**Table S1. ICD9 codes for respiratory, hemorrhagic and infectious complications**

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| **ICD-9 code (Diagnosis or Procedure)** | | **ICD-9 Description** | **Comment** |
| **Respiratory Failure** | | |  |
| 96.7x | Other continuous invasive mechanical ventilation | | post-op > 24 hours |
| 93.9x | Respiratory therapy | | post-op > 24 hours |
| 518.5 | Pulmonary insufficiency following trauma and surgery | |  |
| 31.1 | Temporary tracheostomy | | post-op > 24 hours |
| 31.2 | Permanent tracheostomy | | post-op > 24 hours |
| **Hemorrhage** | | |  |
| 998.11 | hemorrhage complicating surgical procedure | | intra or post-op |
| 998.12 | hematoma complicating surgical procedure | | intra or post-op |
| **Infectious complications** | | |  |
| 038.xx | Septicemia | | post-op |
| 790.7 | Bacteremia | | post-op |
| 041.xx | Bacterial infections unspecified site | | post-op |
| 997.31 | Ventilator associated pneumonia | | post-op |
| 481 | Pneumococcal pneumonia [Streptococcus pneumonia pneumonia] | | IV antibiotic after Day 1 |
| 482.41 | Methicillin susceptible pneumonia due to Staphylococcus aureus | | IV antibiotic after Day 1 |
| 482.8x | Pneumonia due to other specified bacteria | | IV antibiotic after Day 1 |
| 484.xx | Pneumonia in infectious diseases classified elsewhere | | IV antibiotic after Day 1 |
| 486 | Pneumonia, organism unspecified | | IV antibiotic after Day 1 |
| 510.xx | Empyema | | IV antibiotic after Day 1 |
| 567.22 | Peritoneal abscess | |  |
| 567.29 | Other suppurative peritonitis | |  |
| 569.5x | Abscess of intestine | | IV antibiotic after Day 1 |
| 996.xx | Complications peculiar to certain specified procedures | |  |
| 519.2 | Mediastinitis | | Anytime post-op during hospitalization |
| 995.91 | Sepsis | | IV antibiotic after Day 1 |
| 995.92 | Severe sepsis | | IV antibiotic after Day 1 |
| 998.3x | disruption of wound/dehiscence | |  |
| **Cardiac complications** | | |  |
| 37.62 | Insertion of non-implantable heart assist system | | Procedure |
| 37.66 | Insertion of implantable heart assist system | | Procedure |
| 37.68 | Insertion of percutaneous external heart assist  device | | Procedure |
| 97.44 | Nonoperative removal of heart assist system | | Procedure |
| 427 | Paroxysmal supraventricular tachycardia | | Diagnosis |
| 427.1 | Paroxysmal ventricular tachycardia | | Diagnosis |
| 427.3x | Atrial fibrillation and flutter | | Diagnosis |
| 427.4x | Ventricular fibrillation and flutter | | Diagnosis |
| 37.21 | Right heart cardiac catheterization | | Procedure |
| 37.22 | Left heart cardiac catheterization | | Procedure |
| 37.23 | Combined right and left heart cardiac catheterization | | Procedure |
| 37.94 | ICD insertion | | Procedure |
| 99.61 | Atrial cardioversion | | Procedure |
| 99.62 | Other electric countershock of heart | | Procedure |
| 410 | Acute myocardial infarction | | Diagnosis |
| 410.0 | Acute myocardial infarction, of anterolateral wall | | Diagnosis |
| 410.00 | Acute myocardial infarction, of anterolateral wall,  episode of care unspecified | | Diagnosis |
| 410.01 | Acute myocardial infarction, of anterolateral wall,  initial episode of care | | Diagnosis |
| 410.1 | Acute myocardial infarction, of other anterior wall | | Diagnosis |
| 410.10 | Acute myocardial infarction, of other anterior wall,  episode of care unspecified | | Diagnosis |
| 410.11 | Acute myocardial infarction, of other anterior wall,  initial episode of care | | Diagnosis |
| 410.2 | Acute myocardial infarction, of inferolateral wall | | Diagnosis |
| 410.20 | Acute myocardial infarction, of inferolateral wall,  episode of care unspecified | | Diagnosis |
| 410.21 | Acute myocardial infarction, of inferolateral wall,  initial episode of care | | Diagnosis |
| 410.3 | Acute myocardial infarction, of inferoposterior wall | | Diagnosis |
| 410.30 | Acute myocardial infarction, of inferoposterior wall,  episode of care unspecified | | Diagnosis |
| 410.31 | Acute myocardial infarction, of inferoposterior wall,  initial episode of care | | Diagnosis |
| 410.4 | Acute myocardial infarction, of other inferior wall | | Diagnosis |
| 410.40 | Acute myocardial infarction, of other inferior wall,  episode of care unspecified | | Diagnosis |
| 410.41 | Acute myocardial infarction, of other inferior wall,  initial episode of care | | Diagnosis |
| 410.5 | Acute myocardial infarction, of other lateral wall | | Diagnosis |
| 410.50 | Acute myocardial infarction, of other lateral wall,  episode of care unspecified | | Diagnosis |
| 410.51 | Acute myocardial infarction, of other lateral wall,  initial episode of care | | Diagnosis |
| 410.6 | Acute myocardial infarction, true posterior wall infarction | | Diagnosis |
| 410.60 | True posterior wall infarction, episode of care unspecified | | Diagnosis |
| 410.61 | True posterior wall infarction, initial episode of care | | Diagnosis |
| 410.7 | Acute myocardial infarction, subendocardial infarction | | Diagnosis |
| 410.70 | Subendocardial infarction, episode of care unspecified | | Diagnosis |
| 410.71 | Subendocardial infarction, initial episode of care | | Diagnosis |
| 410.8 | Acute myocardial infarction, of other specified sites | | Diagnosis |
| 410.80 | Acute myocardial infarction of other specified sites,  episode of care unspecified | | Diagnosis |
| 410.81 | Acute myocardial infarction of other specified sites,  initial episode of care | | Diagnosis |
| 410.9 | Acute myocardial infarction, unspecified site | | Diagnosis |
| 410.90 | Acute myocardial infarction of unspecified site,  episode of care unspecified | | Diagnosis |
| 410.91 | Acute myocardial infarction of unspecified site,  initial episode of care | | Diagnosis |