**Supplements**

Table S1 – ICD 9 and ICD 10 codes used for comorbidities and additional procedures performed.

Diagnosis/Procedure

|  |  |
| --- | --- |
|  Valve replacement/procedure other than aortic valve  | ICD 10 codes – 02R907Z, 02R908Z, 02R90JZ, 02R90KZ, 02RD07Z, 02RD08Z, 02RD0JZ, 02RD0KZ,02RG07Z, 02RG08Z, 02RG0JZ, 02RG0KZ, 02RH07Z, 02RH08Z, 02RH0JZ, 02RH0KZ, 02RJ07Z, 02RJ08Z, 02RJ0JZ, 02RJ0KZICD 9 codes – 3523,3524,3525,3526,3527,3528,3531,3532,3533 |
| Coronary artery bypass surgery  | ICD 10 codes – 02R907Z,02R908Z,02R90JZ,02R90KZ,02RD07Z, 02RD08Z,02RD0JZ,02RD0KZ,02RG07Z,02RG08Z, 02RG0JZ, 02RG0KZ, 02RH07Z,02RH08Z,02RH0JZ, 02RH0KZ,02RJ07Z,02RJ08Z,02RJ0JZ, 02RJ0KZICD 9 codes – 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3619, 362 |
| Prior Coronary artery bypass | ICD 10 codes – Z951ICD 9 codes – V4581 |
| Prior Percutaneous coronary intervention | ICD 10 codes – Z9861, I955ICD 9 codes – V4582 |
| Coronary intervention using stent placement  | ICD 10 codes – 0270346,0272346,027034Z,027234Z,0270356,0272356,027035Z,027235Z, 0270366,0272366,027036Z,027236Z,0270376,0272376,027037Z,027237Z,027134Z, 027334Z,0271356,0273356,027135Z,027335Z,027135Z,0271366,027136Z,027336Z, 0271346,0273346,0271376, 0273376,027137Z,027337Z02703D6,02723D6,02703DZ,02723DZ,02703E6,02723E6,02703EZ,02723EZ,02703F6,02723F6,02703FZ,02723FZ,02703G6,02723G6,02703GZ,02723GZ,02713D6,02733D6,02713DZ,02733DZ,02713E6,02733E6,02713EZ,02733EZ,02713F6,02733F6,02713FZ,02733FZ,02713G6,02733G6,02713GZ,02733GZ |
| Transcatheter mitral repair/replacement | ICD 10 codes –02UG3JZ |

Table S2 – ICD 9 and ICD 10 codes used for outcomes assessed.

 Outcome

|  |  |
| --- | --- |
| Pacemaker implantation | ICD 10 codes – 0JH836Z, 0JH636Z, 02HK3JZ, 02HK4JZ, 0JH635Z, 0JH835ZICD 9 codes – 0050, 3780, 3781, 3782, 3783 |
| Stroke | ICD 10 codes – I6300, I63011, I63012, I63013, I63019, I6302, I63031, I63032, I63033, I63039, I6309, I6310, I63111, I63112, I63113, I63119, I6312, I63131, I63132, I63133, I63139, I6319, I6320, I63211, I63212, I63213, I63219, I6322, I63231, I63232, I63233, I63239, I6329, I6330, I63311, I63312, I63313, I63319, I63321, I63322, I63323, I63329, I63331, I63332, I63333, I63339, I63341, I63342, I63343, I63349, I6339, I6340, I63411, I63412, I63413, I63419, I63421, I63422, I63423, I63429, I63431, I63432, I63433, I63439, I63441, I63442, I63443, I63449, I6349, I6350, I63511, I63512, I63513, I63519, I63521, I63522, I63523, I63529, I63531, I63532, I63533, I63539, I63541, I63542, I63543, I63549, I6359, I636, I638, I6300, I63011, I63012, G9781, G9782, I97810, I97811, I97820, I9782ICD 9 codes – 43401,43411,43491,43301,43311,43321,43331,43381,43391,4350,436,99701,99702 |
| Bleeding  | ICD 10 codes – D62, I97418,I9742,D62,I97618,I9762,I97620,I97621,I9763830230H1,30230N0,30230N1,30230P0,30230P1,30233H0,30233H1,30233N0,30233N1,30233P0,30233P1,30240H0,30240H1,30240N0,30240N1,30240P0,30240P1,30243H0,30243H1,30243N0,30243N1,30243P0,30243P1,30250H0,30250H1,30250N0,30250N1,30250P0,30250P1,30253H0,30253H1,30253N0,30253N1,30253P0,30253P1,30260H0,30260H1,30260N0,30260N1,30260P0,30260P1,30263H0,30263H1,30263N0,30263N1,30263P0,30263P1ICD 9 codes – 2851, 99811,99812 ,9900,9902 ,9903 ,9904 |
| Acute kidney injury | ICD 10 codes – N170,N171,N172,N178,N179ICD 9 codes – 5845, 5846,5847,5848,5849 |
| Blood transfusion | ICD 10 codes – D62, I97418,I9742,D62,I97618,I9762,I97620,I97621,I9763830230H1,30230N0,30230N1,30230P0,30230P1,30233H0,30233H1,30233N0,30233N1,30233P0,30233P1,30240H0,30240H1,30240N0,30240N1,30240P0,30240P1,30243H0,30243H1,30243N0,30243N1,30243P0,30243P1,30250H0,30250H1,30250N0,30250N1,30250P0,30250P1,30253H0,30253H1,30253N0,30253N1,30253P0,30253P1,30260H0,30260H1,30260N0,30260N1,30260P0,30260P1,30263H0,30263H1,30263N0,30263N1,30263P0,30263P1ICD 9 codes – 9900,9902 ,9903 ,9904 |

Table S3 – Variables used to calculate propensity score for SAVR in women.

|  |
| --- |
| AgeNational quartile of Patient’s Zip code median incomeRacePrimary payer/insurance **Elixhauser comorbidities** Congestive heart failureCardiac arrhythmiaPulmonary circulation disorderPeripheral vascular diseaseHypertension, uncomplicatedHypertension, complicatedParalysisOther neurological diseaseChronic pulmonary diseaseDiabetes, uncomplicatedDiabetes, complicatedRenal failureLiver diseaseWeighted elixhauser comorbidity summary indexProbability sample weight of the visitHospital ID variable |

Table S4 – Baseline characteristics of patients undergoing surgical aortic valve replacement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Male | Female | P value |
| Total |  | 272577 (261742-283413) | 158767 (152179-165354) |  |
|  | Proportion (%) | 63.19 (62.83-63.56) | 36.81 (36.44-37.17) |  |
| Age (mean) |  | 73.24 (73.15-73.34) | 74.3 (74.16-74.44) | <0.001 |
| Race |  |  |  | <0.001 |
|  | White | 63.83 (63.43-64.23) | 36.17 (35.77-36.57) |  |
|  | Non-White | 58.91 (57.94-59.87) | 41.09 (40.13-42.06) |  |
| Concomitant Surgery |  |  |  |
|  | CABG | 47.54 (46.91-48.18) | 32.83 (32.14-33.53) | <0.001 |
|  | Non-AV | 3.27 (3.05-3.5) | 5.08 (4.79-5.38) | <0.001 |
| Median Household Income National Quartile for Patient ZIP Code (%) |  |  |
|  | Quartile |  |  | <0.001 |
|  | 1 | 20.77 (20.02-21.54) | 22.6 (21.75-23.47) |  |
|  | 2 | 26.07 (25.3-26.86) | 26.92 (26.07-27.79) |  |
|  | 3 | 26.87 (26.24-27.52) | 25.99 (25.24-26.74) |  |
|  | 4 | 26.28 (25.03-27.58) | 24.49 (23.12-25.92) |  |
| Primary Payer |  |  |  | <0.001 |
|  | Medicare | 77.09 (76.57-77.61) | 82.75 (82.17-83.32) |  |
|  | Medicaid | 1.52 (1.38-1.67) | 2.04 (1.86-2.24) |  |
|  | Private | 18.77 (18.33-19.21) | 13.61 (13.12-14.12) |  |
|  | Self-pay | 2.62 (2.41-2.85) | 1.59 (1.4-1.8) |  |
| Comorbidities |  |  |  |  |
|  | CHF | 36.92 (36.14-37.71) | 38.67 (37.7-39.66) | <0.001 |
|  | Cardiac arrhythmias | 63.75 (63.19-64.31) | 59.86 (59.11-60.61) | <0.001 |
|  | Pulm circulation disorders | 11.69 (11.3-12.09) | 14.41 (13.88-14.96) | <0.001 |
|  | PVD | 22.23 (21.69-22.78) | 18.39 (17.78-19.02) | <0.001 |
|  | uncomp HTN | 56.32 (55.74-56.89) | 61.23 (60.48-61.96) | <0.001 |
|  | comp HTN | 23.16 (22.62-23.71) | 18.68 (18.11-19.25) | <0.001 |
|  | Paralysis | 1.04 (0.96-1.14) | 1.27 (1.16-1.4) | 0.0015 |
|  | Other neurological disorders | 6.84 (6.59-7.1) | 6.6 (6.31-6.91) | 0.1645 |
|  | Chronic pulm disease | 26.99 (26.47-27.51) | 30.49 (29.83-31.16) | <0.001 |
|  | uncomp DM | 25.24 (24.74-25.74) | 24.86 (24.27-25.45) | 0.2114 |
|  | comp DM | 9.07 (8.68-9.47) | 8.07 (7.66-8.5) | <0.001 |
|  | Renal failure | 19.98 (19.51-20.46) | 15.38 (14.87-15.91) | <0.001 |
|  | Liver disease | 2.97 (2.82-3.13) | 3.02 (2.83-3.22) | 0.7021 |
|  | Prior PCI | 8.39 (8.08-8.72) | 5.24 (4.95-5.55) | <0.001 |
|  | Prior CABG | 6.29 (6.03-6.56) | 2.76 (2.56-2.96) | <0.001 |
|  | Elixsum (mean) | 5.22 (5.18-5.26) | 5.43 (5.39-5.48) | <0.001 |

Table S5: Baseline characteristics of patients undergoing transcatheter aortic valve replacement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Male | Female | P value |
| Total |  | 101339 (97567-105111) | 87798 (84594-91003) |  |
|  | Proportion (%) | 53.58 (53.05-54.1) | 46.42 (45.9-46.94) |  |
| Age (mean) |  | 80.51 (80.4-80.63) | 81.21 (81.09-81.33) | <0.001 |
| Race |  |  |  | <0.001 |
|  | White | 54.25 (53.67-54.82) | 45.75 (45.18-46.33) |  |
|  | Non-White | 48.17 (46.67-49.68) | 51.83 (50.32-53.33) |  |
| Median Household Income National Quartile for Patient’s ZIP Code (%) |  |  |
|  | Quartile |  |  | <0.001 |
|  | 1 | 20.32 (19.55-21.11) | 21.86 (20.99-22.75) |  |
|  | 2 | 25.72 (24.9-26.56) | 25.46 (24.62-26.33) |  |
|  | 3 | 27 (26.23-27.78) | 25.7 (24.92-26.48) |  |
|  | 4 | 26.96 (25.74-28.21) | 26.98 (25.72-28.28) |  |
| Primary Payer |  |  |  | <0.001 |
|  | Medicare | 90.19 (89.61-90.74) | 93.18 (92.65-93.68) |  |
|  | Medicaid | 0.63 (0.52-0.75) | 0.88 (0.74-1.03) |  |
|  | Private | 6.57 (6.13-7.05) | 5.05 (4.61-5.54) |  |
|  | Self-pay | 2.61 (2.31-2.94) | 0.88 (0.72-1.08) |  |
| Comorbidities |  |  |  |  |
|  | CHF | 74.11 (73.04-75.16) | 73.38 (72.24-74.48) | 0.104 |
|  | Cardiac arrhythmias | 61.66 (60.91-62.4) | 55.79 (54.97-56.6) | <0.001 |
|  | Pulm circulation disorders | 16.14 (15.53-16.76) | 19.63 (18.92-20.36) | <0.001 |
|  | PVD | 27.64 (26.86-28.44) | 22.3 (21.57-23.04) | <0.001 |
|  | uncomp HTN | 31.69 (30.67-32.73) | 37.74 (36.53-38.96) | <0.001 |
|  | comp HTN | 56.71 (55.53-57.87) | 51.06 (49.72-52.41) | <0.001 |
|  | Paralysis | 0.99 (0.85-1.14) | 1.25 (1.1-1.43) | 0.0165 |
|  | Other neurological disorders | 5.7 (5.37-6.04) | 5.09 (4.77-5.42) | 0.0097 |
|  | Chronic pulm disease | 33.79 (32.98-34.61) | 34.8 (33.94-35.67) | 0.0399 |
|  | uncomp DM | 21.69 (21.02-22.37) | 20.63 (19.95-21.32) | 0.0128 |
|  | comp DM | 17.33 (16.66-18.03) | 14.29 (13.68-14.93) | <0.001 |
|  | Renal failure | 40.72 (39.89-41.57) | 31.16 (30.24-32.08) | <0.001 |
|  | Liver disease | 3.12 (2.87-3.39) | 2.86 (2.63-3.12) | 0.1473 |
|  | Prior PCI | 9.01 (8.42-9.63) | 6.75 (6.26-7.28) | <0.001 |
|  | Prior CABG | 27.5 (26.77-28.23) | 9.75 (9.3-10.23) | <0.001 |
|  | Elixsum (mean) | 5.77 (5.74-5.81) | 5.82 (5.78-5.86) | 0.036 |

Figure S1 – Standardized percentage difference between the variables before and after matching for surgical versus transcatheter aortic valve replacement

