

Integrating Community Pharmacists into a Patient Centered Medical Home to Improve Outcomes for Patients with Hypertension

Donald Klepser, PhD¹, Allison Dering-Anderson, PharmD^{1,2}, Michael Taitel, PhD², Julie Oestreich, PharmD, PhD³, Erene Strouboulos, PharmD² and Kristi Rudkin, PharmD²

¹University of Nebraska Medical Center, Omaha, NE, ²Walgreens, Deerfield, IL, ³University of Kentucky, Lexington, KY

Background

- Hypertension is the leading cause of cardiovascular disease worldwide. Age-adjusted prevalence of hypertension in the United States among adults was approximately 30%. Among those patients, the rate of hypertension control was only 43.7%.¹ While the rate is slightly higher for patients receiving treatment, estimates of hypertension control for those patients are still less than ideal (~53%).
- There are a number of predictors of hypertension control, but consistent follow-up with providers, patient adherence to lifestyle changes, and adherence to medication regimens are chief among them.²
- Pharmacists working in collaboration with providers in ambulatory settings have proven effective at improving adherence and ultimately blood pressure control.^{3,4}
- A barrier to more widespread use of pharmacists in the management of hypertension is the lack of incentives for cooperation and coordination between primary care providers and pharmacists. It has been difficult for pharmacists to provide patients with tailored counseling and to make informed recommendations without access to relevant clinical information.^{5,6}
- The Accountable Care Organization (ACO) and Patient Centered Medical Home (PCMH) movements may provide opportunities to more fully integrate the community pharmacist into the primary patient care team.^{7,8}

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Research Objective

Pharmacists working, as part of interdisciplinary teams, in clinic settings have shown value in helping patients manage chronic conditions such as diabetes and hypertension. We sought to determine if integrating community pharmacists into a Patient Centered Medical Home (PCMH) improved outcomes for patients with hypertension.

Population Studied

Study participants were 123 hypertensive patients (83 intervention, 40 control) age 19 and above who were jointly served by a central Nebraska PCMH and a nearby Walgreens community pharmacy.

Study Design

Patients were randomized (2:1) to receive enhanced pharmacist intervention or usual care for 12-20 months.

For the intervention,

- The pharmacists queried the PCMH electronic medical record (EMR) for detailed patient information.
 - Specifically, they collected relevant diagnoses, target blood pressure, lifestyle modification goals, and blood pressure (BP) history. Pharmacists conducted face-to-face medication reviews with patients and provided an active medication list to patients and the PCMH that included vitamins, supplements, over-the-counter treatments, and prescribed medications.
- Pharmacists called patients who were late-to-refill prescribed medications.
- At every refill visit, pharmacists were alerted to consult with intervention patients on hypertension self-management and adherence; they also measured the patients' BP.
- Pharmacists communicated information related to patients' hypertension to the clinic's care coordinator.
 - Shared information included reconciled active medication list, adherence information, treatment recommendations, and BP readings.

PCMH EMR blood pressure readings and healthcare utilization (emergency room and unscheduled clinic visits) were collected throughout the study for all subjects and were used for analyses.

Chi square and t-tests were used to compare changes in blood pressure and healthcare utilization between the intervention and control groups.

Patient Demographics

- Gender composition for all patients was 59.3% female and 40.7% male.
- Patients were 20-84 years of age. Average age of all patients, on date of consent, was 58.77 years (58.89 intervention, 58.52 control).

Figure 1. Gender: Intervention Group

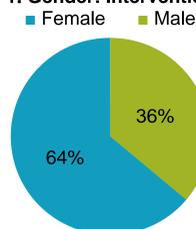


Figure 2. Gender: Control Group

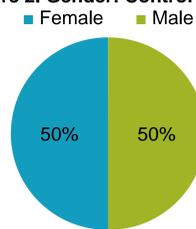
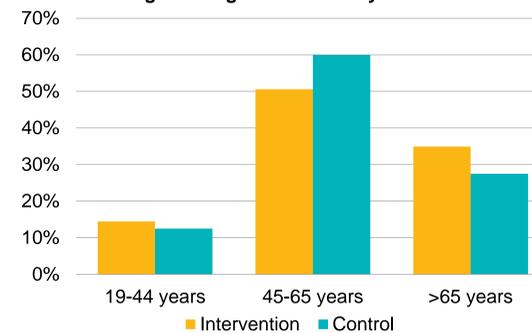


Figure 3. Age of Patients by Cohort



Principal Findings

Participants did not differ significantly at baseline for systolic or diastolic BP, the number at BP goal, or other characteristics compared.

Table 1. Baseline Blood Pressure

Patient Group	Average Systolic Blood Pressure Baseline	Average Diastolic Blood Pressure Baseline	% at Goal BP (128/76) Baseline
Intervention	128 (SD = 15.1)	76 (SD = 12.4)	79.2% (61/83)
Control	128 (SD = 16.8)	74 (SD = 10.4)	79.5% (31/40)
P Value	0.860	0.500	1.000

There was no difference in the changes in BP between the groups from baseline to the end of the study.

Table 2. Changes in Blood Pressure from Baseline to End of Study

Patient Group	Average Systolic Blood Pressure Change	Average Diastolic Blood Pressure Change
Intervention	1.54 (SD = 17.3)	-0.56 (SD = 12.3)
Control	-3.25 (SD = 19.6)	-0.94 (SD = 11.0)
P Value	0.219	0.882

Patients in the intervention arm had fewer ER visits and unscheduled clinic visits compared to patients in the control group.

Table 3. Healthcare Utilization During Study Period

Patient Group	Emergency Room Visits	Unscheduled Clinic Visits
Intervention	7.2% (6)	22.9% (19)
Control	22.5% (9)	47.5% (19)
P Value	0.021	0.007

Conclusions & Implications For Practice

It is possible to integrate free standing community pharmacists as another provider into a PCMH care team.

While integration of community pharmacists into a PCMH did not have significant impact on the blood pressure for relatively well-controlled patients, *the additional access to a health care provider*, for more frequent blood pressure monitoring and education, was associated with meaningful reductions in ER and unscheduled clinic visits.

Integrating community pharmacists into the care of patients with hypertension may reduce unwanted healthcare utilization.

Research Funding

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