**Appendix 1: Complications in the Outcome “Major Complication”**

**Complication Frequency Relative Freq. (%)**

1. Perioperative respiratory failure 6054 5.87
2. Major disruption of surgical wound 43 0.04
3. Bleeding 7703 7.47
4. Pneumonia 7820 7.58
5. Atrial fibrillation or flutter 35104 34.05
6. Myocardial infarction 257 0.25
7. Acute kidney injury 8397 8.14
8. Cardiac arrest or another 1620 1.57

life-threatening postoperative incident

1. Shock 4944 4.80
2. Stroke 6965 6.76
3. Sepsis 5640 5.47
4. Pulmonary embolism 867 0.84
5. Deep venous thrombosis 1803 1.05
6. Coma 147 0.14

**Supplemental Table 1: Risk of In-Hospital/30-Day Mortality for Handover vs. No Handover of Anesthesia Care by Year, Type and Priority of Cardiac Surgery, Pre-Operative Clinical Factors (Cardiac Presentation and Comorbidities), and Mortality Risk Quartile for In-hospital/30-Day Mortality**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Subgroup | Unadjusted Values | | | Adjusted Values | | | |
|  | Handover  # of cases (MR, %) | No Handover  # of cases (MR,%) | Relative Risk,% (95% CI) | Handover  # of cases (MR,%) | No Handover  # of cases (MR, %) | Relative Risk,% (95% CI) | P-Value of interaction |
| **All Cases** | 8798 ( 3.6) | 94304 ( 2.4) | 1.51 (1.35, 1.70) | 8731.5 ( 2.9) | 94442.1 ( 2.5) | 1.15 (1.01, 1.31) | 0.03 |
| ***Type of Surgery*** |  |  |  |  |  |  |  |
| Iso-CABG | 4890 ( 2.0) | 48368 ( 1.5) | 1.35 (1.10, 1.66) | 4527.6 ( 1.9) | 48757.0 ( 1.6) | 1.22 (0.98, 1.53) | 0.57 |
| Iso- Valve | 1813 ( 3.9) | 26423 ( 2.5) | 1.57 (1.23, 1.99) | 2417.7 ( 3.0) | 25855.3 ( 2.6) | 1.14 (0.90, 1.45) |  |
| Valve/CABG | 1365 ( 6.0) | 13371 ( 4.2) | 1.42 (1.14, 1.78) | 1198.5 ( 4.4) | 13496.8 ( 4.4) | 1.00 (0.76, 1.32) |  |
| Aortic | 730 ( 8.8) | 6142 ( 4.7) | 1.86 (1.43, 2.41) | 587.7 ( 6.7) | 6333.0 ( 5.1) | 1.32 (0.96, 1.82) |  |
| **Priority** |  |  |  |  |  |  |  |
| Elective | 3126 ( 2.8) | 42994 ( 1.7) | 1.66 (1.34, 2.07) | 3332.1 ( 2.3) | 42151.6 ( 1.7) | 1.34 (1.06, 1.69) | 0.06 |
| Urgent | 5123 ( 3.0) | 48501 ( 2.6) | 1.16 (0.99, 1.37) | 5024.7 ( 2.5) | 49183.5 ( 2.6) | 0.95 (0.80, 1.14) |  |
| Emergency | 549 (13.7) | 2809 ( 9.5) | 1.43 (1.13, 1.82) | 374.7 (12.1) | 3107.0 ( 9.9) | 1.22 (0.91, 1.63) |  |
| **Hospital Status** |  |  |  |  |  |  |  |
| Teaching | 4446 ( 4.2) | 51727 ( 2.6) | 1.64 (1.41, 1.90) | 4857.0 ( 3.2) | 51444.2 ( 2.7) | 1.19 (1.01, 1.40) | 0.55 |
| Nonteaching | 4352 ( 3.0) | 42577 ( 2.1) | 1.39 (1.16, 1.66) | 3874.5 ( 2.4) | 42998.0 ( 2.2) | 1.10 (0.89, 1.35) |  |
| **Surgery Start Time** |  |  |  |  |  |  |  |
| 6am-12pm | 3177 ( 3.8) | 73821 ( 2.3) | 1.68 (1.40, 2.01) | 6484.2 ( 2.8) | 70421.0 ( 2.3) | 1.20 (1.03, 1.40) | 0.74 |
| 12pm-4pm | 4138 ( 2.8) | 15976 ( 2.3) | 1.22 (1.00, 1.50) | 1712.6 ( 2.4) | 18408.5 ( 2.5) | 0.99 (0.72, 1.35) |  |
| 4pm-8pm | 1343 ( 4.5) | 3830 ( 3.3) | 1.37 (1.01, 1.85) | 454.8 ( 4.0) | 4814.0 ( 3.5) | 1.17 (0.73, 1.87) |  |
| 8pm-12am | 65 ( 7.7) | 463 (10.4) | 0.74 (0.31, 1.80) | 54.7 ( 8.1) | 529.9 (10.0) | 0.81 (0.32, 2.05) |  |
| 12am-6am | 75 (18.7) | 214 (10.7) | 1.74 (0.94, 3.20) | 25.3 (15.4) | 268.7 (11.3) | 1.37 (0.52, 3.62) |  |
| **Surgery Duration** |  |  |  |  |  |  |  |
| <3 hours | 884 ( 2.7) | 12375 ( 1.7) | 1.63 (1.07, 2.48) | 1542.8 ( 3.8) | 12076.8 ( 1.7) | 2.28 (1.71, 3.03) | <0.001 |
| 3-5 hours | 4036 ( 1.7) | 48215 ( 1.6) | 1.01 (0.79, 1.30) | 3999.8 ( 1.4) | 47840.0 ( 1.7) | 0.86 (0.66, 1.12) |  |
| 5-7 hours | 2762 ( 3.9) | 26848 ( 2.6) | 1.49 (1.22, 1.82) | 2400.8 ( 3.0) | 27118.1 ( 2.7) | 1.11 (0.88, 1.41) |  |
| ≥7 hours | 1116 (10.7) | 6866 ( 8.1) | 1.32 (1.10, 1.59) | 788.1 ( 8.0) | 7407.2 ( 8.4) | 0.95 (0.74, 1.22) |  |
| **Demographic Factors** |  |  |  |  |  |  |  |
| Age |  |  |  |  |  |  |  |
| ≥75 | 2584 ( 5.6) | 27134 ( 4.0) | 1.40 (1.18, 1.65) | 2530.5 ( 4.4) | 27194.5 ( 4.1) | 1.07 (0.89, 1.30) | 0.006 |
| 65-75 | 2727 ( 3.5) | 29978 ( 2.3) | 1.54 (1.25, 1.91) | 2664.4 ( 2.2) | 29995.0 ( 2.3) | 0.94 (0.72, 1.22) |  |
| ≤65 | 3487 ( 2.2) | 37192 ( 1.3) | 1.70 (1.34, 2.16) | 3536.6 ( 2.2) | 37252.6 ( 1.4) | 1.61 (1.27, 2.03) |  |
| Gender |  |  |  |  |  |  |  |
| Female | 2758 ( 4.7) | 30845 ( 3.2) | 1.47 (1.23, 1.75) | 2837.2 ( 3.9) | 30774.7 ( 3.3) | 1.16 (0.95, 1.40) | 0.97 |
| Male | 6040 ( 3.1) | 63459 ( 2.0) | 1.56 (1.34, 1.82) | 5894.3 ( 2.4) | 63667.5 ( 2.1) | 1.15 (0.97, 1.37) |  |
| BMI |  |  |  |  |  |  |  |
| <18.5 | 97 ( 6.2) | 1073 ( 6.2) | 1.01 (0.45, 2.26) | 102.1 ( 4.0) | 1071.2 ( 6.5) | 0.62 (0.23, 1.64) | 0.31 |
| 18.5-39.9 | 8227 ( 3.4) | 88351 ( 2.3) | 1.48 (1.31, 1.67) | 8179.4 ( 2.8) | 88457.6 ( 2.4) | 1.16 (1.01, 1.32) |  |
| ≥40 | 474 ( 6.1) | 4880 ( 2.7) | 2.23 (1.51, 3.29) | 450.0 ( 4.0) | 4913.4 ( 2.9) | 1.36 (0.84, 2.21) |  |
| **Clinical factors** |  |  |  |  |  |  |  |
| AMI, <20D old |  |  |  |  |  |  |  |
| Yes | 1899 ( 4.5) | 16601 ( 3.3) | 1.36 (1.09, 1.69) | 1725.3 ( 4.2) | 16963.6 ( 3.5) | 1.20 (0.95, 1.53) | 0.63 |
| No | 6899 ( 3.3) | 77703 ( 2.2) | 1.54 (1.34, 1.76) | 7006.2 ( 2.5) | 77478.6 ( 2.3) | 1.12 (0.96, 1.31) |  |
| CHF |  |  |  |  |  |  |  |
| Yes | 2708 ( 5.8) | 26545 ( 4.4) | 1.34 (1.14, 1.57) | 2430.8 ( 4.6) | 26805.6 ( 4.5) | 1.03 (0.85, 1.24) | 0.07 |
| No | 6090 ( 2.6) | 67759 ( 1.6) | 1.62 (1.37, 1.91) | 6300.7 ( 2.2) | 67636.6 ( 1.7) | 1.30 (1.09, 1.55) |  |
| Cerebrovascular Disease |  |  |  |  |  |  |  |
| Yes | 1402 ( 5.9) | 14530 ( 3.9) | 1.50 (1.20, 1.88) | 1257.1 ( 4.3) | 14582.1 ( 4.1) | 1.05 (0.80, 1.38) | 0.39 |
| No | 7396 ( 3.2) | 79774 ( 2.1) | 1.51 (1.32, 1.72) | 7474.4 ( 2.6) | 79860.0 ( 2.2) | 1.20 (1.04, 1.39) |  |
| Diabetes |  |  |  |  |  |  |  |
| Yes | 2768 ( 3.7) | 29725 ( 2.6) | 1.44 (1.18, 1.77) | 2798.5 ( 2.6) | 29752.9 ( 2.6) | 0.98 (0.78, 1.25) | 0.099 |
| No | 6030 ( 3.6) | 64579 ( 2.3) | 1.55 (1.34, 1.78) | 5933.0 ( 3.0) | 64689.2 ( 2.4) | 1.24 (1.07, 1.45) |  |
| COPD |  |  |  |  |  |  |  |
| Yes | 1988 ( 4.3) | 20049 ( 3.7) | 1.14 (0.92, 1.42) | 1802.8 ( 3.5) | 20212.6 ( 3.9) | 0.91 (0.71, 1.17) | 0.02 |
| No | 6810 ( 3.4) | 74255 ( 2.0) | 1.69 (1.47, 1.93) | 6928.7 ( 2.7) | 74229.5 ( 2.1) | 1.28 (1.10, 1.48) |  |
| Renal Dysfunction |  |  |  |  |  |  |  |
| Yes | 2169 ( 7.2) | 22078 ( 4.6) | 1.58 (1.34, 1.86) | 2014.1 ( 6.0) | 22225.5 ( 4.8) | 1.25 (1.04, 1.50) | 0.29 |
| No | 6629 ( 2.4) | 72226 ( 1.7) | 1.41 (1.20, 1.66) | 6717.3 ( 1.9) | 72216.7 ( 1.8) | 1.09 (0.91, 1.30) |  |
| **Mortality Risk Quartile** |  |  |  |  |  |  |  |
| Q1 | 1977 ( 0.7) | 23799 ( 0.3) | 2.08 (1.18, 3.66) | 2113.5 ( 0.5) | 23598.0 ( 0.3) | 1.43 (0.75, 2.71) | 0.22 |
| Q2 | 2100 ( 0.6) | 23675 ( 0.9) | 0.70 (0.40, 1.23) | 2210.0 ( 0.7) | 23548.4 ( 0.9) | 0.76 (0.45, 1.28) |  |
| Q3 | 2163 ( 2.1) | 23612 ( 1.9) | 1.13 (0.83, 1.52) | 2133.9 ( 2.6) | 23620.9 ( 1.9) | 1.33 (1.01, 1.76) |  |
| Q4 | 2558 ( 9.5) | 23218 ( 6.5) | 1.46 (1.29, 1.67) | 2274.2 ( 7.5) | 23674.8 ( 6.7) | 1.11 (0.95, 1.29) |  |
| **Mortality Quartiles for Hospitals** |  |  |  |  |  |  |  |
| Q1 | 274 ( 4.7) | 16682 ( 2.5) | 1.87 (1.09, 3.21) | 378.5 ( 3.1) | 16579.8 ( 2.7) | 1.16 (0.65, 2.05) | 0.13 |
| Q2 | 841 ( 2.7) | 20327 ( 2.0) | 1.37 (0.90, 2.07) | 762.7 ( 3.3) | 20317.6 ( 2.1) | 1.57 (1.06, 2.34) |  |
| Q3 | 1663 ( 5.3) | 25765 ( 2.8) | 1.91 (1.54, 2.37) | 2268.7 ( 3.9) | 25537.8 ( 2.9) | 1.34 (1.08, 1.66) |  |
| Q4 | 6020 ( 3.2) | 31530 ( 2.2) | 1.44 (1.23, 1.68) | 5321.6 ( 2.4) | 32007.0 ( 2.3) | 1.02 (0.84, 1.22) |  |
| **Quartiles of Handover Propensity Score** |  |  |  |  |  |  |  |
| Q1 | 617 ( 2.1) | 25158 ( 1.5) | 1.40 (0.81, 2.42) | 2326.0 ( 2.5) | 23588.6 ( 1.5) | 1.69 (1.29, 2.21) | 0.02 |
| Q2 | 776 ( 1.9) | 25000 ( 1.6) | 1.20 (0.72, 2.00) | 1810.8 ( 1.9) | 23728.7 ( 1.6) | 1.17 (0.83, 1.66) |  |
| Q3 | 1730 ( 3.9) | 24045 ( 3.3) | 1.17 (0.92, 1.50) | 2363.3 ( 3.4) | 23424.4 ( 3.3) | 1.01 (0.80, 1.27) |  |
| Q4 | 5675 ( 3.9) | 20101 ( 3.3) | 1.17 (1.01, 1.36) | 2231.4 ( 3.5) | 23700.5 ( 3.5) | 0.99 (0.79, 1.25) |  |

AMI = acute myocardial infarction

BMI = body mass index

MR = mortality rate

CHF = congestive heart failure

COPD = chronic obstructive pulmonary disease

**Supplementary Table 2: Risk of Major Complications for Handover vs No Handover of Anesthesia Care by Year, Type and Priority of Cardiac Surgery, Demographic Factors, Pre-Operative Clinical Factors (Cardiac Presentation and Comorbidities), and Mortality Risk Quartile for In-hospital/30-Day Mortality**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Subgroup | Unadjusted Values | | | Adjusted Values | | | |
|  | Handover  # of cases (MR, %) | No Handover  # of cases (MR,%) | RR,% (95% CI) | Handover  # of cases (MR,%) | No Handover  # of cases (MR, %) | RR,% (95% CI) | P-Value of interaction |
| ***Type of Surgery*** |  |  |  |  |  |  |  |
| Iso-CABG | 4890 (21.9) | 48368 (18.7) | 1.17 (1.11, 1.24) | 4527.6 (20.4) | 48757.0 (18.9) | 1.08 (1.02, 1.15) | 0.51 |
| Iso- Valve | 1813 (28.9) | 26423 (22.1) | 1.31 (1.21, 1.41) | 2417.7 (23.6) | 25855.3 (22.3) | 1.06 (0.98, 1.14) |  |
| Valve/CABG | 1365 (36.6) | 13371 (30.6) | 1.20 (1.11, 1.29) | 1198.5 (33.4) | 13496.8 (31.0) | 1.08 (0.99, 1.17) |  |
| Aortic | 730 (43.0) | 6142 (29.6) | 1.45 (1.32, 1.59) | 587.7 (36.2) | 6333.0 (30.8) | 1.18 (1.05, 1.32) |  |
| **Priority** |  |  |  |  |  |  |  |
| Elective | 3126 (24.2) | 42994 (18.4) | 1.32 (1.23, 1.41) | 3332.1 (21.7) | 42151.6 (18.6) | 1.17 (1.09, 1.25) | 0.001 |
| Urgent | 5123 (26.9) | 48501 (24.0) | 1.12 (1.07, 1.18) | 5024.7 (24.1) | 49183.5 (24.2) | 0.99 (0.94, 1.05) |  |
| Emergency | 549 (49.4) | 2809 (42.7) | 1.16 (1.05, 1.27) | 374.7 (47.0) | 3107.0 (43.6) | 1.08 (0.96, 1.21) |  |
| **Hospital Status** |  |  |  |  |  |  |  |
| Teaching | 4446 (32.0) | 51727 (24.3) | 1.32 (1.26, 1.38) | 4857.0 (26.9) | 51444.2 (24.8) | 1.09 (1.03, 1.14) | 0.62 |
| Nonteaching | 4352 (22.6) | 42577 (19.2) | 1.18 (1.11, 1.25) | 3874.5 (20.7) | 42998.0 (19.5) | 1.06 (1.00, 1.13) |  |
| **Surgery Start Time** |  |  |  |  |  |  |  |
| 6am-12pm | 3177 (28.4) | 73821 (21.6) | 1.31 (1.24, 1.39) | 6484.2 (23.8) | 70421.0 (21.8) | 1.09 (1.04, 1.14) | 0.25 |
| 12pm-4pm | 4138 (26.1) | 15976 (21.8) | 1.20 (1.13, 1.27) | 1712.6 (24.5) | 18408.5 (22.3) | 1.10 (1.01, 1.20) |  |
| 4pm-8pm | 1343 (26.3) | 3830 (25.8) | 1.02 (0.92, 1.13) | 454.8 (24.3) | 4814.0 (26.7) | 0.91 (0.77, 1.08) |  |
| 8pm-12am | 65 (43.1) | 463 (43.6) | 0.99 (0.73, 1.33) | 54.7 (37.8) | 529.9 (40.4) | 0.94 (0.66, 1.33) |  |
| 12am-6am | 75 (60.0) | 214 (48.6) | 1.23 (0.98, 1.55) | 25.3 (57.6) | 268.7 (49.4) | 1.17 (0.82, 1.66) |  |
| **Surgery Duration** |  |  |  |  |  |  |  |
| <3 hours | 884 (17.5) | 12375 (15.8) | 1.11 (0.96, 1.29) | 1542.8 (21.0) | 12076.8 (15.8) | 1.32 (1.19, 1.47) | <0.001 |
| 3-5 hours | 4036 (20.9) | 48215 (18.9) | 1.10 (1.04, 1.18) | 3999.8 (18.9) | 47840.0 (19.0) | 0.99 (0.93, 1.06) |  |
| 5-7 hours | 2762 (30.5) | 26848 (25.5) | 1.20 (1.13, 1.27) | 2400.8 (27.7) | 27118.1 (25.7) | 1.08 (1.01, 1.15) |  |
| ≥7 hours | 1116 (51.0) | 6866 (41.8) | 1.22 (1.14, 1.30) | 788.1 (46.0) | 7407.2 (42.3) | 1.09 (1.00, 1.18) |  |
| **Demographic Factors** |  |  |  |  |  |  |  |
| Age |  |  |  |  |  |  |  |
| ≥75 | 2584 (35.9) | 27134 (28.0) | 1.28 (1.21, 1.35) | 2530.5 (33.1) | 27194.5 (28.4) | 1.17 (1.10, 1.24) | 0.008 |
| 65-75 | 2727 (25.3) | 29978 (21.8) | 1.16 (1.08, 1.24) | 2664.4 (22.4) | 29995.0 (22.1) | 1.01 (0.94, 1.09) |  |
| ≤65 | 3487 (22.7) | 37192 (17.8) | 1.27 (1.19, 1.36) | 3536.6 (19.0) | 37252.6 (18.1) | 1.05 (0.98, 1.13) |  |
| Gender |  |  |  |  |  |  |  |
| Female | 2758 (31.2) | 30845 (24.4) | 1.28 (1.21, 1.36) | 2837.2 (26.7) | 30774.7 (24.7) | 1.08 (1.01, 1.15) | 0.99 |
| Male | 6040 (25.6) | 63459 (20.9) | 1.23 (1.17, 1.28) | 5894.3 (22.9) | 63667.5 (21.2) | 1.08 (1.03, 1.13) |  |
| BMI |  |  |  |  |  |  |  |
| <18.5 | 97 (32.0) | 1073 (33.5) | 0.96 (0.71, 1.29) | 102.1 (22.7) | 1071.2 (33.6) | 0.68 (0.47, 0.97) | 0.009 |
| 18.5-39.9 | 8227 (27.1) | 88351 (21.7) | 1.25 (1.20, 1.29) | 8179.4 (24.1) | 88457.6 (22.0) | 1.09 (1.05, 1.14) |  |
| ≥40 | 474 (31.6) | 4880 (24.8) | 1.28 (1.11, 1.47) | 450.0 (25.2) | 4913.4 (25.4) | 0.99 (0.84, 1.17) |  |
| **Clinical factors** |  |  |  |  |  |  |  |
| AMI, <20D old |  |  |  |  |  |  |  |
| Yes | 1899 (31.6) | 16601 (27.4) | 1.15 (1.07, 1.24) | 1725.3 (29.4) | 16963.6 (27.9) | 1.06 (0.98, 1.14) | 0.61 |
| No | 6899 (26.2) | 77703 (20.9) | 1.26 (1.20, 1.31) | 7006.2 (22.8) | 77478.6 (21.1) | 1.08 (1.03, 1.13) |  |
| CHF |  |  |  |  |  |  |  |
| Yes | 2708 (39.0) | 26545 (31.9) | 1.23 (1.17, 1.29) | 2430.8 (34.7) | 26805.6 (32.3) | 1.08 (1.02, 1.14) | 0.74 |
| No | 6090 (22.2) | 67759 (18.2) | 1.22 (1.16, 1.28) | 6300.7 (20.0) | 67636.6 (18.4) | 1.09 (1.03, 1.15) |  |
| Cerebrovascular Disease |  |  |  |  |  |  |  |
| Yes | 1402 (34.1) | 14530 (29.1) | 1.17 (1.08, 1.26) | 1257.1 (31.8) | 14582.1 (29.5) | 1.08 (0.99, 1.18) | 0.92 |
| No | 7396 (26.1) | 79774 (20.7) | 1.26 (1.21, 1.31) | 7474.4 (22.8) | 79860.0 (21.0) | 1.09 (1.04, 1.13) |  |
| Diabetes |  |  |  |  |  |  |  |
| Yes | 2768 (27.4) | 29725 (23.8) | 1.15 (1.08, 1.23) | 2798.5 (24.3) | 29752.9 (24.1) | 1.01 (0.94, 1.08) | 0.02 |
| No | 6030 (27.4) | 64579 (21.2) | 1.29 (1.24, 1.35) | 5933.0 (24.1) | 64689.2 (21.5) | 1.12 (1.06, 1.17) |  |
| COPD |  |  |  |  |  |  |  |
| Yes | 1988 (33.7) | 20049 (27.5) | 1.22 (1.14, 1.30) | 1802.8 (30.3) | 20212.6 (27.9) | 1.09 (1.01, 1.17) | 0.91 |
| No | 6810 (25.5) | 74255 (20.5) | 1.24 (1.19, 1.30) | 6928.7 (22.5) | 74229.5 (20.8) | 1.08 (1.03, 1.13) |  |
| Renal Dysfunction |  |  |  |  |  |  |  |
| Yes | 2169 (39.4) | 22078 (31.6) | 1.25 (1.18, 1.32) | 2014.1 (34.3) | 22225.5 (32.1) | 1.07 (1.00, 1.14) | 0.63 |
| No | 6629 (23.4) | 72226 (19.1) | 1.23 (1.17, 1.29) | 6717.3 (21.1) | 72216.7 (19.3) | 1.09 (1.04, 1.14) |  |
| **Mortality Risk Quartile** |  |  |  |  |  |  |  |
| Q1 | 1977 (13.9) | 23799 (11.0) | 1.26 (1.12, 1.41) | 2113.5 (12.8) | 23598.0 (11.1) | 1.15 (1.02, 1.29) | 0.042 |
| Q2 | 2100 (18.2) | 23675 (16.4) | 1.11 (1.01, 1.22) | 2210.0 (15.6) | 23548.4 (16.5) | 0.95 (0.85, 1.05) |  |
| Q3 | 2163 (26.0) | 23612 (23.3) | 1.12 (1.04, 1.21) | 2133.9 (25.9) | 23620.9 (23.5) | 1.10 (1.02, 1.19) |  |
| Q4 | 2558 (46.4) | 23218 (37.7) | 1.23 (1.18, 1.29) | 2274.2 (41.3) | 23674.8 (38.2) | 1.08 (1.03, 1.14) |  |
| **Mortality Quartiles for Hospitals** |  |  |  |  |  |  |  |
| Q1 | 274 (28.5) | 16682 (22.4) | 1.27 (1.05, 1.54) | 378.5 (20.9) | 16579.8 (22.7) | 0.92 (0.75, 1.12) | 0.18 |
| Q2 | 841 (23.4) | 20327 (19.5) | 1.20 (1.06, 1.36) | 762.7 (23.2) | 20317.6 (19.7) | 1.17 (1.03, 1.34) |  |
| Q3 | 1663 (27.0) | 25765 (21.5) | 1.25 (1.16, 1.36) | 2268.7 (22.3) | 25537.8 (21.9) | 1.02 (0.94, 1.10) |  |
| Q4 | 6020 (28.0) | 31530 (23.8) | 1.17 (1.12, 1.23) | 5321.6 (25.3) | 32007.0 (24.1) | 1.05 (1.00, 1.10) |  |
| **Quartiles of Handover Propensity Score** |  |  |  |  |  |  |  |
| Q1 | 617 (18.8) | 25158 (17.0) | 1.11 (0.94, 1.31) | 2326.0 (18.9) | 23588.6 (17.0) | 1.12 (1.02, 1.22) | 0.09 |
| Q2 | 776 (19.2) | 25000 (19.8) | 0.97 (0.84, 1.12) | 1810.8 (19.3) | 23728.7 (19.8) | 0.98 (0.89, 1.08) |  |
| Q3 | 1730 (32.8) | 24045 (27.4) | 1.20 (1.12, 1.28) | 2363.3 (30.8) | 23424.4 (27.5) | 1.12 (1.05, 1.19) |  |
| Q4 | 5675 (27.8) | 20101 (24.7) | 1.13 (1.07, 1.18) | 2231.4 (26.4) | 23700.5 (25.2) | 1.05 (0.97, 1.13) |  |

RR = Relative Risk

AMI = acute myocardial infarction

BMI = body mass index

CHF = congestive heart failure

COPD = chronic obstructive pulmonary disease

**Supplemental Table 3: Risk of Readmission within 30 Days for Handover vs. No Handover of Anesthesia Care by Year, Type and Priority of Cardiac Surgery, Demographic Factors, Pre-Operative Clinical Factors (Cardiac Presentation and Comorbidities), and** **Mortality Risk Quartile for In-hospital/30-Day Mortality**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Subgroup | Unadjusted Values | | | Adjusted Values | | | |
|  | Handover  # of cases (MR, %) | No Handover  # of cases (MR,%) | Relative Risk,% (95% CI) | Handover  # of cases (MR,%) | No Handover  # of cases (MR, %) | Relative Risk ,% (95% CI) | P-Value of interaction |
| **All Cases** | 8798 (13.8) | 94304 (14.0) | 0.99 (0.93, 1.04) | 8731.5 (13.4) | 94442.1 (14.1) | 0.95 (0.90, 1.00) | 0.06 |
| ***Type of Surgery*** |  |  |  |  |  |  |  |
| Iso-CABG | 4890 (13.1) | 48368 (13.1) | 1.00 (0.93, 1.08) | 4527.6 (12.5) | 48757.0 (13.2) | 0.95 (0.87, 1.03) | 0.25 |
| Iso- Valve | 1813 (13.4) | 26423 (14.1) | 0.95 (0.84, 1.07) | 2417.7 (13.8) | 25855.3 (14.1) | 0.98 (0.88, 1.08) |  |
| Valve/CABG | 1365 (16.5) | 13371 (16.3) | 1.01 (0.89, 1.15) | 1198.5 (16.2) | 13496.8 (16.3) | 1.00 (0.87, 1.14) |  |
| Aortic | 730 (14.5) | 6142 (15.8) | 0.92 (0.76, 1.11) | 587.7 (12.3) | 6333.0 (15.9) | 0.78 (0.62, 0.97) |  |
| **Priority** |  |  |  |  |  |  |  |
| Elective | 3126 (12.8) | 42994 (12.8) | 1.00 (0.91, 1.10) | 3332.1 (13.0) | 42151.6 (12.9) | 1.01 (0.92, 1.11) | 0.15 |
| Urgent | 5123 (14.4) | 48501 (15.1) | 0.96 (0.89, 1.03) | 5024.7 (13.6) | 49183.5 (15.1) | 0.90 (0.84, 0.97) |  |
| Emergency | 549 (14.0) | 2809 (14.4) | 0.98 (0.78, 1.22) | 374.7 (12.8) | 3107.0 (14.6) | 0.88 (0.67, 1.16) |  |
| **Hospital Status** |  |  |  |  |  |  |  |
| Teaching | 4446 (14.8) | 51727 (14.2) | 1.04 (0.96, 1.12) | 4857.0 (13.7) | 51444.2 (14.3) | 0.96 (0.89, 1.03) | 0.60 |
| Nonteaching | 4352 (12.9) | 42577 (13.8) | 0.94 (0.86, 1.01) | 3874.5 (12.9) | 42998.0 (13.8) | 0.93 (0.86, 1.02) |  |
| **Surgery Start Time** |  |  |  |  |  |  |  |
| 6am-12pm | 3177 (14.3) | 73821 (13.9) | 1.02 (0.94, 1.12) | 6484.2 (13.3) | 70421.0 (13.9) | 0.96 (0.90, 1.02) | 0.94 |
| 12pm-4pm | 4138 (13.6) | 15976 (14.3) | 0.95 (0.87, 1.03) | 1712.6 (13.5) | 18408.5 (14.4) | 0.93 (0.82, 1.06) |  |
| 4pm-8pm | 1343 (13.5) | 3830 (14.5) | 0.93 (0.79, 1.08) | 454.8 (13.1) | 4814.0 (14.9) | 0.88 (0.69, 1.13) |  |
| 8pm-12am | 65 (15.4) | 463 (16.6) | 0.93 (0.50, 1.69) | 54.7 (13.5) | 529.9 (15.5) | 0.88 (0.43, 1.76) |  |
| 12am-6am | 75 (14.7) | 214 (13.1) | 1.12 (0.59, 2.14) | 25.3 (16.1) | 268.7 (13.1) | 1.23 (0.48, 3.15) |  |
| **Surgery Duration** |  |  |  |  |  |  |  |
| <3 hours | 884 (13.1) | 12375 (12.5) | 1.05 (0.88, 1.25) | 1542.8 (12.8) | 12076.8 (12.6) | 1.02 (0.89, 1.17) | 0.12 |
| 3-5 hours | 4036 (12.2) | 48215 (13.6) | 0.90 (0.83, 0.98) | 3999.8 (12.0) | 47840.0 (13.6) | 0.88 (0.81, 0.97) |  |
| 5-7 hours | 2762 (15.8) | 26848 (15.0) | 1.05 (0.96, 1.15) | 2400.8 (15.4) | 27118.1 (15.1) | 1.02 (0.93, 1.13) |  |
| ≥7 hours | 1116 (15.3) | 6866 (16.0) | 0.96 (0.83, 1.11) | 788.1 (15.0) | 7407.2 (16.1) | 0.93 (0.78, 1.11) |  |
| **Demographic Factors** |  |  |  |  |  |  |  |
| Age |  |  |  |  |  |  |  |
| ≥75 | 2584 (16.9) | 27134 (16.5) | 1.03 (0.94, 1.12) | 2530.5 (17.6) | 27194.5 (16.5) | 1.07 (0.98, 1.17) | 0.002 |
| 65-75 | 2727 (12.2) | 29978 (13.8) | 0.89 (0.80, 0.98) | 2664.4 (11.6) | 29995.0 (13.9) | 0.84 (0.75, 0.93) |  |
| ≤65 | 3487 (12.9) | 37192 (12.5) | 1.03 (0.94, 1.13) | 3536.6 (11.7) | 37252.6 (12.5) | 0.93 (0.85, 1.03) |  |
| Gender |  |  |  |  |  |  |  |
| Female | 2758 (16.2) | 30845 (16.2) | 1.00 (0.91, 1.09) | 2837.2 (15.9) | 30774.7 (16.3) | 0.97 (0.89, 1.07) | 0.46 |
| Male | 6040 (12.8) | 63459 (13.0) | 0.98 (0.92, 1.06) | 5894.3 (12.2) | 63667.5 (13.0) | 0.93 (0.87, 1.00) |  |
| BMI |  |  |  |  |  |  |  |
| <18.5 | 97 (14.4) | 1073 (15.4) | 0.94 (0.57, 1.55) | 102.1 (10.4) | 1071.2 (15.3) | 0.68 (0.38, 1.22) | 0.26 |
| 18.5-39.9 | 8227 (13.6) | 88351 (13.8) | 0.98 (0.93, 1.04) | 8179.4 (13.3) | 88457.6 (13.9) | 0.96 (0.91, 1.02) |  |
| ≥40 | 474 (17.5) | 4880 (17.2) | 1.02 (0.83, 1.25) | 450.0 (14.5) | 4913.4 (17.3) | 0.84 (0.67, 1.06) |  |
| **Clinical factors** |  |  |  |  |  |  |  |
| AMI, <20D old |  |  |  |  |  |  |  |
| Yes | 1899 (15.0) | 16601 (15.0) | 1.00 (0.89, 1.11) | 1725.3 (14.8) | 16963.6 (15.1) | 0.98 (0.87, 1.10) | 0.54 |
| No | 6899 (13.5) | 77703 (13.8) | 0.98 (0.92, 1.04) | 7006.2 (13.0) | 77478.6 (13.9) | 0.94 (0.88, 1.00) |  |
| CHF |  |  |  |  |  |  |  |
| Yes | 2708 (16.9) | 26545 (17.2) | 0.99 (0.90, 1.08) | 2430.8 (18.2) | 26805.6 (17.2) | 1.06 (0.97, 1.15) | 0.005 |
| No | 6090 (12.4) | 67759 (12.8) | 0.97 (0.91, 1.04) | 6300.7 (11.5) | 67636.6 (12.9) | 0.90 (0.83, 0.96) |  |
| Cerebrovascular Disease |  |  |  |  |  |  |  |
| Yes | 1402 (17.3) | 14530 (16.7) | 1.03 (0.92, 1.17) | 1257.1 (17.9) | 14582.1 (16.8) | 1.07 (0.94, 1.21) | 0.048 |
| No | 7396 (13.2) | 79774 (13.5) | 0.97 (0.92, 1.03) | 7474.4 (12.6) | 79860.0 (13.6) | 0.93 (0.87, 0.99) |  |
| Diabetes |  |  |  |  |  |  |  |
| Yes | 2768 (15.3) | 29725 (16.0) | 0.95 (0.87, 1.05) | 2798.5 (14.9) | 29752.9 (16.1) | 0.92 (0.84, 1.01) | 0.47 |
| No | 6030 (13.2) | 64579 (13.1) | 1.00 (0.94, 1.07) | 5933.0 (12.7) | 64689.2 (13.1) | 0.96 (0.90, 1.03) |  |
| COPD |  |  |  |  |  |  |  |
| Yes | 1988 (17.4) | 20049 (17.0) | 1.02 (0.92, 1.13) | 1802.8 (16.7) | 20212.6 (17.0) | 0.98 (0.88, 1.09) | 0.50 |
| No | 6810 (12.8) | 74255 (13.2) | 0.97 (0.91, 1.03) | 6928.7 (12.5) | 74229.5 (13.3) | 0.94 (0.88, 1.00) |  |
| Renal Dysfunction |  |  |  |  |  |  |  |
| Yes | 2169 (16.2) | 22078 (17.7) | 0.92 (0.83, 1.01) | 2014.1 (15.5) | 22225.5 (17.7) | 0.87 (0.79, 0.97) | 0.06 |
| No | 6629 (13.0) | 72226 (12.9) | 1.01 (0.95, 1.08) | 6717.3 (12.7) | 72216.7 (13.0) | 0.98 (0.92, 1.05) |  |
| **Mortality Risk Quartile** |  |  |  |  |  |  |  |
| Q1 | 1977 ( 8.4) | 23799 ( 9.2) | 0.92 (0.79, 1.06) | 2113.5 ( 8.7) | 23598.0 ( 9.2) | 0.95 (0.82, 1.09) | 0.89 |
| Q2 | 2100 (13.0) | 23675 (12.7) | 1.03 (0.91, 1.15) | 2210.0 (11.8) | 23548.4 (12.8) | 0.92 (0.82, 1.04) |  |
| Q3 | 2163 (15.2) | 23612 (15.5) | 0.98 (0.88, 1.09) | 2133.9 (15.2) | 23620.9 (15.6) | 0.98 (0.88, 1.09) |  |
| Q4 | 2558 (17.5) | 23218 (18.8) | 0.93 (0.85, 1.02) | 2274.2 (17.5) | 23674.8 (18.8) | 0.93 (0.85, 1.02) |  |
| **Mortality Quartiles for Hospitals** |  |  |  |  |  |  |  |
| Q1 | 274 (15.3) | 16682 (13.8) | 1.11 (0.84, 1.47) | 378.5 (15.3) | 16579.8 (13.9) | 1.10 (0.87, 1.40) | 0.06 |
| Q2 | 841 (17.0) | 20327 (15.1) | 1.12 (0.96, 1.31) | 762.7 (16.6) | 20317.6 (15.2) | 1.09 (0.93, 1.29) |  |
| Q3 | 1663 (13.4) | 25765 (13.9) | 0.96 (0.85, 1.09) | 2268.7 (12.1) | 25537.8 (14.0) | 0.86 (0.77, 0.97) |  |
| Q4 | 6020 (13.4) | 31530 (13.5) | 0.99 (0.93, 1.07) | 5321.6 (13.3) | 32007.0 (13.6) | 0.98 (0.91, 1.06) |  |
| **Quartiles of Handover Propensity Score** |  |  |  |  |  |  |  |
| Q1 | 617 (13.0) | 25158 (12.9) | 1.01 (0.82, 1.24) | 2326.0 (12.3) | 23588.6 (12.9) | 0.96 (0.85, 1.07) | 0.54 |
| Q2 | 776 (12.1) | 25000 (13.7) | 0.88 (0.73, 1.07) | 1810.8 (12.1) | 23728.7 (13.7) | 0.88 (0.78, 1.00) |  |
| Q3 | 1730 (15.5) | 24045 (15.3) | 1.01 (0.90, 1.13) | 2363.3 (15.2) | 23424.4 (15.3) | 1.00 (0.90, 1.10) |  |
| Q4 | 5675 (13.7) | 20101 (14.3) | 0.95 (0.88, 1.03) | 2231.4 (13.5) | 23700.5 (14.5) | 0.93 (0.84, 1.04) |  |

AMI = acute myocardial infarction

BMI = body mass index

ReadR = Readmission Rate

CHF= congestive heart failure

COPD = chronic obstructive pulmonary disease

**Supplementary Table 4: Length of Stay for Handover vs. No Handover of Anesthesia Care by Year, Type and Priority of Cardiac Surgery, Demographic Factors, Pre-Operative Clinical Factors (Cardiac Presentation and Comorbidities), and Mortality Risk Quartile for In-hospital/30-Day Mortality**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Baseline Variable | Unadjusted Values | | | Adjusted Values | | | |
|  | Handover  Mean (±SD) | No Handover  Mean (±SD) | RD,% (95%CI) | Handover  Mean (±SD) | No Handover  Mean (±SD) | RD,% (95%CI) | P-Value of interaction |
| ***Type of Surgery*** |  |  |  |  |  |  |  |
| Iso-CABG | 8.0 ( 7.1) | 7.4 ( 7.9) | 0.7 (0.4, 0.9) | 7.7 ( 6.8) | 7.4 ( 7.9) | 0.3 (0.0, 0.5) | 0.58 |
| Iso- Valve | 10.5 (10.9) | 8.8 ( 8.5) | 1.7 (1.3, 2.1) | 9.3 (11.1) | 8.9 ( 8.5) | 0.5 (0.1, 0.9) |  |
| Valve/CABG | 11.8 (12.1) | 10.5 (10.6) | 1.2 (0.6, 1.9) | 11.3 (10.7) | 10.7 (10.9) | 0.6 (-.1, 1.2) |  |
| Aortic | 11.9 (10.5) | 10.0 (11.0) | 1.9 (1.0, 2.7) | 10.5 ( 8.5) | 10.4 (11.7) | 0.1 (-.9, 1.1) |  |
| **Priority** |  |  |  |  |  |  |  |
| Elective | 8.7 ( 7.5) | 7.6 ( 6.6) | 1.1 (0.9, 1.3) | 8.2 ( 7.5) | 7.6 ( 6.6) | 0.6 (0.4, 0.9) | 0.004 |
| Urgent | 9.5 ( 9.7) | 8.8 ( 9.9) | 0.6 (0.3, 0.9) | 8.9 ( 9.1) | 8.9 (10.0) | -.1 (-.3, 0.2) |  |
| Emergency | 13.2 (13.5) | 12.8 (15.1) | 0.4 ( -1, 1.9) | 13.2 (11.6) | 13.0 (15.8) | 0.1 ( -2, 1.9) |  |
| **Hospital Status** |  |  |  |  |  |  |  |
| Teaching | 9.9 ( 9.7) | 8.6 ( 8.8) | 1.3 (1.1, 1.6) | 9.1 ( 9.4) | 8.7 ( 8.9) | 0.4 (0.1, 0.6) | 0.78 |
| Nonteaching | 8.9 ( 8.8) | 8.1 ( 8.8) | 0.8 (0.5, 1.1) | 8.5 ( 8.0) | 8.2 ( 8.9) | 0.3 (0.0, 0.6) |  |
| **Surgery Start Time** |  |  |  |  |  |  |  |
| 6am-12pm | 9.7 (10.1) | 8.3 ( 8.8) | 1.4 (1.1, 1.7) | 8.8 (12.9) | 8.3 ( 8.7) | 0.4 (0.2, 0.7) | 0.08 |
| 12pm-4pm | 9.0 ( 7.9) | 8.3 ( 8.3) | 0.7 (0.4, 0.9) | 8.6 ( 4.8) | 8.4 ( 9.1) | 0.2 (-.2, 0.6) |  |
| 4pm-8pm | 9.7 (10.6) | 9.5 ( 9.3) | 0.2 (-0.4, 0.8) | 9.3 ( 5.7) | 9.8 (11.3) | -0.5 ( -1, 0.5) |  |
| 8pm-12am | 10.6 ( 7.7) | 12.2 (11.9) | -2.0 ( -5.0, 1.5) | 9.8 ( 6.1) | 11.8 (12.4) | -2.0 ( -5.0, 1.5) |  |
| 12am-6am | 17.8 (13.4) | 14.1 (14.7) | 3.7 (-0.5, 7.8) | 15.7 ( 7.2) | 14.6 (16.8) | 1.2 ( -6.0, 7.8) |  |
| **Surgery Duration** |  |  |  |  |  |  |  |
| <3 hours | 7.8 ( 8.4) | 6.9 ( 5.9) | 0.9 (0.5, 1.3) | 8.0 (11.3) | 6.9 ( 5.8) | 1.1 (0.8, 1.4) | <0.001 |
| 3-5 hours | 8.2 ( 6.7) | 7.8 ( 7.8) | 0.4 (0.2, 0.7) | 7.8 ( 6.1) | 7.8 ( 7.8) | -0.0 (-0.3, 0.2) |  |
| 5-7 hours | 10.0 (10.1) | 9.1 ( 9.9) | 0.9 (0.5, 1.3) | 9.6 ( 9.3) | 9.2 (10.1) | 0.4 (0.0, 0.9) |  |
| ≥7 hours | 13.9 (13.9) | 12.6 (12.8) | 1.3 (0.4, 2.2) | 13.3 (11.9) | 12.9 (13.6) | 0.5 (-0.6, 1.5) |  |
| **Demographic Factors** |  |  |  |  |  |  |  |
| Age |  |  |  |  |  |  |  |
| ≥75 | 11.4 (11.3) | 9.9 ( 9.9) | 1.5 (1.1, 2.0) | 10.7 (10.8) | 10.0 (10.1) | 0.8 (0.3, 1.2) | 0.03 |
| 65-75 | 9.1 ( 9.1) | 8.3 ( 8.2) | 0.9 (0.5, 1.2) | 8.6 ( 8.6) | 8.3 ( 8.3) | 0.2 (-.1, 0.5) |  |
| ≤65 | 8.1 ( 7.3) | 7.4 ( 8.2) | 0.8 (0.5, 1.1) | 7.6 ( 6.8) | 7.5 ( 8.3) | 0.1 (-.1, 0.4) |  |
| Gender |  |  |  |  |  |  |  |
| Female | 10.8 (11.2) | 9.2 (10.3) | 1.5 (1.1, 2.0) | 10.0 (10.6) | 9.3 (10.4) | 0.7 (0.3, 1.2) | 0.005 |
| Male | 8.8 ( 8.2) | 8.0 ( 7.9) | 0.8 (0.6, 1.0) | 8.2 ( 7.7) | 8.1 ( 8.1) | 0.1 (-.1, 0.4) |  |
| BMI |  |  |  |  |  |  |  |
| <18.5 | 11.6 (11.1) | 10.7 (10.6) | 0.9 ( -1, 3.2) | 9.9 ( 7.9) | 10.8 (10.6) | -1.0 ( -3.0, 1.2) | 0.27 |
| 18.5-39.9 | 9.3 ( 9.2) | 8.3 ( 8.3) | 1.0 (0.8, 1.2) | 8.7 ( 8.6) | 8.4 ( 8.5) | 0.3 (0.1, 0.5) |  |
| ≥40 | 10.9 (10.6) | 9.5 (14.3) | 1.4 (0.1, 2.8) | 10.3 (10.9) | 9.6 (14.3) | 0.7 (-.7, 2.1) |  |
| **Clinical factors** |  |  |  |  |  |  |  |
| AMI, <20D old |  |  |  |  |  |  |  |
| Yes | 10.2 (11.1) | 9.4 (12.3) | 0.8 (0.2, 1.4) | 9.6 ( 9.9) | 9.5 (12.5) | 0.1 (-.5, 0.8) | 0.38 |
| No | 9.2 ( 8.7) | 8.2 ( 7.8) | 1.0 (0.8, 1.2) | 8.6 ( 8.4) | 8.2 ( 7.9) | 0.4 (0.2, 0.6) |  |
| CHF |  |  |  |  |  |  |  |
| Yes | 12.4 (12.7) | 10.9 (12.5) | 1.5 (1.0, 2.0) | 11.3 (10.6) | 11.0 (12.7) | 0.3 (-0.3, 0.8) | 0.53 |
| No | 8.1 ( 7.0) | 7.4 ( 6.6) | 0.7 (0.5, 0.9) | 7.9 ( 7.6) | 7.5 ( 6.7) | 0.4 (0.2, 0.6) |  |
| Cerebrovascular Disease |  |  |  |  |  |  |  |
| Yes | 11.0 (11.0) | 9.8 (10.0) | 1.2 (0.6, 1.7) | 10.1 ( 9.4) | 9.9 (10.1) | 0.2 (-0.4, 0.8) | 0.50 |
| No | 9.1 ( 8.9) | 8.1 ( 8.5) | 1.0 (0.8, 1.2) | 8.6 ( 8.6) | 8.2 ( 8.7) | 0.4 (0.2, 0.6) |  |
| Diabetes |  |  |  |  |  |  |  |
| Yes | 9.9 (10.3) | 8.9 (10.1) | 1.0 (0.6, 1.4) | 9.1 ( 9.6) | 8.9 (10.2) | 0.1 (-0.3, 0.5) | 0.17 |
| No | 9.2 ( 8.8) | 8.1 ( 8.1) | 1.0 (0.8, 1.3) | 8.7 ( 8.3) | 8.2 ( 8.2) | 0.4 (0.2, 0.6) |  |
| COPD |  |  |  |  |  |  |  |
| Yes | 11.1 (11.7) | 9.9 (10.4) | 1.2 (0.7, 1.7) | 10.3 ( 9.7) | 10.0 (10.6) | 0.3 (-0.2, 0.8) | 0.85 |
| No | 8.9 ( 8.4) | 8.0 ( 8.3) | 1.0 (0.7, 1.2) | 8.4 ( 8.4) | 8.0 ( 8.4) | 0.4 (0.2, 0.6) |  |
| Renal Dysfunction |  |  |  |  |  |  |  |
| Yes | 12.2 (12.6) | 10.7 (12.9) | 1.6 (1.0, 2.2) | 11.1 (11.1) | 10.8 (13.1) | 0.3 (-.3, 0.9) | 0.60 |
| No | 8.5 ( 7.8) | 7.7 ( 7.0) | 0.8 (0.7, 1.0) | 8.1 ( 7.7) | 7.8 ( 7.1) | 0.4 (0.2, 0.6) |  |
| **Mortality Risk Quartile** |  |  |  |  |  |  |  |
| Q1 | 6.2 ( 3.1) | 5.8 ( 4.0) | 0.4 (0.2, 0.6) | 5.9 ( 2.8) | 5.8 ( 4.0) | 0.1 (-.0, 0.3) | 0.18 |
| Q2 | 7.5 ( 5.3) | 7.0 ( 5.1) | 0.5 (0.3, 0.7) | 7.3 ( 5.9) | 7.0 ( 5.1) | 0.2 (-.0, 0.4) |  |
| Q3 | 9.1 ( 7.2) | 8.6 ( 7.4) | 0.5 (0.2, 0.9) | 8.8 ( 6.8) | 8.6 ( 7.4) | 0.1 (-0.2, 0.5) |  |
| Q4 | 14.1 (14.2) | 12.4 (14.0) | 1.7 (1.1, 2.3) | 13.2 (13.1) | 12.6 (14.3) | 0.6 (0.0, 1.3) |  |
| **Mortality Quartiles for Hospitals** |  |  |  |  |  |  |  |
| Q1 | 8.8 ( 8.4) | 8.3 (11.1) | 0.4 (-.9, 1.8) | 7.7 ( 7.9) | 8.4 (11.1) | -0.7 ( -2.0, 0.5) | 0.39 |
| Q2 | 7.8 ( 6.4) | 7.4 ( 6.2) | 0.5 (0.0, 0.9) | 7.6 ( 5.5) | 7.4 ( 6.3) | 0.2 (-0.3, 0.6) |  |
| Q3 | 9.1 ( 9.3) | 8.5 ( 8.7) | 0.6 (0.2, 1.1) | 8.5 (10.4) | 8.6 ( 8.9) | -0.1 (-0.5, 0.3) |  |
| Q4 | 9.7 ( 9.6) | 9.0 ( 8.9) | 0.8 (0.5, 1.0) | 9.2 ( 8.6) | 9.0 ( 9.1) | 0.1 (-0.2, 0.4) |  |
| **Quartiles of Handover Propensity Score** |  |  |  |  |  |  |  |
| Q1 | 7.9 ( 7.9) | 7.1 ( 6.3) | 0.7 (0.2, 1.2) | 7.8 (15.2) | 7.1 ( 6.1) | 0.7 (0.4, 0.9) | 0.06 |
| Q2 | 8.1 ( 7.8) | 7.9 ( 7.5) | 0.2 (-.4, 0.7) | 8.0 (11.5) | 7.9 ( 7.3) | 0.1 (-.2, 0.5) |  |
| Q3 | 10.5 (11.1) | 9.7 (11.3) | 0.8 (0.3, 1.4) | 10.1 (12.3) | 9.7 (11.2) | 0.4 (-0.1, 0.9) |  |
| Q4 | 9.4 ( 9.0) | 9.0 ( 9.3) | 0.4 (0.2, 0.7) | 9.1 ( 5.2) | 9.1 (10.4) | -0.0 (-0.5, 0.4) |  |

AMI = acute myocardial infarction

BMI = body mass index

MR = mortality rate

CHF= congestive heart failure

COPD = chronic obstructive pulmonary disease