

# UVM ScholarWorks

## Creating EPIC smart phrases to improve patient understanding of antihypertensive side effects

Item Type	Presentation
Authors	Warfield, Andrew
Publisher	University of Vermont
Rights	Attribution 4.0 International
Download date	2026-05-13 09:59:19
Item License	<a href="http://creativecommons.org/licenses/by/4.0/">http://creativecommons.org/licenses/by/4.0/</a>
Link to Item	<a href="https://hdl.handle.net/20.500.14849/9893">https://hdl.handle.net/20.500.14849/9893</a>

# Creating EPIC smart phrases to improve patient understanding of antihypertensive side effects

Andrew Warfeld

Host Clinic: Porter Medical Center Vergennes Primary Care; Vergennes, VT

January 2026

Project Mentor: Kate Geschwind MD

# Problem Identification

- Hypertension (HTN) affects nearly half of U.S. adults, and more than half of these patients have sub-optimal blood pressure (BP) control<sup>1</sup>
- Clinic blood pressure readings may not accurately represent somebodies baseline BP and those with higher home readings may be at increased risk<sup>2</sup>
- Time is limited in the primary care setting and after visit summaries can help fill gaps in communication and patient understanding

# Public Health Cost

- In 2019, annual costs of HTN were about 219 billion dollars and since then the prevalence of HTN nationally has risen<sup>3</sup>
- In 2019, annual healthcare related costs for people with HTN were 2,759 dollars higher than those without HTN<sup>3</sup>
- Nearly half of Vermont adults are on antihypertensives<sup>1</sup>
- HTN increases risk for cardiovascular disease(CVD) including stroke and heart attack.
  - Medicare cost of CVD per capita in 2018 was between 19,683 and 31,882 dollars<sup>4</sup>

# Community Perspectives

- Interviews with one clinic physician and one clinic pharmacist
- Home blood pressure cuffs are often affordable and can be provided free of charge for those with Medicaid at our clinic
- Patients being started on antihypertensive medications are given a lot of new information about how to measure home BP and what side effects to monitor for
  - This information is easy to forget or misremember
- Clear simple instructions which can be easily referenced by the patient through after visit summaries (AVS) at anytime in the future can limit unnecessary visits and patient anxiety

# Intervention and Methodology for Implementation

- Patient education time is limited clinic
- We created EPIC Smart phrases detailing which medication (name and class of medication) is being added to the AVS
- Patient friendly language
- Concerning and normal side effects discussed
- Example Smart phrase
  - AVSACEI ... after visit summary detailing what patients can expect and what side effects to monitor for when starting an ACE inhibitor

# Results and Reflection

- **This is a new intervention, so we have not collected data yet**
- **We expect these smart phrases to provide a reference for patients after they leave the office**
- **We hope that these smart phrases will help to reassure patients experiencing mild or un concerning side effects (such as mild lightheadedness that is not persistent)**
- **We also hope that patients experiencing more concerning side effects (swelling of lips/tongue or SOB in a patient started on an ACE inhibitor) will be empowered to call the clinic and/or seek immediate medical attention**

# Future Directions

1. Integrate patient-reported BP readings into the EMR
2. Expand education to include device selection and validation
3. Evaluate long-term impact on BP management and outcomes
4. Interview clinic patients who have interacted with these smart phrases to analyze the impact it has had on their level of understanding or anxiety about HTN

# References and Citations

1. Sekkarie A, Fang J, Hayes D, Loustalot F. Prevalence of Self-Reported Hypertension and Antihypertensive Medication Use Among Adults - United States, 2017-2021. *MMWR Morb Mortal Wkly Rep*. 2024 Mar 7;73(9):191-198. doi: 10.15585/mmwr.mm7309a1. PMID: 38451865
2. Liu J, Brettler J, Ramirez UA, Walsh S, Sangapalaarachchi D, Narita K, Byfield RL, Reynolds K, Shimbo D. Home Blood Pressure Monitoring. *Am J Hypertens*. 2025 Mar 17;38(4):193-202. doi: 10.1093/ajh/hpae151. PMID: 39657954
3. Wang Y, Lee JS, Pollack LM, Kumar A, Honeycutt S, Luo F. Health Care Expenditures and Use Associated with Hypertension Among U.S. Adults. *Am J Prev Med*. 2024 Dec;67(6):820-831. doi: 10.1016/j.amepre.2024.07.005. Epub 2024 Jul 11. PMID: 39002890
4. Centers for Medicare & Medicaid Services. Mapping Medicare Disparities by Population. Accessed July 19, 2024. <https://data.cms.gov/tools/mapping-medicare-disparities-by-population>