

**EDITOR-IN-CHIEF**

**JOHN HICKNER, MD, MSc**  
University of Illinois at Chicago

**ASSOCIATE EDITOR**

**RICHARD P. USATINE, MD**  
University of Texas Health  
at San Antonio (Photo Rounds)

**ASSISTANT EDITORS**

**DOUG CAMPOS-OUTCALT, MD, MPA**  
University of Arizona

**RICK GUTHMANN, MD, MPH**  
Advocate Illinois Masonic Family Medicine  
Residency, Chicago

**ROBERT B. KELLY, MD, MS**  
Fairview Hospital, a Cleveland Clinic hospital

**GARY KELSBERG, MD, FAFP**  
University of Washington, Renton

**COREY LYON, DO**  
University of Colorado, Denver

**KATE ROWLAND, MD, MS**  
Rush-Copley Medical Center, Chicago

**E. CHRIS VINCENT, MD**  
University of Washington, Seattle

**EDITORIAL BOARD**

**FREDERICK CHEN, MD, MPH**  
University of Washington, Seattle

**JEFFREY T. KIRCHNER, DO, FAFP, AAHVIS**  
Lancaster General Hospital, Pa

**TRACY MAHVAN, PHARM D**  
University of Wyoming, Laramie

**MICHAEL MENDOZA, MD, MPH, MS, FAFP**  
University of Rochester, New York

**FRED MISER, MD, MA**  
The Ohio State University, Columbus

**KEVIN PETERSON, MD, MPH**  
University of Minnesota, St. Paul

**MICHAEL RADDOCK, MD**  
The MetroHealth System, Cleveland, Ohio

**MICHELLE ROETT, MD, MPH, FAFP, CPE**  
Georgetown University Medical Center,  
Washington, DC

**KATE ROWLAND, MD, MS**  
Rush-Copley Medical Center, Chicago

**LINDA SPEER, MD**  
University of Toledo, Ohio

**JEFFREY R. UNGER, MD, ABFP, FACE**  
Unger Primary Care Concierge Medical Group,  
Rancho Cucamonga, Calif

**DIRECT INQUIRIES TO:**

Frontline Medical Communications  
7 Century Drive, Suite 302  
Parsippany, NJ 07054  
Telephone: (973) 206-3434  
Fax: (973) 206-9378

**GUEST EDITORIAL**

**Paul A. James, MD**

Professor and Chair, Department of Family Medicine, University of Washington, Seattle, and JNC-8 Panel Co-Chair of the 2014 Evidence-Based Guideline For the Management of High Blood Pressure in Adults



# The problem with blood pressure guidelines

**I**n this issue of *JFP*, MacLaughlin and colleagues (page 416) echo the recommendations of the 2017 American College of Cardiology/American Heart Association (ACC/AHA) guidelines on high blood pressure (BP).<sup>1</sup>

This guideline, however, is not endorsed by primary care organizations. Both the American College of Physicians (ACP) and the American Academy of Family Physicians (AAFP) released their own evidence-based guideline in 2017.<sup>2</sup> (The European Society of Cardiology also declined to endorse the ACC/AHA guideline.<sup>3</sup>) So how do we make sense of the different recommendations? And how do we decide which guideline is most trustworthy?<sup>4</sup>

## Evidence based vs evidence informed

Both guideline writing groups are highly respected and affiliated with influential organizations. Both claim their guidelines are based on scientific evidence and are crafted with the intention to improve health. The 2 guidelines, however, differ in their fidelity to the evidence-based process and in their willingness to generalize disease-centered interventions to non-diseased populations.

## Evidence-based guidelines differ from evidence-informed guidelines.

Evidence-based guidelines differ from evidence-informed guidelines. Evidence-based guidelines have an established methodology that includes well-designed

specific critical questions, a literature review with clearly defined inclusion and exclusion criteria, an evidence grading system, and a systematic approach to creating recommendations. Evidence-based guidelines are limited in scope and are often controversial because the evidence may not comport with the narrative promulgated by experts. Indeed, the controversy surrounding the 2014 Eighth Joint National Committee (JNC 8) guideline that I co-chaired focused on the one recommendation with the strongest evidence.<sup>5,6</sup>

Comprehensive guidelines written by experts are by their very nature evidence-informed guidelines. The ACC/AHA guidelines are comprehensive, providing a panoply of recommendations. When such guidelines are written for primary care, the generalizability of specialized disease-centered knowledge is limited,<sup>7</sup> and the risk of overdiagnosis and overtreatment rises,<sup>8</sup> especially when the primary care community is not invited as equal partners in the guideline development process.

**Trustworthy guidelines** require management of conflicts of interests. A hidden contributor to guideline panel membership and content is organizational sponsorship. Advocacy organizations and specialty societies have governing boards that have fiduciary responsibilities to their organizations. Such responsibilities may supersede the responsibilities of guideline panel members and influence content. JNC 8's appointed panel members chose to release the 2014 guideline independently, so as not to cede editorial authority to governing boards of associations with potential conflicts of interest.

CONTINUED ON PAGE 404

CONTINUED FROM PAGE 402

**As Paul Frame said, “An ounce of prevention is a ton of work.”<sup>9</sup>**

Dr. Frame, a family medicine pioneer who applied evidence-based medicine to preventive practice, encouraged us to ask critical questions that must be supported by scientific evidence before implementing these practices in healthy populations.<sup>10</sup> The ACC/AHA guidelines advocate recommendations based on untested assumptions: that improved health results from earlier “diagnosis” and disease labeling of individuals with risks (healthy patients), and that such patients should receive aggressive “prevention” with daily and lifelong medications requiring physician monitoring.<sup>11</sup> To support their new diagnostic standards, the authors cite similar relative risk (RR) reductions (an outcome-based measure), while discounting the smaller absolute risk (AR) reductions (a population-based measure) in studies supporting lower BP goals.

**Let’s examine what this means**

In 1967, a study of 143 hypertensive patients showed that treating high BP (average diastolic BP between 115 and 129 mm Hg) dramatically improved important health outcomes.<sup>12</sup> The number needed to treat (NNT) after about 1.5 years showed that for every 1.4 people treated, 1 benefited.<sup>9</sup> This is strong and effective medicine.

Successive randomized controlled trials of lower BP goals showed consistent RR reductions; however, AR reductions were much lower, reflecting a higher NNT.<sup>8</sup> To prove BP-lowering benefits were not a random effect, higher numbers of participants were needed (SPRINT required over 9300 participants).<sup>13</sup> The AR reduction in SPRINT was 1.6% (meaning no benefit was seen in 98.4% receiving the intensive intervention). One participant with high cardiovascular disease risk benefited for every 63 subjects given the intensive therapy compared with usual care (BP goal of 120 mm Hg vs 140 mm Hg).<sup>13,14</sup> The researchers noted serious harms in 1 of 22 subjects treated. Treating younger patients to lower BP goals labels healthy people with risk factors as “sick” and commits them to lifelong medications. It exposes them to more frequent harms than benefits. For healthy patients who are unlikely to benefit from taking more antihypertensive medication, these harms matter.

**Interpreting the benefits of BP Tx when the benefit to individuals appears small**

If only there were a biomarker that could tell us who is most likely to benefit from antihypertensive medication treatment, FPs could ensure that the correct patients are treated. The ACP/AAFP guideline points the way. There is a biomarker, and it is called BP. Systolic BP above 150 mm Hg signals urgency to treat with medications.

■ **A call to advocate.** We must all advocate for better guideline processes. The status quo in guideline development and its reliance on special interest funding requires ongoing vigilance to advocate on behalf of our patients. High-value medical care is expensive and hard work. When it is applied to the wrong people at the wrong time, we don’t deliver on our promises.

**References**

- Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol*. 2018;71:e127-e248.
- Qaseem A, Wilt TJ, Rich R, et al. Pharmacologic Treatment of Hypertension in Adults Aged 60 Years or Older to Higher Versus Lower Blood Pressure Targets: A Clinical Practice Guideline From the American College of Physicians and the American Academy of Family Physicians. *Ann Intern Med*. 2017;166:430-437.
- Phend C. Europe stands pat on hypertension thresholds. ESC doesn’t follow ACC/AHA diagnostic cutoff, focuses on control rates. Medpage Today. Available at: [https://www.medpagetoday.com/cardiology/hypertension/73384?xid=NL\\_breakingnews\\_2018-06-09&eun=g1206318d0r&utm\\_source=Sailthru&utm\\_medium=email&utm\\_campaign=BreakingNews\\_060918&utm\\_term=Breaking%20News%20Targeted](https://www.medpagetoday.com/cardiology/hypertension/73384?xid=NL_breakingnews_2018-06-09&eun=g1206318d0r&utm_source=Sailthru&utm_medium=email&utm_campaign=BreakingNews_060918&utm_term=Breaking%20News%20Targeted). Accessed June 19, 2018.
- Institute of Medicine (US). Committee on Standards for Developing Trustworthy Clinical Practice Guidelines; eds, Graham R, Mancher M, Miller Wolman D, et al. *Clinical Practice Guidelines We Can Trust*. Washington, DC: National Academies Press; 2011.
- James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA*. 2014;311:507-520.
- Wright JT Jr, Fine LJ, Lackland DT, et al. Evidence supporting a systolic blood pressure goal of less than 150 mm Hg in patients aged 60 years or older: the minority view. *Ann Intern Med*. 2014;160:499-503.
- Graham R, James P, Cowan T. Are clinical practice guidelines valid for primary care? *J Clin Epidemiol*. 2000;53:949-954.
- Welch HG, Schwartz LM, Woloshin S. *Overdiagnosed: Making People Sick in the Pursuit of Health*. Boston, Mass: Beacon Press; 2011.
- Clancy CM, Kamerow DB. Evidence-based medicine meets cost-effectiveness analysis. *JAMA*. 1996;276:329-330.
- Frame PS. A critical review of adult health maintenance. Part 1: Prevention of atherosclerotic diseases. *J Fam Pract*. 1986;22:341-346.
- Starfield B, Hyde Jervas J, Heath I. Glossary: the concept of prevention: a good idea gone astray? *J Epidemiol Community Health*. 2008;62:580-583.
- Effects of treatment on morbidity in hypertension. Results in patients with diastolic blood pressures averaging 115 through 129 mm Hg. *JAMA*. 1967;202:1028-1034.
- Wright JT Jr, Whelton PK, Reboussin DM. A randomized trial of intensive versus standard blood-pressure control. *N Engl J Med*. 2016;374:2294.
- Ortiz E, James PA. Let’s not SPRINT to judgment about new blood pressure goals. *Ann Intern Med*. 2016;164:692-693.



**We must all advocate for better guideline processes.**