

**Supplementary Table 1 The Clinical Classifications Softwarecodes used for this study were: Left ventricular assist device, pericardial effusion, cardiac tamponade, pericardial window, and pericardiocentesis**

| <b>Comorbidities</b>                  |                                                                                                                  |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Dyslipidemia                          | E78                                                                                                              |
| Chronic obstructive pulmonary disease | J41, J42, J43, J44                                                                                               |
| Carotid artery disease                | I652                                                                                                             |
| Old stroke                            | I63                                                                                                              |
| Hypertension                          | I10                                                                                                              |
| Peripheral vascular disease           | I739                                                                                                             |
| Hypothyroidism                        | E03, E031, E032, E033, E038, E039                                                                                |
| Diabetes Mellitus Types 1&2           | E10, E11                                                                                                         |
| Obesity                               | E660, E6601, E6609, E661, E662, E668, E669                                                                       |
| Congestive heart Failure              | I50                                                                                                              |
| Chronic Kidney Disease                | N18                                                                                                              |
| Liver disease                         | K70, K71, K72, K73, K74, K75, K76, K77                                                                           |
| Electrolyte derangement               | E870, E871, E872, E873, E874, E875, E876                                                                         |
| Smoking                               | Z87891, F17200, F17                                                                                              |
| Anemia                                | D50, D51, D52, D53, D55, D56, D57, D58, D59, D60, D61, D62, D63, D64                                             |
| CAD                                   | M I20.0, I2510 : I214, I21                                                                                       |
| Ionized Radiation                     | W888                                                                                                             |
| Atrial fibrillation                   | 148                                                                                                              |
| Congestive Heart F                    | ICD-10-CM I50.1, I50.20, I50.21, I50.22, I50.23, I50.30, I50.31, I50.32, I50.33, I50.40, I50.41, I50.42, I50.43) |

|                                        |                                      |
|----------------------------------------|--------------------------------------|
| Cardiac tamponade                      | I314                                 |
| Hemopericardium                        | I312                                 |
| Pericardial effusion                   | I31.3                                |
| Coronary Artery Bypass Grafting (CABG) | I25.81, I25. 811, I25.810, I25. 812  |
| Coronary Artery Bypass Grafting (CABG) | 0210, 0211, 0212, 0213               |
| Impella                                | 5A0221D, 5A0211D,                    |
| Need pericardiocentesis                | 0W9D40Z,0W9D4ZZ,0W9D30Z,0W9D3ZZ      |
| Open window                            | 0W9D00Z, 0W9D0ZZ                     |
| Heart transplant                       | 02YA0Z0, 02Y, 02YA0Z1, 02YA0Z2, Z941 |
| LVAD                                   | 02HA0QZ,                             |

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CAD: Coronary artery disease; LVAD: left ventricular assist device.