

**Item S1.** Inpatient and outpatient ICD-9 codes in claims used to define chronic kidney disease in Medicare data (CKD<sub>Medicare</sub>) in our primary analyses.

016.0 - Tuberculosis of kidney,  
095.4 - Syphilis of kidney  
189.0 - Malignant neoplasm of kidney, except pelvis  
189.9, - Malignant neoplasm of urinary organ, site unspecified  
223.0 - Benign neoplasm of kidney, except pelvis  
236.91 - Neoplasm of uncertain behavior of kidney and ureter  
250.4 - Diabetes with renal manifestations  
271.4 - Renal glycosuria,  
274.1 - Gouty nephropathy  
283.11 - Hemolytic-uremic syndrome  
403.x1 - Hypertensive chronic kidney disease  
403.x0 (after October 1, 2006) - Hypertensive chronic kidney disease (subtypes)  
404.x2, Hypertensive heart and chronic kidney disease  
404.x3, Hypertensive heart and chronic kidney disease (subtypes)  
404.x0 Hypertensive heart and chronic kidney disease (subtypes)  
404.x1 (after October 1, 2006),  
440.1- Atherosclerosis of renal artery  
442.1 - Aneurysm of renal artery  
447.3 - Hyperplasia of renal artery  
572.4 - Hepatorenal syndrome  
580–588 (there are many sub-codes)  
    580 Acute glomerulonephritis  
    580.9 Glomerulonephritis, acute, unspec.  
    581 Nephrotic syndrome  
    581.9 Nephrotic syndrome, unspec.  
    582 Chronic glomerulonephritis  
    582.9 Glomerulonephritis, chronic, unspec.  
    583 Nephritis and nephropathy, not specified as acute or chronic  
    584 Acute renal failure  
    584.5 Renal failure, acute w/ tubular necrosis  
    584.9 Renal failure, acute, unspec.  
    585 Chronic renal failure  
    586 Renal failure, unspecified  
    587 Renal sclerosis, unspecified  
    588 Disorders resulting from impaired renal function  
    588.8 Other specified disorders resulting from impaired renal function  
    588.81 Hyperparathyroidism, secondary, renal  
    588.89 Renal tubular acidosis  
    589 Small kidney of unknown cause

Specific codes are present between 580 and 588 and should be included. For example:

- 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
- 591 - Hydronephrosis
- 642.1 - Hypertension secondary to renal disease complicating pregnancy childbirth and the puerperium
- 646.2 - Unspecified renal disease in pregnancy without mention of hypertension
- 753.12–753.17 - Polycystic kidney, unspecified type, Polycystic kidney, autosomal dominant, autosomal recessive, Renal dysplasia, Medullary cystic kidney, Medullary sponge kidney
- 753.19 - Other specified cystic kidney disease
- 753.2 - Obstructive defects of renal pelvis and ureter
- 794.4 - Nonspecific abnormal results of function study of kidney

Chronic kidney disease in Medicare was defined as the presence of any of the above ICD-9 codes associated with an inpatient, skilled nursing facility or home health aide claim or an outpatient claim linked to a physician evaluation and management claim. This list was derived from codes listed in the chronic conditions warehouse.<sup>1</sup>

#### **Item S1 Reference**

1. Chronic condition data warehouse - chronic condition categories 2011. PDF available at <https://www.ccwdata.org/web/guest/condition-categories>