

INTRODUCTION

- The 2017 American College of Cardiology/American Heart Association (ACC/AHA) guideline recommends the use of telehealth strategies to help improve blood pressure control for individuals with hypertension.¹
- A previous pilot study demonstrated that remote telemonitoring with hypertension management is associated with greater reductions in blood pressure (BP) than usual clinic-based care.²

OBJECTIVE

The objective of this study was to evaluate the long-term implementation of a remote telemonitoring program in routine clinical practice for patients with uncontrolled hypertension.

METHODS

DESIGN:

- A retrospective chart review was conducted between 2018 to 2022 at the University of Mississippi Medical Center (UMMC) – Center for Telehealth and included patients with uncontrolled hypertension that were enrolled in the remote patient monitoring (RPM) program.
- Patients enrolled in the telemonitoring program received a BP monitor with Bluetooth capability and a tablet to record daily BP measurements.
- BP medications were titrated based on a medication intensification algorithm.
- The interprofessional care team was composed of registered nurses, physicians, and pharmacists.

INCLUSION CRITERIA:

- Patients with a BP >130/80 mmHg at the last clinic visit prior to enrollment and successfully completed the RPM program

STATISTICAL ANALYSIS:

- The control group was identified using a propensity score matching on age, sex, race, and baseline blood pressure.
- After matching, a comparison between the last systolic and diastolic clinic BP measurements was conducted using a Wilcoxon rank-sum test.
- A sensitivity analysis was used to evaluate the program's short-term effectiveness on BP.
- A linear regression was utilized to estimate the effect of RPM on BP change, adjusting for baseline BP, age, sex, and race.

RESULTS

- 210 patients successfully completed the RPM program between 2018 and 2022.
- The most common reason for discharge, other than completion, was noncompliance.

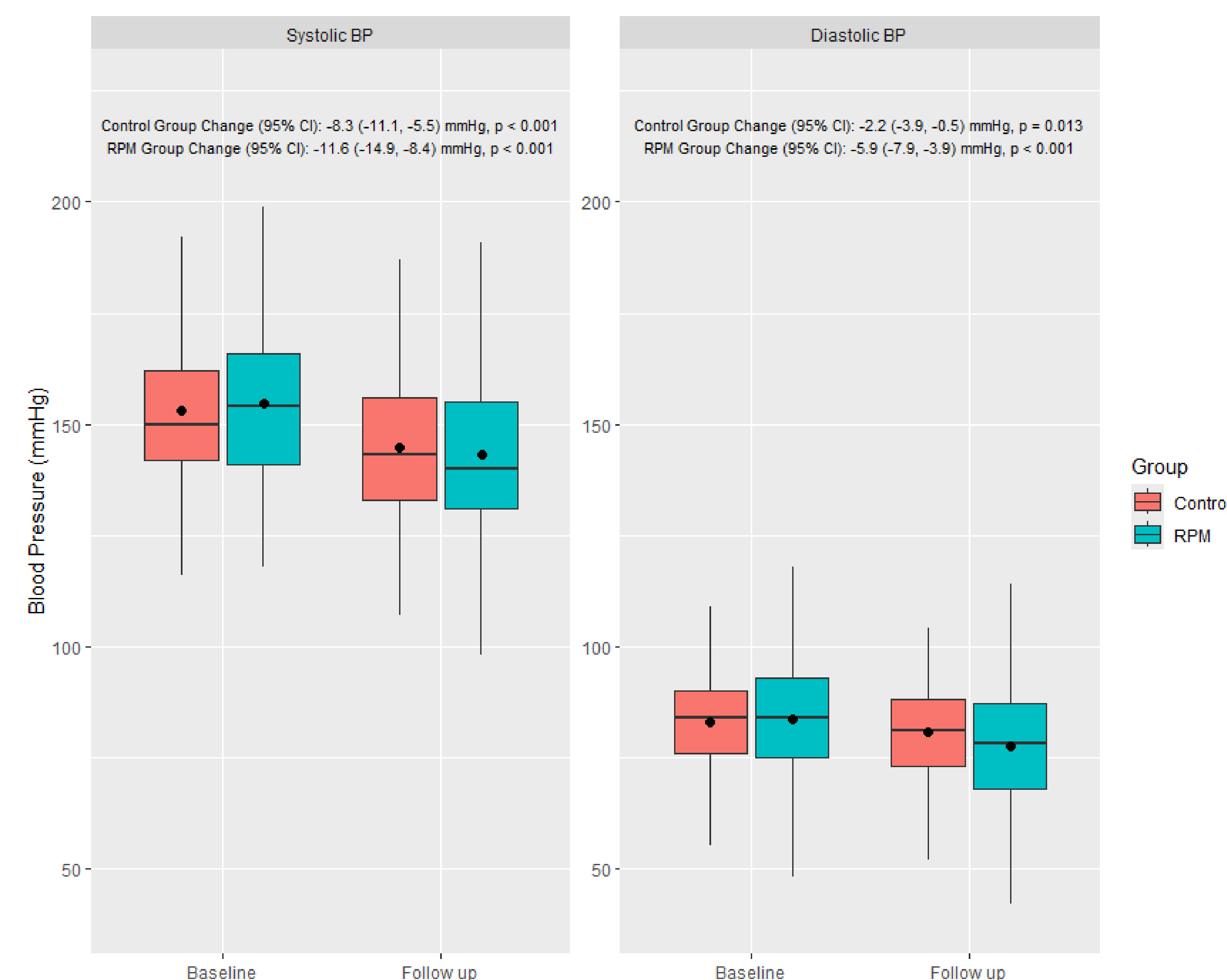
Figure 1: Participant Characteristics, no. (%)

	RPM Group (n=210)	Control Group (n=6,145)	P Value
Age, mean	62.6	59.6	<.001
Female sex	133 (63.3)	3875 (63.1)	0.936
Race/Ethnicity			<.001 ^f
Black	163 (78.4)	3960 (64.7)	
White	42 (20.2)	2089 (34.1)	
Other	3 (1.4)	74 (1.2)	
Resides in a federally designated rural area	44 (21.0)	2195 (35.7)	<.001

^fFisher's exact test

- 201 patients had both pre- and post-enrollment BP measurements measured in clinic.
- After matching for clinic BP, the RPM group and the control group had a mean baseline systolic BP of 154.7 and 153.1, respectively and a mean baseline diastolic BP of 83.6 and 83.0, respectively.

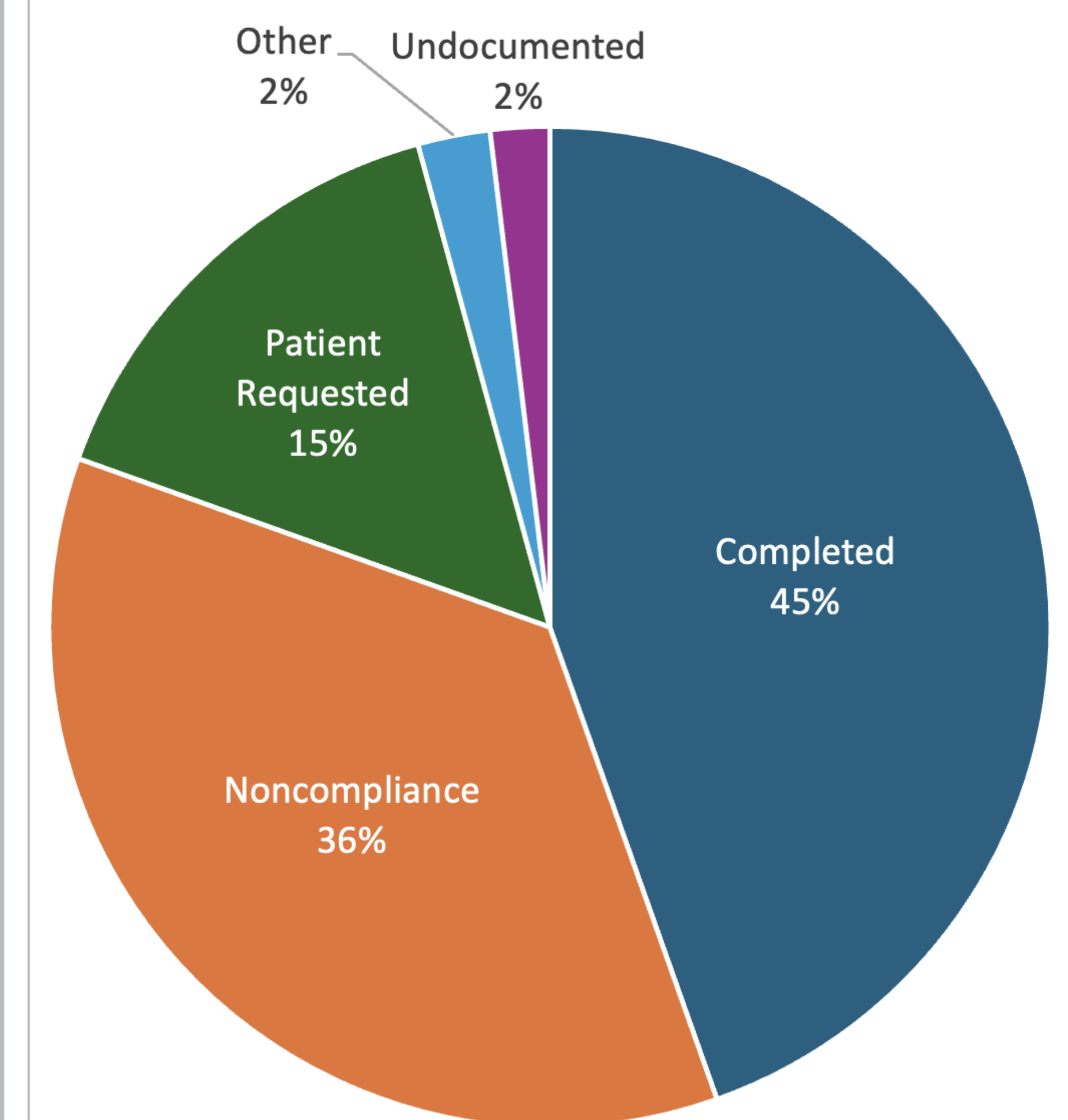
Figure 2: Change in BP



- Patients who returned to clinic within 30 days post discharge experienced a greater reduction by 6.72 mmHg in systolic BP and 5.53 mmHg in diastolic BP on average from baseline when compared to the control group.

RESULTS

Figure 3: Reasons for Discharge from RPM Program



DISCUSSION

- Patients receiving remote telemonitoring showed greater reductions in clinic systolic and diastolic BP when compared to the matched control group receiving routine clinical care only for BP management.
- These findings suggest that a remote telemonitoring program may help patients achieve better BP control.
- Further research is needed to understand the economic impact and long-term clinical outcomes associated with the use of a telemonitoring program for hypertension management.

REFERENCES

- Whelton PK, Carey RM, Aronow, WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Hypertension. 2018; 71(6): 13-115. doi.org/10.1161/HYP.0000000000000065
- Clark D, Woods J, Zhang Y, Chandra S, Summers RL, Jones DW. Home Blood Pressure Telemonitoring With Remote Hypertension Management in a Rural and Low-Income Population. Hypertension. 2021;78(6):1927-1929. doi:10.1161/HYPERTENSIONAHA.121.18153