Critical Review Form
Clinical Practice Guidelines

Clinical policy: critical issues in the evaluation and management of adult patients with asymptomatic hypertension in the emergency department. Ann Emerg Med. 2006 Mar;47(3):237-49.

Objectives: To assess the available evidence in determining the best evaluation and management strategies for patients presenting to the Emergency Department (ED) with asymptomatic hypertension.

Methods: Members of the American College of Emergency Physicians (ACEP) Clinical Policies Subcommittee on Asymptomatic Hypertension performed a review and critical appraisal of the peer-reviewed medical literature. A MEDLINE search of articles published between January 1992 and January 2005 was performed, restricted to the English language, using the key words "hypertension" and "emergency department." Members of the subcommittee reviewed abstracts and articles, and those addressing the questions considered in the policy were chosen for grading. Members also chose references from bibliographies of the selected articles or from their own files. Expert peer reviewers also supplied articles.

Where literature was not available, consensus of emergency physicians was obtained. Expert commentary was also received from "individual emergency physicians as well as individual members of the American College of Physicians, American Society of Hypertension, American Society of Nephrology, and Emergency Nurses Association."

All publications were graded by at least 2 subcommittee members and assigned a "Strength of Class" using the following criteria:

> **"*Strength of evidence Class I*—Interventional studies including clinical trials, observational studies including prospective cohort studies, aggregate studies including meta- analyses and randomized clinical trials only.**
>
> ***Strength of evidence Class II*—Observational studies including retrospective cohort studies, case-controlled studies, aggregate studies including other meta-analyses.**
>
> ***Strength of evidence Class III*—Descriptive cross-sectional studies, observational reports including case series and case reports, consensus studies including published panel consensus by acknowledged groups of experts." (p. 239)**

Based on the available evidence, recommendations were made according the following criteria:

Level A recommendations. Generally accepted principles for patient management that reflect a high degree of clinical certainty (ie, based on strength of evidence Class I or overwhelming evidence from strength of evidence Class II studies that directly address all of the issues).

Level B recommendations. Recommendations for patient management that may identify a particular strategy or range of management strategies that reflect moderate clinical certainty (ie, based on strength of evidence Class II studies that directly address the issue, decision analysis that directly addresses the issue, or strong consensus of strength of evidence Class III studies).

Level C recommendations. Other strategies for patient management based on preliminary, inconclusive, or conflicting evidence, or in the absence of any published literature, based on panel consensus." (p. 239)

The clinical questions asked and recommendations made were:

1. **Are ED blood pressure readings accurate and reliable for screening asymptomatic patients for hypertension?**

Level B recommendations. If BP measurements are persistently elevated (SBP > 140 mmHg, DBP > 90 mmHg) the patient should be referred for follow-up.

Level C recommendations. Patients with a single elevated BP may need further outpatient screening for hypertension.

2. **Do asymptomatic patients with elevated BP benefit from rapid lowering of their BP?**

Level B recommendations:

a) **Initiation of treatment for asymptomatic hypertension is not necessary when the patients have follow-up.**
b) **Rapidly lowering BP in asymptomatic patients is unnecessary and potentially harmful.**
c) **When BP treatment is initiated for asymptomatic hypertension, the goal should be to gradually lower the BP and should not be expected to normalize it during the ED visit.**

<table>
<tr><th colspan="2">Guide</th><th>Comments</th></tr>
<tr><td>I.</td><td>Are the Recommendations Valid?</td><td>Answer questions IA-D below</td></tr>
<tr><td>A.</td><td>Did the recommendations consider all relevant patient groups, management options, and possible outcomes?</td><td>No. The recommendations address two primary questions:
1) Are BP readings in asymptomatic patients in the ED reliable?
2) Do asymptomatic patients with elevated BP benefit from rapid lowering of their BP?
Additional important questions might include:
1) What testing should be undertaken in the ED to evaluate for end-organ damage?
2) Do patients with asymptomatic hypertension in benefit from initiation of antihypertensive therapy upon discharge from the ED, or should such therapy be initiated at outpatient follow-up?
3) Does access to follow-up care impact the answers to the any of the above questions?</td></tr>
<tr><td>B.</td><td>If necessary, was an explicit, systematic, and reliable process used to tap expert opinion?

You should look for a clear description of how the panel was assembled along with the members' specialties and any organizations they are representing.</td><td>No. Subcommittee members are listed, and it clear that all members of the subcommittee were members of ACEP, but the article does not address how members were selected for the subcommittee and how conflicts of interest were handled.

The authors specifically do state: "where literature was not available, consensus of emergency physicians was used. Expert review comments were received from individual emergency physicians as well as individual members of the American College of Physicians, American Society of Hypertension, American Society of Nephrology, and Emergency Nurses Association." (p. 239) However, they do not state how commentators were chosen.</td></tr>
<tr><td>C.</td><td>Is there an explicit, systematic specification of values or preferences?

Panelists' ratings presumably reflect the risk-benefit trade-offs of specific interventions, but whether other physicians or patients themselves would make the same decisions remains uncertain. Whether given options are value- or preference-related should be clearly stated in the guideline.</td><td>No. "This policy is a product of the American College of Emergency Physicians (ACEP) clinical policy development process, including expert review, and is based on the existing literature; where literature was not available, consensus of emergency physicians was used." (p. 239)

These guidelines represent the preferences of the committee members and expert commentators chosen by the committee. There is no mention of patient preferences or values being solicited or considered.</td></tr>
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D.	**If the quality of the evidence used in originally framing the criteria was weak, have the criteria themselves been correlated with patient outcomes?** *When the studies utilized to produce guidelines are less than randomized-controlled trials, conclusions can be strengthened by noting how outcomes can be correlated with adherence to the guidelines.*	Yes and No. For the 1st question in the guidelines, the authors primarily used evidence directed at assessing whether elevated BP measurements in the ED remain elevated when repeated either in the ED or in the outpatient setting. This has not been prospectively validated on patient-important outcomes. For the 2nd question, the authors do present some data that assesses the impact of early treatment of asymptomatic hypertension with patient-important outcomes, including death, ruptured aortic aneurysm, severely elevated blood urea nitrogen, and congestive heart failure.
II.	**Were the Criteria Applied Appropriately?**	Answer questions II A-B below.
A.	**Was the process of applying the criteria reliable, unbiased, and likely to yield robust conclusions?**	No. The guidelines have not been prospectively validated, so it is not possible to assess the impact of applying them on patient-important outcomes (stroke, MI, death, ED length of stay) or systems-based outcomes (ED length of stay, healthcare costs).
B.	**What is the impact of uncertainty associated with evidence and values on the criteria based ratings of process of care?**	The impact of uncertainty includes patient-concerns about ongoing hypertension, physician-angst about discharge of patients with persistently elevated hypertension, and the risk of adverse outcomes following discharge.

Limitations:

1) **The guidelines are based on very limited available evidence. There are no prospective, randomized controlled trials evaluating the impact of these guidelines.**

2) **Patient-values were not solicited or included in the creation of the guidelines.**

3) **The guidelines have not been prospectively evaluated to assess their impact.**

4) **Several important questions, including the ED evaluation of asymptomatic hypertension, were not addressed in the guidelines**

5) **Some have recommended standardization of grading criteria and levels of evidence in guidelines and policies (GRADE).**

Bottom Line:

This ACEP clinically policy, based on limited available evidence, provides a handful of level B and C (moderate to weak) recommendations. Follow-up is typically recommended for patients with asymptomatic persistently elevated blood pressure readings in the ED. Rapid lowering of blood pressure is NOT recommended in asymptomatic hypertensive patients, though it is reasonable to initiate outpatient therapy in the ED, with the goal being to gradually lower blood pressure over time. The policy was limited by the availability of evidence, as well as failure to assess patient values and preferences.

III.	How Can I Apply the Criteria to Patient Care?	
A.	**Are the criteria relevant to your practice setting?** *Medical practice is shaped by an amalgam of evidence, values, and circumstances; clinicians should consider their local medical culture and practice circumstances before importing a particular set of audit criteria.*	Yes. The questions asked are relevant to the practice of emergency medicine in multiple settings, including ours. The frequency of patients presenting with asymptomatic hypertension is significant, and there is lack of clear consensus as to how to manage these patients, with significant practice variation. Recommendations may depend on certain environmental factors, such as lack of access to follow-up and compliance with medical therapy, and may need to be adjusted based on these factors.
B.	**Have the criteria been field-tested for feasibility of use in diverse settings, include settings similar to yours?**	No. These guidelines have not been prospectively evaluated to assess impact on outcomes.