Community health workers in a rural community pharmacy: a pilot project

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Introduction

This report summarizes descriptive data from a pilot project that sought to explore the synergistic effect of imbedding a community health worker (CHW) within a community pharmacy practice. The tasks of the CHW within the model is consistent with CHWs, generally. They provide education, advocacy, and connection between the health care providers, social service agencies, and the patient.

Community Pharmacy

Chronic disease is a burden for many Americans, resulting in serious health complications and premature death. Diabetes and heart disease are leading causes of chronic disease morbidity and mortality. In 2018, 27 million Americans were diagnosed with diabetes while another 7.8 million Americans were estimated to have undiagnosed diabetes.[1] The number is similar for heart disease. Roughly 30 million Americans (12% of the population) were diagnosed with heart disease the same year.[2] In Missouri chronic diseases contributed to 42,695 deaths in 2018, of which 23.6% were attributed to heart disease, 4.8% from stroke, and 2.5% from diabetes.[3]

Pharmacies play a critical role in chronic disease management from screening to education and medication treatment plans. Community pharmacists are often considered the most accessible health care professional in a community, particularly in rural communities and with individuals suffering from chronic disease, because they are located within the fabric of a community. Because community pharmacists are often well known in smaller communities, they are able to build trusting relationships with patients.

Community Health Workers

The National Association of Community Health Workers (NACHW) describes a CHW as "frontline public health workers who are trusted members of and/or have an unusually close understanding of the community served."[4] Community health workers help patients navigate between the health care system and the social service system. Most CHWs meet with patients who are vulnerable to poor outcomes due to poverty, severity of illness, or barriers to navigating the healthcare or social service systems. Although they do not provide direct care or services, they act as an information conduit between patients, health care providers, and social services providers in turn enhancing patient care by comprehensively communicating a patient's context. Community health workers often come from the communities in which patients live and are able to spend time talking with patients about their concerns, resulting in more trusting relationships with patients than health care providers often have. Trusting relationships with patients allow CHWs to educate, connect, and empower patients to achieve better health. Extending pharmacy teams to include CHWs is a natural, yet innovative, opportunity to improve chronic disease outcomes further by increasing education and outreach to patients who may need more support and who are homebound.

Description of the intervention

Compared to primary care physicians, community pharmacists are more accessible health care professionals with more frequent opportunities to interact with both patients and community members.[5] In an effort to utilize these frequent touch points to improve local care, a community pharmacy practice in rural Missouri utilized existing pharmacy staff

and employed CHWs to screen, assess, refer, and follow-up with at-risk patients and members of the community. The community pharmacy utilized delivery drivers, community pharmacists, and existing pharmacy staff to screen existing patients for social determinants of health (SDoH) resulting in referrals to an in-house CHW. Trained to understand SDoH, the CHW engaged and assessed patients for follow-up CHW advocacy and support, either in the pharmacy or at the patient's home. The CHW interventions resulted in ongoing support and advocacy and/or referrals to social, medical, and/or pharmacy service providers.

At the first visit the CHW obtained consent for services, authorization to release protected health information, and consent to engage in case management. The CHW conducted an initial SDoH assessment to determine services needed related to health insurance, fall risk, food, housing, employment, medication, health care, emotional health, translation, education, or transportation. The screening tool was based on tools used in primary care settings and modified to fit the pharmacy context. Then, the CHW conducted an assessment for health-related information including diabetes and blood pressure support, a medical history survey, depression screening, and current medication usage. The health assessment was followed up with a pharmacy services assessment that included medication optimization, out of pocket cost reduction services, clinical services, educational services and home visit needs. Given these assessments the pharmacy team determined a plan to identify and provide services needed. The plan may have included a targeted home visit by the pharmacy delivery driver, care coordination services between patient and health care providers, referral to a diabetes prevention program or program delivery by a CHW, referral to medication reconciliation services, medication optimization services, medication compliance packaging services or medication cost reduction services, referral to non-pharmacy health and social services, and maintenance of recurring appointments.

Patients were eligible to participate in the CHW community pharmacy intervention if one or more of the following conditions were met: at least one antihypertensive medication filled in the last six months or hypertension diagnosis (confirmed and/or patient reported), at least one cholesterol medication filled in the last six months or high cholesterol diagnosis (confirmed and/or patient reported), at least one diabetes medication filled in the last six months or diabetes /pre-diabetes diagnosis (confirmed and/or patient reported), care transition from tertiary care, such as a hospital, to long term care, assisted living facility, or home, care transition between health care providers, current health care third party coverage transition, transition from current housing, transition in employment from current employer to no employment, to another employer, or to retirement, and supporting psychosocial transitions including, but not limited to patient's own support network, health literacy, nutrition, transportation, etc.

Data

As this was a pilot program, the model allowed for adaption as the intervention unfolded. As such, the data that were captured changed over the course of the intervention. Outcome data, such as expenditures and cost savings, were only captured for patients at the end of the intervention period. However, we are able to report descriptive statistics about who participated in the intervention and what interactions with the community pharmacy occurred.

Findings

The data capture patient visits from January 02, 2019 to June 12, 2019. There was a total of 1,786 visits among 379 unique patients, for an average of 4.7 visits per patient. Most visits were short: 1,296 (74%) were five minutes or less and 1,543 (88%) were less than 30 minutes. Although less common, there were visits, predominantly performed by CHWs and pharmacists, that lasted more than 30 minutes (Table 1).

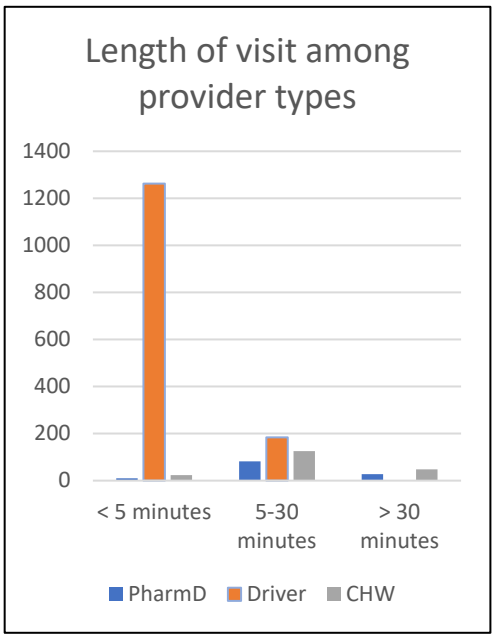

Table 1. Length of visit among provider types.

	PharmD	Driver	CHW	Sum
Less than 5 min	10	1263	23	1296
5-30 min	82	184	126	392
More than 30 min	27	0	48	75
Sum	119	1447	197	1763

Of the 1,786 visits, 1,397 (78%) had some documentation related to social conditions and 1,154 (65%) had all social conditions documented. See Table 2 for results of counts and percent after removing missing values. Not applicable and don't know are not included in the table but account for the remaining percent. About 44% of the patients live alone and two-thirds have visitors visible at the home (67.0%). Nearly a quarter (22.2%) of patients did not have a clear walkway to the house and 6.7% of patients had doors or windows that were not in good working condition. One out of six (15%) had visible clutter in the home. Few did not have electricity (1%) or working AC or heat (0.2%). While 14.1% of homes smelled of smoke, 20% of homes had visible smoke detectors. Less than 1% of homes had illicit drugs visible. In 3.6% of homes medications were visible. Less than 1% of patients asked questions related to medication while 1.8% asked about assistance beyond the job description (transportation, finances). Less than 5% of visits resulted in social service referrals.

Table 2. Social conditions data from all visits, n= 1787

Social Condition	n (%)*
Does the patient live alone?	
No	625 (45.0)
Yes	614 (44.2)
Have you ever seen the patient have visitors?	
No	412 (29.6)
Yes	933 (67.0)
Is there an accessible walkway for entry?	
No	307 (22.2)
Yes	1049 (75.8)
Are windows and doors in proper working condition?	
No	94 (6.7)
Yes	1231 (88.3)
Have you observed clutter, trash or obscure findings in home?	
No	947 (68.5)
Yes	207 (15.0)
Is there electricity service in the home?	
No	13 (1.0)

Yes	1134 (83.1)
Is there proper AC or heat in the home?	
No	3 (0.2)
Yes	1126 (82.0)
Does the home smell of smoke (tobacco, marijuana, etc.)	
No	940 (68.2)
Yes	194 (14.1)
Have you observed smoke detectors in home?	
No	829 (60.3)
Yes	276 (20.1)
Have you visibly seen illicit drugs in the home?	
No	1128 (81.9)
Yes	4 (0.3)
Did the patient ask you any questions about medications?	
No	1363 (97.8)
Yes	12 (0.9)
Are medications visible in the home?	
No	1094 (79.4)
Yes	49 (3.6)
Does patient ask you for assistance beyond job description (e.g., transportation, financial assistance, cigarettes, etc.)	
No	1318 (95.6)
Yes	25 (1.8)
Did your engagement lead to a service referral?	
No	1194 (93.2)
Yes	54 (4.2)

*Total percent will not equal 100% because “Don’t Know” and “Not Applicable” are not presented in the table.

To understand the use of services, we describe patients with the most visits in terms of which pharmacy care team members they saw, the number of visits by care team member, and the average duration of the visit. See Table 3. The range of total time spent with the pharmacy care team for the top ten users ranged from 77 minutes to 1,043 minutes per person. The average time per visit ranged from 4.0 minutes to 18.0. Drivers were the most common visit type among those patients with the most visits from the pharmacy care team.

Table 3. Patient-specific summary information, 10 most frequent patients only.

Visits	Total time	Avg time	PharmD visits	Driver visits	CHW visits
58	1043	18.0	4	28	26
28	166	5.9	1	25	2
27	109	4.0	0	27	0
24	128	5.3	0	24	0
22	226	10.3	1	18	3
21	100	4.8	0	21	0
20	315	15.8	2	16	2
19	91	4.8	0	19	0
19	108	5.7	0	19	0
18	77	4.3	0	18	0

The pilot team began collecting cost savings data late in the project. Therefore, monthly cost data were only available for 5% (97) of all visits. PharmD providers were the only care team members who captured cost

data. PharmD providers captured cost data from 14% of unique patients. The program resulted in monthly savings in 52 (54% or those with recorded cost data) of all recorded cases. The average savings was $71.01 per case. In some cases, cost increase occurred. The largest cost increase was $27.05.

The data included documentation notes. Two-thirds (65%) of the documentation notes either indicated “no change” since the last patient encounter or the documentation field was blank. The additional 35% of entries included notes regarding medications, insurance, cost savings, patient condition, social conditions, and care coordination. Examples of notes are listed below.

Table 4. Example documentation notes by category

Category	**Note example**
Prescription	“100-day supply metformin”
Insurance	“Contact insurance to figure out why patient now has copay.”
Cost saving	“9 cost of Ventolin was $46, 340B copay was $29.69, for a savings of $17”
Patient condition	“Patient was sitting up on side of the bed. They had been up walking with walker, looking better.”
Social conditions	“Her daughter is there every day to help. Inside is neat as a pin. She always hugs me and tells me she loves me. Last year she asked me to deposit a check into her checking account. I did.” “Need to call housing authority and get screen door handle fixed. Potential health hazard if someone cuts themselves on it. Very high risk of cutting yourself just trying to get in door.”
Care coordination	“Social Security Office called, I explained to him there was no way for the patient to come into the office due to her health. He asked me if she would be willing to provide all of the information over the phone, I told him she would prefer this. He stated he would either be calling her that day (Friday) or Monday to go over all of the information with her. I asked him to please call me to let me know if she was confused or if there were any problems. I contacted the patient afterwards to give her a heads up that the Social Security Office would be contacting her within the next three days. I also let her know that she could call me if she needed any questions answered while he was calling her.”

Although less common, the notes reveal that patients trust the pharmacy care team. For example, a documentation note describes a patient calling the pharmacy care team to ask about a concerning call she received regarding insurance coverage.

> “Patient called and said that a woman called her house, knew her name, birthday and address and informed the patient that she would be coming to her to switch her current health insurance because "It was time to change." She asked if someone from the Pharmacy could come to her house during this time because neither she nor her daughter were very knowledgeable in this area. We decided to send a CHW who has helped with insurance problems in the past.”

Discussion

Although the data are limited, they describe who may be best served by a pharmacy care team that includes a CHW. Those who have medications delivered and live alone may benefit from the additional support of a CHW, primarily if they are living in poorer housing conditions. The documentation notes provide limited insight into the important role care coordination plays in serving patients with complex health needs and suggest that pharmacy care teams are considered a source of information and support for health care related concerns, such as health insurance coverage and cost questions. The social conditions documentation example reveals that not only is there trust between the pharmacy care team but also a sense of caring that may be particularly relevant for patients living alone.

Pilot studies are an opportunity to try a new approach. As such the data collected in a pilot study may change over time. Cost data were only captured from 5% of all visits because it was a variable added later in the study. While these data are limited, they do indicate that closer examination of cost saving and cost increase when adding a CHW to the team is warranted. While there may be social advantages to adding a CHW to the team, more research needs to be conducted on the cost effectiveness of expanding the pharmacy care team to include a CHW.

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