to clinicians.** Encourage buy-in from the primary care team by demonstrating how participation in an MTM program can help them achieve quality improvement goals, qualify for incentive payments, and realize other benefits.

- **Communicate the value of the MTM program to all staff.** Focus on building support for the MTM program by using a marketing approach that communicates the value of MTM services to everyone involved in patient care. Consider how each staff role could potentially contribute to the MTM intervention and specify their contributions within the implementation protocol. To overcome potential resistance from clinicians, offer evidence that MTM services can improve the quality of care while decreasing costs. Provide training to staff on practical activities they can do to encourage patients to participate fully in the program by keeping appointments and responding to followup phone calls. For example, the MyRx team thought that appointment schedulers could play a valuable role in getting patients to the clinic, and suggested that the program might achieve improved patient retention by training schedulers to communicate the value of followup visits and encourage patients to return for scheduled visits.
• **Systematically coordinate primary care and pharmacist interactions.** By instituting in-person clinician-pharmacist huddles as part of the MyRx protocol, the program facilitated in-person communication between the MTM pharmacist and primary care clinicians. Further, these huddles fit well into daily clinical workflow and supported a team-based approach to patient care. Implementers should try to schedule the pharmacist’s visits with patients during the clinician’s regularly scheduled “administrative time” to facilitate clinician-pharmacist huddles. To supplement the huddle communication, pharmacists can add progress notes to each patient’s EHR chart for later review by the clinician.

• **Allow time for clinicians to recognize the value of pharmacist integration into the primary care team.** Although some clinicians were reluctant at first to accept the pharmacist’s medication recommendations, within weeks these clinicians realized the value of the pharmacist’s involvement and started accepting the pharmacist’s recommendations and inviting consultations.

**Lessons From the Field:**

• **To facilitate clinical workflow, design and implement a structured process for addressing drug therapy problems that fits into existing workflows and allows pharmacists to work with other clinicians to resolve such problems.** This lesson emerged from the Texas Medicaid MTM pilot project. In that project, community pharmacists found it easy to identify drug therapy problems. However, many of the pharmacists initially did not realize that there was a structured process and workflow for resolving drug therapy problems in collaboration with prescribing clinicians. The project implementers developed checklists that outlined action steps in a suggested workflow that pharmacists could use to recommend appropriate medication changes to their clinical colleagues.

• **To help support wider implementation of MTM, it could be helpful to modify the continuing education requirements for pharmacists so MTM practice experiences could contribute to fulfilling those requirements.** Pharmacy leaders think that the demand for MTM-related training is increasing in response to growing efforts to implement MTM programs.

• **If you do not achieve complete support from clinicians for the MTM program at first, start small.** At San Jose Charity Clinic, after the MTM program plan was developed, the pharmacists presented the program to the primary care clinicians. Many of the clinicians were hesitant about the plan, partly because there was concern

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about the pharmacist’s role in managing patient care without clinician oversight. The pharmacists piloted the project with five clinicians who supported the program. During the pilot program, the pharmacists were encouraged to share their knowledge with the clinicians to build trust. Over time, this approach helped build support for the program and ultimately, it was well received by most clinicians.

- **Apply a multidisciplinary approach to providing care to patients.** Emmily Simmons, PharmD, from Houston Area Community Services (HACS) encourages collaboration among various members of the health care management team, including team members who focus on a patient’s social and socioeconomic challenges. At HACS, social workers in particular play a major role in identifying strategies for screening patients and referring them to MTM services. Primary care clinicians and pharmacists at HACS value the social workers’ knowledge of the community and the care they provide in addressing the socioeconomic needs of the patients they serve.

- **Use tools such as Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®) to facilitate communication and teamwork skills among providers.** TeamSTEPPS® is an evidence-based teamwork system used to improve communication and teamwork skills among health care professionals. It has ready-to-use materials and a training curriculum to successfully integrate teamwork principles.¹⁵

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**Social workers can play a major role in identifying strategies for screening patients, referring them to MTM services, and covering the social gaps that patients experience.**

—Emmily Simmons

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**Lessons Learned: Patient Enrollment**

The MyRx pilot experience and the work of the MTM LC yielded lessons regarding the process of patient enrollment that is required for MTM implementation.

The lessons address challenges related to identifying patients who may benefit from an MTM intervention, communicating opportunity and value to patients, and mitigating barriers to patient recruitment.
Identifying Patients Who May Benefit From an MTM Intervention

MyRx Experience:
The MyRx team decided that the pilot program would include patients who were at least 18 years of age, had a confirmed diagnosis of diabetes mellitus, had an HbA1c level above 8 percent, and had not visited the clinic within 2 months prior to enrollment. The team initially set the qualifying HbA1c level at above 9 percent, but reduced the criterion during the program planning phase to capture more patients considered to be at risk of developing diabetic complications. In 2014, SBCHC provided care for an estimated 200 patients with HbA1c levels above 8 percent, indicating inadequate control of their diabetes. Although the MyRx program had inclusion criteria that specified the target population, some of the patients were unable to fully participate in the program. For example, the patient’s primary residence and access to the clinic for followup was not an inclusion criterion; some enrolled patients could not complete the followup in-person visit with the pharmacist because their primary residence was outside of the Houston metropolitan area.

Lessons Learned:
- Establish inclusion criteria that will identify the target population based on clinical criteria, and assess whether a patient will be able to fully participate and benefit from the MTM intervention. Assess the patient population and identify clinical criteria for enrolling patients in the MTM program who are at risk of disease progression and development of complications and related morbidity. Further, consider inclusion criteria that will exclude patients who will not be able to benefit from the MTM intervention. SBCHC might have been able to reach more patients who could benefit from the MTM intervention if the protocol had excluded patients who were not primary residents of the Houston area.

Lessons From the Field:
- Possible approaches to targeting patients include focusing on high-cost patients, patients who are frequent visitors for clinical services, patients detected based on clinical criteria, and patients referred by clinicians for MTM services. These methods were used to identify patients in a program led by the University of Southern California School of Pharmacy and funded by the Centers for Medicare & Medicaid Services. In that program, clinical pharmacy services were integrated into safety-net clinics, both to help improve medication adherence and ensure the safe and appropriate use of prescription drugs. Inclusion and exclusion criteria based on laboratory test results governed patient selection, in conjunction with a chart and medication profile review.36

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Communicating Opportunity and Value to Patients

MyRx Experience:
The MyRx team found that when the pharmacist engaged with the patient during the baseline consultation visit, the visit typically required more time than the 30 minutes specified in the initial protocol. Patients had significant knowledge gaps related to their understanding of diabetes and the need for lifestyle modifications. In response to the pharmacist’s recommendation, the team extended the baseline appointment to 45 minutes to allow time to fully assess the patient’s health and educational needs.

Although the MyRx program pharmacists were trained in motivational interviewing and had protocols to guide their interactions with patients, they did not have printed materials or other promotional resources to share with patients and educate them about the value of participating in the MTM intervention. Further, there were no promotional materials at SBCHC that discussed the value of participating in the MyRx program.

Lessons Learned:
- During the planning phase, allow sufficient time for the patient’s first visit. Allocate the time required to fully assess the patient’s knowledge and provide tailored education that both addresses the patient's knowledge gap and informs him or her about the goals and expected benefits of participating in the MTM program.
- Develop information materials that will encourage patient participation into the MTM program. Develop culturally tailored materials that will engage patients, and include visual elements that can facilitate communication with patients, including those with low literacy.
Mitigating Barriers to Patient Recruitment

MyRx Experience:
The MyRx pilot program experienced challenges recruiting patients who could visit the clinic during the same time that a pharmacist was available to conduct an in-person MTM consultation. In part, this challenge resulted from limited pharmacist availability (see Section IV.a.ii Developing an Effective Staffing Model), but other factors also hindered patient enrollment. The MyRx team attributed the limited enrollment to the following factors:

- Limited resources for patient enrollment
- Lack of patient incentives
- Cost of payment for HbA1c tests
- Part-time pharmacists vs. clinic schedules
- Part-time pharmacists vs. pharmacy interns’ schedules
- Change in leadership at SBCHC

Lessons Learned: Patient Engagement

The MyRx pilot experience and the work of the MTM LC yielded lessons regarding the process of patient engagement that is required for MTM implementation. The lessons address challenges related to reducing socioeconomic barriers; considering patient culture, language, and diversity; encouraging patient self-management; addressing patient health literacy; providing additional services to patients who need them; and encouraging patients to attend followup visits.

Lessons Learned:

- Patient enrollment into a program may be lower than expected because of various risk factors. During the planning phase, consider all of the factors that could limit patient enrollment in the MTM program, and identify possible ways to mitigate those barriers.

Lessons From the Field:

- Hiring a community health worker is one option for maximizing patient enrollment. Texas Children’s Health Plan implemented an MTM program to help manage the care of children with high-risk asthma. The asthma MTM program’s grant funding supported hiring a community health worker whose sole job for 16 hours per week was to help recruit and enroll participants.
Reducing Socioeconomic Barriers

MyRx Experience:
In the SBCHC clinic setting, financial barriers affected some patients’ ability to afford co-payments for HbA1c tests, medications, or referral visits to other health care professionals. Also, some patients were unable to complete scheduled in-person clinic visits due to factors such as a lack of transportation, a lack of affordable child care, and an inability to take off time from work. These challenges resulted in incomplete laboratory data for some visits, missed appointments, and difficulty achieving improved clinical outcomes.

Self-pay patients were especially likely to experience challenges in maintaining consistency with followup visits and medication adherence. Medication barriers for patients were due in large part to pharmacist relying on the availability of medications that the discount programs provided. For some patients, there was a long waiting period to be approved for assistance programs.

Although the SBCHC clinics could not directly eliminate socioeconomic barriers, the MyRx program attempted to mitigate these challenges. For example, the SBCHC clinics had memoranda of understanding agreements for various medical practitioners and specialists, so that referred patients who were uninsured or underinsured had access to discounted services. Further, even though the patient consultation visits with the pharmacist were free of charge, some patients faced financial barriers that made it difficult for them to pay the $20 fee for HbA1c testing and other fees for blood glucose tests and other laboratory tests. Given concern that some patients might skip the HbA1c test due to the additional cost, the MyRx team explored options to determine if they could waive the testing fee for patients in financial need.

Lessons Learned:

- **Consider the affordability of the patient's medication regimen and laboratory tests.** Encourage the pharmacist to monitor the prescriptions that patients receive and talk with patients about potential financial barriers to filling the prescriptions. When necessary, the pharmacist should advise the patient’s clinician about this problem and recommend more affordable medication alternatives. In addition, look for ways to reduce the out-of-pocket cost of laboratory testing for patients in financial need.
• Provide travel vouchers to reduce transportation challenges. The MyRx team recognized at the outset of the pilot program that transportation barriers might limit a patient’s access to care, and sought to offer assistance with transportation, such as vouchers to pay for public transit fare. At one of the three SBCHC sites, the MyRx program used grant funds to implement a voucher system to pay for taxi or other transportation so patients could get to and from their clinic appointments. Patients who received this support came to their appointments with the pharmacist more regularly than did patients at the other two SBCHC sites.

Lessons From the Field:
• Offer incentives to promote patient participation in the MTM program to improve patient adherence and achieve better health outcomes. In developing an MTM program to help manage the care of children with high-risk asthma, Texas Children’s Health Plan included incentives in a grant proposal so that patients would receive $10 for the baseline and midpoint visits and $20 for the final visit. Another option is to obtain donations from businesses. For example, pharmaceutical companies may provide discount cards and glucometers for patients at no cost.

• Use patient medication assistance programs when possible. Various nationwide programs provide free or affordable medications to patients. Organizations are encouraged to collaborate with multiple programs to optimize the services they can offer to patients.

- Trinity Health’s prescription safety-net program allows all providers to use the available free or discounted medication options with patients. The program is multi-layered; based on income qualifications, patients are placed into one of the available safety-net programs, such as AmeriCares, Dispensary of Hope, and FamilyWize.
- Wellspan takes advantage of the prescription drug calculator at the NeedyMeds Web site to estimate the costs of medications for self-pay as well as insured patients.
- The medication assistance program at Hope Dispensary relies on a formulary system. The dispensary team identifies medically appropriate and cost-effective prescriptions to include in the dispensary stock. Using therapeutic interchange and a collaborative practice agreement, clinicians can dispense the available medications at the initial patient visit, thereby greatly increasing medication adherence.
Considering Patient Culture, Language, and Diversity

MyRx Experience:
The target population for the MyRx pilot program was predominantly Hispanic and generally preferred to communicate and receive health information in Spanish. The MyRx team recognized the importance of having culturally competent providers who could provide effective patient education, address health literacy, and encourage adherence to medication regimens and other interventions. During the program planning phase, the TSU leadership team recognized that recruiting bilingual pharmacists might be difficult. The team considered finding a Spanish interpreter if hiring a bilingual pharmacist was not feasible; however, there was concern that relying on an interpreter might lead to communication problems.

The MyRx pharmacists were bilingual and well equipped to engage Hispanic patients and address related cultural issues. For example, the pharmacist could discuss the Hispanic tradition of eating “sweet bread” and sugary beverages after meals, and highlight the potential impact of this cultural practice on blood sugar levels and control of diabetes. Additionally, pharmacists used English and Spanish pamphlets with pictures to enhance communications with patients.

Lessons Learned:
• Ensure that MTM providers can provide culturally competent care. Recruit and hire pharmacists and other staff who understand the cultural beliefs and practices of patients that can influence their personal health behaviors and engagement in effective health care. Consider whether the job description for the pharmacist should specify that bilingual (e.g., English and Spanish) language proficiency is required.

• Use multiple techniques to communicate with patients. When appropriate, providers should use visual aids and other educational tools to enhance communication.
Lessons From the Field:

• Other approaches to providing culturally competent care include establishing partnerships with cultural leaders and elders in the community to increase trust in providers, and developing a continuing education requirement for providers that focuses on cultural competency.

• Providers should be more cognizant of how they communicate with their patients. Sandra Leal, PharmD, MPH, CDE, FAPhA, Vice President for Innovation at SinfoniaRx, noted common mistakes that providers unknowingly make that can inadvertently impair patient engagement, including:
  - Giving patients complicated instructions to follow
  - Suggesting treatments that a patient cannot afford
  - Scheduling too many followup visits with the patient
  - Focusing on a patient’s negative results
  - Not being aware of social issues that impact the patient’s care (e.g., lack of transportation, housing)
  - Dismissing the cultural beliefs of the patient (e.g., value of herbal products, alternative medicine, “susto” [a cultural illness in Latin American cultures])
  - Not acknowledging the importance of relationship norms (e.g., spouses giving medicine to patient, family members preparing meals)

Dr. Leal suggests providers be more aware of these practices, and try to understand the patient’s primary language. Even if a provider is not fully fluent in the patient’s primary language, knowing some key phrases and terms can facilitate patient engagement.

> Even if a provider is not fully fluent in the patient’s primary language, knowing some key phrases and terms can facilitate patient engagement.

—Sandra Leal

Encouraging Patient Self-Management

MyRx Experience:

One of the biggest challenges the MyRx pilot program pharmacists and pharmacy students experienced was persuading patients to adopt positive health behaviors, including medication adherence and healthy eating. Some of the pharmacists’ success in encouraging healthy behaviors was attributable to their previous training in motivational interviewing.

Lessons Learned:

• Use motivational interviewing techniques to promote healthy behaviors. Consider providing training to ensure that MTM staff who interact with patients know how to apply motivational interviewing techniques as part of the effort to encourage patient adherence to medication regimens and recommended lifestyle changes.
Lessons From the Field:

- Motivational interviewing, an evidence-based counseling style that elicits behavior change by addressing ambivalence to change, can help patients advance through the stages of readiness for change (pre-contemplation, contemplation, action, maintenance, relapse). The key principles of motivational interviewing are expression of empathy, acceptance of resistance to behavior change, resolving discrepancies between the provider’s point of view and the patient’s point of view, and supporting self-efficacy, according to Santhi Masilamani, PharmD, CDE, MBA, Director of Ambulatory Based Advanced Pharmacy Practice Experiences at the University of Houston College of Pharmacy. Dr. Masilamani promotes the use of the OARS technique (Open-ended questions, Affirmations, Reflective listening, and Summaries) during counseling calls.

The key principles of motivational interviewing are expression of empathy, acceptance of resistance to behavior change, resolving discrepancies between the provider’s point of view and the patient’s point of view, and supporting self-efficacy.

—Santhi Masilamani

- Use technology to engage patients. Dr. Sandra Leal suggests that smartphones can be a useful tool for engaging patients and improving their health literacy, particularly because of the recent evidence that Blacks and Hispanics rely on their smartphones to look up information about health conditions. Yaquelen Barece, LVN, from AccessHealth also supports the use of mobile technology to actively engage patients. At her organization, they use a platform that helps providers connect with their patients to reinforce diabetes education, nutrition, and lifestyle changes between patient clinic visits. For example, the platform sends daily automated messages (following patient consent) to help patients take control of their health. Furthermore, the platform sends health tips to help educate patients about diabetes care, reminds patients about diabetes classes while tracking their attendance to the classes, and sends reminders to patients about their medication refills.

Addressing Patient Health Literacy

MyRx Experience:
Some of the patients served by the SBCHC clinics have low health literacy levels that can make it difficult for them to read and follow written information about their prescriptions and medical care. The MyRx team recognized that limited health literacy was a potential barrier to patient engagement, in part because patients might not know what to ask medical professionals, or might feel uncomfortable doing so. However, because the pharmacists were bilingual and received motivational interviewing training, they were able to mitigate the patient low health literacy concern.

Lessons Learned:
• Ask patients open-ended questions to learn about their experiences, thoughts, beliefs, and behaviors. As previously mentioned in Section IV.c.iii, motivational interviewing is a key strategy for providers to communicate and engage patients. In particular, open-ended questions provide an opportunity for patients to use their own language to discuss their condition and concerns.

Lessons From the Field:
• Develop plain-language materials to help patients better understand their health conditions and medications, provide videos to further explain key points, and involve patients in developing education materials. Based on her experience, Rosemary Botchway of the Primary Care Coalition of Montgomery County, MD, recommended that patient education materials be made available in both English and Spanish and be written in a fourth- to sixth-grade reading level, with pictures depicting key points. To promote patient retention of information discussed during a patient visit, follow up with the patient after the visit to reinforce key points about medication adherence and related health issues. Hope Dispensary uses pictograms for educational materials to enhance communication with patients who cannot read, or whose preferred language is not English. Many pictograms can be found through the International Pharmaceutical Federation (FIP). Patients and caregivers can place materials depicting device use or explaining complicated regimens on their refrigerators or store on their phones.

Patient education materials should be made available in both English and Spanish and be written in a fourth- to sixth-grade reading level, with pictures depicting key points.

—Rosemary Botchway

Providing Additional Services to Patients When Needed to Address Needs

MyRx Experience:
The MyRx team developed a detailed protocol for patient followup that included in-person office visits and telephone consultations, details about the role of the pharmacists and pharmacy students, information to gather at each step, and topics for patient education. The 16-week protocol included steps for enrollment, office visits, and followup phone calls, as well as a script for the pharmacists and students to follow when interacting with the patients, to help ensure consistency in their interactions. Based on early experience with the intervention, the team added an optional in-person visit focusing on health education and knowledge assessment. This appointment made it possible to provide additional care for selected patients with complex medical needs, difficulty adhering to their medication regimen, required changes in their medication regimen, and/or a need for additional education.

Lessons Learned:
- Adapt MTM interventions to successfully encourage patients to make recommended behavior changes. Although the initial MyRx protocol called for two in-person visits with the pharmacist, a mid-point pharmacist visit was added to the protocol for patients who needed /required additional support or services. The midpoint visit was scheduled if a patient met one or more of the following criteria:
  - The patient did not undergo lab tests during the first office visit.
  - The patient was new to SBCHC and needed re-evaluation of newly prescribed medications.
  - The patient was instructed to perform self-monitoring of blood glucose following changes in the treatment plan.

Lessons From the Field:
- Texas Children’s Health Plan implemented an MTM program to help manage the care of children with high-risk asthma. According to Joy P. Alonzo, M. E., PharmD, Clinical Assistant Professor at the University of Houston College of Pharmacy, the program piloted pharmacists from 13 Walgreen’s stores, offering additional counseling time for targeted medication reviews. These reviews were 10 minutes each and occurred when a patient visited the pharmacy to fill or refill his or her medication(s).
Encouraging Patients to Attend Followup Visits

MyRx Experience:
Of the 57 patients who were enrolled in the program, 20 patients did not return to the clinic for their final MyRx visit. Along with the socioeconomic challenges previously discussed, some patients were unwilling to return for the sole purpose of the followup visit with the pharmacist, especially if the pharmacist’s part-time availability created a scheduling challenge. When a patient did not keep an appointment, the pharmacist followed up with the patient individually to reschedule the appointment.

Lessons Learned:
- Implement a system for followup visit reminders. The MyRx team implemented a reminder system in an effort to encourage patients to come to their followup visits:
  - Two days before the appointment, the EHR system made an automated phone call that prompted patients to confirm their appointment.
  - One day before the appointment, clinic staff called the patient to confirm the appointment.
  - The evening before the appointment, the patient received a reminder via email or a text message sent by a text messaging service (if the patient had signed up for the service).
- Schedule followup visits with the pharmacist to align with the patient’s primary care visits. Patients were more likely to meet with the pharmacist if they were already at the clinic to meet with their primary care clinician. Try to maximize a patient’s time in the clinic by providing all the services (e.g., medical, pharmacy, nutrition) during one visit.
Lessons Learned: Data Collection and Evaluation

The MyRx pilot experience and the work of the MTM LC yielded lessons regarding the process of data collection and evaluation that is required for MTM implementation. The lessons address challenges related to determining metrics to evaluate an MTM program, and developing tools to collect data.

Determining Metrics to Evaluate an MTM Program

MyRx Experience:
The TSU and SBCHC teams worked collaboratively to determine which quality improvement metrics would be used to monitor the performance of the MyRx pilot program. This effort included reviewing data already collected by the clinic, as well as identifying new data sources that could be incorporated into the workflow at SBCHC. The MyRx team used the following measures to evaluate the program:

- Knowledge assessment: pre- and post-intervention
- HbA1c level: baseline, 3-month, and 6-month
- Pharmacist intervention: monitored monthly
- Compliance with clinic visits: initial, 3-month, and 6-month
- Frequency of medication use: monitored monthly

Lessons Learned:
- Select achievable measures to evaluate the MTM program. Carefully consider the intended outcomes of the MTM program and choose outcome measures that will allow meaningful assessment of the program’s success.
Lessons From the Field:

• A comprehensive approach to MTM evaluation includes outcome measures focusing on health care quality, safety, total cost and return on investment, patient and provider satisfaction, and patient access. Such outcome measures were monitored by the University of Southern California School of Pharmacy, in which clinical pharmacy services were integrated into safety-net clinics to help improve medication adherence and safe and appropriate use of prescription drugs. Jamie Barner, PhD at the University of Texas at Austin also suggests using the quality measures from the National Committee for Quality Assurance when appropriate.

Developing Tools to Collect Data

MyRx Experience:
The MyRx team created a “first appointment form” that the consultant pharmacist completed during the first visit. The form served both as a data collection tool and as a guide to the pharmacist’s services/activities during the initial patient visit. Key information that was collected at baseline included: health status measures; diabetes knowledge, attitudes, and beliefs; medication inventory; and assessment of the patient’s readiness to change. During the visit, the pharmacist educated the patient about diabetes awareness, diet, and exercise; medication duplication; drug-disease interactions; drug-food interactions; drug-drug interactions; inappropriate dosage; therapeutic suggestion/alternatives; medication noncompliance; and adverse drug events. Similar forms were created for the followup phone calls and visits.

The high cost of creating custom EHR forms at the SBCHC clinics prevented the MyRx team from creating electronic documentation forms for the MTM program. Only a few fields were directly tracked in the EHR system; therefore, the team used a manual process to track the remaining data. The process of collecting data using paper forms and then scanning the forms into the EHR system increased the burden of program reporting, in large part because data were not immediately available in discrete data fields. Additional effort was required for data collection, including transfer of data into an Excel spreadsheet and additional hours that the pharmacy interns spent manually inputting information into the database that was used for MTM program tracking and reporting. Although the EHR system did not have fields specific to the MyRx program, all patient encounters (in-person and telephone) and any exchanges between the clinician and the pharmacist were documented in the EHR system by scanning and uploading the forms to a patient’s file. The pharmacist added notes in the medical records about each patient visit. The SBCHC administrative team securely sent data to the MyRx evaluation team, including scanned copies of the pharmacist’s encounter forms for the preceding week.


Lessons Learned:

- **Use previously established tools and metrics.** If possible, try not to “reinvent the wheel.” Adapt established tools and metrics that are publicly available. In developing a tool for assessment of diabetes knowledge to be administered at baseline and followup visits, the MyRx team used questions taken from a standardized test used by a national program.42

- **Adapt tools when necessary.** Some of the questions within the knowledge assessment tools were too intuitive, so that patients could readily figure out the expected answers. When possible, perform cognitive testing of data collection instruments to help ensure that they will provide meaningful results.

- **Establish a reliable system for documenting all aspects of MTM service delivery.** When planning an MTM intervention, develop a workflow for collecting and reporting data. Explore the feasibility of creating forms in the EHR system so MTM clinicians can enter data electronically.

- **Enable access to electronic records.** If feasible, streamline data collection and review by ensuring that MTM program leaders can directly access the EHR system that clinicians use to document patient encounters and record clinical findings. Lack of access to the EHR system can reduce efficiencies in collecting data. If feasible, develop the MTM program at clinical sites where program evaluators are on staff and have access to the EHR system.

Lessons From the Field:

- **The MTM program at St. Vincent Paul Charitable Pharmacy uses the Outcomes MTM Platform (http://www.outcomesmtm.com) to track outcomes.** Another potential approach is to use Web-facilitated home monitoring of key health measures such as blood pressure, as was done in a program developed by Group Health Cooperative in Seattle.43

- **When a team is developing a pharmacist-based MTM program, it is also important to address the logistical program needs.** At the San Jose Charity Clinic, members of the MTM program had a dedicated office space for the clinical pharmacist and pharmacy students, developed formal appointment templates with input from the clinic staff and scheduling team, and created a template for pharmacy encounters within the existing EHR system.

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Lessons Learned: Program Sustainability

The MyRx pilot experience and the work of the MTM LC yielded lessons related to ensuring program sustainability following initial MTM implementation. The lessons address challenges related to establishing plans to continue the MTM program after the initial pilot period, and establishing funding and reimbursement for ongoing support.

Establishing Funding and Mechanisms to Continue the MTM Program After the Initial Pilot Period

MyRx Experience:
During the early phase of the MyRx pilot program, the SBCHC’s medical director was very positive about the program and the prospect of continuing to provide the services after completion of the pilot project. Additionally, new leadership at SBCHC who joined the organization during the MyRx pilot program expressed support for the program and looked forward to evaluating the results and considering how to continue the program beyond the pilot phase.

Lessons Learned:

• **Build an evidence base for continuation of the MTM program.** Organize the MTM program in a way that will provide evidence of its value to help build a business case for extending the program past the initial start-up period.

• **Assess return on investment.** Systematically assess the MTM program’s return on investment (ROI) to help justify continuation of the program and build support for dissemination and implementation in additional clinical settings.
Lessons From the Field:

• When assessing the ROI from an MTM program, potential cost savings may result from factors such as reduced emergency department visits, hospitalizations, and readmissions penalties. According to Kristin L. Reiter, PhD and Paula H. Song, PhD, of the Department of Health Policy and Management at the University of North Carolina at Chapel Hill, the positive indirect effects of an MTM program include increased patient engagement and retention, increased business volume due to enhanced reputation, and incentives for achieving positive outcomes in external quality reporting. Nonfinancial considerations include better patient outcomes, improved patient and provider satisfaction, improved care coordination, and improved or enhanced positioning for value-based reimbursement and patient-centered medical home certification. Dr. Reiter and Dr. Song further note that to help demonstrate overall program value, it is important to gather baseline data and track trends observed during a period long enough to yield significant results.

• Review previous MTM implementations, particularly those within your state. Texas implemented a comprehensive community-based MTM program that was designed to resolve medication-related problems and decrease health care costs for patients covered by Medicaid. Jamie C. Barner, PhD, Professor of Health Outcomes and Pharmacy Practice at the University of Texas at Austin, has discussed how providing MTM services to high-risk Medicaid recipients improved patient outcomes and reduced health care costs, and the ROI ranged from 1.6:1 to 30.6:1.

To help demonstrate overall program value, it is important to gather baseline data and track trends observed during a period long enough to yield significant results.

—Kristin L. Reiter
Paula H. Song

• Determine the ROI of similar MTM implementations. Calculation of ROI was a key consideration for the MTM program that Texas Children’s Health Plan implemented to help manage the care of children with high-risk asthma across a wide service area. MTM LC member Joy P. Alonzo, ME, PharmD, Clinical Assistant Professor at the University of Houston College of Pharmacy, has noted that if the program achieves a 2 percent reduction in the number of asthma exacerbations and hospitalizations, it would translate to $10 million cost avoidance for the health plan. Further, Hoai-An Truong, PharmD, MPH, Associate Professor of Pharmacy at the University of Maryland Eastern Shore, and formerly a public health pharmacist with the Primary Care Coalition of Montgomery County, reported that MTM services delivered in a safety-net clinic over 4 years through the Primary Care Coalition of Montgomery County achieved a positive ROI. The program targeted a low-income, uninsured, predominately Latino population who experience difficulty controlling their diabetes. Dr. Truong reported that among 246 patients who received MTM services during a 4-year period, the cost of medication-related problems ranged from $141.55 to $755 per event, and the ROI
based on the time spent during billable face-to-face MTM encounters ranged from 1:5 to 1:25.44

- Conduct surveys for both the patient population and care team. Molly Ekstrand, RPh, BCACP from Park Nicollet encourages organizations to continuously monitor their performance by surveying the patient population as well as care teams who have been impacted by an MTM program. She cited past research that links patient experience to self-rated and objective health outcomes as well as to adherence to recommended medication and treatments.45 She also notes that surveys conducted with the care teams at Park Nicollet have indicated MTM programs have positive effects on care team value and team orientation.

- Increase access to billable clinicians. Molly Ekstrand, RPh, BCACP suggests utilizing pharmacist prescriptive authority when appropriate. Depending on state laws, collaborative practice agreements can provide an opportunity to streamline care processes for health care organizations. Collaborative practice agreements allow organizations to delegate medication management review from clinicians so they can use that time to see patients with more complex needs or new patients requiring diagnostic workup. Further, it provides an opportunity to alter clinician schedules so more patients can be seen, improving clinic access to care services.


- Obtain a National Provider Identifier (NPI). An NPI is a standard unique health identifier for health care providers, health care plans, and employers. In order to receive reimbursement from payers, many organizations are required to have an NPI.46

- Review state-specific scope of practice regulations. According to Rear Admiral Pamela Schweitzer, Assistant Surgeon General for the U.S. Public Health Service, pharmacists today are providing a broad spectrum of services within their scope of practice, including conducting health and wellness testing, managing chronic diseases and performing medication management, administering immunizations, and working in and partnering with hospitals and health systems to advance health and wellness and help reduce hospital readmissions. Furthermore, pharmacists are authorized to enter into collaborative practice agreements with a clinician or another prescriber, further expanding the services they are able to provide. Depending on the particular state, collaborative practice agreements enable pharmacists to provide a range of services such as initiation, monitoring, and modification of a patient’s drug therapy.

• Determine if your organization’s providers need credentialing and/or privileging. Some payers require providers to receive training or special credentialing. A credential is documented evidence of professional qualifications, including academic degrees, state licensure, residency certificates, training certificates, continuing education statements of credit, and board certifications. Credentialed providers can obtain privileges, which are permissions or authorizations granted by a hospital or other health care institution for a provider to treat patients in their facilities.

Establishing Reimbursement Options

MyRx Experience:
The MyRx team recognized at the outset of the pilot program that MTM programs are difficult to sustain when pharmacist services are not directly reimbursed. Jurisdictions vary as to whether pharmacists are allowed to receive reimbursement for MTM services. Because of this variability, MTM LC members emphasized the need to explore grant and alternative funding opportunities to support MTM programs after the pilot phase.

Lessons Learned:
• Develop plans early on aimed at funding an MTM program beyond the pilot phase. When developing an MTM program, it is important to consider a wide range of potential funding sources for ensuring the program’s long-term financial viability.

Lessons From the Field:
• Become familiar with the Current Procedural Terminology (CPT®) codes that are specific for pharmacist-provided MTM services. Currently, three CPT® codes (99605, 99606, and 99607) have been established to report the provision of medication therapy management services. These services are intended to be provided by a pharmacist to optimize the response to medications or for the management of treatment-related medication problems or complications.48


Depending on the particular state, collaborative practice agreements enable pharmacists to provide a range of services such as initiation, monitoring, and modification of a patient’s drug therapy.

—Pamela Schweitzer
• Options for paying for MTM services include billing policy changes, pay-for-performance agreements, health home demonstration programs, and increased use of risk-bearing capitated payment arrangements. Steven W. Chen, PharmD, FASHP, FCSHP, FNAP, of the University of Southern California School of Pharmacy, and Michael Hochman, MD, MPH, Medical Director of AltaMed Health Services, offered these suggestions. By setting up student internships and residency rotations, academic institutions and publicly funded community-based organizations can bridge resource gaps in MTM service delivery to underserved populations.

• In an MTM program that integrated clinical pharmacists in 13 community health centers in the Houston area, Harris Health System developed a business plan that considered the program’s potential impact on hospital finances and quality of care. The business plan highlights the potential to reduce costs and improve outcomes.

• When the Texas Children’s Health Plan implemented an MTM program to help manage the care of children with high-risk asthma, it had a sustainable business model that did not rely on grant funding. The program piloted a cost-sharing model with the pharmacy benefit manager (PBM) for reimbursement with 13 Walgreens pharmacies in the Houston area, according to Joy P. Alonzo, M. E., PharmD, Clinical Assistant Professor at the University of Houston College of Pharmacy. Corporate partnerships with Walgreens and other organizations were the key to success for long-term implementation. Moreover, the PBM is conducting a pharmaceutical care initiative, so the pharmacists were reimbursed for the counseling time required for targeted medication reviews.

• Explore Federal policies that may create more opportunities for pharmacists to collaborate with providers and receive reimbursement for MTM services. Rear Admiral Pamela Schweitzer, Assistant Surgeon General for the U.S. Public Health Service, noted that recent Federal policies may encourage more funding opportunities for pharmacists. In particular, the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) provides a new framework for rewarding health care providers for providing better care. MTM programs can be one solution for organizations that are looking to transition from a fee-for-service reimbursement system to a value-based reimbursement system. Besides MACRA, other Federal policies and initiatives that providers should explore include Medicare Part D, Medicaid MTM Programs, and Medicaid funds available through the Health Information Technology for Economic and Clinical Health (HITECH) Act.

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Appendices

Appendix A: Member Organizations of the Medication Therapy Management Learning Community

Access Health, Richmond, TX
Harris Health System, Houston, TX
Healthy York Network, Gettysburg, PA
Hope Dispensary of Greater Bridgeport, Bridgeport, CT
Houston Area Community Services (FQHC), Houston, TX
Primary Care Coalition of Montgomery County, Silver Spring, MD
San Jose Clinic (Charity Clinic), Houston, TX
Spring Branch Community Health Center (FQHC), Houston, TX
St. Hope Clinic (FQHC), Houston, TX
Texas Southern University College of Pharmacy and Health Sciences, Houston, TX
Trinity Health, Livonia, MI
University of Houston College of Pharmacy and Texas Children’s Health Plan, Houston, TX
University of Texas Rio Grande Valley/University of Texas at Austin College of Pharmacy Cooperative Pharmacy Program, Edinburg, TX
Walgreens Pharmacy, Houston, TX
Appendix B: AHRQ Health Care Innovations Exchange MyRx Profile

Service Delivery Innovation Profile


Culturally Tailored Pharmacist Home Visits and Educator-Led Group Sessions Increase Medication Adherence and Reduce Blood Pressure for Seniors with Hypertension and Diabetes

Snapshot

Summary

The Managing Your Medications (MyRx) Medication Adherence Program offered culturally and linguistically tailored medication management and health education to seniors with hypertension and/or diabetes living in the community. Pharmacists visited participants in their homes, usually an apartment in one of the participating housing complexes, to perform a medication assessment and reconciliation, offer personalized education, and develop a care plan. After these visits had been completed, health educators hosted two group sessions at the residential facilities—one focused on healthy eating and one focused on physical activity and stress management. After each session, pharmacists called patients at home to follow up on the care plan and answer any questions they had. The program increased seniors’ knowledge about diabetes and improved medication adherence. Significant reductions in blood pressure were observed as well. The program’s impact on hemoglobin A1c levels and weight were inconclusive. Both participants and staff had positive things to say about the program. The program ended in April 2013 when the grant funding that supported it ran out.

Evidence Rating

Moderate: The evidence consists of pre- and post-implementation comparisons of key outcomes measures related to participants’ condition-specific medication adherence, blood pressure, blood glucose, and weight, along with anecdotal feedback from participants and staff involved in the program.

Date First Implemented

2013

The MyRx program operated from January to April 2013.
Problem Addressed

Minorities are more likely to have chronic conditions such as diabetes and hypertension than non-minorities. Managing these conditions generally requires following complex medication regimens that often involve multiple drugs, something many seniors find difficult to do. While pharmacists can be utilized to help community-dwelling elderly minorities with chronic conditions manage their medications and improve health outcomes, relatively few seniors, particularly racial and ethnic minorities, have access to such support.

- **Higher risk of diabetes and hypertension among minorities:** About a quarter of African Americans between the ages of 65 and 74 suffer from diabetes, and overall, African Americans are 1.8 times more likely than non-Hispanic Whites to have the disease.\(^1\) Hispanic adults are 1.7 times more likely than non-Hispanic White adults to have been diagnosed with diabetes.\(^2\) Roughly a third of African Americans over the age of 18 have hypertension, making African Americans 40 percent more likely to have the condition than members of other racial and ethnic groups.\(^3\) Roughly a quarter of Hispanic Americans have high blood pressure.\(^4\)

- **Lack of adherence to prescribed medication regimen:** Approximately 37 percent of adults aged 60 and older rely on five or more prescription drugs on an ongoing basis.\(^5\)

- **Furthermore, many do not take their medications as prescribed:** For example, up to half of patients with chronic conditions do not take their medications as recommended.\(^6\) Major reasons for low adherence include high costs, difficulties in following complicated regimens, adverse side effects, inadequate provider–patient communication, and patient forgetfulness.\(^7\)

- **Largely untapped potential of pharmacists:** Pharmacists can help patients with diabetes better manage the condition by improving medication adherence and ensuring the provision of appropriate services.\(^8\) Pharmacists can also help those with hypertension improve adherence and blood pressure control and reduce drug interactions and health care costs.\(^9\) However, relatively few community-dwelling seniors with chronic conditions, particularly minorities, have access to medication management and education programs involving pharmacists.
Description of the Innovative Activity

The Managing Your Medications (MyRx) Medication Adherence Program offered home-based culturally and linguistically tailored medication management and health education to seniors with hypertension and/or diabetes living in community-based residential facilities identified with the help of the Houston Housing Authority. Pharmacists visited participants in their homes, usually an apartment within one of the housing complexes, to perform a medication assessment and reconciliation, offer personalized education, and develop a care plan. After these visits had been completed, health educators hosted two group sessions at the residential facilities—one focused on healthy eating and one focused on physical activity and stress management. After each session, pharmacists called patients to follow up on the care plan and answer any questions they had.

Key program elements included the following:

- **Target population:** This voluntary program served racial/ethnic minorities (African Americans, Latinos/Hispanics, and Asian Americans) over the age of 55 living in one of four city-owned residential facilities identified with the help of the Houston Housing Authority. Many of the participants had multiple chronic conditions and all were required to have a history of diabetes and/or hypertension and access to a telephone.

- **In-home, culturally tailored medication assessment and care plan:** Bilingual community pharmacists trained in motivational interviewing and cultural competency made one 60-minute home visit to each participant to conduct a medication assessment and provide customized education in the participant’s preferred language (English, Spanish, Mandarin, Cantonese, or Vietnamese). During the visit, these pharmacists conducted a medication review and reconciliation, engaged in a detailed discussion with the seniors regarding how and when they take their medications, identified and addressed medication-related challenges to adherence, and discussed diabetes and hypertension self-care needs, including the importance of medication adherence. The pharmacist then developed a care plan documenting the discussion and recommended self-care activities, distributed cards to help participants track blood glucose and/or blood pressure, and answered any questions the participants had. If the participant provided contact information for his/her physician, the pharmacist faxed the physician details on recommended followup care (if any).
• **Culturally tailored group education sessions held at the residential facility:** After the pharmacist visits had been completed, bilingual health educators led two 45- to 60-minute group classes at each residential facility. Held four weeks apart and open to all enrolled in the program, these curriculum-based, interactive classes taught participants about self-care practices for diabetes and hypertension, stress management, physical activity, and healthy eating. During the sessions, the educators provided disease-specific information while actively engaging the seniors in discussion, including offering small prizes (e.g., measuring spoons, stress balls) to encourage participation. All sessions and materials were delivered in the participants’ preferred language (English, Spanish, Mandarin, Cantonese, or Vietnamese), with a translator used as necessary. Classes made use of culturally tailored materials, such as food pyramids adapted to the cultures represented in the class.

• **Pharmacist followup by telephone:** Within two weeks of each education session, pharmacists called each participant at home to gauge his or her progress versus the care plan, identify and address any needs, and answer any questions, including those related to material covered during the group classes.

• **Modest monetary incentive:** Seniors who participated received $15 as an incentive for them to engage in the program.

### Context of the Innovation

Texas Southern University College of Pharmacy and Health Sciences is a fully accredited educational institution that focuses on producing high-quality health care professionals, especially African Americans and other ethnic minorities. Harris Health System is a community-owned, integrated health care system serving Harris County, Texas that has three hospitals and 16 community health centers. The vast majority of its patients are Hispanic or African American. The Houston Housing Authority provides affordable housing options and services to more than 60,000 low-income residents of Houston living in 25 housing developments around the city. The four housing complexes that participated in this program included Bellerive, a senior living apartment complex located in southwest Houston with 210 units; Historic Oaks of Allen Parkway, a 500-unit complex that is a part of Houston’s urban revitalization effort; Lyerly, a mid-rise apartment building in north Houston with 200 units; and Telephone Road, a building in south Houston with 200 units housing elderly and disabled residents.

The impetus for this program came from Texas Southern University College of Pharmacy and Health Sciences’ participation in the Department of Health and Human Services Office of Minority Health Patient Centered Care Collaboration initiative, which explored how comparative effectiveness research could be used to reduce health disparities. This initiative promoted the dissemination of proven, evidence-based practices to minority-serving health providers and racial and ethnic minority patients with diabetes, hypertension, and/or obesity. Dr. Aisha Morris Moultry and her pharmacist and public health colleagues had expertise in home-based interventions for seniors, who typically face transportation and other barriers.
to accessing care. Understanding these barriers, the medication management challenges faced by seniors with chronic diseases, and the health disparities faced by minority populations, these researchers decided to test an intervention involving medication reconciliation and education for community-dwelling minority seniors in the home setting. The intervention was initially planned to be implemented over a longer time frame; due to delays in the Federal approval process, however, the program time frame was shortened to less than 3 months.

Results

The program improved medication adherence and blood pressure, although blood glucose levels and weight both increased. Participants and staff had positive things to say about the program.

- **Better medication adherence:** Medication adherence scores improved between baseline and program completion, from 190.2 to 195.9 for hypertension and from 191.2 to 196.11 for diabetes (out of a total of 200 possible points).

- **Lower blood pressure:** Between baseline and program completion, participants experienced modest reductions in systolic blood pressure (from 139.8 to 137 mm Hg) and diastolic blood pressure (from 77.3 to 77.1 mm Hg).

- **Inconclusive results for hemoglobin A1c and weight:** Program implementers originally planned to evaluate the program on changes in hemoglobin A1c and weight. Due to a shortened program implementation period, the measures of hemoglobin A1c and weights are unstable and inconclusive. The standard time frame for assessing impacts on hemoglobin A1c is 3 months and the program ran for less than 3 months. Future research is needed to assess the long-term impact of the program on these measures.

- **Positive feedback:** In focus groups, participating seniors reported finding the educational sessions to be informative and interactive. For their part, health educators and pharmacists reported feeling “very prepared” to play their roles in the program and felt confident in their ability to work with and help the seniors.
Evidence Rating

Moderate: The evidence consists of pre- and post-implementation comparisons of key outcomes measures related to participants' condition-specific medication adherence, blood pressure, hemoglobin A1c, and weight, along with anecdotal feedback from participants and staff involved in the program.

Planning and Development Process

Selected steps (some of which occurred simultaneously) included the following:

- **Program development:** The researchers investigated successful community-based education programs for seniors, and formed a workgroup to provide input into program development. The group included representatives of various stakeholder organizations, including the local chapter of the American Diabetes Association, the local African-American Health Coalition, and MD Anderson Cancer Center.

- **Recruiting participants:** The Houston Housing Authority allowed program leaders to recruit participants in four buildings, chosen based on the availability of senior residents and the racial/ethnic diversity of these residents. They met with building facility managers and resident council members to describe the program, and also provided flyers for distribution to residents and attended resident meetings to describe the initiative, ask for feedback, and solicit participation.

- **Hiring pharmacists:** Program leaders created a job description and then used a School of Pharmacy listserv to advertise for bilingual community pharmacists.

- **Training health educators and pharmacists:** Bilingual health educators employed by Harris Health System received training on the program’s diabetes and hypertension curriculum. These health educators then trained the community pharmacists over a two-day period on motivational interviewing, cultural competency, and health education.

- **Developing linguistically-appropriate materials:** Program leaders identified available health education materials in the different languages, and had existing English materials translated into these languages.

- **Program termination:** The program ended in April 2013 when the grant funding supporting it ran out.
Resources Used and Skills Needed

- **Staffing:** Program staff included 13 community pharmacists contracted to work varying hours based on the size of the patient load assigned (size of patient load was determined by the language spoken and the pharmacists’ hours of availability); 5 health educators already employed by Harris Health System; and 8 pharmacy students who participated as part of their educational practice experience, assisting with data collection and entry. One of these students spoke Mandarin and also served as a translator.

- **Costs:** The total budget for the program was approximately $280,000, including payments to pharmacists and the student translator, the cost of materials, incentive payments to participants, and research-related expenses.

Funding Sources

The Office of Minority Health contracted with Westat, Inc., which contracted with and funded the Texas Southern University College of Pharmacy and Health Sciences.

Getting Started with This Innovation

- **Obtain stakeholder input:** Obtain input from community groups (including resident councils) so that the program can be highly relevant to the populations being served.

- **Use bilingual service providers:** Having pharmacists and health educators who can speak to participants in their preferred languages increases participant comfort with and engagement in the program.

- **Train pharmacists:** Community pharmacists will need training on motivational interviewing and cultural competency. Additional training is needed on the targeted disease state to ensure that pharmacists are informed of the most current practice guidelines and drug therapies.

- **Leverage pharmacy students if available:** Involving pharmacy students can be a “win-win” for the program and the students. The students provide services at no financial cost to the program and they obtain valuable experience and earn hours toward their educational practice experience.
Sustaining This Innovation

- **Maintain contact with facility managers and resident councils:** Maintaining ongoing contact with facility managers and resident councils results in easier scheduling of program-related activities and creates the potential to implement additional programs targeting other chronic diseases and conditions.

- **Monitor and share data on program impact:** Tracking and sharing data on the program’s impact with key stakeholders (e.g., health system leaders, local payers) helps to maintain their support for the program. Whenever possible, include information showing the program’s impact on use of costly resources, such as emergency department visits, inpatient care, and medications. Payers may be willing to support the program if they see that it can lead to substantially lower costs.

- **Update program content:** Continually review and update program content based on the latest medical information, including new medications.

Use by Other Organizations

- Through the support of AHRQ from January 2015 to February 2016, the MyRx program was piloted at Spring Branch Community Health Center (SBCHC), a federally qualified health center in Houston, Texas. The MyRx program was adapted for the primary care clinic by targeting adults with uncontrolled diabetes, and scheduling in-person visits and follow-up calls with a pharmacist. Results from the pilot indicated positive changes in hemoglobin A1c, medication adherence, and diabetes knowledge scores among patients.

Contact the Innovator

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Innovator Disclosures

Dr. Moultry reported having no financial interests or business/professional affiliations relevant to the work described in the profile, other than the funders listed in the Funding Sources section.

References/Related Articles

Endnotes


Appendix C: Detailed Description of the Adapted MyRx Intervention Protocol

Initially, the adapted MyRx intervention protocol included an initial in-person meeting with a pharmacist, four followup telephone calls, and an in-person post intervention visit, all conducted during a 16-week period. Based on early experiences 6 weeks from the start of the pilot program, the project team modified the protocol to include an optional in-person visit focused on health education and knowledge assessment in order to better care for selected patients, including those with complex medical needs, difficulty adhering to their medication regimen, a required change in their medication regimen, and/or a need for additional education. This midpoint visit could be scheduled between the second and third telephone visits, at the discretion of the pharmacist and based on the needs of the individual patient. (Figure 1 depicts the modified protocol.) Another modification made to the protocol after the pilot program was initiated involved the number of followup phone calls, which was changed to “one to four calls” because of the need to combine calls for patients who missed one or more of the planned calls.

Figure 1. MyRx Adaptation Pilot Timeline
**Patient Enrollment (Week 1):** For each potential participant, the medical assistant at the FQHC completes the Participant Eligibility Screening Form to assess whether the patient meets the inclusion criteria for the program. If the patient is eligible, the medical assistant documents the patient’s demographics, preferred language spoken, medical history, and allergies. The first appointment with a MyRx pharmacist is then scheduled.

**First Onsite Visit (Week 2):** The consultant pharmacist conducts the visit (approximately 45 minutes) and completes the First Appointment Form.

- The consultant pharmacist starts with an introduction then collects baseline information, including HbA1c, height, weight, and history of diabetes.
- The pharmacist completes the Diabetes Knowledge Questionnaire and assesses the patient’s attitudes and beliefs regarding the health program and diabetes.
- The pharmacist completes a comprehensive medication review, records the patient’s medication list, and assesses medication adherence.
- The pharmacist signs off on each column of the First Appointment Form to indicate the education points that have been addressed with the patient.


- The pharmacist adds a SOAP (subjective, objective, assessment, and plan) note to the patient’s electronic health record (EHR), notes any interventions and recommendations in the patient’s chart, and discusses the changes with the patient’s primary care clinician.
- The pharmacist concludes by discussing a followup plan with the patient.

**Telephone Followup 1 (Week 3):** The pharmacy intern completes the Telephone Followup 1 Form on Long-Term Complications.

- The intern starts with an introduction then revisits the patient’s HbA1c level from the first visit.
- The intern completes a medication review, records the patient’s medication list, and assesses medication adherence.
- The intern conducts a knowledge questions exercise on long-term complications.
- The intern concludes with patient education on serious health problems and complications that diabetes may cause, and recommends lifestyle changes to prevent or delay onset of complications.
**Telephone Followup 2 (Week 4):** The pharmacy intern completes the Telephone Followup 2 Form on Healthy Eating. The intern starts with an introduction, then revisits the patient’s HbA1c level from the first visit.

- The intern completes a medication review, records the patient’s medication list, and assesses medication adherence.
- The intern conducts a knowledge questions exercise on the effects of food on blood sugar, and recommends a meal plan for healthy eating.

**Mid-Point Onsite Visit (Optional, Week 6):** This visit is available for patients who need more immediate followup, at the discretion of the pharmacist and based on the needs of the individual patient. During this visit, the pharmacist completes the Mid-Intervention Followup Form.

- The pharmacist starts with an introduction then collects HbA1c, height, weight, and history of diabetes.
- The pharmacist completes the Diabetes Knowledge Questionnaire to assess the patient’s understanding of HbA1c and blood glucose levels, eye exams, and when to check his or her feet.
- The pharmacist completes a comprehensive medication review, records the patient’s medication list, and assesses medication adherence.
- The pharmacist assesses the patient’s HbA1c level. If it is not at goal, the pharmacist notes any interventions and recommendations in the patient’s chart, and discusses the changes with the patient’s primary care clinician.

**Telephone Followup 3 (Week 8):** The pharmacy intern completes the Telephone Followup 3 Form on Hypoglycemia and Hyperglycemia.

- The intern starts with an introduction then revisits the patient’s HbA1c level from the first visit (or from the Mid-Intervention, if applicable).
- The intern completes a medication review, records the patient’s medication list, and assesses medication adherence.
- The intern completes a knowledge questions exercise on HbA1c, hypoglycemia, and hyperglycemia.
- The intern concludes with patient education on hypoglycemia and hyperglycemia, describes signs and symptoms, and discusses how to prevent and manage these situations.
Telephone Followup 4 (Week 12): The pharmacy intern completes the Telephone Followup 4 Form on Being Active and Managing Stress.

- The intern starts with an introduction then revisits the patient’s HbA1c level from the first visit (or from the Mid-Intervention, if applicable).
- The intern completes a medication review, records the patient’s medication list, and assesses medication adherence.
- The intern conducts a knowledge questions exercise on being active and managing stress.
- The intern concludes with patient education on the benefits of being active and managing stress, and gives examples of each.

Post-Intervention Followup Onsite Visit (Week 16): The pharmacist completes the Post Intervention Followup Form on Diabetes.

- The pharmacist starts with an introduction then collects HbA1c, height, weight, and history of diabetes.
- The pharmacist completes the Diabetes Knowledge Questionnaire and assesses the patient’s attitudes and beliefs regarding the health program and diabetes.
- The pharmacist completes a comprehensive medication review, records the patient’s medication list, and assesses medication adherence.
- The pharmacist adds a SOAP note to the patient’s chart, notes any interventions and recommendations in the chart, and discusses the changes with the patient’s primary care clinician.

Roles for the Care Team in Implementing the Team-Based MyRx Pilot Program

- The nurse manager generates the patient list for enrollment and intervention.
- The scheduler coordinates appointments for the patients to come in for screening.
- The medical assistant screens the patients for eligibility.
- The pharmacist visits with the patient and implements MTM.
- The clinician reviews the pharmacist’s SOAP notes and recommendations and revises or approves the interventions.
- The pharmacy intern conducts followup telephone calls to the patient, with pharmacist supervision.
Appendix D: My Rx Data/Outcomes

The MyRx pilot program enrolled a total of 57 patients and collected data on the following process and outcome measures:

- Number of pharmacist interventions
- Patient followup visit completion rate
- Average diabetes knowledge score
- Average medication adherence score
- Average HbA1c level

Patient Evaluations and Followup Data:

- Initial (i.e., baseline) evaluations were performed when patients first enrolled in the program, and included their HbA1c levels, demographics, knowledge of diabetes, and medication adherence.

- Up to four followup phone calls were made to patients. These phone calls monitored the patients' adherence to their medication and provided further education on disease state management.

- Midpoint evaluations (optional at the pharmacist’s discretion) involved patients coming back into the clinic for a face-to-face meeting, usually due to drug therapy changes. Eleven patients received a midpoint followup visit.

- Post-intervention HbA1c levels were recorded for patients who returned to the clinic for a followup visit.

The pharmacist made an average of four interventions per patient, for a total of 230 pharmacist actions (e.g., recommendations for lifestyle modifications, drug therapy changes, additional testing). Of the 230 pharmacist actions, 24 were medication-related recommendations, all of which were approved by the patients' primary care clinicians.

Tables 1 and 2 summarize the outcome results from the MyRx pilot program at Spring Branch Community Health Center. Outcome results for the 38 patients with followup-visit data were positive:

- The average post HbA1c for this group was 8.53 percent, which represented a 15.2 percent reduction from the average HbA1c reported at baseline.

- The average knowledge score among the 38 patients was 9.57. This represented a 13 percent increase from the average knowledge score reported at baseline.
Table 1. Pharmacist impact on HbA1c: average change in HbA1c from baseline to post-Intervention among enrolled MyRx program patients

<table>
<thead>
<tr>
<th>Month patient enrolled into MyRx program (patient enrollment cohort)</th>
<th>Number of patients enrolled into cohort</th>
<th>Number of patients from cohort who returned for followup visit at clinic</th>
<th>Average HbA1c of cohort at enrollment (%)</th>
<th>Average HbA1c of cohort that returned for followup visit at clinic (%)</th>
<th>Average change in HbA1c (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td>9</td>
<td>6</td>
<td>9.85</td>
<td>8.05</td>
<td>-1.80</td>
</tr>
<tr>
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<td>8</td>
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<td>9.47</td>
<td>9.19</td>
<td>-0.28</td>
</tr>
<tr>
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<td>13</td>
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<td>10.97</td>
<td>8.78</td>
<td>-2.19</td>
</tr>
<tr>
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<td>8.56</td>
<td>7.96</td>
<td>-0.60</td>
</tr>
<tr>
<td>June</td>
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<td>-1.24</td>
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<tr>
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<tr>
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<td>1</td>
<td>14.00</td>
<td>12.00</td>
<td>-2.00</td>
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<tr>
<td>TOTAL</td>
<td>57</td>
<td>38</td>
<td>10.06</td>
<td>8.53</td>
<td>-1.53</td>
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Table 2: Pharmacist Impact on Knowledge Score, Medication Adherence Score, and Patient Satisfaction

<table>
<thead>
<tr>
<th>Patient Enrollment Cohort</th>
<th>Number of Pharmacist In-Person Visits per Cohort</th>
<th>Average Knowledge Score (Max score=10)</th>
<th>Average Medication Adherence Score (Max score=30)</th>
<th>Patient Satisfaction Score (Max Score=80)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline number</td>
<td>Post-intervention number</td>
<td>Baseline average score</td>
<td>Post-intervention average score</td>
</tr>
<tr>
<td>February</td>
<td>9</td>
<td>6</td>
<td>9.25</td>
<td>9.25</td>
</tr>
<tr>
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<td>7</td>
<td>9.33</td>
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<tr>
<td>August</td>
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<td>1</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>57</td>
<td>38</td>
<td>8.47</td>
<td>9.57</td>
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Overall, these findings show the potential for the MyRx program to achieve improvements in clinical outcomes for at-risk patients through the integration of pharmacists into interdisciplinary health care teams in ambulatory clinic settings.