Evaluating Pharmacist-Written Recommendations to Providers in a Medicare Advantage Plan: Factors Associated with Provider Acceptance

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ABSTRACT

BACKGROUND: Pharmacist-written recommendation letters to physicians, through mail or fax, are common practice in managed care settings. While rates of physician acceptance of pharmacist recommendations have been reported to average around 50%, the factors affecting the provider's acceptance of recommendations have not been adequately explored. Identifying these factors may help to improve pharmacist-physician communication and help identify areas where physician education may benefit patient care.

OBJECTIVES: To (a) determine the percentage of pharmacist-written recommendations for members enrolled in a Medicare Advantage Plan with prescription drug coverage that was accepted by providers and (b) examine member and provider factors associated with provider acceptance.

METHODS: A retrospective cohort study was conducted among members enrolled in a Medicare Advantage Plan in Texas. Members were included if their medication profiles were reviewed by a health plan resident pharmacist and resulted in a recommendation letter sent directly to the member's provider between July 1, 2012, and March 15, 2014. Pharmacist-written recommendation letters were retrieved from the archived files and were assessed for factors such as type of recommendation made, the member's disease state affected by the recommendation, and the letter format. Other factors assessed included member and provider characteristics such as demographics, participation in the health plan pay-for-performance program, physician specialty, and region of practice. Acceptance was defined as a change in pharmacy claims that reflected the change suggested in the letter within 6 months of the recommendation. The percentage of recommendations accepted by providers was calculated. Chi-square tests were used to examine group differences in recommendation acceptances with recommendation type as well as member and prescriber characteristics. Logistic regression was used to identify significant predictors of an accepted change.

RESULTS: From 158 pharmacist-written recommendation letters, 228 recommendations were identified, of which 115 (50.4%) were accepted. Ninety-five (41.7%) recommendations were to add a drug; 80 (35.1%) recommendations were to discontinue a drug; and 53 (23.2%) recommendations were to change a drug. The member population affected by these recommendations had a mean [SD] age of 69 [± 11] years. Recommendations to discontinue or change a drug were more likely to be accepted than to add a drug ($P=0.007$), but recommendation type was not determined as a significant predictor in the multivariate model. Recommendations for heart failure were less likely to be followed compared with recommendations for diabetes (OR=0.31; 95% CI=0.10-0.96; $P=0.043$). A regional trend was identified in which recommendations in Southeast Texas were more likely to be implemented than those in West Texas, but it did not reach a level of significance (OR=0.51; 95% CI=0.24-1.07; $P=0.074$), possibly because of the relatively limited sample size.

CONCLUSIONS: Overall, pharmacist-written recommendations were commonly accepted by physicians. Recommendations for heart failure were less likely followed versus those for diabetes. Since most recommendations for heart failure concerned changing drugs within the beta-blocker class, physicians may not have seen the value in modifying current therapy. This finding points to a potential need for physician education. Further research with larger samples is warranted to increase the power to identify significant differences in other variables that may need to be addressed in order to increase the rates of recommendation acceptance and improve patient care.

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What is already known about this subject

- Managed care pharmacists can serve a pivotal role as part of the interdisciplinary care team to help improve the health and safety of Medicare Advantage Plan members, in addition to minimizing cost.
- As the drug information resource, pharmacists can make medication-related recommendations, forwarding those to members' providers through faxed letters or calling the provider directly.
- Several studies have examined overall provider response to pharmacist recommendations. Perera et al. (2011) assessed provider response to pharmacist-faxed letters and demonstrated a 47.2% approval rate by providers overall.

What this study adds

- This retrospective study is the first to examine the acceptance of pharmacist recommendation letters by providers within a Medicare Advantage Plan, with the purpose of identifying factors associated with provider acceptance of pharmacist recommendations.
- Approximately 50% of recommendations were accepted by providers overall, with significantly less recommendations accepted for heart failure as compared with those for diabetes, identifying a potential need to educate physicians regarding heart failure medications.

Pharmacists have many responsibilities, such as medication therapy management, providing immunizations, playing a role on interdisciplinary care teams, performing final checks on dispensed medications, making sure a medication is prescribed appropriately, counseling patients, and even retaining prescriber authority in certain situations. The interventions that pharmacists provide while performing these duties are essential to the checks and balances of the health care system, providing safety and quality of care to patients. Although pharmacists endure a rigorous doctorate program and are considered drug experts, the vast majority of pharmacist services are not regularly assessed. As a result, it can be difficult to quantify the contributions of pharmacists.

As part of the Medicare Advantage Plan (MAP) interdisciplinary care team (ICT), pharmacists have the ability to improve the health and safety of their beneficiaries and assist with minimizing cost while facilitating interdisciplinary health care delivery. During targeted rounds with plan medical directors, case managers present difficult member cases to the team, which consists of nurses, pharmacists, licensed social workers, and/or any other network provider that has skills matching the unique needs of the member. This activity allows pharmacists to make medication-related recommendations that can contribute to improving health outcomes overall. A literature review that included 59 studies demonstrated that pharmacist interventions can decrease cost; control chronic disease states such as hypertension, diabetes, and hyperlipidemia; and improve patient outcomes.¹ Other studies have shown that using pharmacists to make patient-specific interventions is cost-effective over a time span of 5 years or more.²⁻⁴ Along with improving the overall health outcomes and cost for each member, pharmacists can help with the achievement of the Centers for Medicare & Medicaid Services (CMS) Part D Star Ratings, particularly the measures for medication adherence.⁵⁻⁸ These Star Ratings were implemented by the CMS to rate MAPs on their efficacy and medication use and are often used to determine which plans are eligible for quality bonus payments along with when the plans can enroll members.⁹ The inclusion of pharmacists in ICT rounds may be a cost-effective way to improving the Part D Star Ratings in addition to providing quality care for these members.

Health plan pharmacists use several methods to communicate their suggested interventions to the member's primary care provider (PCP). Faxed recommendation letters or phone calls have been widely used to initiate the clinical discussion, with the PCP determining the best course of action for each member's therapy. This fits into the traditional pharmacist-physician relationship in which the pharmacist is the primary initiator.¹⁰ Seventy-six percent of physicians believe pharmacists bring medication quality to their attention through interventions, and 70% of physicians believe pharmacists bring medication costs to their attention, showing that physi-

cians believe pharmacist recommendations can improve their patients' care.¹¹ However, how frequently are recommendations accepted by the prescriber?

When assessing changes in prescribing patterns based on printed material and letters sent to physicians, a 72.2% positive change in prescribing patterns as a result of sent letters can be expected based on a literature review of 30 articles.¹² However, most programs assessing prescribing patterns observe a 50% change in prescription modification based on pharmacist recommendations to physicians.¹²⁻¹⁴ These changes in prescribing habits have been as high as 81.2% and 73.3%, as reported in Rascati et al. (1996) and Okano and Rascati (1995), respectively.^{15,16} However, changes in prescribing patterns can also be as low as a 13.5% decrease from baseline or a 31.1% decrease in medication use when the pharmacist letters are specifically recommending the discontinuation of a certain medication.^{5,17} Conversely, Bambauer et al. (2006) found no statistical significance in patient adherence when utilizing a fax alert program to notify PCPs when patients were nonadherent in picking up their antidepressant medications.¹⁸ This could be because the chosen outcome of adherence is not directly affected by physician actions, as is prescription modification, but by the actions of the patient.

Other than looking at the overall acceptance of pharmacist interventions by physicians, few studies have assessed other variables in order to identify predictors of an accepted recommendation. Perera et al. (2011) noted that faxed letters by pharmacists were accepted more often when sent to PCPs rather than to physician specialists, with an overall 47.2% acceptance rate by the providers.¹³ One stated limitation of this study was that physician age was not taken into account during this analysis. Type of intervention was also assessed, which showed that pharmacist interventions with the intent to save costs were more likely to be accepted by physicians than interventions because of safety or guideline adherence. Doucette et al. (2005) looked at types of interventions as well, concluding that physicians are more likely to accept a recommendation, change a medication (50.0%), or stop a medication (50.3%) than to start a new medication (41.7%).¹⁴ Legault et al. (2012) also assessed for potential factors affecting the pharmacist-physician relationship and determined that the barriers were independent of the patient population being served.¹⁹ With most programs observing a 50% acceptance of recommendations in response to pharmacist-written recommendation letters,¹²⁻¹⁴ more variables should be assessed for the identification of potential factors affecting provider acceptance.

Through attending MAP ICT rounds, health plan pharmacists have the ability to make a significant difference in patients' medication regimens. Faxing intervention letters directly to providers may be an effective route for pharmacists to communicate their recommendations. Evaluating provider acceptance of pharmacist-written recommendations is one way to verify

FIGURE 1 Member Selection Flowchart for Pharmacist Intervention Letters

MAP=Medicare Advantage Plan.

pharmacist contribution in the managed care setting. However, factors affecting a provider's acceptance of recommendations are still widely undetermined. Identifying these factors may improve pharmacist-physician communication and help identify areas where physician education may benefit patient care. Therefore, the objectives of our study were to determine the percentage of recommendations accepted by providers in a MAP, as well as identify the factors associated with provider acceptance of pharmacist-written recommendations.

Methods

Study Design

A retrospective cohort study was performed among adult beneficiaries within a Texas MAP with prescription drug coverage. Members included were aged 18 years or older and had letters written by health plan resident pharmacists to their providers with drug recommendations from July 1, 2012, to March 15, 2014. A total of 250 pharmacist-written letters were screened. Exclusion criteria included beneficiaries who did not have a Part D plan with a MAP or who had duplicate letters (defined as letters written to 2 or more providers [$n=18$]), letters that had less than 6 months of pharmacy claims data after the date the letter was written ($n=45$), and letters that did not recommend a specific medication change that could be evaluated through the pharmacy claims database ($n=29$). After these exclusions, this study included 158 pharmacist-written letters comprising 228 recommendations to physicians (Figure 1).

Data Collection and Measures

Letters were retrieved from the MAP archives from July 1, 2012, through March 15, 2014. Information collected from the letters included the date written, format, type of recommendation made, disease specified in the letter, and if the written recommendation referenced Star Ratings. Letter format was defined as either written in paragraph format, where the recommendations were within the paragraphs, or written in concise format, where the recommendations were concisely written and emphasized within bold boxes. Recommendation type was classified as recommendations to add a medication; discontinue a medication; or change a medication's dose, frequency, or formulation for efficacy, safety, or cost savings. Star Ratings referenced within the letters pertained to Part D Star Ratings. Recommendations included discontinuing high-risk medications, initiating angiotensin-converting enzyme inhibitors or angiotensin II receptor blockers in members with diagnoses of hypertension and diabetes, and making changes to medications for diagnoses of diabetes, hypertension, and hypercholesterolemia to improve adherence.

The RxClaim database, which holds prescription claims records for MAP members, was used to determine acceptance of recommendations. The main endpoints assessed in previous studies were adherence to medication and overall acceptance by physicians.^{4-8,12,15-18,20,21} DeName et al. (2008) determined that median time to intervention acceptance by physicians was 13.5 days from the request date.²⁰ Lester et al. (2006) found similar results when assessing the timing from the intervention date to the prescription change in pharmacy claims, reporting 0 months in the intervention group and 7.1 months in the control group.²¹ The majority of studies used a time frame of 6 months or less as the follow-up period to assess physician acceptance, with some studies adding a null period of 1-2 months after the intervention date to allow for letter distribution and incorporation of physicians responses into their practices.^{12,17} This 6-month time frame has been shown to have statistically significant results for assessing physician acceptance. Therefore, acceptance was defined as a change in pharmacy claims that reflected the change suggested in the letter within 6 months of the recommendation. This was measured as the percentage of recommendations accepted by providers.

MAP's internal computerized database, which houses data pertaining to MAP members and their providers, was used to extract the provider and member variables. Provider variables included physician type, physician age, physician gender, the region of Texas in which the physician practices, and participation in the health plan pay-for-performance program. The pay-for-performance program awards financial incentives to providers based on their members' care and following state disease guidelines, Star Ratings, and other quality measures. Physician type was defined as a PCP or a specialist. Regions of Texas were classified as West Texas, Southeast Texas, or Northeast Texas

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based on the county in which a physician's office was located. Member demographics of age, gender, and qualification for low-income subsidy were also collected. Approval from the University of Houston Institutional Review Board was obtained before conducting this study.

Data Analysis

Member, physician, and letter characteristics were analyzed using descriptive statistics and chi-square analyses. The outcome variable of accepting recommendations versus not accepting recommendations was used in statistical analyses, and the overall percentages were determined. Chi-square tests were carried out to examine group differences in recommendation acceptance with various member and prescriber characteristics along with letter and recommendation variables (Table 1).

A logistic regression model was generated to identify significant predictors of an accepted change. Independent variables in the model included recommendation and letter variables, as well as member and provider characteristics. The outcome variable was whether the recommendation was accepted or not. Results were presented as odds ratios (OR) with 95% confidence intervals (CI) along with their *P* values (Table 2). Significance was assessed at the 0.05 significance level. All statistical analyses were carried out using SPSS version 22 (SPSS Inc., Chicago, IL).

Results

Of 228 recommendations, 115 were considered accepted after examining the pharmacy claims data, giving a 50.4% acceptance rate. The overall frequencies and percentages of each variable assessed are presented in Table 1, along with results of the chi-square analysis for the primary outcome of the number of recommendations accepted by physicians. Ninety-five (41.7%) recommendations were to add a drug; 80 (35.1%) recommendations were to discontinue a drug; and 53 (23.2%) recommendations were to change a drug. Approximately one third (33.3%) of recommendations referenced Star Ratings as the rationale for the recommendation. The member population affected by these recommendations were 58.3% female and had a mean ($\pm$ standard deviation [SD]) age of 69 $\pm$ 11 years. Recommendations to discontinue or change a drug were more likely to be accepted than to add a drug (*P*=0.007).

The physicians who were faxed had a mean [SD] age of 53 $\pm$ 11 years, were 71.5% male, and primarily consisted of members' PCPs (93.0%). Pharmacist-written recommendations to PCPs had an acceptance rate of 51.9%, while specialists accepted 31.3% of recommendations; however, this difference was not statistically significant. Physicians participating in the pay-for-performance program accepted 56.8% of recommendations, while physicians who did not participate accepted 47.4% of recommendations.

TABLE 1 Letter, Provider, and Member Characteristics of Pharmacist-Written Recommendation Letters in a MAP

Recommendation Factor	Total Frequency (n)	Percentage of Recommendations (%)	Percentage of Accepted Recommendations Within Subcategory (%)	P Value ^a
Letter format				
Concise	143	62.7	49.7	0.757
Paragraph	85	37.3	51.8	
Recommendation type				
Add drug	95	41.7	38.9	0.007
Discontinue drug	80	35.1	62.5	
Change drug	53	23.2	52.8	
Disease state affected				
Diabetes	37	16.2	45.9	0.178
Hypertension	27	11.8	55.6	
Hyperlipidemia	21	9.2	38.1	
Heart failure	23	10.1	34.8	
Diabetes/hypertension	35	15.4	42.9	
Psychiatric disorders	37	16.2	59.5	
Other	48	21.1	62.5	
Did this recommendation reference Star Ratings?				
No	152	66.7	49.3	0.640
Yes	76	33.3	52.6	
Was this recommendation accepted?				
No	113	49.6		
Yes	115	50.4		
Physician type				
Primary care physician	212	93.0	51.9	0.111
Specialist	16	7.0	31.3	
Physician age group, years				
34-54	128	56.1	48.4	0.702
55-64	60	26.3	55.0	
65+	40	17.5	50.0	
Physician gender				
Female	65	28.5	49.2	0.818
Male	163	71.5	50.9	
Texas region				
West	11	4.8	36.4	0.083
Northeast	62	27.2	40.3	
Southeast	155	68.0	55.5	
Did this physician participate in the P4P program?				
No	154	67.5	47.4	0.186
Yes	74	32.5	56.8	
Member age group, years				
<65	76	33.3	47.4	0.651
65-79	114	50.0	53.5	
80+	38	16.7	47.4	
Member gender				
Female	133	58.3	53.4	0.293
Male	95	41.7	46.3	
Did this member qualify for LIS?				
No	84	36.8	51.2	0.862
Yes	144	63.2	50.0	

^aChi-square statistical test.

LIS=low-income subsidy; MAP=Medicare Advantage Plan; P4P=pay-for-performance.

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Multivariate logistic regression results for the primary outcome with a c-statistic of 0.696 are displayed in Table 2. Recommendations for heart failure were less likely to be followed compared with recommendations for diabetes (OR=0.31; 95% CI=0.10-0.96; $P=0.043$). Recommendation type was not determined as a significant predictor in this multivariate model. Recommendations to physicians practicing in Southeast Texas were more likely to be implemented compared with those in West Texas. Although identified, this trend did not reach a level of significance (OR=0.51; 95% CI=0.24-1.07; $P=0.074$) possibly because of the relatively limited sample size. Other variables assessed did not show a significant correlation for physician acceptance.

Discussion

Overall, pharmacist-written recommendations were regularly accepted by physicians, with a 50.4% acceptance rate. With approximately half of the pharmacist-written recommendations accepted, this study shows that pharmacists have a meaningful and clinically significant effect on members' health care. In 2008, a study of faxed pharmacist letters to prescribers reported an overall 47.2% approval rate by prescribers, with cost-saving recommendations (58.2%) more likely to be accepted than recommendations for safety (44.3%) or guideline adherence (41.4%).¹³ A 2005 study of pharmacist-written letters reported a 47.4% acceptance rate of recommendations by prescribers.¹⁴ The findings of these studies, along with our own, demonstrate that there is a consistent acceptance rate of pharmacist recommendations by physicians. However, these findings also indicate that approximately half of the recommendations are not accepted and identifying reasons for the nonacceptance of pharmacist recommendations is important in order to ensure quality of care for health plan members.

Recommendations for heart failure were a significant negative predictor of prescriber acceptance of recommendations and were less likely to be followed compared with those for diabetes. Since most recommendations for heart failure concerned changing drugs within the same class, specifically beta-blockers, physicians may not have seen the value in modifying current therapy; further research will be needed to assess the reason behind this finding. This has identified a potential area of opportunity to educate physicians and improve patient care.

Recommendations to change or discontinue a medication were more likely to be accepted than those that indicated to add a medication and initially displayed a significant difference in the unadjusted rate. This result is consistent with a previous study that assessed pharmacist-written recommendations to physicians and reported that the lowest rate of acceptance was for recommendations to start a medication (41.7%) compared with recommendations to stop (50.3%) or change (50.0%) a medication.¹⁴ Once we adjusted for potential confounders in the multivariate model, this finding was no longer significant.

TABLE 2 Multivariate Logistic Regression Results Examining Predictors of Accepting Pharmacist Recommendations in a MAP

Recommendation Factor	P Value	OR (95% CI)
Letter format		
Concise	Reference	Reference
Paragraph	0.737	1.35 (0.70-2.62)
Recommendation type		
Add drug	Reference	Reference
Discontinue drug	0.164	0.54 (0.22-1.29)
Change drug	0.442	1.39 (0.60-3.19)
Disease state affected		
Diabetes	Reference	Reference
Hypertension	0.141	0.46 (0.16-1.29)
Hyperlipidemia	0.440	0.65 (0.22-1.95)
Heart failure	0.043 ^a	0.31 (0.10-0.96)
Diabetes/hypertension	0.099	0.38 (0.12-1.20)
Psychiatric disorders	0.301	0.49 (0.13-1.89)
Other	0.323	0.59 (0.21-1.70)
Did this recommendation reference Star Ratings?		
No	Reference	Reference
Yes	0.416	0.70 (0.30-1.66)
Physician type		
Primary care physician	Reference	Reference
Specialist	0.105	2.79 (0.81-9.68)
Physician age group, years		
34-54	Reference	Reference
55-64	0.955	0.98 (0.42-2.29)
65+	0.475	1.40 (0.56-3.51)
Physician gender		
Female	Reference	Reference
Male	0.968	1.01 (0.52-1.96)
Texas region		
West	Reference	Reference
Northeast	0.234	0.42 (0.10-1.76)
Southeast	0.074	0.51 (0.24-1.07)
Did this physician participate in the P4P program?		
No	Reference	Reference
Yes	0.808	1.09 (0.55-2.17)
Member age group, years		
<65	Reference	Reference
65-79	0.641	1.23 (0.51-2.94)
80+	0.256	1.64 (0.70-3.86)
Member gender		
Female	Reference	Reference
Male	0.738	1.11 (0.60-2.05)
Did this member qualify for LIS?		
No	Reference	Reference
Yes	0.739	0.90 (0.48-1.68)

^aSignificant finding.

CI=confidence interval; LIS=low-income subsidy; MAP=Medicare Advantage Plan; OR=odds ratio; P4P=pay-for-performance.

Certain physician characteristics were examined but were not significantly associated with recommendation acceptance. Physicians practicing in Southeast Texas trended more toward

accepting recommendations versus those in West Texas. Since the sample size was relatively small, a larger study could potentially provide more power to detect a significant difference.

Recommendations to PCPs had a 51.9% acceptance rate, which is higher than the 31.3% acceptance rate of recommendations by specialists. This is consistent with a previous study reporting a significant difference in PCPs accepting more recommendations overall than specialists.¹³ Moreover, physicians participating in the pay-for-performance program accepted recommendations 56.8% of the time, while physicians who did not participate only accepted recommendations 47.4% of the time. These variables, however, were not significantly associated with acceptance in chi-square tests or in the multivariate adjusted models, even though physicians participating in the pay-for-performance program have a larger financial incentive to provide quality care and meet Star Ratings.

Limitations

There are several limitations to this study. This research was not randomized, allowing for possible confounders, which we attempted to adjust for in the multivariate model. The small sample size may have precluded identifying some significant predictors. Larger studies are needed to provide sufficient power to detect differences. Also, this research analyzed letters written within a MAP, with the majority of the population being elderly. The generalizability of these results may only be extrapolated to a similar subpopulation. The acceptance rates in this study only depict those recommendations that were received, read, and then implemented within the 6-month time frame. Physicians who read and took a recommendation under consideration but did not accept the recommendation because of member variables that could not be documented in the MAP database would not have been captured in this acceptance criteria. Furthermore, an accepted recommendation may not have been reported in the RxClaim data if a member paid out of pocket or received samples from a physician for any medications being initiated or changed.

Conclusions

This study shows that pharmacist-written recommendations are generally accepted by providers, yet there are potential areas of opportunity where physician education may benefit patient care, specifically for members with heart failure. To our knowledge, this research is the first to look for predictors of accepted pharmacist-written recommendations to prescribers within a MAP. Further research is needed to identify reasons for physician denials of pharmacist-written recommendation letters and to find ways to improve acceptance rates. Identifying factors associated with acceptance of pharmacist-written recommendations to providers can result in fostering a better pharmacist-physician relationship and ultimately help improve patient outcomes.

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DISCLOSURES

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Serna, Esse, and Mann contributed to the design of this study. Mann, with assistance from Serna, collected the data. Abughosh, Esse, and Mann performed the data analysis and interpretation. Mann wrote the manuscript, and all authors contributed to the revision of the manuscript.

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