

**Appendix Table 1: ICD and CPT codes used**

<b>Diagnosis</b>	<b>ICD-9 codes</b>	<b>ICD-10 codes</b>
Chronic Kidney Disease (CKD)	CKD Stage 1-5: 585.1 – 585.5 unspecified CKD: 585.9  hypertensive CKD: 403.00 – 404.93  diabetic CKD: 249.40, 249.41, 250.40, 250.41, 250.42, 250.43	N18.1 – N18.5 N18.9  I12.0 – I13.2  E08.21, E08.22, E08.29 E09.21, E09.22, E09.29 E10.21, E10.22, E10.29 E11.21, E11.22, E11.29 E13.21, E13.22, E13.29
Diabetes Mellitus (DM)	249.00 – 250.93	E08.0 – E13.9
Hypertension (HTN)	401.0 – 405.99	I10 – I16.9
Cardiovascular Disease (CVD)	393. – 398.99 402.00 – 402.91 404.00 – 404.93 410.00 – 429.9	I05.0 – I09.9 I11.0, I11.9 I13.0 – I13.2 I20.0 – I52.
Peripheral Arterial Disease (PAD)	440.0 – 440.9 443.0 – 443.9	I70.0 – I70.92 I73.00 – I73.9
Stroke	430. – 438.9	I60.00 – I69.998 G45.0 – G45.9
Tumors	Malignant: 140.0 – 209.36 Benign: 209.40 – 239.9	C00.0 – C96.9 D00.00 – D49.9
<b>Procedure Type</b>	<b>CPT codes</b>	
Radiology (CT scans and interventional radiology)	70460 70470 70481 70482 70487 70491 70496 70498 71260 71270 71275 72126 72129 72132 72193 72194 73201 73701 74160 74170 74174 74175 74177 74178 75572 75574	
Cardiology (heart catheterization and percutaneous coronary intervention)	92920 92921 92924 92925 92928 92929 92933 92934 92937 92938 92941 92943 92944 92973 92978 92979 93451 93452 93453 93454 93455 93456 93457 93458 93459 93460 93461 93530 93531 93532 93533 93563 93564 93565 93566 93567 93568 93571 93572	
Endovascular (peripheral angiography, venography, and percutaneous interventions)	36005 36010 36011 36012 36100 36120 36140 36200 36215 36216 36217 36218 36221 36222 36223 36224 36225 36226 36227 36228 36245 36246 36247 36248 36251 36252 36253 36254 36901 36902 36903 36904 36905 36906 36907 36908 36909 37184 37185 37186 37187 37188 37191 37192 37193 37197 37211 37212 37213 37214 37215 37216 37217 37218 37220 37221 37222 37223 37224 37225 37226 37227 37228 37229 37230 37231 37232 37233 37234 37235 37236 37237 37238 37239 37241 37242 37243 37244 37246 37247 37248 37249 37252 37253 75600 75605 75625 75630 75635 75658 75705 75710 75716 75726 75731 75733 75736 75741 75743 75746 75756 75774 75820 75822 75825 75827 75831 75833 75840 75842 75860 75870 75872 75880 75894 75898 0234T 0235T 0236T 0237T 0238T	

Appendix Table 2: Patients Characteristics by CKD recognition status with lab evidence of CKD by eGFR or uACR or both criteria

	Lab Evidence of CKD	Recognition in Pt with eGFR<60 ml/min/1.73m2 only		CKD Recognition in Pts with uACR>30 mg/g only			CKD Recognition in Pts with both eGFR+uACR criteria			
Characteristics <sup>a</sup>	Total N=92,900	Total N= 67,899 (73%)	Recognized N=29,536 (43.5%)	Not Recognized N=38,363 (56.5%)	Total N=11,655 (12.5%)	Recognized N=2,167 (18.6%)	Not Recognized N=9,488 (85.4%)	Total N=13,346 (14.3%)	Recognized N=8,883 (66.6%)	Not Recognized N=4,463 (33.4%)
Existing Patients at start of 10/2012 <sup>a</sup>	70,478	50,798	22,517 (44.3%)	28,281 (55.7%)	8,596	1,657 (19.3%)	6,939 (81.7%)	11,084	7,442 (67.1%)	3,642 (32.9%)
Entered Cohort in 10/2012-09/2014 <sup>a</sup>	10,121	7,412	2,984 (40.3%)	4,428 (59.7%)	1,523	258 (16.9%)	1,265 (83.1%)	1,186	764 (64.4%)	422 (35.6%)
Entered Cohort in 10/2014-09/2016 <sup>a</sup>	7,453	5,783	2,380 (41.2%)	3,403 (58.8%)	981	169 (17.2%)	812 (82.8%)	689	435 (63.1%)	254 (36.9%)
Entered Cohort in 10/2016-09/2018 <sup>a</sup>	4,848	3,906	1,655 (42.4%)	2,251 (57.6%)	555	83 (14.95%)	472 (85.05%)	387	242 (62.5%)	145 (37.5%)
Age, Mean (sd)	67.5 (11.3)	68.6 (11.3)	69.2 (11.2)	68.1 (11.4)	61.4 (10.9)	60.5 (10.4)	61.6 (11.0)	67.6 (9.5)	67.3 (9.6)	68.1 (9.3)
Male, n (%)	88,514 (95.3%)	64,253 (94.6%)	28,492 (96.5%)	35,761 (93.2%)	11,237 (96.4%)	2,075 (95.7%)	9,162 (96.6%)	13,024 (97.6%)	8,703 (98.0%)	4,321 (96.8%)
Race, n (%)										
Non-hispanic White	54,302 (58.5%)	41,021 (60.4%)	17,222 (58.3%)	23,799 (62.0%)	5,685 (48.8%)	930 (42.9%)	4,744 (50.1%)	7,596 (56.9%)	4,809 (54.1%)	2,787 (62.5%)
Non-hispanic black	16,823 (18.1%)	12,950 (19.1%)	5,450 (18.5%)	7,500 (19.6%)	1,666 (14.3%)	385 (17.8%)	1,281 (13.5%)	2,207 (16.5%)	1,560 (17.6%)	647 (14.5%)
Hispanics	11,206 (12.1%)	6,147 (9.1%)	3,431 (11.6%)	2,716 (7.1%)	2,972 (25.5%)	596 (27.5%)	2,376 (25.0%)	2,087 (15.6%)	1,537 (17.3%)	550 (12.3%)
Asian	211 (0.2%)	131 (0.2%)	70 (0.2%)	61 (0.2%)	48 (0.4%)	7 (0.3%)	41 (0.4%)	32 (0.2%)	22 (0.3%)	10 (0.2%)
American Indian/Pacific Islanders	1,278 (1.4%)	852 (1.3%)	402 (1.4%)	450 (1.2%)	196 (1.7%)	43 (2.0%)	153 (1.6%)	230 (1.7%)	164 (1.9%)	66 (1.5%)
Unknown	8,432 (9.1%)	6,317 (9.3%)	2,733 (9.2%)	3,584 (9.3%)	1,009 (8.7%)	195 (9.0%)	814 (8.6%)	1,106 (8.3%)	736 (8.3%)	370 (8.3%)
Multi-Race	648 (0.7%)	481 (0.7%)	228 (0.8%)	253 (0.7%)	79 (0.7%)	11 (0.5%)	68 (0.7%)	88 (0.7%)	55 (0.6%)	33 (0.7%)
BMI, Mean (sd)	30.5 (6.1)	29.9 (5.9)	30.0 (6.0)	29.8 (5.8)	32.3 (6.5)	32.3 (6.3)	32.3 (6.5)	31.7 (6.3)	31.8 (6.3)	31.5 (6.2)
Co-morbidities, n (%)										
Diabetes w/o Hypertension	2,109 (2.3%)	1,428 (2.1%)	448 (1.5%)	960 (2.6%)	499 (4.3%)	59 (2.7%)	440 (4.6%)	182 (1.4%)	88 (1.0%)	94 (2.1%)
Hypertension w/o diabetes	37,774 (40.7%)	35,665 (52.5%)	13,668 (46.3%)	21,997 (57.3%)	950 (8.2%)	99 (4.6%)	851 (9.0%)	1,159 (8.7%)	774 (8.7%)	385 (8.6%)
Both Diabetes and Hypertension	53,017 (57.1%)	30,806 (45.4%)	15,420 (52.2%)	15,386 (40.1%)	10,206 (87.6%)	2,009 (92.7%)	8,197 (86.4%)	12,005 (89.9%)	8,021 (90.3%)	3,984 (89.3%)
Heart disease	56,042 (60.3%)	40,857 (60.2%)	19,487 (66.0%)	21,370 (55.7%)	5,793 (49.7%)	1,167 (53.9%)	4,626 (48.8%)	9,392 (70.4%)	6,393 (72.0%)	2,999 (67.2%)
Peripheral arterial disease	13,927 (15.0%)	9,244 (13.6%)	5,156 (17.5%)	4,088 (10.7%)	1,622 (13.9%)	361 (16.7%)	1,261 (13.3%)	3,061 (22.9%)	2,286 (25.7%)	775 (17.4%)
Stroke	17,192 (18.5%)	12,381 (18.2%)	6,219 (21.1%)	6,162 (16.1%)	1,749 (15.0%)	384 (17.7%)	1,365 (14.4%)	3,062 (22.9%)	2,144 (24.1%)	918 (20.6%)
Tumor	48,499 (52.2%)	35,983 (53.0%)	16,265 (55.1%)	19,718 (51.4%)	5,301 (45.5%)	1,054 (48.6%)	4,247 (44.8%)	7,215 (54.1%)	4,873 (54.9%)	2,342 (52.5%)
Primary Care visits/yr, Mean (sd)	4.46 (2.80)	4.28 (2.71)	---	---	4.66 (2.82)	---	---	5.20 (3.06)	---	---
Specialty Care visits/yr, Mean (sd)	0.81 (1.76)	0.78 (1.74)	---	---	0.60 (1.25)	---	---	1.10 (2.14)	---	---
ER visit+Hospitalization/yr, Mean (sd)	0.71 (1.60)	0.71 (1.62)	---	---	0.58 (1.37)	---	---	0.83 (1.63)	---	---
Elective Procedures, n/yr, Mean (sd)										
Radiological	0.717 (2.06)	0.707 (2.10)	---	---	0.803 (2.00)	---	---	0.695 (1.90)	---	---
Endovascular	0.091 (0.58)	0.076 (0.51)	---	---	0.079 (0.49)	---	---	0.180 (0.93)	---	---
Cardiac	0.098 (0.51)	0.088 (0.48)	---	---	0.075 (0.38)	---	---	0.168 (0.67)	---	---
Median Blood Pressure Value										
Not diagnosed with HTN (%)	2,109 (2.3%)	1,428 (2.1%)	---	---	499 (4.3%)	---	---	182 (1.4%)	---	---
Not available (%)	348 (0.4%)	237 (0.4%)	---	---	78 (0.7%)	---	---	33 (0.3%)	---	---
<130/80 mmHg, n (%)	29,340 (31.6%)	23,203 (34.2%)	---	---	2,592 (22.2%)	---	---	3,545 (26.6%)	---	---
130-140/80-90 mmHg, n (%)	48,044 (51.7%)	34,047 (50.1%)	---	---	6,583 (56.5%)	---	---	7,414 (55.6%)	---	---
>140/90 mmHg, n (%)	13,059 (14.1%)	8,984 (13.2%)	---	---	1,903 (16.3%)	---	---	2,172 (16.3%)	---	---
Medications (%)										
ACEI/ARB	66,266 (71.3%)	45,192 (66.6%)	20,524 (69.5%)	24,668 (64.3%)	9,801 (84.1%)	1,940 (89.5%)	7,861 (82.9%)	11,273 (84.5%)	7,564 (85.2%)	3,709 (83.1%)
Diuretics	54,591 (58.8%)	38,771 (57.1%)	18,100 (61.3%)	20,671 (53.9%)	6,233 (53.5%)	1,295 (59.8%)	4,938 (52.0%)	9,587 (71.8%)	6,634 (74.7%)	2,953 (66.2%)
Statins	40,681 (43.8%)	28,653 (42.2%)	10,760 (36.4%)	17,893 (46.6%)	6,601 (56.6%)	1,266 (58.4%)	5,335 (56.2%)	5,427 (40.7%)	3,407 (38.4%)	2,020 (45.3%)
NSAIDs	71,467 (76.9%)	49,828 (73.4%)	22,579 (76.5%)	27,249 (71.0%)	9,945 (85.3%)	1,915 (88.4%)	8,030 (81.4%)	1,694 (12.6%)	7,865 (88.5%)	3,829 (85.8%)

Foot note: <sup>a</sup> The percentage are calculated with denominator from a column before. The rest of the percentage (rows without <sup>a</sup>), are calculated with N from that column as denominator.

All the comparisons has p value &lt;0.0001, except Existing patients at start of 10/2012, BMI &amp; NSAIDs in uACR category, p=0.009, p=0.86, p=0.06, respectively, and Existing patients at start, BMI, cancer &amp; ACEI/ARB in both criteria, p=0.014, p=0.013, p=0.009, p=0.002,