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| **Supplementary Materials**  **Table S1.** Procedure code for determining treatment cases | | | | |  | |  | |  | |  | |  | |
| **Procedure code** |  |  |  |  | |  | |  | |  | |  | |  | | |
| HA670 | Coronary Angiography |  |  |  | |  | |  | |  | |  | |  | | |
| HA680 | Aortocoronary Venous Bypass Graft Angiography | | | | | |  | |  | |  | |  | |
| HA681 | Aortocoronary Venous Bypass Graft Angiography, 2 or 3 vessels | | | | | | | | | |  | |  | |
| HA682 | Aortocoronary Venous Bypass Graft Angiography and consequent ventricular angiography | | | | | | | | | | | |  | |
| M6551 | Percutaneous Transluminal Coronary Angioplasty, single vessel | | | | | | | | | | | | | | |
| M6552 | Percutaneous Transluminal Coronary Angioplasty, additional vessel | | | | | | | | | | | | | | |
| M6561 | Percutaneous Trans-catheter Placement of Intracoronary Stent, single vessel | | | | | | | | | | | |  | |
| M6562 | Percutaneous Trans-catheter Placement of Intracoronary Stent, additional vessel | | | | | | | | | |  | |  | |
| M6563 | Percutaneous Trans-catheter Placement of Intracoronary Stent with angioplasty or atherectomy, single vessel | | | | | | | | | | | |  | |
| M6564 | Percutaneous Trans-catheter Placement of Intracoronary Stent with angioplasty or atherectomy, additional vessel | | | | | | | | | | | | | |
| M6571 | Percutaneous Transluminal Coronary Atherectomy, single vessel | | | | | | | | | | | |  | |
| M6572 | Percutaneous Transluminal Coronary Atherectomy, additional vessel | | | | | | | | | | | |  | |
| M6633 | Percutaneous Thrombus Removal, Mechanical Thrombolysis | | | | | | | | | | | | | |
| M6634 | Percutaneous Thrombus Removal, Thrombolytic Treatment, Coronary Artery | | | | | | | | | | | | | |
| O1641 | Simple Aorta-Coronary Vascular Bypass Operation(Artery), 1 site | | | | | | | | | | | | | |
| O1642 | Simple Aorta-Coronary Vascular Bypass Operation(Artery), 2 site or more | | | | | | | | | | | | | |
| O1647 | Complex Aorta-Coronary Vascular Bypass Operation(Artery) | | | | | | | | | | | | | |
| OA641 | Simple Off Pump CABG Aorta-Coronary Vascular Bypass Operation(Artery), 1 site | | | | | | | | | | | | | |
| OA642 | Simple Off Pump CABG Aorta-Coronary Vascular Bypass Operation(Artery), 2 site or more | | | | | | | | | | | | | |
| OA647 | Complex Off Pump CABG Aorta-Coronary Vascular Bypass Operation(Artery) | | | | | | | | | | | |  | |

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| **Table S2.** Variables and data source | |  |  |  |  |
| **Type** | **Institution** | **Data source** | **Variable** | | |  |
| Dependent variables | HIRA | Health claim data | Treatment case per 100,000 | | |  |
| 30-day mortality (%) | |  |  |
| Control variables | KOSIS | Population status | Regional population | | |  |
| Proportion of elderly (%) | | |  |
| Health insurance status | Number of medical facilities, by type | | |  |
| Number of clinicians, by specialties | | |  |
| The Korea community health survey | High risk drinking (%) | | |  |
| Hypertension prevalence (%) | | |  |
| Hypertension on treatment (%) | | |  |
| Diabetes prevalence (%) | | |  |
| Diabetes on treatment (%) | | |  |
| Subjective obesity recognition (%) | | |  |
| Subjective stress recognition (%) | | |  |
| Current smoking (%) | |  |  |
| Regional income statistics | GRDP per capita | | |  |
| KOSTAT | Provisional income report of 2016 | GRDP per capita of Sejong | | | |
| Seoul open data plaza | Seoul Statistical Yearbook | GRDP per capita of Seoul | | | |
| Treatment variable | KCDC | KCDC webpage for RCVC | Designation of RCCVC (Binary) | | |  |

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| **Table S3.** Composition of each tertiary catchment area | |  |  |  |
| **Tertiary catchment area** | **Composition** |  |  |  |
| Seoul | Seoul, Hanam, Guri, Namyangju, Gwangmyeong |  |  |  |
| Busan | Busan,Ulsan, Gimhae, Yangsan, Milyang |  |  |  |
| Daegu, Gyeongbuk | Daegu, Gyeongsangbuk-do |  |  |  |
| Incheon | Incheon |  |  |  |
| Gwangju, Jeonnam | Gwangju, Jeollanam-do |  |  |  |
| Daejeon, Chungnam | Daejeon, Chungcheongnam-do |  |  |  |
| Gyeonggi (1) | Seongnam, Gwangju, Yongin, Icheon, Yeoju, Yangpyeong | | | |
| Gyeonggi (2) | Suwon, Osan, Hwaseong, Pyeongtaek, Anseong, Anyang, Gwacheon, Gunpo, Uiwang | | | |
| Gyeonggi (3) | Uijeongbu, Dongducheon, Yangju, Yeoncheon, Pocheon, Goyang, Paju, Gimpo | | | |
| Gyeonggi (4) | Bucheon, Ansan, Siheung |  |  |  |
| Gangwon | Gangwon-do |  |  |  |
| Chungbuk | Chungcheongbuk-do |  |  |  |
| Jeonbuk | Jeollabuk-do |  |  |  |
| Gyeongnam | Changwon, Hallyeong, Hamaan, Changnyeong, Jinju, Sacheon, Namhae, Hadong, Sancheong, Hamyang, Tongyeong, | | | |
| Jeju | Jeju-do |  |  |  |

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| **Table S4.** Population of each tertiary catchment area and treatment cases 1 | | | | | | | | |  |  |
| Tertiary catchment area | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| Seoul | 11332007 (3190) | 11356707 (3097) | 11391929 (3158) | 11567545 (2962) | 11526668 (2999) | 11489027 (3165) | 11449826 (3357) | 11423765 (3534) | 11374047 (3588) | 11337118 (3678) |
| Busan | 5495827 (1806) | 5508426 (1680) | 5510866 (1861) | 5568274 (1807) | 5569251 (1833) | 5578215 (1827) | 5594071 (1902) | 5613159 (1975) | 5625363 (2147) | 5625646 (2291) |
| Daegu, Gyeongbuk | 5294054 (1620) | 5285600 (1686) | 5275810 (1727) | 5316109 (1668) | 5320220 (1798) | 5317379 (1962) | 5314495 (2075) | 5307652 (2138) | 5303032 (2025) | 5296289 (2098) |
| Incheon | 2664576 (473) | 2692696 (423) | 2710579 (444) | 2758296 (424) | 2801274 (466) | 2843981 (575) | 2879782 (671) | 2902608 (813) | 2925815 (843) | 2943069 (910) |
| Gwangju, Jeonnam | 3343280 (995) | 3341702 (1048) | 3346644 (1058) | 3373121 (1049) | 3377803 (1155) | 3378834 (1325) | 3380082 (1393) | 3381664 (1493) | 3381195 (1287) | 3373128 (1184) |
| Daejeon, Chungnam | 3471190 (1081) | 3499432 (947) | 3521762 (993) | 3579178 (1036) | 3616887 (1080) | 3666477 (1124) | 3702595 (1310) | 3750207 (1212) | 3807308 (1138) | 3854145 (1014) |
| Gyeonggi (1) | 2374064 (324) | 2387787 (326) | 2437547 (314) | 2514207 (368) | 2553705 (436) | 2586890 (394) | 2626152 (457) | 2655271 (505) | 2684033 (568) | 2726718 (561) |
| Gyeonggi (2) | 3248538 (518) | 3345116 (552) | 3410573 (471) | 3492552 (429) | 3531273 (551) | 3586030 (670) | 3632646 (760) | 3672961 (789) | 3740702 (808) | 3800160 (822) |
| Gyeonggi (3) | 2328973 (754) | 2377682 (656) | 2398097 (660) | 2472081 (712) | 2526903 (682) | 2581339 (689) | 2634483 (750) | 2689752 (718) | 2738869 (778) | 2776825 (955) |
| Gyeonggi (4) | 1959641 (533) | 1968691 (439) | 1973202 (443) | 1993892 (577) | 1989187 (636) | 1984537 (677) | 1974151 (669) | 1958101 (749) | 1945128 (639) | 1944127 (685) |
| Gangwon | 1559504 (562) | 1565683 (541) | 1570434 (595) | 1588708 (612) | 1595806 (591) | 1599424 (591) | 1603280 (661) | 1605655 (671) | 1611515 (629) | 1613254 (688) |
| Chungbuk | 1506608 (286) | 1519587 (276) | 1527478 (428) | 1549528 (422) | 1562903 (361) | 1565628 (398) | 1572732 (480) | 1578933 (519) | 1583952 (446) | 1591625 (452) |
| Jeonbuk | 1862277 (577) | 1855772 (566) | 1854508 (538) | 1868963 (531) | 1874031 (584) | 1873341 (590) | 1872965 (588) | 1871560 (656) | 1869711 (661) | 1864791 (733) |
| Gyeongnam | 2269131 (570) | 2274868 (548) | 2281053 (568) | 2301957 (555) | 2312217 (589) | 2313457 (664) | 2310397 (602) | 2309282 (655) | 2314273 (689) | 2307724 (730) |
| Jeju | 559258 (171) | 560618 (182) | 562663 (167) | 571255 (170) | 576156 (141) | 583713 (204) | 593806 (182) | 607346 (227) | 624395 (225) | 641597 (222) |
| 1Number of cases in parenthesis | | |  |  |  |  |  |  |  |  |