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ADVANCES IN PHARMACY PRACTICE

Exploring the Membership Pharmacy Model: Initial impact and feasibility

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ABSTRACT

Background: There is a need to shift pharmacy payment models, given the expanding role of the community pharmacist in improving patient outcomes, misaligned incentives of the existing reimbursement model, and deleterious effects of a lack of transparency on prescription costs.

Objectives: The primary objective of this paper was to develop a payment strategy for a Membership Pharmacy Model within an independent community pharmacy setting. A secondary objective of this paper is to explore the early impact of a novel value-based pharmacy payment model on patients, pharmacies, and self-insured employers.

Practice description: Good Shepherd Pharmacy, a nonprofit Membership Pharmacy founded in Memphis, TN, in 2015.

Practice innovation: We discuss a novel, value-based payment model for community pharmacy, which involves a partnership between pharmacy and employer, without the use of a pharmacy benefit manager, using a recurring (i.e., membership pharmacy) business revenue model.

Evaluation methods: The pilot program was assessed using the RE-AIM framework.

Results: The pilot enrolled 34 patients for whom 1399 prescriptions were filled spanning 13 quarterly refill cycles from January 2019-March 2022. After the intervention, proportion of days covered for diabetes and cholesterol medications both increased: 96.7% and 100% ($P < 0.05$); 90.3% and 98.1% ($P > 0.05$). Financial savings for the employer group were realized across both fee charges and prescription medication costs. The net savings provided to the employer was $67,843, a 35% reduction in topline pharmacy spending. Revenue for the pharmacy was realized exclusively through synchronization fees of $30 per fill. Synchronization fees for the entire study totaled $41,970, and the average revenue per quarterly batch refill was $3228.

Conclusion: The Membership Pharmacy Model represents a potentially viable alternative to traditional fee-for-service, buy-and-bill pharmacy payment models through its use of medication pricing based on actual acquisition costs, lean pharmacy operations, and value-based reimbursement methods.

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Background

Community pharmacies continue to be recognized as an underutilized health care destination offering highly accessible and convenient services.[1-3] Current pharmacy practice in community pharmacy settings is financed under a "buy-and-bill" fee-for-service model, where medications are purchased through a wholesaler and filled for patients on-demand. Although this model represents the primary means for community pharmacy revenue, ancillary service offerings have continued to grow over the past few decades, which support the medication use process and further diversify revenue sources. These include immunization programs, medication

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Key points

Background:

- Existing payment models for the community pharmacy are based on prescription drug sales, a form of fee-for-service reimbursement.
- Fee for service reimbursement may not sufficiently incentivize the implementation or expansion of pharmacist-based care for community pharmacies.

Findings:

- The Membership Pharmacy Model may represent a viable alternative to fee-for-service reimbursement by generating pharmacy revenue through the use of membership fees, and not on prescription drug sales.
- Future research on Membership Pharmacy Model should determine downstream impact on hospitalizations, and overall healthcare spending.

therapy management (MTM) services, point-of-care testing (POCT), and medication synchronization programs, among others.[4] These other service offerings have been shown to positively affect a variety of outcomes, including increased access to vaccination services, especially among the underserved,[5] and improved adherence and safe medication use via MTM services.[6] In particular, medication synchronization programs have had a substantial impact on medication adherence, increasing medication adherence between 2- to 6-fold.[7-9] However, despite the overall positive impact on patient care, within the existing "buy-and-bill" fee-for- service model, pharmacies are incentivized to prioritize medication dispensing over patient care service implementation, rather than to offer these services in compliment to one another.

At its core, the traditional pharmacy revenue model is generated from fee-for-service payments made by either third parties (i.e., insurers) or induvial patient payers.[4] This fee-for-service model is increasingly recognized as having several disadvantages, including incentivizing prescription fill quantity over quality of medication use.[10,11] The long-term viability of this pharmacy payment model is also uncertain.[10,12] Gross profit per prescription has remained flat over the past decade, leading many pharmacies to fill more prescriptions with less staff.[13]

Existing fee-for-service payment models are primarily administered through a pharmacy benefits manager (PBM). In 2018, the U.S. PBM market size was valued at $368.3 billion, with expectations to expand at a compounded annual growth rate of 9.2% through 2026.[14] The top 3 PBMs (Express Scripts, CVS health, and OptumRx) manage pharmacy benefits for over 180 million lives, or approximately 80% of the total PBM industry.[15] Although PBMs originally existed as a means for cost containment and managed care for their sponsors,[15] several professional organizations have expressed skepticism on the current value of the PBM model within health care.[16-18] Many current standard PBM practices have come under scrutiny in recent years, including the use of rebating and its link to increased prescription drug spending and medication costs.[16] For instance, the list price of the average brand-name drug rose by nearly 300% since 2014.[19] Moreover, the lack of transparency around drug formularies, prior authorizations, and step therapy affect medical care decision-making and may result in delays of necessary treatment and prescription abandonment.[16-18,20] In the 2018 AMA Prior Authorization Physician Survey, 91% of physicians indicated that the prior authorization process delays patients' access to necessary care, and 28% of physicians reported that PAs led to serious adverse events for a patient in their care.[21]

There is a need for a shift in payment models to fund pharmacy operations, given the expanding role of the community pharmacist in improving patient outcomes, misaligned incentives of the existing reimbursement model, and deleterious effects of a lack of transparency on prescription costs. Several novel payment models for pharmacy are currently being implemented or investigated to improve the medication use process. One of the most prevalent models is performance-based pharmacy payment (PBPM), a form of value-based health care that involves payment made to a pharmacy based on performance on a predetermined set of quality measures.[22] The Medicare Star Ratings Program is the most salient example of an implemented PBPM, with over 40 million patients enrolled in these programs.[23] However, these models are not without their own set of limitations. For instance, PBPMs are currently layered on top of existing "buy-and-bill" models (i.e., payment via fee-for-service). PBPMs also use direct and indirect renumeration (DIR) fees. DIR fees paid to PBMs have increased dramatically over the past decade, with over $9 billion paid in 2019 alone, and the lack of transparency around "claw-backs" (i.e., prescription product payments owed back to the PBM from the pharmacy) has recently become a point of criticism among stakeholders.[24]

Community pharmacy offers a variety of important and clinically meaningful services, including medication dispensing, medication synchronization, MTM, POCT, and immunization services. However, existing payment models for community pharmacies may not adequately incentivize care quality. Moreover, these traditional "buy-and-bill" fee-for-service payment structures may lack long-term viability, given increasing reimbursement pressures, which have reduced prescription margins and increased the fees paid to insurers by pharmacies (i.e., DIR fees).

Objective

The primary objective of this paper was to develop a payment strategy for a Membership Pharmacy Model within an independent community pharmacy setting. A secondary objective of this paper was to explore the early impact of a novel value-based pharmacy payment model on patients, pharmacies, and self-insured employers.

Practice description

Good Shepherd Pharmacy (GSP) is a nonprofit community pharmacy founded in Memphis, TN, in 2015. Instead of contracting with PBMs to sell prescriptions for average wholesale

price (AWP) minus a discount, the closed-door pharmacy charges a monthly membership fee and sells all prescriptions at their actual acquisition cost (AAC). The pharmacy primarily serves low-income (< 200% FPL) and uninsured patients with multiple chronic medications and fills an average of 50,000 prescriptions per year. In October of 2017, GSP initiated a group synchronization model for over 900 patients. Over 4200 chronic prescriptions were synchronized to be refilled on the same day, every 3 months. This group synchronization process has been maintained to the present time and has continued to evolve using principles of continuous quality improvement. In September of 2018, in an effort to test the feasibility of the existing membership model beyond low-income and uninsured patients, GSP partnered with Barnhart Crane and Rigging (BCR), a local self-insured employer, to investigate providing group synchronization as a novel population health management service. The goal was to develop a payment model that generated substantial savings for the employer, sustainable revenues for the pharmacy, and improved health care outcomes for patients.

Practice innovation

We discuss the development of a novel, value-based payment model for community pharmacy that involves a business-to-business partnership between pharmacy and employer group, without the use of a PBM. The model instead uses a recurring (i.e., Membership Pharmacy Model) business revenue model. A pilot program was used to (1) develop a payment strategy for the model, and (2) evaluate initial outcomes of this novel model. The development of the payment strategy was a critical first step as the pilot of the Membership Pharmacy Model had to be financially self-sustaining, yet no prior information on payment structure was available within the published literature or within the larger community pharmacy industry.

The Membership Pharmacy Model comprised 3 elements:

1. Prescription price transparency: All medications are sold at actual acquisition cost (AAC).
2. Lean pharmacy operations: Group synchronization to reduce dispensing cost and free up pharmacist time for clinical care
3. Value-based payment: Incentives to reward improved outcomes, including shared savings and bonuses, while removing incentives that encourage more frequent prescription fills such as dispensing fees and administration fees

In this model, hard dollar prescription cost savings are realized by the employer immediately by passing along the pharmacy's true cost of the prescription drug product to the employer (as compared with the price paid through a PBM contract). All prescriptions are sold at AAC with no markups or fees. The rationale for this is that the 100% price transparency changes forces the pharmacy incentive model from volume based to value based, as there is no revenue generated by the prescription sale. Pharmacy services are instead funded through a membership fee paid for by the employer. In addition, a shared saving bonus is paid to the pharmacy by the employer based on a predetermined value-based payment structure whereby the more medical and pharmacy spending is reduced by the pharmacy, the larger the bonus payment paid by the employer to the pharmacy. Both the membership fee and the value-based payment were not established at the beginning of the project; instead, it was the goal of the project to use the financial results of the project to arrive at both of these figures based on overall cost to the pharmacy and savings realized to the employer group.

Secondary to the altered payment are the operational changes to pharmacy workflow to focus pharmacist time on MTM service provision, chronic care management, and medication synchronization. Each member-patient's prescriptions for the employer group were synchronized to a single set schedule and filled en masse quarterly for a 90-day supply (rather than individual synchronizations per patient). This was termed "group synchronization" (Appendix 1). Group synchronization occurs at the pharmacy only 4 times each year, which means that staff can focus solely on 1 aspect of the medication dispensing process over a period of time (rather than multiple types of workflow stations, which may change daily or hourly). Dedicated staff only perform those duties on those days across all patients enrolled in the model. The rationale for this innovation is that it creates operational efficiencies in medication dispensing by eliminating waste inherent to traditional pharmacy workflows and instead batch processing 1 element of dispensing workflow per period of time. Batch-filled medications included only chronic medications and excluded controlled substances and acute medications that were deemed urgent by the patient. The entire pharmacy operates within a fixed 12-week cycle that is continually improved. In addition to a streamlined medication distribution process that reduces pharmacy cost per medication filled, the workflow design also generates additional time needed to provide other clinical pharmacy services (i.e., MTM, comprehensive medication management, and Med Sync). The pharmacy also makes use of the Optimizing Care Model, which includes the use of technician product verification to free up pharmacist time to provide clinical care services.[25,26]

Evaluation methods

The pilot program was assessed using the RE-AIM framework.[27] This framework was selected because of its robust ability to capture patient and employer outcomes (reach, effectiveness) and internal pharmacy outcomes (adoption, implementation, and maintenance). It is an evidence-based, program evaluation framework, which has been used in over 700 peer-reviewed publications and has been used specifically in the planning, implementation, and evaluation of programs to improve their chances of working in "real world" settings.[28] Given that only 1 pharmacy adopted this model and that the description of this pharmacy is found elsewhere in this paper, only reach, effectiveness, implementation, and maintenance are reported in the results section.

Adherence

For select patients in the program, medication adherence was assessed using the proportion of days covered (PDC) metric, comparing adherence measurements before and after program implementation. Owing to the nature of the program,

Table 1
Financial results of the Membership Pharmacy Model

Quarter	Patients	Prescription fills	PBM			Membership Pharmacy Model			Savings, %	Employer savings per member	Pharmacy revenue per member
			Prescription charges (AWP- 20%/AWP-80%)	Fee charges	Total	Prescription charges (AAC)	Membership fees	Total			
1Q19	26	82	$10,592	$2214	$12,806	$5528	$2460	$7988	45%	$185	$95
2Q19	32	104	$10,971	$2808	$13,779	$5817	$3120	$8937	44%	$151	$98
3Q19	34	170	$18,274	$4590	$22,864	$9031	$5100	$14,131	48%	$257	$150
4Q19	32	127	$14,042	$3429	$17,471	$7306	$3810	$11,116	45%	$199	$119
1Q20	30	187	$18,941	$5049	$23,990	$9831	$5610	$15,441	45%	$285	$187
2Q20	15	36	$3865	$972	$4,837	$2520	$1080	$3600	32%	$82	$72
3Q20	27	114	$15,031	$3078	$18,109	$9462	$3420	$12,882	35%	$194	$127
4Q20	27	103	$12,570	$2781	$15,351	$7159	$3090	$10,249	41%	$189	$114
1Q21	25	112	$12,923	$3024	$15,947	$7584	$3360	$10,944	39%	$200	$134
2Q21	25	106	$12,067	$2862	$14,929	$6870	$3180	$10,050	40%	$195	$127
3Q21	24	93	$10,778	$2511	$13,289	$6173	$2790	$8963	40%	$180	$116
4Q21	22	91	$10,415	$2457	$12,872	$5943	$2730	$8673	40%	$191	$124
1Q22	20	74	$8628	$1998	$10,626	$3831	$2220	$6051	53%	$229	$111
Total	26	1399	$159,096	$37,77	$196,86	$87,056	$41,970	$129,02	42%	$195	$121
	(Average)			3	9			6		(Average)	(Average)

Abbreviations used: AAC, actual acquisition cost; AWP, average wholesale price; PBM, pharmacy benefits manager.

patients had variable baseline and follow-up times; therefore, data in the pre- and postimplementation period used to calculate adherence were applied based on availability but for no more than 365 days in either the baseline or follow-up period. Consequently, the numerator was a sum of the days covered in either period, and the denominator was no less than 30 days and no more than 365 days. Days' supply ended on the date of program initiation (index date), with credit being added to the postimplementation period for fills whose supply would have been applied after the program began. Therefore, days' supply in the postimplementation period would similarly not have been given credit for fills before the program began; therefore, counts of days' supply began with the first fill in the postimplementation period. Analyses focused on highly prevalent, chronic conditions for which nonadherence is a concern: type 2 diabetes, hypertension, and hyperlipidemia. For patients with diabetes, only oral medications were considered in the calculations. For each condition, a patient with a PDC of at least 80% was deemed adherent. PDC and proportion adherent ware presented for all conditions, and changes in adherence were assessed by Wilcoxon signed-rank tests.

Economic analysis

Economic measures were used to assess the program's impact on both the employer group and the pharmacy business model and included transaction fees, synchronization fees, AAC, and AWP. The employer group's existing PBM contracted rates minus the AAC and synchronization fee charged by the program. All savings are reported as net savings. The contracted rates were AWP minus 20% for brand drugs and AWP minus 80% for generic drugs. Medispan was used as the source for AWP calculations, and AWPs used in calculations were current to the quarter being compared with program charges. The PBM contract included a transaction fee of $8 per fill and an average dispensing fee of $1.

Results

Primary objective: Development of Membership Pharmacy Model payment strategy

Financial savings for the employer group were realized across both fee charges and prescription medication costs (Table 1). Financial savings for the patient were in the elimination of prescription copays (i.e., no out-of-pocket costs). Regarding employer savings, the existing PBM contract for the employer included a transaction fee charge of $8 per prescription fill and a dispensing fee of $1 per prescription fill. Therefore, the shift from a 30-day fill to 90-day fill saved $27 in fees per prescription per quarter. PBM medication charges were on average 82.7% higher than the Membership Pharmacy Model prescription charges. The price variability across patients and time posed by multiple generic manufacturers of the same drug or dose was also reduced because of the synchronization. Synchronizing allowed for the purchase of the lowest priced prescription drug from the wholesaler for each patient on the same drug in the company, which also contributed to the overall prescription cost savings. The overall contracted PBM price for all medications was $159,095 versus the AAC of $87,056 used in the Membership Pharmacy Model. The difference between AAC and PBM price generated a gross savings of $72,032. Regarding the contracted PBM fees, the elimination of these fees in the Membership Pharmacy Model totaled $33,576.

In the development of the payment strategy, a synchronization fee was initially agreed on between the pharmacy and employer to cover initial, estimated costs incurred by the pharmacy associated with the Membership Pharmacy Model. This was a temporary measure, as true cost savings from the model were unknown, and the fees were to be removed once the value-based payment strategy (i.e., shared savings on prescription costs) was established. These temporary fees totaled $41,970 by the conclusion of the pilot.

Table 2
Definitions of RE-AIM domains with measures used in the Pharmacy Membership Model

RE-AIM domain and Definition	Measure	Data source
Reach		
The absolute number of patients and employer groups participating in the model	Demographics of intervention population	Pharmacy software
	Counts of prescription fills	Pharmacy administrative data
	Description of the employer group partner	Employer internal records
Efficacy/Effectiveness		
The impact of the model on the patient, employer group, and pharmacy	Proportion of days covered	Pharmacy administrative data
	Cost difference between membership model and PBM model	Medispan (AWPs) Employer PBM contract Pharmacy administrative data
	Inventory turnover ratio	Pharmacy administrative data
Adoption		
The number and representativeness of settings initiating the model	Not included in the analysis, given that only a single pharmacy setting was included in this program; a description can be found in the preceding sections of the manuscript	
Implementation		
	Counts of prescription fills over the implementation period	Pharmacy administrative data
At the pharmacy level, the fidelity to the use of the model over time	Counts of prescription patients over the implementation period	Pharmacy administrative data
	Gantt Chart of Group Sync	Pharmacy administrative data
Maintenance		
Extent to which the model becomes institutionalized within the organization beyond initial implementation	Counts of employer groups enrolled in program	Pharmacy administrative data
	Counts of prescription fills and patients	Pharmacy administrative data
	Employer savings per patient	Medispan (AWPs) Employer PBM contract
	Pharmacy revenue per patient	Pharmacy administrative data

Abbreviations used: AWP, average wholesale price; PBM, pharmacy benefits manager.

At the conclusion of the pilot, the net savings provided to the employer were $67,843 based on a 35% reduction in topline pharmacy spending. On average, the program generated $1615 per patient in net savings or about $194 per patient per quarter (Table 1).

Secondary objective

Results for the Membership Pharmacy Model pilot project are reported using the RE-AIM framework and can be found in Table 2.

Reach

The pilot enrolled 34 patients (Table 1) during the program implementation period for whom 1399 prescriptions were filled throughout the study, which spanned 13 quarterly refill cycles from January 1, 2019, through March 31, 2022. The average quarterly batch refill consisted of 26 patients and 107 prescriptions; however, the actual number of patients ranged from 15 to 34, and actual number of prescriptions ranged from 36 to 187. Among program participants, 20 unique patients had at least 1 chronic condition for which adherence was assessed: 5 had diabetes, 18 had hypertension, and 13 were being treated for high cholesterol.

A single, Memphis-based employer group was included in the study. BCR is an engineering firm that employs about 1500 people nationally and about 500 members within the state of Tennessee. Total prescription counts were 1399 from January 2019 through to March 2022.

Effectiveness

Prescription medication adherence was maintained in the Membership Pharmacy Model. Before the program, median PDC was 81.6%, 99.7%, and 96.1% for oral antidiabetics, antihypertensives, and lipid- lowering agents, respectively. During this same observation period, 4 of 5 patients with diabetes were adherent, all those with hypertension were adherent, and 10 of 12 patients on lipid-lowering agents similarly achieved a PDC of at least 80%. Once the program began, mean and median PDCs for diabetes and cholesterol medications both increased: 96.7% and 100% (mean and median for antidiabetics, $P < 0.05$ [median change]); 90.3% and 98.1% (mean and median for lipid-lowering drugs, $P = 0.9740$ [median change]). The counts of those adherent increased slightly for both

Table 3
Lean pharmacy operations

Year	Average inventory value	Cost of goods sold	Inventory turnover ratio
Year 1	$6989	$27,954	4
Year 2	$7268	$29,070	4
Year 3	$6643	$26,570	4
3-year average	$6966	$83,594	12

Percentage of Prescription Fills Syncronized (%)

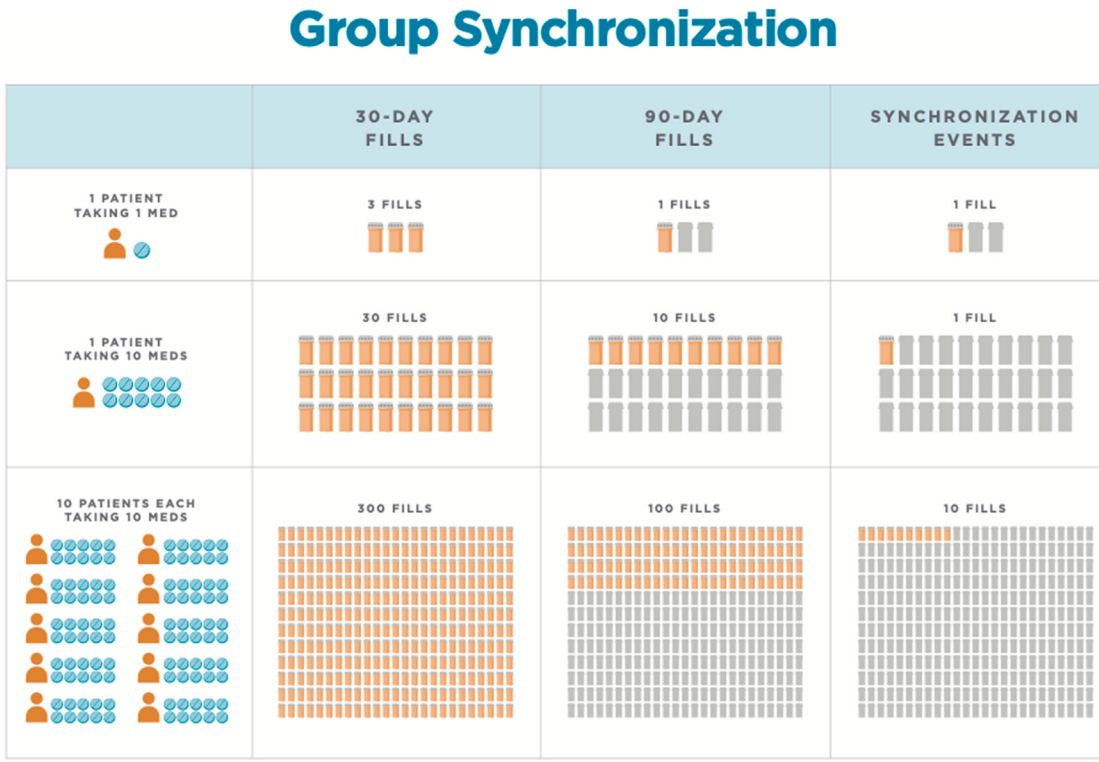

Figure 1. Group synchronization impact on quarterly fill rates.

conditions after program implementation, with all patients with diabetes deemed adherent and all but one on lipid-lowering agents reaching the requisite threshold as well. However, both mean and median PDCs dropped slightly for antihypertensive agents, 88.5% and 97.8%, respectively ($P = 0.0898$ [median change]), and several patients were then observed to be nonadherent in the follow-up period (N = 4). Post hoc analysis of changes in antihypertensive use suggested that some of the drop in adherence was likely owing to patient discontinuations.

Table 3 describes measurement of lean pharmacy operations via the inventory turnover ratio, a cross-industry accounting measure following generally accepted accounting principles. The Membership Pharmacy Model turned over

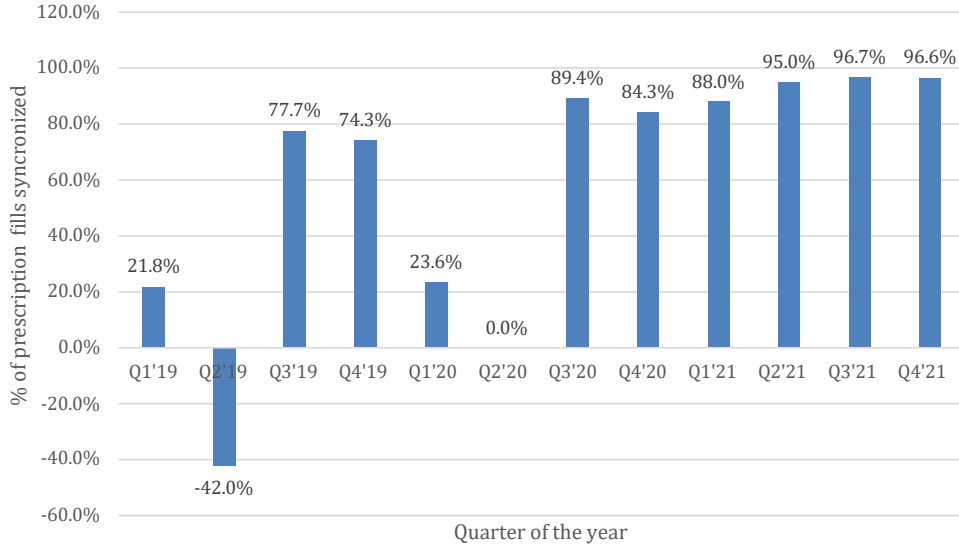

Figure 2. Time series of prescription synchronization rates.

inventory 4 times a year through its use of a just-in-time inventory process. Inventory orders were only placed during 4 periods annually and followed the patient outreach phase of the model (Figure 1 and Appendix 1). Moreover, lean pharmacy operations improved over the study period as reported in Figure 2, which illustrates that synchronization rates improved and sustained at a rate >95%, meaning that at most 5% of prescriptions filled were filled between synchronization sessions.

Revenue for the pharmacy was realized exclusively through synchronization fees of $30 per fill. Synchronization fees for the entire study totaled $41,970, and the average revenue per quarterly batch refill was $3228. On average, each patient generated $120 in pharmacy revenue per quarter or roughly $40 per patient per month. Using the group synchronization method, the pharmacy was able to reduce the number of prescription fills to precisely what was required and fulfill all the orders for the entire group within a single 8-hour day every 90 days. When assessing gross profit, all overhead expenses (e.g., vials, packaging, labels, mailing fees, personnel) were subtracted from pharmacy revenues. With a staff of 1 pharmacist and 2 technicians, GSP's operating expenses are about $25,000 per month or $1250 per business day, so the average gross profit per quarter was roughly $1978. The average gross profit per patient per quarter is roughly $76, and the average gross profit per prescription fill is $18.48. In addition to generating sustainable amounts of revenue for the pharmacy, group synchronization improves the pharmacy's cash flow by converting the inventory management to just-in-time. Whereas a volume-based pharmacy must maintain a large inventory to fill prescription asynchronously, the group synchronized pharmacy can minimize its inventory by ordering in bulk immediately before fulfillment.

Implementation

One of the goals of the pilot was to develop a model that could be scaled by other pharmacies nationwide. At the end of the pilot, the group synchronization method that was developed was a 12-week repeating operation cycle for the pharmacy that aimed to fill all prescriptions on the same refill schedule. Every process was recorded, assessed, formalized, and then reassessed with each refill cycle. The current iteration of the group synchronization process can be found in Appendix 1.

The implementation period was from January 2019 through March 2022. Trends in patient enrollment and prescription fills can be found across each quarter in Table 3. After a peak enrollment in the second half of 2019, patient engagement dropped substantially during the second quarter of 2020, concurrent with the beginning of the coronavirus disease 2019 (COVID-19) pandemic. An average of 26 patients were engaged in the program each quarter.

Group synchronization improved over the program's implementation (Figure 2). During the first year, the percentage of prescriptions filled during the quarterly group synchronization varied widely, with nonsynced prescription fills representing medications filled between group synchronizations. Concurrent with the beginning of the COVID-19 pandemic, the first half of 2020 dropped to 0% group synchronization but then rose again in the second half of the year. Steady increases in group synchronization were seen through the end of the implementation period, with only about 4% of prescriptions filled out of sync (between group synchronizations).

Maintenance

Pilot program long-term viability is dependent on employer savings and pharmacy revenue. Consequently, both per-member savings and per-member revenue were calculated over the course of the pilot. Throughout the entire implementation period, net positive savings for the employer were realized, with all but one-quarter exceeding $100/patient/quarter (Table 1). Revenues per patient per quarter were on average $121/quarter.

As of March 2022, 9 employer groups had joined the Membership Pharmacy Model program, with 7 actively enrolling patients. In addition to those patients enrolled in the current pilot program, the 6 additional employer groups represent 270 lives and 1631 prescriptions. Along with the employer group described in this paper, long-term clinical and economic outcomes data are being collected for these 9 additional employer groups to determine overall impact on health care spending and patient care, including both prescription drug spending costs and overall medical costs (including hospitalizations and emergency department visits).

During the pilot, a temporary $30 dispensing fee was used initially to (1) generate revenue to cover costs for the pilot, (2) determine economic viability, and, (3) determine the ultimate Membership Pharmacy Model payment strategy. Total savings and savings net of the $30 dispensing fee can be found in Table 1, along with employer savings per member and pharmacy revenue per member. Based on this information, the pharmacy arrived at a $150/member/quarter membership fee based on pilot data for these added employer groups.

Practice implications

This paper presents a novel payment and its overall impact on a variety of outcomes, including employer group pharmacy spending, adherence, and pharmacy operations. Given the results presented here, this model may represent a viable future business model for the community pharmacy. The overarching aim of the Membership Pharmacy Model was to integrate both the (1) dispensing and (2) clinical functions of the community pharmacist through a new reimbursement structure that is not tied to the drug product (instead tied to a membership fee) and the use of a lean pharmacy operations model that features group synchronization. Initial clinical, operational, and economic outcomes signal that the innovative joint pharmacy payment-operations model is feasible and economically viable.

It is also important to note that although this is the first report in the peer-reviewed literature to describe a novel payment model centered on actual drug cost, there has also been much recent attention on lowering prescription drug prices by eliminating prescription markup. Namely, both Amazon Pharmacy and Mark Cuban's Cost Plus Drug Company have implemented novel pharmacy business models that eliminate the PBM to reduce prescription prices. Moreover, there has also been an increase in experimentation by independent pharmacies with new payment models that feature

cash-based payments based on a "cost plus" payment structure for generic medications (i.e., transparent pricing based on AAC plus markup).[29] However, despite these other, similar models, the Membership Pharmacy Model presented here differs substantially in its potential for scalability, given its potential for more rapid scaling through the use of employer-group contracting and adjustments to improve pharmacy operational efficiencies (i.e., group synchronization). Importantly, our model includes the provision of MTM, CCM, and medication synchronization services to improve patient outcomes and reduce health care costs—something that has not been previously included in these other models.

A key driver of the Membership Pharmacy Model was the use of group synchronization to drive operational efficiency and improve patient outcomes. A robust body of evidence supports the idea that pharmacists can significantly improve adherence to prescribed medications. Complex medication regimens—owing to the presence of concomitant chronic disease states—are a major cause of nonadherence for many patients.[30] The Centers for Disease Control and Prevention suggests that 40% of adults 65 years or older are taking at least 5 medications, leading to an increased tablet burden for these patients.[30] To overcome adherence barriers, community pharmacies have increasingly implemented medication synchronization programs that adjust patients' medication refill dates to coordinate each patients' prescriptions to be filled on the same day each month. Importantly, a recent study demonstrated an improvement in mean adherence (~7%) for patients enrolled in the appointment-based medication synchronization program, as compared with the control group, whose adherence ranged from 58% to 63%.[9] In addition, appointment-based models with patient-pharmacist consultation increased adherence from 79.6% to 87.1%, whereas the unenrolled patients' adherence minimally increased from 78.1% to 80.1%.[31] Average number of visits to the pharmacy were also reduced for the enrolled and unenrolled patients by 0.17 and 0.03, respectively.[31]

From a business model perspective, the Membership Pharmacy Model most rese mbles that of Netflix and other streaming services. Their business model shifted from nonrecurring revenue (i.e., DVD rentals a video store) to recurring revenue (i.e., membership fees) and changed the unit economics for the entire industry. Of particular note is the lesson that Netflix's shift of focus from quantity of transactions (i.e., rentals) to customer experience led the organization up the supply chain into content creation. Whereas a focus on rental sales may have led Netflix to become the most profitable DVD rental business in the country, their focus on customers led the organization to global success in an entirely new industry. Shifting the pharmacy business model from dispensing to membership changes the underlying incentive model such that the ultimate goal of the pharmacy becomes the ultimate good of the patient. The dispensing model generates a pharmacy that is incentivized to fill ever more prescriptions at ever higher prices. The downstream effects have made prescriptions more expensive, reduced access to medication, and increased prescription waste. The membership model fundamentally aligns the business incentives of the pharmacy with the desired outcomes of the patient and creates a pharmacy that is incentivized to create happier, healthier patients. The downstream effects of the membership model improve medication access, decrease prescription prices, and improve outcomes.

There were study limitations. Only 1 employer organization was used in study recruitment and lacked a control group, which may lead to selection bias. Future research should investigate the Membership Pharmacy Model across multiple employer groups and include a nonequivalent control from which to investigate difference-in-differences. However, a strength of this study was the use of repeated measures, similar to an interrupted time series design, which allowed for reporting of trends over time and reduced the impact of secular bias, which is traditionally seen in quasi-experimental pre/post study designs. Moreover, downstream impacts of the Membership Pharmacy Model on overall employer health care spending and clinical outcomes must be evaluated to fully understand its value, as present outcomes such as PDC do not necessarily correlate with improved patient outcomes. Given the short time duration of the present study, we were unable to identify downstream impacts on hospitalizations, emergency department visits, and overall health care spending. Future research on this model should investigate these outcomes as they may be included in value-based payment agreements and provide further insights into the overall clinical impact of the model. Finally, gross profit per prescription was calculated in the present study rather than net profit to more cleanly describe the financial impact of the model. However, net profit is the more universally accepted model of measuring pharmacy business success, given its incorporation of other variables, including software fees and insurance, among other things.

Conclusion

The Membership Pharmacy Model represents a potentially viable alternative to traditional fee-for-service, buy-and-bill pharmacy payment models through its use of medication pricing based on ACC, lean pharmacy operations, and value-based payment methods.

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Appendix 1. Membership Pharmacy Model Gantt chart figure.