

# Physician-pharmacist collaboration in a Nephrology clinic: impact on patient blood pressure control



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## BACKGROUND

- Uncontrolled blood pressure is a leading cause of chronic kidney disease (CKD) and progression to end-stage renal disease (ESRD)
- Pharmacist involvement in outpatient care has shown improvements in blood pressure control and adherence compared to no pharmacist involvement<sup>2</sup>
- One study followed 11 CKD patients over 6 months and showed decreasing blood pressure readings when a pharmacist was involved in their care<sup>1</sup>
- Overall, data of a pharmacist's presence in managing HTN in a CKD patient population is limited

Polypharmacy Medication Reconciliation	Assess Medication Adherence and Counselling
<b>Opportunities for Pharmacists in Nephrology</b>	
Resistant Hypertension Clinic	Blood Pressure Medication Titration

## PURPOSE

Evaluate the pharmacist and physician collaborative impact on blood pressure trajectory in a CKD patient population in the outpatient setting

## METHODS

- Quality improvement pre-post quasi-experimental study
- Pharmacists work collaboratively with the physician to help achieve goal blood pressure readings by the following ways:
  - More frequent blood pressure assessments
  - More frequent medication titrations
  - Assess adherence and tolerance to therapies
- Initial visit with the pharmacist must have occurred between January 30, 2017 – January 30, 2020
- Patient outcomes collected 6 months before and after the initial pharmacist visit
- Repeated measures analysis was conducted

## METHODS

### Inclusion Criteria

- 18 years of age or older
- Patients with CKD stages II-V
- At least 2 documented blood pressure readings greater than 140/90 mmHg before the initial pharmacist visit

### Exclusion Criteria

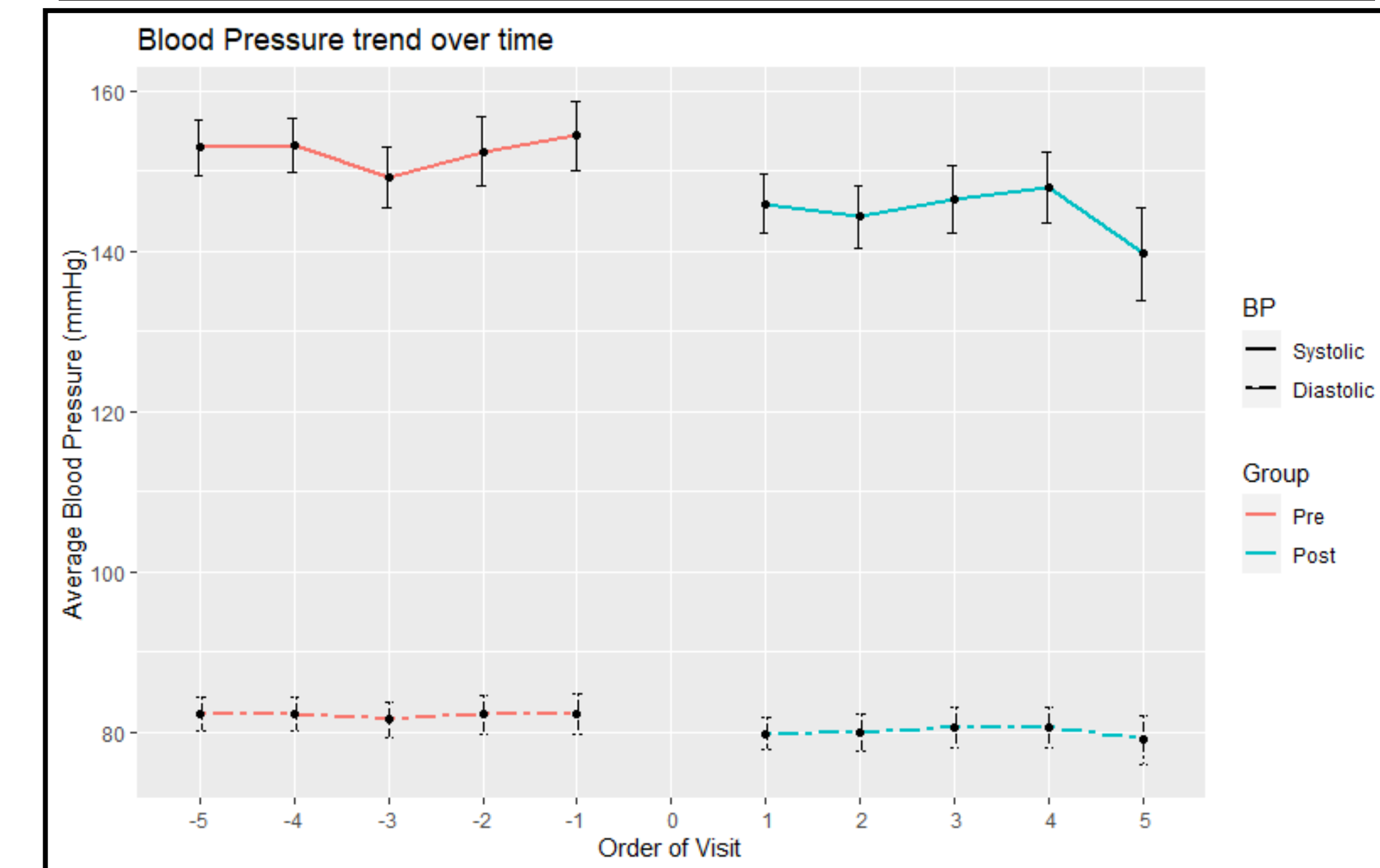
- Patients with ESRD
  - History of kidney transplant
  - Non-renal secondary causes of hypertension
- Primary Outcome:** Blood pressure trajectory before and after the initial pharmacist visit
  - Secondary Outcomes:** Change in kidney function, number and type of pharmacist made medication changes, and medication adherence

## PRELIMINARY RESULTS

- 153 patients included in final analysis

Baseline Characteristic	Mean (SD) or N (%)
Age (years)	63.93 (11.38)
Female	84 (54.9%)
Caucasian	106 (69.28%)
Systolic Blood Pressure (mmHg)	155.93 (22.05)
Diastolic Blood Pressure (mmHg)	82.33 (14.15)
eGFR (mL/min)	44.06 (15.87)
Anemia	56 (36.6%)
Diabetes	101 (66.01%)
Obesity	57 (37.25%)
ACE Inhibitor or ARB	121 (79.09%)
Dihydropyridine Calcium Channel Blocker	79 (51.63%)
Thiazide	58 (37.91%)
Beta Blocker	111 (72.55%)

## PRELIMINARY RESULTS



- Systolic blood pressure decreased by 14.73 mmHg on average over time after the pharmacist visit ( $P < 0.0001$ )
- Diastolic blood pressure decreased by 3.32 mmHg on average over time after the pharmacist visit ( $P = 0.1015$ )
- Secondary outcome results are undergoing analysis

## DISCUSSION

- Our pharmacy-driven collaborative intervention significantly decreased systolic blood pressure over time in CKD patients followed in the outpatient clinic
- Although diastolic blood pressure decreased over time, this improvement did not reach statistical significance
- Our results highlight the importance of the pharmacist's role in a nephrology clinic

## REFERENCES

- Hopley C, Andrews E, Klem P, et al. Evaluating the feasibility of a pharmacist-guided patient-driven intervention to improve blood pressure control in patients with CKD. Pilot and feasibility studies. 2019;5(1), 1-8.
- Morgado M, Rolo S, and Castelo-Branco M. Pharmacist intervention program to enhance hypertension control: a randomised controlled trial. International journal of clinical pharmacy. 2011; 33(1), 132-140.

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