The new hypertension guideline: logical but unwise

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Published In/Presented At
Solberg, L. I., Miller, W. L. (2018). The new hypertension guideline: logical but unwise. *Family Practice*, cmy026, https://doi.org/10.1093/fampra/cmy026%20

Family Practice, 2018, 1–3
doi:10.1093/fampra/cmy026

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Editorial

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In November 2017, the American College of Cardiology and the American Heart Association, along with nine supporting organizations, released their new Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults along with a systematic review (1,2). This guideline, intended to provide an update to the 2003 Joint National Committee guideline (JNC 7), has already generated considerable controversy (3–7). It lowered the threshold for the diagnosis of hypertension to ≥130/80 mmHg from the previous threshold of ≥140/90 mmHg, added a new category of 'elevated blood pressure' for those at 120–129/<80 mmHg (previously considered normal), and lowered the target for those being treated from <140/90 to <130/80 mmHg (1).

The logic behind such drastic changes appears to have been based on the following:

(i) Observational data showing a log-linear relationship between blood pressure levels from <115/75 to >180/105 mmHg and cardiovascular mortality (8).
(ii) A concurrent systematic review and meta-analysis showing that patients with hypertension treated to a goal of <130 mmHg 'may reduce the risk of - - - myocardial infarction, stroke, heart failure and major cardiovascular events'. (2,9,10)
(iii) An assumption that care in real life will conform closely to results in randomized controlled trials.
(iv) An assumption that most people newly identified as having hypertension or elevated blood pressure will receive and respond to recommendations to improve their lifestyle.
(v) A philosophy that any potential reduction in undesirable physical outcomes, no matter how small, uncertain or risky warrants expanding the use of medical treatment.

Although we understand the logic, assumptions of human rationality and good intentions behind these guideline changes, we are concerned that they may lack prudence and ignore several pragmatic issues. Lowering the threshold for diagnosing hypertension will greatly expand the proportion of the population with this disease, more than likely greatly expand the population being treated to very aggressive endpoints, greatly increase the expense and demands on a care system that is already at a tipping point and potentially inflict unintended harm on the public's health. Moreover, these dramatic changes were recommended without apparent consideration for the potential difficulties and uncertainties that their implementation will cause and without input from the patients, primary care clinicians and care systems that will be responsible for that implementation. Since US guidelines often have large impacts on other countries, we write to highlight some of those potential difficulties for our primary care colleagues and their patients throughout the world.

First, even the guideline estimates that the changed definitions will increase the prevalence of hypertension from 32% to 46% of the US adult population, although it goes on to suggest that only a small proportion of the 31 million new hypertension patients will need antihypertensive medication. This belief seems to be based on an assumption that physicians will follow the recommendations to focus on changes in lifestyle for those at <10% risk and that patients will follow those recommendations just as well as in the controlled trials. Unfortunately, the few trials on which these proposals are based were mostly explanatory and not pragmatic trials; they speak to efficacy and not effectiveness; they advance the science of hypertension but not guideline development (9–11). The more pragmatic HOPE-3 and ACCORD trials actually presented evidence against lowering the treatment bar for hypertension (12–15). We suggest that it is as unlikely that clinicians will resist the tendency to rely on medications as it is that many patients will change their lifestyles because their doctor so instructed. There is little evidence that translating risk into medicalization and disease actually improves health at lower cost; there is more evidence that says otherwise (16,17). There may be more effective ways to manage risk than to diagnose it as a disease.

The guideline says little about all the previously healthy people who will now be told that they have 'elevated blood pressure'. Perhaps there are some people who will understand that does not mean they have the disease we call hypertension, but there will not be many. It appears the literature on labelling and hypertension was ignored (18–20). The additional population that will now be considered sick, at least by themselves, is estimated by the guideline authors from National Health and Nutrition Examination Survey data to be another 12% of the US population (21). The total average proportion of the population with varying degrees of elevated blood pressure is 58%, and among those aged 55–64 years, it is 67%, 65–74 is 76% and >74, fully 82%. Thus, the great majority of older people will be at risk of aggressive medical treatment. Notice that the 2017 guidelines for treating hypertension in adults older than 60 years by the American College of Physicians and the American Academy of Family Physicians, who reviewed the same evidence, concluded that >150/90 mmHg should be the threshold for treatment (22,23).

What does the guideline say we should do with those with 'elevated blood pressure' or with low risk hypertension? Although it recommends non-pharmacological therapy, it also requests reassessment at 3–6 months and is silent about what should be done with those who do not respond by making lifestyle changes and lower their blood pressure to the new normal within this unrealistic short

time frame. Despite the silence, the clear implication from the spirit of the rest of the guideline is to start these patients on medications, a potential boon for the pharmaceutical industry, but perhaps not for the patients.

The more aggressive treatment targets also mean that most people started on medications will be taking more drugs at larger dosages with more side effects and complications. That includes the people already on treatment—guideline authors estimate that 53% of those already under treatment will need their treatment intensified (21). Yet the systematic review did not include a question about the frequency or impact of harms from the new goals other than comparing the harmful effects from different medications (2). In fact, the review did not include any questions about the various damaging impacts of the changes made in definitions and targets.

Greenland suggests that the real problem is not with the guideline but with US lifestyles that put so many people at risk for cardiovascular disease (24). He calls for individuals to 'take more responsibility for their own health behaviors'. It would seem that they are taking more responsibility, since despite a blizzard of warnings about the problems associated with smoking, weight, diet, hyperlipidemia, etc., most people seem to have chosen to live as they wish rather than as the experts tell them. The response of the guideline experts to this evidence of population choices appears to be to medicalize ever larger populations with its attendant costs and harms.

Regardless of one's opinion of the new guidelines, it is clear that broad implementation will greatly increase the pressure on a primary care system already at the breaking point, especially if it tries to take seriously the resources needed to support lifestyle changes. Even if long-term health care costs are reduced from the promised reduction in cardiovascular events, the next decade may see a large opposite effect. Although the US health care system might be able to add the proposed large cost burdens of all this extra care and the disparities that go with it, does it really make sense for other countries to do the same? Until this break in the consensus, all other international guidelines have been using about 140/90 mmHg as the definition and treatment goal for hypertension in the general population. Hopefully this will be an example of other countries declining to follow our example and instead putting their minds and funds on a wiser path.

So how could this august group of experts have gotten it so wrong? The absence of a generalist and practice-based primary care perspective might be one reason. By our estimate, 17 of the 22 members of the Task Force are subspecialty and public health academics. The others include an attorney, a cardiac rehab program director, two private health care consultants and the director of the American Academy of Physician Assistants. This background is mirrored in the 52 guideline reviewers, of whom 44 are academics. With the possible exception of one physician assistant, there is nobody from the primary care practice field or from care delivery systems that would be responsible for nearly all implementation. Pharmaceutical support is not the only bias this group should have been concerned about. Neither the American Academy of Family Physicians (AAFP) nor the American College of Physicians (ACP) had any opportunity for review or input and, as a result, the AAFP has publicly declined to endorse the new guidelines (6). Imagine the furor if the AAFP were to produce its own guidelines for how cardiologists should treat specialized cardiac disease.

Fortunately, the new ACC/AHA guidelines do have some good advice for primary care clinicians. Their updated recommendations supporting use of out-of-office blood pressure measurement and the importance of accurate blood pressure assessment are most welcome. The emphasis on lifestyle management and their drug treatment recommendations are also helpful. But with regards to the definition of hypertension, we will continue to follow the 'JNC-8' guidelines until more pragmatic trials and more evidence on harm become available (25).

A generalist perspective approaches evidence reviews and guideline development from both a broader systems viewpoint and a deeper understanding of particular individuals. Generalists ask the four questions of wisdom: what are the numbers; what are the words; who benefits and what are the unintended consequences, and then use the precautionary principle of minimizing harm. Furthermore, although the preamble pays lip service to the goal of meeting the needs and interests of patients, there is no evidence that either individual patients or any organized patient group had an opportunity to provide input. The new ACC/AHA guidelines appear to be internally logical, but to these primary care advocates, they are unwise.

Declaration

Funding: None.
Ethical approval: None.
Conflict of interest: Dr. Solberg is a co-investigator for the study 'Pragmatic Trial Comparing Telehealth Care and Clinic-based Care for Uncontrolled High Blood Pressure (Hyperlink-3)' funded by Patient-Centered Outcomes Research Institute and co-investigator and lead of dissemination and engagement for 'Evaluation of AHRQ Initiative to Accelerate the Dissemination and Implementation of PCOR Findings into Primary Care Practice' funded by the Agency for Healthcare Research and Quality. Dr. Miller has no conflicts of interest.

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