

SUPPLEMENTARY DATA

Table 1 of the supplementary data

CCS codes used to identify relevant diagnoses

<i>Heart failure</i>	
00108	Congestive heart failure, non hypertensive
<i>Diabetes</i>	
00049	Diabetes mellitus, no complications mentioned
00050	Diabetes mellitus with complications
<i>Hypertension</i>	
00098	Essential hypertension
00099	Hypertension with complications and secondary hypertension
<i>Chronic kidney disease</i>	
00158	Chronic kidney disease
<i>Ischemic heart disease</i>	
00100	Acute myocardial infarction
00101	Coronary atherosclerosis

CCS, clinical classifications software.

Table 2 of the supplementary data

ICD-9-CM codes used to identify relevant diagnoses

<i>Heart failure</i>	
398.91	Rheumatic heart failure (congestive)
402.01	Malignant hypertensive heart disease with heart failure
402.11	Benign hypertensive heart disease with heart failure
402.91	Unspecified hypertensive heart disease with heart failure
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease
428	Heart failure
428.0	Congestive heart failure, unspecified
428.1	Left heart failure
428.2, 428.2x	Systolic heart failure
428.3, 428.3x	Diastolic heart failure
428.4, 428.4x	Combined systolic and diastolic heart failure
428.9	Heart failure, unspecified
<i>Diabetes</i>	
250	Diabetes mellitus
250.0, 250.0x	Diabetes mellitus without mention of complication
250.1, 250.1x	Diabetes with ketoacidosis
250.2, 250.2x	Diabetes with hyperosmolarity
250.3, 250.3x	Diabetes with other coma
250.4, 250.4x	Diabetes with renal manifestations
250.5, 250.5x	Diabetes with ophthalmic manifestations
250.6, 250.6x	Diabetes with neurological manifestations
250.7, 250.7x	Diabetes with peripheral circulatory disorders
250.8, 250.8x	Diabetes with other specified manifestations
250.9, 250.9x	Diabetes with unspecified complication
<i>Hypertension</i>	
401	Essential hypertension
401.0	Malignant essential hypertension
401.1	Benign essential hypertension
401.9	Unspecified essential hypertension
402	Hypertensive heart disease
402.0, 402.0x	Malignant hypertensive heart disease
402.1, 402.1x	Benign hypertensive heart disease
402.9, 402.9x	Unspecified hypertensive heart disease
403	Hypertensive chronic kidney disease

403.0, 403.0x	Malignant hypertensive renal disease
403.1, 403.1x	Benign hypertensive renal disease
403.9, 403.9x	Unspecified hypertensive renal disease
404	Hypertensive heart and chronic kidney disease
404.0, 404.0x	Malignant hypertensive heart and renal disease
404.1, 404.1x	Benign hypertensive heart and renal disease
404.9, 404.9x	Unspecified hypertensive heart and renal disease
405	Secondary hypertension
405.0, 405.0x	Malignant secondary hypertension
405.1, 405.1x	Benign secondary hypertension
405.9, 405.9x	Unspecified secondary hypertension
<i>Chronic kidney disease</i>	
403.00	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage I through stage IV, or unspecified
403.01	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage V or end stage renal disease
403.10	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage I through stage IV, or unspecified
403.11	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage V or end stage renal disease
403.90	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified
403.91	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage V or end stage renal disease
404.00	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.02	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage V or end stage renal disease
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease
404.10	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.12	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage V or end stage renal disease
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease
404.90	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified
404.92	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end stage renal disease
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease
582.xx	Chronic glomerulonephritis
585	Chronic kidney disease

585.1	Chronic kidney disease, Stage I
585.2	Chronic kidney disease, Stage II (mild)
585.3	Chronic kidney disease, Stage III (moderate)
585.4	Chronic kidney disease, Stage IV (severe)
585.5	Chronic kidney disease, Stage V
585.6	End stage renal disease
585.9	Chronic kidney disease, unspecified
458.21	Hypotension of hemodialysis
792.5	Cloudy (hemodialysis) (peritoneal) dialysis effluent
996.81	Complications of transplanted kidney
996.73	Other complications due to renal dialysis device, implant, and graft
996.56	Mechanical complication due to peritoneal dialysis catheter
V42.0	Kidney replaced by transplant
V45.1x	Renal dialysis status
V56.xx	Encounter for extracorporeal dialysis
<i>Ischemic heart disease</i>	
410	Acute myocardial infarction
410.0, 410.0x	Acute myocardial infarction of anterolateral wall
410.1, 410.1x	Acute myocardial infarction of other anterior wall
410.2, 410.2x	Acute myocardial infarction of inferolateral wall
410.3, 410.3x	Acute myocardial infarction of inferoposterior wall
410.4, 410.4x	Acute myocardial infarction of other inferior wall
410.5, 410.5x	Acute myocardial infarction of other lateral wall
410.6, 410.6x	True posterior wall infarction
410.7, 410.7x	Subendocardial infarction
410.8, 410.8x	Acute myocardial infarction of other specified sites
410.9, 410.9x	Acute myocardial infarction of unspecified site
411	Other acute and subacute forms of ischemic heart disease
411.0	Postmyocardial infarction syndrome
411.1	Intermediate coronary syndrome
411.8, 411.8x	Other acute and subacute forms of ischemic heart disease
412	Old myocardial infarction
413	Angina pectoris
413.0	Angina decubitus
413.1	Prinzmetal angina
413.9	Other and unspecified angina pectoris
414	Other forms of chronic ischemic heart disease
414.0, 414.0x	Coronary atherosclerosis
414.1, 414.1x	Aneurysm and dissection of heart
414.2	Chronic total occlusion of coronary artery
414.3	Coronary atherosclerosis due to lipid rich plaque
414.4	Coronary atherosclerosis due to calcified coronary lesion
414.8	Other specified forms of chronic ischemic heart disease
414.9	Chronic ischemic heart disease, unspecified
996.03	Mechanical complication due to coronary bypass graft
V45.81	Aortocoronary bypass status
V45.82	Percutaneous transluminal coronary angioplasty status

ICD-9-CM, International Classification of Diseases, 9th Revision, Clinical Modification.

Table 3 of the supplementary data

ICD-10 codes used to identify relevant diagnoses

<i>Heart failure</i>	
I09.9	Rheumatic heart disease, unspecified
I11.0	Hypertensive heart disease with (congestive) heart failure
I13.0	Hypertensive heart and renal disease with (congestive) heart failure
I13.2	Hypertensive heart and renal disease with both (congestive) heart failure and renal failure
I50.0	Congestive heart failure
I50.1	Left ventricular failure
I50.9	Heart failure, unspecified
<i>Diabetes</i>	
E10	Type 1 diabetes mellitus
E11	Type 2 diabetes mellitus
E12	Malnutrition-related diabetes mellitus
E13	Other specified diabetes mellitus
E14	Unspecified diabetes mellitus
<i>Hypertension</i>	
I10	Essential (primary) hypertension
I11.0	Hypertensive heart disease with (congestive) heart failure
I11.9	Hypertensive heart disease without (congestive) heart failure
I12.0	Hypertensive renal disease with renal failure
I12.9	Hypertensive renal disease without renal failure
I13.0	Hypertensive heart and renal disease with (congestive) heart failure
I13.1	Hypertensive heart and renal disease with renal failure
I13.2	Hypertensive heart and renal disease with both (congestive) heart failure and renal failure
I13.9	Hypertensive heart and renal disease, unspecified
I15.0	Renovascular hypertension
I15.1	Hypertension secondary to other renal disorders
I15.2	Hypertension secondary to endocrine disorders
I15.8	Other secondary hypertension
I15.9	Secondary hypertension, unspecified
<i>Chronic kidney disease</i>	
I12.0	Hypertensive renal disease with renal failure
I13.0	Hypertensive heart and renal disease with (congestive) heart failure
I13.1	Hypertensive heart and renal disease with renal failure
I13.2	Hypertensive heart and renal disease with both (congestive) heart failure and renal failure
I13.9	Hypertensive heart and renal disease, unspecified
N18.1	Chronic kidney disease, stage 1
N18.2	Chronic kidney disease, stage 2
N18.3	Chronic kidney disease, stage 3
N18.4	Chronic kidney disease, stage 4
N18.5	Chronic kidney disease, stage 5
N18.9	Chronic kidney disease, unspecified
T82.4	Mechanical complication of vascular dialysis catheter
T86.1	Kidney transplant failure and rejection

Y84.1	Kidney dialysis
Z49	Care involving dialysis
Z94.0	Kidney transplant status
Z99.2	Dependence on renal dialysis
<i>Ischemic heart disease</i>	
I20.0	Unstable angina
I20.1	Angina pectoris with documented spasm
I20.8	Other forms of angina pectoris
I20.9	Angina pectoris, unspecified
I21.0	Acute transmural myocardial infarction of anterior wall
I21.1	Acute transmural myocardial infarction of inferior wall
I21.2	Acute transmural myocardial infarction of other sites
I21.3	Acute transmural myocardial infarction of unspecified site
I21.4	Acute subendocardial myocardial infarction
I21.9	Acute myocardial infarction, unspecified
I22.0	Subsequent myocardial infarction of anterior wall
I22.1	Subsequent myocardial infarction of inferior wall
I22.8	Subsequent myocardial infarction of other sites
I22.9	Subsequent myocardial infarction of unspecified site
I23.0	Hemopericardium as current complication following acute myocardial infarction
I23.1	Atrial septal defect as current complication following acute myocardial infarction
I23.2	Ventricular septal defect as current complication following acute myocardial infarction
I23.3	Rupture of cardiac wall without hemopericardium as current complication following acute myocardial infarction
I23.4	Rupture of chordae tendineae as current complication following acute myocardial infarction
I23.5	Rupture of papillary muscle as current complication following acute myocardial infarction
I23.6	Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction
I23.8	Other current complications following acute myocardial infarction
I24.0	Coronary thrombosis not resulting in myocardial infarction
I24.1	Dressler syndrome
I24.8	Other forms of acute ischemic heart disease
I24.9	Acute ischemic heart disease, unspecified
I25.0	Atherosclerotic cardiovascular disease, so described
I25.1	Atherosclerotic heart disease
I25.2	Old myocardial infarction
I25.3	Aneurysm of heart
I25.4	Coronary artery aneurysm and dissection
I25.5	Ischemic cardiomyopathy
I25.6	Silent myocardial ischemia
I25.8	Other forms of chronic ischemic heart disease
I25.9	Chronic ischemic heart disease, unspecified
T82.2	Mechanical complication of coronary artery bypass and valve grafts
Z95.1	Presence of aortocoronary bypass graft
V45.82	Percutaneous transluminal coronary angioplasty status

ICD-10, International Classification of Diseases, 10th Revision

Table 4 of the supplementary data

ATC codes used to identify RAASI medications and other medications of interest

<i>ACEIs (plain, or in combination)</i>	
Captopril	C09AA01, C09BA01
Enalapril	C09AA02, C09AA02, C09BA02, C09BB02, C09BB06
Lisinopril	C09AA03, C09BB03, C09BA03, C10BX07
Perindopril	C10BX15, C10BX12, C10BX11, C09AA04, C09BB04, C09BX02, C09BA04, C09BX01, C10BX14, C10BX13
Ramipril	C10BX06, C09AA05, C09BB07, C09BA05, C09BB05, C09BX03, C10BX04
Quinapril	C09AA06, C09AA06, C09BA06
Benazepril	C09AA07, C09BA07
Cilazapril	C09AA08, C09BA08
Fosinopril	C09AA09, C09BA09
Trandolapril	C09AA10, C09BB10
Spirapril	C09AA11
Delapril	C09AA12, C09BA12, C09BB12
Moexipril	C09AA13, C09BA13
Temocapril	C09AA14
Zofenopril	C09AA15, C09BA15
Imidapril	C09AA16
<i>ARBs (plain, or in combination)</i>	
Losartan	C09CA01, C09DB06, C09DA01
Eprosartan	C09CA02, C09DA02
Valsartan*	C10BX10, C09CA03, C09DX02, C09DB01, C09DA03, C09DB08, C09DX04, C09DX01
Irbesartan	C09CA04, C09DB05, C09DA04
Tasosartan	C09CA05
Candesartan	C09CA06, C09DB07, C09DA06
Telmisartan	C09CA07, C09DB04, C09DA07
Olmesartan	C09CA08, C09DB02, C09DA08, C09DX03
Azilsartan	C09CA09, C09DA09
Fimasartan	C09CA10, C09DA10
<i>Rennin inhibitors</i>	
Remikiren	C09XA01
Aliskiren	C09XA02, C09XA53, C09XA52, C09XA54, C09DX02
<i>Aldosterone inhibitors (potassium-sparing diuretics)</i>	
Spironolactone	C03DA01
Eplerenone	C03DA04
<i>Beta-blockers</i>	
Betablocking agents	C07
<i>Potassium supplements</i>	
Potassium supplements	A12B
<i>Loop diuretics</i>	
Furosemide	C03CA01, C03CB01, C03EB01
Torsemide	C03CA04
Bumetanide	C03CA02, C03CA02, C03CB02, C03EB02
<i>Trimethoprim</i>	

Trimethoprim and derivatives	J01EA
Combinations of sulfonamides and trimethoprim, incl. Derivatives	J01EE
<i>Macrolides</i>	
Macrolides	J01FA
<i>NSAIDs</i>	
NSAIDs	M01A

ACEI, angiotensin converting enzyme inhibitor; ARB, angiotensin-receptor blocker; ATC, anatomical therapeutic chemical; NSAID, non-steroidal anti-inflammatory drug; RAASI, renin-angiotensin-aldosterone system inhibition.

*Includes the combination valsartan/sacubitril (code C09DX04)

Table 5 of the supplementary data

Chronic morbidity groups included in the adjusted morbidity groups (AMG) classification system, by socioeconomic status

	Socioeconomic status			
	High	Medium	Low	Very low
<i>Individuals with chronic conditions affecting 1 system</i>				
Severity 1				
Severity 2				
Severity 3				
Severity 4				
Severity 5				
<i>Individuals with chronic conditions affecting 2-3 systems</i>				
Severity 1				
Severity 2				
Severity 3				
Severity 4				
Severity 5				
<i>Individuals with chronic conditions affecting >3 systems</i>				
Severity 1				
Severity 2				
Severity 3				
Severity 4				
Severity 5				
<i>Individuals with active cancer</i>				
Severity 1				
Severity 2				
Severity 3				
Severity 4				
Severity 5				

Note that the AMG components “Acute disease” and “Pregnancy” were not used in this study of chronic patients aged 55 years or older. Within each component, severity was defined based on the total burden of comorbidities, prior health care resource use, and estimated risk of re-hospitalization.

Table 6 of the supplementary data

Average prices by activity, in Catalonia, as of 2016

Concept	Average price
<i>Primary care visits (physician or nurse)</i>	35.80 € per visit
<i>Specialist visit</i>	€59.71 per visit
<i>Daycare hospital</i>	€203.7 per visit
<i>Emergency room visit</i>	€103.59 per visit
<i>Hospital admission</i>	€ 2,259.86 per admission
<i>Skilled nursing facility</i>	
Long term	€52.03 per day
Convalescence	€90.04 per day
Paliative care	€878.54 per visit
<i>Mental health admission</i>	
Acute	€181.18 per day
Subacute	€114.00 per day
<i>Minor outpatient surgery</i>	€195.45 per act
<i>Hospital at home</i>	€966.47 per admission
<i>Ambulatory rehabilitation</i>	€175.15 per session
<i>Nonurgent medical transportation</i>	€23.57 per act
<i>Urgent medical transportation</i>	€196.63 per act
<i>Dialysis</i>	€152.15 per session
<i>Implants, prostheses and special techniques or procedures</i>	€474.61 per act
<i>Pharmaceutical prescription</i>	
Primary care prescriptions	€10.13 per drug box
Hospital outpatient dispensing medication	€36.87 per drug box

Table 7 of the supplementary data

Characteristics of study participants included in the incident case analysis, overall and by K+ profile

	All	Normokalemic	Hyperkalemic	Hypokalemic
Overall	8241	7722 (93.7)	327 (4.0)	192 (2.3)
<i>Age, y</i>				
55-64	1603	1518 (94.7)	51 (3.2)	34 (2.1)
65-74	2733	2577 (94.3)	102 (3.7)	54 (2.0)
75-84	2875	2670 (92.9)	142 (4.9)	63 (2.2)
≥ 85	1030	957 (92.9)	32 (3.1)	41 (4.0)
<i>Sex</i>				
Men	4392	4080 (92.9)	221 (5.0)	91 (2.1)
Women	3849	3642 (94.6)	106 (2.8)	101 (2.6)
<i>Conditions*</i>				
CHF	2263	2068 (91.4)	106 (4.7)	89 (3.9)
CKD	1129	1010 (89.5)	82 (7.3)	37 (3.3)
DM	3566	3281 (92.0)	208 (5.8)	77 (2.2)
HTN	7272	6810 (93.6)	290 (4.0)	172 (2.4)
IHD	2231	2077 (93.1)	105 (4.7)	49 (2.2)
<i>EGFR categories</i>				
60	4357	4144 (95.1)	108 (2.5)	105 (2.4)
45-59	2162	2025 (93.7)	90 (4.2)	47 (2.2)
30-45	1206	1100 (91.2)	80 (6.6)	26 (2.2)
< 30	516	453 (87.8)	49 (9.5)	14 (2.7)

CHF, congestive heart failure; CKD, chronic kidney disease; DM, diabetes mellitus; ED, emergency department; EGFR, estimated glomerular filtration rate; HTN, hypertension; IHD, ischemic heart disease; K+, potassium.

Results are presented as No. (%); %s are by rows. Percentages may not add up to 100% due to rounding.

All *P* values for chi-squared comparisons across K+ categories were < .001, except for CHF (.057) and IHD (.629).

* Groups are not mutually exclusive; the same patient could have several relevant conditions simultaneously.

Individuals included in this analysis were those with no recorded evidence of any of the 5 relevant conditions as of January 1st, 2016, and who had a first recording of at least 1 of those conditions between January 2nd, 2016, and September 30th, 2017.

Table 8 of the supplementary data

Characteristics of study participants included in the prevalent case, prevalent user analysis, overall and by K+ profile

	All	Normokalemic	Hyperkalemic	Hypokalemic
Overall	24251	23309 (96.1)	689 (2.8)	253 (1.0)
<i>Age, y</i>				
55-64	4641	4492 (96.8)	96 (2.1)	53 (1.1)
65-74	9122	8785 (96.3)	255 (2.8)	82 (0.9)
75-84	7986	7655 (95.9)	249 (3.1)	82 (1.0)
≥ 85	2502	2377 (95.0)	89 (3.6)	36 (1.4)
<i>Sex</i>				
Men	11622	11128 (95.7)	375 (3.2)	119 (1.0)
Women	12629	12181 (96.5)	314 (2.5)	134 (1.1)
<i>Conditions*</i>				
CHF	1944	1829 (94.1)	76 (3.9)	39 (4.0)
CKD	4418	4117 (93.2)	263 (6.0)	38 (0.9)
DM	8322	7871 (94.6)	381 (4.6)	70 (0.8)
HTN	23283	22378 (96.1)	654 (2.8)	251 (1.1)
IHD	1951	1848 (94.7)	81 (4.2)	22 (1.1)
<i>Medication use*</i>				
ACEI	14807	14230 (96.1)	458 (3.1)	119 (0.8)
ARB	9345	8990 (96.2)	225 (2.4)	130 (1.4)
MRA	994	931 (93.7)	48 (4.8)	15 (1.5)
<i>EGFR categories</i>				
≥ 60	17336	16824 (97.0)	326 (1.9)	186 (1.1)
45-59	4297	4076 (94.9)	176 (4.1)	45 (1.0)
30-45	2146	1994 (92.9)	135 (6.3)	17 (0.8)
< 30	472	415 (87.9)	52 (11.0)	5 (1.1)

ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor antagonist; CHF, congestive heart failure; CKD, chronic kidney disease; DM, diabetes mellitus; ED, emergency department; EGFR, estimated glomerular filtration rate; HTN, hypertension; IHD, ischemic heart disease; K+, potassium; MRA, mineralocorticoid receptor antagonist.

Results are presented as No. (%); %s are by rows. Percentages may not add 100% due to rounding.

All *P* values for chi-squared comparisons across K+ categories were < .001, except for sex (.002), HTN (.018) and IHD (.004).

* Groups are not mutually exclusive; the same patient could have several relevant conditions and/or be treated with several renin-angiotensin-aldosterone system inhibitor (RAASI) drugs simultaneously.

Individuals included in this analysis were those who had at least 1 relevant condition as of January 1st, 2016 and were using at least one RAASI medication between October 1st, 2015 and January 1st, 2016.

Table 9 of the supplementary data

Characteristics of study participants included in the incident case, incident user analysis, overall and by K+ profile

	All	Normokalemic	Hyperkalemic	Hypokalemic
Overall	4887	4568 (93.5)	216 (4.4)	103 (2.1)
<i>Age, y</i>				
55-64	818	772 (94.4)	32 (3.9)	14 (1.7)
65-74	1616	1522 (94.2)	64 (4.0)	30 (1.9)
75-84	1825	1687 (92.4)	98 (5.4)	40 (2.2)
≥85	628	587 (93.5)	22 (3.5)	19 (3.0)
<i>Sex</i>				
Men	2588	2396 (92.6)	146 (5.6)	46 (1.8)
Women	2299	2172 (94.5)	70 (3.0)	57 (2.5)
<i>Conditions*</i>				
CHF	460	419 (91.1)	27 (5.9)	14 (3.0)
CKD	687	617 (89.8)	55 (8.0)	15 (2.2)
DM	1566	1413 (90.2)	114 (7.3)	39 (2.5)
HTN	3708	3444 (92.9)	175 (4.7)	89 (2.4)
IHD	390	360 (92.3)	20 (5.1)	10 (2.6)
<i>Medication use*</i>				
ACEI	2947	2768 (93.9)	132 (4.5)	47 (1.6)
ARB	1839	1708 (92.9)	80 (4.4)	51 (2.8)
MRA	432	396 (91.7)	25 (5.8)	11 (2.5)
<i>EGFR categories</i>				
≥ 60	2371	2255 (95.1)	66 (2.8)	50 (2.1)
45-59	1466	1372 (93.6)	62 (4.2)	32 (2.2)
30-45	822	742 (90.3)	65 (7.9)	15 (1.8)
< 30	228	199 (87.3)	23 (10.1)	6 (2.6)

ACEI, angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; CHF, congestive heart failure; CKD, chronic kidney disease; DM, diabetes mellitus; ED, emergency department; EGFR, estimated glomerular filtration rate; HTN, hypertension; IHD, ischemic heart disease; K+, potassium; MRA, mineralocorticoid-receptor antagonists; RAASI, renin-angiotensin-aldosterone system inhibition.

Results are presented as No. (%); %s are by rows. Percentages may not add 100% due to rounding.

All *P* values for chi-squared comparisons across K+ categories were < .05, except for age (.116), CHF (.089), IHD (.618) and IAL (.272).

* Groups are not mutually exclusive; a same patient could have several conditions and/or be treated with several RAASI drugs simultaneously.

Individuals included in this analysis were those with no recorded evidence of any of the 5 relevant conditions as of January 1st, 2016, who had a first recording of at least one of those conditions between January 2nd, 2016, and September 30th, 2017 and who had a first recording of RAASI medication use during that same period.

Table 10 of the supplementary data

Subgroup analysis by prevalent condition as of January 1st, 2016 (prevalent case analysis): associations between K+ abnormalities and clinical endpoints

	All-cause death	Hospitalization	ED visit	Daycare visit*
<i>CHF</i>				
Hyperkalemic	1.22 (0.76-1.98)	1.35 (1.03-1.77)	0.97 (0.74-1.27)	N/A
Hypokalemic	2.34 (1.46-3.75)	1.30 (0.86-1.94)	1.04 (0.72-1.50)	N/A
<i>CKD</i>				
Hyperkalemic	1.35 (0.99-1.84)	1.14 (0.95-1.36)	1.16 (1.01-1.34)	N/A
Hypokalemic	3.21 (2.05-5.03)	1.22 (0.82-1.81)	1.11 (0.81-1.52)	N/A
<i>DM</i>				
Hyperkalemic	1.03 (0.73-1.45)	1.08 (0.92-1.28)	1.06 (0.94-1.21)	N/A
Hypokalemic	2.43 (1.58-3.74)	0.97 (0.67-1.41)	0.88 (0.66-1.18)	N/A
<i>HTN</i>				
Hyperkalemic	1.32 (1.03-1.68)	1.10 (0.96-1.25)	1.06 (0.96-1.17)	N/A
Hypokalemic	2.48 (1.85-3.33)	1.12 (0.90-1.39)	1.06 (0.91-1.24)	N/A
<i>IHD</i>				
Hyperkalemic	1.02 (0.57-1.84)	0.92 (0.67-1.28)	0.84 (0.64-1.09)	N/A
Hypokalemic*	N/A	N/A	N/A	N/A

CHF, congestive heart failure; CKD, chronic kidney disease; DM, diabetes mellitus; ED, emergency

department; EGFR, estimated glomerular filtration rate; HTN, hypertension; IHD, ischemic heart disease; K+, potassium; N/A, not applicable

* The analysis could not be conducted due to the small number of events in this stratum

Individuals included in this analysis were those who had at least one relevant condition as of January 1st, 2016.

The analyses for hospitalization, ED visits and daycare visits accounted for the competing risk with death. Models adjusted for age, sex, socioeconomic status, comorbidities, EGFR, medication use, duration of disease, prior hospitalizations, prior ED visits, and prior serum K+ measurements.

Table 11 of the supplementary data

Subgroup analysis by incident condition (incident case analysis): associations between K+ abnormalities and clinical endpoints

	All-cause death	Hospitalization	ED visit	Daycare visit*
<i>CHF</i>				
Hyperkalemic	1.44 (0.93-2.22)	0.85 (0.62-1.15)	0.83 (0.63-1.08)	N/A
Hypokalemic	1.72 (1.09-2.71)	0.99 (0.67-1.47)	0.94 (0.68-1.30)	N/A
<i>CKD</i>				
Hyperkalemic	1.48 (1.02-2.14)	1.19 (0.95-1.50)	1.07 (0.88-1.31)	N/A
Hypokalemic	N/A	N/A	N/A	N/A
<i>DM</i>				
Hyperkalemic	1.50 (1.04-2.16)	1.04 (0.83-1.30)	1.00 (0.82-1.22)	N/A
Hypokalemic	1.66 (0.94-2.90)	1.22 (0.81-1.84)	1.25 (0.91-1.73)	N/A
<i>HTN</i>				
Hyperkalemic	1.40 (1.00-1.95)	1.06 (0.86-1.30)	1.05 (0.89-1.25)	N/A
Hypokalemic	1.96 (1.34-2.87)	1.44 (1.11-1.88)	1.34 (1.08-1.66)	N/A
<i>IHD</i>				
Hyperkalemic	1.94 (1.20-3.14)	1.04 (0.77-1.40)	0.70 (0.64-1.19)	N/A
Hypokalemic*	N/A	N/A	N/A	N/A

CHF, congestive heart failure; CKD, chronic kidney disease; DM, diabetes mellitus; ED, emergency

department; EGFR, estimated glomerular filtration rate; HTN, hypertension; IHD, ischemic heart disease; K+, potassium; N/A, not applicable

* The analysis could not be conducted due to the small number of events in this stratum

Individuals included in this analysis were those with no recorded evidence of any of the 5 relevant conditions as of January 1st, 2016, and who had a first recording of at least one of those conditions between January 2nd, 2016, and September 30th, 2017.

The analyses for hospitalization, ED visits and daycare visits accounted for the competing risk with death. Models adjusted for age, sex, socioeconomic status, comorbidities, EGFR, and medication use.

Table 12 of the supplementary data

Subgroup analysis by prevalent condition as of January 1st, 2016 (prevalent case, prevalent user analysis): associations between K+ abnormalities and clinical endpoints

	All-cause death	Hospitalization	ED visit	Daycare visit*
<i>CHF</i>				
Hyperkalemic	1.62 (0.93-2.82)	1.17 (0.83-1.63)	0.90 (0.65-1.25)	N/A
Hypokalemic*	N/A	N/A	N/A	N/A
<i>CKD</i>				
Hyperkalemic	1.86 (1.28-2.69)	1.21 (0.96-1.52)	1.23 (1.03-1.46)	N/A
Hypokalemic*	N/A	N/A	N/A	N/A
<i>DM</i>				
Hyperkalemic	1.30 (0.87-1.95)	1.15 (0.94-1.40)	1.13 (0.97-1.31)	N/A
Hypokalemic	3.43 (1.87-6.30)	1.25 (0.79-1.97)	1.01 (0.70-1.48)	N/A
<i>HTN</i>				
Hyperkalemic	1.71 (1.28-2.28)	1.09 (0.93-1.28)	1.07 (0.96-1.21)	N/A
Hypokalemic	2.65 (1.77-3.96)	1.14 (0.87-1.49)	1.07 (0.88-1.31)	N/A
<i>IHD</i>				
Hyperkalemic	1.48 (0.74-2.97)	0.80 (0.52-1.23)	0.81 (0.58-1.14)	N/A
Hypokalemic*	N/A	N/A	N/A	N/A

CHF, congestive heart failure; CKD, chronic kidney disease; DM, diabetes mellitus; ED, emergency

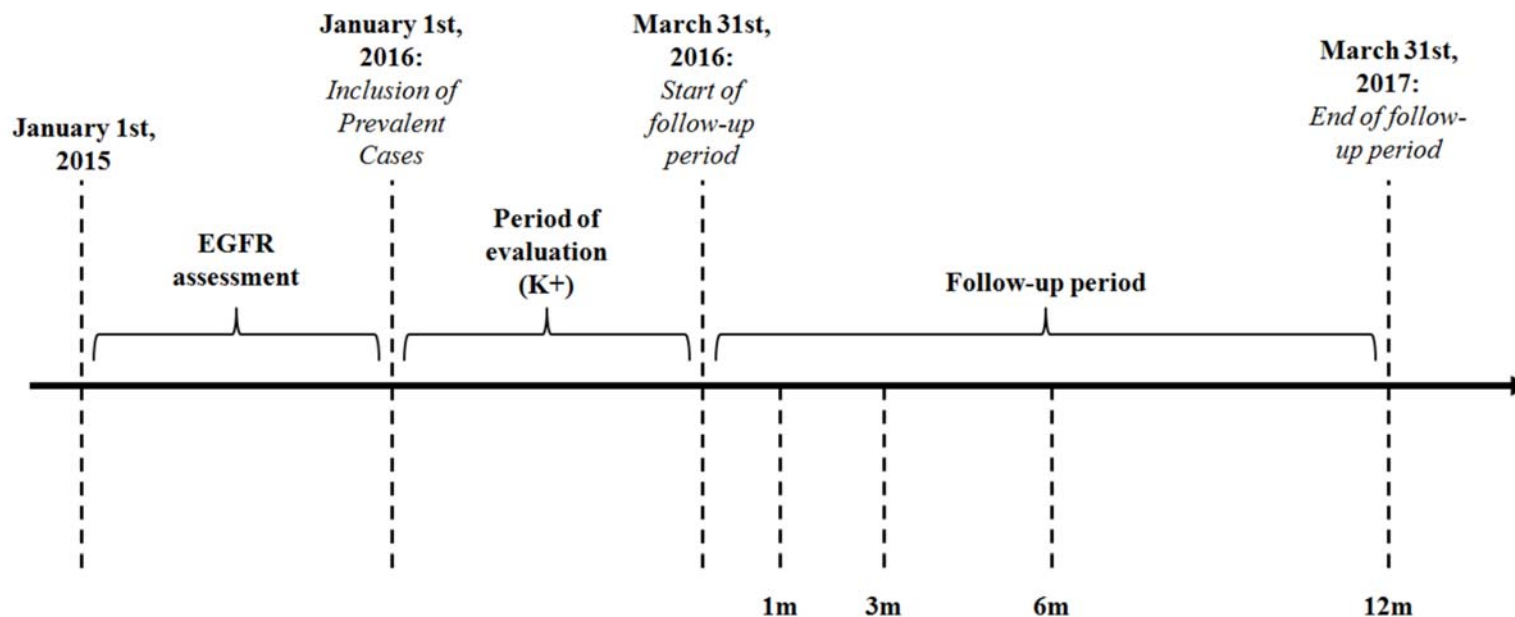
department; EGFR, estimated glomerular filtration rate; HTN, hypertension; IHD, ischemic heart disease; K+, potassium; N/A, non-applicable

* The analysis could not be conducted due to the small number of events in this stratum

Individuals included in this analysis were those who had at least one relevant condition as of January 1st, 2016 and were using at least one RAASI medication between October 1st, 2015 and January 1st, 2016.

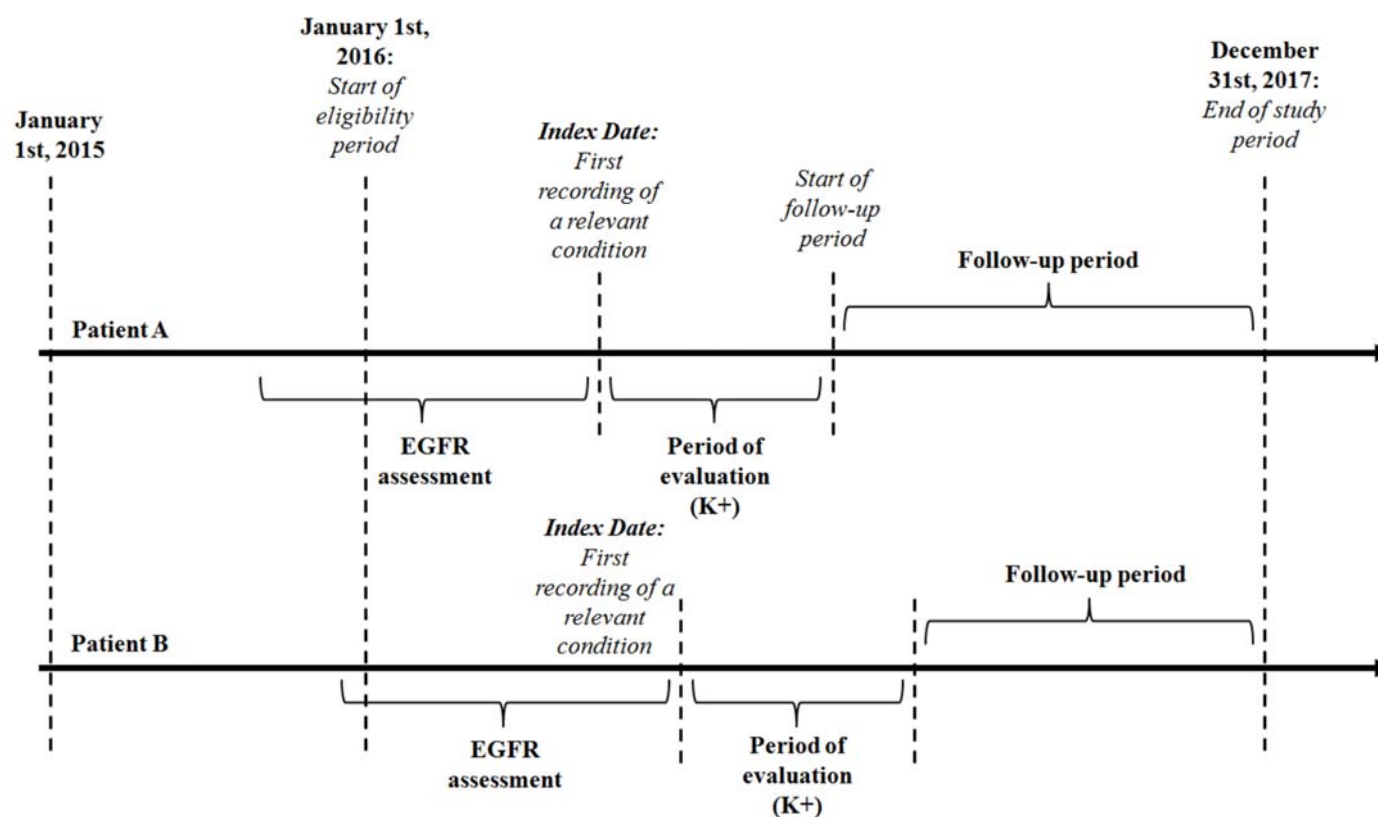
The analyses for hospitalization, ED visits and daycare visits accounted for the competing risk with death. Models were adjusted for age, sex, socioeconomic status, comorbidities, EGFR, medication use, duration of disease, prior hospitalizations, prior ED visits, and prior serum K+ measurements.

Figure 1 of the supplementary data. Study design, period of evaluation and follow-up period for the prevalent case analysis (individuals with prevalent chronic cardiovascular and renal conditions, regardless of use of RAASI medications)



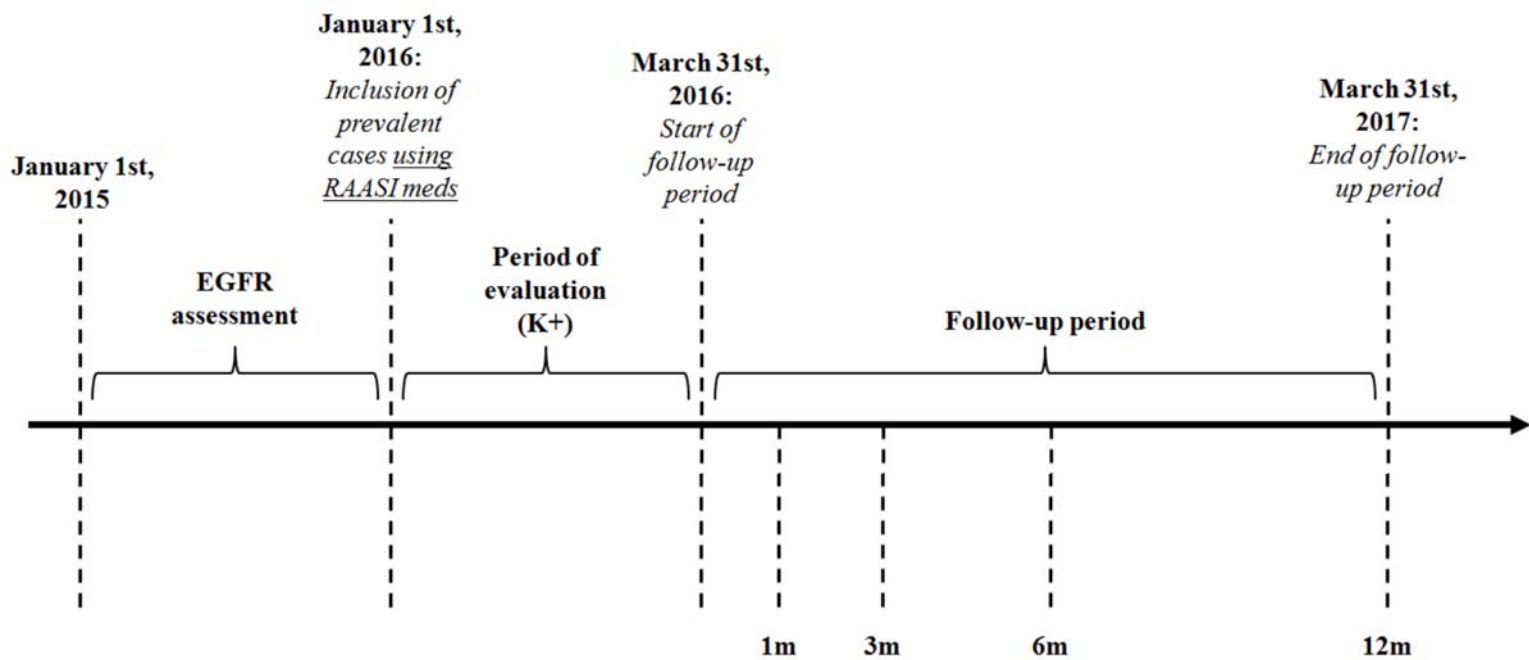
EGFR, estimated glomerular filtration rate; K+, potassium; m, months; RAASI, renin-angiotensin-aldosterone system inhibitor(s).

Figure 2 of the supplementary data. Study design, period of evaluation and follow-up period for the incident case analysis (individuals with incident chronic cardiovascular and renal conditions, regardless of use of RAASI medications).



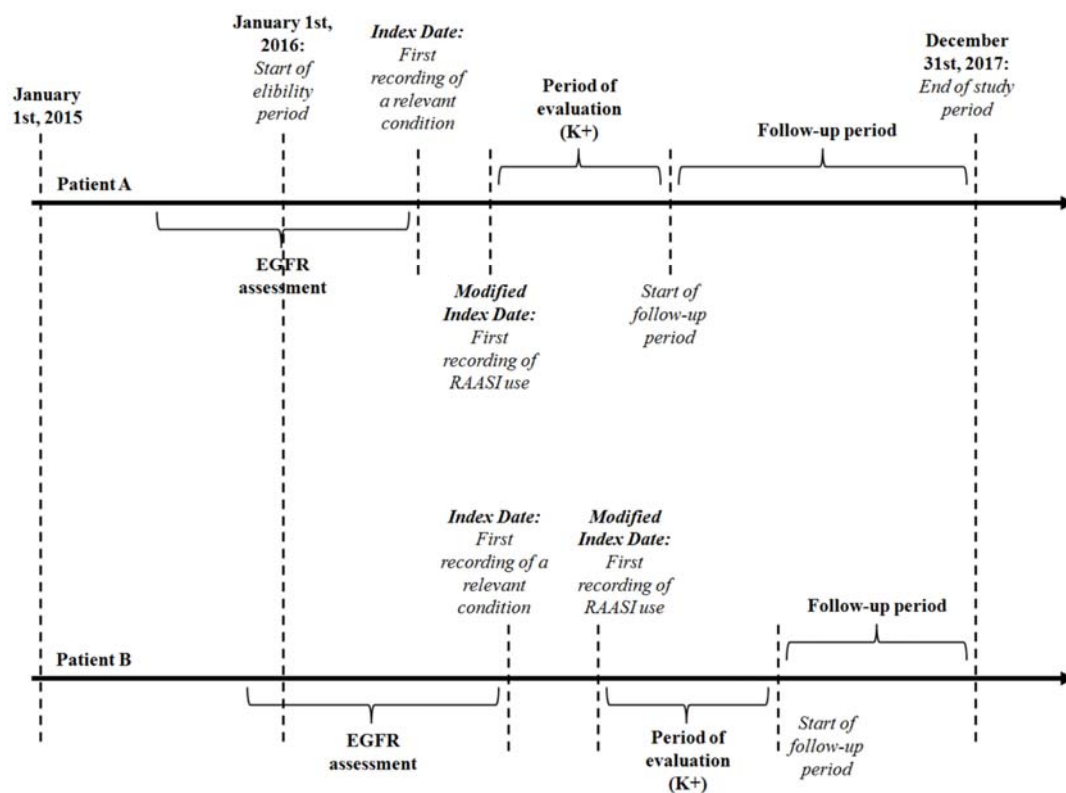
EGFR, estimated glomerular filtration rate; K+, potassium; m, months; RAASI, renin-angiotensin-aldosterone system inhibitor(s).

Figure 3 of the supplementary data. Study design, period of evaluation and follow-up period for the prevalent case, prevalent user analysis (patients with prevalent chronic cardiovascular and renal conditions and using at least one RAASI medication as of January 1st, 2016).



EGFR, estimated glomerular filtration rate; K+, potassium; m, months; RAASI, renin-angiotensin-aldosterone system inhibitor(s).

Figure 4 of the supplementary data. Study design, period of evaluation and follow-up period for the incident case, incident user analysis (patients with incident chronic cardiovascular and renal conditions and starting at least one RAASI medication).



EGFR, estimated glomerular filtration rate; K+, potassium; m, months; RAASI, renin-angiotensin-aldosterone system inhibition

Corrección a la figura