

Characteristics of Visits to Primary Care Physicians by Adults Diagnosed With Hypertension

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Abstract

Objective—This report describes the demographic, state, and regional differences in hypertension control and pharmaceutical treatment among visits to primary care physicians made by hypertensive adults during 2013–2014.

Methods—Data are from the 2013–2014 National Ambulatory Medical Care Survey (NAMCS), a nationally representative survey of visits to nonfederal, office-based physicians. The sample design for the 2013–2014 NAMCS included oversampling in selected states. Estimates are provided for the 18 states oversampled in both years. Estimates are also presented for the nine census divisions. The study population includes all primary care physician visits made by nonpregnant adults who have hypertension, as defined by documentation of hypertension in their medical record. Hypertensive visits indicating hypertension control as well as those with mention of a hypertensive medication were examined by selected demographic characteristics as well as by region and state. Sample weights were applied to each case to provide national estimates of health care utilization.

Results—During 2013–2014, in the United States, hypertension control was indicated [a blood pressure (BP) measurement of less than 140/90 mm Hg] at an estimated 66.0% of hypertensive visits. There was mention of at least one hypertensive medication documented in the medical record at 72.0% of hypertensive visits. Hypertension control was indicated at a lower percentage of hypertensive visits made by non-Hispanic black persons (57.4%) than hypertensive visits made by all other racial or ethnic groups. Hypertension was under control or there was mention of a hypertensive medication at a lower percentage of hypertensive visits made by adults aged 18–44 than hypertensive visits by older adults. The percentage of visits with an indication of hypertension control varied widely by state (ranging from 53.7% in Tennessee to 73.2% in Florida) and region (ranging from 60.1% in the East South Central division to 71.1% in the New England division). Among the 18 states, the percentage of hypertensive visits that had mention of a hypertensive medication ranged from 57.1% in Georgia to 85.0% in Washington.

Conclusion—The demographic and geographical differences identified in this report may help inform state and local policies aimed at controlling hypertension.

Keywords: high blood pressure • chronic conditions • office-based physicians • NAMCS

Introduction

Hypertension, defined as having a systolic blood pressure greater than or equal to 140 mmHg or diastolic blood pressure greater than or equal to 90 mmHg, is a leading risk factor for cardiovascular disease and stroke (1), two of the five leading causes of death in the United States (2). The disease affects almost one-third of adults in the United States and often has no signs or symptoms (1). Findings from a recent study estimated that 53% of hypertensive adults had their hypertension controlled during 2011–2014 (3).

The prevalence of hypertension increases with age, from 7% among those aged 18–39 to 65% among those aged 60 and over (3,4). According to data from the 2013 National Ambulatory Medical Care Survey (NAMCS), 34% of all adult visits to office-based physicians were made by those with hypertension (5).

NAMCS data can be used to make national, regional, and some state-based estimates of office-based physician health care utilization. State and regional estimates may help inform interventions and policies designed to improve blood pressure control and disease outcomes, as well as highlight the effectiveness of existing policies. Increasing awareness,



treatment, and control of hypertension will lead to reduced morbidity, mortality and costs associated with treatment, the burden of which will become increasingly more apparent as the population of older Americans continues to grow (6).

This report describes demographic, regional, and state estimates of all visits made during 2013–2014 to a patient’s primary care physician by nonpregnant adults who have hypertension (referred to as “hypertensive visits”). Controlled hypertension (the documentation of a blood pressure [BP] measurement of less than 140/90 mm Hg in the medical record for that visit) and hypertensive medication (documentation of at least one hypertensive medication in the medical record for that visit [referred to as “hypertensive medication”]) (7,8) are examined (both separately and jointly).

Methods

All estimates are from the 2013–2014 NAMCS, a nationally representative survey of visits to nonfederal, office-based physicians. The survey is conducted annually by the National Center for Health Statistics, Division of Health Care Statistics. NAMCS uses a stratified two-stage sample, with physicians selected in the first stage and visits in the second stage. List samples of physicians were used to produce separate estimates for individual states. The survey data are inflated or weighted to produce national annual estimates of office visits. The unweighted visit response rate for the 2013 survey was 41.1% (40.4% weighted) and for 2014 was 38.7% (39.0% weighted) (7,8).

The sample design for the 2013–2014 NAMCS included oversampling in selected states. Estimates are provided for the 18 states oversampled in both years. Estimates are also presented for the nine census divisions (see the Technical Notes for a list of the states included in each census division). Both state and division estimates are compared with the national estimate for each outcome examined. A set of maps and a set of charts (Figures 1–12) are presented for each outcome. The charts display outcome estimates for each of the 18 states, and the maps

display outcome estimates for each of the nine divisions.

Estimates are based on a sample of 10,288 hypertensive visits (visits made to primary care physicians by nonpregnant adults aged 18 and over diagnosed with hypertension), representing a weighted total of 121.9 million annualized visits. Diagnosed hypertension is based on documentation in the patient’s medical record of a diagnosis of hypertension, regardless of the diagnosis for the current visit. Hypertensive visits with missing data for either systolic or diastolic blood pressure (403 records [3.8%]) or an indication of pregnancy (23 records [0.2%]) were excluded from the study population. See the Technical Notes for definitions of terms used to define the study population.

Differences among subgroups were evaluated using two-tailed *t*-tests ($p < 0.05$). Data analyses were performed using the statistical packages SAS version 9.4 (SAS Institute, Cary, N.C.) and SUDAAN version 11.0 (RTI International, Research Triangle Park, N.C.).

There are limitations to this analysis that should be considered when interpreting the findings. Patients with incomplete blood pressure measurements were excluded from this study, and although the proportion of visits with missing blood pressure was relatively small (3.8%), this might have introduced bias to the final estimates. Also, NAMCS only collects single BP measurements, which may affect the validity of the measurement. Because this analysis was limited to primary care physician visits made by patients with diagnosed hypertension, and so, did not include patients unaware that they have hypertension, estimates may underestimate the true health care burden of uncontrolled hypertension. Additionally, the BP measurements were recorded by hand from the medical record and typed into an automated data collection tool, a procedure that may have been subject to measurement error.

Estimating rare events, see Figure 12 for example, proved difficult because for many of the states, the sample size was too small to report reliable estimates. Another limitation is the ability to make state estimates for only 18 states and having to limit analyses to regional

estimates for the remaining states. Finally, NAMCS collects medications that were ordered, supplied, administered, or continued during a patient visit, as opposed to collecting information on medication taken by the patient. As a result, medication adherence was not examined in this report.

Results

Variation in controlled hypertension at visits to a patient’s primary care physician

Demographic variation

- During 2013–2014, hypertension was under control at an estimated 66.0% of hypertensive visits by patients in the United States (Table 1).
- Hypertension was under control at a lower percentage of hypertensive visits by patients aged 18–44 (55.2%) than hypertensive visits by older patients (65.3% by patients aged 45–64, 68.4% by patients aged 65–74, and 67.6% by patients aged 75 and over).
- Hypertension was under control at a lower percentage of hypertensive visits by non-Hispanic black persons (57.4%) than visits by non-Hispanic white (66.9%), Hispanic (69.2%), and non-Hispanic other (67.3%) persons.
- Hypertension was under control at a lower percentage of hypertensive visits by patients with no insurance (52.7%) than visits by insured patients (64.9% by patients with private insurance, 67.5% by patients with Medicare, and 67.0% by patients with Medicaid).
- Hypertension control did not differ by sex.

Regional variation

- Among the nine divisions, hypertension was under control at a majority of hypertensive visits, ranging from 60.1% in the East South Central division to 71.1% in the New England division (Figure 1, Table 2).

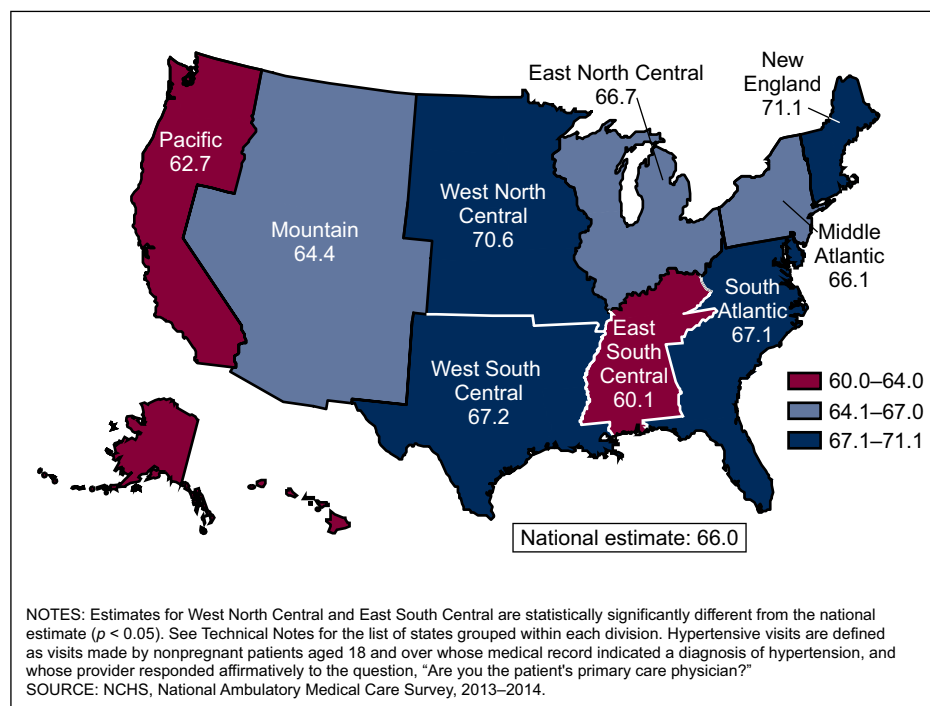


Figure 1. Percentage of hypertensive visits with hypertension under control, by geographic area: United States, 2013–2014

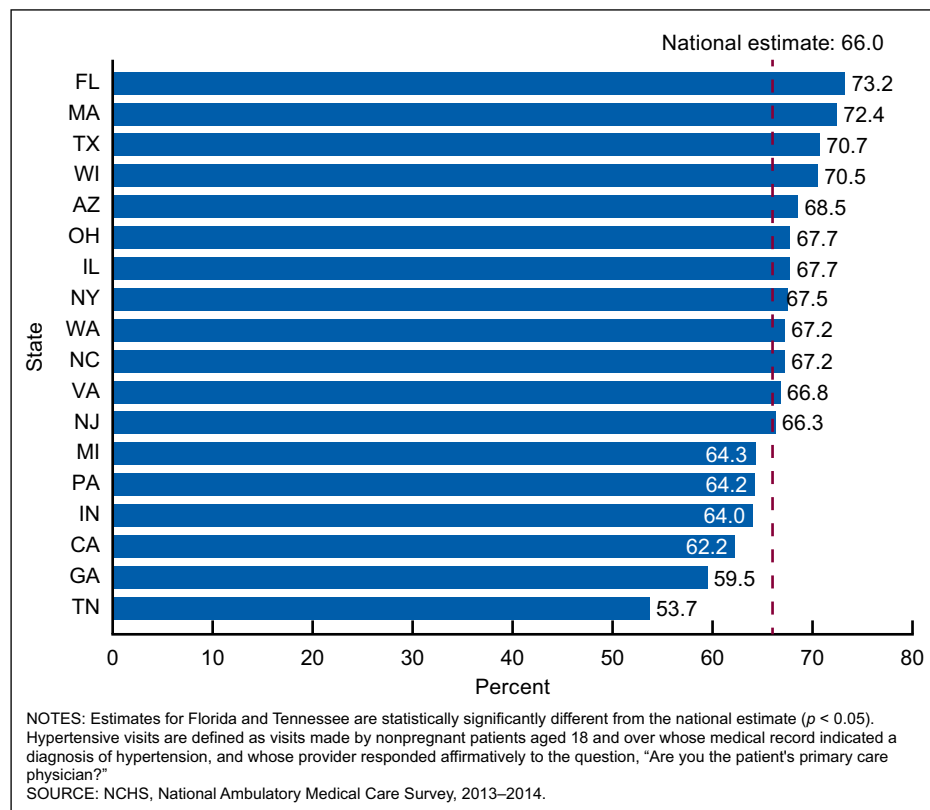


Figure 2. Percentage of hypertensive visits with hypertension under control, by state: United States, 2013–2014

- Hypertension was under control at 70.6% of hypertensive visits in the West North Central division, which was higher than the national percentage of 66.0%.
- Hypertension was under control at 60.1% of hypertensive visits in the East South Central division, which was lower than the national percentage of 66.0%.

State variation

- Among the 18 states, hypertension was under control at a majority of hypertensive visits, ranging from 53.7% in Tennessee to 73.2% in Florida (Figure 2, Table 2).
- Hypertension was under control at 73.2% of hypertensive visits in Florida, which was higher than the national percentage of 66.0%.
- Hypertension was under control at 53.7% of hypertensive visits in Tennessee, which was lower than the national percentage of 66.0%.

Variation in the mention of at least one hypertensive medication documented in the medical record at visits

Demographic variation

- During 2013–2014, an estimated 72.0% of hypertensive visits in the United States included a hypertensive medication (Table 1).
- A lower percentage of hypertensive visits by patients aged 18–44 included a hypertensive medication (63.8%) compared with hypertensive visits made by older patients (71.4% by patients aged 45–64, 72.8% by patients aged 65–74, and 74.5% by patients aged 75 and over).
- The percentage of hypertensive visits with a hypertensive medication did not differ across the four racial and ethnic groups examined (non-Hispanic white, non-Hispanic black, Hispanic, and non-Hispanic other).
- No statistically significant differences by sex, race and ethnicity, or insurance status in the percentage of hypertensive visits with a hypertensive medication were observed.

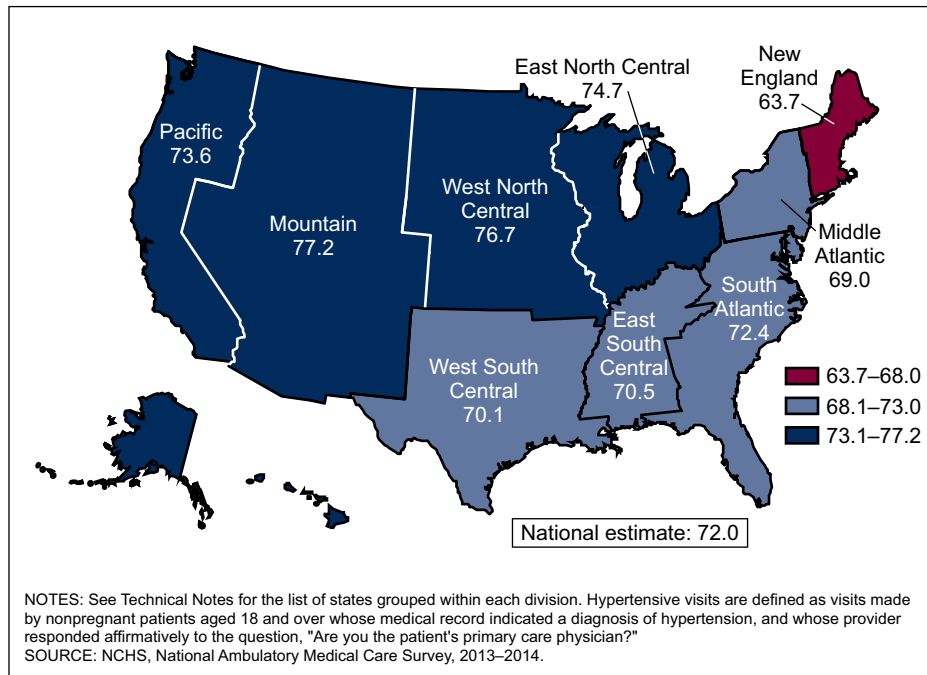


Figure 3. Percentage of hypertensive visits with mention of a hypertensive medication, by geographic area: United States, 2013–2014

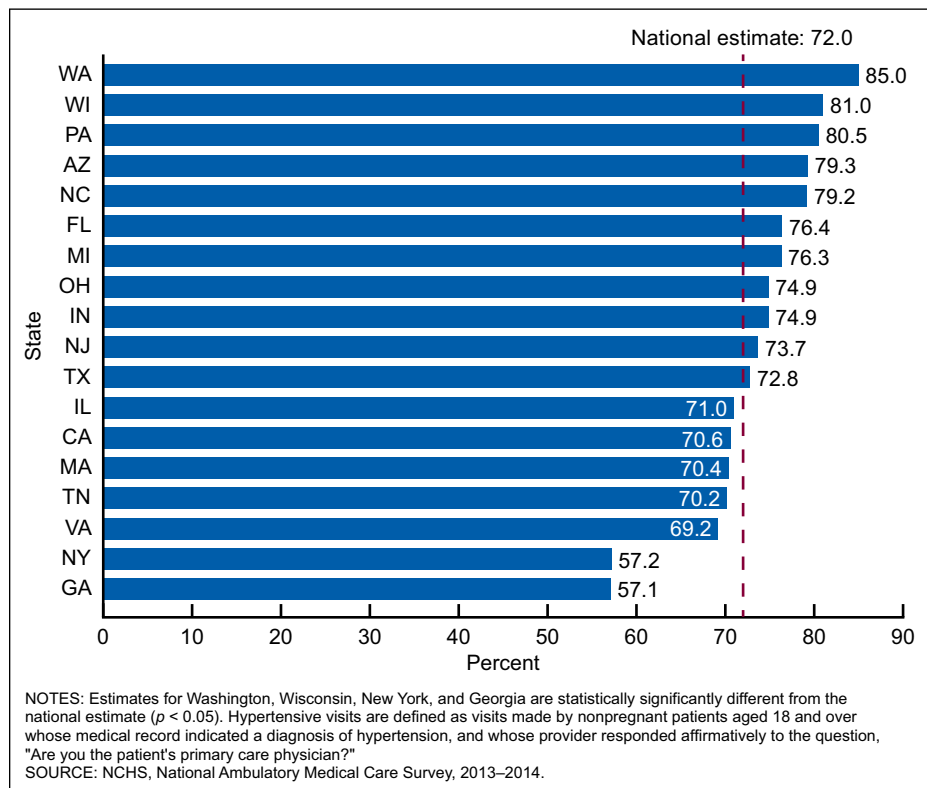


Figure 4. Percentage of hypertensive visits with mention of a hypertensive medication, by state: United States, 2013–2014

Regional variation

- Among the nine divisions, the percentage of hypertensive visits with a hypertensive medication ranged from 63.7% in the New England division to 77.2% in the Mountain division (Figure 3, Table 2). However, none of the division estimates were statistically significantly different from the national estimate of 72.0%.

State variation

- Among the 18 states, the percentage of hypertensive visits with a hypertensive medication ranged from 57.1% in Georgia to 85.0% in Washington.
- The percentage of hypertensive visits with a hypertensive medication was higher than the national percentage of 72.0% in Washington (85.0%) and Wisconsin (81.0%) (Figure 4, Table 2).
- The percentage of hypertensive visits with a hypertensive medication was lower than the national percentage of 72.0% in Georgia (57.1%) and New York (57.2%).

Variation in controlled hypertension with and without the mention of at least one hypertensive medication documented in the medical record at visits

Demographic variation

- During 2013–2014, an estimated 46.9% of hypertensive visits indicated hypertension control and had a mention of a hypertensive medication (Table 1), whereas 19.2% of hypertensive visits indicated hypertension control without any mention of a hypertensive medication.
- An estimated 33.0% of hypertensive visits by patients aged 18–44 indicated hypertension control and had a mention of a hypertensive medication, which was lower than the percentage by older patients (45.9% of visits by patients aged 45–64, 49.0% by patients aged

65–74, and 49.9% by patients aged 75 and over).

- An estimated 39.1% of hypertensive visits by non-Hispanic black persons indicated hypertension control and had a mention of a hypertensive medication, which was lower than the percentages by non-Hispanic white (47.6%), Hispanic (49.8%), and non-Hispanic other (48.7%) persons.
- An estimated 35.5% of hypertensive visits by patients with no insurance indicated hypertension control and had a mention of a hypertensive medication, which was lower than the percentage by patients with private insurance (45.5%) and Medicare (48.5%).
- No statistically significant difference by sex was observed in the percentage of hypertensive visits that indicated hypertension control and had a mention of a hypertensive medication.
- No statistically significant differences by sex, race and ethnicity, and insurance status were observed in the percentage of hypertensive visits that indicated hypertension control without any mention of a hypertensive medication.

Regional variation

- Among the nine divisions, the percentage of hypertensive visits that indicated hypertension control and had a mention of a hypertensive medication ranged from 40.7% in the East South Central division to 54.1% in the West North Central division (Figure 5, Table 2).
- An estimated 54.1% of hypertensive visits in the West North Central division indicated hypertension control and had a mention of a hypertensive medication, which was higher than the national percentage of 46.9%, but none of the division estimates were statistically significantly lower than the national estimate.
- The percentage of hypertensive visits that indicated hypertension control without any mention of a hypertensive medication ranged from 16.5% in the West North

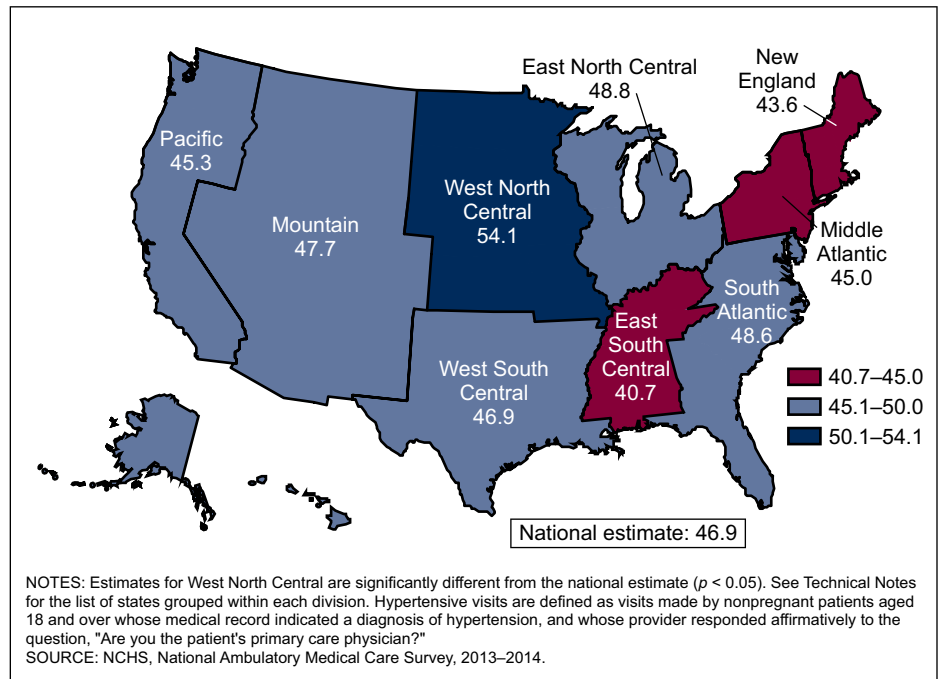


Figure 5. Percentage of hypertensive visits with an indication of hypertension control and mention of a hypertensive medication, by geographic area: United States, 2013–2014

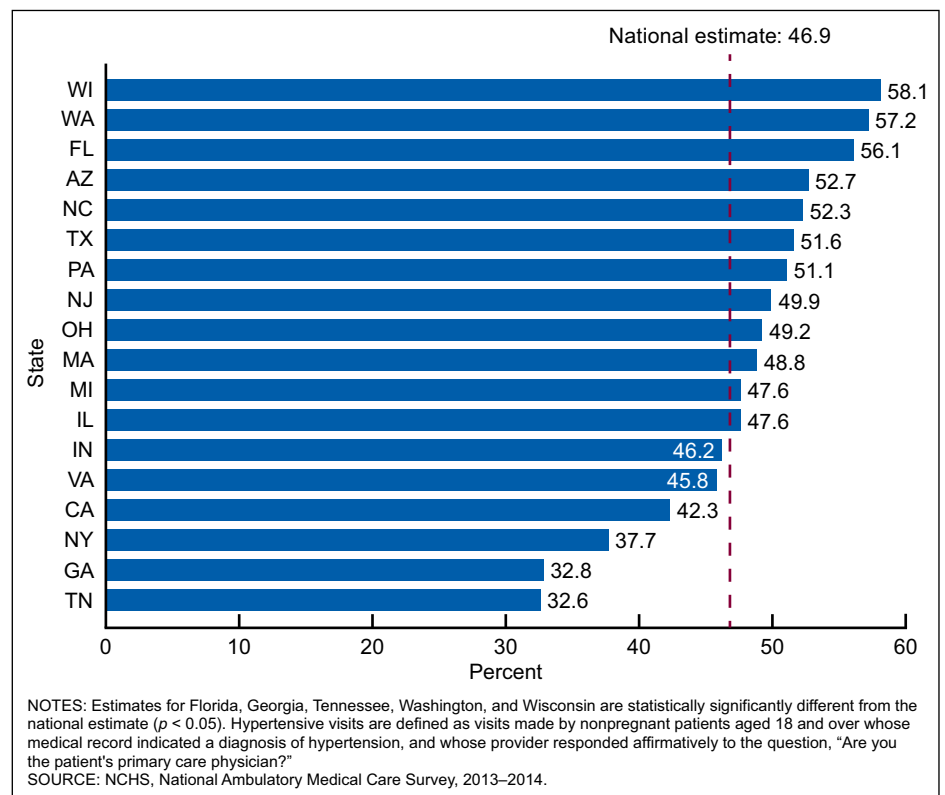


Figure 6. Percentage of hypertensive visits with an indication of hypertension control and mention of a hypertensive medication, by state: United States, 2013–2014

Central division to 27.5% in the New England division (Figure 7, Table 2).

- An estimated 27.5% of hypertensive visits in the New England division indicated hypertension control without any mention of a hypertensive medication, which was higher than the national percentage of 19.2%, but none of the division estimates were statistically significantly lower than the national estimate.

State variation

- Among the 18 states, the percentage of hypertensive visits that indicated hypertension control and had a mention of a hypertensive medication ranged from 32.6% in Tennessee to 58.1% in Wisconsin (Figure 6, Table 2).
- In three states, Florida (56.1%), Washington (57.2%), and Wisconsin (58.1%), the percentage of hypertensive visits that indicated hypertension control and had a mention of a hypertensive medication was higher than the national percentage of 46.9%.
- In two states, Georgia (32.8%) and Tennessee (32.6%), the percentage of hypertensive visits that indicated hypertension control and had a mention of a hypertensive medication was lower than the national percentage of 46.9%.
- The percentage of hypertensive visits that indicated hypertension control without any mention of a hypertensive medication ranged from 9.9% in Washington to 29.8% in New York (Figure 8, Table 2).
- In two states, Georgia (26.7%) and New York (29.8%), the percentage of hypertensive visits that indicated hypertension control without any mention of a hypertensive medication was higher than the national percentage of 19.2%.
- In two states, Washington (9.9%) and Wisconsin (12.4%), the percentage of hypertensive visits that indicated hypertension control without any mention of a hypertensive medication was lower than the national percentage of 19.2%.

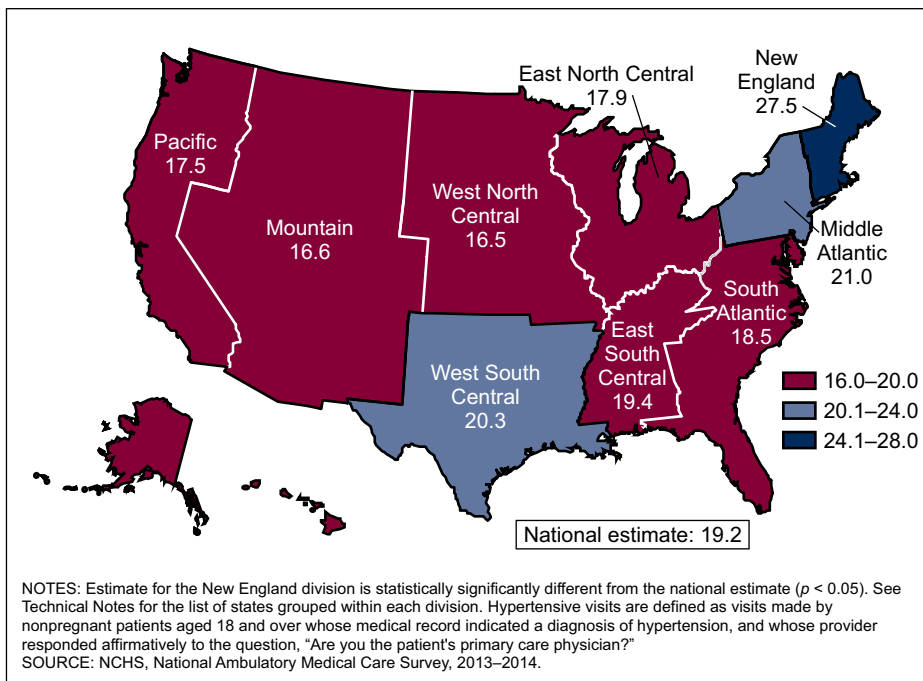


Figure 7. Percentage of hypertensive visits with an indication of hypertension control and no mention of a hypertensive medication, by geographic area: United States, 2013–2014

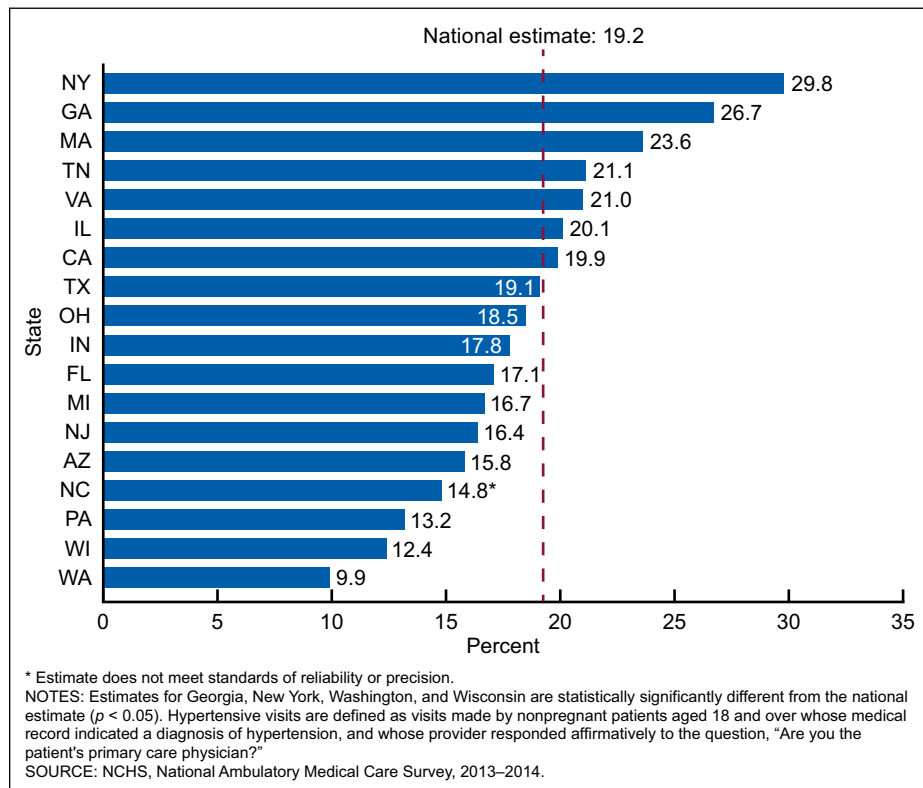


Figure 8. Percentage of hypertensive visits with an indication of hypertension control and no mention of a hypertensive medication, by state: United States, 2013–2014

Variation in uncontrolled hypertension with and without the mention of at least one hypertensive medication documented in the medical record at visits

Demographic variation

- During 2013–2014, an estimated 25.2% of hypertensive visits indicated uncontrolled hypertension and had a mention of a hypertensive medication (Table 1), whereas 8.8% of hypertensive visits indicated uncontrolled hypertension without any mention of a hypertensive medication.
- An estimated 30.8% of visits by patients aged 18–44 indicated uncontrolled hypertension and had a mention of a hypertensive medication, which was higher than the percentage by older patients (25.5% of visits by patients aged 45–64, 23.7% by patients aged 65–74, and 24.6% by patients aged 75 and over).
- An estimated 32.3% of hypertensive visits by non-Hispanic black persons indicated uncontrolled hypertension and had a mention of a hypertensive medication, which was higher than the percentages by non-Hispanic white (24.4%), Hispanic (23.1%), and non-Hispanic other (24.1%) persons.
- An estimated 37.1% of hypertensive visits by patients with no insurance indicated uncontrolled hypertension and had a mention of a hypertensive medication, which was higher than the percentage by patients with private insurance (24.8%) and Medicare (24.5%).
- An estimated 14.0% of hypertensive visits by patients aged 18–44 indicated uncontrolled hypertension without any mention of a hypertensive medication, which was higher than the percentage by older patients (9.2% of visits by patients aged 45–64, 7.9% by patients aged 65–74, and 7.8% by patients aged 75 and over).
- An estimated 10.2% of hypertensive visits by patients with private

insurance indicated uncontrolled hypertension without any mention of a hypertensive medication, which was higher than the percentage by patients with Medicare (8.0%) and Medicaid (6.7%).

- No statistically significant difference by sex was observed in the percentage of hypertensive visits that indicated uncontrolled hypertension and had a mention of a hypertensive medication.
- No statistically significant differences by sex, race and ethnicity were observed in the percentage of hypertensive visits that indicated uncontrolled hypertension without any mention of a hypertensive medication.

Regional variation

- Among the nine divisions, the percentage of hypertensive visits that indicated uncontrolled hypertension and had a mention of a hypertensive medication ranged from 20.1% in the New England division to 29.7% in the East South Central division (Figure 9, Table 2). However, none of the division estimates were statistically significantly different from the national estimate of 25.2%.

- The percentage of hypertensive visits that indicated uncontrolled hypertension without any mention of a hypertensive medication ranged from 6.2% in the Mountain division to 10.1% in the East South Central division (Figure 11, Table 2). None of the division estimates were statistically significantly higher than the national estimate of 8.8%.
- An estimated 6.2% of hypertensive visits in the Mountain division indicated uncontrolled hypertension without any mention of a hypertensive medication, which was lower than the national percentage of 8.8%.

State variation

- Among the 18 states, the percentage of hypertensive visits that indicated uncontrolled hypertension and had a mention of a hypertensive medication ranged from 19.5% in New York to 37.6% in Tennessee (Figure 10, Table 2).
- An estimated 37.6% of hypertensive visits in Tennessee indicated uncontrolled hypertension and had a mention of a hypertensive medication mention, which was higher than the national percentage of 25.2%.

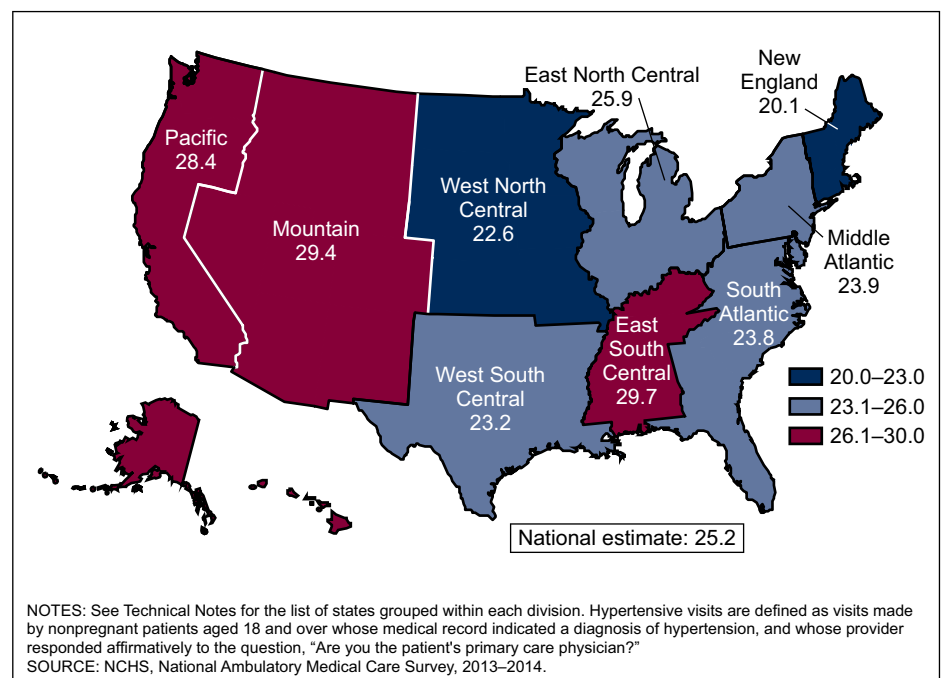


Figure 9. Percentage of hypertensive visits with an indication of uncontrolled hypertension and mention of a hypertensive medication, by geographic area: United States, 2013–2014

- An estimated 19.5% of hypertensive visits in New York indicated uncontrolled hypertension and had a mention of a hypertensive medication, which was lower than the national percentage of 25.2%.
- The percentage of hypertensive visits that indicated uncontrolled hypertension without any mention of a hypertensive medication ranged from 7.0% in Michigan to 16.2% in Georgia (Figure 12, Table 2). However, none of the state estimates were statistically significantly different from the national estimate of 8.8%.

Summary

Multiple studies have reported variability among cardiovascular health indicators across the United States (9–11), but there is limited information on state and regional differences in the occurrence of adult hypertensive visits made to physician offices. This report aims to describe the variation in hypertension control and pharmaceutical treatment among patients accessing health services through their primary care physicians by selected demographic and geographic characteristics.

During 2013–2014, 46.9% of all visits to primary care physicians by nonpregnant adults aged 18 and over were made by those with hypertension. Hypertension was under control at about two-thirds of hypertensive visits (66.0%), and a hypertensive medication was ordered or provided at almost three-quarters (72.0%) of hypertensive visits by patients in the United States.

Hypertension control and medication treatment varied by selected demographic characteristics. A smaller percentage of hypertensive visits made by those aged 18–44 had an indication of hypertension control or a mention of a hypertensive medication. A smaller percentage of hypertensive visits by patients with no insurance had an indication of hypertension control. There was no difference in the percentage of hypertensive visits with mention of a hypertensive medication by insurance. A smaller percentage of hypertensive visits by non-Hispanic black persons compared with visits by other racial and ethnic

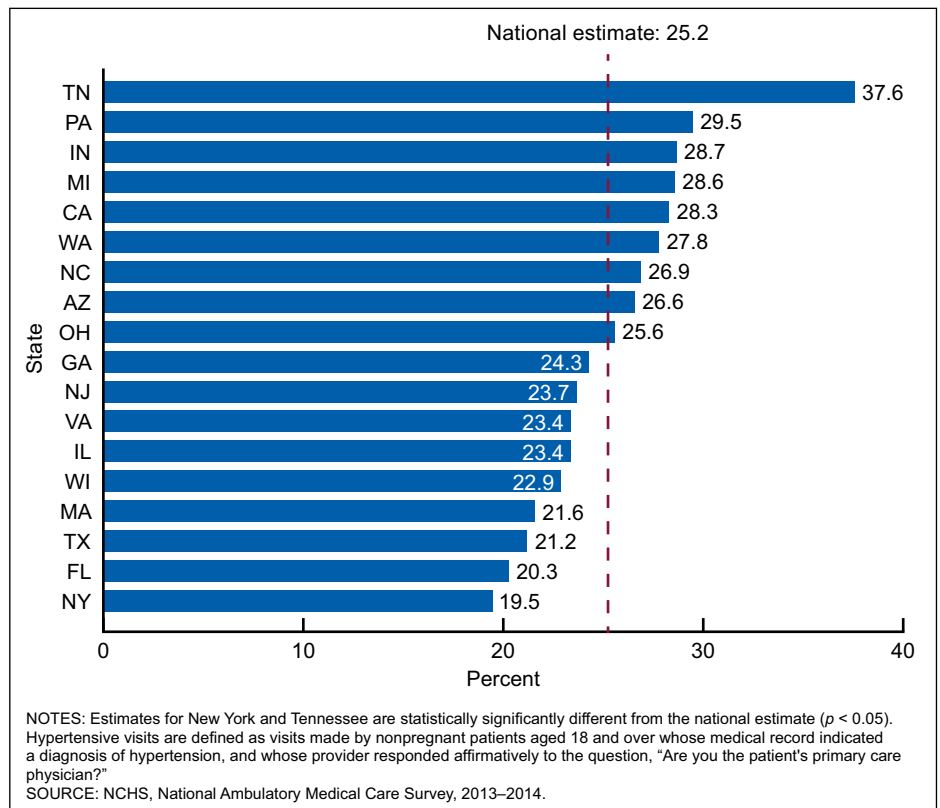


Figure 10. Percentage of hypertensive visits with an indication of uncontrolled hypertension and mention of a hypertensive medication, by state: United States, 2013–2014

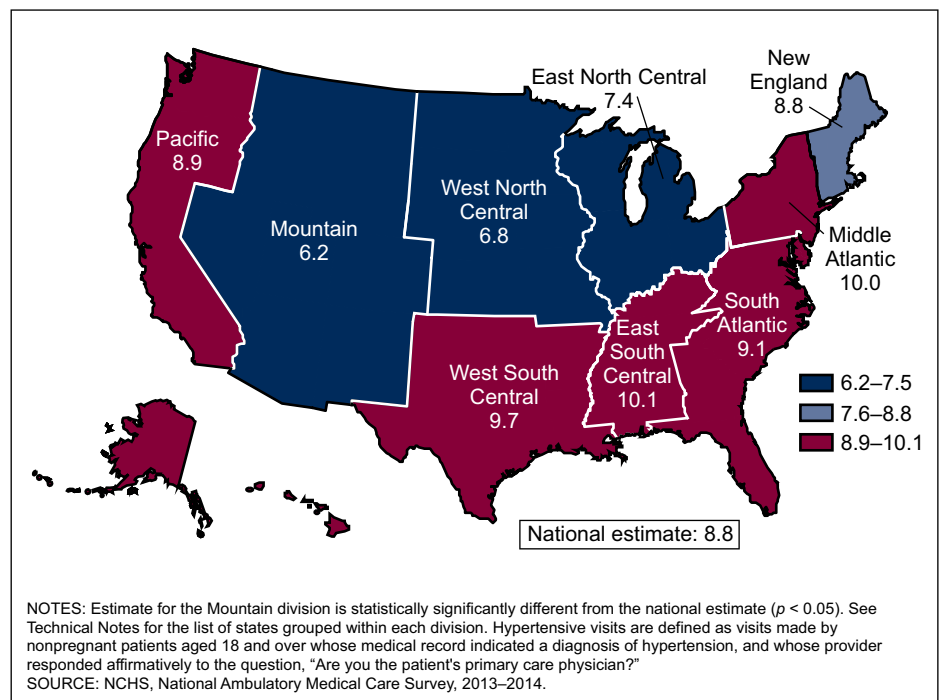


Figure 11. Percentage of hypertensive visits with an indication of uncontrolled hypertension and no mention of a hypertensive medication, by geographic area: United States, 2013–2014

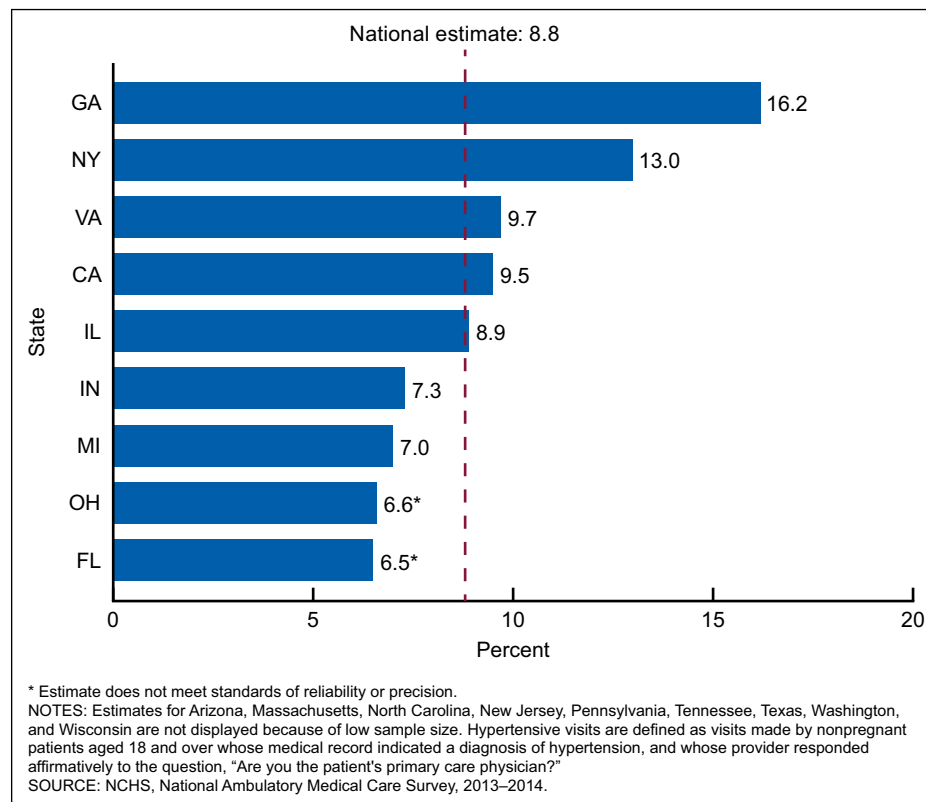


Figure 12. Percentage of hypertensive visits with an indication of uncontrolled hypertension and no mention of a hypertensive medication, by state: United States, 2013–2014

groups had an indication of hypertension control. Despite this disparity, there were no statistically significant differences by race and ethnicity in visits with mention of a hypertensive medication.

Hypertension control and the mention of a hypertensive medication clustered geographically by state. For instance, New York and New Jersey had similar, relatively high percentages of hypertensive visits that indicated hypertension control (Figure 2). Michigan, Illinois, Indiana, and Ohio had similar percentages of hypertensive visits that indicated hypertension control and similar percentages of hypertensive visits that had mention of a hypertensive medication that hovered around the national estimate of each respective outcome (66.0% for hypertension control and 72.0% for mention of a hypertensive medication).

Poor hypertension control at hypertensive visits was more widespread in states considered to be part of the "stroke belt," which is an 11-state region in the southeast United States characterized by stroke death rates that are 10% higher than the U.S.

average (12). The states included in the stroke belt are: Alabama, Arkansas, Georgia, Indiana, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia (13). The geographic association seems to persist in the context of ambulatory care, with lower percentages of controlled hypertension around this region.

When examining hypertension control and mention of a hypertensive medication jointly, the most common combination was an indication of controlled hypertension and mention of a hypertensive medication; followed by uncontrolled hypertension and mention of a hypertensive medication; controlled hypertension and no hypertensive medication mention; and uncontrolled hypertension and no hypertensive medication mention (Tables 1 and 2).

Variation by selected demographic characteristics existed when examining hypertension control and mention of a hypertensive medication jointly. Almost one-half of visits by patients with private insurance and Medicare indicated hypertension control and had a mention of a hypertensive medication

compared with only about one-third of the visits by patients with no insurance. Compared with visits by other racial and ethnic groups, a smaller percentage of hypertensive visits by non-Hispanic black persons indicated hypertension control and mention of a hypertensive medication. Previous studies have documented a disparity in blood pressure control by race and ethnicity, in which blacks have lower BP control (14,15). Suggested explanations for the disparity include increased medication nonadherence and adverse effects of medications, as well as a higher prevalence of resistant hypertension being observed in black persons (12, 16,17).

Geographic variation was also found when examining hypertension control and mention of a hypertensive medication jointly. The percentages of hypertensive visits that indicated hypertension control and had a mention of a hypertensive medication were more than 10 percentage points lower than the national estimate (46.9%) in Tennessee (32.6%) and Georgia (32.8%). In Tennessee, 37.6% of hypertensive visits indicated uncontrolled hypertension, despite including a hypertensive medication, which was about 50% higher than the national estimate of 25.2%. In addition, in Georgia, of the hypertensive visits that did not include a hypertensive medication, 37.7% indicated uncontrolled hypertension, which represented 16.2% of all hypertensive visits in the state and was almost double that of the national estimate of 8.8%.

This report found wide variation in hypertension control and mention of a hypertensive medication by selected demographic and geographical characteristics. Analyses of office-based health care visits at the state and regional level may help inform local policies and initiatives to better improve hypertension control and use of hypertensive medications at the population level (18).

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Table 1. Adult hypertensive visits to primary care physicians, by selected demographic characteristics, control, and medication status: United States, 2013–2014

Selected demographic characteristics	All hypertensive visits		Controlled hypertensive visits		Hypertensive medication mention		Controlled hypertensive visits with medication mention	Controlled hypertensive visits with no medication mention	Uncontrolled hypertensive visits with medication mention	Uncontrolled hypertensive visits with no medication mention
	Number of visits in thousands (standard error)	Percent distribution (standard error)	Number of visits in thousands (standard error)	Percent (standard error)	Number of visits in thousands (standard error)	Percent (standard error)	Percent distribution ¹ (standard error)			
Total	121,889 (4,808)	100.0 ...	80,465 (3,378)	66.0 (0.8)	87,797 (3,795)	72.0 (1.1)	46.9 (1.0)	19.2 (0.8)	25.2 (0.8)	8.8 (0.6)
Sex										
Women	68,898 (2,994)	56.5 (0.9)	45,650 (2,112)	66.3 (1.0)	49,327 (2,339)	71.6 (1.2)	46.7 (1.2)	19.6 (0.9)	24.9 (0.9)	8.8 (0.6)
Men	52,991 (2,251)	43.5 (0.9)	34,815 (1,622)	65.7 (1.1)	38,470 (1,801)	72.6 (1.4)	47.1 (1.3)	18.6 (1.1)	25.5 (1.0)	8.8 (0.8)
Age group in years										
18–44	9,406 (600)	7.7 (0.4)	5,192 (374)	55.2 (2.3)	5,997 (401)	63.8 (2.4)	33.0 (2.1)	22.2 (2.0)	30.8 (2.0)	14.0 (1.9)
45–64	44,734 (1,911)	36.7 (0.8)	29,192 (1,335)	² 65.3 (1.0)	31,918 (1,533)	² 71.4 (1.4)	² 45.9 (1.3)	19.4 (1.1)	² 25.5 (1.0)	² 9.2 (0.8)
65–74	33,897 (1,655)	27.8 (0.7)	23,181 (1,250)	² 68.4 (1.2)	24,672 (1,359)	² 72.8 (1.5)	² 49.0 (1.4)	19.3 (1.3)	² 23.7 (1.2)	² 7.9 (0.8)
75 and over	33,851 (1,681)	27.8 (0.8)	22,900 (1,301)	² 67.6 (1.5)	25,210 (1,368)	² 74.5 (1.7)	² 49.9 (1.7)	17.8 (1.5)	² 24.6 (1.3)	² 7.8 (0.8)
Race and ethnicity										
Non-Hispanic white	86,531 (3,584)	71.0 (1.7)	57,854 (2,563)	³ 66.9 (0.8)	62,242 (2,834)	71.9 (1.3)	³ 47.6 (1.1)	19.3 (1.0)	³ 24.4 (0.8)	8.8 (0.6)
Non-Hispanic black	14,819 (1,264)	12.2 (0.9)	8,513 (786)	57.4 (1.9)	10,584 (1,053)	71.4 (2.6)	39.1 (2.3)	18.3 (1.7)	32.3 (2.0)	10.2 (1.5)
Hispanic	14,542 (1,882)	11.9 (1.4)	10,064 (1,489)	³ 69.2 (3.3)	10,603 (1,436)	72.9 (2.2)	³ 49.8 (3.2)	19.4 (1.9)	³ 23.1 (2.9)	7.7 (1.4)
Non-Hispanic other	5,997 (1,069)	4.9 (0.8)	4,034 (783)	³ 67.3 (3.1)	4,368 (742)	72.8 (5.1)	³ 48.7 (4.2)	18.5 (3.8)	³ 24.1 (2.9)	* *
Insurance										
Private	43,760 (2,089)	35.9 (1.1)	28,422 (1,498)	⁴ 64.9 (1.2)	30,782 (1,586)	70.3 (1.4)	⁴ 45.5 (1.3)	19.5 (1.0)	⁴ 24.8 (1.0)	10.2 (0.8)
Medicare	61,988 (2,945)	50.9 (1.1)	41,872 (2,153)	⁴ 67.5 (1.1)	45,263 (2,398)	73.0 (1.4)	⁴ 48.5 (1.4)	19.0 (1.1)	⁴ 24.5 (1.1)	⁵ 8.0 (0.7)
Medicaid	6,602 (648)	5.4 (0.5)	4,425 (495)	⁴ 67.0 (2.7)	4,648 (497)	70.4 (3.2)	44.1 (2.9)	22.9 (2.9)	26.3 (2.8)	⁵ 6.7 (1.4)
No insurance	2,398 (323)	2.0 (0.3)	1,263 (194)	52.7 (5.0)	1,742 (270)	72.6 (4.8)	35.5 (4.8)	17.1 (3.7)	37.1 (5.3)	* *
Workers or other	2,067 (538)	1.7 (0.4)	1,225 (334)	59.3 (4.6)	1,398 (353)	67.6 (5.0)	40.3 (6.1)	* *	27.4 (5.5)	* *
Unknown or blank	5,073 (658)	4.2 (0.5)	3,258 (473)	⁴ 64.2 (3.0)	3,963 (580)	78.1 (3.6)	⁴ 50.0 (3.8)	14.2 (2.1)	28.1 (2.8)	7.6 (2.2)

... Category not applicable.

* Estimate does not meet standards of reliability or precision.

¹The four groupings—controlled with and without medication mention and uncontrolled with and without medication mention—are mutually exclusive categories and together total all adult hypertensive visits to primary care physicians, with each row representing the percent distribution for that demographic characteristic.

²Statistically significantly different from 18–44 age group ($p < 0.05$).

³Statistically significantly different from non-Hispanic black persons ($p < 0.05$).

⁴Statistically significantly different from no insurance ($p < 0.05$).

⁵Statistically significantly different from private ($p < 0.05$).

NOTE: Hypertensive visits are defined as visits made by nonpregnant patients aged 18 and over whose medical record indicated a diagnosis of hypertension, and whose provider responded affirmatively to the question, "Are you the patient's primary care physician?"

SOURCE: NCHS, National Ambulatory Medical Care Survey, 2013–2014.

Table 2. Adult hypertensive visits to primary care physicians, by geographic area: United States, 2013–2014

Geographic area	All hypertensive visits		Controlled hypertensive visits		Hypertensive medication mention		Controlled hypertensive visits with medication mention	Controlled hypertensive visits with no medication mention	Uncontrolled hypertensive visits with medication mention	Uncontrolled hypertensive visits with no medication mention
	Number of visits in thousands (standard error)	Percent distribution (standard error)	Number of visits in thousands (standard error)	Percent (standard error)	Number of visits in thousands (standard error)	Percent (standard error)	Percent distribution ¹ (standard error)			
National	121,889 (4,808)	100.0 ...	80,465 (3,378)	66.0 (0.8)	87,797 (3,795)	72.0 (1.1)	46.9 (1.0)	19.2 (0.8)	25.2 (0.8)	8.8 (0.6)
Division										
New England	6,291 (915)	5.2 (0.7)	4,476 (699)	71.1 (2.8)	4,007 (661)	63.7 (5.1)	43.6 (4.4)	² 27.5 (4.1)	20.1 (2.6)	8.8 (1.9)
Middle Atlantic	19,140 (2,039)	15.7 (1.5)	12,650 (1,442)	66.1 (2.0)	13,199 (1,529)	69.0 (3.5)	45.0 (3.0)	21.0 (2.9)	23.9 (1.8)	10.0 (1.6)
East North Central	17,983 (1,315)	14.8 (1.1)	11,998 (917)	66.7 (1.4)	13,434 (1,045)	74.7 (2.1)	48.8 (1.8)	17.9 (1.6)	25.9 (1.4)	7.4 (0.9)
West North Central	5,378 (656)	4.4 (0.5)	3,795 (460)	² 70.6 (2.2)	4,124 (570)	76.7 (3.3)	² 54.1 (3.0)	16.5 (2.6)	22.6 (1.8)	6.8 (1.5)
South Atlantic	28,165 (2,497)	23.1 (1.8)	18,904 (1,790)	67.1 (1.9)	20,379 (1,980)	72.4 (2.6)	48.6 (2.3)	18.5 (1.6)	23.8 (1.8)	9.1 (1.5)
East South Central	7,093 (704)	5.8 (0.6)	4,266 (497)	² 60.1 (2.7)	4,997 (526)	70.5 (3.4)	40.7 (3.0)	19.4 (2.4)	29.7 (2.4)	10.1 (2.0)
West South Central	12,037 (1,689)	9.9 (1.3)	8,086 (1,366)	67.2 (3.4)	8,437 (1,334)	70.1 (3.9)	46.9 (4.1)	20.3 (2.8)	23.2 (2.8)	9.7 (1.8)
Mountain	6,213 (722)	5.1 (0.6)	4,000 (484)	64.4 (2.3)	4,793 (617)	77.2 (2.9)	47.7 (2.6)	16.6 (2.5)	29.4 (2.2)	² 6.2 (1.1)
Pacific	19,589 (2,445)	16.1 (1.8)	12,291 (1,515)	62.7 (1.7)	14,427 (1,977)	73.6 (3.0)	45.3 (2.6)	17.5 (2.2)	28.4 (2.0)	8.9 (1.4)
States										
Arizona	2,028 (359)	1.7 (0.3)	1,389 (270)	68.5 (3.6)	1,608 (312)	79.3 (3.8)	52.7 (3.9)	15.8 (3.3)	26.6 (3.4)	* *
California	14,789 (2,392)	12.1 (1.8)	9,203 (1,478)	62.2 (2.2)	10,438 (1,925)	70.6 (4.0)	42.3 (3.4)	19.9 (2.9)	28.3 (2.7)	9.5 (1.9)
Florida	13,041 (2,063)	10.7 (1.6)	9,541 (1,565)	² 73.2 (3.2)	9,968 (1,723)	76.4 (3.8)	² 56.1 (3.4)	17.1 (2.6)	20.3 (3.2)	² 6.5 (2.2)
Georgia	3,055 (677)	2.5 (0.6)	1,819 (379)	59.5 (3.3)	1,745 (363)	² 57.1 (5.9)	² 32.8 (4.3)	² 26.7 (3.7)	24.3 (2.7)	16.2 (4.0)
Illinois	4,875 (728)	4.0 (0.6)	3,303 (503)	67.7 (2.8)	3,459 (546)	71.0 (4.1)	47.6 (3.8)	20.1 (3.4)	23.4 (2.1)	8.9 (1.8)
Indiana	2,627 (399)	2.2 (0.3)	1,682 (276)	64.0 (3.6)	1,968 (296)	74.9 (4.7)	46.2 (3.7)	17.8 (3.8)	28.7 (3.6)	7.3 (1.5)
Massachusetts	2,643 (598)	2.2 (0.5)	1,913 (468)	72.4 (4.5)	1,860 (492)	70.4 (6.9)	48.8 (5.9)	23.6 (6.0)	21.6 (4.7)	* *
Michigan	3,939 (631)	3.2 (0.5)	2,534 (433)	64.3 (2.7)	3,004 (510)	76.3 (4.3)	47.6 (3.3)	16.7 (3.2)	28.6 (2.8)	7.0 (1.7)
New Jersey	4,206 (1,012)	3.5 (0.8)	2,789 (667)	66.3 (3.8)	3,099 (825)	73.7 (4.2)	49.9 (4.3)	16.4 (3.1)	23.7 (3.6)	* *
New York	8,237 (1,377)	6.8 (1.1)	5,561 (1,013)	67.5 (3.4)	4,709 (823)	² 57.2 (5.9)	37.7 (4.7)	² 29.8 (5.2)	² 19.5 (2.7)	13.0 (3.2)
North Carolina	2,886 (595)	2.4 (0.5)	1,938 (457)	67.2 (4.6)	2,287 (525)	79.2 (6.1)	52.3 (6.8)	² 14.8 (4.7)	26.9 (4.4)	* *
Ohio	4,842 (764)	4.0 (0.6)	3,280 (541)	67.7 (3.3)	3,625 (635)	74.9 (4.9)	49.2 (4.2)	18.5 (3.4)	25.6 (3.3)	² 6.6 (2.1)
Pennsylvania	6,697 (1,132)	5.5 (0.9)	4,300 (792)	64.2 (3.2)	5,391 (998)	80.5 (4.3)	51.1 (4.6)	13.2 (3.0)	29.5 (3.0)	* *
Tennessee	1,761 (302)	1.4 (0.3)	945 (214)	² 53.7 (5.5)	1,235 (196)	70.2 (6.6)	² 32.6 (5.0)	21.1 (6.0)	² 37.6 (5.7)	* *
Texas	8,352 (1,589)	6.9 (1.2)	5,905 (1,322)	70.7 (4.2)	6,083 (1,259)	72.8 (4.9)	51.6 (5.2)	19.1 (3.6)	21.2 (3.2)	* *
Virginia	3,278 (469)	2.7 (0.4)	2,191 (325)	66.8 (3.6)	2,269 (368)	69.2 (5.4)	45.8 (5.0)	21.0 (3.9)	23.4 (3.2)	9.7 (2.4)
Washington	2,351 (327)	1.9 (0.3)	1,579 (233)	67.2 (2.5)	1,999 (288)	² 85.0 (2.0)	² 57.2 (2.5)	² 9.9 (1.5)	27.8 (2.3)	* *
Wisconsin	1,700 (242)	1.4 (0.2)	1,198 (176)	70.5 (2.7)	1,377 (208)	² 81.0 (3.2)	² 58.1 (3.0)	² 12.4 (2.3)	22.9 (2.5)	* *

... Category not applicable.

* Estimate does not meet standards of reliability or precision.

¹The four groupings—controlled with and without medication mention and uncontrolled with and without medication mention—are mutually exclusive categories and together total all adult hypertensive visits to primary care physicians, with each row representing the percent distribution for that geographic area.

²Statistically significantly different from national ($p < 0.05$).

NOTES: Hypertensive visits are defined as visits made by nonpregnant patients 18 years and older whose medical record indicated a diagnosis of hypertension, and whose provider responded affirmatively to the question, "Are you the patient's primary care physician?" Numbers may not add to totals because of rounding.

SOURCE: NCHS, National Ambulatory Medical Care Survey, 2013–2014.

Technical Notes

Census division

The 50 states and the District of Columbia are divided into four census regions (Northeast, Midwest, South, and West), which are subdivided into nine census divisions:

East North Central—Indiana, Illinois, Michigan, Ohio, and Wisconsin

East South Central—Alabama, Kentucky, Mississippi, and Tennessee

Mid-Atlantic—New Jersey, New York, and Pennsylvania

Mountain—Arizona, Colorado, Idaho, New Mexico, Montana, Utah, Nevada, and Wyoming

New England—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

Pacific—Alaska, California, Hawaii, Oregon, and Washington

South Atlantic—Delaware, Florida, Georgia, District of Columbia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia

West North Central—Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota

West South Central—Arkansas, Louisiana, Oklahoma, and Texas

Controlled hypertension

All visits made to the patient's primary care physician by nonpregnant adult patients aged 18 and over with documentation in the medical record for both hypertension and a blood pressure (BP) measurement of less than 140/90 mm Hg for that visit (4).

Hypertension and other chronic conditions

Since 2005, the National Ambulatory Medical Care Survey has asked, "Regardless of the diagnosis for the current visit, does the patient now have (mark all that apply): hypertension, arthritis, asthma, cancer, cerebrovascular disease, chronic obstructive pulmonary disease, chronic renal failure, congestive heart failure, depression, diabetes, hyperlipidemia, ischemic heart disease, obesity, and osteoporosis." This item

has since changed to include additional chronic conditions. To be sure that the checkboxes are all-inclusive, during the data editing process, a consistency check is performed to be sure that any record with a visit diagnosis of any of the above chronic conditions, including hypertension, also has the checkbox marked. This report includes all visits made to a patient's primary care physician by nonpregnant adults aged 18 and over with documentation in the medical record of having hypertension. Managing hypertension is the reason for some of these visits, but many other reasons, such as a respiratory infection or an injury, are also included.

Expected source of payment for this visit

During data collection, all sources of payment were collected. These sources of payment were collapsed into one mutually exclusive variable (expected source of payment) that ranks payment sources based on the hierarchy shown below (7,8).

Medicare—Partial or full payment by Medicare plan includes payments made directly to the physician and community health center (CHC) provider as well as, payments reimbursed to the patient. Charges covered under a Medicare-sponsored prepaid plan are included.

Medicaid—Partial or full payment by Medicaid plan includes, payments made directly to the physician and CHC provider as well as payments reimbursed to the patient. Charges covered under a Medicaid-sponsored prepaid plan are included.

Private insurance—Partial or full payment by a private insurer (e.g., BlueCross BlueShield), either directly to the physician and CHC, or reimbursed to the patient. Charges covered under a private insurance sponsored prepaid plan are included.

Workers' compensation and other—Includes programs designed to enable employees injured on the job to receive financial compensation, regardless of fault. For this report, "other" includes any other source of payment not covered by the above categories, such as the

Civilian Health and Medical Program of the Uniformed Services, state and local governments, private charitable organizations, and other liability insurance (e.g., automobile collision policy coverage).

No insurance—Includes self-pay, no charge, or charity. Self-pay is charges that are paid by the patient or patient's family, which will not be reimbursed by a third party. Self-pay includes visits for which the patient is expected to be ultimately responsible for most of the bill, even if the patient never actually pays it. This does not include copayments or deductibles. No charge or charity are visits for which no fee is charged (e.g., charity, special research, or teaching).

Unknown or blank—The primary source of payment is not known or all of the sources of payment listed above are left entirely blank.

Hypertensive medications

A comprehensive list of 102 hypertensive medications was compiled by a staff pharmacist from the National Center for Health Statistics. Any hypertensive medication documented in the medical record as having been ordered, supplied, administered, or continued at that visit was included. Up to 10 drug mentions were collected per visit in 2013, and 30 mentions were collected per visit in 2014. For a complete list of the 102 medications, please contact the Ambulatory and Hospital Care Statistics Branch at 301-458-4600 or email ambcare@cdc.gov.

Patient's primary care physician

Affirmative responses to the question, "Are you the patient's primary care physician or provider?" are included.

Uncontrolled hypertension

All visits made to the patient's primary care physician by nonpregnant patients aged 18 and over with documentation in the medical record for both hypertension and a blood pressure measurement of more than or equal to 140/90 mm Hg for that visit (4).

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