

Supplemental Table 1. Diagnostic codes used for identification of chronic conditions included in recommended list for investigation of multimorbidity in patients with rheumatoid arthritis.

Morbidity	ICD-9-CM codes	ICD-10-CM codes
Alcohol abuse	265.2, 291.1, 291.2, 291.3, 291.5, 291.81, 291.82, 291.89, 291.9, 303.x, 305.0x, 357.5, 425.5, 535.3x, 571.0, 571.1, 571.2, 571.3, 980.x, V11.3	E52, F10.x, G62.1, I42.6, K29.2x, K70.x, T51.x, Z71.51
Anemia	280.x, 281.x, 282.x, 283.x, 284.x, 285.x	D5x.x, D60.x, D61.x, D62.x, D63.x, D64.x
Anxiety	293.84, 300.x (not including 300.4), 308.x	F40.x, F41.x, F42.x, F43.0, F44.x, F45.x, F48.x
Asthma	493.x* (not including 493.81)	J45.x* (not including J45.990)
Bipolar disorder	296.0x, 296.1x, 296.4x, 296.5x, 296.6x, 296.7, 296.8x	F30.x, F31.x
Benign prostatic hyperplasia	600.x	N40.x
Cancer	14x.x, 15x.x, 16x.x, 17x.x* (not including 173.x), 18x.x, 19x.x, 20x.x* (not including 209.x), V10.6x, V10.7x	Cxx.x* (not including C44.x, C7A.x, or C7B.x), Z85.6, Z85.7x
Cancer (solid)	200.x, 201.x, 202.0x, 202.1x, 202.4x, 202.7x, 202.8x, 202.9x, 203.x, 204.x, 205.x, 206.x, 207.x, 208.x	C0x.x-C7x.x (not including C44.x, C4A.x), D0x.x (not including D04.x, D06.x), D43.x, D45, D47.2, D47.3, D47.4, D47.Z1, D47.Z2, D49.6, E31.22, E31.23, J91.0, R18.0, R85.614, R87.624
Cancer (hematologic)	14x.x, 15x.x, 16x.x, 17x.x* (not including 173.x), 18x.x, 19x.x, 202.3x, 202.5x, 202.6x, 209.0x, 209.1x, 209.2x, 209.3x,	C8x.x (not including C80.x), C90.x-C95.x (not including C94.40, C94.42, C94.6)

	209.7x, 230.x, 231.x, 233.x (not including 233.1), 234.x, 237.5, 237.7x, 237.9, 238.77, 239.6, 258.02, 258.03, 511.81, 789.51, 795.16, 796.76	
Cardiac arrhythmia	426.0, 426.10, 426.12, 426.13, 426.7, 426.9, 427.x* (not including 427.5), 785.0, 996.01, 996.04, V45.0x, V53.3x	I44.2, I44.3x, I44.1, I45.6, I45.9, I47.x, I48.x, I49.x, R00.0, T82.110x, T82.111x, T82.120x, T82.121x, T82.190x, T82.191x, Z95.0, Z95.810, Z95.818, Z95.9, Z45.0x
Cerebrovascular disease	362.34, 43x.x (not including 437.3)	H34.x, I6x.x (not including I67.1)
Chronic back pain	720.x* (not including 720.0), 721.x, 722.x, 723.x, 724.x	M46.x, M47.x, M48.x, M49.x, M50.x, M51.x, M53.x, M54.x
Congestive heart failure	398.91, 402.x1, 404.x1, 404.x3, 425.4, 425.7, 425.8, 425.9, 428.x	I09.81, I11.0, I13.0, I13.2, I42.5, I42.7, I43, I50.x
Chronic obstructive pulmonary disorder	491.x, 492.x, 496.x	J41.x, J43.x, J44.9
Coronary artery disease	410.x, 411.x, 412.x, 413.x, 414.x, 429.7x, V45.81, V45.82	I20.x, I21.x, I22.x, I23.x, I24.x, I25.x, I51.0, Z95.1, Z98.61
Dementia	290.x, 294.1x, 331.2	F01.x, F02.x, F03.x, G31.1
Depression	296.2x, 296.3x, 300.4, 309.x (not including 309.81), 311	F32.x, F33.x, F34.1, F43.x (not including F43.1x)
Diabetes mellitus	250.x	E08.x, E09.x, E10.x, E11.x, E13.x
Diverticular disease	562.x	K57.x

Drug abuse	292.x, 304.x, 305.2x, 305.3x, 305.4x, 305.5x, 305.6x, 305.7x, 305.8x, 305.9x, V65.42	F11.x, F12.x, F13.x, F14.x, F15.x, F16.x, F18.x, F19.x, Z71.51
Fibromyalgia	729.1	M79.1x, M79.7
Gastroesophageal reflux disease	530.11, 530.81, 530.85	K21.x, K22.7x
Gout	274.x	M10.x, M1A.x
Headaches	339.x, 346.x, 784.0	G44.x, G43.x, R51
Hearing loss	389.x	H90.x, H91.x
Hyperlipidemia	272.0, 272.2, 272.3, 272.4	E78.0x, E78.2, E78.3, E78.4x, E78.5
Hypertension	401.x, 402.x (not including 402.x1), 403.x (not including 403.x1), 404.0, 404.00, 404.1, 404.10, 404.9, 404.90 405.x	I10.x, I11.9, I12.9, I13.10, I15.x, I16.x
Hypothyroidism	240.9, 243.x, 244.x, 246.1, 246.8	E01.0, E01.2, E00.x, E03.0, E03.1, E01.8, E89.0, E03.2, E03.3, E03.4, E03.8, E03.9, E02, E07.1, E07.89
Inflammatory skin disease	690.x, 694.x, 695.x, 696.x, 697.x, 698.x	L00, L10.x, L12.x, L13.x, L14, L21.x, L28.x, L29.x, L30.3, L4x.x, L51.x, L52.x, L53.x, L54.x, L71.x, L93.x, L98.1
Interstitial lung disease	515, 516.3x, 516.8, 516.9, 714.81, 714.89	J84.1x, J84.2, J84.09, J84.9, M05.1x, M06.4
Liver disease	070.22, 070.23, 070.32, 070.33, 070.44, 070.54, 070.6, 070.9, 456.0, 456.1, 456.2x, 570, 571.4x, 571.5-571.9, 572.2, 572.3,	B18.x, I85.x, K71.x, K72.x, K73.x, K76.2, K76.3, K76.4, K76.5, K76.6, K76.7, K76.89, K76.9, Z94.4

	572.4, 572.8, 573.3, 573.4, 573.8, 573.9, V42.7	
Neuropathy	350.x, 351.x, 352.x, 353.x, 354.x, 355.x, 356.x, 357.x (not including 357.5)	G5x.x, G6x.x (not including G62.1)
Non-inflammatory gynecologic disorders	618.x, 620.x, 621.x, 622.x, 623.x, 624.x, 626.x, 627.x	N81.x, N83.x, N84.x, N85.x, N86, N87.x, N88.x, N89.x, N90.x, N91.x, N92.x, N93.x, N95.x
Obesity	278.0x	E66.x
Osteoarthritis	715.x, V13.4	M15.x, M16.x, M17.x, M18.x, M19.x
Osteoporosis	733.0x	M80.x, M81.x
Parkinson's disease	332.x	G20, G21.x
Pulmonary circulation disorder	415.x, 416.x, 417.0, 417.8, 417.9	I26.x, I27.x, I28.0, I28.8, I28.9
Peptic ulcer disease	531.x, 532.x, 533.x, 534.x	K25.x, K26.x, K27.x, K28.x
Peripheral vascular disease	093.0, 437.3, 440.x, 441.x, 443.1, 443.2x, 443.81, 443.82, 443.89, 443.9, 447.1, 557.1, 557.9, V43.4	A52.01, I67.1, I70.x, I71.x, I73.1, I77.7x, I73.81, I73.89, I73.9, I77.1, K55.1, K55.8, K55.9, Z95.82x
Post-traumatic stress disorder	309.81	F43.1x
Renal disease	403.x1, 404.x2, 404.x3, 582.x, 583.0, 583.1, 583.2, 583.4, 583.6, 583.7, 585.x, 586, 588.0, V42.0, V45.1x, V56.x	I12.0, I13.11, I13.2, N03.x, N08, N05.2, N05.3, N05.4, N05.5, N05.9, N17.1, N17.2, N18.x, N19, N25.0, Z94.0, Z99.2, Z91.15, Z49.x
Severe vision reduction	361.x, 362.x (not including 362.34), 363.8, 363.9, 365.x, 366.x, 369.x, 370.x, 377.x* (not including 377.3x)	E08.3x* (not including E08.37x), E09.3x* (not including E09.37x), E10.3x* (not including E10.37x), E11.3x* (not including E11.37x), E13.3x* (not

		including E13.37x), H16.x, H25.x, H26.x, H28, H31.8, H31.9, H33.x, H35.x, H40.x, H42, H47.x, H54.x
Sleep disorders, inorganic	307.4x, 780.5x	F51.x, G47.0x, G47.1x, G47.2x, G47.8
Urinary incontinence	788.3x	R32, N39.3, N39.4x
Valvular heart disease	093.2x, 394.x, 395.x, 396.x, 397.x, 424.x, 746.3, 746.4, 746.5, 746.6, V42.2, V43.3	I05.x, I06.x, I07.x, I08.x, I09.1, I09.89, I09.9, I34.x, I35.x, I36.x, I37.x, I38, I39, Q23.0, Q23.1, Q23.2, Q23.3, Z95.3, Z95.2, Z95.4
Vitamin D deficiency and Other Nutritional Deficiencies (CCS52)	260, 261, 262, 263.x, 264.5, 268.x	E40, E41, E42, E43, E44.x, E45, E46, E50.5, E55.x, E64.0, E64.3, M83.x
Hypercalcemia and Other Nutritional/Endocrine/Metabolic Disorders (CCS58)	270.x, 271.x, 272.5-272.9, 273.x, 275.x, 277.1-277.9 (not including 277.83, 277.88), 278.1-278.8	D81.3, D81.5, D81.810, E20.1, E67.x, E68, E70.x (not including E70.81, E70.89), E71.x (not including E71.43), E72.x, E73.x, E74.x (not including E74.81x, E74.89), E75.21, E75.22, E75.24x, E75.3, E75.5, E75.6, E76.x, E77.x, E78.6, E78.70, E78.79, E78.8x, E78.9, E79.1-E79.9, E80.x, E83.x (not including E83.2), E85.x, E88.x (not including E88.3)
Thrombocytopenia and other Coagulation and Hemorrhagic Disorders (CCS62)	286.x, 287.1, 287.3x, 287.4, 287.5, 289.81, 289.82, 289.84	D65, D66, D67, D68.x, D69.1, D69.3, D69.4x, D69.6, D75.82
Leukopenia and diseases of White Blood Cells (CCS63)	288.x, 289.53	D70.x, D71, D72.0, D72.1, D72.8x, D72.9, D73.81, D76.x
Restless legs and other nervous system conditions (CCS81)	330.x, 331.3-331.9 (not including 331.82, 331.83), 333.x (not including 333.72,	E75.0x, E75.1x, E75.23, E75.25, E75.26, E75.29, E75.4, G10, G11.0, G11.1, G11.2-G11.9, G12.x,

	333.85, 333.92), 334.x, 335.x, 336.x, 337.x (not including 337.2x)	G23.x, G24.09, G24.x (not including G24.01, G24.02), G25.x, G26, G31.2, G31.8x (not including G31.83), G31.9, G32.0, G32.81, G80.3, G90.0x, G90.3, G90.4, G99.0, G99.2
Chronic Sinusitis and Other Upper Respiratory Infections (CCS126)	473.x	J32.x
Allergic Rhinitis and Other Upper Respiratory Diseases (CCS134)	472.x, 476.x, 477.x, 478.11, 478.3x, V44.0, V55.0	J30.x (not including J30.5), J31.x, J34.81, J37.x, J38.0x, Z43.0, Z93.0, Z96.3
Erectile dysfunction and other male genital disorders (CCS166)	607.0, 607.3, 607.8x, 607.9	N42.83, N48.x (not including N48.1, N48.2x), N50.1, N52.x
Chronic Skin Ulcers (CCS199)	707.x	L89.x (not including L89.x6, L89.xx6), L97.x, L98.4x
Acquired Foot Deformities (CCS208)	735.0-735.4	M20.1x-M20.4x
Sleep Apnea, Organic (CCS259 modified)	327.00, 327.01, 327.09, 327.1X (not including 327.15), 327.2X (not including 327.22), 327.4X, 327.51, 327.59, 327.8	G47.0x, G47.1x, G47.3x (not including G47.32), G47.5x, G47.61, G47.69, G47.8