Improving Patient Access to Primary Care Providers Using a Pharmacist-Physician Co-Visit Model

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Abstract

Background: Implementation of a clinical pharmacist in the primary care setting can offset provider time spent managing chronic diseases using Collaborative Practice Agreements (CPAs). The pharmacist-physician co-visit model presents an opportunity for pharmacists to increase patient access to their primary care provider (PCP). Studies of the co-visit model show that co-visits increase clinic efficiency by allowing the PCP to see additional patients and achieve more health care goals compared with independent visits[1-4].

Objectives: The aim of this study was to increase patient access to their PCP by utilizing a pharmacist-physician co-visit model at the Madsen Health Center Family Medicine (MHC FM) Clinic. The primary outcome was to identify the number of co-visits completed compared to the number of possible co-visits, and the number of appointment slots made available. The secondary outcomes were to track the time spent with patients and to obtain provider feedback via a survey.

Methods: The co-visit model was implemented as a 4-month pilot study at the MHC FM Clinic. Complex care appointments lasting 40 minutes were selected based on inclusion and exclusion criteria. Potential co-visit appointments were identified one week prior then provider consent was obtained to change the appointment into two separate 20-minute visits. Schedules were reviewed to determine if the appointment slot opened by the co-visit was filled by another patient. Upon completion of the study, a survey was distributed to providers to collect feedback.

Results: A total of five co-visits were completed out of a possible 19 (26%). All the appointments made available were filled by another patient. On average, the provider and pharmacist spent 15 and 14 minutes with the patient, respectively.

Conclusion: Implementation of the physician-pharmacist co-visit model increased the availability of the PCP to see more patients without disrupting clinic workflow and provider schedules.

Background

In the United States, 6 in 10 adults have a chronic illness and 4 in 10 have two or more[5]. A large proportion of patients seek care for chronic conditions from a PCP. In 2017, 81% of patients with hypertension (HTN) and 84% of patients with diabetes mellitus (DM) visited a PCP[6]. PCPs spend significant time managing these chronic disease states[7]. This can impact their ability to accept new patients or manage acute conditions, which can decrease patient access and lead to negative patient outcomes[7]. Implementation of a clinical pharmacist in the primary care setting can offset some chronic disease state management using Collaborative Practice Agreements (CPAs), which may include HTN, DM, and hyperlipidemia (HLD). Pharmacist management of these conditions has been shown to have a positive impact on access to health care services and chronic disease state control in many settings[1]. Integrating a clinical pharmacist can expand provider availability to see new patients, provide follow-up for established patients, or manage complex diseases[1]. The pharmacist-physician co-visit model allows a pharmacist and provider to see the patient within the same appointment and has been shown to create interprofessional collaboration and is more convenient for patients[8].

The co-visit model not only reduces the burden placed on PCPs to manage chronic disease states and expands patient access, but also results in improved health outcomes, such as improvement in hemoglobin A1c in patients with type 2 DM[3,4]. Previous studies have found that the co-visit model generated 4924.41 dollars in additional income over 14 half-days, allowed providers to see, on average, 1.3 additional patients per half day compared to individual visits, and justified the addition of one full-time equivalent pharmacist position[1,2,9].

Studies of the co-visit model have not been conducted within the University of Utah Health (UUH), although embedded primary care clinical pharmacists conduct informal co-visits without modifying the appointment. Pharmacists receive a referral to manage chronic disease states as outlined in CPAs and provide comprehensive medication management. Complex care appointments present an opportunity for a pharmacist-physician co-visit as they allow for adequate time with the patient. At the MHC FM Clinic, it is unknown if co-visits increase patient access to providers compared to physician-only visits. The aim of this pilot study is to increase patient access to providers by utilizing a pharmacist-physician co-visit model.

Primary objectives

1. Identify the number of pharmacist-physician co-visits completed compared to the number of possible co-visits
2. Determine the number of provider appointment slots made available due to the co-visit model

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Secondary objectives
1. Track pharmacist and provider time spent with patients during co-visits
2. Survey participating providers to obtain feedback

Methods

Setting and Design

UUH comprises 12 community health centers including the MHC, which is located in an urban setting near the UUH campus. MHC provides outpatient services including family and internal medicine, sports medicine, women's health, nutrition, and geriatric care. The MHC FM Clinic comprises 10 providers and family medicine residents. Appointments are typically 20 minutes in length and 40-minute appointments are reserved for patients establishing care, procedures, annual physicals, or patients requiring complex care. Clinical pharmacists are embedded in 11 of the 12 community health centers and practice under CPAs. CPAs allow for independent management of chronic disease states including DM, HTN, HLD, asthma, heart failure, osteoporosis, and smoking cessation. Pharmacists may also manage other disease states as requested by providers through drug information questions or warm-handoffs. Patients are referred to clinical pharmacy by their PCP and scheduled by an embedded pharmacy technician for an initial 20 to 60-minute appointment. Follow-up is completed via in-person visit, phone, or secure message within the patient web portal. One clinical pharmacist and one post-graduate year 2 pharmacy resident (PGY2) is available in clinic from 8 am-5 pm Monday through Friday

The co-visit model was implemented as a pilot study at the MHC FM Clinic with a subset of providers from February–May 2022. This model differs from our typical practice as co-visits done prior to the study did not modify the duration of the provider's appointment. The pharmacist met with the patient during their provider appointment and added a separate visit to their schedule, but the duration with the provider remained the same. Three providers at the MHC FM Clinic with the highest number of 40-minute visits conducted six months prior to study initiation were selected and included a physician, physician assistant, and nurse practitioner. All co-visits were conducted by the same PGY2 pharmacy resident. The University of Utah

Institutional Review Board reviewed and deemed this study exempt.

Inclusion criteria were 40-minute provider appointments (e.g. complex care, transitional care management, return patient extended visits), patients with one of the selected PCPs, patients with at least one condition outlined in the pharmacist CPAs or per provider request (e.g. medication reconciliation, polypharmacy), and appointment times that overlapped with pharmacist availability. PCPs must provide consent for the appointment to be changed a co-visit, otherwise the appointment remained unchanged. Exclusion criteria included appointments with medical residents, patients requiring language interpretive services, virtual visits, and patients unwilling to meet with the pharmacist.

Patient identification and appointment scheduling

Upcoming provider schedules were reviewed one week prior to the appointment. Appointment notes and problem list were reviewed by the same pharmacist then potential co-visits were identified based on inclusion and exclusion criteria. Providers were contacted during clinic hours or electronically to obtain consent to change the appointment to a co-visit. If consent was obtained, the pharmacy technician rescheduled the 40-minute appointment into two 20-minute appointments, one with the provider and one with the pharmacist. The original starting time was maintained. If the patient had no prior contact with clinical pharmacy, the pharmacy technician contacted the patient via phone or secure message within the patient web portal. Otherwise, the patient was not contacted. Appointment notes were added to inform Medical Assistants (MAs) and the provider of the change.

The clinical pharmacist notified the provider and MA the morning of the co-visit. The provider's schedule was reviewed to determine if another patient filled the appointment slot made available by the co-visit. Depending on the provider preference, the clinical pharmacist met with the patient before or after the provider. The time spent with the patient by the provider and pharmacist was tracked and entered in a secure Microsoft Excel table. A short debriefing session was completed with the provider to discuss interventions made (Figure 1).

Figure 1. Timeline of co-visit appointment scheduling. (appt: appointment)
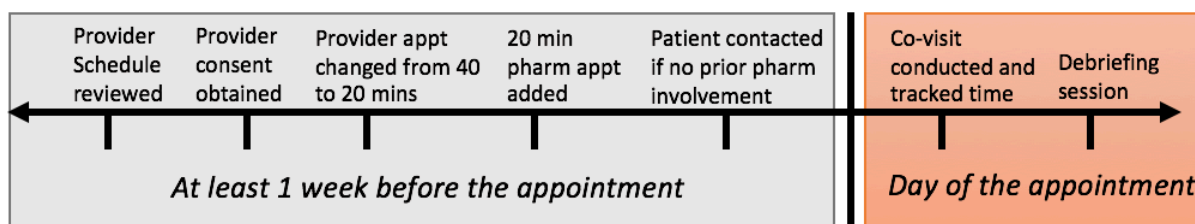
Patient demographics
The mean age of enrolled patients was 41 ± 15 years, 3 patients were male (60%), 3 (60%) had 2 or more comorbid conditions, and 2 (40%) had 10 or more comorbid conditions.

Provider survey
Upon completion of the study, a survey was distributed to providers via email to collect feedback (Table 1). The online platform, SurveyMonkey, was used to collect responses.

Table 1. Online survey questions distributed to providers

1. Rank how well this statement applies to you: On days when a co-visit was added, I was able to stay on schedule with my other patients.   a.   Strongly agree   Agree   Disagree   Neutral   Strongly disagree
2. What was the most effective order to conduct the co-visit?
3. What are effective ways to contact you regarding an upcoming co-visit?
4. When did you prefer to be contacted regarding an upcoming co-visit?
5. How often was a 20-minute co-visit sufficient to address patient needs?
6. Rank how well this statement applies to you: The use of co-visits increased my ability to see other patients.   a.   Strongly agree   Agree   Disagree   Neutral   Strongly disagree
7. Rank how well this statement applies to you: The use of co-visits disrupted my schedule and limited how often a co-visit can be conducted.
8. What barriers limit the expansion of the co-visit model?
9. List suggestions to improve the co-visit model or feedback regarding your experience.

Data analysis
The goal of this study was to conduct 4-5 co-visits per week with three providers. The total number of completed co-visits was recorded and compared to the number of visits that met inclusion criteria for a co-visit, but was unable to be completed. Descriptive statistics were used to characterize the survey responses and report outcomes.

Results
Primary Objectives
A total of five co-visits were completed out of a possible 19 (26%) during the four-month study period (Table 2). A variety of disease states were managed by the clinical pharmacist including HTN, DM, HLD, and smoking cessation. DM (n = 3, 60%) and HTN (n = 3, 60%) were managed most often. The provider saw the patient first for 80% of the visits. All the appointments made available by the addition of a co-visit were filled by another patient with an acute concern or for lab monitoring (n = 5).

Secondary Objectives
On average, the PCP spent 15 minutes (12-25 mins) with the patient, and the pharmacist spent 14 minutes (7-24 mins) with the patient. The pharmacist and provider each spent longer than 20 minutes during two separate co-visits, but otherwise stayed within the allotted timeframe.

Table 2. Data from completed co-visit appointments (*time in minutes)

Patient	Pharmacist Time Spent*	PCP Time Spent*	PCP Started the Visit	Disease State Managed by the Pharmacist
1	7	25	Yes	Smoking cessation
2	13	12	Yes	HTN
3	17	13	No	DM, HTN
4	11	13	Yes	DM, HTN, HLD
5	24	12	Yes	DM
Average time*	**14**	**15**		

Barriers that limited the addition of a co-visits are listed in Figure 2. Out of the 35 visits identified, 15 patients did not meet inclusion criteria and one met exclusion criteria, so 16 visits were not included in the final count of 19 possible visits. Of the possible 19 co-visits, the most common reason a co-visit was not scheduled was due to the provider requiring 40 minutes to address multiple patient concerns (n = 5, 26%) and because the patient canceled, rescheduled or did not arrive for their appointment (n = 5, 26%).

Figure 2. Reasons co-visits were not scheduled (pharm: pharmacist, appt: appointment, mins: minutes)
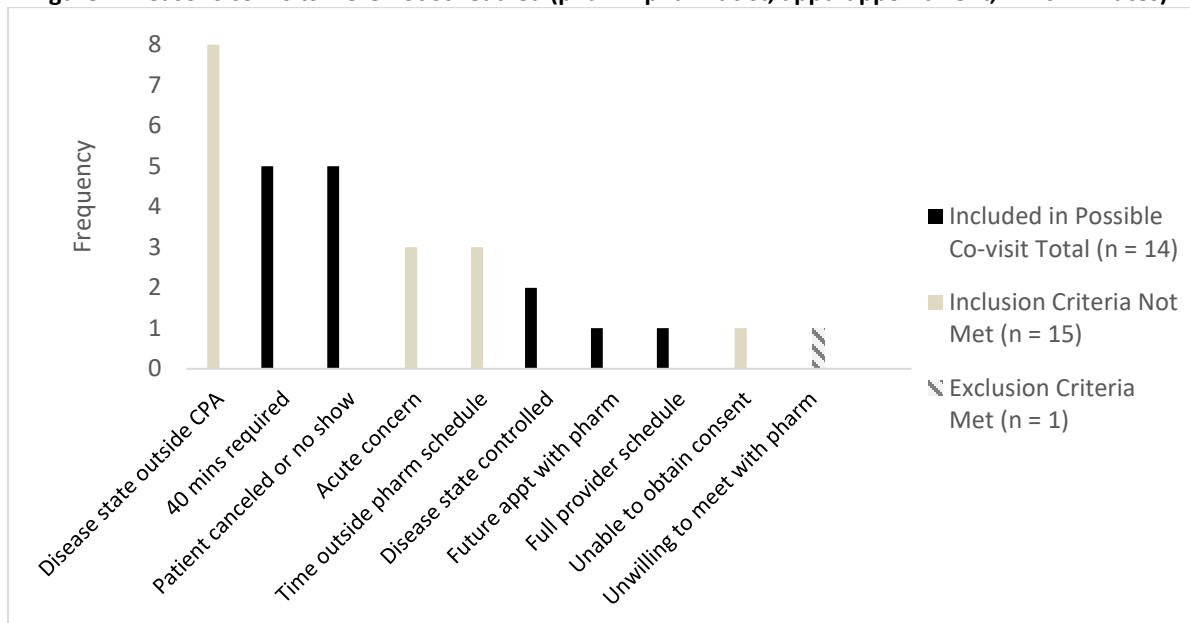
Feedback from providers
A survey with standardized questions was distributed to providers via email to obtain feedback on the co-visit model. For the statement, 'On days when a co-visit was added, I was able to stay on schedule with my other patients', all providers selected that they strongly agreed. When asked about the most effective order to conduct the co-visit, providers varied in their responses with each selecting a different preference of, 'pharmacist first then the provider', 'provider then pharmacist', or 'both worked equally well', with none selecting 'depends on the patient situation'.

Providers preferred to be contacted regarding the upcoming visit in a variety of ways, but two of the three providers preferred a message or face-to-face during clinic. Other options including via a wearable communication device (e.g. Vocera) or through an MA were selected by one provider. Two of the three providers preferred to be contacted 2 or more days before the appointment and one preferred the day before the appointment, when given the option of multiple times. A 20-minute co-visit was sufficient to address patient needs 'most of the time' for all providers. For the statement, 'The use of co-visits increased my ability to see other patients', two providers stated they agreed with this statement and one selected neutral. All providers disagreed with the statement, 'The use of co-visits disrupted my schedule and limited how often a co-visit could be conducted". When asked about barriers that limit the expansion of the co-visit model, all providers selected a full patient schedule and the inability to add another appointment. Two providers selected that 40 minutes was required to address multiple concerns and one selected that patient disease states were outside the pharmacist CPA as barriers.

Discussion
In the primary care setting, PCPs spend a significant amount of time managing chronic diseases[7]. This can impact their ability to accept new patients or manage acute conditions due to limited time, which can decrease patient access and lead to negative outcomes. Clinical pharmacist involvement can attenuate this problem by providing chronic disease state management through CPAs and can reduce the amount of time providers spend on these conditions.

The aim of this study was to increase patient access to providers by utilizing a pharmacist-physician co-visit model. Within the MHC FM Clinic, the implementation of the co-visit model increased patient access by allowing five additional patients to be seen by the provider without disrupting their workflow, using the survey data. Providers noted that reducing their time spent with the patient from 40 to 20 minutes using the co-visit model still allowed sufficient time to address patient needs. This is an important finding exemplifying how this co-visit model can increase patient access to providers. Except for two co-visits, the pharmacist and provider completed their visit within the allotted 20-minute timeframe. Based on these results, a similar co-visit structure could be implemented at

other sites to increase patient access to healthcare without causing major disruptions to clinic workflow.

The study by Ulrich, Patel, and Gilmer evaluated fourteen half-days of the co-visit model and showed that the physician saw an additional 1.3 patients per half-day using the co-visit model[2]. They also showed the number of physician appointment slots increased by 4 per half-day. Our study implemented the co-visit model about 1-2 times per month and was not done using half-days, so these two studies cannot be compared directly, although both showed increased patient access using the co-visit model. Other studies by Wong et al. and Hall et al. evaluated billing and patient satisfaction in a federally qualified health center and specialty clinic [8,10]. Our study did not elicit patient feedback or evaluate billing, but these could be investigated to demonstrate the value of an integrated clinical pharmacist and encourage the implementation of pharmacist-physician co-visit model across the UUH system.

Strengths
Clinic workflow and efficiency were maintained with the implementation of the co-visit model. This was facilitated by the provider seeing the patient first in most cases. This was successful because the patient discussed acute concerns then the pharmacist reviewed chronic conditions. It could be difficult to debrief with the provider immediately after the co-visit, but in most cases the provider was contacted the same day. Regarding the inclusion criteria, it was reasonable to select 40-minute visits since some co-visits lasted longer than 20 minutes.

Limitations
We anticipated the ability to complete more co-visits than was possible during the study period. The number of co-visits was smaller than expected at 1-2 co-visits per month on average compared to the anticipated 4-5 per week. There were a few factors that were common among the incomplete co-visits; 40 minutes was required by the provider to address multiple patient concerns, the patient rescheduled for a 20-minute visit, canceled or did not arrive for the appointment. Additionally, eight patients were excluded because their conditions were outside the pharmacist CPAs. These results reflect the implementation of the co-visit model in a clinic where providers are accustomed to pharmacist involvement and may not be applicable to other practice types. Due to small sample size and short study duration, the generalizability of our findings may be limited; thus future investigations are warranted with larger study populations across multiple sites to determine the sustainability and effects of the co-visit model.

Conclusion
Within the MHC FM Clinic, the implementation of the physician-pharmacist co-visit model slightly increased patient access by allowing five additional patients to be seen by the provider over a 4-month period. Clinical pharmacists provided chronic disease

state management while still allowing the provider adequate time to address patient concerns. Future studies with larger sample size are needed to inform the implementation of this model at other sites.

The opinions expressed in this paper are those of the author(s).

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