Appendix Table 1. The proportion of incident episodes occurring at tertiary hospitals in Seoul before and after the benefit expansion policy by admission type

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All tertiary hospitals in Seoul** | **Five largest hospitals** | **The other tertiary** **hospitals in Seoul** |
|  | **Before policy** | **After policy** | **Diff.****(%p)** | **Before policy** | **After policy** | **Diff.****(%p)** | **Before policy** | **After policy** | **Diff.****(%p)** |
|  | **2011-2013** | **2014-2016** | **2011-2013** | **2014-2016** | **2011-2013** | **2014-2016** |
| **Medical episodes** |  |  |  |  |  |  |  |  |  |
| **Total** | 31.1  | 33.6  | 2.5\*\* | 21.8  | 24.3  | 2.5\*\*  | 9.2  | 9.2  | 0.0\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Income**  |  |  |  |  |  |  |  |  |  |
| Medical Aid | 12.9  | 15.1  | 2.2\*\*  | 7.6  | 8.9  | 1.3\*\*  | 5.3  | 6.2  | 0.9\*\*  |
| 1 (lowest) | 27.5  | 30.1  | 2.6\*\*  | 17.9  | 20.7  | 2.8\*\*  | 9.5  | 9.4  | -0.1\*\*  |
| 2 | 28.3  | 30.2  | 1.9\*\*  | 19.0  | 20.8  | 1.8\*\*  | 9.3  | 9.4  | 0.1\*\*  |
| 3 | 31.2  | 33.5  | 2.3\*\*  | 21.7  | 23.8  | 2.1\*\*  | 9.5  | 9.7  | 0.2\*\*  |
| 4 | 35.4  | 37.8  | 2.4\*\*  | 25.7  | 28.3  | 2.6\*\*  | 9.7  | 9.6  | -0.1\*\*  |
| 5 (highest) | 40.2  | 42.6  | 2.4\*\*  | 30.7  | 33.5  | 2.8\*\*  | 9.5  | 9.1  | -0.4\*\*  |
| Missing | 31.1  | 35.0  | 3.9\*\*  | 22.7  | 26.5  | 3.8\*\*  | 8.3  | 8.5  | 0.2\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area** |  |  |  |  |  |  |  |  |  |
| Seoul | 64.3  | 65.1  | 0.8\*\*  | 38.1  | 39.4  | 1.3\*\*  | 26.2  | 25.7  | -0.5\*\*  |
| Gyeonggi, Incheon | 31.4  | 33.0  | 1.6\*\*  | 22.5  | 24.7  | 2.2\*\*  | 8.9  | 8.4  | -0.5\*\*  |
| Chungbuk | 34.4  | 39.1  | 4.7\*\*  | 27.3  | 32.0  | 4.7\*\*  | 7.1  | 7.1  | 0.0\*\*  |
| The Chungnam area | 26.7  | 32.9  | 6.2\*\*  | 21.6  | 27.3  | 5.7\*\*  | 5.1  | 5.5  | 0.4\*\*  |
| Gangwon | 26.2  | 29.1  | 2.9\*\*  | 20.8  | 23.4  | 2.6\*\*  | 5.4  | 5.7  | 0.3\*\*  |
| Junbuk | 18.8  | 21.5  | 2.7\*\*  | 15.2  | 18.3  | 3.1\*\*  | 3.6  | 3.2  | -0.4\*\*  |
| The Junnam area | 16.1  | 18.0  | 1.9\*\*  | 13.0  | 15.2  | 2.2\*\*  | 3.1  | 2.8  | -0.3\*\*  |
| The Gyeongbuk area | 17.9  | 20.2  | 2.3\*\*  | 15.1  | 17.1  | 2.0\*\*  | 2.8  | 3.0  | 0.2\*\*  |
| The Gyeongnam area | 13.9  | 15.4  | 1.5\*\*  | 12.0  | 13.5  | 1.5\*\*  | 2.0  | 1.9  | -0.1\*\*  |
| Jeju | 26.4  | 31.2  | 4.8\*\*  | 21.7  | 26.7  | 5.0\*\*  | 4.7  | 4.6  | -0.1\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area type** |  |  |  |  |  |  |  |  |  |
| Urban | 34.4  | 37.0  | 2.6\*\*  | 23.3  | 25.8  | 2.5\*\*  | 11.1  | 11.2  | 0.1\*\*  |
| Suburban  | 28.1  | 30.4  | 2.3\*\*  | 21.1  | 23.6  | 2.5\*\*  | 7.0  | 6.8  | -0.2\*\*  |
| Rural | 21.8  | 23.3  | 1.5\*\*  | 16.9  | 18.8  | 1.9\*\*  | 5.0  | 4.6  | -0.4\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Surgical episodes** |  |  |  |  |  |  |  |  |  |
| **Total** | 36.7 | 37.6 | 0.9\*\* | 27.3 | 28.8 | 1.5\*\* | 9.4 | 8.7 | -0.7\*\* |
|  |  |  |  |  |  |  |  |  |  |
| **Income**  |  |  |  |  |  |  |  |  |  |
| Medical Aid | 16.0 | 17.0 | 1.0\*\* | 10.5 | 11.2 | 0.7\*\* | 5.5 | 5.9 | 0.4\*v |
| 1 (lowest) | 31.9 | 33.2 | 1.3\*\* | 22.8 | 24.4 | 1.6\*\* | 9.1 | 8.8 | -0.3\*\* |
| 2 | 32.8 | 33.2 | 0.4\*\* | 23.7 | 24.8 | 1.1\*\* | 9.1 | 8.5 | -0.6\*\* |
| 3 | 36.3 | 37.3 | 1.0\*\* | 26.8 | 28.3 | 1.5\*\* | 9.5 | 9.0 | -0.5\*\* |
| 4 | 40.9 | 41.5 | 0.6\*\* | 30.8 | 32.5 | 1.7\*\* | 10.1 | 9.0 | -1.1\*\* |
| 5 (highest) | 46.3 | 47.3 | 1.0\*\* | 36.1 | 38.1 | 2.0\*\* | 10.2 | 9.2 | -1.0\*\* |
| Missing | 36.2 | 38.3 | 2.1\*\* | 27.9 | 30.2 | 2.3\*\* | 8.3 | 8.0 | -0.3\*\* |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area** |  |  |  |  |  |  |  |  |  |
| Seoul | 67.3 | 68.6 | 1.3\*\* | 42.7 | 45.0 | 2.3\*\* | 24.6 | 23.6 | -1.0\*\* |
| Gyeonggi, Incheon | 34.4 | 34.1 | -0.3\*\* | 25.6 | 26.3 | 0.7\*\* | 8.8 | 7.8 | -1.0\*\* |
| Chungbuk | 42.4 | 42.9 | 0.5\*\* | 36.0 | 36.7 | 0.7\*\* | 6.4 | 6.2 | -0.2\*\* |
| The Chungnam area1 | 34.0 | 36.0 | 2.0\*\* | 28.3 | 30.7 | 2.4\*\* | 5.6 | 5.4 | -0.2\*\* |
| Gangwon | 37.0 | 39.1 | 2.1\*\* | 31.4 | 33.7 | 2.3\*\* | 5.6 | 5.4 | -0.2\*\* |
| Junbuk | 24.8 | 27.8 | 3.0\*\* | 20.9 | 24.1 | 3.2\*\* | 3.9 | 3.7 | -0.2\*\* |
| The Junnam area2 | 23.3 | 26.1 | 2.8\*\* | 19.7 | 22.5 | 2.8\*\* | 3.7 | 3.6 | -0.1\*\* |
| The Gyeongbuk area3 | 23.9 | 25.0 | 1.1\*\* | 20.4 | 21.8 | 1.4\*\* | 3.5 | 3.2 | -0.3\*\* |
| The Gyeongnam area4 | 20.1 | 21.3 | 1.2\*\* | 17.6 | 18.7 | 1.1\*\* | 2.5 | 2.6 | 0.1\*\* |
| Jeju | 37.3 | 39.5 | 2.2\*\* | 31.6 | 34.0 | 2.4\*\* | 5.7 | 5.5 | -0.2\*\* |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area type** |  |  |  |  |  |  |  |  |  |
| Urban | 38.6 | 39.3 | 0.7\*\* | 27.6 | 29.1 | 1.5\*\* | 11.0 | 10.2 | -0.8\*\* |
| Suburban  | 35.1 | 36.3 | 1.2\*\* | 27.7 | 29.4 | 1.7\*\* | 7.4 | 6.8 | -0.6\*\* |
| Rural | 30.0 | 30.6 | 0.6\*\* | 24.7 | 25.8 | 1.1\*\* | 5.4 | 4.7 | -0.7\*\* |

Values are presented as %.

Diff, difference.

1Daejeon, Sejeong, Chungnam.

2Gwangju, Jeonnam.

3Daegu, Gyeongbuk.

4Busan, Ulsan, Gyeongnam.

\* *p* < 0.05, \*\* *p* <0.001.

Appendix Table 2. The proportion of prevalent episodes occurring at tertiary hospitals in Seoul before and after the benefit expansion policy by admission type

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All tertiary hospitals in Seoul** | **Five largest hospitals** | **The other tertiary** **hospitals in Seoul** |
|  | **Before policy** | **After policy** | **Diff.****(%p)** | **Before policy** | **After policy** | **Diff.****(%p)** | **Before policy** | **After policy** | **Diff.****(%p)** |
|  | **2011-2013** | **2014-2016** | **2011-2013** | **2014-2016** | **2011-2013** | **2014-2016** |
| **Medical episodes** |  |  |  |  |  |  |  |  |  |
| **Total** | 33.9  | 35.7  | 1.8\*\*  | 24.4  | 26.6  | 2.2\*\*  | 9.5  | 9.1  | -0.4\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Income**  |  |  |  |  |  |  |  |  |  |
| Medical Aid | 17.0  | 19.6  | 2.6\*\*  | 10.4  | 12.5  | 2.1\*\*  | 6.6  | 7.1  | 0.5\*\*  |
| 1 (lowest) | 31.1  | 32.5  | 1.4\*\*  | 21.0  | 23.4  | 2.4\*\*  | 10.1  | 9.1  | -1.0\*\*  |
| 2 | 31.1  | 32.8  | 1.7\*\*  | 21.2  | 22.9  | 1.7\*\*  | 10.0  | 9.9  | -0.1\*\*  |
| 3 | 33.9  | 36.0  | 2.1\*\*  | 24.2  | 26.6  | 2.4\*\*  | 9.7  | 9.5  | -0.2\*\*  |
| 4 | 37.9  | 38.9  | 1.0\*\*  | 28.2  | 29.5  | 1.3\*\*  | 9.7  | 9.3  | -0.4\*\*  |
| 5 (highest) | 43.7  | 45.1  | 1.4\*\*  | 34.3  | 36.4  | 2.1\*\*  | 9.4  | 8.7  | -0.7\*\*  |
| Missing | 33.9  | 38.6  | 4.7\*\*  | 24.3  | 29.4  | 5.1\*\*  | 9.6  | 9.1  | -0.5\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area** |  |  |  |  |  |  |  |  |  |
| Seoul | 67.7  | 67.6  | -0.1\*\*  | 42.1  | 43.7  | 1.6\*\* | 25.7  | 24.0  | -1.7\*\*  |
| Gyeonggi, Incheon | 37.4  | 38.2  | 0.8\*\*  | 27.7  | 29.4  | 1.7\*\*  | 9.7  | 8.8  | -0.9\*\*  |
| Chungbuk | 36.3  | 42.5  | 6.2\*\*  | 28.0  | 35.3  | 7.3\*\*  | 8.3  | 7.2  | -1.1\*\*  |
| The Chungnam area | 29.8  | 34.3  | 4.5\*\*  | 24.2  | 28.6  | 4.4\*\*  | 5.6  | 5.7  | 0.1\*\*  |
| Gangwon | 27.6  | 29.9  | 2.3\*\*  | 22.5  | 24.2  | 1.7\*\*  | 5.1  | 5.6  | 0.5\*\*  |
| Junbuk | 20.2  | 22.5  | 2.3\*\*  | 16.6  | 18.7  | 2.1\*\*  | 3.6  | 3.8  | 0.2\*\*  |
| The Junnam area | 16.7  | 18.0  | 1.3\*\*  | 13.5  | 14.8  | 1.3\*\*  | 3.2  | 3.2  | 0.0\*\*  |
| The Gyeongbuk area | 18.8  | 21.6  | 2.8\*\*  | 15.5  | 18.2  | 2.7\*\*  | 3.3  | 3.4  | 0.1\*\*  |
| The Gyeongnam area | 13.9  | 14.9  | 1.0\*\*  | 11.8  | 12.8  | 1.0\*\*  | 2.1  | 2.1  | 0.1\*\*  |
| Jeju | 26.1  | 29.8  | 3.7\*\*  | 22.0  | 25.1  | 3.1\*\*  | 4.1  | 4.7  | 0.6\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area type** |  |  |  |  |  |  |  |  |  |
| Urban | 37.3  | 39.0  | 1.7\*\*  | 26.1  | 28.2  | 2.1\*\*  | 11.3  | 10.8  | -0.5\*\*  |
| Suburban  | 31.2  | 33.0  | 1.8\*\*  | 23.5  | 25.8  | 2.3\*\*  | 7.7  | 7.2  | -0.5\*\*  |
| Rural | 23.6  | 24.9  | 1.3\*\* | 18.4  | 19.8  | 1.4\*\* | 5.2  | 5.0  | -0.2\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Surgical episodes** |  |  |  |  |  |  |  |  |  |
| **Total** | 46.5  | 46.3  | -0.2\*\*  | 38.4  | 38.5  | 0.1\*\*  | 8.1  | 7.7  | -0.4\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Income**  |  |  |  |  |  |  |  |  |  |
| Medical Aid | 24.6  | 26.4  | 1.8\*\*  | 18.4  | 20.0  | 1.6\*\*  | 6.3  | 6.3  | 0.1\*\*  |
| 1 (lowest) | 41.6  | 41.8  | 0.2\*\*  | 32.8  | 33.6  | 0.8\*\*  | 8.7  | 8.2  | -0.5\*\*  |
| 2 | 43.5  | 42.5  | -1.0\*\*  | 34.7  | 34.6  | -0.1\*\*  | 8.8  | 7.9  | -0.9\*\*  |
| 3 | 45.8  | 46.2  | 0.4\*\*  | 37.6  | 38.0  | 0.4\*\*  | 8.2  | 8.2  | 0.0\*\*  |
| 4 | 51.2  | 50.6  | -0.6\*\*  | 43.3  | 43.0  | -0.3\*\*  | 7.9  | 7.6  | -0.3\*\*  |
| 5 (highest) | 58.0  | 57.3  | -0.7\*\*  | 50.7  | 49.9  | -0.8\*\*  | 7.3  | 7.4  | 0.1\*\*  |
| Missing | 46.3  | 47.5  | 1.2\*\*  | 37.7  | 40.1  | 2.4\*\*  | 8.6  | 7.4  | -1.2\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area** |  |  |  |  |  |  |  |  |  |
| Seoul | 73.2  | 73.9  | 0.7\*\*  | 53.3  | 53.8  | 0.5\*\*  | 19.9  | 20.1  | 0.2\*\*  |
| Gyeonggi, Incheon | 45.2  | 43.2  | -2.0\*\*  | 37.3  | 36.0  | -1.3\*\*  | 7.9  | 7.2  | -0.7\*\*  |
| Chungbuk | 51.6  | 54.6  | 3.0\*\*  | 46.2  | 49.1  | 2.9\*\*  | 5.4  | 5.5  | 0.1\*\*  |
| The Chungnam area1 | 43.9  | 44.8  | 0.9\*\*  | 38.9  | 40.3  | 1.4\*\*  | 5.0  | 4.5  | -0.5\*\*  |
| Gangwon | 45.1  | 47.5  | 2.4\*\*  | 40.7  | 43.3  | 2.6\*\* | 4.5  | 4.3  | -0.2\*\*  |
| Junbuk | 36.4  | 37.6  | 1.2\*\*  | 32.5  | 34.4  | 1.9\*\*  | 3.9  | 3.2  | -0.7\*\*  |
| The Junnam area2 | 34.4  | 36.7  | 2.3\*\*  | 30.8  | 33.0  | 2.2\*\*  | 3.5  | 3.8  | 0.3\*\*  |
| The Gyeongbuk area3 | 35.9  | 36.3  | 0.4\*\*  | 32.6  | 33.1  | 0.5\*\*  | 3.3  | 3.1  | -0.2\*\*  |
| The Gyeongnam area4 | 29.3  | 29.0  | -0.3\*\*  | 27.3  | 27.0  | -0.3\*\*  | 1.9  | 2.0  | 0.1\*\*  |
| Jeju | 44.7  | 41.7  | -3.0\*\*  | 40.1  | 37.8  | -2.3\*\*  | 4.6  | 3.9  | -0.7\*\*  |
|  |  |  |  |  |  |  |  |  |  |
| **Residential area type** |  |  |  |  |  |  |  |  |  |
| Urban | 48.0  | 47.4  | -0.6\*\*  | 38.8  | 38.5  | -0.3\*\*  | 9.2  | 9.0  | -0.2\*\*  |
| Suburban  | 45.9  | 45.8  | -0.1\*\*  | 39.0  | 39.5  | 0.5\*\*  | 6.9  | 6.3  | -0.6\*\*  |
| Rural | 40.3  | 41.3  | 1.0\*\*  | 35.2  | 36.6  | 1.4\*\*  | 5.1  | 4.7  | -0.4\*v  |

Values are presented as %.

Diff, difference.

1Daejeon, Sejeong, Chungnam.

2Gwangju, Jeonnam.

3Daegu, Gyeongbuk.

4Busan, Ulsan, Gyeongnam.

\* *p* < 0.05, \*\* *p* <0.001.

Appendix Table 3. Multiple logistic regression analysis of utilization of the 5 largest hospitals and the other tertiary hospitals in Seoul for medical episodes

|  |  |  |
| --- | --- | --- |
|  | **Five largest hospitals** | **The other tertiary hospitals in Seoul** |
| 　 | **Incident** **episodes** | **Prevalent episodes** | **Incident episodes** | **Prevalent episodes** |
| **Sex** |  |  |  |  |
| Men | 1.27 (1.26 - 1.28) | 1.14 (1.14 - 1.15) | 0.81 (0.8 - 0.82) | 0.85 (0.84 - 0.85) |
| Women | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
|  |  |  |  |  |
| **Age** |  |  |  |  |
| 0-29 | 7.56 (7.44 - 7.69) | 7.58 (7.47 - 7.69) | 0.60 (0.58 - 0.62) | 0.55 (0.54 - 0.57) |
| 30-39 | 2.53 (2.49 - 2.57) | 2.36 (2.32 - 2.4) | 1.25 (1.22 - 1.28) | 1.11 (1.08 - 1.14) |
| 40-49 | 1.86 (1.84 - 1.88) | 1.79 (1.77 - 1.81) | 1.31 (1.29 - 1.34) | 1.17 (1.15 - 1.19) |
| 50-59 | 1.85 (1.83 - 1.86) | 1.74 (1.72 - 1.75) | 1.26 (1.24 - 1.27) | 1.18 (1.16 - 1.2) |
| 60-69 | 1.72 (1.7 - 1.73) | 1.59 (1.57 - 1.6) | 1.22 (1.2 - 1.24) | 1.18 (1.16 - 1.2) |
| 70+ | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
|  |  |  |  |  |
| **Income**  |  |  |  |  |
| Medical Aid | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
| 1 (lowest) | 2.33 (2.28 - 2.38) | 2.13 (2.09 - 2.16) | 1.51 (1.47 - 1.55) | 1.31 (1.28 - 1.34) |
| 2 | 2.47 (2.41 - 2.52) | 2.11 (2.07 - 2.14) | 1.49 (1.45 - 1.54) | 1.37 (1.34 - 1.4) |
| 3 | 2.93 (2.86 - 2.99) | 2.58 (2.54 - 2.62) | 1.53 (1.48 - 1.57) | 1.34 (1.31 - 1.36) |
| 4 | 3.70 (3.62 - 3.79) | 3.14 (3.09 - 3.19) | 1.57 (1.52 - 1.61) | 1.31 (1.28 - 1.34) |
| 5 (highest) | 5.04 (4.93 - 5.15) | 4.40 (4.32 - 4.47) | 1.56 (1.51 - 1.6) | 1.25 (1.22 - 1.28) |
| Missing | 3.15 (3.05 - 3.25) | 2.68 (2.62 - 2.75) | 1.40 (1.34 - 1.47) | 1.33 (1.28 - 1.37) |
|  |  |  |  |  |
| **Residential area** |  |  |  |  |
| Seoul | 4.93 (4.87 - 4.99) | 6.14 (6.07 - 6.21) | 21.55 (20.99 - 22.12) | 18.89 (18.46 - 19.34) |
| Gyeonggi, Incheon | 1.98 (1.95 - 2) | 2.68 (2.65 - 2.71) | 4.42 (4.3 - 4.54) | 4.46 (4.35 - 4.56) |
| Chungbuk | 2.85 (2.79 - 2.91) | 3.25 (3.19 - 3.32) | 3.29 (3.16 - 3.43) | 3.36 (3.23 - 3.48) |
| The Chungnam area1 | 2.17 (2.13 - 2.2) | 2.48 (2.44 - 2.52) | 2.59 (2.5 - 2.68) | 2.57 (2.49 - 2.65) |
| Gangwon | 1.77 (1.73 - 1.81) | 1.99 (1.95 - 2.03) | 2.15 (2.06 - 2.24) | 1.91 (1.84 - 1.98) |
| Junbuk | 1.31 (1.29 - 1.34) | 1.48 (1.45 - 1.51) | 1.46 (1.4 - 1.53) | 1.49 (1.43 - 1.55) |
| The Junnam area2 | 1.08 (1.06 - 1.1) | 1.15 (1.13 - 1.17) | 1.32 (1.27 - 1.37) | 1.33 (1.29 - 1.38) |
| The Gyeongbuk area3 | 1.28 (1.26 - 1.3) | 1.38 (1.36 - 1.4) | 1.37 (1.33 - 1.42) | 1.47 (1.43 - 1.52) |
| The Gyeongnam area4 | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
| Jeju | 1.80 (1.74 - 1.86) | 1.82 (1.76 - 1.88) | 1.77 (1.65 - 1.89) | 1.56 (1.46 - 1.66) |
|  |  |  |  |  |
| **Residential area type** |  |  |  |  |
| Urban | 0.81 (0.8 - 0.83) | 0.82 (0.81 - 0.83) | 0.58 (0.57 - 0.59) | 0.61 (0.6 - 0.62) |
| Suburban  | 1.09 (1.07 - 1.1) | 1.07 (1.05 - 1.08) | 1.01 (0.99 - 1.04) | 1.05 (1.03 - 1.08) |
| Rural | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
|  |  |  |  |  |
| **Time period** |  |  |  |  |
| Before policy | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
| After policy | 1.16 (1.15 - 1.17) | 1.15 (1.14 - 1.15) | 0.98 (0.97 - 0.99) | 0.93 (0.93 - 0.94) |

Values are presented as odds ratio (95% confidence interval).

1Daejeon, Sejeong, Chungnam.

2Gwangju, Jeonnam.

3Daegu, Gyeongbuk.

4Busan, Ulsan, Gyeongnam.

Appendix Table 4. Multiple logistic regression analysis of utilization of the 5 largest hospitals and the other tertiary hospitals in Seoul for surgical episodes

|  |  |  |
| --- | --- | --- |
|  | **Five largest hospitals** | **The other tertiary hospitals in Seoul** |
| 　 | **Incident** **episodes** | **Prevalent episodes** | **Incident episodes** | **Prevalent episodes** |
| **Sex** |  |  |  |  |
| Men | 1.26 (1.24 - 1.27) | 1.20(1.18 - 1.22) | 0.87(0.86 - 0.89) | 0.93(0.9 - 0.95) |
| Women | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
|  |  |  |  |  |
| **Age** |  |  |  |  |
| 0-29 | 2.07 (2.01 - 2.14) | 3.33 (3.18 - 3.49) | 1.42 (1.36 - 1.49) | 0.63 (0.57 - 0.7) |
| 30-39 | 1.61 (1.58 - 1.64) | 2.17 (2.08 - 2.25) | 1.69 (1.64 - 1.74) | 1.12 (1.05 - 1.19) |
| 40-49 | 1.61 (1.59 - 1.63) | 2.00 (1.95 - 2.05) | 1.29 (1.26 - 1.32) | 1.02 (0.97 - 1.07) |
| 50-59 | 1.68 (1.66 - 1.7) | 1.92 (1.88 - 1.96) | 1.14 (1.11 - 1.16) | 1.04 (1 - 1.07) |
| 60-69 | 1.56 (1.54 - 1.58) | 1.63 (1.6 - 1.66) | 1.07 (1.04 - 1.09) | 1.04 (1 - 1.07) |
| 70+ | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
|  |  |  |  |  |
| **Income**  |  |  |  |  |  |
| Medical Aid | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
| 1 (lowest) | 2.31 (2.24 - 2.39) | 2.11 (2.04 - 2.19) | 1.38 (1.32 - 1.45) | 1.29 (1.22 - 1.37) |
| 2 | 2.42 (2.34 - 2.5) | 2.26 (2.18 - 2.34) | 1.38 (1.32 - 1.44) | 1.28 (1.2 - 1.35) |
| 3 | 2.89 (2.79 - 2.98) | 2.62 (2.53 - 2.72) | 1.45 (1.38 - 1.51) | 1.27 (1.19 - 1.34) |
| 4 | 3.56 (3.44 - 3.68) | 3.33 (3.21 - 3.45) | 1.51 (1.45 - 1.59) | 1.16 (1.1 - 1.24) |
| 5 (highest) | 4.71 (4.56 - 4.87) | 4.52 (4.36 - 4.68) | 1.59 (1.52 - 1.67) | 1.11 (1.04 - 1.17) |
| Missing | 3.10 (2.96 - 3.24) | 2.69 (2.54 - 2.85) | 1.28 (1.19 - 1.37) | 1.25 (1.13 - 1.38) |
|  |  |  |  |  |
| **Residential area** |  |  |  |  |
| Seoul | 4.02 (3.96 - 4.09) | 3.57 (3.49 - 3.66) | 14.38 (13.9 - 14.89) | 15.55 (14.59 - 16.57) |
| Gyeonggi, Incheon | 1.49 (1.46 - 1.51) | 1.45 (1.42 - 1.49) | 3.19 (3.08 - 3.3) | 3.75 (3.52 - 4) |
| Chungbuk | 2.46 (2.39 - 2.53) | 2.37 (2.27 - 2.47) | 2.27 (2.15 - 2.41) | 2.37 (2.14 - 2.62) |
| The Chungnam area1 | 1.82 (1.79 - 1.86) | 1.70 (1.65 - 1.76) | 2.05 (1.96 - 2.15) | 2.20 (2.03 - 2.39) |
| Gangwon | 1.81 (1.76 - 1.87) | 1.63 (1.56 - 1.7) | 1.66 (1.56 - 1.76) | 1.54 (1.38 - 1.71) |
| Junbuk | 1.19 (1.16 - 1.22) | 1.26 (1.2 - 1.31) | 1.26 (1.19 - 1.34) | 1.42 (1.28 - 1.59) |
| The Junnam area2 | 1.11 (1.08 - 1.14) | 1.18 (1.15 - 1.22) | 1.23 (1.17 - 1.3) | 1.52 (1.4 - 1.66) |
| The Gyeongbuk area3 | 1.15 (1.13 - 1.18) | 1.25 (1.21 - 1.29) | 1.20 (1.15 - 1.26) | 1.44 (1.32 - 1.56) |
| The Gyeongnam area4 | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
| Jeju | 1.74 (1.67 - 1.82) | 1.38 (1.3 - 1.48) | 1.62 (1.48 - 1.78) | 1.50 (1.28 - 1.75) |
|  |  |  |  |  |
| **Residential area type** |  |  |  |  |
| Urban | 0.76 (0.74 - 0.77) | 0.76 (0.75 - 0.78) | 0.61 (0.59 - 0.63) | 0.54 (0.51 - 0.57) |
| Suburban  | 1.10 (1.08 - 1.12) | 1.07 (1.04 - 1.1) | 1.02 (0.99 - 1.06) | 0.99 (0.94 - 1.04) |
| Rural | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
|  |  |  |  |  |
| **Time period** |  |  |  |  |
| Before policy | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) | 1.00 (reference) |
| After policy | 1.11 (1.1 - 1.12) | 1.04 (1.03 - 1.06) | 0.95 (0.93 - 0.96) | 0.97 (0.95 - 1) |

Values are presented as odds ratio (95% confidence interval).

1Daejeon, Sejeong, Chungnam.

2Gwangju, Jeonnam.

3Daegu, Gyeongbuk.

4Busan, Ulsan, Gyeongnam.