**Analyzing the Impact of Multimorbidity on Long-Term Outcomes After Emergency General Surgery Operations**

Supplementary Appendix

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**eTable 1: Silber Billing Codes Used to Identify Comorbid Conditions, by Version 9 and 10 International Classification of Disease (ICD), Current Procedural Terminology (CPT), and Healthcare Common Procedure Coding System (HCPCS) Codes**

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| **Comorbid Condition** | **ICD, CPT, and/or HCPCS Codes** |
| Acute Myocardial Infarction | ICD-9 codes: 41001, 41011, 41021, 41031, 41041, 41051, 41061, 41071, 41081, 41091, 4295-4296ICD-10 codes: I2101-I2102, I2109, I2111, I2119, I2121, I2129, I213-I214, I219, I21A1, I21A9-I222, I228-I229, I234-I235, I511-I512 |
| Acute Renal Failure | ICD-9 codes: 5845-5849, 586ICD-10 codes: N170-N172, N178-N179, N19 |
| Amputation and Complications | ICD-9 codes: 3536, 9059, 99760-99762, 99769, V4970-V4977, V521ICD-10 codes: G546-G547, S48011S-S48012S, S48019S, S48021S-S48022S, S48029S, S48111S-S48112S, S48119S, S48121S-S48122S, S48129S, S48911S-S48912S, S48919S, S48921S-S48922S, S48929S, S58011S-S58012S, S58019S, S58021S-S58022S, S58029S, S58111S-S58112S, S58119S, S58121S-S58122S, S58129S, S58911S-S58912S, S58919S, S58921S-S58922S, S58929S, S68011S-S68012S, S68019S, S68021S-S68022S, S68029S, S68110S-S68129S, S68411S-S68412S, S68419S, S68421S-S68422S, S68429S, S68511S-S68512S, S68519S, S68521S-S68522S, S68529S, S68610S-S68629S, S68711S-S68712S, S68719S, S68721S-S68722S, S68729S, S78011D, S78011S-S78012D, S78012S, S78019D, S78019S, S78021D, S78021S-S78022D, S78022S, S78029D, S78029S, S78111D, S78111S-S78112D, S78112S, S78119D, S78119S, S78121D, S78121S-S78122D, S78122S, S78129D, S78129S, S78911D, S78911S-S78912D, S78912S, S78919D, S78919S, S78921D, S78921S-S78922D, S78922S, S78929D, S78929S, S88011D, S88011S-S88012D, S88012S, S88019D, S88019S, S88021D, S88021S-S88022D, S88022S, S88029D, S88029S, S88111D, S88111S-S88112D, S88112S, S88119D, S88119S, S88121D, S88121S-S88122D, S88122S, S88129D, S88129S, S88911D, S88911S-S88912D, S88912S, S88919D, S88919S, S88921D, S88921S-S88922D, S88922S, S88929D, S88929S, S98011D, S98011S-S98012D, S98012S, S98019D, S98019S, S98021D, S98021S-S98022D, S98022S, S98029D, S98029S, S98111D, S98111S-S98112D, S98112S, S98119D, S98119S, S98121D, S98121S-S98122D, S98122S, S98129D, S98129S, S98131D, S98131S-S98132D, S98132S, S98139D, S98139S, S98141D, S98141S-S98142D, S98142S, S98149D, S98149S, S98211D, S98211S-S98212D, S98212S, S98219D, S98219S, S98221D, S98221S-S98222D, S98222S, S98229D, S98229S, S98311D, S98311S-S98312D, S98312S, S98319D, S98319S, S98321D, S98321S-S98322D, S98322S, S98329D, S98329S, S98911D, S98911S-S98912D, S98912S, S98919D, S98919S, S98921D, S98921S-S98922D, S98922S, S98929D, S98929S, T8730-T8734, T8740-T8744, T8750-T8754, T8781, T8789, T879, Z44101-Z44102, Z44109, Z44111-Z44112, Z44119, Z44121-Z44122, Z44129, Z89411-Z89412, Z89419, Z89421-Z89422, Z89429, Z89431-Z89432, Z89439, Z89441-Z89442, Z89449, Z89511-Z89512, Z89519, Z89611-Z89612, Z89619 |
| Angina Pectoris | ICD-9 codes: 4130-4131, 4139ICD-10 codes: I201, I208-I209, I25111, I25118-I25119, I25701, I25708-I25709, I25711, I25718-I25719, I25721, I25728-I25729, I25731, I25738-I25739, I25751, I25758-I25759, I25761, I25768-I25769, I25791, I25798-I25799 |
| Artificial Openings | ICD-9 codes: 53086-53087, 53640-53642, 53649, 56960-56962, 56969, 56971, 56979, V441-V444, V4450-V4452, V4459, V446, V448-V449, V551-V556, V558-V559ICD-10 codes: K91850, K91858, K9400-K9403, K9409-K9413, K9419-K9423, K9429-K9433, K9439, Z431-Z436, Z438-Z439, Z931-Z934, Z9350-Z9352, Z9359, Z936, Z938-Z939 |
| Asthma | ICD-9 codes: 49300-49302, 49310-49312, 49381-49382, 49390-49392ICD-10 codes: J4520-J4522, J4530-J4532, J4540-J4542, J4550-J4552, J45901-J45902, J45909, J45990-J45991, J45998 |
| Cancers, Other | ICD-9 codes: 1410-1416, 1418-1422, 1428-1431, 1438-1441, 1448-1456, 1458-1473, 1478-1483, 1488-1491, 1498-1499, 1530-1543, 1548, 1590-1591, 1598-1605, 1608-1613, 1618-1619, 1640-1643, 1648-1650, 1658-1659, 1700-1710, 1712-1729, 1740-1746, 1748-1750, 1759-1765, 1768-1769, 179, 1800-1801, 1808-1809, 181, 1820-1821, 1828, 1830, 1832-1835, 1838-1844, 1848-1849, 185, 1860, 1869, 1871-1894, 1898-1923, 1928-1929, 193, 1940-1941, 1943-1946, 1948-1955, 1958, 1963, 1969, 1982, 19881-19882, 1991-1992, 20000-20008, 20010-20018, 20020-20028, 20030-20038, 20040-20048, 20050-20058, 20060-20068, 20070-20078, 20080-20088, 20100-20108, 20110-20118, 20120-20128, 20140-20148, 20150-20158, 20160-20168, 20170-20178, 20190-20198, 20200-20208, 20210-20218, 20220-20228, 20230-20238, 20240-20248, 20250-20258, 20260-20268, 20270-20278, 20280-20288, 20290-20298, 20410-20412, 20420-20422, 20480-20482, 20490-20492, 20810-20812, 20820-20822, 20880-20882, 20890-20892, 20900-20903, 20910-20917, 20920-20927, 20929-20936, 2250-2254, 2258-2259, 2273-2274, 22802, 2370-2371, 2373, 2375-2376, 23770-23773, 23779, 2379, 2396, 2592, 7595-7596ICD-10 codes: C01, C020-C024, C028-C031, C039-C041, C048-C052, C058-C062, C0680, C0689, C069, C07, C080-C081, C089-C091, C098-C104, C108-C113, C118-C119, C12, C130-C132, C138-C140, C142, C148, C180-C189, C19-C20, C210-C212, C218, C260-C261, C269, C300-C301, C310-C313, C318-C323, C328-C329, C37, C380-C383, C388, C390, C399, C4000-C4002, C4010-C4012, C4020-C4022, C4030-C4032, C4080-C4082, C4090-C4092, C410-C414, C419, C430, C4310, C43111-C43112, C43121-C43122, C4320-C4322, C4330-C4331, C4339, C434, C4351-C4352, C4359-C4362, C4370-C4372, C438-C439, C460-C464, C4650-C4652, C467, C469-C470, C4710-C4712, C4720-C4722, C473-C476, C478-C479, C490, C4910-C4912, C4920-C4922, C493-C496, C498-C499, C49A0-C49A5, C49A9, C4A0, C4A10, C4A111-C4A112, C4A121-C4A122, C4A20-C4A22, C4A30-C4A31, C4A39, C4A4, C4A51-C4A52, C4A59-C4A62, C4A70-C4A72, C4A8-C4A9, C50011-C50012, C50019, C50021-C50022, C50029, C50111-C50112, C50119, C50121-C50122, C50129, C50211-C50212, C50219, C50221-C50222, C50229, C50311-C50312, C50319, C50321-C50322, C50329, C50411-C50412, C50419, C50421-C50422, C50429, C50511-C50512, C50519, C50521-C50522, C50529, C50611-C50612, C50619, C50621-C50622, C50629, C50811-C50812, C50819, C50821-C50822, C50829, C50911-C50912, C50919, C50921-C50922, C50929, C510-C512, C518-C519, C52, C530-C531, C538-C543, C548-C549, C55, C561-C562, C569, C5700-C5702, C5710-C5712, C5720-C5722, C573-C574, C577-C579, C58, C600-C602, C608-C609, C61, C6200-C6202, C6210-C6212, C6290-C6292, C6300-C6302, C6310-C6312, C632, C637-C639, C641-C642, C649, C651-C652, C659, C661-C662, C669-C681, C688-C689, C6900-C6902, C6910-C6912, C6920-C6922, C6930-C6932, C6940-C6942, C6950-C6952, C6960-C6962, C6980-C6982, C6990-C6992, C700-C701, C709-C721, C7220-C7222, C7230-C7232, C7240-C7242, C7250, C7259, C729, C73, C7400-C7402, C7410-C7412, C7490-C7492, C750-C755, C758-C763, C7640-C7642, C7650-C7652, C768, C773, C779, C792, C7981-C7982, C7A00, C7A010-C7A012, C7A019-C7A026, C7A029, C7A090-C7A096, C7A098, C7A1, C7A8, C801-C802, C8100-C8149, C8170-C8179, C8190-C8269, C8280-C8319, C8330-C8339, C8350-C8359, C8370-C8419, C8440-C8449, C8460-C8479, C8490-C8499, C84A0-C84A9, C84Z0-C84Z9, C8510-C8529, C8580-C8599, C860-C866, C882-C884, C888-C889, C9030-C9032, C9110-C9112, C9130-C9132, C9140-C9142, C9150-C9152, C9160-C9162, C9190-C9192, C91A0-C91A2, C91Z0-C91Z2, C9510-C9512, C9590-C9592, C960, C9620-C9622, C9629, C964-C966, C969, C96A, C96Z, D030, D0310, D03111-D03112, D03121-D03122, D0320-D0322, D0330, D0339, D034, D0351-D0352, D0359-D0362, D0370-D0372, D038-D039, D1802, D320-D321, D329-D334, D337, D339, D352-D354, D420-D421, D429-D434, D438-D439, D443-D447, D496, E340, Q8500-Q8503, Q8509, Q851, Q858-Q859 |
| Cancers, Severe | ICD-9 codes: 1500-1505, 1508-1516, 1518-1523, 1528-1529, 1550-1552, 1560-1562, 1568-1574, 1578-1580, 1588-1589, 1620, 1622-1625, 1628-1631, 1638-1639, 20300-20302, 20310-20312, 20380-20382, 20510-20512, 20520-20522, 20530-20532, 20580-20582, 20590-20592, 20610-20612, 20620-20622, 20680-20682, 20690-20692, 20710-20712, 20720-20722, 20780-20782ICD-10 codes: C153-C155, C158-C166, C168-C173, C178-C179, C220-C224, C227-C229, C23, C240-C241, C248-C254, C257-C259, C33, C3400-C3402, C3410-C3412, C342, C3430-C3432, C3480-C3482, C3490-C3492, C384, C450-C452, C457, C459, C480-C482, C488, C9000-C9002, C9010-C9012, C9020-C9022, C9210-C9212, C9220-C9222, C9230-C9232, C9290-C9292, C92Z0-C92Z2, C9310-C9312, C9330-C9332, C9390-C9392, C93Z0-C93Z2, C9430-C9432, C9480-C9482 |
| Cardio and Respiratory Failure | ICD-9 codes: 42741-42742, 4275, 5184, 51851-51853, 51881-51884, 78550-78551, 7980-7982, 7989, 7991, 99801ICD-10 codes: I462, I468-I469, I4901-I4902, J80, J810, J951-J953, J95821-J95822, J9600-J9602, J9610-J9612, J9620-J9622, J9690-J9692, R092, R570, R579, T8111XA |
| Cerebrovascular Diseases | ICD-9 codes: 09487, 34200-34202, 34210-34212, 34280-34282, 34290-34292, 3442, 34430-34432, 34440-34442, 3445, 34481, 34489, 3449, 430-431, 4320-4321, 4329, 43300-43301, 43310-43311, 43320-43321, 43330-43331, 43380-43381, 43390-43391, 43400-43401, 43410-43411, 43490-43491, 4350-4353, 4358-4359, 436, 4370-4371, 4374-4376, 4378-4379, 43820-43822, 43830-43832, 43840-43842, 43850-43853, 99702ICD-10 codes: G450-G452, G458-G468, G8100-G8104, G8110-G8114, G8190-G8194, G830, G8310-G8314, G8320-G8324, G8330-G8334, G835, G8381-G8384, G8389, G839, I6000-I6002, I6010-I6012, I602, I6030-I6032, I604, I6050-I6052, I606-I616, I618-I619, I6200-I6203, I621, I629, I6300, I63011-I63013, I63019, I6302, I63031-I63033, I63039, I6309-I6310, I63111-I63113, I63119, I6312, I63131-I63133, I63139, I6319-I6320, I63211-I63213, I63219, I6322, I63231-I63233, I63239, I6329-I6330, I63311-I63313, I63319, I63321-I63323, I63329, I63331-I63333, I63339, I63341-I63343, I63349, I6339-I6340, I63411-I63413, I63419, I63421-I63423, I63429, I63431-I63433, I63439, I63441-I63443, I63449, I6349-I6350, I63511-I63513, I63519, I63521-I63523, I63529, I63531-I63533, I63539, I63541-I63543, I63549, I6359, I636, I6381, I6389, I639, I6501-I6503, I6509, I651, I6521-I6523, I6529, I658-I659, I6601-I6603, I6609, I6611-I6613, I6619, I6621-I6623, I6629, I663, I668-I669, I672, I675-I677, I6781-I6782, I67841, I67848, I67850, I67858, I6789, I679-I680, I682, I688, I69031-I69034, I69039, I69041-I69044, I69049, I69051-I69054, I69059, I69061-I69065, I69069, I69131-I69134, I69139, I69141-I69144, I69149, I69151-I69154, I69159, I69161-I69165, I69169, I69231-I69234, I69239, I69241-I69244, I69249, I69251-I69254, I69259, I69261-I69265, I69269, I69331-I69334, I69339, I69341-I69344, I69349, I69351-I69354, I69359, I69361-I69365, I69369, I69831-I69834, I69839, I69841-I69844, I69849, I69851-I69854, I69859, I69861-I69865, I69869, I69931-I69934, I69939, I69941-I69944, I69949, I69951-I69954, I69959, I69961-I69965, I69969, I97810-I97811, I97820-I97821 |
| Chronic Kidney Disease, Stage 1-3 and Nephritis | ICD-9 codes: 0786, 40300, 40310, 40390, 40400-40401, 40410-40411, 40490-40491, 5800, 5804, 58081, 58089, 5809-5813, 58181, 58189, 5819-5822, 5824, 58281, 58289, 5829-5832, 5834, 5836-5837, 58381, 58389, 5839, 5851-5853, 5859, 75314ICD-10 codes: A3684, A985, B520, D8684, E0821-E0822, E0829, E0921-E0922, E0929, E1021-E1022, E1029, E1121-E1122, E1129, E1321-E1322, E1329, I129-I130, I1310, M3214-M3215, M3504, N000-N079, N08, N140-N144, N150, N158, N181-N183, N189, Q6111, Q6119 |
| Chronic Kidney Disease, Stage 4-5 and Dialysis | ICD-9 codes: 40301, 40311, 40391, 40402-40403, 40412-40413, 40492-40493, 5854-5856, 99656, 99668, 99673, V4511-V4512, V560-V562, V5631-V5632, V568ICD-10 codes: I120, I1311, I132, N184-N186, T81502A, T81502D, T81502S, T81512A, T81512D, T81512S, T81522A, T81522D, T81522S, T81532A, T81532D, T81532S, T81592A, T81592D, T81592S, T8241XA, T8241XD, T8241XS-T8242XA, T8242XD, T8242XS-T8243XA, T8243XD, T8243XS, T8249XA, T8249XD, T8249XS, T85611A, T85611D, T85611S, T85621A, T85621D, T85621S, T85631A, T85631D, T85631S, T85691A, T85691D, T85691S, T8571XA, T8571XD, T8571XS, Y622, Z4901-Z4902, Z4931-Z4932, Z9115, Z992 |
| Chronic Lung Diseases | ICD-9 codes: 135, 27700-27703, 27709, 4910-4911, 49120-49122, 4918-4920, 4928, 49320-49322, 4940-4941, 4950-4959, 496, 500-505, 5060-5064, 5069, 5080-5082, 5088-5089, 515, 5160-5162, 51630-51637, 5164-5165, 51661-51664, 51669, 5168-5169, 5171-5172, 5178, 5181-5183, 5186ICD-10 codes: B4481, D860, D862, E840, E8411, E8419, E848-E849, J410-J411, J418, J42, J430-J432, J438-J441, J449, J470-J471, J479, J60-J61, J620, J628, J630-J636, J64-J65, J660-J662, J668, J670-J684, J688-J689, J700-J705, J708-J709, J82, J8401-J8403, J8409-J8410, J84111-J84117, J8417, J842, J8481-J8483, J84841-J84843, J84848, J8489, J849, J982-J983, J99, M3213, M3301, M3311, M3321, M3391, M3481, M3502 |
| Chronic Pancreatitis | ICD-9 codes: 5771ICD-10 codes: K860-K861 |
| Chronic Ulcer, Skin, Not Pressure | ICD-9 codes: 70710-70715, 70719, 7078-7079ICD-10 codes: E08621-E08622, E09621-E09622, E10621-E10622, E11621-E11622, E13621-E13622, I70231-I70235, I70238-I70239, I70241-I70245, I70248-I70249, I7025, I70331-I70335, I70338-I70339, I70341-I70345, I70348-I70349, I7035, I70431-I70435, I70438-I70439, I70441-I70445, I70448-I70449, I7045, I70531-I70535, I70538-I70539, I70541-I70545, I70548-I70549, I7055, I70631-I70635, I70638-I70639, I70641-I70645, I70648-I70649, I7065, I70731-I70735, I70738-I70739, I70741-I70745, I70748-I70749, I7075, L97101-L97106, L97108-L97109, L97111-L97116, L97118-L97119, L97121-L97126, L97128-L97129, L97201-L97206, L97208-L97209, L97211-L97216, L97218-L97219, L97221-L97226, L97228-L97229, L97301-L97306, L97308-L97309, L97311-L97316, L97318-L97319, L97321-L97326, L97328-L97329, L97401-L97406, L97408-L97409, L97411-L97416, L97418-L97419, L97421-L97426, L97428-L97429, L97501-L97506, L97508-L97509, L97511-L97516, L97518-L97519, L97521-L97526, L97528-L97529, L97801-L97806, L97808-L97809, L97811-L97816, L97818-L97819, L97821-L97826, L97828-L97829, L97901-L97906, L97908-L97909, L97911-L97916, L97918-L97919, L97921-L97926, L97928-L97929, L98411-L98416, L98418-L98419, L98421-L98426, L98428-L98429, L98491-L98496, L98498-L98499 |
| Congestive Heart Failure | ICD-9 codes: 39891, 40201, 40211, 40291, 4150, 4160-4161, 4168-4171, 4178-4179, 4250, 42511, 42518, 4252-4255, 4257-4259, 4280-4281, 42820-42823, 42830-42833, 42840-42843, 4289-4291ICD-10 codes: A3681, B3324, I0981, I110, I130, I132, I2601-I2602, I2609, I270-I271, I2720-I2724, I2729, I2781, I2783, I2789, I279-I281, I288-I289, I420-I429, I43, I501, I5020-I5023, I5030-I5033, I5040-I5043, I50810-I50814, I5082-I5084, I5089, I509, I514-I515 |
| Coronary Artery Disease | ICD-9 codes: 412, 41400-41407, 41410-41412, 41419, 4142-4144, 4148-4149, 74685ICD-10 codes: I2510, I252-I253, I2541-I2542, I255-I256, I25810-I25812, I2582-I2584, I2589, I259, Q245 |
| Depression, Other | ICD-9 codes: 3004, 30110-30113, 3091, 311ICD-10 codes: F3281, F3289, F329, F340-F341, F530 |
| Diabetes with Complications | ICD-9 codes: 24910-24911, 24920-24921, 24930-24931, 24940-24941, 24950-24951, 24960-24961, 24970-24971, 24980-24981, 24990-24991, 25010-25013, 25020-25023, 25030-25033, 25040-25043, 25050-25053, 25060-25063, 25070-25073, 25080-25083, 25090-25093, 3572, 36201, 36203-36207, 36641ICD-10 codes: E0800-E0801, E0810-E0811, E0821-E0822, E0829, E08311, E08319, E083211-E083213, E083219, E083291-E083293, E083299, E083311-E083313, E083319, E083391-E083393, E083399, E083411-E083413, E083419, E083491-E083493, E083499, E083511-E083513, E083519, E083521-E083523, E083529, E083531-E083533, E083539, E083541-E083543, E083549, E083551-E083553, E083559, E083591-E083593, E083599, E0836, E0837X1-E0837X3, E0837X9, E0839-E0844, E0849, E0851-E0852, E0859, E08610, E08618, E08620-E08622, E08628, E08630, E08638, E08641, E08649, E0865, E0869, E088, E0900-E0901, E0910-E0911, E0921-E0922, E0929, E09311, E09319, E093211-E093213, E093219, E093291-E093293, E093299, E093311-E093313, E093319, E093391-E093393, E093399, E093411-E093413, E093419, E093491-E093493, E093499, E093511-E093513, E093519, E093521-E093523, E093529, E093531-E093533, E093539, E093541-E093543, E093549, E093551-E093553, E093559, E093591-E093593, E093599, E0936, E0937X1-E0937X3, E0937X9, E0939-E0944, E0949, E0951-E0952, E0959, E09610, E09618, E09620-E09622, E09628, E09630, E09638, E09641, E09649, E0965, E0969, E098, E1010-E1011, E1021-E1022, E1029, E10311, E10319, E103211-E103213, E103219, E103291-E103293, E103299, E103311-E103313, E103319, E103391-E103393, E103399, E103411-E103413, E103419, E103491-E103493, E103499, E103511-E103513, E103519, E103521-E103523, E103529, E103531-E103533, E103539, E103541-E103543, E103549, E103551-E103553, E103559, E103591-E103593, E103599, E1036, E1037X1-E1037X3, E1037X9, E1039-E1044, E1049, E1051-E1052, E1059, E10610, E10618, E10620-E10622, E10628, E10630, E10638, E10641, E10649, E1065, E1069, E108, E1100-E1101, E1110-E1111, E1121-E1122, E1129, E11311, E11319, E113211-E113213, E113219, E113291-E113293, E113299, E113311-E113313, E113319, E113391-E113393, E113399, E113411-E113413, E113419, E113491-E113493, E113499, E113511-E113513, E113519, E113521-E113523, E113529, E113531-E113533, E113539, E113541-E113543, E113549, E113551-E113553, E113559, E113591-E113593, E113599, E1136, E1137X1-E1137X3, E1137X9, E1139-E1144, E1149, E1151-E1152, E1159, E11610, E11618, E11620-E11622, E11628, E11630, E11638, E11641, E11649, E1165, E1169, E118, E1300-E1301, E1310-E1311, E1321-E1322, E1329, E13311, E13319, E133211-E133213, E133219, E133291-E133293, E133299, E133311-E133313, E133319, E133391-E133393, E133399, E133411-E133413, E133419, E133491-E133493, E133499, E133511-E133513, E133519, E133521-E133523, E133529, E133531-E133533, E133539, E133541-E133543, E133549, E133551-E133553, E133559, E133591-E133593, E133599, E1336, E1337X1-E1337X3, E1337X9, E1339-E1344, E1349, E1351-E1352, E1359, E13610, E13618, E13620-E13622, E13628, E13630, E13638, E13641, E13649, E1365, E1369, E138 |
| Diabetes, No Complications | ICD-9 codes: 24900-24901, 25000-25003, V5867ICD-10 codes: E089, E099, E109, E119, E139, Z794 |
| Disorders of Immunity | ICD-9 codes: 27900-27906, 27909-27913, 27919, 2792-2793, 27941, 27949-27953, 2798-2799, 28411-28412, 28419, 28800-28804, 28809, 2881-2882, 2884ICD-10 codes: D61810-D61811, D61818, D700-D704, D708-D709, D71, D720, D761-D763, D800-D813, D8130-D8132, D8139, D814-D817, D8189, D819-D824, D828-D832, D838-D840, D848-D849, D893, D8940-D8943, D8949, D89810-D89813, D8982, D8989, D899 |
| Endocrine and Metabolic Disorders | ICD-9 codes: 0363, 2510, 25200-25202, 25208, 2521, 2528-2541, 2548-2550, 25510-25514, 2552-2553, 25541-25542, 2555-2556, 2558-2559, 25801-25803, 2581, 2588-2589, 2700-2711, 2714, 2718-2719, 2727, 2732-2734, 27501, 2771-2772, 27730-27731, 27739, 2775-2776, 27781-27787, 27789, 5881, 58881ICD-10 codes: A391, C880, D841, D891, E035, E15, E200, E208-E215, E220-E222, E228-E233, E236-E237, E240-E244, E248-E250, E258-E259, E2601-E2602, E2609, E261, E2681, E2689, E269-E273, E2740, E2749, E275, E278-E279, E310-E311, E3120-E3123, E318-E321, E328-E329, E344, E700-E701, E7020-E7021, E7029-E7030, E70310-E70311, E70318-E70321, E70328-E70331, E70338-E70339, E7039-E7041, E7049, E705, E708-E710, E71110-E71111, E71118, E71120-E71121, E71128, E7119, E712, E71310-E71314, E71318, E7132, E7139-E7143, E71440, E71448, E7150, E71510-E71511, E71518, E71520-E71522, E71528-E71529, E7153, E71540-E71542, E71548, E7200-E7204, E7209-E7212, E7219-E7223, E7229, E723-E724, E7250-E7253, E7259, E7281, E7289, E729, E7400-E7404, E7409, E7420-E7421, E7429, E744, E748-E749, E7521-E7522, E75240-E75243, E75248-E75249, E753, E7601-E7603, E761, E76210-E76211, E76219, E7622, E7629, E763, E768-E771, E778-E779, E791-E792, E798-E801, E8020-E8021, E8029, E803, E83110, E850-E854, E8581-E8582, E8589, E859, E8801, E8840-E8842, E8849, E8889, E892-E893, E896, H49811-H49813, H49819, N251, N2581 |
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| Heart Arrhythmias | ICD-9 codes: 4260, 4270-4272, 42731-42732, 42781ICD-10 codes: I442, I470-I472, I479-I481, I4811, I4819, I482, I4820-I4821, I483-I484, I4891-I4892, I492, I495 |
| Hematological, Other | ICD-9 codes: 2384, 23871, 23877, 23879, 2820-2823, 28243-28245, 28247, 28249, 2825, 2827-2829, 2850, 2862-2864, 28652-28653, 28659, 2866-2867, 2869-2872, 28730-28733, 28739, 2875, 2878-2879, 28981-28982, 28984ICD-10 codes: C946, D45, D471, D473, D479, D47Z1-D47Z2, D47Z9, D550-D553, D558-D562, D564-D565, D568, D573, D580-D582, D588-D589, D640-D643, D65, D680-D682, D68311-D68312, D68318, D6832, D684, D6851-D6852, D6859, D6861-D6862, D6869, D688-D693, D6941-D6942, D6949, D696, D698-D699, D7582 |
| Hematological, Severe | ICD-9 codes: 23872-23876, 28241-28242, 28260-28264, 28268-28269, 2830, 28310-28311, 28319, 2832, 2839, 28401, 28409, 2842, 28481, 28489, 2849, 2860-2861, 28952, 28983, 5173ICD-10 codes: D460-D461, D4620-D4622, D464, D469, D46A, D46B, D46C, D46Z, D474, D5700-D5702, D571, D5720, D57211-D57212, D57219, D5740, D57411-D57412, D57419, D5780, D57811-D57812, D57819, D590-D596, D598-D601, D608-D609, D6101, D6109, D611-D613, D6182, D6189, D619, D66-D67, D7581 |
| HIV/AIDS | ICD-9 codes: 042, 07953, V08ICD-10 codes: B20, B9735, Z21 |
| Hypertension | ICD-9 codes: 4010-4011, 4019, 40200, 40210, 40290, 40501, 40509, 40511, 40519, 40591, 40599, 4372ICD-10 codes: I10, I119, I150-I152, I158-I161, I169, I674, N262 |
| Implants/Grafts with Complications | ICD-9 codes: 3491, 59681-59683, 62931, 9961-9962, 99630-99631, 99639-99647, 99649, 99660-99667, 99669, 99674-99678ICD-10 codes: M96621-M96622, M96629, M96631-M96632, M96639, M9665, M96661-M96662, M96669, M96671-M96672, M96679, M9669, N99510-N99512, N99518, N99520-N99524, N99528, N99530-N99534, N99538, T82310A-T82312A, T82318A-T82322A, T82328A-T82332A, T82338A-T82339A, T82390A-T82392A, T82398A-T82399A, T82510A-T82511A, T82513A-T82515A, T82518A, T82520A-T82521A, T82523A-T82525A, T82528A, T82530A-T82531A, T82533A-T82535A, T82538A, T82590A-T82591A, T82593A-T82595A, T82598A, T826XXA-T827XXA, T82818A, T82828A, T82838A, T82848A, T82856A, T82858A, T82868A, T82898A, T83010A-T83012A, T83018A, T83020A-T83022A, T83028A, T83030A-T83032A, T83038A, T83090A-T83092A, T83098A, T83110A-T83113A, T83118A, T83120A-T83123A, T83128A, T83190A-T83193A, T83198A, T8321XA-T8325XA, T8329XA, T83410A-T83411A, T83418A, T83420A-T83421A, T83428A, T83490A-T83491A, T83498A, T83510A-T83512A, T83518A, T83590A-T83593A, T83598A, T8361XA-T8362XA, T8369XA, T83711A-T83714A, T83718A-T83719A, T83721A-T83724A, T83728A-T83729A, T8379XA, T8381XA-T8386XA, T8389XA, T839XXA, T84010A-T84013A, T84018A-T84023A, T84028A-T84033A, T84038A-T84039A, T84050A-T84053A, T84058A-T84063A, T84068A-T84069A, T84090A-T84093A, T84098A-T84099A, T84110A-T84117A, T84119A-T84127A, T84129A, T84190A-T84197A, T84199A, T84210A, T84213A, T84216A, T84218A, T84220A, T84223A, T84226A, T84228A, T84290A, T84293A, T84296A, T84298A, T84310A, T84318A, T84320A, T84328A, T84390A, T84398A, T84410A, T84418A, T84420A, T84428A, T84490A, T84498A, T8450XA-T8454XA, T8459XA-T8460XA, T84610A-T84615A, T84619A-T84625A, T84629A, T8463XA, T8469XA, T847XXA, T8481XA-T8486XA, T8489XA, T849XXA, T8501XA-T8503XA, T8509XA, T85110A-T85113A, T85118A, T85120A-T85123A, T85128A, T85190A-T85193A, T85199A, T85615A, T85625A, T85635A, T85695A, T8572XA, T85730A-T85735A, T85738A, T8579XA, T85810A, T85820A, T85830A, T85840A, T85850A, T85860A, T85890A, T86842 |
| Inflammatory Bowel Disease | ICD-9 codes: 5550-5552, 5559-5566, 5568-5569ICD-10 codes: K5000, K50011-K50014, K50018-K50019, K5010, K50111-K50114, K50118-K50119, K5080, K50811-K50814, K50818-K50819, K5090, K50911-K50914, K50918-K50919, K5100, K51011-K51014, K51018-K51019, K5120, K51211-K51214, K51218-K51219, K5130, K51311-K51314, K51318-K51319, K5140, K51411-K51414, K51418-K51419, K5150, K51511-K51514, K51518-K51519, K5180, K51811-K51814, K51818-K51819, K5190, K51911-K51914, K51918-K51919 |
| Lipoid Metabolism | ICD-9 codes: 2720-2725, 2728-2729ICD-10 codes: E7130, E755-E756, E7800-E7801, E781-E783, E7841, E7849, E785-E786, E7870, E7879, E7881, E7889, E789, E882 |
| Liver Diseases | ICD-9 codes: 07022-07023, 07032-07033, 07044, 07054, 4560-4561, 45620-45621, 5712-5713, 57140-57142, 57149, 5715-5716, 5722-5724, 5728, 5735ICD-10 codes: B180-B182, B188-B189, I8500-I8501, I8510-I8511, K7030-K7031, K7040-K7041, K7041, K709, K7111, K7201, K7210-K7211, K7290-K7291, K730-K732, K738-K739, K743-K745, K7460, K7469, K754, K766-K767, K7681 |
| Major Depressive Bipolar and Paranoid disorder | ICD-9 codes: 29600-29606, 29610-29616, 29620-29626, 29630-29636, 29640-29646, 29650-29656, 29660-29666, 2967, 29680-29682, 29689-29690, 29699, 2970-2973, 2978-2979, E9500-E9511, E9518, E9520-E9521, E9528-E9531, E9538-E9539, E954, E9550-E9557, E9559, E956, E9570-E9572, E9579-E9589, E959ICD-10 codes: F22, F24, F3010-F3013, F302-F304, F308-F310, F3110-F3113, F312, F3130-F3132, F314-F315, F3160-F3164, F3170-F3178, F3181, F3189, F319-F325, F330-F333, F3340-F3342, F338-F339, F3481, F3489, F349, F39, T1491XA, T1491XD, T1491XS, T360X2A, T360X2S, T361X2A, T361X2S, T362X2A, T362X2S, T363X2A, T363X2S, T364X2A, T364X2S, T365X2A, T365X2S, T366X2A, T366X2S, T367X2A, T367X2S, T368X2A, T368X2S, T3692XA, T3692XS, T370X2A, T370X2S, T371X2A, T371X2S, T372X2A, T372X2S, T373X2A, T373X2S, T374X2A, T374X2S, T375X2A, T375X2S, T378X2A, T378X2S, T3792XA, T3792XS, T380X2A, T380X2S, T381X2A, T381X2S, T382X2A, T382X2S, T383X2A, T383X2S, T384X2A, T384X2S, T385X2A, 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| Major Organ Transplant | ICD-9 codes: 99681-99688, V420-V421, V426-V427, V4281-V4284, V4321-V4322ICD-10 codes: T8600-T8603, T8609-T8613, T8619-T8623, T86290, T86298, T8630-T8633, T8639-T8643, T8649, T865, T86810-T86812, T86818-T86819, T86850-T86852, T86858-T86859, Z4821-Z4824, Z48280, Z48290, Z940-Z944, Z9481-Z9484, Z95811-Z95812 |
| Morbid Obesity | ICD-9 codes: 27801, 27803, V8541-V8545ICD-10 codes: E6601, E662, Z6841-Z6845 |
| Neurological Disorder, Other | ICD-9 codes: 33371, 33520-33524, 33529, 340, 3410-3411, 3418-3419, 3430-3434, 3438-3439, 3570-3571, 3573-3577, 35781-35782, 35789, 3579, 35800-35801, 3581-3582, 35830-35831, 35839, 3588-3591, 35921ICD-10 codes: D8682, G1220-G1225, G1229, G130-G131, G35, G360-G361, G368-G372, G375, G378-G379, G610-G611, G6181-G6182, G6189, G619-G622, G6281-G6282, G63, G650-G652, G7000-G7001, G701-G702, G7080-G7081, G7089, G709, G7100-G7102, G7109, G7111, G712, G731, G733, G800-G804, G808-G809, M0550, M05511-M05512, M05519, M05521-M05522, M05529, M05531-M05532, M05539, M05541-M05542, M05549, M05551-M05552, M05559, M05561-M05562, M05569, M05571-M05572, M05579, M0559, M3483 |
| Opportunistic Infections | ICD-9 codes: 0074, 0310, 0312, 0785, 1124-1125, 11284, 1173, 1175, 1177, 118, 1300, 1304, 1308, 1363, 3210, 4841, 4846ICD-10 codes: A072, A310, A312, B250-B252, B258-B259, B371, B377, B3781, B440-B442, B447, B4489, B449-B453, B457-B465, B468-B469, B484, B488, B582-B583, B59 |
| Oxygen | CPT/HCPCS codes: E0425, E0430-E0431, E0433-E0435, E0439-E0443, E1390-E1392, K0738 |
| Paralysis | ICD-9 codes: 0522, 05314, 05474, 32302, 32342, 32352, 32363, 32372, 32382, 3340-3344, 3348-3350, 33510-33511, 33519, 3358-3363, 3368-3369, 34120-34122, 34400-34404, 34409, 3441, 34460-34461, 7400-7402, 74100-74103, 74190-74193, 7420-7424, 74251, 74253, 74259, 7428-7429, 78072, 80600-80639, 8064-8065, 80660-80662, 80669-80672, 80679, 8068-8069, 9072, 95200-95219, 9522-9524, 9528-9529ICD-10 codes: B0082, B0112, B0224, G041, G0489, G0491, G054, G110-G114, G118-G121, G128-G129, G320, G3281, G373-G374, G8220-G8222, G8250-G8254, G834, G901, G950, G9511, G9519-G9520, G9529, G9581, G9589, G959, G992, Q000-Q002, Q010-Q012, Q018-Q019, Q02, Q030-Q031, Q038-Q046, Q048-Q064, Q068-Q069, Q0700-Q0703, Q078-Q079, R532, S140XXA, S140XXD, S140XXS, S14101A, S14101D, S14101S-S14102A, S14102D, S14102S-S14103A, S14103D, S14103S-S14104A, S14104D, S14104S-S14105A, S14105D, S14105S-S14106A, S14106D, S14106S-S14107A, S14107D, S14107S-S14108A, S14108D, S14108S-S14109A, S14109D, S14109S, S14111A, S14111D, S14111S-S14112A, S14112D, S14112S-S14113A, S14113D, S14113S-S14114A, S14114D, S14114S-S14115A, S14115D, S14115S-S14116A, S14116D, S14116S-S14117A, S14117D, S14117S-S14118A, S14118D, S14118S-S14119A, S14119D, S14119S, S14121A, S14121D, S14121S-S14122A, S14122D, S14122S-S14123A, S14123D, S14123S-S14124A, S14124D, S14124S-S14125A, S14125D, S14125S-S14126A, S14126D, S14126S-S14127A, S14127D, S14127S-S14128A, S14128D, S14128S-S14129A, S14129D, S14129S, S14131A, S14131D, S14131S-S14132A, S14132D, S14132S-S14133A, S14133D, S14133S-S14134A, S14134D, S14134S-S14135A, S14135D, S14135S-S14136A, S14136D, S14136S-S14137A, S14137D, S14137S-S14138A, S14138D, S14138S-S14139A, S14139D, S14139S, S14141A, S14141D, S14141S-S14142A, S14142D, S14142S-S14143A, S14143D, S14143S-S14144A, S14144D, S14144S-S14145A, S14145D, S14145S-S14146A, S14146D, S14146S-S14147A, S14147D, S14147S-S14148A, S14148D, S14148S-S14149A, S14149D, S14149S, S14151A, S14151D, S14151S-S14152A, S14152D, S14152S-S14153A, S14153D, S14153S-S14154A, S14154D, S14154S-S14155A, S14155D, S14155S-S14156A, S14156D, S14156S-S14157A, S14157D, S14157S-S14158A, S14158D, S14158S-S14159A, S14159D, S14159S, S240XXA, S240XXD, S240XXS, S24101A, S24101D, S24101S-S24102A, S24102D, S24102S-S24103A, S24103D, S24103S-S24104A, S24104D, S24104S, S24109A, S24109D, S24109S, S24111A, S24111D, S24111S-S24112A, S24112D, S24112S-S24113A, S24113D, S24113S-S24114A, S24114D, S24114S, S24119A, S24119D, S24119S, S24131A, S24131D, S24131S-S24132A, S24132D, S24132S-S24133A, S24133D, S24133S-S24134A, S24134D, S24134S, S24139A, S24139D, S24139S, S24141A, S24141D, S24141S-S24142A, S24142D, S24142S-S24143A, S24143D, S24143S-S24144A, S24144D, S24144S, S24149A, S24149D, S24149S, S24151A, S24151D, S24151S-S24152A, S24152D, S24152S-S24153A, S24153D, S24153S-S24154A, S24154D, S24154S, S24159A, S24159D, S24159S, S3401XA, S3401XD, S3401XS-S3402XA, S3402XD, S3402XS, S34101A, S34101D, S34101S-S34102A, S34102D, S34102S-S34103A, S34103D, S34103S-S34104A, S34104D, S34104S-S34105A, S34105D, S34105S, S34109A, S34109D, S34109S, S34111A, S34111D, S34111S-S34112A, S34112D, S34112S-S34113A, S34113D, S34113S-S34114A, S34114D, S34114S-S34115A, S34115D, S34115S, S34119A, S34119D, S34119S, S34121A, S34121D, S34121S-S34122A, S34122D, S34122S-S34123A, S34123D, S34123S-S34124A, S34124D, S34124S-S34125A, S34125D, S34125S, S34129A, S34129D, S34129S, S34131A, S34131D, S34131S-S34132A, S34132D, S34132S, S34139A, S34139D, S34139S, S343XXA |
| Parkinson’s and Huntington’s Disease | ICD-9 codes: 3320-3321, 3330, 3334ICD-10 codes: G10, G20, G2111, G2119, G212-G214, G218-G219, G230-G232, G238-G239, G903 |
| Pneumonias | ICD-9 codes: 00322, 0064, 0203-0205, 0212, 0221, 0391, 1140, 1144-1145, 11505, 11515, 11595, 1212, 1221, 481, 4820-4822, 48230-48232, 48239-48242, 48249, 48281-48284, 48289, 4847, 5070-5071, 5078, 5100, 5109, 5130-5131, 99731ICD-10 codes: A0103, A0222, A065, A202, A212, A221, A420, A430, A481, A5484, B380-B382, B390-B392, B400-B402, B410, B664, B671, J13-J14, J150-J151, J1520, J15211-J15212, J1529, J153-J156, J158, J181, J690-J691, J698, J850-J853, J860, J869, J95851 |
| Pressure Ulcer, Skin | ICD-9 codes: 70722-70725ICD-10 codes: L89000, L89002-L89004, L89010, L89012-L89014, L89020, L89022-L89024, L89100, L89102-L89104, L89110, L89112-L89114, L89120, L89122-L89124, L89130, L89132-L89134, L89140, L89142-L89144, L89150, L89152-L89154, L89200, L89202-L89204, L89210, L89212-L89214, L89220, L89222-L89224, L89300, L89302-L89304, L89310, L89312-L89314, L89320, L89322-L89324, L8942-L8945, L89500, L89502-L89504, L89510, L89512-L89514, L89520, L89522-L89524, L89600, L89602-L89604, L89610, L89612-L89614, L89620, L89622-L89624, L89810, L89812-L89814, L89890, L89892-L89894, L8992-L8995 |
| Protein-Calorie Malnutrition | ICD-9 codes: 260-262, 2630-2632, 2638-2639, 7994ICD-10 codes: E40-E43, E440-E441, E45-E46, E640, R64 |
| Respirator Dependence or Tracheostomy | ICD-9 codes: 51900-51902, 51909, V440, V4611-V4614, V550ICD-10 codes: J9500-J9504, J9509, J95850, J95859, Z430, Z930, Z9911-Z9912ICD-10 codes: J9500-J9504, J9509, J95850, J95859, Z430, Z930, Z9911-Z9912 |
| Rheumatoid Arthritis | ICD-9 codes: 0993, 1361, 4460-4461, 44620-44621, 44629, 4463-4467, 6960, 7100-7105, 7108-7109, 71110-71129, 7140-7142, 71430-71433, 7144, 71481, 71489, 7149, 7200-7202, 72081, 72089, 7209, 725ICD-10 codes: L4050-L4054, L4059, M0230, M02311-M02312, M02319, M02321-M02322, M02329, M02331-M02332, M02339, M02341-M02342, M02349, M02351-M02352, M02359, M02361-M02362, M02369, M02371-M02372, M02379, M0238-M0239, M041-M042, M048-M049, M0500, M05011-M05012, M05019, M05021-M05022, M05029, M05031-M05032, M05039, M05041-M05042, M05049, M05051-M05052, M05059, M05061-M05062, M05069, M05071-M05072, M05079, M0509-M0510, M05111-M05112, M05119, M05121-M05122, M05129, M05131-M05132, M05139, M05141-M05142, M05149, M05151-M05152, M05159, M05161-M05162, M05169, M05171-M05172, M05179, M0519-M0520, M05211-M05212, M05219, M05221-M05222, M05229, M05231-M05232, M05239, M05241-M05242, M05249, M05251-M05252, M05259, M05261-M05262, M05269, M05271-M05272, M05279, M0529-M0530, M05311-M05312, M05319, M05321-M05322, M05329, M05331-M05332, M05339, M05341-M05342, M05349, M05351-M05352, M05359, M05361-M05362, M05369, M05371-M05372, M05379, M0539-M0540, M05411-M05412, M05419, M05421-M05422, M05429, M05431-M05432, M05439, M05441-M05442, M05449, M05451-M05452, M05459, M05461-M05462, M05469, M05471-M05472, M05479, M0549-M0550, M05511-M05512, M05519, M05521-M05522, M05529, M05531-M05532, M05539, M05541-M05542, M05549, M05551-M05552, M05559, M05561-M05562, M05569, M05571-M05572, M05579, M0559-M0560, M05611-M05612, M05619, M05621-M05622, M05629, M05631-M05632, M05639, M05641-M05642, M05649, M05651-M05652, M05659, M05661-M05662, M05669, M05671-M05672, M05679, M0569-M0570, M05711-M05712, M05719, M05721-M05722, M05729, M05731-M05732, M05739, M05741-M05742, M05749, M05751-M05752, M05759, M05761-M05762, M05769, M05771-M05772, M05779, M0579-M0580, M05811-M05812, M05819, M05821-M05822, M05829, M05831-M05832, M05839, M05841-M05842, M05849, M05851-M05852, M05859, M05861-M05862, M05869, M05871-M05872, M05879, M0589, M059, M0600, M06011-M06012, M06019, M06021-M06022, M06029, M06031-M06032, M06039, M06041-M06042, M06049, M06051-M06052, M06059, M06061-M06062, M06069, M06071-M06072, M06079, M0608-M0609, M061, M0620, M06211-M06212, M06219, M06221-M06222, M06229, M06231-M06232, M06239, M06241-M06242, M06249, M06251-M06252, M06259, M06261-M06262, M06269, M06271-M06272, M06279, M0628-M0630, M06311-M06312, M06319, M06321-M06322, M06329, M06331-M06332, M06339, M06341-M06342, M06349, M06351-M06352, M06359, M06361-M06362, M06369, M06371-M06372, M06379, M0638-M0639, M064, M0680, M06811-M06812, M06819, M06821-M06822, M06829, M06831-M06832, M06839, M06841-M06842, M06849, M06851-M06852, M06859, M06861-M06862, M06869, M06871-M06872, M06879, M0688-M0689, M069, M0800, M08011-M08012, M08019, M08021-M08022, M08029, M08031-M08032, M08039, M08041-M08042, M08049, M08051-M08052, M08059, M08061-M08062, M08069, M08071-M08072, M08079, M0808-M0809, M081, M0820, M08211-M08212, M08219, M08221-M08222, M08229, M08231-M08232, M08239, M08241-M08242, M08249, M08251-M08252, M08259, M08261-M08262, M08269, M08271-M08272, M08279, M0828-M0829, M083, M0840, M08411-M08412, M08419, M08421-M08422, M08429, M08431-M08432, M08439, M08441-M08442, M08449, M08451-M08452, M08459, M08461-M08462, M08469, M08471-M08472, M08479, M0848, M0880, M08811-M08812, M08819, M08821-M08822, M08829, M08831-M08832, M08839, M08841-M08842, M08849, M08851-M08852, M08859, M08861-M08862, M08869, M08871-M08872, M08879, M0888-M0890, M08911-M08912, M08919, M08921-M08922, M08929, M08931-M08932, M08939, M08941-M08942, M08949, M08951-M08952, M08959, M08961-M08962, M08969, M08971-M08972, M08979, M0898-M0899, M1200, M12011-M12012, M12019, M12021-M12022, M12029, M12031-M12032, M12039, M12041-M12042, M12049, M12051-M12052, M12059, M12061-M12062, M12069, M12071-M12072, M12079, M1208-M1209, M300-M303, M308, M310-M312, M3130-M3131, M314-M317, M320, M3210-M3215, M3219, M328-M329, M3300-M3303, M3309-M3313, M3319-M3322, M3329, M3390-M3393, M3399, M340-M342, M3481-M3483, M3489, M349, M3500-M3504, M3509, M351-M353, M355, M358-M360, M368, M450-M459, M4600-M4609, M461, M4650-M4659, M4680-M4699, M488X1-M488X9, M4980-M4989 |
| Schizophrenia and Psychosis | ICD-9 codes: 29500-29505, 29510-29515, 29520-29525, 29530-29535, 29540-29545, 29550-29555, 29560-29565, 29570-29575, 29580-29585, 29590-29595, 2979, 2981, 2983-2984, 2988-2989ICD-10 codes: F200-F203, F205, F2081, F2089, F209, F23, F250-F251, F258-F259, F28-F29, F531 |
| Seizure and Convulsions | ICD-9 codes: 34500-34501, 34510-34511, 3452-3453, 34540-34541, 34550-34551, 34560-34561, 34570-34571, 34580-34581, 34590-34591, 78031-78033, 78039ICD-10 codes: G40001, G40009, G40011, G40019, G40101, G40109, G40111, G40119, G40201, G40209, G40211, G40219, G40301, G40309, G40311, G40319, G40401, G40409, G40411, G40419, G40501, G40509, G40801-G40804, G40811-G40814, G40821-G40824, G4089, G40901, G40909, G40911, G40919, G40A01, G40A09, G40A11, G40A19, G40B01, G40B09, G40B11, G40B19, R5600-R5601, R561, R569 |
| Sepsis/Shock | ICD-9 codes: 0031, 0202, 0223, 0362, 0380, 03810-03812, 03819, 0382-0383, 03840-03844, 03849, 0388-0389, 04082, 0545, 77181, 78552, 78559, 99590-99594, 99802ICD-10 codes: A021, A207, A227, A267, A327, A392-A394, A400-A401, A403, A408-A409, A4101-A4102, A411-A414, A4150-A4153, A4159, A4181, A4189, A419, A427, A483, A5486, B007, B377, P0270, P360, P3610, P3619, P362, P3630, P3639, P364-P365, P368-P369, R571, R578, R6510-R6511, R6520-R6521, T8112XA, T8144XA |
| Substance Abuse with Complications | ICD-9 codes: 2910-2915, 29181-29182, 29189, 2919-2920, 29211-29212, 2922, 29281-29285, 29289, 2929, 30300-30303, 30390-30393, 30400-30403, 30410-30413, 30420-30423, 30430-30433, 30440-30443, 30450-30453, 30460-30463, 30470-30473, 30480-30483, 30490-30493, 96500-96502, 96509, 9696, 96970-96973, 96979, 97081, 9800, E8500-E8502, E8541-E8542, E8601, E9800, E9802-E9804, E9809ICD-10 codes: F10120-F10121, F10129, F1014, F10150-F10151, F10159, F10180-F10182, F10188, F1019-F1021, F10220-F10221, F10229-F10232, F10239, F1024, F10250-F10251, F10259, F1026-F1027, F10280-F10282, F10288, F1029, F10920-F10921, F10929, F1094, F10950-F10951, F10959, F1096-F1097, F10980-F10982, F10988, F1099, F11120-F11122, F11129, F1114, F11150-F11151, F11159, F11181-F11182, F11188, F1119-F1121, F11220-F11222, F11229, F1123-F1124, F11250-F11251, F11259, F11281-F11282, F11288, F1129, F11920-F11922, F11929, F1193-F1194, F11950-F11951, F11959, F11981-F11982, F11988, F1199, F12120-F12122, F12129, F12150-F12151, F12159, F12180, F12188, F1219-F1221, F12220-F12222, F12229, F1223, F12250-F12251, F12259, F12280, F12288, F1229, F12920-F12922, F12929, F1293, F12950-F12951, F12959, F12980, F12988, F1299, F13120-F13121, F13129, F1314, F13150-F13151, F13159, F13180-F13182, F13188, F1319-F1321, F13220-F13221, F13229-F13232, F13239, F1324, F13250-F13251, F13259, F1326-F1327, F13280-F13282, F13288, F1329, F13920-F13921, F13929-F13932, F13939, F1394, F13950-F13951, F13959, F1396-F1397, F13980-F13982, F13988, F1399, F14120-F14122, F14129, F1414, F14150-F14151, F14159, F14180-F14182, F14188, F1419-F1421, F14220-F14222, F14229, F1423-F1424, F14250-F14251, F14259, F14280-F14282, F14288, F1429, F14920-F14922, F14929, F1494, F14950-F14951, F14959, F14980-F14982, F14988, F1499, F15120-F15122, F15129, F1514, F15150-F15151, F15159, F15180-F15182, F15188, F1519-F1521, F15220-F15222, F15229, F1523-F1524, F15250-F15251, F15259, F15280-F15282, F15288, F1529, F15920-F15922, F15929, F1593-F1594, F15950-F15951, F15959, F15980-F15982, F15988, F1599, F16120-F16122, F16129, F1614, F16150-F16151, F16159, F16180, F16183, F16188, F1619-F1621, F16220-F16221, F16229, F1624, F16250-F16251, F16259, F16280, F16283, F16288, F1629, F16920-F16921, F16929, F1694, F16950-F16951, F16959, F16980, F16983, F16988, F1699, F18120-F18121, F18129, F1814, F18150-F18151, F18159, F1817, F18180, F18188, F1819-F1821, F18220-F18221, F18229, F1824, F18250-F18251, F18259, F1827, F18280, F18288, F1829, F18920-F18921, F18929, F1894, F18950-F18951, F18959, F1897, F18980, F18988, F1899, F19120-F19122, F19129, F1914, F19150-F19151, F19159, F1916-F1917, F19180-F19182, F19188, F1919-F1921, F19220-F19222, F19229-F19232, F19239, F1924, F19250-F19251, F19259, F1926-F1927, F19280-F19282, F19288, F1929, F19920-F19922, F19929-F19932, F19939, F1994, F19950-F19951, F19959, F1996-F1997, F19980-F19982, F19988, F1999, T400X1A, T400X4A, T401X1A, T401X4A, T402X1A, T402X4A, T403X1A, T403X4A, T404X1A, T404X4A, T405X1A, T405X4A, T40601A, T40604A, T40691A, T40694A, T408X1A, T408X4A, T40901A, T40904A, T40991A, T40994A, T43601A, T43604A, T43611A, T43614A, T43621A, T43624A, T43631A, T43634A, T43641A, T43644A, T43691A, T43694A, T510X1A, T510X4A |
| Thyroid Disorders | ICD-9 codes: 2400, 2409-2411, 2419, 24200-24201, 24210-24211, 24220-24221, 24230-24231, 24240-24241, 24280-24281, 24290-24291, 243, 2440-2443, 2448-2454, 2458-2463, 2468-2469ICD-10 codes: E000-E002, E009-E012, E018, E02, E030-E035, E038-E042, E048-E049, E0500-E0501, E0510-E0511, E0520-E0521, E0530-E0531, E0540-E0541, E0580-E0581, E0590-E0591, E060-E065, E069-E071, E0789, E079, E890 |
| Trauma, Head | ICD-9 codes: 80000-80006, 80009-80016, 80019-80026, 80029-80036, 80039-80046, 80049-80056, 80059-80066, 80069-80076, 80079-80086, 80089-80096, 80099-80106, 80109-80116, 80119-80126, 80129-80136, 80139-80146, 80149-80156, 80159-80166, 80169-80176, 80179-80186, 80189-80196, 80199, 80220-80239, 8024-8029, 80300-80306, 80309-80316, 80319-80326, 80329-80336, 80339-80346, 80349-80356, 80359-80366, 80369-80376, 80379-80386, 80389-80396, 80399-80406, 80409-80416, 80419-80426, 80429-80436, 80439-80446, 80449-80456, 80459-80466, 80469-80476, 80479-80486, 80489-80496, 80499, 8502-8504, 85100-85106, 85109-85116, 85119-85126, 85129-85136, 85139-85146, 85149-85156, 85159-85166, 85169-85176, 85179-85186, 85189-85196, 85199-85206, 85209-85216, 85219-85226, 85229-85236, 85239-85246, 85249-85256, 85259, 85300-85306, 85309-85316, 85319, 85400-85406, 85409-85416, 85419, 9050, 9070ICD-10 codes: S020XXA, S020XXB, S020XXS, S02101A, S02101B, S02101S-S02102A, S02102B, S02102S, S02109A, 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| Unstable Angina and Other Ischemic Heart Disease | ICD-9 codes: 41000, 41002, 41010, 41012, 41020, 41022, 41030, 41032, 41040, 41042, 41050, 41052, 41060, 41062, 41070, 41072, 41080, 41082, 41090, 41092, 4110-4111, 41181, 41189ICD-10 codes: I200, I230-I233, I236-I238, I240-I241, I248-I249, I25110, I25700, I25710, I25720, I25730, I25750, I25760, I25790 |
| Vascular Diseases | ICD-9 codes: 0400, 41511-41513, 41519, 4162, 4400-4401, 44020-44024, 44029-44032, 4404, 44100-44103, 4411-4417, 4419-4423, 44281-44284, 44289, 4429, 4431, 44321-44324, 44329, 44381-44382, 44389, 4439, 44401, 44409, 4441, 44421-44422, 44481, 44489, 4449, 44501-44502, 44581, 44589, 4470-4476, 44770-44773, 4478-4480, 449, 45111, 45119, 45181, 45183, 4530, 4532-4533, 45340-45342, 45350-45352, 45372, 45374-45377, 45382, 45384-45387, 4540, 4542, 45911, 45913, 45931, 45933, 5570-5571, 5579, 59381, 7854ICD-10 codes: A480, E0851-E0852, E0852, E0951-E0952, E0952, E1051-E1052, E1052, E1151-E1152, E1152, E1351-E1352, E1352, I2601-I2602, I2609, I2690, I2692-I2694, I2699, I2782, I670, I700-I701, I70201-I70203, I70208-I70209, I70211-I70213, I70218-I70219, I70221-I70223, I70228-I70229, I70231-I70235, I70238-I70239, I70241-I70245, I70248-I70249, I7025, I70261-I70263, I70268-I70269, I70291-I70293, I70298-I70299, I70301-I70303, I70308-I70309, I70311-I70313, I70318-I70319, I70321-I70323, I70328-I70329, I70331-I70335, I70338-I70339, I70341-I70345, I70348-I70349, I7035, I70361-I70363, I70368-I70369, I70391-I70393, I70398-I70399, I70401-I70403, I70408-I70409, I70411-I70413, I70418-I70419, I70421-I70423, I70428-I70429, I70431-I70435, I70438-I70439, I70441-I70445, I70448-I70449, I7045, I70461-I70463, I70468-I70469, I70491-I70493, I70498-I70499, I70501-I70503, I70508-I70509, I70511-I70513, I70518-I70519, I70521-I70523, I70528-I70529, I70531-I70535, I70538-I70539, I70541-I70545, I70548-I70549, I7055, I70561-I70563, I70568-I70569, I70591-I70593, I70598-I70599, I70601-I70603, I70608-I70609, I70611-I70613, I70618-I70619, I70621-I70623, I70628-I70629, I70631-I70635, I70638-I70639, I70641-I70645, I70648-I70649, I7065, I70661-I70663, I70668-I70669, I70691-I70693, I70698-I70699, I70701-I70703, I70708-I70709, I70711-I70713, I70718-I70719, I70721-I70723, I70728-I70729, I70731-I70735, I70738-I70739, I70741-I70745, I70748-I70749, I7075, I70761-I70763, I70768-I70769, I70791-I70793, I70798-I70799, I7092, I7100-I7103, I711-I716, I718-I726, I728-I729, I7301, I731, I7381, I7389, I739, I7401, I7409-I7411, I7419, I742-I745, I748-I749, I75011-I75013, I75019, I75021-I75023, I75029, I7581, I7589, I76, I770-I776, I7770-I7777, I7779, I77810-I77812, I77819, I7789, I779-I780, I790-I791, I798, I8010-I8013, I80201-I80203, I80209, I80211-I80213, I80219, I80221-I80223, I80229, I80231-I80233, I80239, I80241-I80243, I80249, I80251-I80253, I80259, I80291-I80293, I80299, I820, I82210-I82211, I82220-I82221, I82290-I82291, I823, I82401-I82403, I82409, I82411-I82413, I82419, I82421-I82423, I82429, I82431-I82433, I82439, I82441-I82443, I82449, I82451-I82453, I82459, I82461-I82463, I82469, I82491-I82493, I82499, I824Y1-I824Y3, I824Y9, I824Z1-I824Z3, I824Z9, I82501-I82503, I82509, I82511-I82513, I82519, I82521-I82523, I82529, I82531-I82533, I82539, I82541-I82543, I82549, I82551-I82553, I82559, I82561-I82563, I82569, I82591-I82593, I82599, I825Y1-I825Y3, I825Y9, I825Z1-I825Z3, I825Z9, I82621-I82623, I82629, I82721-I82723, I82729, I82A11-I82A13, I82A19, I82A21-I82A23, I82A29, I82B11-I82B13, I82B19, I82B21-I82B23, I82B29, I82C11-I82C13, I82C19, I82C21-I82C23, I82C29, I83001-I83005, I83008-I83009, I83011-I83015, I83018-I83019, I83021-I83025, I83028-I83029, I83201-I83205, I83208-I83209, I83211-I83215, I83218-I83219, I83221-I83225, I83228-I83229, I87011-I87013, I87019, I87031-I87033, I87039, I87311-I87313, I87319, I87331-I87333, I87339, I96, K55011-K55012, K55019, K55021-K55022, K55029, K55031-K55032, K55039, K55041-K55042, K55049, K55051-K55052, K55059, K55061-K55062, K55069, K551, K5530-K5533, K558-K559, M318-M319, N280 |
| Wheelchair/Beds | CPT/HCPCS codes: E0971, E0973, E1050, E1060, E1070, E1083-E1090, E1092-E1093, E1100, E1110, E1140, E1150, E1160-E1161, E1170, E1250, E1260, E1285, E1290, E2365, E2601, K0001-K0014, K0195, K0813-K0816, K0820-K0831, K0835-K0843, K0848-K0864, K0868-K0871, K0877-K0880, K0884-K0886, K0890-K0891, K0898, A0130, E0250-E0251, E0255-E0256, E0260-E0261, E0265-E0266, E0270, E0290-E0297, E0301-E0304, E0316 |

HIV/AIDS = Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome

**eTable 2: Silber Qualifying Comorbidity Sets Comprised of Single, Double, and Triple Combinations**

|  |
| --- |
| **Single Condition Qualifying Comorbidity Sets** |
| Acute Myocardial Infarction |  |  |
| Amputation and Complications |   |   |
| CKD Stage 4-5 and Dialysis |   |   |
| Cardio and Respiratory Failure |   |   |
| Oxygen |   |   |
| Liver Diseases |   |   |
| Pneumonia |   |   |
| Pressure Ulcer, Skin |   |   |
| Protein-Calorie Malnutrition |   |   |
| Sepsis/Shock |   |   |
| **Double Condition Qualifying Comorbidity Sets** |
| Acute Renal Failure | Wheelchair/Beds |   |
| Acute Renal Failure | Chronic Ulcer, Skin, Not Pressure |   |
| Acute Renal Failure | Other Trauma |   |
| Congestive Heart Failure | Wheelchair/Beds |   |
| Congestive Heart Failure | Acute Renal Failure |   |
| Congestive Heart Failure | Chronic Lung Diseases |   |
| Congestive Heart Failure | Chronic Ulcer, Skin, Not Pressure |   |
| Congestive Heart Failure | Complications Implants Graft |   |
| Congestive Heart Failure | Other Trauma |   |
| Congestive Heart Failure | Vascular Diseases |   |
| Chronic Lung Diseases | Wheelchair/Beds |   |
| Chronic Lung Diseases | Acute Renal Failure |   |
| Chronic Lung Diseases | Chronic Ulcer, Skin, Not Pressure |   |
| Chronic Lung Diseases | Other Trauma |   |
| Chronic Ulcer, Skin, Not Pressure | Complications Implants Graft |   |
| Chronic Ulcer, Skin, Not Pressure | Coronary Artery Disease |   |
| Diabetes with Complications | Congestive Heart Failure |   |
| Diabetes with Complications | Chronic Ulcer, Skin, Not Pressure |   |
| Diabetes with Complications | Complications Implants Graft |   |
| Diabetes with Complications | Other Hematological |   |
| Diabetes with Complications | Other Trauma |   |
| Endocrine and Metabolic Disorders | Chronic Ulcer, Skin, Not Pressure |   |
| Endocrine and Metabolic Disorders | Other Hematological |   |
| Heart Arrhythmias | Acute Renal Failure |   |
| Heart Arrhythmias | Chronic Lung Diseases |   |
| Heart Arrhythmias | Chronic Ulcer, Skin, Not Pressure |   |
| Heart Arrhythmias | Other Trauma |   |
| Other Hematological | Wheelchair/Beds |   |
| Other Hematological | Acute Renal Failure |   |
| Other Hematological | Congestive Heart Failure |   |
| Other Hematological | Chronic Lung Diseases |   |
| Other Hematological | Chronic Ulcer, Skin, Not Pressure |   |
| Other Hematological | Complications Implants Graft |   |
| Other Hematological | Coronary Artery Disease |   |
| Other Hematological | Other Depression |   |
| Other Hematological | Heart Arrhythmias |   |
| Other Hematological | Hypertension |   |
| Other Hematological | Substance Abuse with Complications |   |
| Other Hematological | Other Trauma |   |
| Other Hematological | Vascular Diseases |   |
| Disorders of Immunity | Acute Renal Failure |   |
| Opportunistic Infections | Vascular Diseases |   |
| Vascular Diseases | Wheelchair/Beds |   |
| Vascular Diseases | Acute Renal Failure |   |
| Vascular Diseases | Chronic Ulcer, Skin, Not Pressure |   |
| Vascular Diseases | Other Trauma |   |
| **Triple Condition Qualifying Comorbidity Sets** |
| Congestive Heart Failure | Heart Arrhythmias | Cerebrovascular Diseases |
| Congestive Heart Failure | Heart Arrhythmias | Coronary Artery Disease |
| Diabetes with Complications | Endocrine and Metabolic Disorders | Wheelchair/Beds |
| Diabetes with Complications | Heart Arrhythmias | Vascular Diseases |
| Diabetes with Complications | Vascular Diseases | Chronic Lung Diseases |
| Endocrine and Metabolic Disorders | Cerebrovascular Diseases | Complications Implants Graft |
| Endocrine and Metabolic Disorders | Congestive Heart Failure | Heart Arrhythmias |
| Endocrine and Metabolic Disorders | Chronic Lung Diseases | Complications Implants Graft |
| Endocrine and Metabolic Disorders | Complications Implants Graft | Coronary Artery Disease |
| Endocrine and Metabolic Disorders | Heart Arrhythmias | Complications Implants Graft |
| Endocrine and Metabolic Disorders | Heart Arrhythmias | Vascular Diseases |
| Endocrine and Metabolic Disorders | Vascular Diseases | Complications Implants Graft |
| Heart Arrhythmias | Complications Implants Graft | Coronary Artery Disease |
| Heart Arrhythmias | Vascular Diseases | Complications Implants Graft |
| Disorders of Immunity | Heart Arrhythmias | Vascular Diseases |
| Disorders of Immunity | Vascular Diseases | Chronic Lung Diseases |
| Vascular Diseases | Chronic Lung Diseases | Complications Implants Graft |
| Vascular Diseases | Chronic Lung Diseases | Coronary Artery Disease |
| Vascular Diseases | Complications Implants Graft | Coronary Artery Disease |

CKD = Chronic Kidney Disease

**eTable 3: Billing codes used to identify Durable Medical Equipment Use by Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS) Codes**

|  |  |
| --- | --- |
| **Durable Medical Equipment Category** | **CPT and/or HCPCS Codes** |
| Bedside Commode | E0163, E0165, E0167, E0168, E0170-E0172, E0175 |
| Home Oxygen | E0425, E0430, E0431, E0433-E0435, E0439-E0443, E1390-E1392, K0738 |
| Wheelchair or Scooter | A0130, E0971, E0973, E0968, E1050, E1060, E1070, E1083-E1090, E1092, E1093, E1100, E1110, E1140, E1150, E1160, E1161, E1170, E1250, E1260, E1285, E1290, E2365, E2601, K0001-K0014, K0195, K0813-K0816, K0820-K0831, K0835-K0843, K0848-K0864, K0868-K0871, K0877-K0879, K0890, K0891, K0898 |
| Cane or Crutch | E0100, E0105, E0110-E0118, E0153 |
| Walker | E0131, E0135, E0140-E0149, E0154-E0159 |
| Hospital Bed | E0250, E0251, E0255, E0256, E0260, E0261, E0265, E0266, E0270, E0290-E0297, E0301-E0304, E0316 |
| Home Intravenous or Enteral Nutrition/Hydration | B4034-B9999 |
| Patient Lift | E0621, E0625, E0630, E0635, E0639, E0640, G0501 |

**eTable 4: Prevalence of Comorbid Conditions Among Patients**

|  |  |  |  |
| --- | --- | --- | --- |
| **Comorbidity** | **Non-Multimorbid\*** | **Multimorbid\*** | **Total** |
| Sepsis/Shock, n(%) | 0 (<0.1) | 22,869 (28.7) | 22,869 (13.1) |
| Pneumonias, n(%) | 0 (<0.1) | 4,087 (5.1) | 4,087 (2.3) |
| Opportunistic Infections, n(%) | 154 (0.2) | 758 (1.0) | 912 (0.5) |
| Endocrine and Metabolic Disorders, n(%) | 2,746 (2.9) | 7,167 (9.0) | 9,913 (5.7) |
| Vascular Diseases, n(%) | 11,338 (11.9) | 30,220 (38.0) | 41,558 (23.8) |
| HIV/AIDS, n(%) | 288 (0.3) | 318 (0.4) | 606 (0.3) |
| Dementia, n(%) | 5,572 (5.8) | 10,578 (13.3) | 16,150 (9.2) |
| Paralysis, n(%) | 723 (0.8) | 1,638 (2.1) | 2,361 (1.3) |
| Liver Diseases, n(%) | 0 (<0.1) | 5,219 (6.6) | 5,219 (3.0) |
| Chronic Kidney Disease Stage I-III & Nephritis, n(%) | 9,877 (10.4) | 25,412 (31.9) | 35,289 (20.2) |
| Cerebrovascular Diseases, n(%) | 6,289 (6.6) | 12,443 (15.6) | 18,732 (10.7) |
| Rheumatoid Arthritis, n(%) | 6,153 (6.5) | 7,131 (9.0) | 13,284 (7.6) |
| Chronic Lung Diseases, n(%) | 9,214 (9.7) | 29,413 (36.9) | 38,627 (22.1) |
| Other Cancer, n(%) | 13,060 (13.7) | 14,000 (17.6) | 27,060 (15.5) |
| Severe Cancer, n(%) | 1,723 (1.8) | 3,777 (4.7) | 5,500 (3.1) |
| Metastatic Cancer, n(%) | 2,738 (2.9) | 4,191 (5.3) | 6,929 (4.0) |
| Other Hematologic Disorder, n(%) | 470 (0.5) | 14,377 (18.1) | 14,847 (8.5) |
| Severe Hematologic Disorder, n(%) | 318 (0.3) | 986 (1.2) | 1,304 (0.7) |
| Diabetes, Uncomplicated, n(%) | 21,480 (22.5) | 27,350 (34.4) | 48,830 (27.9) |
| Diabetes, Complicated, n(%) | 9,985 (10.5) | 19,244 (24.2) | 29,229 (16.7) |
| Protein-Calorie Malnutrition, n(%) | 0 (<0.1) | 14,333 (18.0) | 14,333 (8.2) |
| Lipoid Metabolism, n(%) | 52,622 (55.2) | 51,785 (65.1) | 104,407 (59.7) |
| Morbid Obesity, n(%) | 6,950 (7.3) | 8,454 (10.6) | 15,404 (8.8) |
| Disorders of Immunity, n(%) | 944 (1.0) | 3,103 (3.9) | 4,047 (2.3) |
| Substance Abuse, n(%) | 2,935 (3.1) | 4,584 (5.8) | 7,519 (4.3) |
| Schizophrenia and Psychosis, n(%) | 1,848 (1.9) | 2,187 (2.7) | 4,035 (2.3) |
| Major Depressive Bipolar and Paranoid Disorder, n(%) | 7,372 (7.7) | 7,382 (9.3) | 14,754 (8.4) |
| Other Depression, n(%) | 13,173 (13.8) | 15,173 (19.1) | 28,346 (16.2) |
| Parkinson’s and Huntington’s Disease, n(%) | 1,396 (1.5) | 2,031 (2.6) | 3,427 (2.0) |
| Other Neurologic Disorder, n(%) | 1,659 (1.7) | 2,074 (2.6) | 3,733 (2.1) |
| Seizure and Convulsions, n(%) | 2,729 (2.9) | 3,557 (4.5) | 6,286 (3.6) |
| Implants/Grafts with Complications, n(%) | 558 (0.6) | 3,546 (4.5) | 4,104 (2.3) |
| Amputation and Complications, n(%) | 0 (<0.1) | 1,251 (1.6) | 1,251 (0.7) |
| Congestive Heart Failure, n(%) | 2,213 (2.3) | 28,858 (36.3) | 31,071 (17.8) |
| Hypertension, n(%) | 67,687 (71.0) | 65,098 (81.8) | 132,785 (75.9) |
| Chronic Kidney Disease, Grade IV-V, n(%) | 0 (<0.1) | 8,223 (10.3) | 8,223 (4.7) |
| Unstable Angina and Other Ischemic Heart Disease, n(%) | 867 (0.9) | 3,273 (4.1) | 4,140 (2.4) |
| Acute Myocardial Infarction, n(%) | 0 (<0.1) | 3,254 (4.1) | 3,254 (1.9) |
| Coronary Artery Disease, n(%) | 16,112 (16.9) | 31,433 (39.5) | 47,545 (27.2) |
| Angina Pectoralis, n(%) | 1,797 (1.9) | 4,034 (5.1) | 5,831 (3.3) |
| Arrhythmia, n(%) | 8,509 (8.9) | 28,608 (35.9) | 37,117 (21.2) |
| Cardiac Failure, n(%) | 0 (<0.1) | 11,336 (14.2) | 11,336 (6.5) |
| Asthma, n(%) | 7,683 (8.1) | 8,876 (11.1) | 16,559 (9.5) |
| Respiratory Dependence or Tracheostomy, n(%) | 53 (0.1) | 580 (0.7) | 633 (0.4) |
| Artificial Opening, n(%) | 982 (1.0) | 2,449 (3.1) | 3,431 (2.0) |
| Inflammatory Bowel Disease, n(%) | 1,307 (1.4) | 1,549 (1.9) | 2,856 (1.6) |
| Chronic Pancreatitis, n(%) | 261 (0.3) | 468 (0.6) | 729 (0.4) |
| Acute Renal Failure, n(%) | 4,481 (4.7) | 24,071 (30.2) | 28,552 (16.3) |
| Chronic Skin Ulcer, Non-Pressure, n(%) | 256 (0.3) | 5,045 (6.3) | 5,301 (3.0) |
| Pressure Skin Ulcer, n(%) | 0 (<0.1) | 2,699 (3.4) | 2,699 (1.5) |
| Other Trauma, n(%) | 672 (0.7) | 5,007 (6.3) | 5,679 (3.2) |
| Head Trauma, n(%) | 302 (0.3) | 695 (0.9) | 997 (0.6) |
| Major Organ Transplant, n(%) | 269 (0.3) | 1,046 (1.3) | 1,315 (0.8) |
| Wheelchair/Bedbound, n(%) | 501 (0.5) | 3,501 (4.4) | 4,002 (2.3) |
| Home Oxygen Use, n(%) | 0 (<0.1) | 7,946 (10.0) | 7,946 (4.5) |

\*Multimorbidity defined by the satisfaction of Qualifying Comorbidity Set; Non-Multimorbid patients’ comorbidities do not satisfy a Qualifying Comorbidity Set

HIV/AIDS = Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome

**eTable 5: Emergency General Surgery Condition Categories and Emergency General Surgery Sub Conditions Utilizing Shafi1 codes and for Multimorbid\* and Non-Multimorbid Patients**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **EGS Condition** | **Sub-Condition** | **Non-Multimorbid** | **Multimorbid** | **Total** |
| Colorectal, n(%) | Anorectal Stenosis, Polyp, Ulcer, Necrotizing Enterocolitis | 23 (<0.1) | 30 (<0.1) | 53 (<0.1) |
| Bleeding (not otherwise specified) | 98 (0.1) | 171 (0.2) | 269 (0.2) |
| Colitis | 77 (0.1) | 173 (0.2) | 250 (0.1) |
| Colostomy and Enterostomy Complication | 75 (0.1) | 148 (0.2) | 223 (0.1) |
| Diverticular Disease | 3,285 (3.4) | 3,622 (4.5) | 6,907 (3.9) |
| Fistula | 10 (<0.1) | 31 (<0.1) | 41 (<0.1) |
| Hemorrhoids | 10 (<0.1) | 10 (<0.1) | 20 (<0.1) |
| Megacolon | 15 (<0.1) | 20 (<0.1) | 35 (<0.1) |
| Neoplasm | 1,115 (1.2) | 1,004 (1.3) | 2,119 (1.2) |
| Rectal Prolapse | 195 (0.2) | 161 (0.2) | 356 (0.2) |
| General Abdominal, n(%) | Abdominal Mass | 119 (0.1) | 97 (0.1) | 216 (0.1) |
| Abdominal Pain | 2,997 (3.1) | 10,697 (13.4) | 13,694 (7.8) |
| Hemoperitoneum | 16 (<0.1) | 72 (0.1) | 88 (0.1) |
| Peritonitis | 117 (0.1) | 426 (0.5) | 543 (0.3) |
| Retroperitoneal Abscess | < 10 (<0.1) | < 10 (<0.1) | < 20 (<0.1) |
| Hepato-Pancreato-Biliary, n(%) | Biliary | 28 (<0.1) | 40 (0.1) | 68 (<0.1) |
| Gallstones and Related Diseases | 41,373 (43.4) | 23,909 (30.0) | 65,282 (37.3) |
| Hepatic | < 10 (<0.1) | < 10 (<0.1) | < 20 (<0.1) |
| Pancreatitis | 3,340 (3.5) | 1,729 (2.2) | 5,069 (2.9) |
| Intestinal Obstruction, n(%) | Incarcerated Hernia | 13,385 (14.0) | 12,631 (15.9) | 26,016 (14.9) |
| Incarcerated Hernias | 1,305 (1.4) | 1,223 (1.5) | 2,528 (1.4) |
| Intussusception | 305 (0.3) | 231 (0.3) | 536 (0.3) |
| Obstruction | 4,214 (4.4) | 4,931 (6.2) | 9,145 (5.2) |
| Volvulus | 2,579 (2.7) | 2,365 (3.0) | 4,944 (2.8) |
| Upper Gastrointestinal, n(%) | Appendicitis | 15,176 (15.9) | 7,043 (8.8) | 22,219 (12.7) |
| Bleeding | 224 (0.2) | 720 (0.9) | 944 (0.5) |
| Bowel Perforation | 1,245 (1.3) | 2,836 (3.6) | 4,081 (2.3) |
| Crohn’s Disease | 83 (0.1) | 66 (0.1) | 149 (0.1) |
| Diverticular Disease | 506 (0.5) | 353 (0.4) | 859 (0.5) |
| Esophageal Disease | < 10 (<0.1) | < 10 (<0.1) | < 20 (<0.1) |
| Fistula, etc | 81 (0.1) | 140 (0.2) | 221 (0.1) |
| Gastritis | < 10 (<0.1) | < 10 (<0.1) | < 20 (<0.1) |
| Gastrostomy | 28 (<0.1) | 216 (0.3) | 244 (0.1) |
| Ileus | 55 (0.1) | 142 (0.2) | 197 (0.1) |
| Meckel’s Diverticulum | 121 (0.1) | 48 (0.1) | 169 (0.1) |
| Neoplasm | 292 (0.3) | 281 (0.4) | 573 (0.3) |
| Peptic Ulcer Disease | 2,779 (2.9) | 4,011 (5.0) | 6,790 (3.9) |

\*Multimorbidity defined by the satisfaction of Qualifying Comorbidity Set; Non-Multimorbid patients’ comorbidities do not satisfy a Qualifying Comorbidity Set

**References**

1. Shafi S, Aboutanos MB, Agarwal S, et al. Emergency general surgery: Definition and estimated burden of disease. J Trauma Acute Care Surg. 2013;74(4):1092-1097.