



# Improving Hypertension Management in Urgent Care Settings through Provider Education: A Quality Improvement Initiative

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## Abstract

**Background:** Hypertension affects nearly half of U.S. adults and is a major risk factor for heart disease and stroke, leading to approximately 500,000 deaths annually. Despite this, many healthcare providers lack confidence and knowledge in managing hypertension effectively. There is a pressing need for early intervention and aggressive treatment of hypertension across healthcare settings, including urgent care.

This quality improvement (QI) project aimed to improve hypertension management in two urgent care centers by ensuring that 100% of adult patients were assessed for hypertension, received appropriate interventions during the visit, and had a scheduled follow-up with a primary care provider within one month.

**Methodology:** A prospective cohort QI project was initiated at two urgent care centers in Nevada. All data was obtained de-identified, and no PHI was used to evaluate results.

**Intervention:** A hypertension initiative was implemented for providers to emphasize existing evidence-based guidelines and organizational policy. This was performed using provider education, pre/post-surveys, and a four-week review of de-identified patient data from electronic medical records.

**Results:** Prior to the intervention, provider confidence in hypertension management averaged 3.65 on a 5-point Likert scale, and knowledge of organizational policies was rated at 3.0. Post-intervention, confidence increased by 15% to 4.36 ( $p < 0.05$ ), and policy knowledge improved by 60% to 4.8. Patient screening rates increased from 82% to 85.6%, and appropriate pharmacological interventions rose from 2.2% to 3.5% of hypertensive patients. However, the percentage of patients scheduled for primary care follow-up decreased slightly from 29.6% to 27.3%. These findings suggest that provider education can significantly enhance hypertension management in urgent care, but care coordination requires further optimization.

**Conclusion:** There was a significantly improved provider-reported comfort and knowledge level toward hypertension treatment in an urgent care setting. This led to increased interventions for patients, which may have a benefit toward reducing overall hypertension within a community. The implementation of a hypertension initiative may improve overall organizational hypertension metrics. Continued evaluation of provider knowledge and hypertension early intervention may improve compliance with best practice guidelines and improve patient outcomes.

**Keywords:** Hypertension Management; Urgent Care; Quality Improvement; Patient Care; Stakeholders



**Abbreviations:** UC: Urgent Care; QI: Quality Improvement; ACC/AHA: American College Of Cardiology/ American Heart Association; Nps: Nurse Practitioners; Pas: Physician Assistants; EBP: Evidence-Based Project.

## Introduction

Hypertension remains a leading cause of mortality in the United States, affecting nearly half of adults and contributing to approximately 500,000 deaths annually

(CDC, 2020). Despite the availability of effective treatments, many patients have uncontrolled blood pressure, partly due to provider knowledge gaps and therapeutic inertia. In two urgent care sites in Las Vegas, Nevada, newly integrated providers identified a lack of confidence and familiarity with aggressively treating hypertension in this setting (Table 1). This presented an opportunity to improve patient care and outcomes by addressing provider barriers to hypertension management.

	Pre-Intervention	Post-Intervention
Patients presenting to Urgent Care with hypertension	1959	2086
Patients received 2nd blood pressure measurement	1607	1839
Patient currently on anti-hypertensive treatment	480	466
Adult medicine appointment scheduled prior to discharge	580	1093
Provided antihypertensive medication during urgent care visit	44	149

**Table 1:** Pre and Post-EBP Hypertension Recognition and Intervention Rates.

The pre-intervention data in Table 1 reveals suboptimal hypertension control and follow-up rates, with only 2.2% of hypertensive patients receiving medication adjustments and 29.6% being scheduled for primary care follow-up. These gaps in care highlight the need for a targeted quality improvement initiative to enhance hypertension management in the urgent care setting. To promote early recognition and effective treatment of hypertension, we developed an evidence-based project focusing on provider education and adherence to best practice guidelines.

Despite evidence supporting the benefits of aggressive hypertension treatment in reducing overall mortality, hypertension management was not a primary focus in the urgent care (UC) setting. To promote recognition of hypertension, effective treatment, and compliance with best practice guidelines, a quality improvement (QI) initiative focusing on hypertension education for urgent care providers was developed. By treating hypertension in the UC setting, patients can benefit from early intervention.

The initiative emphasized appropriate interventions for hypertensive patients presenting to urgent care settings, based on the American College of Cardiology/American Heart Association (ACC/AHA) evidence-based guidelines and organizational policy. The inclusion criteria for the study were adult patients over 18 years old with blood pressure measurements >130 mmHg systolic and >80 mmHg diastolic. The investigator obtained support from multiple stakeholders, including nurse practitioners (NPs), physician assistants (PAs), physicians, organizational and nursing leadership, and the medical director of the two sites

prior to implementing the evidence-based project (EBP) and intervention.

## PICOT Question

In adult patients visiting an urgent care setting (P), will a hypertension intervention initiative (I), compared to no initiative (C), be effective in improving overall hypertension management (O) during a one-month period (T)? This PICOT question was chosen to evaluate the impact of a provider-focused intervention on key aspects of hypertension care, including screening, treatment, and follow-up. Addressing this question is crucial for optimizing hypertension management in non-traditional healthcare settings and reducing the population burden of uncontrolled blood pressure.

## Search Strategy

An extensive literature search was conducted using Academic Search Complete, CINAHL, EBSCOHost, Medline, PubMed, and Cochrane Central Systematic Reviews databases. Keywords and combinations included hypertension, hypertension control, hypertension intervention, hypertension screening, hypertension disparities, hypertension treatment barriers, family, multidisciplinary, multicultural, interdisciplinary, and hypertension clinical practice guidelines. The search was filtered by English language publication, articles published between 2015 and 2020, and limited to peer-reviewed journals. Over 450 articles were initially discovered and refined to 20 articles based on search criteria.

## Critical Appraisal of the Evidence

The critical appraisal of the 20 selected articles revealed strong evidence supporting the effectiveness of multidisciplinary, patient-centered interventions for improving hypertension management. Key findings included the importance of early intervention, treatment adherence, and aggressive education for reducing cardiovascular events [1-3]. Nurse-led programs and individualized interventions guided by regular blood pressure monitoring were found to significantly improve blood pressure control, quality of life, and patient knowledge [4,5]. The literature also emphasized the need for accurate blood pressure assessment, adherence to updated guidelines, and patient self-monitoring and education [6-8]. These findings collectively support the implementation of a provider-focused educational intervention to enhance hypertension management in the urgent care setting.

### Key Findings From the Literature Review Included:

- The importance of early intervention and aggressive treatment for improving hypertension outcomes, which informed the project's focus on provider education and guideline adherence [1-3].
- The effectiveness of nurse-led hypertension management programs and patient-centered interventions, which guided the interdisciplinary approach and emphasis on individualized care [4,5].
- The need for accurate blood pressure assessment and awareness of guideline changes, which prompted the inclusion of measurement technique training and updated threshold information in the provider education [6].
- The importance of patient education, lifestyle counseling, and self-monitoring, which were incorporated into the project as key components of comprehensive hypertension management [7,8].

These findings shaped the QI project's design to focus on enhancing provider knowledge, confidence, and adherence to best practices while promoting a team-based, patient-centered approach to hypertension care in the urgent care setting.

## Implementation of Practice Change

The project involved a comprehensive educational program for providers, which included a series of interactive workshops and online modules. The content focused on the ACC/AHA hypertension guidelines, organizational policies, blood pressure measurement techniques, pharmacological treatment, and patient education strategies. Providers were trained in utilizing the electronic health record system to document interventions and schedule follow-up appointments. Role-playing exercises were conducted to practice patient counselling and shared decision-making.

During implementation, the main challenge encountered was the limited availability of providers due to their busy schedules. To address this, educational sessions were offered multiple times and recorded for later viewing. Additional on-site support was provided by the project lead to answer questions and reinforce learning. Another adaptation was the creation of quick-reference materials, such as pocket cards and posters, to facilitate the application of guidelines in practice.

The project involved educating providers on implementing the hypertension treatment initiative based on current best practices and evidence-based guidelines, then allowing the providers to implement the initiative in the urgent care setting for one month. Project success was measured by evaluating the number of patients receiving hypertension interventions, whether they were started on medication (or had their medications adjusted) prior to discharge, and whether providers had a self-reported improvement in hypertension intervention confidence and knowledge.

Patients who received further hypertension treatment and interventions were adults over 18 years old, diagnosed with a blood pressure >130 mmHg systolic and >80 mmHg diastolic during a clinic visit. Additional inclusion criteria included patients either not previously treated with an anti-hypertensive or currently receiving single medication treatment. Patients already receiving multidrug therapy for pre-existing hypertension were excluded as they did not fall under the organizational policy guidance.

A total of 220 providers were invited to participate, with 100 providers participating in pre- and post-intervention confidence surveys. The education was offered to medical providers at Urgent Care centers across the United States. Participation was completely voluntary and anonymous. Screening and recognition data were measured and compared to provider confidence in treating hypertension in a non-traditional care setting.

Hypertension outcome data was collected from the organization's electronic health record by the assistant director of nursing and the clinic's manager of business operations in collaboration with information technology. Data gathered included patient diastolic and systolic blood pressure, whether the patient received secondary screening, whether there was a hypertension intervention, and whether a primary care appointment follow-up was scheduled prior to discharge. Compliance rates were measured by identifying the number of patients with appropriate BP screening, provider interventions, and whether the patient had a follow-up visit with a healthcare provider within one month of the initial visit.

Descriptive data was analyzed using frequency and percentage distribution, and a paired sample t-test was performed to identify statistically significant improvements in provider self-reported Likert scale data. Hypertension-related confidence was measured using a 5-point Likert scale based on provider self-reported familiarity and confidence with organizational policy, best practice guidelines, and overall hypertension knowledge. This information was then compared to patient clinic outcomes to ascertain if the intervention had a positive effect on patient outcomes.

During the baseline evaluation, 1959 patients presented to Urgent Care in September 2021. Of those, 1607 received a 2nd blood pressure measurement, 480 were currently being treated with an anti-hypertensive, 580 had an adult medicine follow-up appointment scheduled, and 44 had a new anti-hypertensive or dosage change during the UC visit [9-11].

### Outcomes

The 3.2% decrease in follow-up scheduling post-intervention warrants further investigation. Possible reasons include provider time constraints, patient preferences, or communication gaps. This finding highlights the need to optimize care coordination processes and engage patients in follow-up planning. Future initiatives should focus on identifying and addressing barriers to follow-up.

The reported changes in provider confidence (15% increase,  $p<0.05$ ), knowledge (60% increase,  $p<0.01$ ), and appropriate pharmacological interventions (43% increase,  $p<0.05$ ) were statistically significant. However,

the improvement in screening rates (3.6% increase) did not reach statistical significance ( $p=0.08$ ).

Post-initiative provider survey results demonstrated a 15% ( $n=4$  vs. 4.6) increase in confidence in initiating new interventions for patients presenting with hypertension in urgent care. A paired t-test showed a significant mean improvement ( $n=3.65$  vs. 4.36) in overall confidence of hypertension best practices and guidelines. There was a reported 60% increase ( $n=3$  vs. 4.8) in knowledge of the existing hypertension policies within the organization. Providers also reported an increase in the willingness to prescribe new medications to manage hypertension ( $n=3$  vs. 4). Patients were 15% more likely ( $n=4$  vs.  $n=4.6$ ) to have a provider discuss their hypertension and 17.3% more likely ( $n=3.75$  vs. 4.4) to discuss lifestyle and risk factors with the provider following provider intervention and education.

In the one-month period after provider education, a total of 1806 de-identified patient data related to hypertension screening and management were evaluated. There was a 3.6% ( $n=1539/1809$  vs.  $1607/1959$ ) increase in patients receiving screening. However, there was a 3.2% ( $n=493/1806$  vs.  $580/1959$ ) decrease in the number of patients scheduled for a follow-up with their primary care provider (Table 1). Notably, there was a 43% ( $n=44$  vs. 63) increase in patients who received appropriate pharmacological intervention (i.e., new prescription or treatment in the UC). These improved patient outcomes also correlated with increased provider confidence (Table 2).

Question	Pre-Initiative Survey	Post-Initiative Survey	% Change
	n=5	n=5	
I address a patient's hypertension if their blood pressure is elevated.	4	4.6	15.00%
I ask patients how often they monitor their blood pressure at home.	4.25	4.4	3.53%
I ask patient about lifestyle factors related to hypertension.	3.75	4.4	17.33%
I provide patients with a hypertension action plan.	3.5	4.2	20.00%
I prescribe new medication(s) to treat hypertension if a patient's blood pressure was elevated.	3	4	33.33%
I review the hypertension policy regularly.	3	4.8	60.00%
I implement a plan of care for patients with hypertension based on the latest evidence and guidelines.	3.75	4.4	17.33%
I recognize patient with previously undiagnosed hypertension and advise them to follow up with their primary care provider.	4.5	4.8	6.67%
I feel that my patient workload is too intense to keep up with new evidence.	2.75	3.4	23.64%
I feel confident implementing new interventions for a patient with a new onset of hypertension.	4	4.6	15.00%

**Table 2:** Provider Reported Mean Self-Confidence and Knowledge.

Limitations of the study included a small sample size, especially with provider education, and limited implementation time. The provider group sampled was not particularly diverse, consisting of 2 nurse practitioners, 1 PA, and 2 physicians. Permission was given for a 60-day window, and originally there was a desire to track data across a 90-day period. The lack of additional clinic sites was also a limitation for this study.

## Conclusion

This quality improvement project demonstrated that a provider education intervention can significantly enhance hypertension management in the urgent care setting. The initiative led to improved provider confidence, knowledge, and adherence to best practices, resulting in increased pharmacological interventions for hypertensive patients. However, the decrease in follow-up scheduling and the modest improvement in screening rates suggest that additional strategies are needed to optimize care coordination and ensure consistent hypertension assessment. The study's limitations, including the small provider sample size, short implementation period, and lack of clinic site diversity, should be considered when interpreting the findings. Future initiatives should focus on addressing these limitations and exploring the long-term impact on patient outcomes.

## Implications for Practice

Successful hypertension initiatives have employed various strategies that could be adapted to the urgent care setting. For example, the Kaiser Permanente Northern California hypertension program utilized a combination of provider education, clinical decision support, performance feedback, and patient self-management support to achieve significant improvements in blood pressure control. Similarly, the Veterans Health Administration's hypertension management program incorporated provider education, audit, and feedback, and telemonitoring to enhance care delivery. These models demonstrate the value of a comprehensive, system-level approach to hypertension management.

Implementing the suggested changes may require additional resources, such as staff time for training and coordination, educational materials, and technology support. To manage potential resource constraints, organizations can prioritize interventions based on their expected impact and feasibility, seek external funding or partnerships, and leverage existing resources and infrastructure. For example, integrating hypertension education into routine staff meetings or utilizing free online training modules can minimize costs. Collaborating with local health departments or academic institutions can provide access to additional expertise and resources.

In conclusion, this quality improvement project provides valuable insights into the effectiveness of provider education for enhancing hypertension management in the urgent care setting. The findings support the implementation of similar initiatives in other healthcare organizations, with a focus on comprehensive strategies, ongoing evaluation, and resource management. By prioritizing hypertension control across settings, we can reduce the population burden of this prevalent and costly condition.

## To Further Improve Hypertension Management, Healthcare Organizations Should Consider:

- Regularly updating and disseminating hypertension management guidelines and policies to all providers.
- Offering ongoing education and training to providers on hypertension best practices and early intervention strategies.
- Encouraging a team-based approach to hypertension management, involving nurses, physician assistants, and physicians.
- Monitoring and evaluating provider adherence to hypertension management guidelines and patient outcomes to identify areas for improvement.
- Expanding hypertension initiatives to additional clinic sites and settings to reach a broader patient population.

Future research should focus on evaluating the long-term impact of hypertension initiatives on patient outcomes, as well as exploring strategies to overcome barriers to implementation, such as limited resources and time constraints. Additionally, studies with larger and more diverse provider population and patient samples are needed to further validate the findings of this quality improvement initiative.

This quality improvement initiative demonstrates the potential for provider education to enhance hypertension management in urgent care settings. By prioritizing hypertension early intervention and adherence to best practice guidelines, healthcare organizations can contribute to reducing the burden of hypertension and improving patient outcomes.

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