

Controlling Blood Pressure Among US Veterans

Evaluating VISN 1's PMC Note Tool

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Introduction

VA Boston Healthcare System (VISN 1) is dedicated to improving the lives of veterans and their families.

- 5 community outpatient clinics in Boston, Framingham, Lowell, Plymouth and Quincy
- 61,479 patients served (FY 2021)
- VA facilities and programs maintain accreditation from the Joint Commission, Long Term Care Institute, National Commission for Quality Assurance and many more.

Background: Hypertension

- Hypertension is an important public health challenge in the United States due to its strong association and prevalence of cardiovascular disease, stroke, and early death and was the cause of death for 516,955 people in the United States in 2019 (CDC, 2021)
- Nearly half of adults in the United States (47%, or 116 million) have hypertension, defined as a systolic blood pressure greater than 130 mmHg or a diastolic blood pressure greater than 80 mmHg or are taking medication for hypertension (CDC, 2021)
- Among Veterans, hypertension is the most common chronic condition, affecting more than 37% of the Veteran population (VA health services research & development, 2011)



Related Literature

Complications

Hypertension is a medical condition that significantly increases the risks of heart, brain, kidney and other diseases.

- Stroke as a cause of long-term disability is a growing public health burden. Therefore, focusing on prevention is important. The most prominent aim of this strategy is to treat modifiable risk factors, such as arterial hypertension, the leading modifiable contributor to stroke (Buonacera, 2019).
- Hypertension triggers a series of pathophysiological ocular modifications affecting significantly the retinal, choroidal, and optic nerve circulations that result in a range of ocular effects (Konstantinidis, 2016)
- High blood pressure is the second leading cause of kidney failure in the United States after diabetes (CDC, 2019)

Veterans Benefit to Blood Pressure Monitoring

- Individuals who experienced a combat injury (high exposure intensity) were 28% to 46% more likely to report having hypertension (Howard, 2020).
- Age is a related factor, where 90% of adults between ages 80-90 develop hypertension (Tschanz, 2020).
- Compared to nonveterans, veterans have a 65% higher chance of developing hypertension. (DeLaughter, 2021)

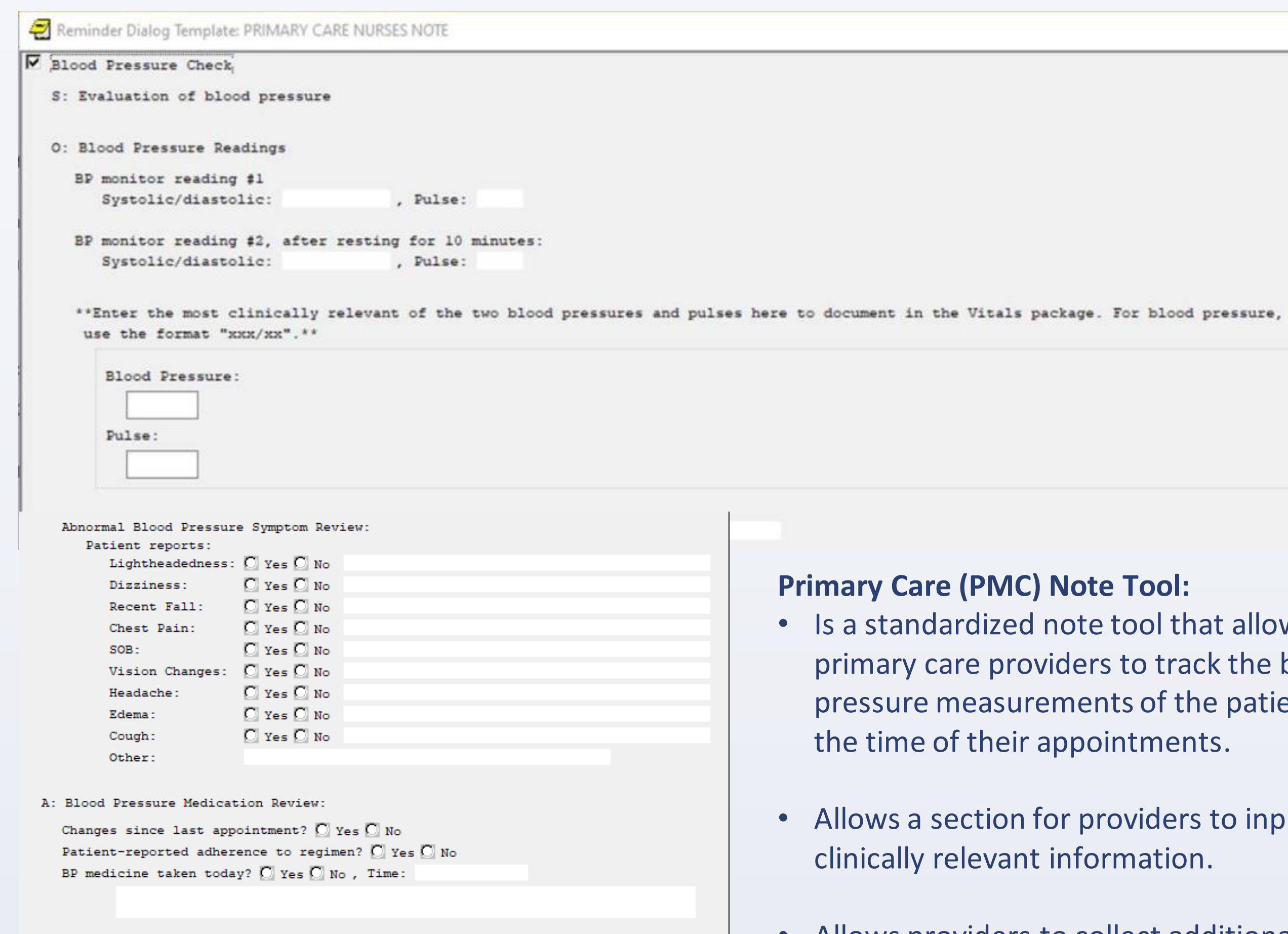
Internship Objectives

- To gain an understanding in implementing methodology of highly reliable organizations (HRO) with the ultimate goal to build a "zero harm" environment.
- Explore careers in the health field, while gaining project development, and project management experience.

Project Objectives:

- To conduct a data analysis of the implementation of the PMC Note Tool for assessing hypertension and to improve and reinforce the systematic practice of blood pressure measuring.
- Provide project management support to the organization wide 'Improving Veteran Blood Pressure Rate' project.

PMC Note Tool and Methods and Materials for Assessing Hypertension:



Reminder Dialog Template: PRIMARY CARE NURSES NOTE

Blood Pressure Check

S: Evaluation of blood pressure

O: Blood Pressure Readings

BP monitor reading #1
Systolic/diastolic: _____, Pulse: _____

BP monitor reading #2, after resting for 10 minutes:
Systolic/diastolic: _____, Pulse: _____

Enter the most clinically relevant of the two blood pressures and pulses here to document in the Vitals package. For blood pressure, use the format "mm/nn".

Blood Pressure: _____

Pulse: _____

Abnormal Blood Pressure Symptom Review:

Patient reports:

Lightheadedness: Yes No

Dizziness: Yes No

Recent Fall: Yes No

Chest Pain: Yes No

SOB: Yes No

Vision Changes: Yes No

Headache: Yes No

Edema: Yes No

Cough: Yes No

Other: _____

A: Blood Pressure Medication Review:

Changes since last appointment? Yes No

Patient-reported adherence to regimen? Yes No

BP medicine taken today? Yes No . Time: _____

Primary Care (PMC) Note Tool:

- Is a standardized note tool that allows primary care providers to track the blood pressure measurements of the patient at the time of their appointments.
- Allows a section for providers to input most clinically relevant information.
- Allows providers to collect additional patient data pertaining to their lifestyle.
- Allows providers to record veteran blood pressure measurements taken using home blood pressure cuff issued by VISN 1.

In the PMC Note tool: During outpatient visits

Healthcare provider measures Veterans BP upon arrival. If BP reading 1 is outside of clinical relevant range (140/90) provider is to record it, wait 10 minutes and then take BP reading 2 and document reading 2 in the PMC tool

Provider can also record veteran BP measurements from the home BP cuffs in the PMC note tool. Measurements are given to the healthcare provider at the time of outpatient visit.

Patient Recorded Outcomes:

After taking BP reading 1: Blood pressure is usually higher than 140/90

- potentially due to patients anxiety, rushing to appointment, or caffeine in their system.

After taking BP reading 2: Blood Pressure is more accurate and clinically relevant

- potentially due to patients relaxing more after the period between reading 1 and 2.

Additional PMC Notes:

Additional PMC notes are recorded from the home blood pressure cuff implementation.

- During outpatient visit, veteran recalls BP measurements.

- Measurements are recorded in the PMC by date and systolic/diastolic measurements.

- Home BP measurements can help providers and supporting teams get a full scope understanding of the veterans blood pressure.

Process Plan Outlined:

- Broke down the data from Blood Pressure PMC Note excel spreadsheet.
- Transfer the data from Primary care "reading 1" and "reading 2" into an organized excel document.
- Analyzed data, comparing the first blood pressure measurement to the second measurement after a 10 minute wait period.
- Focused on the diastolic change, with higher diastolic reading there's potential association with a risk of heart disease.

PMC Note Tool Effectiveness

PMC Note Tool Implementation

- Implementing the tool was beneficial in collecting and observing veterans blood pressure data.
- Data analysis, providers, quality management, and supporting teams were able to get a wide look at veterans blood pressure in VISN 1's.
- We were able to get a better understanding of veteran's blood pressure, identifying that the best way to gain clarity in the management of blood pressure is to check the measurements twice.
- Home blood pressure readings with the addition of outpatient visits helped us gain understanding of blood pressure rates on a wider scale. It highlights that tracking these measurements is significant since we are able to see positive or negative blood pressure trends and target preventative interventions.

Conclusion

This project focused on understanding and identifying methods of improvement in areas such as data collection, recording, and management of high blood pressure in the veteran population.

- Hypertension can lead to arterial and cardiac complications, such as stroke, myocardial infarctions, peripheral heart disease, and chronic heart failure. The early intervention, prevention, and treatment of hypertension reduces the risks of these complications. This can be done with regular blood pressure monitoring for positive or negative trends.

Action 1:

- Promote the education of understanding and accurately taking blood pressure measurements of veteran patients.

Lesson Learned

- Veteran blood pressure was not being documented by providers at the time of the outpatient appointment.
 - Leaves room for error on future blood pressure reading input into the PMC tool
- Standardize the documentation processes for the PMC tool and Quality Management
 - Implement a system which prompts staff to check blood pressure twice to indicate most clinically relevant reading.
- It is not standardized to recheck the blood pressure in all settings.
 - PMC tool is not yet used by all services, so there is potential for healthcare providers to only document the first blood pressure reading, which is typically high.

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