2025 Hypertension Guideline Update Expands Stage 1 Treatment Eligibility from 57% to 73%

Team A: Kersten Bartelt, RN; Sam Sahakian
Team B: Louis Kazaglis, MD; Grant Keane
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Key Findings:

- After hypertension treatment guidelines changed in 2025, the share of patients with stage 1 hypertension who are eligible for treatment increased from 57% under the 2017 guideline to 73% under the new guideline.
- 51% of patients qualified for treatment under both the 2017 and 2025 guidelines, 22% became eligible under the 2025 guideline, and 6% became ineligible under the 2025 guideline.
- Newly ineligible patients under the 2025 guideline were disproportionately female (75%) and aged 70 or older (64%).

The 2017 American Heart Association (AHA) guideline recommended antihypertensive medication for adults with stage 1 hypertension (130–139/80–89 mm Hg). The recommendation applies to patients who have established cardiovascular disease (CVD) or 10-year CVD risk greater than 10%, as estimated by the pooled cohort equations.[1] In August 2025, AHA released updated high blood pressure guidance that incorporates the AHA's PREVENT risk equations and recommends a lower 10-year total CVD risk threshold of 7.5% for medication initiation in stage 1 hypertension.[2] Prior work comparing PREVENT with pooled cohort equations has found that PREVENT can generate different risk estimates across demographic groups,[3] which raises practical questions about who gains eligibility, who loses eligibility, and whether these shifts could widen or narrow inequities in hypertension treatment.

We studied more than 1 million U.S. adults who had visits between August 1, 2024, and July 31, 2025, who had confirmed stage 1 hypertension based on two outpatient blood pressure readings in the stage 1 range (130–139 systolic or 80–89 diastolic). Patients were excluded if they had evidence of stage 1 or stage 2 hypertension prior to the first qualifying blood pressure reading, were prescribed antihypertensives prior to the study period, or had evidence of pregnancy between the two qualifying readings. We classified treatment eligibility at the index date under the 2017 guideline criteria (CVD, diabetes, CKD, or pooled cohort 10-year risk ≥10% documented in the record) versus 2025 criteria (CVD, diabetes, CKD, or PREVENT 10-year risk ≥7.5% calculated from available clinical data), which required all patients to have a score under both guidelines.

Across all included patients, 73% met the 2025 treatment-eligibility criteria compared with 57% under the 2017 criteria, as seen in Figure 1. This means clinicians could see a substantial expansion in treatment-eligible stage 1 patients. Of all patients, 51% were eligible under both guidelines, 22% were newly eligible under 2025 criteria (eligible under 2025 but not 2017), and 6% were no longer eligible under 2025 criteria (eligible under 2017 but not 2025); the remaining 21% were not eligible under either framework.

The increase in eligibility was not evenly distributed; most newly ineligible patients were women (75% of newly ineligible patients), and there was a high concentration of newly ineligible patients among those aged 70–79 (64%). By race and ethnicity, differences in newly ineligible patients were smaller than by sex or age but still present. These patterns are directionally consistent with published findings that PREVENT can yield lower predicted risk than pooled cohort equations in some subgroups.[3]

Stage 1 Hypertension Treatment Eligibility by Guideline

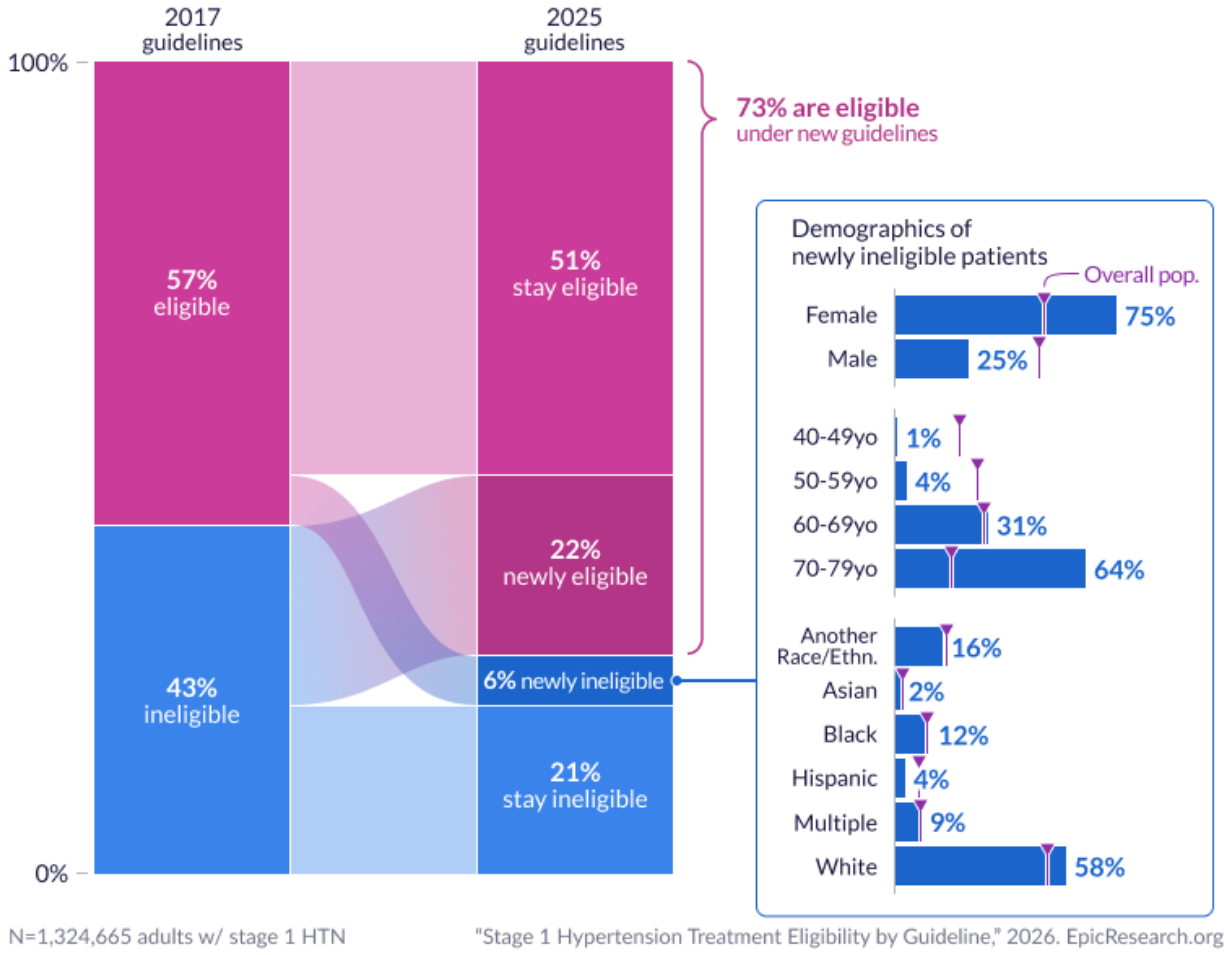

Figure 1. The distribution of patients with stage 1 hypertension who qualify for treatment based on the 2017 hypertension guidelines, the 2025 hypertension guidelines, both, or neither.

These data come from Cosmos, a dataset created in collaboration with a community of Epic health systems representing more than 300 million patient records from 1,900 hospitals and more than 44,000 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 scientists. 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

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 at least 30 years of age on the **index date**
	• Have an evaluated sex of female or male
	• Have a BP result that qualifies as **stage 1 hypertension** during the **study period** (considered the index event)
	  o BP measured in an **outpatient face-to-face visit**
	  o Last BP result from the visit taken
	• Have a second BP result that qualifies as **stage 1 hypertension** in the 1 week prior to 18 months prior to the **index date**
	  o BP measured in an **outpatient face-to-face visit**
	  o Last BP result from the visit taken

Study population: exclusion	Patients who: • Are prescribed an **antihypertensive** prior to study period • Qualify for **stage 1 hypertension** before the **index date** • Qualify for **stage 2 hypertension** before the **index date** • Have evidence of a **pregnancy** between the two qualifying BP readings
Index date	Date of the qualifying BP result during the **study period**
Exposures	2017 treatment guidelines versus 2025 treatment guidelines
Stage 1 hypertension	A blood pressure result with a systolic that is 130–139 systolic or diastolic that is 80–89
Stage 2 hypertension	A blood pressure result that is greater than or equal to 140 systolic or 90 diastolic
Antihypertensives	A medication with an order type of “prescription” or “historical” and ATC code C08*, C07*, C09*, C03* or C02*
Pregnancy	A pregnancy episode or a billing or encounter diagnosis with ICD-10-CM code O* in the nine months preceding the first qualifying BP through the index date
2017 treatment guidelines	Any of the following (as of **index date**): • **ACC/AHA CVD** • **Diabetes** • **CKD** • **Pooled cohort 10-year score** >= 10% from within 18 months prior to the **index date**
Pooled cohort 10-year score	ASCVD 10-Year Risk Score result from patient’s record
2025 treatment guidelines	Any of the following (as of **index date**): • **ACC/AHA CVD** • **Diabetes** • **CKD**

	• **PREVENT 10-year score** >= 7.5%
ACC/AHA CVD	A billing, encounter, or problem list diagnosis with ICM-10-CM code I20*-I25*, I50*, I61*-I69* Z86.73, or G45*
Diabetes	A billing, encounter, or problem list diagnosis with ICD-10-CM code E08*-E13*
CKD	A billing, encounter, or problem list diagnosis with ICD-10-CM code N18*
PREVENT 10-year score	Values used in score were from index date or prior. If any were missing, the score was not calculated, and the patient did not qualify based on score but could qualify based on the other factors. Scores were calculated based on the 10-year PREVENT equations defined here: Development and Validation of the American Heart Association's PREVENT Equations | Circulation
Statin	A medication with an order type of "prescribed" or "historical" and a pharmaceutical subclass or "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 equation defined here: https://www.kidney.org/content/ckd-epi-creatinine-equation-2021
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 that is "Light Smoker"; "Heavy Smoker"; "Every Day"; "Current Every Day Smoker"; "Heavy Smoker"; "Light Tobacco Smoker"; "Current Some Day Smoker"; "Smoker, Current"; or "Some Days"
Outcomes	How many patients from the 2017 guidelines who were qualified or unqualified moved to the 2025 guidelines as qualified or unqualified
Model specifications	Descriptive statistics
Limitations	People may be more likely to get specific lab results done due to the new guidelines. 2017 score was what was known at the organization but 2025 score is calculated using all known data on the patient in Cosmos.

Table 1. Stage 1 Hypertension Treatment Eligibility by Guideline

Grouping	Group	Number of Patients	2017 Eligible	2025 Eligible	Newly Eligible	Newly Ineligible
Overall	Overall	1,324,665	756,147	968,239	294,523	82,431
Evaluated Sex	Female	672,881	333,302	388,353	116,872	61,821
Evaluated Sex	Male	651,784	422,845	579,886	177,651	20,610

Race / Ethnicity	Asian	35,649	18,491	26,537	9,559	1,513
Race / Ethnicity	Black or African American	144,808	94,696	105,132	20,061	9,625
Race / Ethnicity	Hispanic or Latino	110,114	57,400	85,539	31,058	2,919
Race / Ethnicity	Other	230,288	118,958	165,562	59,581	12,977
Race / Ethnicity	Other/Multiple	119,367	67,659	85,326	25,148	7,481
Race / Ethnicity	White	684,439	398,943	500,143	149,116	47,916
Age Bucket	30-39	32	14	21	<11	<11
Age Bucket	40-49	295,157	72,752	205,401	133,135	486
Age Bucket	50-59	373,084	152,530	269,367	119,844	3,007
Age Bucket	60-69	401,083	280,687	295,244	40,468	25,911
Age Bucket	70-79	255,309	250,164	198,206	1,064	53,022