Profile: Improving Medication Adherence and Chronic Disease Outcomes in the Patient-Centered Medical Home

Background

Nonadherence to treatment is a leading cause of poor patient outcomes, the causes for which are as complex and as numerous as the patients themselves. Health care practitioners generally do not have the resources to address barriers to adherence to taking medication during each office visit, a problem that can often prevent these issues from being managed appropriately throughout the course of a patient's treatment. The El Rio Health Center in Tucson, Arizona, determined that these gaps in patient adherence could be addressed through the use of the patient-centered medical home (PCMH) model, specifically by implementing an interdisciplinary team that could target these challenges. Physicians and nurse practitioners partnered with pharmacists, behavioral health specialists and community health advisors to improve patient outcomes by addressing adherence to treatment, with mechanisms put into place for evaluating the program's results and its potential to expand to other disease states beyond diabetes, hypertension and dyslipidemia.

Overview

El Rio is a nonprofit health center serving over 76,000 people in Tucson. It has seven sites that have National Committee for Quality Assurance Level 3 PCMH Recognition and two more that are in the process of becoming a PCMH. The distribution of resources among the clinics is fairly uniform, although the services are tailored to the site, the space available and the needs of the practitioner and patient. There is a behavioral health service, clinical pharmacy and a panel of community health advisors at each of the affiliated major medical sites. Currently, the practice as a whole has five clinical pharmacists and two pharmacy residents on staff, with plans to hire two additional pharmacists. The Southeast Clinic building was specifically designed for interdisciplinary care, with larger exam rooms and more integrated office space for the practitioner, medical assistants and pharmacy groups.

Program Description

El Rio first initiated this program in response to the perception that there were missed opportunities to improve care for each individual patient and the idea that pharmacists can play an integral role in improving chronic disease outcomes for these patients. The practice sought and obtained funding through a grant from the National Alliance of State Pharmacy

Association's Adherence Discovery Projects. Buy-in was obtained from administration, practitioners and support staff and the initiative was rolled out over six months. Progress was assessed through weekly team meetings (which have since been scaled back to once monthly). The first step was the establishment of an interdisciplinary "adherence team." This included the pharmacist, behavioral health specialist and the community health advisor who targeted reasons for patient nonadherence. The roles and objectives of the team members were then established. These roles were established as follows:

- Pharmacist: Addresses knowledge barriers relating to medication, encourages the use of medication reminder methods and tailors administration of the medication regimen to optimize adherence
- Behavioral health consultant: Targets motivational and mental health factors that result in nonadherence, conducts motivational interviewing and, if needed, refers patients to services either at the clinic or with a specialist
- Community health advisor: Identifies and helps remove barriers to adherence that may be due to lack of resources, which could include problems with transportation, insurance, unemployment or homelessness and connects patients to grant programs, pharmaceutical assistance programs, local shelters, employment centers or other community resources

As part of the El Rio program, each patient is introduced to the adherence team at the beginning of treatment and meets with at least one of them at subsequent visits. Initially, each patient is asked a series of questions about his or her disease to ascertain his or her understanding and address any gaps in knowledge. The pharmacist determines if the patient has a gap in treatment, that is, if the patient has missed one or more refills of his or her medication(s) based on the Pharmacy Quality Alliance (PQA) measure of gaps in therapy as assessed by the dispensing pharmacist. If the patient has missed one or more refills of medication, the pharmacist performs an assessment and forwards it to the interdisciplinary team. Patients are then scheduled for a team visit to address barriers to adherence. During this visit, the behavioral health specialist, community health advisor and pharmacist assess the underlying issues affecting each patient's adherence and disease management. The community health advisor assesses financial factors impacting adherence, while the behavioral health consultant addresses motivational factors and environmental factors. The pharmacist addresses knowledge barriers, provides information about each medication, encourages use of medication reminder methods and ensures that the medication regimen is tailored for adherence. The team and the patient create a management plan with goals involving, for example, lab results, nutrition, weight and activity level. These discussions are reinforced with handouts and adherence tools, including a patient plan and list of goals, instructions to help him or her take his or her medication properly and an updated medication list.

In addition to consulting with practitioners during tandem visits with the patient, the adherence team also reviews the daily schedule for every practitioner in the clinic so that a proactive effort is made to check in with patients that need extra support. It also schedules interim appointments with patients, during which it can assess patient outcomes, monitor adherence, order laboratory tests or adjust medication.

The clinic then follows up with patients about their experience. The El Rio health care system has a very robust data collection method for surveying patients about their experience. Phone calls are made to selected patients after their visits and more informal surveys are used for staff regarding the intervention.

Challenges

The central challenge faced by the clinic was developing an effective workflow. Since each practitioner had a heavy patient volume of around 20–25 patients daily, there was much discussion about how to effectively utilize the team without burdening each individual practitioner or patient. The workflow went through several iterations before the practitioners and staff became comfortable with the process, after which use by the team increased significantly.

Another challenge involved documentation of the adherence visits. A sizeable fraction of the team's responsibilities involve informal tandem consults during a patient's visit with another practitioner. Often, this encounter was not entered into the system, so no record of information exchanged or action taken by the team member existed, resulting in an inability to track outcomes. To address this, a standardized process was instituted wherein the adherence team members could add their perceptions and recommendations from their visits into the electronic medical record (EMR). Additionally, phone consults between patients and the adherence team to discuss lab results or patient concerns were not formally documented. Adding a telephone encounter section to the EMR to document the discussion of lab results, patient concerns and actions taken solved this issue.

Outcomes

Over a period of six months, the clinic studied a group of 100 patients (50 in the treatment group and 50 in the control group) aged 18 or older who had at least one chronic disease and who had documented gaps in medication treatment across one of six medication classes. Enrollment was restricted to those patients who utilized the clinic's outpatient pharmacy services. Each patient in the intervention group was matched with a control patient of similar age, race, sex and health parameters. The study used the PQA definition of gaps in therapy.

These interventions showed benefits across patient groups. In patients with hypertension, the average reduction in systolic blood pressure was 24 mm Hg for the treatment group and 4 mm Hg for the control group. The average reduction in diastolic blood pressure was 12 mm Hg for the treatment group, whereas an increase of 0.12 mm Hg was shown in the control group. In patients with diabetes, the average reduction in A1C was 1.33 points for the treatment group, but the level worsened by 0.2 points in the control group. In patients with dyslipidemia, the average reduction in total cholesterol for the treatment group was 37 mg/dL, while it increased by 6 mg/dL in the control group. The reduction in triglycerides for the treatment group was 20 mg/dL, but the level increased in the control group by 48 mg/dL, and the reduction in low-density lipoprotein for the treatment group was 33 mg/dL, while the control group average increased by 2 mg/dL. However, there was no improvement seen in the parameter of high-density lipoprotein. The average increase in high-density lipoprotein was 1.7 and 3.6 mg/dL in the treatment vs. control group. In addition, on average, treatment groups experienced fewer 30-day treatment gaps during the six months than the control group of patients not receiving behavioral health interventions.

A patient's adherence to one medication or lack thereof is not necessarily an indicator of the adherence level across all medications. Nevertheless, these data included several patients who improved on all parameters and some who had frequent gaps in therapy occurring for multiple medications. A secondary analysis is planned for those patients who failed to respond to the interdisciplinary team's efforts.

The implementation of the adherence team also resulted in higher patient satisfaction. Before the study began, satisfaction scores for this clinic location were among the lowest in the health system. In the two quarters after the study began, the clinic has been ranked number one in patient satisfaction. In addition, the individual practitioner with the highest satisfaction scores in the clinic was found to have utilized the team most frequently and appropriately. The qualitative feedback from the patient and practitioner surveys was also very positive and reinforced the benefits of the PCMH model. While the practice cannot directly attribute increases in satisfaction scores to the interventions made by the clinic, clinicians have noted that patients have responded positively to the practice's quality of care improvements.

Lessons Learned

In the beginning, implementation was difficult because each practitioner utilized the adherence team very differently. One helpful modification, particularly during program development, would be to invest time in educating each practitioner individually about the services the team offered. Also, tracking the utilization of the specific services in the program helped the practice identify which needs were not being met and which services needed to be expanded.

Another lesson the clinic learned was the importance of identifying each member of the team by name and title to the patient and limiting the number of team members meeting with the patient at each visit. This reduced patients' confusion and made the experience more positive.

Future Directions

A main push for the El Rio clinic is to increase utilization of the interdisciplinary adherence team by all practitioners. Though the team has the ability to independently identify patients who are at risk, referral of patients by the physicians is vital to improving patient adherence and outcomes.

The clinic is looking to expand its collaborative efforts to other areas of care. One of these is mental health. It is seeking to do this by partnering with its affiliated mental health clinics to ensure that the patients receive seamless care with no gaps in coverage. This includes follow-up appointments to gauge adherence to medication use. Additionally, the practice has expanded its screening of patients with diabetes and depression using the Patient Health Questionnaire nine-item depression scale (PHQ-9). All patients with diabetes are screened for depression. If a patient's depression is not being controlled, as indicated by the PHQ-9 score, he or she is able to get his or her therapy modified in the clinic without having to wait for a specialist appointment.

Another potential area of improvement is chronic pain management, specifically the optimal way to provide pain management to patients without contributing to dependence or abuse problems or putting the practitioner at risk. First steps here included institution of a mandatory urine drug screening for each new narcotic prescription and use of the state prescription monitoring program.

Currently the focus of these interventions has been on patients who use the on-site pharmacy, but the practice is looking to partner with local pharmacies to expand the program to all the clinic's patients.The primary obstacle in achieving this endeavor is overcoming EMR compatibility issues with the participating pharmacies.

The clinic also has plans to enhance its EMR to more efficiently identify patients who are experiencing gaps in therapy. Adding the ability to search by drug class or other parameters would help capture patients who have not returned to the practice after their initial appointment. The clinic is also working to identify those factors that place a patient in the high-risk category for therapy gaps or identifying groups that responded well to the initial intervention—especially those who are experiencing transitions in care, are new to the clinic or have a new diagnosis.