

## DATA SUPPLEMENT

### Initial Antihypertensive Regimens in Newly Treated Patients: Real World Evidence from the OneFlorida Clinical Research Network

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**Table S1. Antihypertensive medications considered acceptable for cohort inclusion.**

<b>Antihypertensive Class</b>	<b>Medication Name</b>
Angiotensin converting enzyme inhibitors	benazepril
	captopril
	enalapril
	fosinopril
	lisinopril
	moexipril
	perindopril
	quinapril
	ramipril
	trandolapril
Angiotensin receptor blockers	azilsartan
	candesartan
	eprosartan
	irbesartan
	losartan
	olmesartan
	telmisartan
	valsartan*
Alpha-blockers	doxazosin
	prazosin
	terazosin
Beta-blockers <sup>†</sup>	acebutolol
	atenolol
	nadolol
	oxprenolol
	betaxolol
	bisoprolol
	carteolol
	timolol
	bucindolol
	esmolol
	labetalol
	carvedilol
	metoprolol
	propranolol
	nebivolol
	penbutolol
	pindolol
	metipranolol
Calcium channel blockers	amlodipine
	felodipine
	isradipine
	nicardipine
	nifedipine <sup>‡</sup>
	nisoldipine
	diltiazem

	verapamil
Centrally acting agents	clonidine
	guanabenz
	guanfacine
	guanadrel
	guanethidine
	methyldopa
	reserpine
Direct vasodilators	hydralazine
	minoxidil
Direct renin inhibitors	aliskiren
Aldosterone receptor antagonists	spironolactone
	eplerenone
Loop diuretics	bumetanide
	ethacrynic acid
	furosemide
	torsemide
Potassium-sparing diuretics	amiloride
	triamterene
Thiazide and thiazide-like diuretics	bendroflumethiazide
	chlorothiazide
	chlorthalidone
	hydrochlorothiazide
	indapamide
	metolazone

\*Excludes sacubitril/valsartan products.

†Excludes ophthalmologic products.

‡Excludes nifedipine rectal ointment products.

**Table S2. Measurement criteria for baseline characteristics.** Variable names are characterized as “TABLE.VARIABLE\_NAME” according to the PCORnet Common Data Model (version 6.0 at the time of this study).

Variable	Definition
Age	Age calculated on the index date based on date of birth in DEMOGRAPHIC.BIRTH_DATE.
Sex	As per DEMOGRAPHIC.SEX
Race-ethnicity	As per DEMOGRAPHIC.RACE and DEMOGRAPHIC.HISPANIC
Current Smoking	Any of the following within one year prior to the index date (including the index date): (a) Most recent VITAL.SMOKING in 01, 02, 07, or 08 (b) ICD-9 codes: a. ≥1 hospitalization with a discharge diagnosis code (any position) of tobacco use of 305.1, 649.0x, 989.84, or V15.82 in any discharge position b. ≥1 physician evaluation and management visit with a discharge diagnosis code (any position) of tobacco use of 305.1, 649.0x, 989.84, or V15.82 in any discharge position (c) ICD-10 codes: a. ≥1 hospitalization with a discharge diagnosis code (any position) of tobacco use of F17.200, F17.201, F17.210, F17.211, F17.220, F17.221, F17.290, F17.291, or Z87.891 in any discharge position b. ≥1 outpatient visit with a discharge diagnosis code (any position) of tobacco of F17.200, F17.201, F17.210, F17.211, F17.220, F17.221, F17.290, F17.291, or Z87.891 in any discharge position (d) ≥1 visit with an evaluation and management code and evidence of tobacco use, identified via CPT code (any position) of 99406, 99407, G0436, G0437, G9016, S9453, S4995, G9276, G9458, 1034F, 4004F, or 4001F (e) ≥1 pharmacy prescription or fill for nicotine or varenicline in the 365 days before the index date (including the index date).
Insurance type	As per ENCOUNTER.PAYER_TYPE_PRIMARY on index encounter (if specified). Categorized as Medicare, Medicaid, Other Government, Commercial Insurance and Managed Care, Self-pay or charity care, Other, or Unknown.
Diabetes	Any of the following using all available claims prior to the index date (including the index date): (a) ICD-9 codes: a. ≥1 inpatient claim with a discharge diagnosis code (any position) of 250.xx, 357.2, 362.0x, or 366.41. b. At least 2 outpatient claims with diagnosis code (any position) of 250.xx, 357.2, 362.0x, or 366.41, with the 2 claims occurring ≥7 days apart. (b) ICD-10 codes: a. ≥1 inpatient claim with a discharge diagnosis code (any position) of E0836, E08.42, E09.36, E09.42, E10.10, E10.11, E10.29, E10.311, E10.319, E10.36, E10.39, E10.40, E10.42, E10.51, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.29, E11.311, E11.319, E11.329, E11.339, E11.349, E11.359, E11.36, E11.39, E11.40, E11.42, E11.51, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.10, E13.36, or E13.42. b. ≥2 outpatient claims with diagnosis code (any position) of E0836, E08.42, E09.36, E09.42, E10.10, E10.11, E10.29, E10.311, E10.319, E10.36, E10.39, E10.40, E10.42, E10.51, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.29, E11.311, E11.319, E11.329, E11.339, E11.349, E11.359, E11.36, E11.39, E11.40, E11.42, E11.51, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.10, E13.36, or E13.42, with the 2 claims occurring ≥7 days apart. (c) ≥1 prescription or fill for an oral or injectable antidiabetic drug in the one-year pre-index period. (d) Positive indication of T2DM via the PCORnet-validated T2DM phenotype
Chronic kidney disease	Any of the following using all available diagnoses prior to the index date (including the index date): (a) ICD-9 codes:

	<p>a. <math>\geq 1</math> inpatient claim with a discharge diagnosis code (any position) of 585.5, 585.1, 582.9, 582.81, 582.2, 585.9, 581, 404.9, 403.9, 403.1, 249.41, 637.32, 637.31, 580, 442.1, 404.1, 250.43, 249.4, 581.3, 404.12, 404, 403, 250.42, 582.89, 582.4, 582, 581.1, 404.02, 403.11, 250.4, 639.3, 585.2, 585, 580.81, 586, 581.9, 581.81, 403.91, 585.6, 585.3, 582.1, 580.8, 403.01, 582.8, 580.89, 404.93, 250.41, 637.3, 404.92, 585.4, 581.89, 581.8, 580.9, 404.13, 581.2, 404.91, 404.11, 404.03, or 404.01.</p> <p>b. At least 2 outpatient claims with diagnosis code (any position) of 585.5, 585.1, 582.9, 582.81, 582.2, 585.9, 581, 404.9, 403.9, 403.1, 249.41, 637.32, 637.31, 580, 442.1, 404.1, 250.43, 249.4, 581.3, 404.12, 404, 403, 250.42, 582.89, 582.4, 582, 581.1, 404.02, 403.11, 250.4, 639.3, 585.2, 585, 580.81, 586, 581.9, 581.81, 403.91, 585.6, 585.3, 582.1, 580.8, 403.01, 582.8, 580.89, 404.93, 250.41, 637.3, 404.92, 585.4, 581.89, 581.8, 580.9, 404.13, 581.2, 404.91, 404.11, 404.03, or 404.01, with the 2 claims occurring <math>\geq 7</math> days apart.</p> <p>(b) ICD-10 codes:</p> <p>a. <math>\geq 1</math> inpatient claim with a discharge diagnosis code (any position) of E11.29, N26.2, E10.29, I13.11, E11.22, E11.21, O10.311, O10.213, O10.33, O10.312, E09.29, O10.211, M32.14, E13.22, E09.22, O10.32, O10.313, E13.29, E10.21, E09.21, E08.22, Q87.81, O10.212, N18.6, E10.22, I13.10, E13.21, O10.319, O10.23, O10.22, O10.219, E08.21, P96.0, N99.0, N19, N18.9, N18.5, N18.4, N18.3, N18.2, N18.1, N07.7, N07.5, N07.4, N07.3, N07.2, N05.9, N05.8, N05.7, N05.6, N05.5, N05.4, N05.3, N05.2, N05.1, N05.0, N04.9, N04.8, N04.7, N04.6, N04.5, N04.4, N04.3, N04.2, N04.1, N04.0, N03.9, N03.8, N03.7, N03.6, N03.5, N03.4, N03.3, N03.2, N03.1, N03.0, N02.7, N02.6, N02.4, N00.7, I72.2, I13.2, I13.0, I12.9, I12.0, O10.31, O10.3, O10.21, O10.2, N18, N05, N04, N03, I13.1, I13, I12, E13.2, E11.2, E10.2, or E09.2.</p> <p>b. <math>\geq 1</math> outpatient claim with a diagnosis code (any position) of E11.29, N26.2, E10.29, I13.11, E11.22, E11.21, O10.311, O10.213, O10.33, O10.312, E09.29, O10.211, M32.14, E13.22, E09.22, O10.32, O10.313, E13.29, E10.21, E09.21, E08.22, Q87.81, O10.212, N18.6, E10.22, I13.10, E13.21, O10.319, O10.23, O10.22, O10.219, E08.21, P96.0, N99.0, N19, N18.9, N18.5, N18.4, N18.3, N18.2, N18.1, N07.7, N07.5, N07.4, N07.3, N07.2, N05.9, N05.8, N05.7, N05.6, N05.5, N05.4, N05.3, N05.2, N05.1, N05.0, N04.9, N04.8, N04.7, N04.6, N04.5, N04.4, N04.3, N04.2, N04.1, N04.0, N03.9, N03.8, N03.7, N03.6, N03.5, N03.4, N03.3, N03.2, N03.1, N03.0, N02.7, N02.6, N02.4, N00.7, I72.2, I13.2, I13.0, I12.9, I12.0, O10.31, O10.3, O10.21, O10.2, N18, N05, N04, N03, I13.1, I13, I12, E13.2, E11.2, E10.2, or E09.2, with the 2 claims occurring <math>\geq 7</math> days apart.</p> <p>(c) Estimated glomerular filtration rate of <math>&lt;60</math> mL/min/1.73 m<sup>2</sup>. The eGFR value used is as defined above for eGFR.</p> <p>(d) Positive indication of CKD via the eMERGE-validated phenotype</p>
Heart failure with reduced ejection fraction	<p>Any one of the following using all available claims before the index date:</p> <p>(a) ICD-9 codes:</p> <p>a. <math>\geq 1</math> inpatient claim with discharge diagnosis code (any position) of 428.0x, 428.1x, 428.2x, or 428.4x.</p> <p>b. <math>\geq 2</math> outpatient claims on separate calendar days with diagnosis code (any position) of 428.0x, 428.1x, 428.2x, or 428.4x.</p> <p>(b) ICD-10 codes:</p> <p>a. <math>\geq 1</math> inpatient claim with discharge diagnosis code (any position) of I50.1, I50.2x, I50.4x, or I50.9.</p> <p>b. <math>\geq 2</math> outpatient claims on separate calendar days with diagnosis code (any position) of I50.1, I50.2x, I50.4x, or I50.9.</p> <p>(c) At least one prescription for sacubitril/valsartan in the 104 days prior to the index date.</p>
History of CHD	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <p>(a) ICD-9 codes:</p> <p>a. <math>\geq 1</math> encounter with a discharge diagnosis code (any position) of 410.xx-414.xx, V45.81, or V45.82.</p> <p>b. <math>\geq 2</math> outpatient encounter with diagnosis code (any position) of 410.xx-414.xx, V45.81, or V45.82.</p> <p>(b) ICD-10 codes:</p> <p>a. <math>\geq 1</math> inpatient encounter with a discharge diagnosis code (any position) of I20.0, I21.xx, I22.xx, I24.0, I24.8, I24.9, I25.10, I25.110, I25.700, I25.710, I25.720, I25.730, I25.750, I25.760, I25.790, I25.810, I25.811, I25.812, I25.3, I25.41, I25.42, Z95.1, or Z98.61.</p> <p>b. <math>\geq 2</math> outpatient encounters with diagnosis codes of codes I20.0, I21.xx, I22.xx, I24.0, I24.8, I24.9, I25.10, I25.110, I25.700, I25.710, I25.720, I25.730, I25.750, I25.760, I25.790, I25.810, I25.811, I25.812, I25.3, I25.41, I25.42, Z95.1, or Z98.61.</p> <p>Patients who met the definition of a prior coronary revascularization, as defined below, are also considered to have a history of CHD.</p>

Prior coronary revascularization	<p>Defined by ≥1 inpatient or outpatient procedure with a CPT code for coronary revascularization (33510-33519, 33521-33523, 33530, 33533-33536, 92920, 92921, 92924, 92925, 92928, 92929, 92933, 92934, 92937, 92938, 92941, 92943, 92944, 92980, 92981, 92982, 92984, or 92996), an ICD-9 procedure code (any position) of 00.66, 36.0, 36.01-36.19, or 36.2, or an ICD-10 procedure code starting with any of the following: 0210, 0211, 0212, 0213, 0270, 0271, 0272, 0273, 02C0, 02C1, 02C2, 02C3, or 3E07 using all available claims prior to the index date (including the index date). In addition to having 1 inpatient or outpatient procedure, patients are required to meet ≥1 of the following criteria:</p> <ul style="list-style-type: none"> <li>(a) Have no inpatient claims with a discharge diagnosis code for acute myocardial infarction (ICD-9 codes 410.x0 or 410.x1 or ICD-10 codes I21.xx or I22.xx) within 60 days prior to the procedure.</li> <li>(b) Have primary discharge diagnosis code for non-elective CHD-related hospitalization prior to the index date (including the index date): <ul style="list-style-type: none"> <li>a. Arrhythmia: ICD-9 diagnosis code of 427.xx [except 427.5] or ICD-10 diagnosis code of I47.1, I47.2, I47.9, I48.91, I48.92, I49.01, I49.02, I49.1, I49.3, I49.40, I49.49, I49.5, I49.8, I49.9, R00.1.</li> <li>b. Cardiac arrest: ICD-9 diagnosis code of 427.5, or ICD-10 diagnosis code of I46.9.</li> <li>c. Heart failure: ICD-9 diagnosis code of 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, or 428.x, or ICD-10 diagnosis code of I11.0, I13.0, I13.2, I50.1, I50.20, I50.21, I50.22, I50.23, I50.30, I50.31, I50.32, I50.33, I50.40, I50.41, I50.42, I50.43, or I50.9.</li> <li>d. Unstable angina: ICD-9 diagnosis code of 411.xx or ICD-10 diagnosis code of I20.0, I24.0, I24.1, I24.8.</li> </ul> </li> </ul>
History of Stroke	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <ul style="list-style-type: none"> <li>(a) ICD-9 codes: <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code in the primary or secondary position of 433.x1 or 434.x1.</li> <li>b. ≥1 outpatient claim with a diagnosis code (any position) of 433.x1 or 434.x1.</li> </ul> </li> <li>(b) ICD-10 codes: <ul style="list-style-type: none"> <li>a. ≥1 inpatient discharge diagnosis code in the primary or secondary position of I63.xx.</li> <li>b. ≥1 outpatient claim with diagnosis code (any position) of I63.xx.</li> <li>c. ≥1 inpatient ICD-10 procedure code of 03CH0ZZ, 03CH4ZZ, 03CJ0ZZ, 03CJ4ZZ, 03CK0ZZ, 03CK4ZZ, 03CL0ZZ, 03CL4ZZ, 03CM0ZZ, 03CM4ZZ, 03CN0ZZ, 03CN4ZZ, 03RH07Z, 03RH0JZ, 03RH0KZ, 03RH47Z, 03RH4JZ, 03RH4KZ, 03RJ07Z, 03RJ0JZ, 03RJ0KZ, 03RJ47Z, 03RJ4JZ, 03RJ4KZ, 03RK07Z, 03RK0JZ, 03RK0KZ, 03RK47Z, 03RK4JZ, 03RK4KZ, 03RL07Z, 03RL0JZ, 03RL0KZ, 03RL47Z, 03RL4JZ, 03RL4KZ, 03RM07Z, 03RM0JZ, 03RM0KZ, 03RM47Z, 03RM4JZ, 03RM4KZ, 03RN07Z, 03RN0JZ, 03RN0KZ, 03RN47Z, 03RN4JZ, or 03RN4KZ.</li> </ul> </li> <li>(c) CPT codes: ≥1 inpatient or outpatient claim with a CPT code for carotid revascularization of 35301, 35390, 37215, 37216, 0005T, 0075T, or 0076.</li> </ul>
History of PAD	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <ul style="list-style-type: none"> <li>(a) ICD-9 codes: <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of 440.20-440.24, 440.31, 444.2, 443.9, or 444.81.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with diagnosis code (any position) of 440.20-440.24, 440.31, 444.2, 443.9, or 444.81 on separate days.</li> </ul> </li> <li>(b) ICD-10 codes: <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of I70.209, I70.219, I70.229, I70.25, I70.269, I70.499, I73.9.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of I70.209, I70.219, I70.229, I70.25, I70.269, I70.499, I73.9 on separate days.</li> </ul> </li> <li>(c) CPT codes: ≥1 inpatient or outpatient claim with a CPT code of 37205 or 75962.</li> </ul>
History of ASCVD	Defined by a history of CHD, cerebrovascular disease, or peripheral artery disease, as defined above.
End-stage renal disease	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <ul style="list-style-type: none"> <li>(a) ICD-9 codes: <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of 585.5.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of 585.5.</li> </ul> </li> </ul>

	<p>(b) ICD-10 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of N18.6.</li> <li>a. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of N18.6.</li> </ul>
History of kidney transplant	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <p>(a) ICD-9 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of V42.0.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of V42.0.</li> </ul> <p>(b) ICD-10 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of Z94.0.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of Z94.0.</li> </ul>
Atrial fibrillation	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <p>(a) ICD-9 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of 427.31.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of 427.31.</li> </ul> <p>(b) ICD-10 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of I48.0, I48.2, I48.91.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of I48.0, I48.2, I48.91.</li> </ul>
Chronic obstructive pulmonary disease	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <p>(a) ICD-9 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of 491.x or 492.x or 496.x.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of 491.x or 492.x or 496.x.</li> </ul> <p>(b) ICD-10 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of J41.x, J42.x, J43.x, or J44.x.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of J41.x, J42.x, J43.x, or J44.x.</li> </ul>
Asthma	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <p>(a) ICD-9 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of 493.x.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of 493.x.</li> </ul> <p>(b) ICD-10 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of J45.x.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of J45.x.</li> </ul>
History of depression	<p>Any of the following using all available claims prior to the index date (including the index date):</p> <p>(a) ICD-9 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of 296.2, 296.3, 296.5, 300.4, 309.x, or 311.</li> <li>b. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of 296.2, 296.3, 296.5, 300.4, 309.x, or 311.</li> </ul> <p>(b) ICD-10 codes:</p> <ul style="list-style-type: none"> <li>a. ≥1 inpatient claim with a discharge diagnosis code (any position) of F20.4, F31.3-F31.5, F32.x, F33.x, F34.1, F41.2, or F43.2.</li> <li>c. ≥2 physician evaluation and management or outpatient claims with a diagnosis code (any position) of F20.4, F31.3-F31.5, F32.x, F33.x, F34.1, F41.2, or F43.2.</li> </ul>
Charlson Comorbidity Score	Continuous variable to represent chronic disease burden. Calculated according to Elixhauser method using publicly available MINI-SENTINEL software.

Aspirin Use	At least 1 dispensing record with a DISPENSING.NDC value representing a product containing aspirin (including combination products). The list of NDC values reflecting aspirin-containing products is derived from the National Library of Medicine's RxNorm medical terminology ( <a href="https://www.nlm.nih.gov/research/umls/rxnorm/index.html">https://www.nlm.nih.gov/research/umls/rxnorm/index.html</a> ) and can be viewed here: <a href="https://github.com/ssmithm/rxnorm-drug-lists">https://github.com/ssmithm/rxnorm-drug-lists</a>
Statin Use	At least 1 dispensing record with a DISPENSING.NDC value representing a product containing any statin (including combination products). The list of NDC values reflecting statin-containing products is derived from the National Library of Medicine's RxNorm medical terminology ( <a href="https://www.nlm.nih.gov/research/umls/rxnorm/index.html">https://www.nlm.nih.gov/research/umls/rxnorm/index.html</a> ) and can be viewed here: <a href="https://github.com/ssmithm/rxnorm-drug-lists">https://github.com/ssmithm/rxnorm-drug-lists</a>



**Table S3. Number of antihypertensives initially started, stratified by insurance.**

<b>No. of Antihypertensives</b>	<b>Pooled Medicaid and Medicare (N=143,054)</b>	<b>Medicaid-Insured (n=71,774)</b>	<b>Medicare-Insured (N=71,280)</b>
<i>Crude Prevalence</i>			
1	75.4%	78.6%	72.2%
2	18.8%	16.9%	20.6%
3+	5.8%	4.5%	7.2%
<i>Age-Adjusted Prevalence</i>			
1	81.4%	82.1%	83.4%
2	15.0%	14.6%	13.0%
3+	3.6%	3.3%	3.6%

Age-adjusted (direct method) to 2000 U.S. Census population (single ages to 84 and 85+ years).

**Table S4. Class combinations and frequencies for patients initiating dual antihypertensive therapy.**

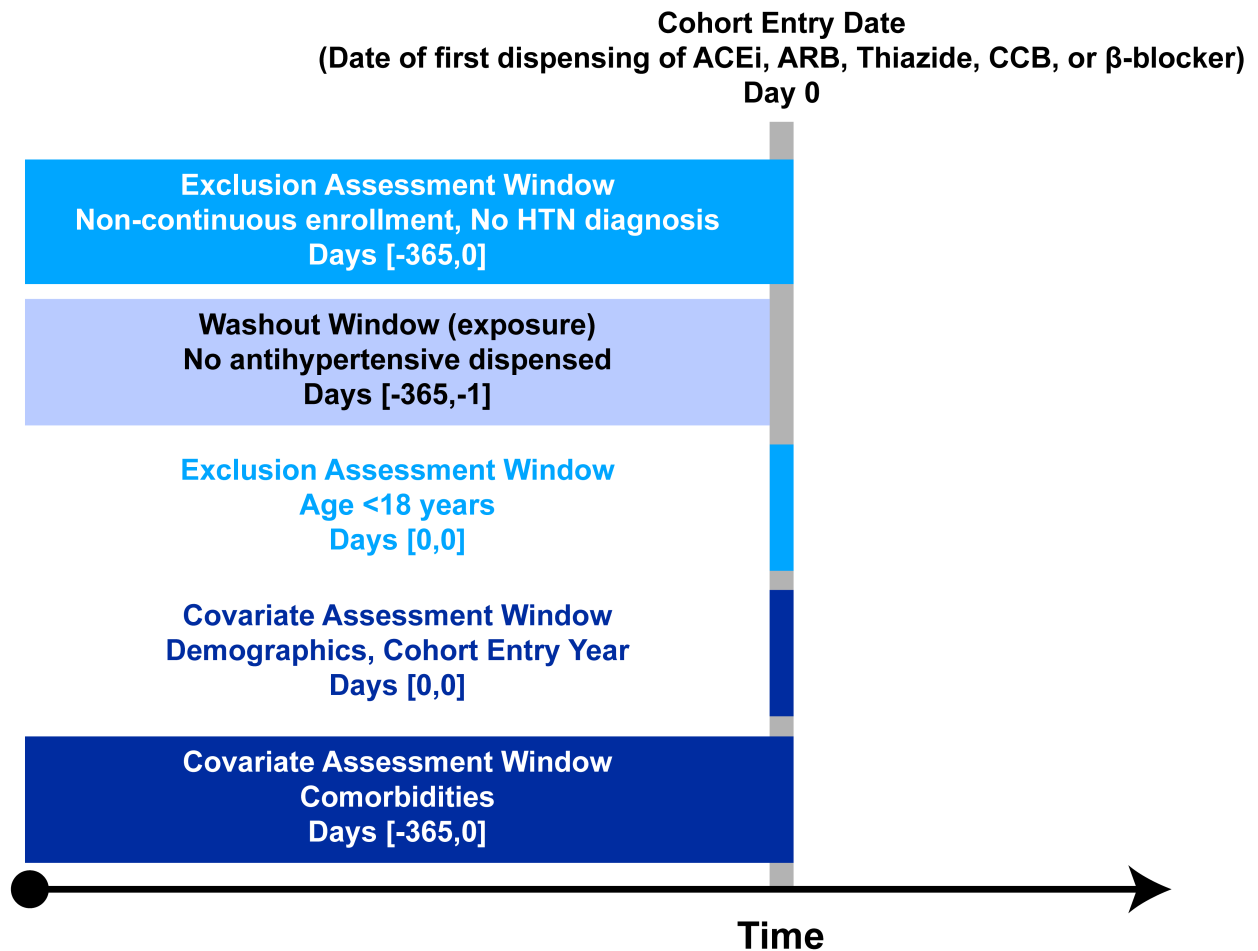
<b>Class Combination</b>	<b>Combined Cohort (n = 26,840)</b>	<b>Medicaid (n = 12,152)</b>	<b>Medicare (n = 14,688)</b>
ACEI + Thiazide	6,419 (23.9%)	3,720 (30.6%)	2,699 (18.4%)
ACEI + $\beta$ -blocker	3,820 (14.2%)	1,534 (12.6%)	2,286 (15.6%)
ARB + Thiazide	2,893 (10.8%)	1,230 (10.1%)	1,663 (11.3%)
ACEI + CCB	2,792 (10.4%)	1,271 (10.5%)	1,521 (10.4%)
$\beta$ -blocker + CCB	2,052 (7.6%)	869 (7.2%)	1,183 (8.1%)
$\beta$ -blocker + Thiazide	1,100 (4.1%)	526 (4.3%)	574 (3.9%)
Thiazide + K-sparing diuretic	1,031 (3.8%)	390 (3.2%)	641 (4.4%)
CCB + Thiazide	1,001 (3.7%)	626 (5.2%)	375 (2.6%)
$\beta$ -blocker + Loop diuretic	975 (3.6%)	278 (2.3%)	697 (4.7%)
ARB + CCB	878 (3.3%)	300 (2.5%)	578 (3.9%)
ARB + $\beta$ -blocker	866 (3.2%)	277 (2.3%)	589 (4.0%)
ACEI + Loop diuretic	524 (2.0%)	157 (1.3%)	367 (2.5%)
CCB + $\alpha_2$ agonist	204 (0.8%)	109 (0.9%)	95 (0.6%)
$\beta$ -blocker + $\alpha_2$ agonist	202 (0.8%)	96 (0.8%)	106 (0.7%)
$\beta$ -blocker + Vasodilator	206 (0.8%)	76 (0.6%)	130 (0.9%)
ACEI + $\alpha_2$ agonist	193 (0.7%)	102 (0.8%)	91 (0.6%)
CCB + Vasodilator	153 (0.6%)	76 (0.6%)	77 (0.5%)
Other combinations	1,531 (5.7%)	515 (4.2%)	1,016 (6.9%)

**Table S5. Stratified analyses with standardized mean differences, by demographic and comorbidity categories.**

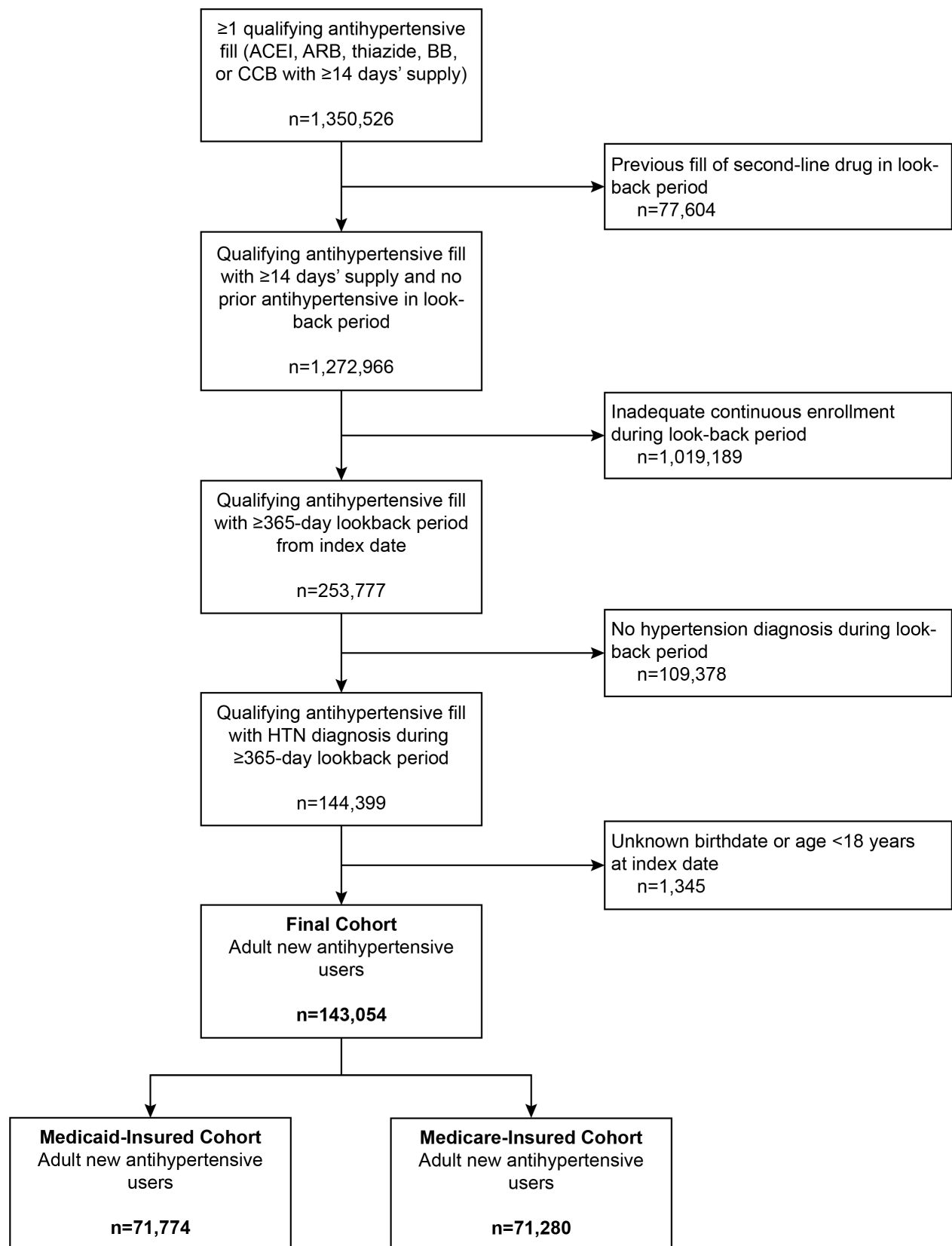
Class	Sex			Race				Ethnicity			T2DM			CKD			ASCVD		
	Women	Men	SMD	Asian	Black	White	SMD	Hispanic	Non-Hispanic	SMD	T2DM	no T2DM	SMD	CKD	no CKD	SMD	ASCVD	no ASCVD	SMD
<i>Medicaid, n</i>	43,011	28,760		659	22,041	25,304		13,016	44,696		13,802	57,972		5,111	66,663		4,229	67,545	
ACEI	37.3%	47.2%	0.20	41.1%	33.7%	44.3%	0.15	46.2%	39.1%	0.14	50.6%	39.1%	0.23	34.7%	41.8%	0.15	39.7%	41.4%	0.03
ARB	9.1%	9.5%	0.01	14.4%	7.8%	8%	0.14	12.6%	7.6%	0.16	9.9%	9.1%	0.03	8.4%	9.3%	0.03	8.7%	9.3%	0.02
CCB	22.7%	25.4%	0.06	22.0%	34.0%	17.7%	0.25	15.9%	25.9%	0.25	17.4%	25.3%	0.19	32.4%	23.1%	0.21	21.2%	23.9%	0.07
BB	26.8%	25.2%	0.04	24.7%	22.7%	30.1%	0.11	23.5%	26.7%	0.07	34.7%	24.1%	0.23	34.6%	25.5%	0.2	52.4%	24.5%	0.6
Thiazide	23.5%	16.9%	0.17	17.5%	26.9%	16.8%	0.16	19.4%	21.8%	0.06	13.2%	22.7%	0.25	14.8%	21.3%	0.17	9.3%	21.6%	0.34
<i>Medicare, n</i>	38,544	32,733		788	11,773	44,852		9,664	54,787		15,831	55,449		12,515	58,765		13,187	58,093	
ACEI	34.2%	39.6%	0.11	38.1%	36.7%	35.8%	0.03	39.4%	36%	0.07	43.3%	34.8%	0.17	28.3%	38.5%	0.22	31.9%	37.8%	0.12
ARB	14.6%	11.8%	0.08	16.9%	11.7%	13.1%	0.10	17.2%	12.5%	0.13	13.7%	13.2%	0.01	13.3%	13.3%	<0.01	11.8%	13.7%	0.06
CCB	24%	24.5%	0.01	27%	34.4%	22.4%	0.18	19.7%	25.2%	0.13	20.2%	25.4%	0.12	31%	22.8%	0.18	24.1%	24.3%	<0.01
BB	34.5%	37.5%	0.06	31.7%	31.1%	38.3%	0.10	32.9%	36.9%	0.08	39.4%	34.9%	0.09	44.7%	34%	0.22	48.7%	33%	0.32
Thiazide	18.8%	14.7%	0.11	13.7%	23.5%	15.2%	0.17	16.4%	17%	0.02	13%	18.1%	0.14	11.5%	18.1%	0.19	9.6%	18.6%	0.26

ACEI indicates angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; ASCVD, atherosclerotic cardiovascular disease; BB,  $\beta$ -blocker; CCB, calcium channel blocker; CKD, chronic kidney disease; SMD, standardized mean difference; T2DM, type 2 diabetes mellitus.

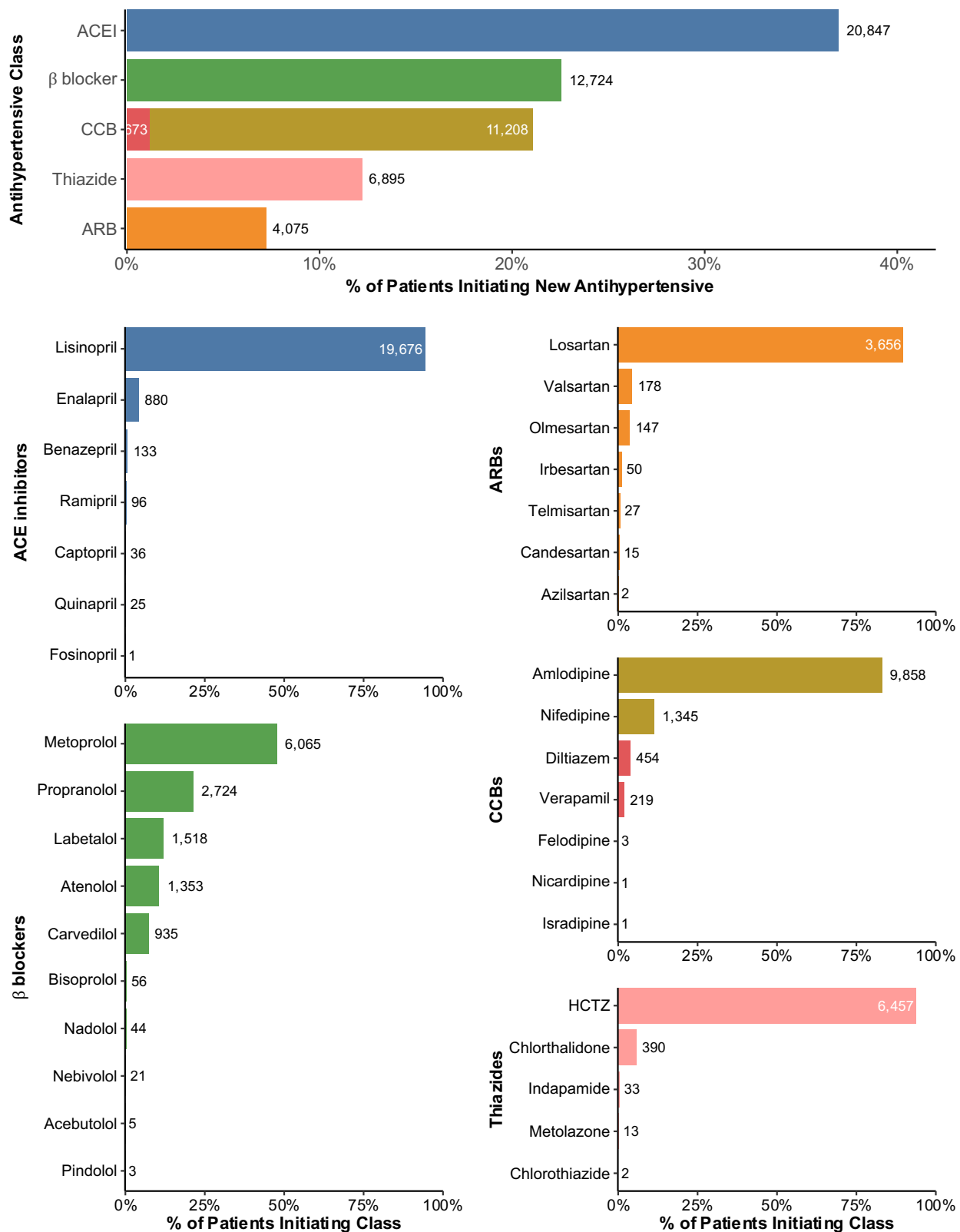
**Figure S1. Study design schematic for building the new antihypertensive user cohort.** A 1-year look-back period was required for all patients, thus the earliest possible enrollment date was December 31, 2012 (for patients with continuous enrollment for all of 2012), using all of 2012 as the look-back period, and the latest possible enrollment date was December 31, 2017 (for Medicare) or September 30, 2021 (for Medicaid).



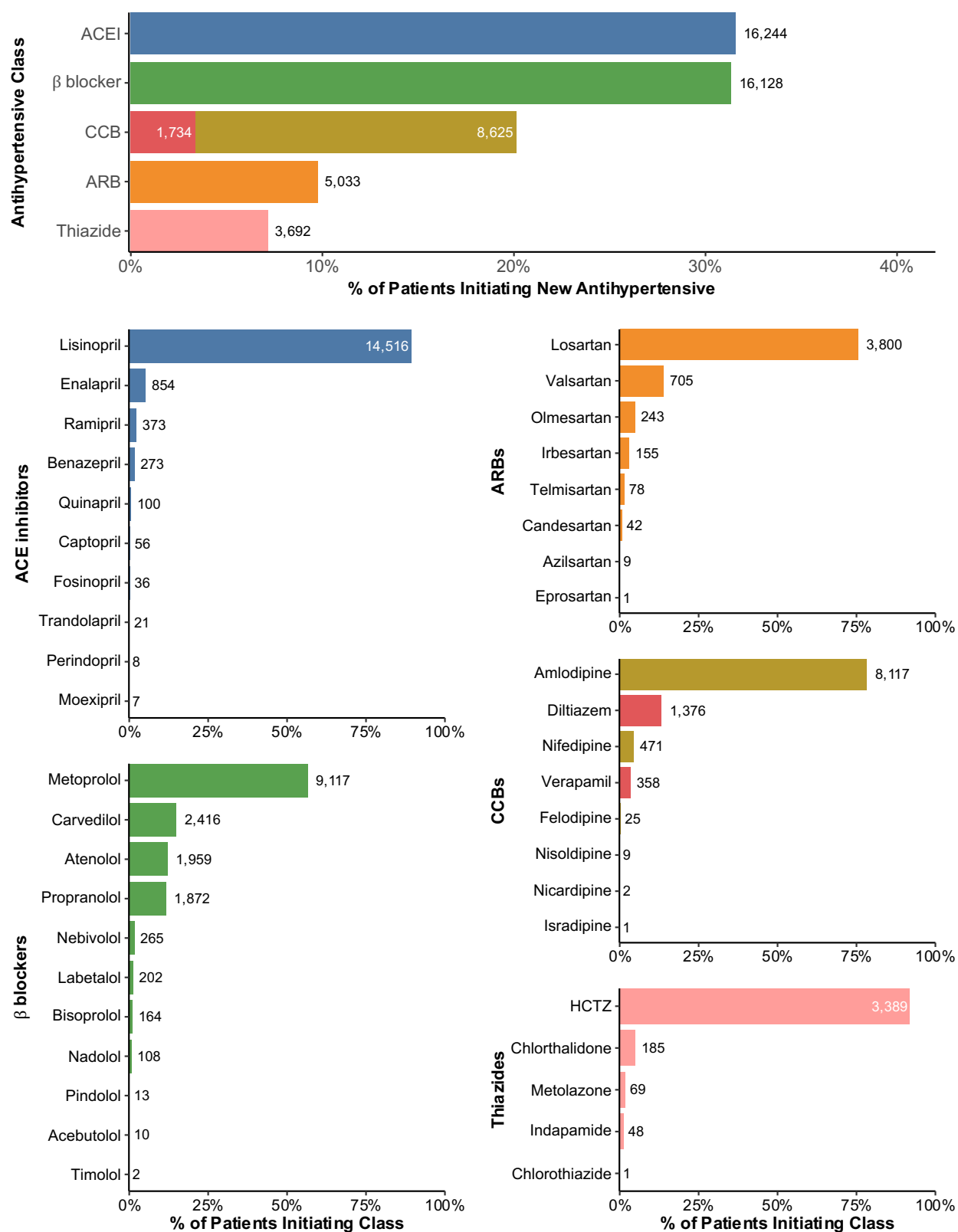
**Figure S2. Flow diagram for cohort development.**



**Figure S3. Antihypertensive use among Medicaid-insured patients initiating monotherapy only.**



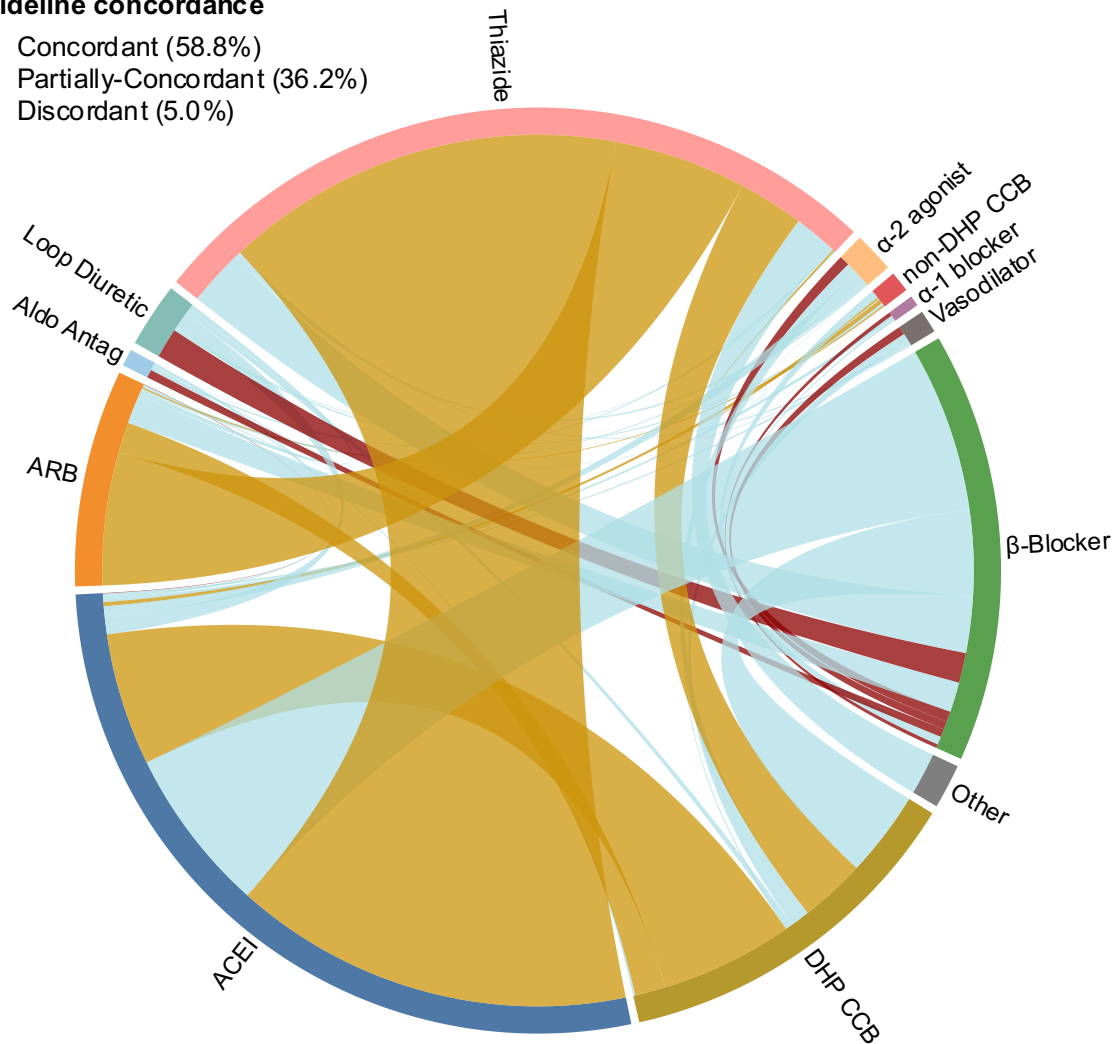
**Figure S4. Antihypertensive use among Medicare-insured patients initiating monotherapy only.**



**Figure S5. Dual combination therapy initiation and concordance with current U.S. hypertension guidelines, among Medicaid-insured patients.** The plot summarizes combination therapy for all Medicaid patients initiating exactly 2 antihypertensives (n = 13,352). Patients initiating triamterene as part of a fixed dose combination (n=414 [3.1%]) as well as those initiating two distinct drugs within the same class (n=47 [0.4%]) are not shown. Guideline concordance was defined as “concordant” (initiated two first-line classes [ACEI, ARB, CCB, or thiazide]), “partially concordant” (one first-line class combined with a non-first-line class), and “discordant” (no first-line class). Patients initiating an ACEI + ARB were considered “discordant.”

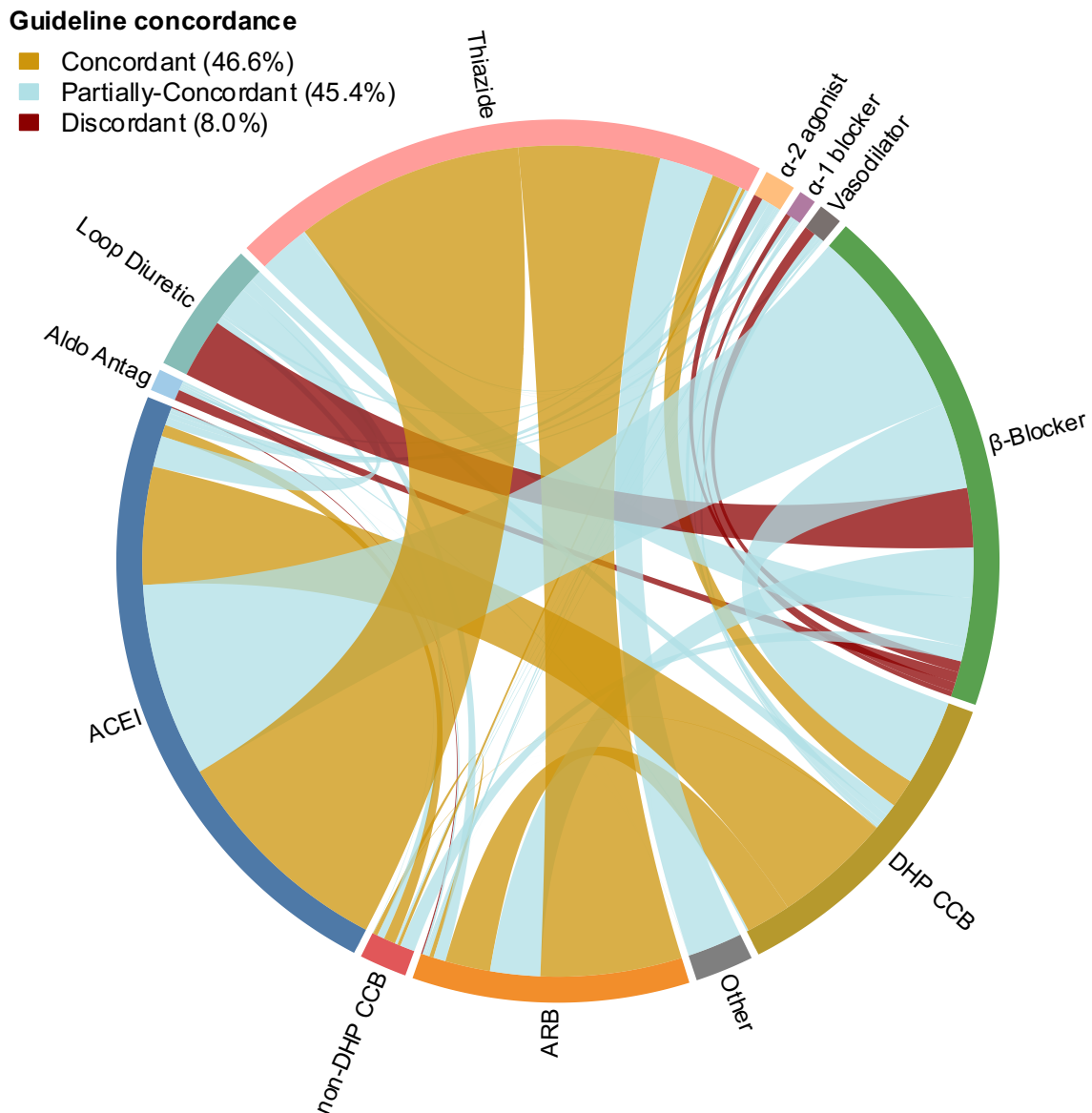
**Guideline concordance**

- Concordant (58.8%)
- Partially-Concordant (36.2%)
- Discordant (5.0%)



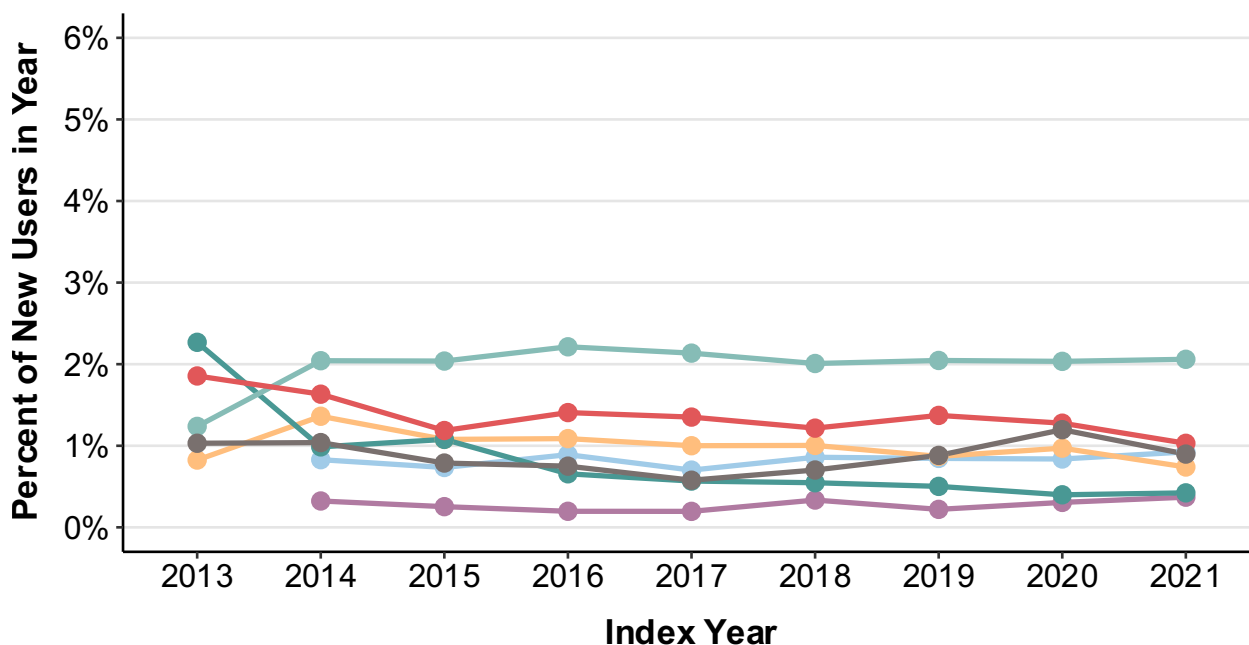


**Figure S6. Dual combination therapy initiation and concordance with current U.S. hypertension guidelines, among Medicare-insured patients.** The plot summarizes combination therapy for all patients initiating exactly 2 antihypertensives (n = 16,471). Patients initiating triamterene as part of a fixed dose combination (n=683 [4.1%]) as well as those initiating two distinct drugs within the same class (n=60 [0.4%]) are not shown. Guideline concordance was defined as “concordant” (initiated two first-line classes [ACEI, ARB, DHP CCB, or thiazide]), “partially concordant” (one first-line class combined with a non-first-line class), and “discordant” (no first-line class). Patients initiating an ACEI + ARB were considered “discordant.”

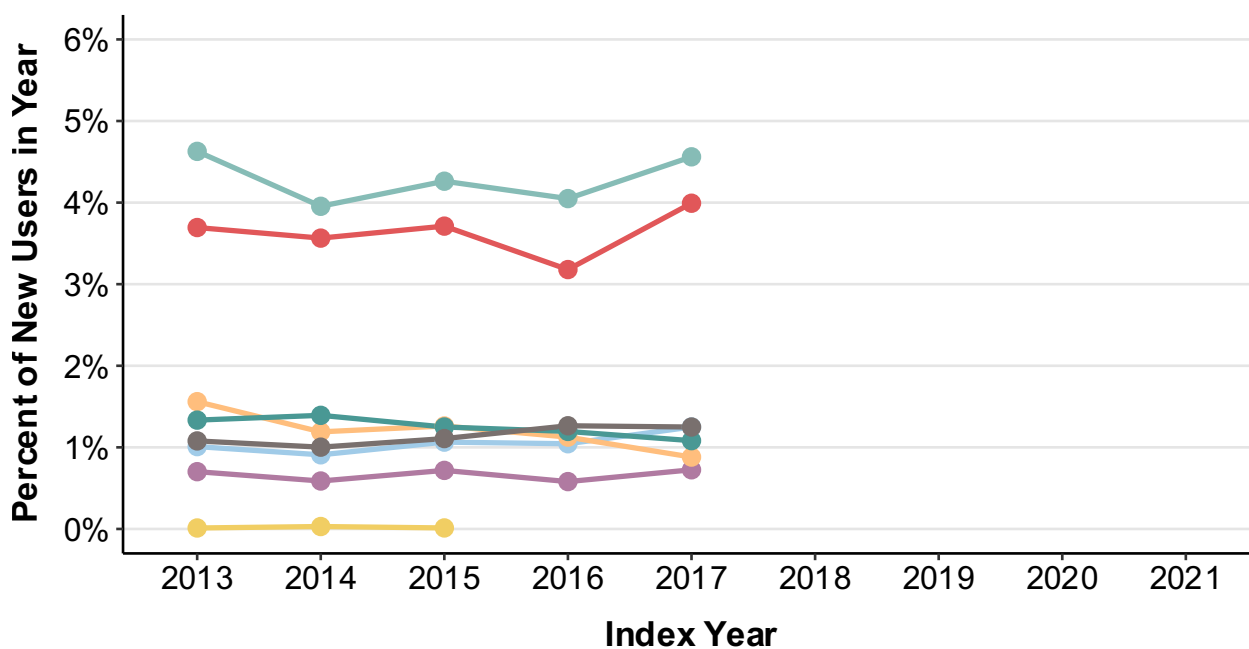


**Figure S7. Detailed view of time trends in initial use of second-line antihypertensive classes, stratified by cohort.**

**A. Medicaid**



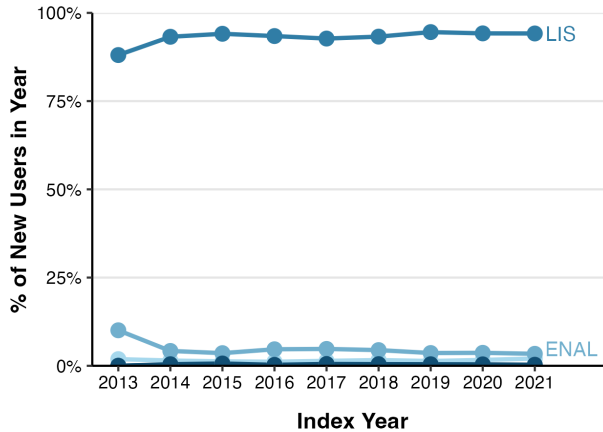
**B. Medicare**



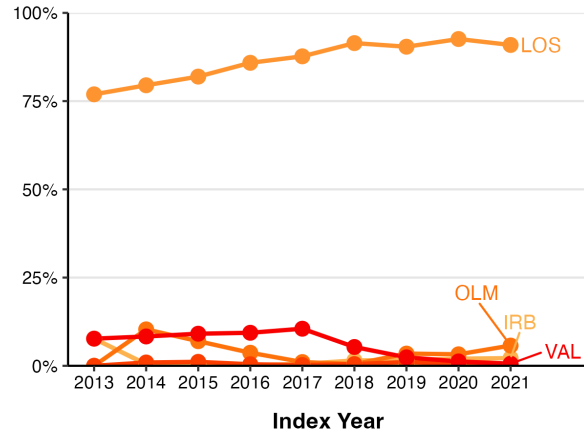
● Loop Diuretic    ● non-DHP CCB    ● Vasodilator    ●  $\alpha_1$  blocker  
●  $\alpha_2$  agonist    ● K-sparing Diur    ● Aldo Antag    ● DRI

**Figure S8. Time trends in initial use of individual antihypertensives within first-line classes, among Florida Medicaid-insured patients, 2013-2021.** Antihypertensives that never achieved  $\geq 5\%$  class share during the study period are unlabeled. AML, amlodipine; ATEN, atenolol; CARV, carvedilol; DILT, diltiazem; ENAL, enalapril; CTLD, chlorthalidone; HCTZ, hydrochlorothiazide; LAB, labetalol; LIS, lisinopril; LOS, losartan; MET, metoprolol; NIF, nifedipine; OLM, olmesartan; PROP, propranolol; VAL, valsartan.

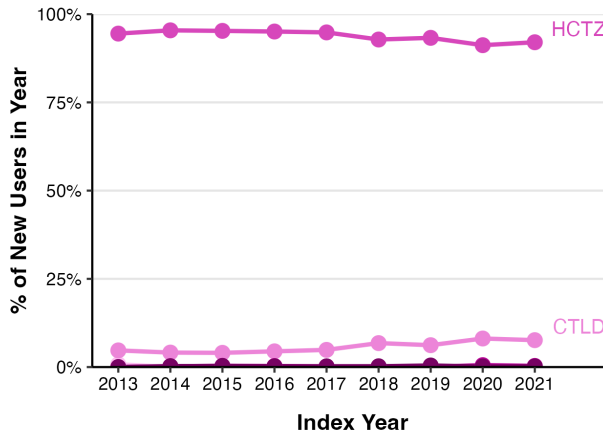
**A. ACE inhibitors**



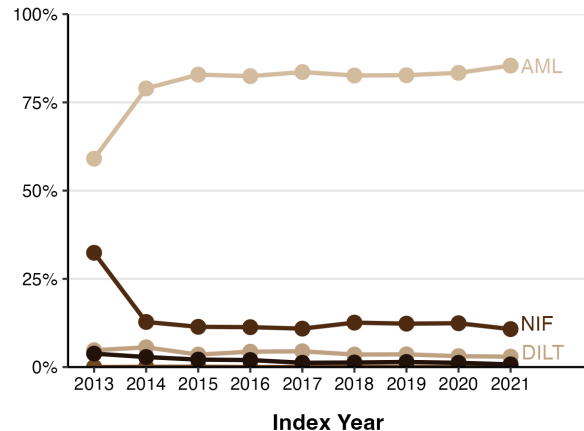
**B. ARBs**



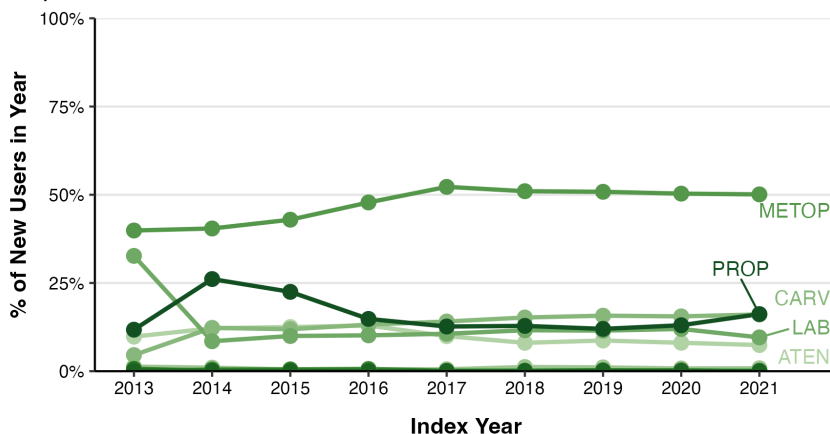
**C. Thiazides**



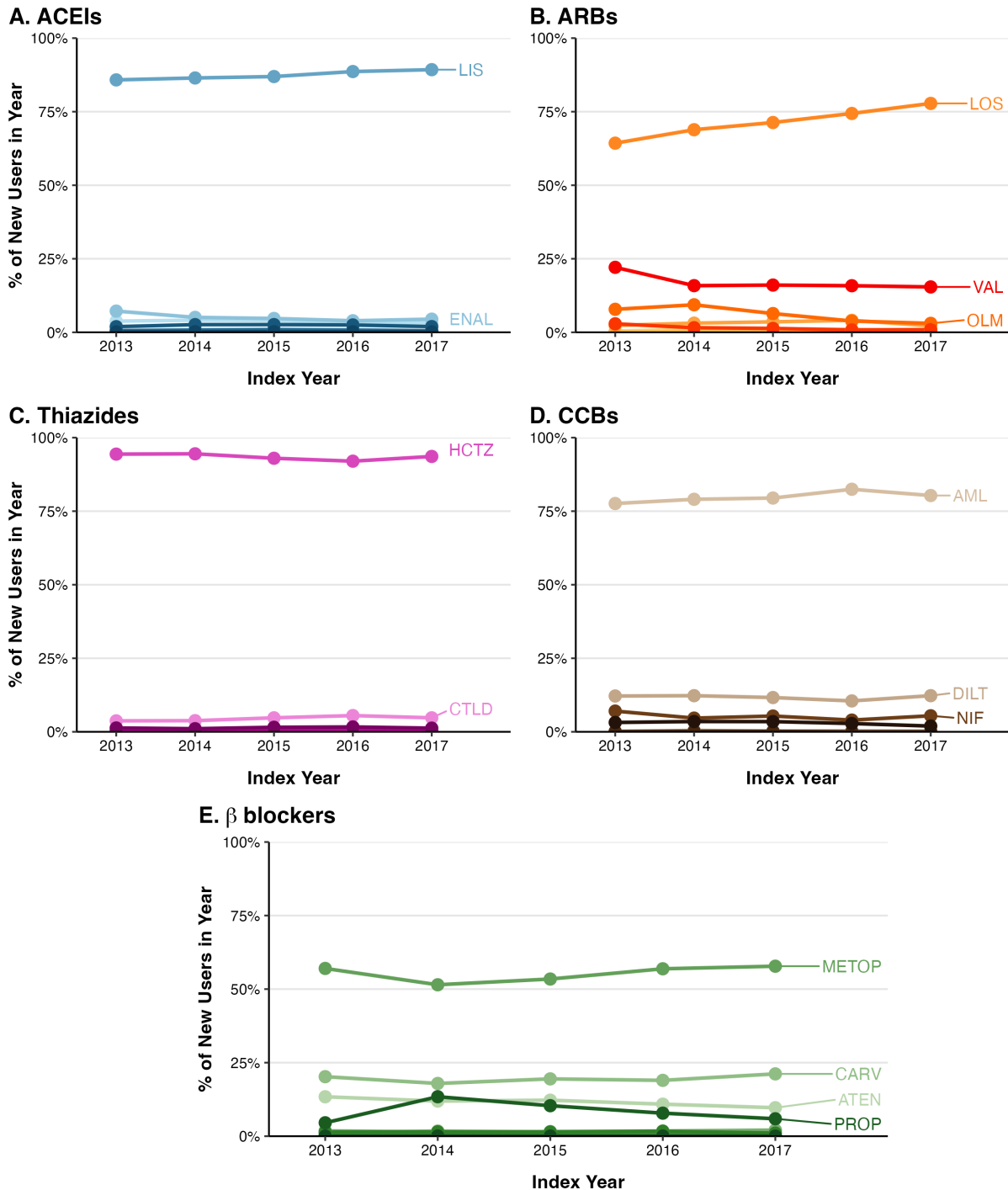
**D. CCBs**



**E.  $\beta$  blockers**

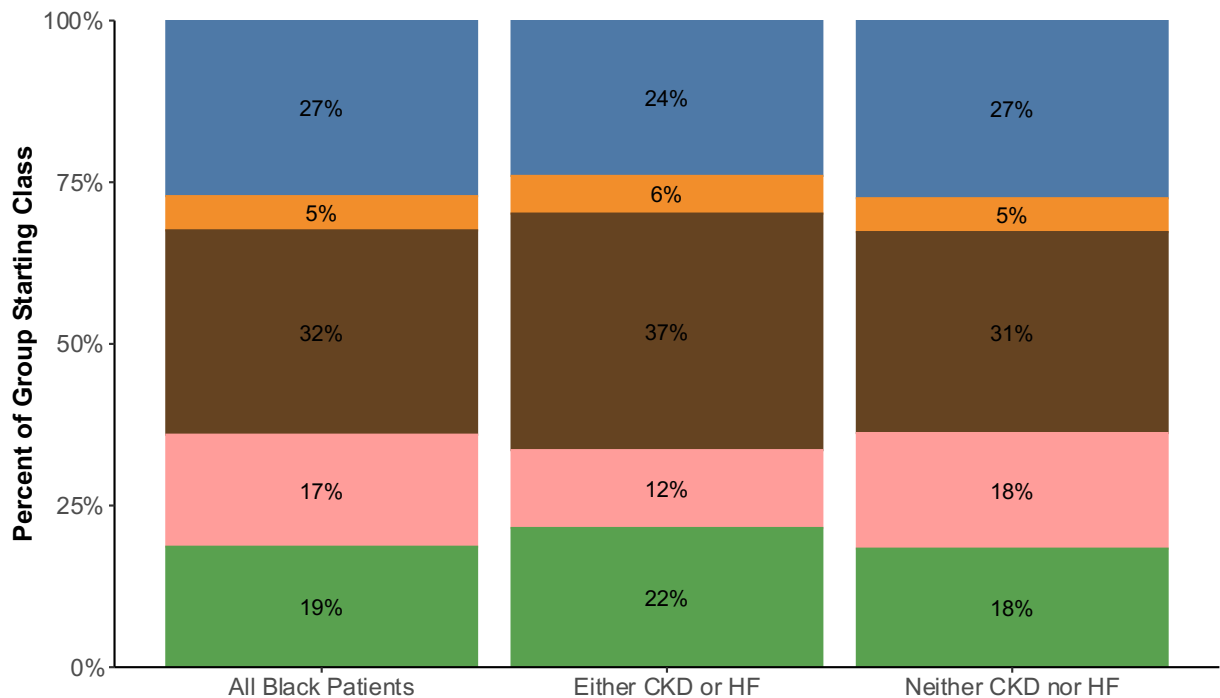


**Figure S9. Time trends in initial use of individual antihypertensives within first-line classes, among Medicare-insured patients, 2013-2017.** Antihypertensives that never achieved  $\geq 5\%$  class share during the study period are unlabeled. AML, amlodipine; ATEN, atenolol; CARV, carvedilol; DILT, diltiazem; ENAL, enalapril; CTLD, chlorthalidone; HCTZ, hydrochlorothiazide; LAB, labetalol; LIS, lisinopril; LOS, losartan; MET, metoprolol; NIF, nifedipine; OLM, olmesartan; PROP, propranolol; VAL, valsartan.



**Figure S10. Initial antihypertensive utilization among Black patients starting monotherapy, overall and stratified by chronic kidney disease and heart failure status.**

**A. Medicaid**



**B. Medicare**

