Impact of Insurance Status on Utilization and Outcomes of Robotic-Assisted Hysterectomy Among Women With Benign Gynecologic Disease

Analysis for RCOP NIS Peds/OB/GYN19

Muhammad Saad

Aymen Ahmed

## Preamble:

* **Reference Papers:**
  + [Salman et al. 2025](https://doi.org/10.1097/MCA.0000000000001479)
* **Study Objective**: To investigate the association between primary insurance payer status and the utilization of robotic-assisted hysterectomy (RAH) versus non-robotic approaches among women undergoing hysterectomy for benign gynecologic conditions, and postoperative outcomes specifically among those women who underwent RAH, in U.S. hospitals from 2018 to 2020.
* **Data Source**: Cross-sectional analysis using the National Inpatient Sample (NIS) database from 2018 to 2020, a representative sample of all-payer inpatient hospitalizations in the U.S.
* **Patient Selection**: Included all inpatient hospitalizations for women aged 18 years and older who underwent a hysterectomy procedure, identified using ICD-10-PCS codes. Patients with diagnosis codes indicating gynecologic malignancy were excluded to focus on benign conditions. Patients were categorized based on their primary insurance payer. Hysterectomies were classified as robotic-assisted if a code for a robotic procedure was recorded in conjunction with a hysterectomy code.
* **Outcomes of Interest:**
  + Route of Hysterectomy
  + In-hospital Mortality
  + Length of Stay (days)
  + Inflation-adjusted Total Charge ($) [adjusted to 2020 dollars, using CPI data by the U.S. Bureau of Labor Statistics]
  + Any Surgical Complication (defined as a composite outcome including Postoperative Infection, Postoperative Wound Complications, or Postoperative Bleeding)
* **Statistical Analysis**: Univariable and multivariable analyses were conducted to evaluate the association between insurance status and outcomes:
  + **Univariable Analysis:**
    - Continuous variables: Design-based Kruskal-Wallis test.
    - Categorical variables: Pearson’s X² test with Rao & Scott adjustment to account for survey design.
  + **Multivariable Analysis:**
    - Logistic regression for binary outcomes (e.g., RAH utilization, in-hospital mortality, route of hysterectomy).
    - Linear regression for continuous outcomes (e.g., length of stay, total charges).
  + **Adjustments:** Models controlled for the following covariates:
    - **Demographics and Socioeconomic Factors**: Age, Race, Residential income.
    - **Clinical Factors:** Charlson Comorbidity Index, Admission Type, specific benign gynecologic conditions (Endometriosis, Uterine Leiomyoma, Pelvic Organ Prolapse), and other comorbidities (Chronic Kidney Disease, Hypertension, Diabetes Mellitus, Previous Heart Failure, Obesity, Chronic Pulmonary Disease).
    - **Hospital-Level Factors:** Hospital region, Hospital bedsize, Hospital location and teaching status.
* **Software:** All statistical analyses were performed using R Statistical Language (Version 4.5.0; R Foundation for Statistical Computing, Vienna, Austria), incorporating survey-weighted procedures via the *survey* package to account for the complex sampling design of NIS.

## Baseline Table:

| **Characteristic** | **Overall** N = 343,655 | **Private** N = 203,700 | **Medicaid** N = 69,555 | **Medicare** N = 45,680 | **Other** N = 24,720 | **p-value***1* |
| --- | --- | --- | --- | --- | --- | --- |
| Age, y, Mean (SD) | 48 (12) | 46 (8) | 43 (9) | 65 (13) | 46 (8) | <0.001 |
| Race, n (%) |  |  |  |  |  | <0.001 |
| White | 170,030 (51) | 105,485 (53) | 25,575 (38) | 29,785 (67) | 9,185 (38) |  |
| Asian or Pacific Islander | 14,260 (4.2) | 9,315 (4.7) | 2,700 (4.0) | 1,365 (3.1) | 880 (3.7) |  |
| Black | 80,145 (24) | 49,155 (25) | 17,595 (26) | 7,455 (17) | 5,940 (25) |  |
| Hispanic | 57,150 (17) | 27,260 (14) | 18,740 (28) | 4,610 (10) | 6,540 (27) |  |
| Native American | 1,845 (0.5) | 830 (0.4) | 535 (0.8) | 230 (0.5) | 250 (1.0) |  |
| Other | 12,645 (3.8) | 7,175 (3.6) | 2,865 (4.2) | 1,295 (2.9) | 1,310 (5.4) |  |
| Residential income, n (%) |  |  |  |  |  | <0.001 |
| $1 - $51,999 | 102,040 (30) | 51,545 (26) | 28,295 (41) | 13,265 (29) | 8,935 (37) |  |
| $52,000 - $65,999 | 86,500 (25) | 49,185 (24) | 19,005 (28) | 11,750 (26) | 6,560 (27) |  |
| $66,000 - $87,999 | 81,195 (24) | 51,180 (25) | 14,125 (21) | 10,765 (24) | 5,125 (21) |  |
| $88,000 or more | 69,660 (21) | 49,365 (25) | 7,300 (11) | 9,290 (21) | 3,705 (15) |  |
| Hospital region, n (%) |  |  |  |  |  | <0.001 |
| Midwest | 65,160 (19) | 40,130 (20) | 11,985 (17) | 9,710 (21) | 3,335 (13) |  |
| Northeast | 56,770 (17) | 33,345 (16) | 12,340 (18) | 8,380 (18) | 2,705 (11) |  |
| South | 147,265 (43) | 92,425 (45) | 21,965 (32) | 18,310 (40) | 14,565 (59) |  |
| West | 74,460 (22) | 37,800 (19) | 23,265 (33) | 9,280 (20) | 4,115 (17) |  |
| Hospital bedsize, n (%) |  |  |  |  |  | <0.001 |
| Large | 176,580 (51) | 101,120 (50) | 36,415 (52) | 25,370 (56) | 13,675 (55) |  |
| Medium | 100,035 (29) | 60,155 (30) | 20,275 (29) | 12,825 (28) | 6,780 (27) |  |
| Small | 67,040 (20) | 42,425 (21) | 12,865 (18) | 7,485 (16) | 4,265 (17) |  |
| Hospital location and teaching status, n (%) |  |  |  |  |  | <0.001 |
| Rural | 30,500 (8.9) | 17,420 (8.6) | 7,930 (11) | 3,045 (6.7) | 2,105 (8.5) |  |
| Urban, non-teaching | 61,670 (18) | 38,730 (19) | 11,890 (17) | 7,340 (16) | 3,710 (15) |  |
| Urban, teaching | 251,485 (73) | 147,550 (72) | 49,735 (72) | 35,295 (77) | 18,905 (76) |  |
| Charlson Comorbidity Index, Mean (SD) | 0.54 (1.26) | 0.38 (1.01) | 0.49 (1.11) | 1.38 (2.00) | 0.44 (1.14) | <0.001 |
| Admission Type, n (%) |  |  |  |  |  | <0.001 |
| Elective | 294,210 (86) | 179,715 (89) | 55,360 (80) | 39,080 (86) | 20,055 (81) |  |
| Non-elective | 48,205 (14) | 23,225 (11) | 13,935 (20) | 6,435 (14) | 4,610 (19) |  |
| Endometriosis, n (%) | 52,590 (15) | 34,595 (17) | 10,960 (16) | 3,280 (7.2) | 3,755 (15) | <0.001 |
| Uterine Leiomyoma, n (%) | 193,975 (56) | 127,950 (63) | 36,360 (52) | 14,020 (31) | 15,645 (63) | <0.001 |
| Pelvic Organ Prolapse, n (%) | 36,905 (11) | 16,615 (8.2) | 5,295 (7.6) | 13,285 (29) | 1,710 (6.9) | <0.001 |
| Chronic Kidney Disease, n (%) | 7,220 (2.1) | 1,925 (0.9) | 960 (1.4) | 4,095 (9.0) | 240 (1.0) | <0.001 |
| Hypertension, n (%) | 106,635 (31) | 54,110 (27) | 18,790 (27) | 26,825 (59) | 6,910 (28) | <0.001 |
| Diabetes Mellitus, n (%) | 37,625 (11) | 16,870 (8.3) | 7,945 (11) | 10,310 (23) | 2,500 (10) | <0.001 |
| Previous Heart Failure, n (%) | 2,730 (0.8) | 825 (0.4) | 495 (0.7) | 1,285 (2.8) | 125 (0.5) | <0.001 |
| Obesity, n (%) | 75,260 (22) | 43,435 (21) | 16,850 (24) | 9,985 (22) | 4,990 (20) | <0.001 |
| Chronic Pulmonary Disease, n (%) | 37,370 (11) | 18,545 (9.1) | 8,950 (13) | 7,795 (17) | 2,080 (8.4) | <0.001 |
| *1*Design-based KruskalWallis test; Pearson's X^2: Rao & Scott adjustment | | | | | | |

## Univariable Analysis:

### Outcomes of patients undergoing hysterectomy:

| **Characteristic** | **Overall** N = 343,655 | **Private** N = 203,700 | **Medicaid** N = 69,555 | **Medicare** N = 45,680 | **Other** N = 24,720 | **p-value***1* |
| --- | --- | --- | --- | --- | --- | --- |
| Route of Hysterectomy, n (%) |  |  |  |  |  | <0.001 |
| Abdominal | 253,095 (74) | 156,015 (77) | 52,250 (75) | 25,960 (57) | 18,870 (76) |  |
| Laparoscopic | 36,435 (11) | 20,190 (9.9) | 8,240 (12) | 5,080 (11) | 2,925 (12) |  |
| Robotic | 34,105 (9.9) | 19,195 (9.4) | 4,980 (7.2) | 8,240 (18) | 1,690 (6.8) |  |
| Vaginal | 20,020 (5.8) | 8,300 (4.1) | 4,085 (5.9) | 6,400 (14) | 1,235 (5.0) |  |
| *1*Pearson's X^2: Rao & Scott adjustment | | | | | | |

### Outcomes of patients undergoing robotic-assisted hysterectomy:

| **Characteristic** | **Overall** N = 34,105 | **Private** N = 19,195 | **Medicaid** N = 4,980 | **Medicare** N = 8,240 | **Other** N = 1,690 | **p-value***1* |
| --- | --- | --- | --- | --- | --- | --- |
| Length of stay (days), Median (IQR) | 1.00 (1.00 – 3.00) | 1.00 (1.00 – 2.00) | 1.00 (1.00 – 3.00) | 2.00 (1.00 – 4.00) | 2.00 (1.00 – 3.00) | <0.001 |
| Inflation-adjusted total charge ($), Median (IQR) | 68,863 (44,150 – 106,531) | 65,995 (42,643 – 101,313) | 70,394 (44,878 – 105,219) | 75,877 (47,901 – 120,485) | 66,397 (45,205 – 108,743) | <0.001 |
| Any Surgical Complication, n (%) | 630 (1.8) | 375 (2.0) | 80 (1.6) | 135 (1.6) | 40 (2.4) | 0.69 |
| Postoperative Infection, n (%) | 130 (0.4) | 65 (0.3) | 20 (0.4) | 30 (0.4) | 15 (0.9) | 0.46 |
| Postoperative Wound Complication, n (%) | 70 (0.2) | 40 (0.2) | 0 (0) | 20 (0.2) | 10 (0.6) | 0.20 |
| Postoperative Bleeding, n (%) | 480 (1.4) | 295 (1.5) | 65 (1.3) | 95 (1.2) | 25 (1.5) | 0.73 |
| *1*Design-based KruskalWallis test; Pearson's X^2: Rao & Scott adjustment | | | | | | |

## Multivariable Logistic Regression:

### Robotic-Assisted Hysterectomy:

| **Characteristic** | **OR** **(95% CI)** | **p-value** |
| --- | --- | --- |
| Expected primary payer |  |  |
| Private | — |  |
| Medicaid | 0.77 (0.70 to 0.86) | <0.001 |
| Medicare | 1.19 (1.08 to 1.31) | <0.001 |
| Other | 0.73 (0.64 to 0.83) | <0.001 |
| Age, y | 1.01 (1.01 to 1.02) | <0.001 |
| Race |  |  |
| White | — |  |
| Asian or Pacific Islander | 0.75 (0.64 to 0.88) | <0.001 |
| Black | 0.70 (0.64 to 0.77) | <0.001 |
| Hispanic | 0.91 (0.82 to 1.01) | 0.071 |
| Native American | 0.84 (0.55 to 1.27) | 0.40 |
| Other | 1.02 (0.87 to 1.20) | 0.79 |
| Residential income |  |  |
| $1 - $51,999 | — |  |
| $52,000 - $65,999 | 1.15 (1.05 to 1.26) | 0.002 |
| $66,000 - $87,999 | 1.25 (1.14 to 1.37) | <0.001 |
| $88,000 or more | 1.38 (1.25 to 1.53) | <0.001 |
| Hospital region |  |  |
| Midwest | — |  |
| Northeast | 0.83 (0.71 to 0.96) | 0.012 |
| South | 0.92 (0.82 to 1.03) | 0.16 |
| West | 1.01 (0.88 to 1.16) | 0.88 |
| Hospital bedsize |  |  |
| Large | — |  |
| Medium | 1.06 (0.95 to 1.18) | 0.32 |
| Small | 0.89 (0.78 to 1.02) | 0.094 |
| Hospital location and teaching status |  |  |
| Rural | — |  |
| Urban, non-teaching | 3.03 (2.10 to 4.37) | <0.001 |
| Urban, teaching | 3.88 (2.73 to 5.51) | <0.001 |
| Charlson Comorbidity Index | 1.01 (0.99 to 1.04) | 0.26 |
| Admission Type |  |  |
| Elective | — |  |
| Non-elective | 1.33 (1.19 to 1.50) | <0.001 |
| Endometriosis |  |  |
| No | — |  |
| Yes | 1.51 (1.39 to 1.64) | <0.001 |
| Uterine Leiomyoma (Fibroids) |  |  |
| No | — |  |
| Yes | 0.67 (0.63 to 0.72) | <0.001 |
| Pelvic Organ Prolapse |  |  |
| No | — |  |
| Yes | 1.58 (1.40 to 1.78) | <0.001 |
| Chronic Kidney Disease |  |  |
| No | — |  |
| Yes | 1.31 (1.12 to 1.55) | 0.001 |
| Hypertension |  |  |
| No | — |  |
| Yes | 1.01 (0.94 to 1.08) | 0.79 |
| Diabetes Mellitus |  |  |
| No | — |  |
| Yes | 1.11 (1.02 to 1.21) | 0.020 |
| Previous Heart Failure |  |  |
| No | — |  |
| Yes | 1.02 (0.79 to 1.31) | 0.89 |
| Obesity |  |  |
| No | — |  |
| Yes | 1.31 (1.22 to 1.40) | <0.001 |
| Chronic Pulmonary Disease |  |  |
| No | — |  |
| Yes | 1.18 (1.09 to 1.28) | <0.001 |
| Abbreviations: CI = Confidence Interval, OR = Odds Ratio | | |

### Any Surgical Complication:

| **Characteristic** | **OR** **(95% CI)** | **p-value** |
| --- | --- | --- |
| Expected primary payer |  |  |
| Private | — |  |
| Medicaid | 0.79 (0.45 to 1.37) | 0.40 |
| Medicare | 1.12 (0.63 to 1.98) | 0.71 |
| Other | 1.20 (0.56 to 2.59) | 0.64 |
| Age, y | 0.98 (0.96 to 1.00) | 0.021 |
| Race |  |  |
| White | — |  |
| Asian or Pacific Islander | 0.97 (0.34 to 2.79) | 0.96 |
| Black | 1.19 (0.72 to 1.97) | 0.49 |
| Hispanic | 0.83 (0.48 to 1.44) | 0.51 |
| Native American | 0.00 (0.00 to 0.00) | <0.001 |
| Other | 0.72 (0.28 to 1.90) | 0.51 |
| Residential income |  |  |
| $1 - $51,999 | — |  |
| $52,000 - $65,999 | 1.47 (0.85 to 2.52) | 0.17 |
| $66,000 - $87,999 | 1.50 (0.86 to 2.62) | 0.16 |
| $88,000 or more | 1.41 (0.78 to 2.54) | 0.25 |
| Hospital region |  |  |
| Midwest | — |  |
| Northeast | 1.27 (0.69 to 2.36) | 0.44 |
| South | 1.18 (0.71 to 1.96) | 0.51 |
| West | 0.94 (0.50 to 1.74) | 0.83 |
| Hospital bedsize |  |  |
| Large | — |  |
| Medium | 1.24 (0.80 to 1.90) | 0.33 |
| Small | 1.49 (0.94 to 2.35) | 0.087 |
| Hospital location and teaching status |  |  |
| Rural | — |  |
| Urban, non-teaching | 0.38 (0.15 to 0.98) | 0.045 |
| Urban, teaching | 0.34 (0.15 to 0.76) | 0.009 |
| Charlson Comorbidity Index | 1.09 (0.94 to 1.26) | 0.27 |
| Admission Type |  |  |
| Elective | — |  |
| Non-elective | 1.78 (1.20 to 2.65) | 0.004 |
| Endometriosis |  |  |
| No | — |  |
| Yes | 1.02 (0.65 to 1.62) | 0.92 |
| Uterine Leiomyoma (Fibroids) |  |  |
| No | — |  |
| Yes | 0.84 (0.55 to 1.28) | 0.42 |
| Pelvic Organ Prolapse |  |  |
| No | — |  |
| Yes | 1.00 (0.57 to 1.73) | >0.99 |
| Chronic Kidney Disease |  |  |
| No | — |  |
| Yes | 1.12 (0.43 to 2.90) | 0.81 |
| Hypertension |  |  |
| No | — |  |
| Yes | 1.09 (0.70 to 1.71) | 0.70 |
| Diabetes Mellitus |  |  |
| No | — |  |
| Yes | 1.15 (0.63 to 2.11) | 0.64 |
| Previous Heart Failure |  |  |
| No | — |  |
| Yes | 2.20 (0.74 to 6.51) | 0.15 |
| Obesity |  |  |
| No | — |  |
| Yes | 1.23 (0.82 to 1.84) | 0.32 |
| Chronic Pulmonary Disease |  |  |
| No | — |  |
| Yes | 0.83 (0.47 to 1.47) | 0.52 |
| Abbreviations: CI = Confidence Interval, OR = Odds Ratio | | |

## Multivariable Linear Regression:

### Length of Stay:

| **Characteristic** | **Beta** **(95% CI)** | **p-value** |
| --- | --- | --- |
| Expected primary payer |  |  |
| Private | — |  |
| Medicaid | -0.05 (-0.30 to 0.21) | 0.72 |
| Medicare | 0.37 (0.02 to 0.72) | 0.036 |
| Other | 0.14 (-0.21 to 0.49) | 0.43 |
| Age, y | 0.01 (-0.01 to 0.02) | 0.31 |
| Race |  |  |
| White | — |  |
| Asian or Pacific Islander | -0.10 (-0.40 to 0.20) | 0.52 |
| Black | 0.29 (0.00 to 0.58) | 0.048 |
| Hispanic | -0.18 (-0.48 to 0.11) | 0.23 |
| Native American | -0.22 (-0.78 to 0.34) | 0.44 |
| Other | -0.46 (-0.73 to -0.18) | 0.001 |
| Residential income |  |  |
| $1 - $51,999 | — |  |
| $52,000 - $65,999 | 0.01 (-0.27 to 0.29) | 0.96 |
| $66,000 - $87,999 | 0.10 (-0.17 to 0.37) | 0.47 |
| $88,000 or more | -0.08 (-0.35 to 0.19) | 0.56 |
| Hospital region |  |  |
| Midwest | — |  |
| Northeast | -0.01 (-0.32 to 0.30) | 0.95 |
| South | 0.24 (0.01 to 0.46) | 0.038 |
| West | 0.00 (-0.27 to 0.28) | 0.99 |
| Hospital bedsize |  |  |
| Large | — |  |
| Medium | 0.01 (-0.23 to 0.25) | 0.94 |
| Small | -0.14 (-0.39 to 0.11) | 0.27 |
| Hospital location and teaching status |  |  |
| Rural | — |  |
| Urban, non-teaching | 0.21 (-0.33 to 0.75) | 0.45 |
| Urban, teaching | 0.29 (-0.19 to 0.78) | 0.24 |
| Charlson Comorbidity Index | 0.75 (0.59 to 0.92) | <0.001 |
| Admission Type |  |  |
| Elective | — |  |
| Non-elective | 1.8 (1.4 to 2.3) | <0.001 |
| Endometriosis |  |  |
| No | — |  |
| Yes | -0.10 (-0.30 to 0.10) | 0.32 |
| Uterine Leiomyoma (Fibroids) |  |  |
| No | — |  |
| Yes | -0.34 (-0.54 to -0.15) | <0.001 |
| Pelvic Organ Prolapse |  |  |
| No | — |  |
| Yes | -0.74 (-0.95 to -0.53) | <0.001 |
| Chronic Kidney Disease |  |  |
| No | — |  |
| Yes | -0.65 (-1.6 to 0.34) | 0.20 |
| Hypertension |  |  |
| No | — |  |
| Yes | 0.11 (-0.12 to 0.35) | 0.34 |
| Diabetes Mellitus |  |  |
| No | — |  |
| Yes | -0.84 (-1.2 to -0.50) | <0.001 |
| Previous Heart Failure |  |  |
| No | — |  |
| Yes | 2.4 (-0.46 to 5.3) | 0.10 |
| Obesity |  |  |
| No | — |  |
| Yes | 0.25 (0.01 to 0.49) | 0.045 |
| Chronic Pulmonary Disease |  |  |
| No | — |  |
| Yes | -0.70 (-1.0 to -0.38) | <0.001 |
| Abbreviation: CI = Confidence Interval | | |

### Inflation-adjusted Total Charge:

| **Characteristic** | **Beta** **(95% CI)** | **p-value** |
| --- | --- | --- |
| Expected primary payer |  |  |
| Private | — |  |
| Medicaid | -4,487 (-12,007 to 3,033) | 0.24 |
| Medicare | 763 (-4,464 to 5,989) | 0.77 |
| Other | -4,298 (-12,555 to 3,960) | 0.31 |
| Age, y | 324 (83 to 565) | 0.009 |
| Race |  |  |
| White | — |  |
| Asian or Pacific Islander | 6,865 (-1,903 to 15,634) | 0.12 |
| Black | 9,951 (4,147 to 15,755) | <0.001 |
| Hispanic | 10,688 (3,078 to 18,298) | 0.006 |
| Native American | -12,668 (-34,326 to 8,990) | 0.25 |
| Other | 2,361 (-5,327 to 10,049) | 0.55 |
| Residential income |  |  |
| $1 - $51,999 | — |  |
| $52,000 - $65,999 | 5,666 (-1,645 to 12,977) | 0.13 |
| $66,000 - $87,999 | 2,255 (-2,853 to 7,362) | 0.39 |
| $88,000 or more | -78 (-5,811 to 5,656) | 0.98 |
| Hospital region |  |  |
| Midwest | — |  |
| Northeast | -6,204 (-13,013 to 605) | 0.074 |
| South | 18,389 (12,388 to 24,391) | <0.001 |
| West | 35,817 (27,162 to 44,472) | <0.001 |
| Hospital bedsize |  |  |
| Large | — |  |
| Medium | 704 (-6,639 to 8,047) | 0.85 |
| Small | -7,806 (-14,353 to -1,259) | 0.019 |
| Hospital location and teaching status |  |  |
| Rural | — |  |
| Urban, non-teaching | 27,363 (17,105 to 37,621) | <0.001 |
| Urban, teaching | 26,612 (18,720 to 34,504) | <0.001 |
| Charlson Comorbidity Index | 16,204 (11,273 to 21,135) | <0.001 |
| Admission Type |  |  |
| Elective | — |  |
| Non-elective | 26,625 (17,305 to 35,945) | <0.001 |
| Endometriosis |  |  |
| No | — |  |
| Yes | 177 (-4,318 to 4,672) | 0.94 |
| Uterine Leiomyoma (Fibroids) |  |  |
| No | — |  |
| Yes | -2,525 (-6,596 to 1,545) | 0.22 |
| Pelvic Organ Prolapse |  |  |
| No | — |  |
| Yes | 5,213 (-546 to 10,971) | 0.076 |
| Chronic Kidney Disease |  |  |
| No | — |  |
| Yes | -29,688 (-49,809 to -9,566) | 0.004 |
| Hypertension |  |  |
| No | — |  |
| Yes | -1,524 (-6,532 to 3,483) | 0.55 |
| Diabetes Mellitus |  |  |
| No | — |  |
| Yes | -14,409 (-21,435 to -7,384) | <0.001 |
| Previous Heart Failure |  |  |
| No | — |  |
| Yes | 17,879 (-7,477 to 43,234) | 0.17 |
| Obesity |  |  |
| No | — |  |
| Yes | 6,493 (668 to 12,318) | 0.029 |
| Chronic Pulmonary Disease |  |  |
| No | — |  |
| Yes | -14,225 (-22,953 to -5,496) | 0.001 |
| Abbreviation: CI = Confidence Interval | | |