The Effect of Community Pharmacy Technicians on Industry Standard Adherence Performance Measures After Cognitive Pharmaceutical Services Training

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Abstract

Background: Cognitive pharmaceutical services (CPS) provided by pharmacists can improve patient adherence and industry standard performance measures. Community pharmacy technicians can aid in CPS support tasks on training, but it is unknown to what extent. **Objective:** To determine the effect of community pharmacy technicians on industry standard adherence performance measures after CPS training. **Methods:** Sixteen community pharmacy technicians within a supermarket chain division were chosen to participate in CPS training based on internal pharmacy benchmarking data. The training program consisted of 3 components: (1) classroom and (2) web-based training for medication therapy management platforms and (3) Hands-on in-pharmacy training. Researchers used pharmacy-specific EQuIPP reports of the proportion of days covered (PDC) for adherence related to diabetes, cholesterol, and hypertension to measure the primary outcome. September through October 2015 represented baseline data. November 2015 through March 2016 represented intervention data. Descriptive and inferential statistics were utilized for this retrospective analysis. The University of Tennessee Institutional Review Board classified the study exempt from review. **Results:** Overall, 100% of Cholesterol PDC 4-Star sites improved to a 5-Star score and 56% of sites improved in the Diabetes PDC score. All sites maintained a 5-Star score for RASA PDC postintervention. An average increase of 2.36% was observed for Cholesterol PDC across all sites. Possible lag time between the intervention and score improvements may limit reliability of results. **Conclusions:** This is the first study to report a positive trend between technician involvement in CPS and improvement in industry standard adherence performance measures. Further research capturing a longer time frame may be beneficial.

Keywords

MTM, medication therapy management, CPS, cognitive pharmaceutical training, pharmacy technicians, community pharmacy, resident projects, Kroger, technician training

Introduction

Diabetes, hypertension, and hypercholesterolemia are 3 common disease states wherein pharmacists have proven to have a positive impact.^{1,2} Heart disease is the number one killer in the United States. Combined, heart disease and stroke cost more than \$312.6 billion per year from direct and indirect costs. High blood pressure, diabetes, and high cholesterol level are all risk factors for cardiovascular disease including heart attack and stroke.³ According to the American Diabetes Association, in 2012, the total cost of diagnosed diabetes was \$245 billion, a 41% increase from the last report in 2007. This estimate included expenses such as prescription medications needed to treat the complications of

diabetes and hospital inpatient care, accounting for 61% of the estimated cost combined. More than half of this cost is covered by government entities, such as Medicare and Medicaid.⁴ For hypertension, according to the Centers for Disease Control and Prevention, the total cost was \$46

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billion in 2011. This was estimated from missed days from work, medications, and costs from health care services.⁵

Poor medication adherence can lead to disease progression, decreased quality of life, and increased complications. These complications can include but are not limited to heart attack, stroke, neuropathy, and even loss of limbs and life. Medication adherence is related to multiple categories in industry standard performance measure reports and can be related to disease state management and improvement. Because poor medication adherence causes decreased quality of life, increased preventable morbidity and mortality, and increased health care costs,⁶ it is used by industry payors to track quality of care. Health care companies recognize the importance of medication adherence in keeping patients healthier and decreasing overall health care costs.⁷ Access to cognitive pharmaceutical services (CPS), which includes medication therapy management (MTM) and adherence coaching, provided by pharmacists can reduce these costs and improve patient's adherence to medications.

In an effort to improve the quality of care provided to Medicare D beneficiaries, Medicare introduced industry standard performance measures, or Star Ratings. The Electronic Quality Improvement Platform for Plans and Pharmacies (EQuIPP) is a platform that provides unbiased information on industry standard performance measures to managed care and community pharmacy organizations. It covers more than 23 million patients enrolled in Medicare, Medicaid, or commercial health plans. Three core measures for EQuIPP are related to adherence. EQuIPP utilizes proportion of days covered (PDC) to report patient adherence for a 6-month rolling timeframe. PDC is calculated by looking at the percentage of patients within a particular cohort who have at least 80% PDC within a 30-day period for a particular medication. The score reported at the site level is the percentage of patients who are at least 80% adherent, who have had the prescription in question filled at least twice, and who have had that particular prescription filled at that pharmacy more often than anywhere else during the timeframe. Patients are considered acceptably adherent at 80%, as this has shown to allow the medication to still be clinically effective.⁸

Community pharmacists are extremely accessible to most of the general public. Pharmacists are very well equipped to provide effective medication reviews for patients. Pharmacists cite time constraints as one reason they are not involved in more CPS services.⁹ Community pharmacy technicians can aid in CPS support tasks after having gained confidence and improved competence as a result of proper training.^{10,11} This would allow pharmacists to delegate the support tasks with which the technicians can aid and allow more time to focus on providing patient care. What is not known is the impact of technician training with CPS support services on industry standard performance measures, specifically those related to adherence.

The purpose of this proof of concept study is to determine the effect of community pharmacy technicians on adherence measures via industry standard adherence performance measures after CPS training.

Methods

Study Sample

Sixteen community pharmacy technicians from Kroger Nashville Division were chosen to participate in a CPS training program based on internal pharmacy benchmarking data. These technicians were chosen based on their perceived ability to be coachable and to incorporate the training into daily workflow and encourage other members of their pharmacy team to become involved as well.

Training

The training program consisted of 3 components: (1) classroom training for the 3 MTM platforms utilized by Kroger Nashville Division including Mirixa, Outcomes, and SOCRxATES; (2) web-based training activities for Mirixa, Outcomes, and SOCRxATES (live webinar); and (3) hands-on in-store training. The classroom training lasted 2 hours and was taught by the Kroger Nashville Division Community Pharmacy PGY1 Resident. None of the chosen technicians had experience with any of the MTM platforms prior to the training. All technicians received individual credentials to log in to each of the 3 platforms on completion of the classroom training to allow them to work independently on CPS support tasks.

Data Collection and Analysis

This study was a retrospective analysis, classified by the University of Tennessee College of Pharmacy Institutional Review Board as exempt from review. Industry standard adherence performance measures were compared pre and post technician training. Baseline data were collected from site-level reports from September through October of 2015, prior to technicians completing the training program's initial session. Intervention data were collected from November 2015 through March 2016. Those were the 2 months after the classroom training session, during which time the technicians were receiving one-on-one support at their respective sites. The reports from November and December were compared to those from September and October to determine the impact of the training on industry standard adherence performance measures. The researchers abstracted the data from the EQuIPP report for each site for the 7 months analyzed in the study. The measures collected included PDC reflecting adherence to noninsulin diabetic medications, HMG-CoA reductase inhibitors (statins), and

angiotensin-converting enzyme inhibitors or angiotensin II receptor blockers (RASA). Data from the retrospective analysis were analyzed using descriptive statistics and inferential statistics using SPSS Version 11. A paired *t* test was used to analyze changes from baseline for industry standard adherence performance measures.

Results

Baseline Measures

Of the 16 pharmacy sites, 7 had a 4-Star score for the Diabetes PDC measure at baseline. The Cholesterol PDC measure had 14 of the 16 sites at a 5-Star Performance score, and 2 sites at a 4-Star Performance score at baseline. All 16 sites had a 5-Star score at baseline for RASA PDC.

Postintervention Measures

After the technician training program for the 16 community pharmacy technicians, 56% of sites improved in the Diabetes PDC, but the diabetes measures had the fewest of the 16 sites at a 5-Star Performance score. Postintervention, all 16 sites achieved a 5-Star score for Cholesterol, and 14 out of the 16 sites showed improvement in the score. All sites maintained a 5-Star score for the RASA measure, and 56% of sites showed improvement in scores. The median change for cholesterol was higher than for the other 2 measures (Figure 1). Utilizing a paired samples test for Cholesterol PDC, there was a statistically significant change from baseline to postintervention ($P < .001$; Table 1).

Discussion

Overall, all sites maintained a 4-Star score, or improved to or maintained a 5-Star score, though there were a few sites that did not show improvement in one or more of the measures. On the EQuIPP Platform report, for Diabetes PDC, the 4-Star score threshold is at 75% and a 5-Star score is 82% or better. The 4-Star score threshold for Cholesterol PDC is set at 73%, while a 5-Star score starts at 79%. A RASA PDC 4-Star score is 77% or better and a 5-Star Score is 81% or more.¹² Diabetes PDC has the highest threshold for a 5-Star rating at 82%, and has the largest increase from a 4-Star score to a 5-Star score rating. Cholesterol is a unique measurement. One must keep in mind that patients are often on multiple medications for diabetes or hypertension at one time, increasing the complexity and burden of these medications. Also, diabetes and RASA medications are often dosed multiple times per day, while the cholesterol measure for this report only looks at statins, which are almost always once daily dosing. Another possibility for the high percentage of improvement could be due to the fact that there are multiple medications in the diabetes and RASA groups, but only one easily identified class in the

Figure 1. Median change in EQuIPP performance scores (%) from baseline to postintervention for proportion of days covered (PDC) categories Diabetes, Cholesterol, and RASA (N = 16 sites).

Table 1. Change in EQuIPP Performance Score (Mean Percent) From Baseline to Postintervention for Proportion of Days Covered (PDC) Categories Diabetes, Cholesterol, and RASA^a.

EQuIPP PDC	n ^b	Baseline Mean (%)	Postintervention Mean (%)	Mean Difference (%)	P
Diabetes	16	82.63	83.09	0.47	.156
Cholesterol	16	83.18	85.53	2.36	.097
RASA	16	86.52	86.92	0.40	.000 ^c

^aData were analyzed using SPSS Version 11.

^bN = number of sites.

^cSignificant at $P < .001$.

cholesterol group. This may have led to increased ability of the technicians to identify poor adherence, and increased intervention with patients. All 16 sites achieved at baseline and maintained postintervention a 5-Star score for the RASA PDC measure, leaving less room for improvement for that measure.

There are possible limitations to this study. The study looked at a very short window and there was not much time to see a change in a 90-day supply. There is a possible lag time regarding the interventions, but due to the short timeframe, those changes may not have been seen. There is always a chance of confounding variables that may have affected the scores, such as employee turnover, other various clinical initiatives, and so on. Many clinical initiatives were introduced during this study timeframe, including a queue-based load into the Kroger system, allowing for easy identification of patients needing adherence checkups on statins, to which the technicians and pharmacists had access. This may have allowed for improvements in the scores as well.

The primary objective of this study was to determine the effect of community pharmacy technicians on industry standard adherence performance measures after CPS training. The majority of sites showed improvements in

industry standard adherence performances measures after technician CPS training. As technicians increase confidence and competence in these skills, it is very probable that the EQuIPP adherence performance scores will continue to improve. Technicians should be recruited for involvement with CPS support tasks. Further research capturing a longer timeframe may be beneficial.

Authors' Note

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Declaration of Conflicting Interests

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