Implementation of standardized protocols for office blood pressure measurement

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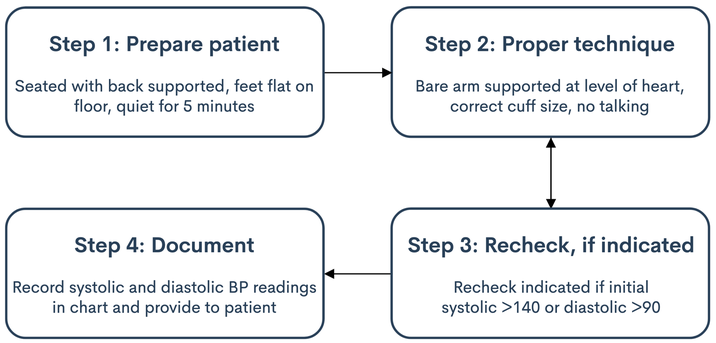
Introduction

- Hypertension is a very prevalent condition with modifiable risk factors that often remains asymptomatic for years while contributing to many complications.
- Accurate blood pressure (BP) measurement is a critical step for diagnosis and management of hypertension. Errors in measurement can lead to further errors in diagnosis and clinical decision-making and therefore to patient harm.
- BP measurement errors are a common issue in the ambulatory setting[1, 2, 3]. There are existing evidence-based recommendations for accurate in-office BP measurement, including practice guidelines issued by the American College of Cardiology (ACC) and American Heart Association (AHA), that can readily be implemented in primary care settings[1].

Methods

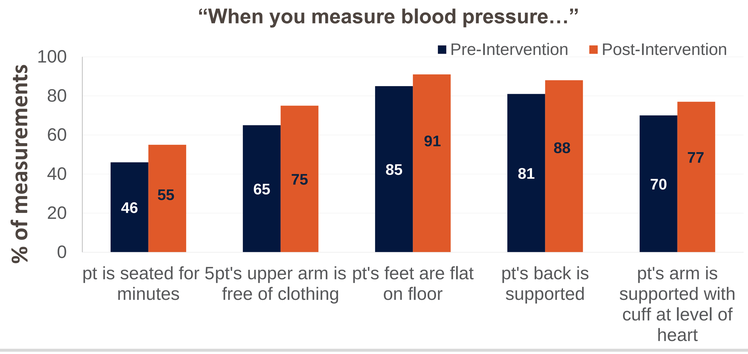
- ACC and AHA practice guidelines include procedural recommendations for in-office BP measurement. These recommendations include proper patient positioning and correct cuff size, positioning, and placement on the skin.
- Staff, residents, and faculty at our FM continuity clinic were trained based on ACC/AHA guidelines for proper BP measurement procedure. Pre- and post-intervention assessments were done to identify knowledge gaps and need for further training.

Figure 3 – BP measurement procedure



Results

Figure 1 – Survey results



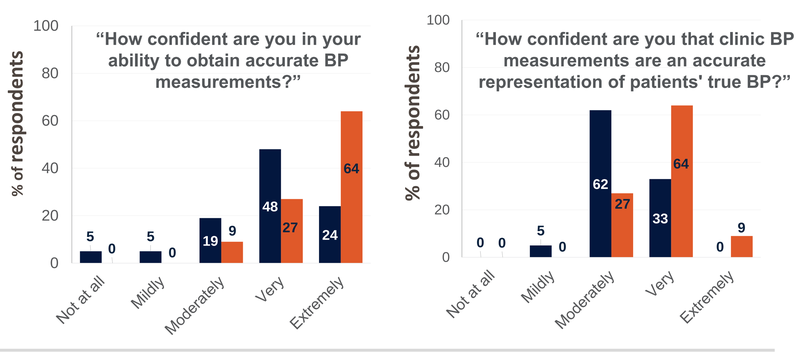


Figure 2a – Pre-intervention chart review results

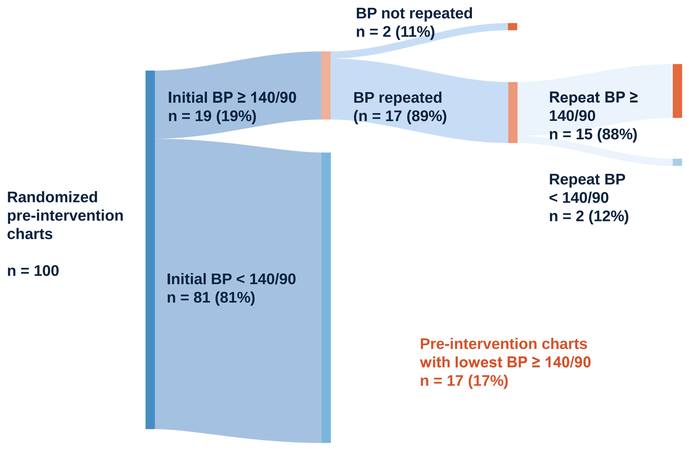
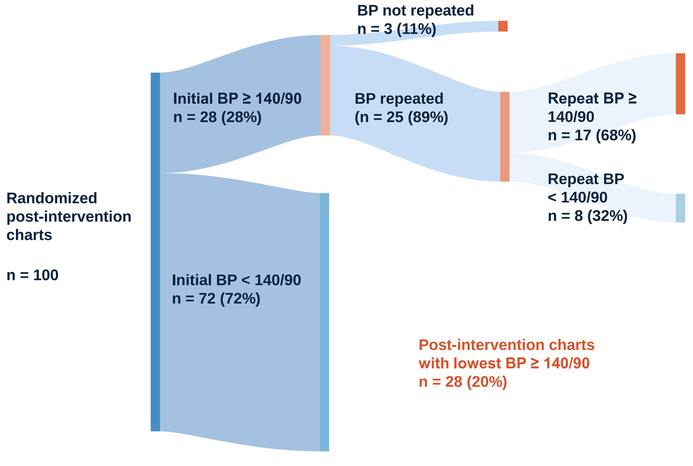


Figure 2b – Post-intervention chart review results



Discussion

- Brief training sessions were beneficial with improvement in self-reported confidence in measurement accuracy. The rates of indicated blood pressure recheck during pre- and post-intervention were similar at 90%.
- In the pre-intervention group, 88% of those with elevated BP initially were again elevated on recheck. In the post-intervention group, 68% remained elevated after recheck. This measurement was likely a more accurate representation of the true value.
- The results were not statistically significant. The small sample size and limited time frame were both likely contributory.

Limitations / Future Directions

- Project limitations included its focus on individual trainings, BP measurement procedure self-recall, and assessment of adherence using chart review. Direct observation to assess standardized procedure adherence would be more accurate, however, this is time intensive and more prone to subjectivity. Trainings also involved a small number of participants.
- A future direction for this project is to reach beyond measurement and investigate rate of appropriate follow-up for elevated BP, including focusing on ambulatory best practices.

Conclusion

- Ambulatory clinic encounters serve an essential role in screening patients for elevated BP and identifying patients with hypertension. Accurate BP measurement is important to avoid under- and over-diagnosis of hypertension and to implement appropriate interventions.

References

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