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Community pharmacist led, employer-based wellness services: A pilot study

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ABSTRACT

The emphasis that United States employers are placing on employee wellness continues to grow; however, most attention has been paid to larger firms to gauge return-on-investment from a larger pool of enrollees. With fewer resources available to fund expansive wellness programs, smaller businesses need a cost-effective mechanism to provide such benefits. As the most accessible healthcare provider, community pharmacists are in an ideal position to support certain wellness programs for smaller businesses. This research piloted a community pharmacist-led, employer-sponsored wellness program for a self-insured financial services company in Tennessee. Employees with diabetes, hypertension, hyperlipidemia, asthma, or COPD were recruited from the partnering firm to receive live, one-on-one counseling from a community pharmacist over a calendar year. Each session was tailored to individual employee's needs and goals but generally focused on medication adherence, diet, exercise, and health maintenance strategies. Fifteen employees participated in the program, and improvements in clinical measures were not realized over the course of a year. Some, albeit not statistically significant, improvements were seen in self-reported medication adherence and quality of life; however, a trend toward some weight gain was observed. Results suggest that, similar to Medicare beneficiaries, working-age adults with certain chronic conditions may benefit from pharmacist-led MTM programs but deeper investigation is needed.

1. Introduction

The United States' Patient Protection and Affordable Care Act (ACA) significantly altered healthcare access, particularly related to employer-sponsored health insurance. As part of the mandate, most firms with at least 50 full-time employees are now required to offer affordable coverage to their workers that meet minimum standards or face a penalty.[1] Consequently, smaller firms that were previously not required to offer health benefits now have to provide coverage and incorporate the associated costs into their operating expenses. While options such as the Small Business Health Options Program were put in place to assist smaller firms, concerns were raised about the implications of the coverage provision on labor demand, particularly shifts toward more part-time employment to avoid penalties or increased costs.[1,2] Determining the precise impact of the ACA on the labor market is challenging and published evidence in this area is limited. Thus far, most results suggest that the ACA has had negligible effects on employment, wages, or hours worked[2–7]; however, more evidence and years of implementation are needed to understand the full impact of this law on United States employers and workers.[8]

Regardless, employers remain focused on mechanisms to reduce their exposure to healthcare costs; examples include the growth in required employee cost-sharing and recent increases in offerings of high deductible health plans.[9,10] However, in spite of these and other mechanisms, employers still absorb most plan expenses, and many have taken steps to avoid downstream costs by addressing prevalent health issues through incentives or wellness services aimed at preventing poor outcomes.[9] Evidence suggests these programs can effectively improve disease management and lead to decreased direct costs or smaller annual increases over time.[11] A seminal example of employer-provided services to improve employee health, the Asheville Project leveraged the availability and expertise of community pharmacists to address the diabetes-related needs of local government workers.[12] In spite of this program's success, expansion of similar pharmacist-provided services has been conspicuously limited even as opportunities for pharmacists to engage in direct patient care were expanded under ACA and despite recent evidence further supporting such services in employer-sponsored plans.[13–17]

To further inform the evidence behind community pharmacist-provided wellness services and address employer healthcare costs, a pilot program was instituted in a self-insured, Tennessee firm seeking to reduce overall direct expenses and improve employee chronic disease management. There were three core goals for the pharmacist-led intervention: 1) partner with patients to identify personal health goals to

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Abbreviations

ACA	Patient Protection and Affordable Care Act
MARS	Medication Adherence Reasons Scale
MTM	Medication Therapy Management
MMAS	Morisky Medication Adherence Scale
PPCP	Pharmacists Patient Care Process
QoL	Quality of Life

improve health accountability; 2) reduce total patient health care costs; and 3) meet national guidelines for asthma/COPD, diabetes, dyslipidemia, and hypertension. Importantly, this program incorporated additional pharmacist responsibilities beyond those tested by the Asheville Project to demonstrate how community pharmacists could practice to the full extent of their license allowed by state law.

2. Methods

This was a single cohort pilot study that used willing participants employed by and receiving healthcare benefits from a financial services company employing approximately 300 employees. Informational sessions were held at the firm's corporate headquarters in Cleveland, TN during which the study pharmacist introduced the program's procedures and potential benefits of participating. Those interested provided contact information and were then contacted to arrange an initial appointment during which full eligibility was determined by the study pharmacist. To be eligible, subjects must have been employed full-time by the partnering firm at their corporate headquarters, enrolled in company-sponsored health insurance, been diagnosed with diabetes, hypertension, hypercholesterolemia, asthma, and/or COPD, and under the care of a primary care physician. Subjects were enrolled and followed for up to one year, and the company provided funding for all study-related visits and tests occurring between May 2016 and May 2017; however, employee time to visit the pharmacy (located within 5 min of the firm) was not provided. The study was reviewed and approved by the University of Tennessee Health Science Center's Institutional Review Board.

2.1. Study measures

Both patient-reported and clinical measures were collected throughout the study. At baseline, subjects completed a paper-based questionnaire that included the EQ-5D quality of life (QoL) measure, the four-item Morisky Medication Adherence Scale (MMAS), the Medication Adherence Reasons Scale (MARS), and basic demographics.[18–20] This instrument was completed at least one additional time, and up to once every three months following the initial study visit. Under a collaborative practice agreement, point-of-care testing was completed at the initial visit and appropriate tests completed at subsequent visits when deemed necessary by the study pharmacist. These tests included blood glucose, hemoglobin A1C, serum cholesterol, and triglycerides, and appropriateness of testing was based on national guidelines (e.g. American Diabetes Association) related to each patient's diagnoses. Blood pressure and weight were collected at all study visits.

2.2. Pharmacist intervention

Pharmacist-led appointments were conducted at a single-site community pharmacy in Cleveland, TN. Appointments ranged from 15 to 45 min, and sessions were conducted face-to-face in a private counseling room. A clinical protocol was developed prior to study initiation, and delineated the program's mission, goals, and scope of practice. All visits were conducted using the Medication Therapy Management (MTM) Core Elements 2.0 framework, as well as the Pharmacists Patient Care Process (PPCP).[21,22] As a core component of the PPCP, follow-up sessions were scheduled every 1–3 months at the pharmacist's discretion. Sessions were founded in principles of motivational interviewing and shared decision making.[23]

2.3. Analysis

Descriptive statistics were completed on all study-collected variables and Spearman rank correlations conducted on select continuous variables. Differences in QoL and medication adherence were assessed using Wilcoxon signed rank tests and McNemar's tests, and changes in clinical measures were analyzed by Friedman's ANOVA comparing the baseline value to the last reported test over the observation period. All analyses were conducted using SPSS (version 22).

3. Results

Recruitment resulted in 43 employees indicating interest in the program: 3 indicated interest but never scheduled an appointment; 5 made appointments but never attended: 13 were screened but did not qualify: 4 qualified but decided against the study: and 1 qualified but then left the firm. Ultimately, 17 subjects entered the program, but 2 were lost to follow-up due to changing health insurance. Consequently, 15 subjects were enrolled and completed the program (Table 1); the average follow-up time was 343 days (SD: 50.7). Most subjects were White (86.7%), married (53.3%), female (73.3%), and over the age of 40 (66.7%).

A majority of subjects reported some level of medication non-adherence at baseline according to the MMAS (11/15 scored 1 or higher), but only 6 reported missing 1 or more day's dose in the previous week on the MARS. After the program, 8 subjects demonstrated improved or maintained high adherence according to the MMAS, and only 3 subjects indicated missing a dose in the previous week according to the MARS with all but 1 subject demonstrating improved adherence according to this instrument. No tests, including correlations between adherence instruments, reached statistical significance at $p < 0.05$ (Table 2).

Mean and median QoL remained relatively unchanged over the course of the program ($p > 0.05$), but 2/3 of subjects reported higher or unchanged QoL values after the program and the minimum observed value rose 10 points from 50 to 60. However, most (60%) reported some decline in domain-specific QoL, particularly related to anxiety/depression. No significant correlations were observed; however, all

Table 1
Patient population.

Subject Characteristic	N (%)
Age[a]	43.3 (10.6)
Female	11 (73.3)
Marital Status	
Single, never married	4 (26.7)
Married	8 (53.3)
Separated/Divorced	3 (20.0)
Race	
White	13 (86.7)
African American	1 (6.7)
Native American	1 (6.7)
Hispanic	1 (6.7)
Household residents[a]	2.5 (1.1)
Qualifying condition	
Diabetes	5 (33.3)
Hypertension	6 (40.0)
Hypercholesterolemia	9 (60.0)
Asthma	2 (13.3)
More than 1	6 (40.0)
More than 2	1 (6.7)

[a] Values listed are mean and SD.

Table 2
Change in self-reported measures.

Measures	Baseline	Endpoint	p value
	N (%)	N (%)	
MMAS[a]	1 (2)	1 (2)	0.408[c]
High	4 (26.7)	6 (40.0)	0.439[d]
Medium	10 (66.7)	8 (53.3)	
Low	1 (6.7)	1 (6.7)	
MARS[b]	6.4 (0.8)	6.6 (1.1)	0.496[c]
7 days	9	12	0.232[d]
6 days or less	6	3	
EQ-5D[b]	79.3 (12.8)	81.6 (9.6)	0.722[c]

Notes: Cut points for MMAS: High = 0; Medium = 1–2; Low = 3–4. This score is based on the 4-item version of the MMAS, which is a series of yes/no questions (yes = 1; no = 0). The MARS uses a single-item, one-week look back question to assess medication use based on the number of days (0–7) the respondent reports taking their medication as prescribed. The EQ-5D values reported are those indicated by the vertical visual analog scale item in this instrument, which asks respondents to indicate their current quality-of-life on a scale from 0 to 100.

[a] Values listed are median (IQR).

[b] Values listed are mean (SD).

[c] p-values from Wilcoxon signed-rank tests for change in mean values.

[d] p-values from McNemar's tests between high adherence and other levels (MMAS) or 7 days versus < 7 days (MARS).

subjects who lost weight or whose weight was unchanged over the program reported higher final QoL scores whereas all subjects whose QoL declined gained weight instead.

The median change in weight throughout the program was a gain of 2.4 pounds (IQR: 8.2). Marginal changes in blood pressure, serum cholesterol, and hemoglobin A1C were observed across the study population, and differences from baseline were inconsistent among those on either an antihypertensive (N = 7), lipid-lowering agent (N = 6), or antidiabetic drug (N = 3) (Table 3).

4. Discussion

The goal of this pilot study was to further explore pharmacist-provided, employer-funded wellness services in a community pharmacy setting. While not reaching statistical significance, these pilot data suggest a pharmacist can play a role in improving medication adherence among working-age adults. Additionally, non-significant changes were seen across all clinical measures and were likely due to both the sample size and duration of the study. Furthermore, lifestyle-related outcomes remained either unchanged or worsened. Importantly, this cohort is distinct from the relatively well-studied Medicare beneficiary cohorts, and so these results add importantly to the literature as pharmacist-led MTM is substantially less well studied in this population.[24–27]

Post-intervention improvements to adherence were seen across both the MMAS and MARS. Although the study duration was not long enough to demonstrate significant improvements in clinical endpoints, the current body of evidence supports the link between patients who consistently take their medications and improved health outcomes.[28] Prior studies have already demonstrated the clinical impact of pharmacist-provided MTM in Medicare-aged population.[24–27] Similarly, this pilot study provides initial data to support that medication adherence in a working-age population can be improved through pharmacist-provided MTM. This has important implications beyond improvements to overall patient health, as adherence has a major impact on health services utilization and costs.[29,30] Such economic outcomes are important for employers who are sensitive to the rising costs and an uncertain political environment surrounding the future of the ACA.

While complete MTM sessions were conducted with each patient, including discussions around adherence, drug and food interactions, and recommended treatment strategies, much of the focus of the patient appointments centered around diet and lifestyle. This may be related to these items being both a priority for the patient and convenient for the pharmacist, as diet and lifestyle recommendations can be made without contacting a prescriber. Also contributing to this diet and lifestyle focus was the fact that this cohort was a younger patient population with less of a need to focus on resolving medication related problems due to polypharmacy. However, despite this focus, there was little impact on weight loss or other related QoL markers such as anxiety/depression.

Of note, adherence as an outcome is often underreported in pharmacist-provided wellness service literature,[12,14,16,29] while diet and lifestyle are often a mainstay of wellness appointments and frequently reported.[12,14,16,29] This approach likely evolved from more traditional disease state management services provided by non-pharmacists, which typically include diet and lifestyle as a component of coaching. However, our pilot data combined with results from similar studies, suggest that, because of their unique training, a more effective and efficient use of a pharmacist's time may be in the delivery of adherence-related counseling as opposed to diet and lifestyle counseling.

Several barriers to service implementation existed, largely external to the pharmacy. For instance, patient recruitment was hindered by the lack of an ongoing, firm-based program champion. Initial approval and launch occurred with the support of a corporate leader, but when this individual left the company, implementation stalled. Additionally, for some employees, the need for the service was self-evident; however, for others the concept of care delivery outside of their normal care team was met with skepticism until a relationship was formed between pharmacist and patient.

4.1. Limitations

This pilot was most prominently limited by its small sample size. For future, similar programs to be successful in attracting a larger number of employees, multiple engagement strategies should be employed and a culture of wellness spread throughout participating firms to emphasize the importance on ongoing chronic disease management among working-age adults. Furthermore, the study was limited by its use of willing participants who opted in to the program rather than the firm experimenting with employees being assigned a program or given the opportunity to opt out of participation. In spite of these limitation, the pilot offers valuable data to justify a larger, more pragmatic study involving a larger set of patients with the primary focus of improving adherence to long-term medications.

5. Conclusions

Based on the data collected in this pilot project, the authors believe that given a working-age based patient cohort with lower likelihood of polypharmacy, pharmacist-led MTM sessions should be centered

Table 3
Change in clinical measures.

Measures	Baseline	Endpoint	p value
	Mean (SD)	Mean (SD)	
Weight (lbs.)[a]	204 (177–236)	206.4 (190–230)	0.053
Blood Pressure			
Systolic (mmHg)	120.9 (15.1)	125.9 (13.8)	0.551
Diastolic (mmHg)	80.5 (11.7)	83.2 (9.3)	0.624
Serum Cholesterol			
LDL (mg/dL)	103.2 (19.0)	107.5 (16.4)	0.705
HDL (mg/dL)	53.0 (17.3)	48.4 (18.8)	0.116
Hemoglobin A1C (%)	5.7 (0.8)	5.8 (0.5)	0.473

All p-values reported are from Wilcoxon signed-rank tests.

[a] Values reported are median and IQR.

around adherence, use an intervention model that is shorter in length, and refer diet and lifestyle related care to a local dietician or nutritionist for follow-up.

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