

Investing in our future: The importance of ambulatory visits to achieving blood pressure control in young adults

Holly C. Gooding MD, MSC  | Courtney A. Brown BA | Lauren E. Wisk PhD

Division of Adolescent and Young Adult Medicine Boston Children's Hospital, Boston, MA, USA

Correspondence

Holly C. Gooding, MD, MS, Division of Adolescent and Young Adult Medicine Boston Children's Hospital, Boston, MA, USA.

Email: holly.gooding@childrens.harvard.edu

Funding information

Dr Holly Gooding is supported by the National Heart, Lung, and Blood Institute of the National Institutes of Health (K23HL122361-01A1). Dr Lauren Wisk is supported by the Agency for Healthcare Research and Quality K12HS022986 (principal investigator: Finkelstein) and the Office of Faculty Development (OFD), Basic/Translational Executive Committee (BTREC), Clinical and Translational Research Executive Committee (CTREC) Faculty Career Development Fellowship (principal investigator: Wisk).

Hypertension is a strong risk factor for cardiovascular disease and stroke.¹ Focusing on identifying hypertension early, and getting blood pressure (BP) to goal preferably without the use of medication, is important for a multitude of reasons. First, elevated BP tracks over time, such that elevated BP in adolescence and young adulthood is strongly associated with elevated BP later in life.² Second, there is evidence that early-onset hypertension (before age 45 years) is associated with a higher risk of cardiovascular death compared with hypertension that develops later.³ Third, even individuals whose BP is treated to goal with medications do not have the same outcome as those whose BP was never elevated in the first place—they have higher left ventricular mass index and twice the cardiovascular disease event rate despite the same BP levels.⁴ Thus, primordial prevention, defined as the prevention of cardiovascular disease risk factors such as hypertension before they ever occur,⁵ is critical to reducing the morbidity and mortality from cardiovascular disease.

Unfortunately, the prevalence of hypertension in younger adults is increasing.^{6,7} Likely contributing factors include increases in sodium intake, body mass index, stress, smoking, and sleep problems.^{7,8} Rates of hypertension awareness and control are also among the lowest in young adults.^{9,10} Hypertension in younger adults often goes undiagnosed and undertreated even when young adults are connected to routine primary care,¹¹ perhaps reflecting clinical inertia on the part of treating clinicians or reluctance to label young people as having hypertension.

The article by King and colleagues in this issue of the Journal identifies important factors associated with achieving BP control in young adults in the clinical setting. The authors set out to determine the relationship between ambulatory visit interval and hypertension control among young adults aged 18 to 39 years who were newly diagnosed with hypertension. They drew upon a unique dataset of almost 3000

young adults with incident hypertension seen in a large academic group practice in the Midwest of the United States between 2008 and 2011. They looked prospectively for 24 months from the date of incident hypertension (defined by JNC 7 [Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure] criteria and an electronic health record diagnosis of hypertension) to see whether ambulatory visit interval was associated with time to BP control.

Notably, only 52% of the sample achieved a BP of <140/90 mm Hg for three consecutive measurement dates during the study period. Almost all (91%) of the young adults who had a subsequent visit within 1 month achieved this goal, compared with just 13% of those with an interval of 6 months or more in between visits. The actual time to BP control was 2.8 months in participants who had their first visit within 1 month compared with 7.1 months in those with a visit interval of 1 to 2 months and 16.4 months in those with a visit interval of 3 to 6 months. Only 26% of the young adults were started on an antihypertensive medication. Rates of antihypertensive prescription use were actually lowest in participants with less than a 1-month interval between ambulatory visits (21%), suggesting that many of these young people were able to achieve BP control with intensive lifestyle counseling alone. Not surprisingly, individuals who were overweight or currently used tobacco were also less likely to achieve BP control, again highlighting the importance of addressing lifestyle factors in hypertension management. Patient age, sex, and type of provider seen (family practice vs internal medicine vs other) did not predict time to hypertension control in adjusted models.

The authors should be commended for utilizing electronic health record data from real-world practice. Notable limitations to their approach include the lack of data on young adults who accessed only urgent or emergency care services or those seen infrequently in

nonurgent settings (eg, seen in primary care only every few years). Unfortunately, many young adults only access care via emergency services or access primary care sporadically.^{12,13} The authors' findings suggest that those individuals least connected to regular ambulatory care are perhaps the least likely to achieve BP control. An additional limitation is the reliance on BPs measured in the clinic setting for both the definition of incident hypertension and hypertension control. While certainly reflective of the standard of clinical care at the time of both the analysis and the writing of this commentary, there is a move toward use of ambulatory BP monitoring to diagnose hypertension.¹⁴ It is curious that the authors chose not to control for antihypertension medication use in their final models, as there is good reason to suspect medication use is associated with both BP control and follow-up interval. Finally, while the authors state that provider specialty and sex were not associated with BP control, they were associated with visit interval and thus important interactions between these provider factors and cardiovascular outcomes remain an interesting area for future investigation.

Importantly, this sample of young adults reflects a population with unique and precarious access to care. Young adults traditionally experience high rates of uninsurance and low rates of a usual source of ambulatory care, both of which contribute to unmet medical needs.¹⁵ Health insurance is a well-established facilitator of access to care for individuals of all ages, and there is mounting evidence for the specific health and utilization benefits for young adults as a result of expanded coverage from the Affordable Care Act (ACA), including improved rates of BP screening.¹⁶ Further, access to health insurance increases the likelihood of reporting a usual source of care, which, in turn, is associated with increased delivery of preventive care among young adults.¹⁷ Yet, simply having a usual source of care is not sufficient for ensuring timely and appropriate care or successful medical management, as this article importantly indicates. Instead, visit frequency and likely the enhanced clinical relationship resulting from greater visit frequency are primary drivers of achieving hypertension control.

A substantial threat to frequent medical follow-up for this population is the high dropout rate from primary care during the transition from pediatric- to adult-focused care, generally recommended for all young adults between ages 18 and 21 years.¹⁸ Indeed in this analysis, a small proportion of the sample still received their ambulatory care in pediatrics/adolescent medicine. Evidence suggests that a majority of young adults transfer their primary care later than recommended and often with gaps of more than a year,¹³ which, as King and colleagues suggest, could expose them to longer periods of elevated BP and increased risk of future cardiovascular events. Moreover, such gaps in care may contribute to delays in both the diagnosis and successful treatment of hypertension, making the need to keep young adults continuously connected to care even more salient.

Although the ACA has led to measurable coverage gains for young adults,¹⁹ the present uncertainty surrounding health reform raises concerns that young adults may experience disruption of health insurance coverage, either from rollbacks of Medicaid expansions, elimination of the individual mandate, or the proposed financial penalty for coverage

gaps.^{20,21} Even if the availability of affordable insurance coverage was only threatened for a portion of the nearly 7 million young adults who become newly insured under the ACA, the population burden of undiagnosed or untreated hypertension in this cohort could be devastating in both the near and far term.²² Any privately insured individual may further be affected by proposed changes to the essential health benefits provision that could undermine access to preventive screenings, such as annual BP checks or routine well-examinations, or lead to prohibitively high prescription drugs costs among those who require antihypertensive medication.²³ As such, the findings from King and colleagues should be carefully considered in light of the uncertainty around the future of insurance reform. Follow-up encounter interval is clearly an important predictor of hypertension control. Ensuring the optimal encounter interval will continue to be a challenge, one tightly linked to both the policy context and the developmental needs of young adults.

DISCLOSURES

None.

ORCID

Holly C. Gooding  <http://orcid.org/0000-0002-3145-5791>

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How to cite this article: Gooding HC, Brown CA, Wisk LE. Investing in our future: The importance of ambulatory visits to achieving blood pressure control in young adults. *J Clin Hypertens*. 2017;19:1298-1300. <https://doi.org/10.1111/jch.13100>