

Table S1 ICD-9 codes

Diagnosis and procedure	ICD-9 codes
Radical pancreaticoduodenectomy (RP)	52.7 (procedure codes)
Robotic assisted RP	52.7 + 17.42 (procedure codes)
Laparoscopic RP	52.7 + 54.21 (procedure codes)
Comorbidities	
Atrial fibrillation	427.3
History of myocardial infarction	412.xx
Chronic liver disease	571.2, 571.4, 571.5, 571.6, 572.2, 572.3, 572.4, 572.8
Hypertension	401.1, 401.9, 642.0x, 401.0, 402.xx, 437.2, 642.10–642.24, 642.70–642.94
Diabetes mellitus	249.00–249.31, 250.00–250.33, 648.00–648.04, 249.40–249.91 250.40–250.93, 775.1
History of stroke	438.x
Peripheral vascular disease	440.x, 441.xx, 442.x, 443.x, 444.2x, 447.1, 449, 557.1, 557.9, V43.5
Obesity	278, V77.8
Congestive heart failure	398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 425, 428
Chronic kidney disease	403, 404, 582, 583, 585, 586, 588
Chronic obstructive pulmonary disease	491, 492, 496
Thrombocytopenia	287.3–287.5
Valvular heart disease	093.2, 394, 395, 396, 397, 424.0–424.3, 424.9, 746.3–746.6, V42.2, V43.4
Coronary artery disease	411, 412, 413, 414
Cirrhosis	571.2, 571.6, 571.5
Outcomes	
Gastrointestinal anastomotic leakage	44.61, 44.63, 44.69, 46.71, 46.72, 46.79 (procedure codes)
Gastrointestinal bleeding	578.x, 44.4x (procedure codes)
Acute kidney failure	584.x
Gastroparesis	536.3
Blood transfusion	99.0x
Cardiac complication	997.1, 423.0, 423.3
Respiratory complication	512.1, 518.4, 518.0, 785.52, 038.x, 995.91, 995.92
Pneumonia	481.x–487.x
Pulmonary embolus	415.1x
Urinary tract infection	599.0
Cardiac arrest	427.5x, 472.4x, 996.0x, 996.3x, 996.2x
Postoperative sepsis	785.52, 038.x, 995.91, 995.92
Postoperative shock	998.0x
Wound complication	567.x, 998.3x, 998.5x, 998.6