

Title: *Potentially Preventable Hospitalization among Patients with Chronic Kidney Disease and High Inpatient Use*

**Supplemental File**

Appendix 1. ICD-9-CM and ICD-10 diagnostic coding schemes to define co-morbidity among study participants.

Appendix 2. Clinical and demographic factors associated with high use of inpatient services among patients with CKD

Appendix 1. ICD-9-CM and ICD-10 diagnostic coding schemes to define co-morbidity among study participants. (Table adapted from Tonelli et al. 2015<sup>28</sup>)

<b>Morbidity</b>	<b>Algorithm</b>	<b>ICD-9 CM</b>	<b>ICD-10</b>
<b>Alcohol misuse</b>	1 hospitalization or 2 claims in 2 years or less	265.2, 291.1–291.3, 291.5–291.9, 303.0, 303.9, 305.0, 357.5, 425.5, 535.3, 571.0–571.3, 980, V11.3	E52, F10, G62.1, I42.6, K29.2, K70.0, K70.3, K70.9, T51, Z50.2, Z71.4, Z72.1
<b>Asthma</b>	1 hospitalization or 3 ACCS in 2 years or less	493	J45
<b>Atrial fibrillation</b>	1 hospitalization or 2 claims in 2 years or less	427.3 <sup>&amp;</sup>	I48.0
<b>Cancer, lymphoma</b>	1 hospitalization or 2 claims in 2 years or less	200–202, 203.0, 238.6	C81–C85, C88, C90.0, C90.2, C96
<b>Cancer, metastatic</b>	1 hospitalization or 2 claims in 2 years or less	196–199	C77–C80
<b>Cancer, non-metastatic (breast, cervical, colorectal, lung, prostate)</b>	1 hospitalization or 2 claims in 2 years or less	153-154, 162-163, 174, 180, 185, 230.3-230.6, 231.2, 233.0-233.1, 233.4	C18-C21, C33-C34, C38.4, C45.0, C46.71, C50, C53, C61, D01.0-D01.3, D02.2, D05-D06, D07.5
<b>Chronic heart failure</b>	1 hospitalization or 2 claims in 2 years or less	398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 425.4–425.9, 428	I09.9, I25.5, I42.0, I42.5–I42.9, I43, I50
<b>Chronic pain</b>	2 hospitalizations or 2 claims or 2 ACCS in 30 days or less	307.80, 307.89, 338.0, 338.2, 338.4, 719.41, 719.45, 719.46, 719.47, 719.49, 720.0, 720.2, 720.9, 721.0, 721.1, 721.2, 721.3, 721.4, 721.6, 721.8, 721.9, 722, 723.0, 723.1, 723.3, 723.4, 723.5, 723.6, 723.7,	F45.4, M08.1, M25.50, M25.51, M25.55, M25.56, M25.57, M43.2, M43.3, M43.4, M43.5, M43.6, M45, M46.1, M46.3, M46.4, M46.9, M47, M48.0, M48.1, M48.8, M48.9, M50.8, M50.9, M51, M53.1, M53.2, M53.3,

		723.8, 723.9, 724.0, 724.1, 724.2, 724.3, 724.4, 724.5, 724.6, 724.70, 724.79, 724.8, 724.9, 729.0, 729.1, 729.2, 729.4, 729.5	M53.8, M53.9, M54, M60.8, M60.9, M63.3, M79.0, M79.1, M79.2, M79.6, M79.7, M96.1
<b>Chronic pulmonary disease</b>	1 hospitalization or 2 claims in 2 years or less	416.8, 416.9, 490–492, 494-505, 506.4, 508.1, 508.8	I27.8, I27.9, J40–J44, J46-J47, J60–J67, J68.4, J70.1, J70.3
<b>Cirrhosis</b>	1 hospitalization or 1 claim or 1 ACCS	571.2, 571.5, 571.6	K70.3, K74.3, K74.4, K74.5, K74.6
	and hepatic decompensation 1 hospitalization or 1 claim or 1 ACCS	456.0, 456.1, 456.20, 456.21, 567.0, 567.2,* 567.21, 567.29, 567.8, 567.9, 572.2, 572.4, 789.5 Exclude 567.81, 567.82, 789.51	I85.0, I85.9, I98.2, I98.3, K65.0, K65.8, K65.9, K67.0, K67.1, K67.2, K67.3, K67.8, K76.7, K93.0, R18
<b>Dementia</b>	1 hospitalization or 2 claims in 2 years or less	290, 294.1, 331.2	F00–F03, F05.1, G30, G31.1
<b>Depression</b>	1 hospitalization or 2 claims in 2 years or less	296.2, 296.3, 296.5, 300.4, 309, 311	F20.4, F31.3–F31.5, F32, F33, F34.1, F41.2, F43.2
<b>Diabetes</b>	1 hospitalization or 2 claims in 2 years or less	250	E10-E14
<b>Epilepsy</b>	1 most responsible hospitalization or 2 claims in 2 years or less or 1 most responsible ACCS	345	G40-G41
<b>Hypertension</b>	1 hospitalization or 2 claim in 2 years or less	401-405	I10-I13, I15
<b>Hypothyroidism</b>	1 hospitalization or 2 claims in 2 years or less	240.9, 243, 244, 246.1, 246.8	E00–E03, E89.0
<b>Inflammatory bowel disease</b>	2 hospitalizations or 2 GAST or	555, 556	K50, K51

GP claims in 3 years or less			
<b>Irritable bowel syndrome</b>	1 hospitalization without surgery or 2 claims in 2 years or less	564.1 Exclude 153-154, 157, 183.0, 197.5, 198.6, 235.2, 239.0, 555-556, 571.2, 571.5, 577.1, 579	K58 Exclude C18-C21, C25, C56, C78.5, C79.6, D01.7, D01.9, D37.1-D37.5, K50-K51, K70.2-K70.3, K74.0, K74.2, K74.6, K86.0-K86.1, K90, K91.2
<b>Multiple sclerosis</b>	2 hospitalizations or 2 claims in 3 years or less	323, 340, 341.0, 341.9, 377.3	G35, G36, G37, H46
<b>Myocardial infarction</b>	1 hospitalization	410	I21-I22
<b>Parkinson's disease</b>	1 hospitalizations or 1 claim	332	G20, G21, G22
<b>Peptic ulcer disease</b>	1 hospitalization or 2 claims in 2 years or less	531.7, 531.9, 532.7, 532.9, 533.7, 533.9, 534.7, 534.9	K25.7, K25.9, K26.7, K26.9, K27.7, K27.9, K28.7, K28.9
<b>Peripheral vascular disease</b>	1 hospitalization or 1 claim or 1 ACCS	440.2	I70.2
<b>Psoriasis</b>	1 hospitalization or 1 DERM claim	696.1	L40.0, L40.1, L40.2, L40.3, L40.4, L40.8, L40.9
<b>Rheumatoid arthritis</b>	1 hospitalization or 2 claims in 2 years or less	446.5, 710.0-710.4, 714.0-714.2, 714.8, 725	M05, M06, M31.5, M32-M34, M35.1, M35.3, M36.0
<b>Schizophrenia</b>	1 hospitalization or 2 claims in 2 years or less	295	F20, F21, F23.2, F25
<b>Stroke or TIA</b>	1 most responsible or post-admittance hospitalization or 1 claim or 1 most responsible ED ACCS	362.3, 430, 431, 433.x1, 434.x1, 435, 436	G45.0-G45.3, G45.8-G45.9, H34.1, I60, I61, I63, I64

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