

<b>Supplementary Appendix: Complication categories, examples and ICD 9/10 code</b>		
<b>Complication category</b>	<b>Complication example</b>	<b>ICD9/10 code</b>
Hemorrhage/bleeding	Hemorrhage complicating procedure, acute hemorrhagic anemia, hematoma, blood transfusion, iron deficiency anemia secondary to blood loss	ICD9: V58.2, 998.1, 998.11, 998.12, 285.1, 39.98, 54.12, 39.41, 39.49, 34.43, 99.00, 99.02, 99.03, 99.04, 459.0, 568.81, 99811, 280, 285.9 ICD10: D500, D62, 30233H0, 30233N0, 30243H0, 30243N0, 30253H0, 30253N0, 30263H0, 30233H1, 30243H1, 30253H1, 30263H1, 30233N1, 30233P1, 30243N1, 30243P1, 30253N1, 30253P1, 30263N1, 30263P1, N9962, N99820, N99821, R58
Cardiac	Myocardial infarction, hypertensive disease with heart failure, heart failure, supraventricular tachycardia, atrial fibrillation, cardiac arrest, cardiogenic shock	ICD9: 410.1, 410.2, 410.3, 410.4, 410.5, 410.6, 410.7, 410.8, 410.9, 402.01, 402.11, 402.91, 428.xx, 4260, 4270, 4271, 272, 42731, 42732, 42741, 42742, 4279, 427.5, 997.1, 785.51 ICD10: I21.09, I21.19, I21.11, I21.29, I21.4, I21.3, I11.0, I50.9, I442, I470, I471, I472, I479, I480, I481, I482, I483, I484, I4891, I4892, I4901, I4902, I499, I46.9, I97.88, I97.89
Respiratory	Atelectasis, pneumonia (any type) and ventilator associated pneumonia, pneumothorax, transfusion related acute lung injury, chronic respiratory failure with hypoxia, acute respiratory failure with hypoxia	ICD9: 518, 514, 518.4, 518.5, 518.82, 466.xx, 480.xx, 481, 482.xx, 483.xx, 485, 486, 507.0, 799.1, 512.1, 518.7, 997.3, 518.81, 518.84, 997.3x, 483.x, 484.x, 507.x, 997.31, 997.39 ICD10: J90, J918, 81.0, 80, J95821, J95822, J9600, J9601, J9602, J9690, J9691, J9692, J9610, J9611, J9620, J9621, J9622, J13, J14, J150, J151, J1520, J15211, J15212, J1529, J153, J154, J155, J156, J158, J159, J180, J181, J182, J188, J189, J95851, J95859, J690, J698, R09.2, J95811, J95.84
Gastrointestinal	Paralytic ileus, nausea/vomiting, diarrhea, constipation, small bowel obstruction GI bleed, gastric or duodenal ulcer, bowel leak	ICD9: 530.82, 531.0x, 531.1x, 531.2x, 531.4x, 531.6x, 532.0x, 532.1x, 532.2x, 532.4x, 532.6x, 533.0x, 533.1x, 533.2x, 533.4x, 533.6x, 534.0x, 534.1x, 534.2x, 534.4x, 534.6x, 535.x1, 578.9, 997.4, 560, 560.0, 560.2, 560.2, 560.3x, 560.8, 560.81, 560.89, 560.9 ICD10: K56.x, K20.x, K21.x, K22.x, K22.11, K22.8, K25.x, K26.x, K28.x, K29.6, K28.7, K92.x, K91.3, K91.89, K91.x, K90.8, K90.9
Genitourinary	Renal or perinephric abscess, urine leak, urinary obstruction, urinary fistula, hematuria, other post procedural complications and disorders of GU systems, stoma complications: parastomal hernia, stomal ischemia	ICD9: 593.82, 596.1, 596.2, 596.3, 997.5, 593.8x, 442.1, 997.72, 445.81, 902.4x, V44.6, V55.6, 866.xx, 867.x, 868.14, 868.04, 599.1, 619.0, 788.8, 567.89, 55.12, 55.21, 55.22, 55.29, 55.8x, 55.92, 55.93, 55.94, 87.73, 87.74, 88.75, 88.45, 97.61, 97.62, 56.0, 56.31, 56.39, 56.8x, 56.6x, 56.74, 56.75, 56.79, 57.0, 57.93, 57.32, 59.0x, 59.2x, 59.92, 59.93, 590.3, 46.4, 56.52, 599.6x, 593.3, 593.4, 593.5, 591, 5848, 9975, 55.0, 55.02, 55.03, 59.8, 56.72

		ICD10: N2889, N321, N322, N323, N99.89, N134, N1330, N138, OT9000Z, OT9070Z, OT9080Z, OT9100Z, OT9170Z, OT9030Z, OT9040Z, OT9130Z, OT9140Z, OTC03ZZ, OTC04ZZ, OTC13ZZ, OTC14ZZ, OT760DZ, OT763DZ, OT764DZ, OT767DZ, OT768DZ, OT770DZ, OT773Z, OT774DZ, OT777DZ, OT780DZ, OT783DZ, OT784DZ, OT787DZ, OT788DZ, OT9600Z, OT9630Z, OT9640Z, OT9670Z, OT9680Z, OT9740Z, OT9770Z, OT9780Z, OT9800Z, OT9830Z, OT9840Z, OT9870Z, OT9880Z, OTQ60ZZ, OTQ63ZZ, OTQ64ZZ, OTQ67ZZ, OTQ68ZZ, OTQ73ZZ, OTQ77ZZ, OTQ78ZZ, OT9700Z, OT9730Z
Wound and hernia	Wound seroma, wound infection, poor wound healing, secondary intention healing, wound dehiscence, fascial dehiscence and/or evisceration, abdominal wall hernia, incisional hernia	ICD9: 879.2, 998.31, 998.32, 998.83, 998.3, 998.5, 998.59, 998.51, 998.6, 958.3, 998.3x, 998.5x, 54.61, 54.62, 54.63, 54.72, 86.04, 86.05, 86.22, 86.28, 551.9, 552.8, 552.9, 553.9, 553.21, 53.5, 53.51, 53.59, 53.6, 53.61, 53.62, 53.63, 53.69 ICD10: OJQ80ZZ, OJQ83ZZ, OJR807Z, OJR80KZ, OJR837Z, OJR83JZ, OJR83KZ, OJU807Z, OJU80JZ, OJU80KZ, OJU837Z, OJU83JZ, OJU83KZ, OJBC0ZX, OJBC0ZZ, OJBC3ZX, OJBC3ZZ, T8131XA, T8131XD, T8131XS, T8130XA, T8130XD, T8130XS, T8132XA, T8132XD, T8132XS, K43.3, K43.4, K43.5, K450, K461, K460, K469, OWQF0ZZ, OWQF3ZZ, OWQF4ZZ, OWUF07Z, OWUF0JZ, OWUF0KZ, OWUF47Z, OWUF4JZ, OWUF4KZ
Thrombosis/embolic	Phlebitis, thrombosis of vein or artery, deep vein thrombosis, pulmonary embolism	ICD9: 415.1, 451.1x, 451.2, 451.81, 451.9, 453.8, 453.9, 997.2, 999.2, 444.22, 444.81, 451.11, 451.19, 453.40, 453.41, 415.11, 415.13, 415.19 ICD10: I2602, I2609, I269, I2699, I8010, I8012, I8013, I80201, I80202, I80291, I80292, I80293, I80299, I82401, I82402, I82403, I82409, I82411, I82412, I80203, I80209, I80211, I80212, I80213, I80219, I80221, I80222, I80223, I80229, I80231, I80232, I80233, I80239, 82413, I82419, I82421, I82422, I82423, I82429, I82431, I82432, I82433, I82439, I824Y1, I824Y2, I824Y3, I824Y9, I743, I74.5, I8011
Infection and sepsis	Pyelonephritis, unspecified kidney infection, urinary tract infection, peritoneal abscess, necrotizing fasciitis, clostridium difficile, drainage of abscess, MRSA sepsis, septic shock, postoperative sepsis, bacteremia	ICD9: 590.2, 580.8, 590.80, 590.1, 590.81, 590.00, 590.11, 038.0, 038.2, 038.3, 038.4, 038.8, 038.9, 996.64, 599.0, 590.9, 567.22, 686.8, 686.9, 728.86, 009.1, 008.45, 567, 567.1, 567.2x, 567.3x, 567.81, 567.82, 567.9, 320.xx, 510.x, 513.x, 519.2, 683, 038.xx, 785.52, 785.50, 785.59, 998.0, 995.91, 995.92, 996.62, 999.3, 999.31, 790.7 ICD10: T814XXA, N12, N16, N110, N10, A409, R7881, T83510, N390, K651, A021, A400, A401, A403, A4101, A4102, A411, A412, A413, A414, A4150, A4151, A4152, A4153, A4159, A4181, A4189, A419, A427, A5486, B37,

		R6520, R6521, L0889, L089, M726, A09, A047, A0471, A0472, 0D9W30Z, 0D9W3ZZ, 0D9W40Z, 0D9W4ZZ, W9J30Z, OW9J3ZZ, OH97X0Z, OH97XZZ, OH9AX0Z, OH9AXZZ, OJ9800Z, OJ980ZZ, OJ9B00Z, OJ9B0ZZ, OJ9C00Z, OJ9C0ZZ, OW9M00Z, OW9M0ZZ, OW9M30Z, OW9M4ZZ, OJC80Z, OJC83ZZ, OJCB0ZZ, OJCB3Z, OJCC0ZZ, OJCC3ZZ, A40.x, A41.x, R65.xx, T80.2, T80.21, T80.219, R78.81, T8112
Renal failure, metabolic disturbances, dehydration, FTT, malnutrition	Renal failure, acute kidney injury, acute kidney failure, dialysis catheter placement, acidosis, volume depletion, dehydration, electrolyte disorders (hypokalemia, hyponatremia, etc), malnutrition, failure to thrive	ICD9: 586, 584, v45.1x, v56.0, v56.1, 38.95, 39.27, 39.95, 54.98, 55.6, 276.2, 276.5, 276.51, 276.9, E87.3, 263.9, 263.1, 263, 263.2, 263.8, 783.7 ICD10: 0TQ77ZZ, 0TQ78ZZ, 0T9700Z, 0T9730Z, 5A1D70Z, 5A1D80Z, 5A1D90Z, 3E1M39Z, E872, E860, E878, R62.7
Neurologic	Subarachnoid, subdural or intracranial hemorrhage; occlusion or stenosis of cerebral artery – no thrombosis, ischemic or hemorrhagic stroke, neuropathy	ICD9: 436, 434.91, 434.11, 434.01, 997.01, 997.02, 997.0x, 433.xx, 434.xx, 430, 431, 432.1, 432.9, 997.09, 356.8 ICD10: I6789, I635, I6340, I6330, G9781, G9782, I97811, I97821, I65, I63, I66, I60, I61, I62, G97.81, G603, G62
Miscellaneous and surgical	Lymphocele, lower extremity swelling, lymphedema, uncontrolled pain, accidental cut/puncture/perforation, intraoperative repair of colon or small bowel (bowel injury), unspecified surgical complication	ICD9: 39.79, E870.0, 998.8, 998.89, 998.9, 999.9, E878.8, E878.9, 997.9, 999.4, 999.5, 999.6, 999.7, 999.8x, e876.x, e878.x, e911, e912, e879.x, 997.99 ICD10: T8183XA, T8189XA, T819XXA, T888XXA, T889XXA, Y838, Y839, Y840, 0DQF3ZZ, 0DQF4ZZ, 0DQF7ZZ, 0DQF8ZZ, 0DQG4ZZ, 0DQK3ZZ, 0DQK4ZZ, 0DQK7ZZ, 0DQK8ZZ, 0DQL3ZZ, 0DQL4ZZ, 0DQL7ZZ, 0DQL8ZZ, 0DQM3ZZ, 0DQM4ZZ, 0DQM7ZZ, I89.8