


EDITORIAL

Hypertension Control Among US Adults, 2009 to 2012 Through 2017 to 2020, and the Impact of COVID-19

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The key message from the article, “Blood Pressure Control Among US Adults, 2009 to 2012 Through 2017 to 2020” by Muntner et al,¹ is confirmation that hypertension control in the United States is declining.² The prior report documented that hypertension control in 2017 to 2018 was comparable to 2005 to 2006, rapidly reversing a decade of efforts to improve and sustain hypertension control. Evidence that hypertension control continues to fall is cause for alarm and further emphasizes the Surgeon General’s call to action on a key vital sign of the nation’s health.

[See related article, pp 1971–1980](#)

Hypertension control among a representative sample of the US population civilian (National Health and Nutrition Examination Survey [NHANES]) fell from 52.8% in 2009 to 2012 to 48.2% in 2017 to 2020 (P trend, 0.029).¹ NHANES was stopped in March 2020 due to the COVID-19 pandemic. Consequently, the 2019 to 2020 NHANES 2-year cycle was incomplete and only available for analysis as NHANES 2017 to 2020. Given the 4-year cycle for NHANES 2017 to 2020, the authors analyzed the 12-year period of NHANES 2009 to 2020 as 3 successive 4-year cycles¹—a decision that may impact study findings.

Two related impacts of the analytic approach shaped by COVID-19 include (1) the rate of decline in hypertension control may be greater than suggested from analysis of three 4-year cycles and the incomplete 2019 to 2020 2-year cycle and (2) the decline in hypertension control for 2017 to 2020 would likely have been greater

if NHANES 2019 to 2020 had been completed as data collection stopped around the time of guidance to shelter in place to mitigate the adverse impact of COVID-19.

In the prior report,² hypertension control reached a plateau from 2009 to 2010 through 2013 to 2014. Thus, the 2009 to 2012 period combined 2 comparable 2-year cycles during the plateau (Figure). In contrast, the 2013 to 2016 4-year cycle included the last 2 years of the plateau in 2013 to 2014 with hypertension control 53.8% and the first 2 years of the decline in 2015 to 2016 with hypertension control 48.4%.² In other words, the fall in hypertension control during 2013 to 2016 from levels in 2009 to 2012 was attenuated by the relatively high level of control in 2013 to 2014. The relatively sharp fall in hypertension control during 2015 to 2016 continued into 2017 to 2018 with control declining to 43.7%. The comparatively low level of hypertension control in 2017 to 2018 was likely mitigated by an increase in 2019 to 2020 pre-COVID as control for the 2017 to 2020 period was 48.2% versus 43.7% for 2017 to 2018 (Figure).

Data from health insurance plans are consistent with the impression that hypertension control rose in 2019. More specifically, from 2018 to 2019, hypertension control rose slightly in commercial health plans from 54.7% to 56.2% and from 58.9% to 60.8% in Medicaid health plans (Figure).³ However, in 2020, hypertension control fell below 2018 levels among adults in commercial (54.7%–49.5%), Medicaid (58.9%–56.0%), or Medicare (69.5%–62.7%) health plans. Moreover, the decline in hypertension control during the full calendar year of 2020 is consistent with evidence that COVID-19 led to a 50% decline in office visits during 2020.¹ Although telemedicine visits increased rapidly, outpatient

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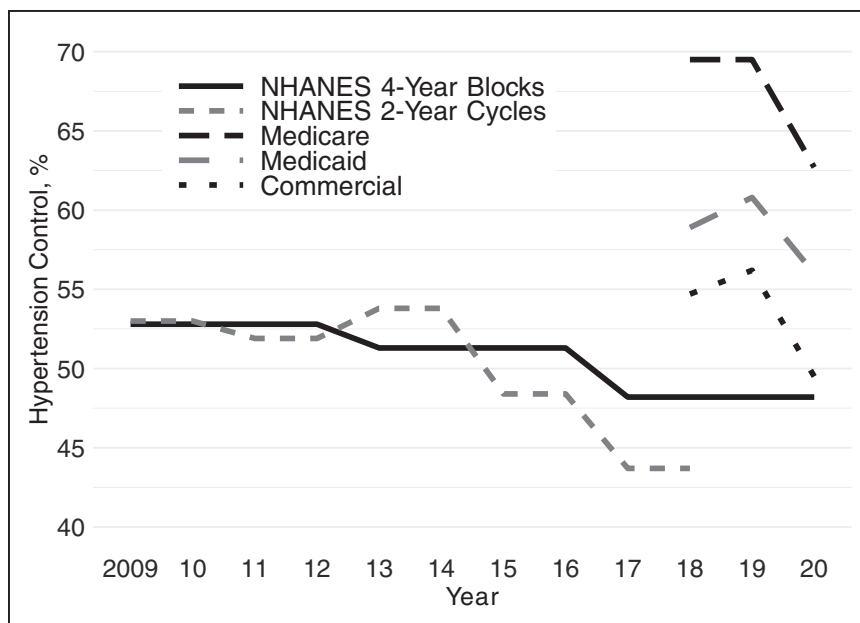


Figure. Hypertension control in population-based (National Health and Nutrition Examination Survey [NHANES]) and health plan-based samples (file uploaded separately). Hypertension control is depicted for (1) NHANES 4-year blocks (2009–2012, 2013–2016, and 2017–2020),¹ which represented aggregation of data for adjacent 2-year cycles; (ii) NHANES 2-year cycles for 2009 to 2018,² and for 3 health plans for 2018 to 2020,³ namely, commercial, Medicaid, and Medicare (no data, 2019). The rate of decline appears greater when analyzing NHANES 2-year cycles than 4-year blocks. Moreover, the COVID-19–related decline in hypertension control across health plans in 2020 was not captured in NHANES as examinations ended in March 2020.

encounters with a blood pressure assessment declined 50%, since blood pressure values were only available on 10% of telemedicine encounters. Prescription fill rates for lisinopril and amlodipine, the two most frequently prescribed antihypertensive medications, also declined after guidance to shelter in place due to COVID-19.⁴

Caution is important in comparing population-based hypertension control rates (NHANES) to health plan-based clinical data. In contrast to adults with health care insurance who access a regular source of care, adults not in the health care system or with limited access, who are captured in population-based (NHANES) samples, are less likely to have awareness, treatment, and control of their hypertension.^{2,5} Since most adults with hypertension have access to care, the substantial decline in health plan-based control rates would likely have adversely affected population-based control if NHANES had been completed in 2020.

Other key findings of the current report include¹ (1) a significant increase of prevalent hypertension among Hispanic and non-Hispanic Asian adults and (2) a significant decline in hypertension control among adults who were female or non-Hispanic Black or ≥ 75 years of age. While hypertension control fell more in women, men and women had similar hypertension control in 2017 to 2020. However, hypertension control in non-Hispanic Black adults, particularly among those on treatment, fell substantially below levels in other race-ethnicity groups in 2017 to 2020 including Hispanic and non-Hispanic Asian adults.¹ Age-related disparities in control among adults with treated hypertension continued to widen for individuals ≥ 75 years of age. The greater decline in hypertension control at ages ≥ 75 years may be disproportionately driven by women.⁶ In fact, hypertension control falls significantly more for women than men in this age group compared with sex-matched younger adults. Moreover,

the proportion of women is substantially greater than the proportion of men among adults ≥ 75 years of age.

The authors discussed several constructive actions to reverse the decline in hypertension control, consistent with the October 2020 Call to Action to Control Hypertension by the US Surgeon General and explored more fully in another report.⁷ Constructive action, supported by several key findings in the current report,¹ is imperative as cardiovascular events are rising in the US population. While the COVID-19 pandemic is beginning to ease, disparities in hypertension control were magnified during COVID-19.⁸ COVID-19 was also linked with a growing proportion of health care professionals including physicians who are burned out and strongly considering early retirement.^{9,10} Thus, broad, sustained, and integrated multidisciplinary efforts are essential to equitable progress in hypertension control—a national health vital sign.

ARTICLE INFORMATION

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Disclosures

B.M. Egan reports royalties from UpToDate. The statements and conclusions in this report are those of the author and do not necessarily represent the official position of the American Medical Association.

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