

2025 Hypertension Guideline Update Modestly Expands Stage 1 Treatment Eligibility, with Net Increases Concentrated Among Older and Female Patients

Team A: Kersten Bartelt, RN; Sam Sahakian

Team B: Louis Kazaglis, MD; Grant Keane

Last updated July 7, 2026 • Check for updates at EpicResearch.org

Key Findings:

- Among adults aged 40–79 with stage 1 hypertension, treatment eligibility rose modestly from 45.2% under the 2017 guideline to 47.0% under the 2025 guideline. Overall, 3.2% of patients would be treated differently under the new guideline (2.5% gained eligibility, 0.7% lost eligibility).
- Net gains in eligibility were concentrated in older patients. Adults aged 60–69 had the largest net gain at 5.6 percentage points, and adults aged 70–79 had a net gain of 2.7 percentage points. In contrast, adults aged 40–49 and 50–59 had no change or a small net loss.
- Female patients had a 3.6 percentage point net gain in eligibility, while male patients had a 0.3 percentage point net loss. Differences across race and ethnicity groups were smaller, with net gains ranging from 1.1 percentage points among Hispanic patients to 2.1 percentage points among White patients.

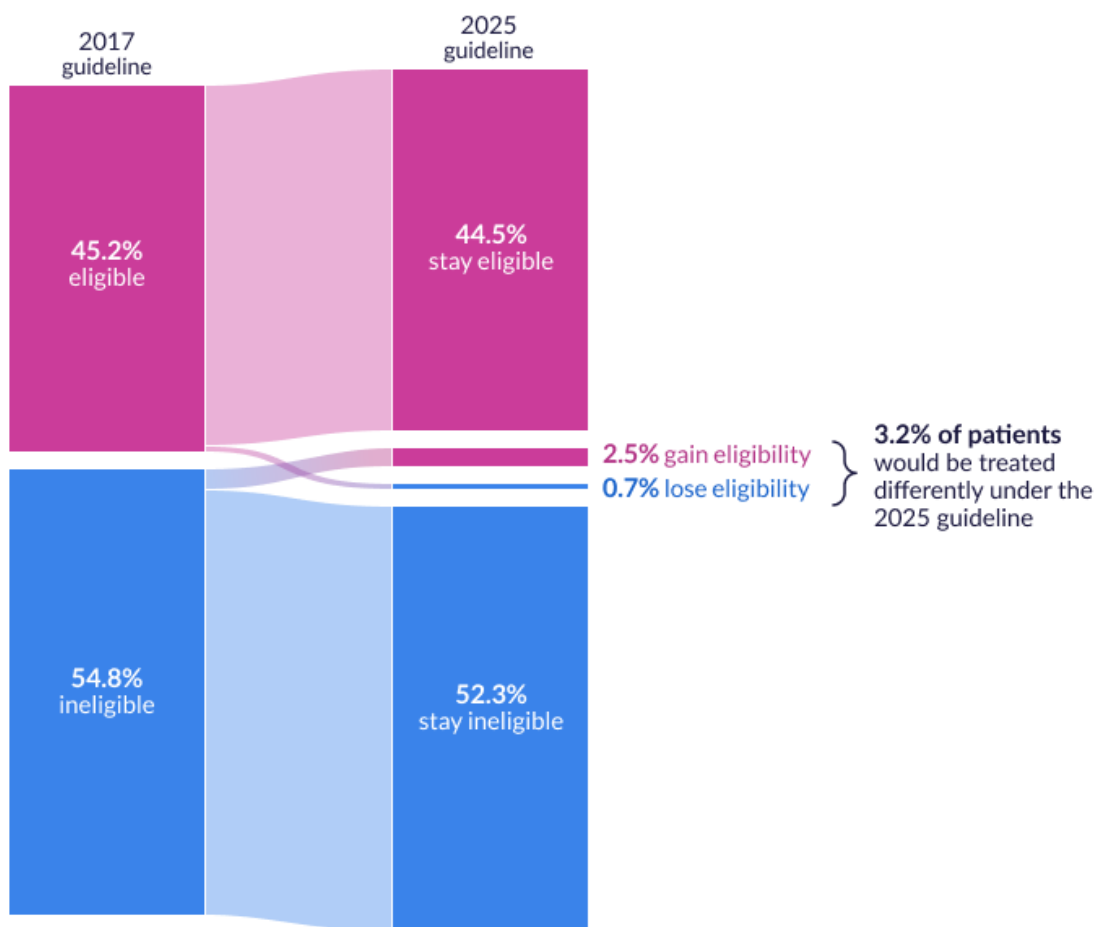
High blood pressure affects nearly half of U.S. adults and is a leading cause of heart attacks and strokes, but not everyone with mildly elevated blood pressure benefits equally from starting medication. National guidelines help clinicians decide when the benefits of treatment outweigh the risks. When those guidelines change, millions of people can move into or out of a treatment recommendation overnight. The 2017 American Heart Association (AHA) guideline recommended antihypertensive medication for adults with stage 1 hypertension (130–139/80–89 mm Hg) who had established cardiovascular disease (CVD), diabetes, chronic kidney disease, or a 10-year atherosclerotic CVD risk of at least 10% as estimated by the pooled cohort equations.¹ In August 2025, the AHA released updated high blood pressure guidance that incorporates the AHA's PREVENT risk equations and recommends a lower threshold of 7.5% 10-year total CVD risk for medication initiation in stage 1 hypertension.² Prior work has shown that PREVENT can generate different risk estimates than the pooled cohort equations across demographic groups,³ which raises practical questions about who gains eligibility, who loses eligibility, and how these shifts vary across age, sex, and race and ethnicity. A recent analysis of National Health and Nutrition Examination Survey (NHANES) data found a small net increase in eligibility under the 2025 guideline, with gains concentrated among older women,⁴ but it is unclear how those patterns hold in a large clinical population.

We studied more than 1.7 million U.S. adults aged 40–79 with confirmed stage 1 hypertension (two outpatient blood pressure readings in the 130–139/80–89 mm Hg range) between August 2024 and July 2025, excluding patients already on antihypertensives, with prior hypertension, or pregnant. For each patient, we calculated eligibility under both the 2017 and 2025 criteria using the same lab values and compared the results.

The 2025 guideline produced a modest expansion in treatment eligibility rather than a sweeping change. 47.0% of patients met the 2025 eligibility criteria compared with 45.2% under the 2017 criteria, a net increase of 1.8 percentage points. As shown in Figure 1, 44.5% of patients qualified under both guidelines,

2.5% gained eligibility under the 2025 guideline, 0.7% lost eligibility, and 52.3% were ineligible under both guidelines. In total, 3.2% of patients would be treated differently under the new guideline.

Stage 1 Hypertension Treatment Eligibility by Guideline



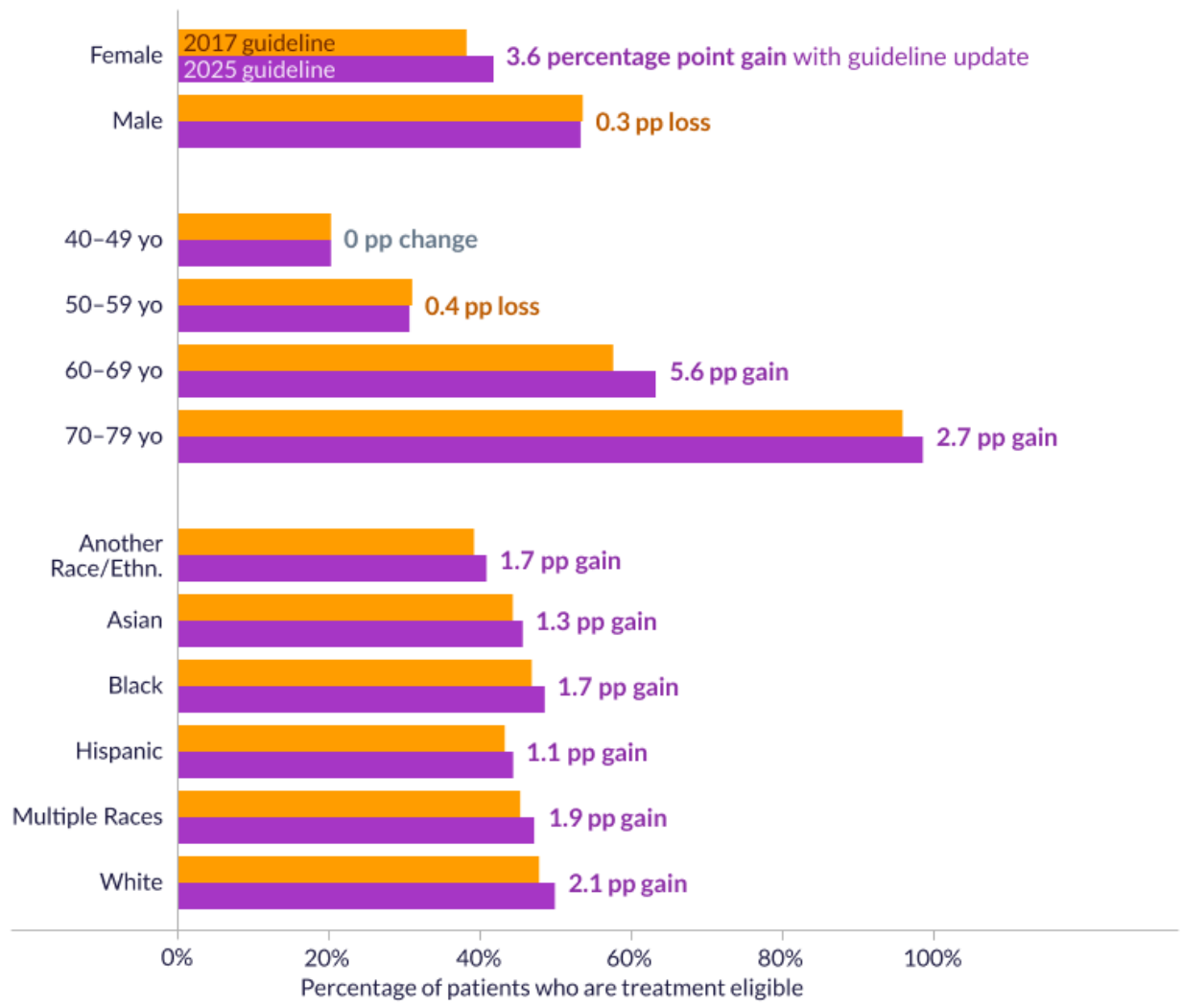
N=1,743,715 adults w/ stage 1 HTN

"Stage 1 Hypertension Treatment Eligibility by Guideline," 2026. EpicResearch.org

Figure 1. The distribution of patients with stage 1 hypertension who qualify for antihypertensive treatment under the 2017 guideline, the 2025 guideline, both, or neither.

Net changes in eligibility were not evenly distributed across subgroups. Older patients had the largest net gains: adults aged 60–69 had a net increase of 5.6 percentage points, and adults aged 70–79 had a net increase of 2.7 percentage points, while adults aged 40–49 and 50–59 had essentially no change or a small net loss. Female patients had a net gain of 3.6 percentage points, while male patients had a small net loss of 0.3 percentage points. Differences across race and ethnicity groups were smaller but still present, with net gains ranging from 1.1 percentage points among Hispanic patients to 2.1 percentage points among White patients.

Stage 1 Hypertension Treatment Eligibility by Demographics



N=1,743,715 adults w/ stage 1 HTN

"Stage 1 Hypertension Treatment Eligibility by Demographics," 2026. EpicResearch.org

Figure 2. The rate of stage 1 hypertension antihypertensive treatment eligibility under the 2017 guideline and the 2025 guideline by sex, age, and race/ethnicity.

These data come from Cosmos, a dataset created in collaboration with a community of Epic health systems representing more than 307 million patient records from 2,000 hospitals and more than 49,000 clinics from all 50 U.S. states, Canada, Lebanon, and Saudi Arabia. This study was completed by two teams that worked independently, each composed of a clinician and research scientist. The two teams came to similar conclusions. Graphics by Brian Olson.

References

1. 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. Hypertension. 2018;71(6). doi:10.1161/HYP.0000000000000065

2. Jones DW, Ferdinand KC, Taler SJ, et al. 2025 guideline for the prevention, detection, evaluation and management of high blood pressure in adults. *Circulation*. Published online August 14, 2025. doi:10.1161/CIR.0000000000001356
3. Anderson TS, Wilson LM, Sussman JB. Atherosclerotic cardiovascular disease risk estimates using the Predicting Risk of Cardiovascular Disease Events equations. *JAMA Intern Med*. 2024;184(8):963-970. doi:10.1001/jamainternmed.2024.1302
4. Metlock FE, Nriagu BN, Scheuermann B, et al. Shifting Thresholds: Changes in Antihypertensive Eligibility Under the 2025 Versus 2017 Hypertension Guidelines. *JACC Adv*. 2026;5(2):102546. doi:10.1016/j.jacadv.2025.102546

Data Definitions

Term	Definition
Study period	8/1/2024 to 7/31/2025
Study population: inclusion	Patients who: Have a residence in the U.S. Were aged 40–79 on the index date Have an evaluated sex of female or male Qualify as a stage 1 hypertension patient
Study population: exclusion	Patients who: Are prescribed an antihypertensive prior to the study period Qualify as a stage 1 hypertension patient before the index date or in the two years preceding the study period Qualify as a stage 2 hypertension patient before the index date or in the two years preceding the study period Qualify as a stage 2 hypertension patient during the study period Have evidence of pregnancy between the two qualifying BP readings
Stage 1 hypertension patient	Patients who have: A stage 1 hypertension BP reading during the study period (the index event), measured in an outpatient face-to-face visit ; the last BP result from the visit is taken A second stage 1 hypertension BP reading between 1 week and 18 months prior to the index date, measured in an outpatient face-to-face visit ; the last BP result from the visit is taken
Stage 2 hypertension patient	Patients who have: A stage 2 hypertension BP reading during the study period, measured in an outpatient face-to-face visit ; the last BP result from the visit is taken A second stage 2 hypertension BP reading between one week and 18 months prior to the index date, measured in an outpatient face-to-face visit ; the last BP result from the visit is taken
Index date	Date of the qualifying BP result during the study period
Exposures	2017 treatment guideline versus 2025 treatment guideline
Stage 1 hypertension BP reading	A blood pressure result with a systolic of 130–139 or a diastolic of 80–89
Stage 2 hypertension BP reading	A blood pressure result that is greater than or equal to 140 systolic or 90 diastolic
Outpatient face-to-face visit	An outpatient encounter where the patient was seen in person or via a video visit
Antihypertensive	A medication with an order type of “prescription” or “reported” and ATC code C08*, C07*, C09*, C03*, or C02*
Pregnancy	A pregnancy episode overlapping any time between the first qualifying BP through the index date, or a billing or encounter diagnosis with ICD-10-CM

	code O* or SNOMED code 77386006 in the nine months preceding the first qualifying BP through the index date
2017 treatment guideline	Any of the following (as of index date): ACC/AHA CVD Diabetes CKD Pooled cohort 10-year score $\geq 10\%$
2025 treatment guideline	Any of the following (as of index date): ACC/AHA CVD Diabetes CKD PREVENT 10-year total CVD score $\geq 7.5\%$
ACC/AHA CVD	A billing, encounter, or problem list diagnosis with ICD-10-CM code I20*-I25*, I50*, I61*-I69*, Z86.73, or G45* or SNOMED code 414795007, 84114007, 62914000, 399211009, or 266257000
Diabetes	A billing, encounter, or problem list diagnosis with ICD-10-CM code E08*-E13* or SNOMED code 73211009
CKD	A billing, encounter, or problem list diagnosis with ICD-10-CM code N18* or SNOMED code 709044004
Pooled cohort 10-year score	Manually computed 10-year predicted ASCVD risk using Pooled Cohort Equations (Goff et al., 2013). Values used in the score were from the index date or prior. If any inputs were missing, the score was not calculated, and the patient did not qualify based on score but could qualify based on other factors. Because the equations are validated only on White and Black populations, patients with “Black or African American” race/ethnicity were evaluated with the equations for the Black population and patients with other race/ethnicity were evaluated with the equations for the White population. Because the study's population is not previously treated for hypertension, terms related to treated blood pressures did not factor into calculations. Inputs include age, TC , HDL , systolic blood pressure, current smoker status, and diabetes status.
PREVENT 10-year total CVD score	Manually computed PREVENT 10-year total CVD risk score (Khan et al., 2024). Values used in the score were from the index date or prior. If any inputs were missing, the score was not calculated, and the patient did not qualify based on score but could qualify based on other factors. Cholesterol values were converted from mg/dL to mmol/L (multiply by 0.02586). Because the study population was not previously treated for hypertension, terms related to taking antihypertensive medications did not factor into calculations. Inputs include age, TC , HDL , systolic blood pressure, eGFR , current smoker status, diabetes status, and statin use.
Statin	A medication with an order type of “prescribed” or “reported” and a pharmaceutical subclass of “Antihyperlipidemic – HMG CoA Reductase Inhibitors (statins),” “Antihyperlipidemic HMG CoA Reduct Inhib and Calcium Channel Blocker,” “Antihyperlipidemic-HMG CoA Reductase Inhibitor-Aspirin, Buffered Comb.,” or “Antihyperlipidemic-HMG CoA Reduct Inhib and Cholesterol Absorp Inhibit”
eGFR	Calculated from the creatinine lab value using the 2021 CKD-EPI creatinine equation:
Creatinine	A lab result with LOINC code 38483-4 or 2160-0 from within 18 months prior to the index date that does not overlap with an admission
HDL	A lab result with LOINC code 2085-9 or 18263-4 from within 18 months prior to the index date

TC	A lab result with LOINC code 2093-3 from within 18 months prior to the index date
Current smoker	Most recent smoking status documented as “Light Smoker,” “Heavy Smoker,” “Every Day,” “Current Every Day Smoker,” “Light Tobacco Smoker,” “Current Some Day Smoker,” “Smoker, Current,” or “Some Days”
Outcomes	Treatment eligibility classifications under the 2017 versus 2025 guidelines: stayed eligible, newly eligible, newly ineligible, or stayed ineligible
Confounders	Age stratification (40–49, 50–59, 60–69, 70–79), sex, and race/ethnicity
Model specifications	Descriptive statistics
Limitations	The 2017 and 2025 risk scores were calculated using all known data on the patient in Cosmos rather than only data available at a single point of care; in clinical practice, ordered lab data may differ from what is used here. Patients may be more likely to have specific lab results documented under the new guideline, which could shift score availability over time. The analysis is restricted to patients with the labs needed to compute both risk scores, which may yield a population that is more engaged with the healthcare system than the general adult population.

Table 1. Stage 1 Hypertension Treatment Eligibility by Guideline

2017 Eligible	2017 Ineligible	2025 Eligible	2025 Ineligible	Stayed Eligible	Newly Eligible	Newly Ineligible	Stayed Ineligible
45.2%	54.8%	47.0%	53.0%	44.5%	2.5%	0.7%	52.3%

Table 2. Stage 1 Hypertension Treatment Eligibility by Demographics

Factor	Net Change in Eligibility
Female	3.57%
Male	-0.28%
40-49	-0.01%
50-59	-0.37%
60-69	5.61%
70-79	2.68%
Another Race/Ethn.	1.66%
Asian	1.32%
Black	1.73%
Hispanic	1.09%
Multiple	1.86%
White	2.08%