**Supplementary 1.** All ICD-10 diagnosis and procedure codes

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| **Diagnosis/Procedures** | **ICD-10 Codes** |
| Transplant codes | Z9481;T8600;T8601;T8602;T860 3;T8609;Z48290 |
|  | 30240Y0;30243Y0;30250Y0;30253Y0;30260Y0;30263Y0;30230Y1;30233Y1;30240Y1;30243Y1;30230Y2;30233Y2;30240Y2;30243Y2;30230Y3;30233Y3;30240Y3;30243Y3;30230Y4;30233Y4;30240Y4;30243Y4;30253Y1;30260Y1;30263Y1;30233X0;30233G0;30233G1;30233G2;30233G3;30233X1;30233X2;30233X3;30233X4;30233Y0;30243X0;30243G0;30243G1;30243G2;30243G3;30243X1;30243X2;30243X3;30243X4;0243Y4;30283X0;30283G0;30283G1;30283G2;30283G3;30283X1;30283X2;30283X3;30283X4;30283Y1;30283Y2;30283Y3;30283Y4 |
| Myelodysplastic syndrome | D46 |
| Lymphoid leukemia | C91 |
| Myeloid leukemia | C92 |
| Hodgkin’s lymphoma | C81 |
| Non-Hodgkin’s lymphoma | C85 |
| Aplastic anemias and bone marrow failure syndromes | D60 |
| HLH | D76.1;D76.2;D76.3 |
| Thalassemia | D56 |
| Sickle cell disease | D57 |
| Inborn errors of metabolism | E76;E75;E7152 |
| Primary immunodeficiency disorders | D80\* to D84\* |
| GVHD | D8981 |
| Hemolytic uremic syndrome | D593 |
| Cholangitis | K83 |
| Choledocholithiasis | K80 |
| Other biliary disease | K83.1, K83.8, K83.9, R17 |
| Hypertriglyceridemia | E78.1 |
| Hypercalcemia | E83.52 |
| Inflammatory bowel disease | K50\*, K51\* |
| Systemic lupus erythematosus | M32\*, L93\* |
| Diabetic ketoacidosis | E081, E0811, E091, E0911, E101, E1011, E111, E1111 |
| Cystic fibrosis | E84 |
| Alcohol | G62.1, G31.2, T510X1A,  T510X2A, T510X3A, T510X4A,  F10\*, Y90\*, K70\*, Z714\*, K29.0,  K29.1, K29.2. |
| Abdominal trauma | S36 \* to S39\* |
| Solid organ transplant | T86.1\*, T86.2\*, T86.3\*, T86.4 |
| Anomalies of pancreas | Q45.0 to Q45.3 |
| Acute kidney injury | N17 |
| Respiratory failure | J96.0\*, J96.2\*, J98.1\* |
| Intubation and mechanical ventilation (procedure codes) | 5A09357, 5A09457, 5A09557,  09HN7BZ, 0CHY7BZ,  0DH57BZ, 0NH17EZ, 5A1935Z,  5A1945Z, 5A1955Z, 0BH07DZ |
| Hypotension | I950;I959;I9589 |
| Use for vasopressor (procedure codes) | 3E030XZ;3E030XZ;3E043XZ;3E  040XZ;3E050XZ;3E053XZ;3E06  3XZ;3E060XZ |
| Multi-organ dysfunction syndrome | R6511 |
| Sepsis | A021;A227;A267;A327;A400;A4  01;A403;A408;A409;A4101;A410  2;A411;A412;A413;A414;A4150;  A4151;A4152;A4153;A4159;A41  81;A4189;A419;A427;A5486;B37  7;P360;P3610;P3619;P362;P3630;  P3639;P364;P365;P368;P369;R65  20;R6521;T8144XA;T8144XD;T8  144XS |
| PE | I26 |
| DVT | I824\*, I826\* |
| Central venous catheter placement (procedure codes) | 0JH63XZ, 0JHD3XZ, 0JHF3WZ,  0JHM3XZ, 0JHL3XZ |
| Pseudocyst | K86.3 |
| Percutaneous biliary procedures (procedure codes) | 0F943ZZ, 0FC93ZZ, 0F753Dz,  0F753DZ, 0F63ZZ, 0F783DZ,  0F783ZZ, 0F793ZZ, 0F793DZ,  0F993ZZ, 0F994ZZ, 0FC53ZZ,  0FC54ZZ, 0FC64ZZ, 0FC84ZZ,  0FC84ZZ, 0FC83ZZ, 0FC63ZZ. |
| Common bile duct exploration (procedure codes) | 0FT90ZZ, 0FT50ZZ, 0FT60ZZ,0FT70ZZ, 0FT80ZZ, 0F550ZZ,  0F560ZZ, 0F570ZZ, 0F580ZZ,0FB50ZZ, 0FB60ZZ, 0FB70ZZ,  0FB80ZZ, 0FC90ZZ, 0F9900Z,0F990ZZ, 0F9940Z, OF9400Z, 0FC400Z, 0FQ97ZZ,0FQ90ZZ, 0F150D3, 0F150DB,0F150Z3, 0F150ZB, 0F160D3,0F160DB, 0F160Z3, 0F160ZB,0F170D3, 0F170DB, 0F170Z3,0F170ZB, 0F180D3, 0F180DB,0F180Z3, 0F180ZB, 0F190D3,0F190DB, 0F190Z3, 0F190ZB,0F140D3, 0F140DB, 0F140Z3,  0F140ZB |
| Cholecystectomy (procedure codes) | 0FB40ZX, 0FB40ZZ, 0FB43ZX,  0FB43ZZ, 0FB48ZX, 0FB48ZZ,  0FB44ZX, 0FB44ZZ |
| ERCP (procedure codes) | 0FQC7ZZ, 0FQC8ZZ, 0F758ZZ,  0F768ZZ, 0F778ZZ, 0F7C8DZ,  0F7C8ZZ, 0F958ZZ, 0F968ZZ,  0F978ZZ, 0F988ZZ, 0F998ZZ,  0F9C8ZZ, 0F9D8ZZ, 0F9C80Z,  0F9980Z, 0F758DZ, 0F768DZ,  0F778DZ, 0F788DZ, 0F798DZ,  0FHB4DZ, 0FHB8DZ, 0FC58ZZ,  0FC68ZZ, 0FC78ZZ, 0FC98ZZ,  0FC88ZZ, 0FCC8ZZ, 0FF48ZZ,  0FF58ZZ, 0FF68ZZ, 0FF78ZZ,  0FF88ZZ, 0FF98ZZ, 0FFC8ZZ,  0F959ZX, 0F968ZX, 0F978ZX,  0F988ZX, 0F998ZX, 0F9C8ZX,  0FB48ZX, 0FB58ZX, 0FB68ZX,  0FB78ZX, 0FB88ZX, 0FB98ZX,  0FBC8ZX, 0FHD8DZ, 0FCD8ZZ,  0F7D8ZZ, 0F7D8DZ, 0FPB8DZ,  0FPD8DZ |