Fall 12-14-2018

Implementation of High Blood Pressure Guidelines in Clinical Practice

Jessica Walker

Implementation of High Blood Pressure Guidelines in Clinical Practice

Jessica Walker MSN, RN, FNP-BC, DNP Student

Introduction

Hypertension affects almost one third of Americans over 18 years of age and is uncontrolled in nearly half of those cases (Centers for Disease Control and Prevention, 2014). According to the 2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults, elevation of blood pressure is noted to have a continuous association with increased cardiovascular risk. Boggia et al. (2014) found that blood pressure level is the cardiovascular risk factor most modifiable by lifestyle measures and drug treatment through use of systematic review and is, therefore, where clinicians should focus management. This quality improvement project implemented 2017 Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults through education and support to clinic practitioners and nursing staff to change practice to be congruent with the guidelines.

Literature Review

The 2017 ACC/AHA guidelines for the management of high blood pressure emphasize the importance of lifestyle interventions and early intervention with a focus on getting blood pressure to goal. The guidelines also change in focus from previous guidelines to encourage overall consideration of ASCVD risk and pharmacologic treatment when risk is 10% or greater for primary prevention in those with SBP >130 mm Hg or DBP >80 mm Hg or for secondary prevention in those with existing CVD. Pharmacologic treatment is also recommended for SBP >140 mm Hg or DBP >90 mm Hg. Evidence for the 2017 ACC/AHA practice guidelines are

strong and heavily based on information gathered from landmark research and randomized control trials.

Changing practice requires consideration of barriers and facilitators to practice. Barriers include lack of visibility, insufficient training, little support for change and lack of supervision. Facilitators include providing progress updates and reinforcement to those implementing the change as well as providing research-based background for the change, soliciting feedback and input from local experts, using local "champions" to support improvement and providing training in a way that minimizes time away from patient care.

The strength of evidence for the studies regarding implementation of evidenced based practice is strong. The evidence includes systemic reviews from Braithwaite et al., Cranley et al., and Ryan, et al. as well as qualitative studies from Adams et al., Johnston et al., and Liang et al. Some limitations to these studies include use of a single search term in targeted journals by Braithwaite et al. while Cranley et al. did not include grey literature or conduct a quality appraisal of included studies. Limitations to qualitative studies included small sample size by Johnston et al., lack of standardized targets by Liang et al., and use of an inpatient setting by Adams et al.

Project Method

The purpose of this quality improvement (QI) project was to update clinical management of patients with high blood pressure in accordance with 2017 AHA/ACC Clinical Practice Guidelines. The goal was to improve high blood pressure management in comparison to practice prior to project implementation. This QI project was conducted in a private primary care rural health clinic in Southern Illinois. A proposal to conduct research involving human subjects entitled: "Human Subjects DNP Project," was submitted and reviewed by the Institutional

Review Board (IRB) at Southern Illinois University Edwardsville and found to be exempt from IRB review on April 10, 2018.

An in-service education session on 2017 Guidelines for the Management of High Blood Pressure was provided to clinical staff including one physician, two nurse practitioners, five licensed practical nurses and four medical assistants on June 12, 2018. Information presented at the in-service included: recommendation to start pharmacologic therapy at blood pressure readings of 130/80 mm Hg if ASCVD risk is greater than 10% or existing cardiovascular disease and a demonstration of how to calculate ASCVD risk. In addition, the AHA/ACC pooled cohort 10-year risk calculator was installed to computer desktops or smart phones, for providers. "Seven simple tips to get an accurate blood pressure reading" (American Medical Association, 2016) was posted in exam rooms and proper measurement and documentation techniques were reviewed with clinical staff. Review and discussion of recommended non-pharmacological treatment methods including the DASH diet, increased physical activity, weight loss and reduction of alcohol intake with proper documentation of patient education in the chart was also conducted. Reinforcement and follow up sessions were provided at the daily huddle meetings and as needed.

A focus group interview was conducted post intervention. Several open-ended questions were presented in the focus group to guide the discussion. Questions sought to determine how providers and staff changed their practice, barriers to change, patient impact, problems encountered and how to address these problems. In addition, EMR data was gathered to evaluate quantifiable changes in practice. Data gathered included a comparison of frequency of repeat blood pressures at office visits when initial reading was greater than or equal to 130/80 mm Hg, documentation of patient education when patient was seen for hypertension diagnosis and adding

the Atherosclerotic Cardiovascular Disease (ASCVD) Risk Calculation to the patient's health maintenance list. This data was compared for the time period from May 8, 2018 to June 12, 2018 (in-service training) and June 12 to July 10, 2018 (the following month's staff meeting).

Evaluation

During the focus group discussion several outcomes emerged. Staff found that some of the recommendations supported their current practice. Both clinical support and healthcare providers reported they rechecked elevated blood pressures using both arms and provided patient education prior to receiving the in-service. Staff reported the proper blood pressure measurement technique signs in the rooms were helpful. Staff identified barriers to implementing new guidelines, which included forgetting to carry a stethoscope and difficulty locating small adult cuffs.

Calculating the relative ratio (RR) for patient education and rechecking blood pressure when reading is greater than or equal to 130/80 mm Hg before and after in service yielded relative risk ratios of 1. Therefore, there is no association between the provided in service and rates of providing patient education or staff rechecking of blood pressures. These findings support the staff assertion that the 2017 guidelines are in alignment with current practice in the clinic (see table one).

Providers noted difficulty with finding time to calculate ASCVD risk to use with decision- making. Three of four primary care providers in the office reported use of the risk calculator and found some benefit to support clinical decision-making. Providers and staff note that ASCVD risk calculation only applies to a limited group of those from age 40-79 for primary prevention. ASCVD risk was calculated and recorded 18 times by the three of four providers.

The ASCVD Calculator is currently accessed through use of a software application or online web-based program. Integration into the EMR would be of benefit to ensuring proper information is transcribed as well as reducing the time burden on staff. Despite the practice policy of keeping a large and regular adult cuff in every room, clinical staff reported that the correct cuff was often unavailable.

Table 1

Comparison of Pre and Post Quality Improvement Project Measures

	Pre QI Project 5/8/18-6/11/18	Post QI Project 6/12/18-7/10/18
Repeated BP readings	851/899 (95%)	862/913 (95%)
Patient Education	398/444 (90%)	384/442 (87%)
ASCVD Risk Calculation	0	18

Impact on Practice

The immediate impact on practice from this project includes awareness of the change in Clinical Practice Guidelines for the management of high blood pressure readings in the office. The ASCVD risk calculator is now installed with a desktop shortcut on all computers for ease of use. There is a standard location to record this information for use in clinical decision-making. This project reinforced the need for proper blood pressure measurement and patient education. New signage in the rooms supports staff in their interactions with patients to obtain proper readings.

The expected long-term impact is improved management of patients with elevated blood pressure readings through application of High Blood Pressure Guidelines. ASCVD risk calculation should be determined for more patients as an aide in clinical decision making for

decreasing adverse cardiovascular outcomes. Signage will remain as a reminder and tool to support proper measurement of blood pressure. This project could be replicated at various levels including in-service at other similar clinics or at larger facilities looking to implement new high blood pressure guidelines into clinical practice.

Conclusions

This QI improvement project was implemented in a private physician owned rural family practice. The results may not be generalizable outside this setting due to differences in resources and patient population. Recommendations for practice include continued use of current High Blood Pressure Management Guidelines for the care of patients with elevated blood pressure readings. Providers who used ASCVD risk in discussion with patients had positive reports of the tool being useful in their patient care decision-making and ability to present the information to the patient to discuss risks and benefits of treatment. The importance of keeping various sized blood pressure cuffs easily available was also demonstrated.

Overall, the QI project was well received, and new guidelines were implemented into practice. Identified needs include further teaching to reinforce new concepts as well as investigation into the consideration of adding small blood pressure cuffs to standard exam room equipment. Through guidelines review staff was validated in current practice of patient education for disease management as well as proper blood pressure measurement. Use of ASCVD calculation for further risk stratification in those with Stage 1 hypertension was introduced and implemented into practice.

Author Contact Information
Jessica Walker: jwalker@lfpc.net