Impact of Cost Sharing on Self-Measured Pressure (SMBP), Patient Cost and Prescription Abandonment for Home BP Monitor in a Large FQHC

Daniel Smith, PhD MBA[1], Nitish Bhargava, BS[2], Vincent Ait Ouamara, MPH[2], Emily LaFentres, MPH[2], Subash Acharya, MPH[2], Lisa Soltani, MD MPH[2]

[1]A.T. Still University College of Graduate Health Studies, [2]A.T. Still Kirksville College of Osteopathic Medicine, [3]El Rio Health Department of Internal Medicine

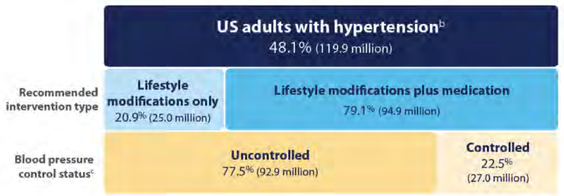
BACKGROUND / ABSTRACT

Hypertension is a leading cause of cardiovascular disease affecting nearly half of U.S. adults [1]. Self-measured blood pressure (SMBP) is a recommended cost-effective tool for the management of hypertension.

Despite the known benefits of home SMBP devices for hypertension management, inconsistent health insurance coverage hinders widespread use.

Estimated Hypertension Prevalence, Treatment, and Control (Blood Pressure <130/80 mm Hg) Among US Adults[a]

Applying the criteria from the American College of Cardiology and American Heart Association's (ACC/AHA) 2017 Hypertension Clinical Practice Guideline - NHANES 2017- March 2020



Data source: National Center for Health Statistics, Centers for Disease Control and Prevention, National Health and Nutrition Examination Survey (NHANES) 2017-March 2020. Definitions: ACC/AHA criteria adapted from Ritchey MD, Gillespie C, Wozniak G, et al. Potential need for expanded pharmacologic treatment and lifestyle modification services under the 2017 ACC/AHA Hypertension Guideline. *J Clin Hypertens*. 2018; 1377-1391. https://doi.org/10.1111/jch.13364

PURPOSE & OBJECTIVES

This study aims to quantify the impact of cost-sharing on the fill rate of SMBP devices in the patient population of a large Federally Qualified Health Center (FQHC).

The findings may inform policies aimed at increasing access to SMBP devices, in turn, reducing hypertension management disparities. Measuring the impact of cost sharing on preventative tools such as SMBP could spur the investment into preventative hypertension care. The increased coverage for SMBP is estimated to reduce heart attacks by 4.9% and strokes by 3.8%, leading to ~$8,000 per person healthcare cost savings over 20 years[1].

We aim to demonstrate the impact of cost sharing in SMBP prescriptions and how it will impact prescription fill rates at a Federally Qualified Health Center.

HYPERTENSION CONTROL FACTS

- **Approximately 119.9 million adults (about half) have hypertension in the U.S [1].**
- **3 in 4 of adults with hypertension don't have their blood pressure controlled putting millions of people at risk for complications from uncontrolled high blood pressure.**
- **Hypertension is associated with $219 Billion in healthcare related costs in 2019, accounting for 12% of total expenses.**
- **Compared to current treatment, SMBP monitoring would yield a ROI of $7.50 to $19.34 per $1 spent over 10 years[3].**

METHODS / MATERIALS

This study was conducted in a large Federally Qualified Health Center (FQHC) in 2023 and 2024 to assess the impact of cost-sharing on the prescription fill rate of self-measured blood pressure (SMBP) devices.

Data were extracted from electronic health records for hypertensive patients who received an SMBP prescription (2023: 2619 patients; 2024: 2357 patients). The data included prescription orders, order fills, and order to fill rate per week for the 2023-2024. We compared pre-cost-sharing (2023) and post-cost-sharing (2024) fill rates using descriptive statistics and an unpaired t-test using 'R' version 4.2.3.

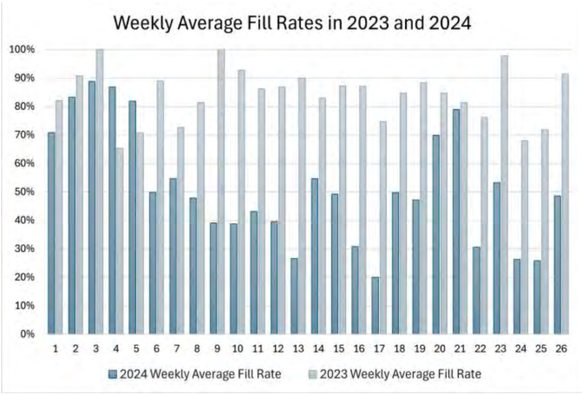


Figure 2. Order percentage comparison between 2023 (pre-cost sharing) and 2024 (post-cost sharing)

RESULTS

We compared the data between 2023 and 2024 looking at the impact of self-measured blood pressure (SMBP) orders vs fill rate when cost sharing was implemented in a large FQHC.

In 2023 (pre-cost sharing) we had 2619 orders with 2357 of those filled giving us a 90% fill rate. In 2024 (post-cost sharing) we had 1630 orders with 974 filled giving us a 59.8% fill rate and a ~30% drop-in fill rate compared to 2023.

When using a linear model fit, we found the mean difference between the groups to be 32% higher on average pre-cost sharing with a confidence interval of 95% ($P= 2.2*10^{-16}$).

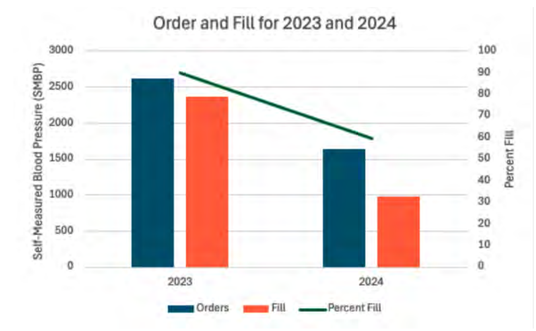


Figure 3. Overall order and fill rate comparing 2023 (pre-cost sharing) and 2024 (post-cost sharing) with overall fill percentage with a 90% and 60% order fill rate, respectively. There was a significant trend of greater pickups in 2023 compared to 2024. There were also greater total orders in 2023 with 2619 vs 1630 in 2024

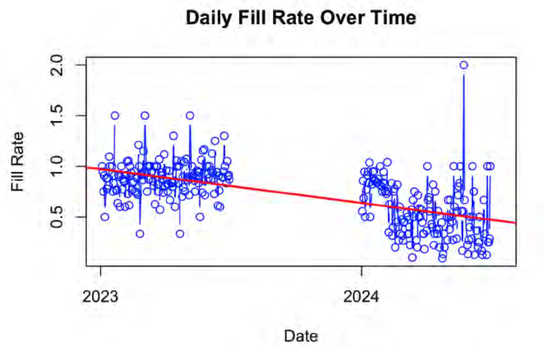


Figure 4. Linear model fit based on date and fill rate daily. Blue points demonstrate daily fill rate and redline demonstrates overall linear trend. The mean difference between the groups is approximately 0. 324(32% higher fill rate in 2023 vs 2024), with a 95% confidence interval of [0.2 78, 0.3 9 6]. This indicates that the 2023 values are, on average, higher than the 2024 values.

Our results demonstrated that cost-sharing would negatively impact the fill rate due to placing greater financial burden on patients as seen by the decreased prescription fill rate post-cost sharing.

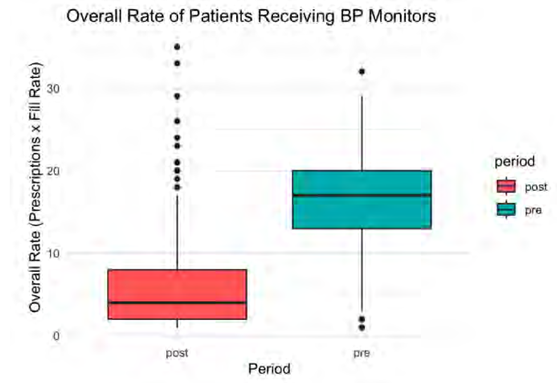


Figure 5. Overall Rate of Patients Receiving BP Monitors pre-cost sharing (2023) and post-cost sharing (2024)

DISCUSSION

Overall, fill rates were significantly higher in the first year (2023) of the SMBP program in comparison to the second year (2024). It is not fully known at this time whether the decline in fill rate can be attributed to provider knowledge of the ongoing program or driven by fewer patients in need of the SMPB devices.

Cost-sharing programs such as this does pose the question of how health providers can successfully make devices, such as blood pressure monitors, more accessible for those who may not be able to afford them traditionally, but also a tool for providers to provide health education on hypertension.

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