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**Contact Information:**  
**Healthcare Cost and Utilization Project (HCUP)**  
**Agency for Healthcare Research and Quality**  
**540 Gaither Road**  
**Rockville, MD 20850**  
**<http://www.hcup-us.ahrq.gov>**

**For Technical Assistance with HCUP Products:**

**Email: [hcup@ahrq.gov](mailto:hcup@ahrq.gov)**

**or**

**Phone: 1-866-290-HCUP**

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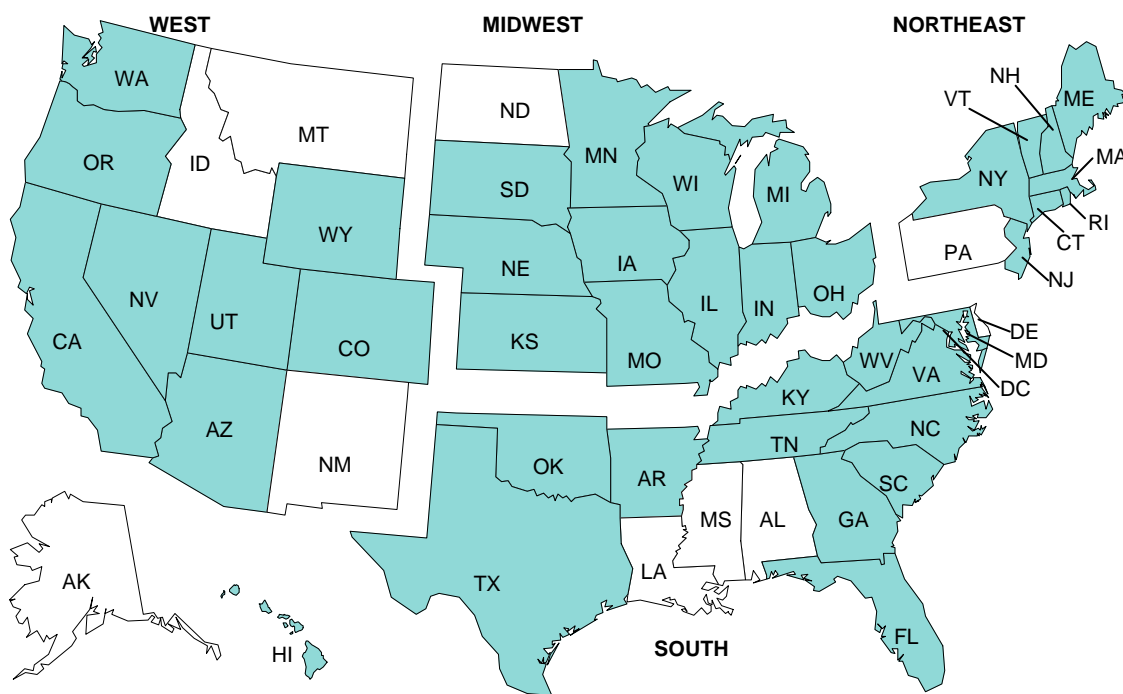
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## INTRODUCTION

This report provides a summary of analyses that compare estimates from the HCUP Nationwide Inpatient Sample (NIS) for 2007 to three related data sources: the American Hospital Association (AHA) Annual Survey Database, the National Hospital Discharge Survey (NHDS) from the National Center for Health Statistics, and the MedPAR inpatient data from the Centers for Medicare and Medicaid Services (CMS). For full information on these databases and complete details on prior years' findings, refer to earlier versions of this report on HCUP-US Website under the heading "NIS Comparison Reports" at <http://www.hcup-us.ahrq.gov/db/nation/nis/nisrelatedreports.jsp>.

As shown in Figure 1 and Table 1, the 2007 NIS is selected from a sampling frame comprising 40 HCUP Partner organizations.

**Figure 1. HCUP State Partners Participating in the NIS, 2007**



The findings in this report are summarized in tables that highlight differences and similarities between the four databases.

- Table 1 compares states representing HCUP Partners in the NIS to those in the hospital universe (the U.S.)
- Tables 2-7 summarize comparisons with the AHA Annual Survey
- Tables 8-13 summarize comparisons with the NHDS
- Tables 14-20 summarize comparisons with MedPAR data

Based on the analyses presented in this report, the NIS appears to provide reliable national estimates when compared with other national data sources along the dimensions of hospital characteristics, numbers of discharges, length of stay, and in-hospital mortality.

Each of the data sources discussed has its strengths and weaknesses, and each may be the preferred choice for different research questions. The NIS offers a large sample that enables study of low incidence disorders and less common procedures; NIS estimates can be calculated for literally thousands of sub-populations that may be of interest to researchers. In addition, NIS hospitals accurately reflect the universe of United States hospitals, particularly the relative mix of large and small hospitals. Therefore, the NIS may be more appropriate when hospital type and size are important considerations.

In contrast, the NHDS and MedPAR both offer data drawn from all 50 states, rather than the more limited sampling frame of the NIS. Where a comprehensive geographic representation is more important than a large sample size, these resources might be preferable. Alternatively, if the question under study applies only to Medicare enrollees, the MedPAR data set might be favored.

Which of the data sources is better? The answer depends on the needs of the researcher. The intended use of the data is the most critical factor in determining which data source will be most valuable. In general, the NIS estimates of data elements essential to health care policy – including in-hospital mortality, inpatient population size, length of stay, and charges – are accurate and precise. It is possible to calculate statistics for large groups ranging from the inpatient population of the United States, as well as for small subsets focusing on specific conditions. The characteristics documented in this report suggest that the NIS produces reliable estimates and that it is a valuable tool for researchers and policy makers alike.

**Table 1. Comparison of States in the NIS with National Demographics, 2007**

|   | <b>NIS Sampling Frame</b>                               | <b>United States</b>                           |
|---|---|--|
| Number of States  | 40  | 50 plus District of Columbia                   |
| Population  | 269,763,460   | 301,621,157                                    |
| Sampling frame for the NIS includes   | 78% of U.S. community hospitals                         | 100%   |
|   | 81% of community hospital discharges                    | 100%   |
|   | 90% of U.S. population                                  | 100%   |
| Average population density (persons per square mile)                        | 114.7   | 84.5   |
| Population density for the least populated states (persons per square mile) | Nebraska (23.1)<br>South Dakota (10.5)<br>Wyoming (5.4) | Montana (6.6)<br>Wyoming (5.4)<br>Alaska (1.2) |
| Market penetration of Medicare managed care providers                       | 18.4%   | 19.0%  |

## Summary of NIS-AHA Comparisons

- NIS hospitals resembled typical hospitals in the AHA universe in most characteristics, although NIS hospitals were more active, had higher and more intensive staffing rates, and more Medicare- and Medicaid-covered patients.
- NIS facilities admitted and discharged more patients, and had larger payrolls compared to hospitals in the AHA universe.
- NIS hospitals tended to offer slightly more high-technology services than the AHA.
- Nearly all NIS discharge estimates closely align with the discharge counts from the AHA Survey. This is not surprising because NIS sampling strata and NIS discharge weights were based on AHA Annual Survey results.
- The AHA-derived sampling weights in the NIS yield discharge counts consistent with the AHA universe by region and for most categories of hospital type. The discharge comparisons by hospital ownership, exhibited no significant differences.
- In contrast, the overall NIS estimated average length of stay was slightly longer than the AHA statistic.
- Rural hospitals was the one category where the weighted NIS hospital count differed from the actual AHA hospital count—the NIS includes relatively fewer small rural hospitals and relatively more large rural hospitals than found in the AHA universe.
- AHA Annual Survey data reflect admission counts. To be consistent with the other datasets used for analysis in this report (i.e., based on discharge counts), we adjusted the AHA Annual Survey admission counts by including admission counts for well newborns.



**Table 2. Number of Hospitals in NIS Frame<sup>1</sup> and AHA Universe, 2007**

|                                   | <b>NIS<br/>(Weighted)</b> | <b>NIS<br/>(Unweighted)</b> | <b>AHA</b> |
|-----------------------------------|---------------------------|-----------------------------|------------|
| U.S.                              | 5,099                     | 1,054                       | 5,099      |
| <b>Region</b>                     |                           |                             |            |
| Northeast                         | 651                       | 134                         | 651        |
| Midwest                           | 1,487                     | 302                         | 1,487      |
| South                             | 2,032                     | 416                         | 2,032      |
| West                              | 929                       | 192                         | 929        |
| <b>Hospital Control</b>           |                           |                             |            |
| Public                            | 1,105                     | 228                         | 1,120      |
| Non-Profit                        | 3,003                     | 614                         | 2,918      |
| Proprietary                       | 991                       | 202                         | 1,061      |
| <b>Location / Teaching Status</b> |                           |                             |            |
| Rural                             | 2,050                     | 420                         | 2,050      |
| Small                             | 1,030                     | 209                         | 1,323      |
| Mediums                           | 425                       | 88                          | 401        |
| Large                             | 595                       | 123                         | 326        |
| Urban, non-teaching               | 2,205                     | 450                         | 2,205      |
| Small                             | 1,014                     | 206                         | 1,032      |
| Medium                            | 554                       | 114                         | 593        |
| Large                             | 637                       | 130                         | 580        |
| Urban, teaching                   | 844                       | 174                         | 844        |
| Small                             | 255                       | 53                          | 245        |
| Medium                            | 256                       | 52                          | 241        |
| Large                             | 333                       | 69                          | 358        |

Note: Significance tests were not performed because AHA numbers are not sample statistics.

<sup>1</sup>The 2007 frame contains 40 states.

**Table 3. NIS and AHA Comparisons by Facility Services, 2007**

|  | <b>NIS</b> | <b>AHA</b> |
|--|------------|------------|
| High Tech Index <sup>1</sup> (mean)                    | 2.66       | 2.58       |
| High Tech Index <sup>1</sup> (median)                  | 2.00       | 2.00       |
| Neonatal ICUs <sup>2</sup>                             | 18.89%     | 18.61%     |
| Cardiac Catheterization <sup>2</sup>                   | 27.35%     | 26.64%     |
| CT Scanners <sup>2</sup>                               | 78.45%     | 74.87%     |
| MRIs <sup>2</sup>                                      | 57.25%     | 54.83%     |
| Open Heart Surgeries <sup>2</sup>                      | 20.81%     | 21.58%     |
| Transplant Services <sup>2</sup>                       | 7.25%      | 7.76%      |
| Intensity Modulated Ray Radiation Therapy <sup>2</sup> | 19.93%     | 18.32%     |
| Extracorporeal Shock Wave Lithotripsy <sup>2</sup>     | 22.32%     | 21.89%     |
| PET Scanners <sup>2</sup>                              | 13.52%     | 13.09%     |
| Pediatric Specialty Hospitals                          | 1.06%      | 1.70%      |
| Burn Units   | 3.83%      | 4.38%      |
| Rehabilitation Units                                   | 25.30%     | 24.64%     |
| Alcohol/Chemical Dependency Services                   | 8.93%      | 7.13%      |
| Trauma Centers   | 28.31%     | 28.97%     |
| Emergency Departments                                  | 78.95%     | 76.28%     |

Note: Significance tests were not performed because AHA numbers are not sample statistics.

<sup>1</sup>Prior to 2004, the index included Angioplasty services.

<sup>2</sup>High technology service - used in the "High Tech Index."

**Table 4. NIS and AHA Comparisons by Facility Characteristics, 2007**

|  | <b>NIS<br/>Mean</b> | <b>AHA<br/>Mean</b> | <b>NIS<br/>Median</b> | <b>AHA<br/>Median</b> |
|--|---------------------|---------------------|-----------------------|-----------------------|
| Hospital Admissions  | 7,143.42            | 6,902.30            | 3,290.00              | 3,154.00              |
| Hospital Discharges  | 7,143.42            | 6,902.30            | 3,290.00              | 3,154.00              |
| Hospital Discharges <sup>1</sup>                                   | 8,037.53            | 7,687.40            | 3,612.00              | 3,494.00              |
| Average Length of Stay   | 5.74                | 5.89                | 4.31                  | 4.38                  |
| Average Length of Stay <sup>1</sup>                                | 5.33                | 5.49                | 3.92                  | 4.00                  |
| Births   | 894.11              | 785.10              | 310.00                | 248.00                |
| Percent Medicare Days  | 54.07               | 54.51               | 54.31                 | 55.66                 |
| Percent Medicare Discharges  | 49.16               | 48.76               | 47.87                 | 47.95                 |
| Percent Medicare Discharges <sup>1</sup>                           | 45.62               | 45.42               | 43.38                 | 43.67                 |
| Percent Medicaid Days  | 15.05               | 14.54               | 13.15                 | 12.52                 |
| Percent Medicaid Discharges  | 16.18               | 15.68               | 15.93                 | 15.08                 |
| Percent Medicaid Discharges <sup>1</sup>                           | 14.51               | 14.15               | 14.04                 | 13.54                 |
| Hospital Beds  | 149.18              | 146.11              | 82.00                 | 80.00                 |
| Occupancy Rate   | 52.34               | 52.23               | 54.19                 | 53.73                 |
| Inpatient Surgeries  | 2,014.30            | 2,040.69            | 896.00                | 892.00                |
| FTE <sup>2</sup>   | 926.88              | 874.98              | 405.50                | 396.00                |
| FTE <sup>2</sup> per Bed   | 6.06                | 5.76                | 5.43                  | 5.22                  |
| RN FTE <sup>2</sup> per 1000 Patient Days                          | 3.93                | 3.52                | 3.16                  | 3.09                  |
| Intern-Resident FTE <sup>2</sup> per 100 Beds                      | 6.77                | 6.40                | 0.00                  | 0.00                  |
| Intern-Resident FTE <sup>2</sup> per 100 Beds (Teaching Hospitals) | 34.81               | 34.60               | 11.61                 | 12.08                 |
| Total Hospital Expenses  | \$122,366,800       | \$112,658,940       | \$51,407,783          | \$45,143,250          |
| Hosp. Expenses per Bed   | \$751,718           | \$690,442           | \$651,770             | \$621,871             |
| Total Hospital Payroll   | \$49,681,561        | \$45,406,010        | \$20,051,934          | \$18,110,986          |
| Hosp. Payroll per Bed  | \$301,262           | \$276,596           | \$256,525             | \$245,781             |

Note: Significance tests were not performed because AHA numbers are not sample statistics.

<sup>1</sup>To be consistent with the other datasets used for analysis in this report, AHA Annual Survey admission counts have been adjusted by including admission counts for well newborns.

<sup>2</sup>Full-time equivalents.

**Table 5. NIS and AHA Comparisons by Region, 2007**

|               | Number of Discharges in Thousands<br>(Standard Error) |        | Average Length of Stay in Days<br>(Standard Error) |        |
|---------------|---|--------|--|--------|
|               | NIS   | AHA    | NIS  | AHA    |
| Overall       | 39,541<br>(799)                                       | 40,023 | 4.60<br>(0.03)                                     | 4.46** |
| <b>Region</b> |   |        |  |        |
| Northeast     | 7,753<br>(337)  | 7,753  | 5.13<br>(0.08)                                     | 5.04   |
| South         | 9,130<br>(323)  | 9,130  | 4.35<br>(0.06)                                     | 4.26   |
| Midwest       | 15,273<br>(594)                                       | 15,273 | 4.62<br>(0.06)                                     | 4.47*  |
| West          | 7,385<br>(258)  | 7,385  | 4.33<br>(0.08)                                     | 4.06** |

\*Significant at  $p < 0.05$ .

\*\*Significant at  $p < 0.01$ .

**Table 6. NIS and AHA Comparisons by Hospital Control, 2007**

|                          | Number of Discharges in Thousands<br>(Standard Error) |        | Average Length of Stay in Days<br>(Standard Error) |        |
|--------------------------|---|--------|--|--------|
|                          | NIS   | AHA    | NIS  | AHA    |
| Total Public             | 5,667<br>(693)  | 5,542  | 4.86<br>(0.16)                                     | 4.7    |
| 1-99 Beds                | 1,041<br>(70)   | 1,060  | 3.89<br>(0.16)                                     | 3.79   |
| 100-199 Beds             | 826<br>(130)  | 923    | 4.05<br>(0.12)                                     | 4.23   |
| 200-299 Beds             | 645<br>(143)  | 633    | 4.16<br>(0.16)                                     | 4.28   |
| 300-499 Beds             | 848<br>(243)  | 1,241  | 4.99<br>(0.28)                                     | 4.96   |
| 500+ Beds                | 2,305<br>(383)  | 1,683  | 5.73<br>(0.27)                                     | 5.53   |
| Total Private Non-Profit | 28,600<br>(965)                                       | 28,587 | 4.54<br>(0.03)                                     | 4.40** |
| 1-99 Beds                | 2,433<br>(129)  | 2,617  | 3.67<br>(0.07)                                     | 3.78   |
| 100-199 Beds             | 4,657<br>(295)  | 4,759  | 4.22<br>(0.06)                                     | 4.10   |
| 200-299 Beds             | 6,202<br>(482)  | 5,842  | 4.46<br>(0.06)                                     | 4.26** |
| 300-499 Beds             | 9,596<br>(783)  | 8,265  | 4.76<br>(0.06)                                     | 4.42** |
| 500+ Beds                | 5,710<br>(939)  | 7,103  | 4.91<br>(0.10)                                     | 4.94   |
| Total Proprietary        | 5,274<br>(389)  | 5,411  | 4.65<br>(0.09)                                     | 4.49   |
| 1-99 Beds                | 936<br>(98)   | 1,007  | 4.64<br>(0.28)                                     | 4.88   |
| 100-199 Beds             | 1,530<br>(126)  | 1,622  | 4.44<br>(0.15)                                     | 4.16   |
| 200-299 Beds             | 1,217<br>(177)  | 1,233  | 4.51<br>(0.15)                                     | 4.41   |
| 300-499 Beds             | 1,138<br>(225)  | 1,011  | 4.91<br>(0.16)                                     | 4.61   |
| 500+ Beds                | 450<br>(162)  | 535    | 5.09<br>(0.26)                                     | 4.70   |

\*Significant at  $p < 0.05$ .

\*\*Significant at  $p < 0.01$ .

**Table 7. NIS and AHA Comparisons by Location and Teaching Status, 2007**

|                     | Number of Discharges in Thousands<br>(Standard Error) |        | Average Length of Stay in Days<br>(Standard Error) |        |
|---------------------|---|--------|--|--------|
|                     | NIS   | AHA    | NIS  | AHA    |
| Rural               | 5,102<br>(218)  | 5,102  | 3.96<br>(0.06)                                     | 4.06   |
| Small               | 1,259<br>(61)   | 1,300  | 3.61<br>(0.12)                                     | 3.68   |
| Medium              | 1,116<br>(100)  | 1,316* | 3.59<br>(0.06)                                     | 3.78** |
| Large               | 2,727<br>(246)  | 2,485  | 4.27<br>(0.09)                                     | 4.40   |
| Urban, Non-teaching | 16,417<br>(456)                                       | 16,417 | 4.45<br>(0.04)                                     | 4.27** |
| Small               | 1,923<br>(137)  | 1,922  | 4.33<br>(0.16)                                     | 4.42   |
| Medium              | 4,661<br>(254)  | 4,566  | 4.27<br>(0.07)                                     | 4.02** |
| Large               | 9,831<br>(478)  | 9,928  | 4.56<br>(0.05)                                     | 4.36** |
| Urban, Teaching     | 18,021<br>(618)                                       | 18,021 | 4.92<br>(0.06)                                     | 4.75** |
| Small               | 2,802<br>(322)  | 2,432  | 4.48<br>(0.11)                                     | 4.40   |
| Medium              | 4,886<br>(609)  | 4,621  | 4.95<br>(0.10)                                     | 4.67** |
| Large               | 10,332<br>(966)                                       | 10,967 | 5.03<br>(0.10)                                     | 4.86   |

\*Significant at  $p < 0.05$ .

\*\*Significant at  $p < 0.01$ .

## Summary of NIS-NHDS Comparisons

- All NIS and NHDS estimates agreed in the overall and regional comparisons.
- Agreements were also observed for most comparisons across hospital, patient, diagnoses, and procedure categories.
- Overall, similarities between the NIS and NHDS were observed for 68% of the discharge comparisons and 97% of the average length of stay (ALOS) comparisons.
- No significant differences were found for in-hospital mortality rates among these region and patient categories, and estimates agreed for 53% of hospital category comparisons.
- Of the NIS-NHDS differences discovered, most occur in diagnosis and procedure groupings.
- New to the NIS Comparison Report are tile charts that provide visual representation of discharge estimates representing the frequency and average total charges for the 25 most common principal diagnoses (Figure 2) and procedures (Figure 3) in the NIS. These figures represent the number of discharges for each CCS category by the size of the rectangle, and the associated magnitude of charges by the color (green = least expensive and orange = most expensive).
- Because of the design of the sampling frame, the NIS may over-represent urban areas. Additionally, the prevalence of higher-density states in the NIS yields data on atypical conditions rarely included in a smaller sample.
- When estimating ALOS and in-hospital mortality for the nation, or within any major categories, NIS rates were consistent with the NHDS data. Because NIS estimates have greater precision, a result of the large sample size, it may be preferred for certain analyses based on relatively uncommon conditions. Furthermore, the NIS contains total hospital charges, while the NHDS does not.
- Reliable estimates from the NIS are possible even for rare conditions. This is not true for the NHDS. Because of the smaller sample size, reliable measures of ALOS and mortality were unavailable from the NHDS for nearly all of the infrequent principal diagnoses in Table 14.

**Table 8. NIS and NHDS Comparisons by Region, 2007**

|               | Number of Discharges<br>in Thousands<br>(Standard Error) |                   | Average Length of<br>Stay in Days<br>(Standard Error) |                          | In-Hospital Mortality<br>Rate Percent<br>(Standard Error) |                          |
|---------------|--|-------------------|---|--------------------------|---|--------------------------|
|               | NIS  | NHDS              | NIS   | NHDS                     | NIS   | NHDS                     |
| Overall       | 39,541<br>(799)  | 38,416<br>(1,751) | 4.58<br>(0.03)  | 4.67<br>(0.34)           | 1.93<br>(0.02)  | 1.92<br>(0.12)           |
| <b>Region</b> |  |                   |   |                          |   |                          |
| Northeast     | 7,753<br>(337)   | 8,063<br>(1,096)  | 5.11<br>(0.08)  | 5.56 <sup>1</sup><br>(c) | 2.13<br>(0.06)  | 1.89 <sup>1</sup><br>(c) |
| South         | 9,130<br>(323)   | 8,565<br>(1,017)  | 4.33<br>(0.06)  | 4.14 <sup>1</sup><br>(c) | 1.76<br>(0.04)  | 1.99 <sup>1</sup><br>(c) |
| Midwest       | 15,273<br>(594)  | 14,187<br>(786)   | 4.60<br>(0.06)  | 4.77<br>(0.41)           | 1.96<br>(0.05)  | 1.98<br>(0.15)           |
| West          | 7,385<br>(258)   | 7,600<br>(567)    | 4.31<br>(0.08)  | 4.16 <sup>1</sup><br>(c) | 1.89<br>(0.06)  | 1.78<br>(0.18)           |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

<sup>1</sup>A significance test was not performed because a valid standard error was not available.

(c) A valid standard error could not be calculated.



**Table 9. NIS and NHDS Comparisons by Hospital Control, 2007**

|                          | Number of Discharges in Thousands (Standard Error) |                   | Average Length of Stay in Days (Standard Error) |                  | In-Hospital Mortality Rate Percent (Standard Error) |                  |
|--------------------------|--|-------------------|---|------------------|---|------------------|
|                          | NIS  | NHDS              | NIS   | NHDS             | NIS   | NHDS             |
| Total Public             | 5,667<br>(693)                                     | 4,364<br>(202)    | 4.84<br>(0.16)                                  | 4.94<br>(0.36)   | 1.93<br>(0.07)                                      | 1.86<br>(0.12)   |
| 1-99 Beds                | 1,041<br>(70)                                      | 1,260*<br>(61)    | 3.86<br>(0.16)                                  | 3.88<br>(0.29)   | 2.06<br>(0.07)                                      | 2.05<br>(0.14)   |
| 100-199 Beds             | 826<br>(130)                                       | 768<br>(38)       | 4.03<br>(0.12)                                  | 4.09<br>(0.31)   | 1.97<br>(0.13)                                      | 1.60*<br>(0.11)  |
| 200-299 Beds             | 645<br>(143)                                       | 290*<br>(16)      | 4.14<br>(0.16)                                  | 5.32*<br>(0.44)  | 1.65<br>(0.23)                                      | 2.78**<br>(0.22) |
| 300-499 Beds             | 848<br>(243)                                       | 1,208<br>(58)     | 4.97<br>(0.27)                                  | 5.67<br>(0.42)   | 1.83<br>(0.13)                                      | 2.26*<br>(0.15)  |
| 500+ Beds                | 2,305<br>(383)                                     | 835**<br>(41)     | 5.71<br>(0.27)                                  | 6.11<br>(0.46)   | 1.96<br>(0.13)                                      | 0.93**<br>(0.06) |
| Total Private Non-Profit | 28,600<br>(965)                                    | 29,174<br>(1,331) | 4.53<br>(0.03)                                  | 4.54<br>(0.33)   | 1.93<br>(0.03)                                      | 1.99<br>(0.12)   |
| 1-99 Beds                | 2,433<br>(129)                                     | 5,695**<br>(262)  | 3.65<br>(0.07)                                  | 3.85<br>(0.28)   | 1.97<br>(0.06)                                      | 2.00<br>(0.13)   |
| 100-199 Beds             | 4,657<br>(295)                                     | 5,314<br>(245)    | 4.20<br>(0.07)                                  | 4.26<br>(0.31)   | 1.95<br>(0.06)                                      | 1.80<br>(0.11)   |
| 200-299 Beds             | 6,202<br>(482)                                     | 7,179<br>(330)    | 4.44<br>(0.06)                                  | 4.53<br>(0.33)   | 1.86<br>(0.05)                                      | 1.98<br>(0.12)   |
| 300-499 Beds             | 9,596<br>(783)                                     | 6,417**<br>(295)  | 4.74<br>(0.06)                                  | 4.73<br>(0.34)   | 2.01<br>(0.07)                                      | 1.98<br>(0.12)   |
| 500+ Beds                | 5,710<br>(939)                                     | 4,567<br>(211)    | 4.90<br>(0.10)                                  | 5.46<br>(0.40)   | 1.81<br>(0.09)                                      | 2.26*<br>(0.14)  |
| Total Proprietary        | 5,274<br>(389)                                     | 4,877<br>(225)    | 4.63<br>(0.09)                                  | 5.25<br>(0.38)   | 1.97<br>(0.06)                                      | 1.55**<br>(0.10) |
| 1-99 Beds                | 936<br>(98)  | 1,183*<br>(57)    | 4.61<br>(0.28)                                  | 6.91**<br>(0.52) | 2.13<br>(0.18)                                      | 0.89**<br>(0.06) |
| 100-199 Beds             | 1,530<br>(126)                                     | 2,284**<br>(107)  | 4.42<br>(0.15)                                  | 4.78<br>(0.35)   | 1.95<br>(0.12)                                      | 1.55*<br>(0.10)  |
| 200-299 Beds             | 1,217<br>(177)                                     | 635**<br>(32)     | 4.49<br>(0.15)                                  | 4.84<br>(0.37)   | 2.01<br>(0.09)                                      | 2.40<br>(0.17)   |
| 300-499 Beds             | 1,138<br>(225)                                     | 665*<br>(33)      | 4.90<br>(0.16)                                  | 4.44<br>(0.34)   | 1.82<br>(0.10)                                      | 2.04<br>(0.14)   |
| 500+ Beds                | 450<br>(162)                                       | 108*<br>(7)       | 5.07<br>(0.25)                                  | 4.52<br>(0.45)   | 1.98<br>(0.24)                                      | 0.66**<br>(0.06) |

\*Significant at  $p < 0.05$ .

\*\*Significant at  $p < 0.01$ .

**Table 10. NIS and NHDS Comparisons by Patient Characteristics, 2007**

|                  | Number of Discharges in Thousands (Standard Error) |                    | Average Length of Stay in Days (Standard Error) |                          | In-Hospital Mortality Rate Percent (Standard Error) |                          |
|------------------|--|--------------------|---|--------------------------|---|--------------------------|
|                  | NIS  | NHDS               | NIS   | NHDS                     | NIS   | NHDS                     |
| <b>Age Group</b> |  |                    |   |                          |   |                          |
| 0-15 Years       | 6,387<br>(241)                                     | 6,391<br>(294)     | 3.67<br>(0.07)                                  | 3.92<br>(0.28)           | 0.39<br>(0.02)                                      | 0.46<br>(0.03)           |
| 16-44 Years      | 10,749<br>(294)                                    | 10,408<br>(477)    | 3.62<br>(0.04)                                  | 3.68<br>(0.26)           | 0.38<br>(0.01)                                      | 0.37<br>(0.02)           |
| 45-64 Years      | 9,134<br>(200)                                     | 8,753<br>(402)     | 4.97<br>(0.04)                                  | 5.11<br>(0.37)           | 1.74<br>(0.03)                                      | 1.63<br>(0.10)           |
| 65+ Years        | 13,229<br>(273)                                    | 12,863<br>(589)    | 5.54<br>(0.04)                                  | 5.56<br>(0.40)           | 4.07<br>(0.05)                                      | 4.10<br>(0.26)           |
| <b>Gender</b>    |  |                    |   |                          |   |                          |
| Female           | 23,202<br>(492)                                    | 22,478<br>(1,026)  | 4.33<br>(0.03)                                  | 4.43<br>(0.32)           | 1.64<br>(0.02)                                      | 1.75<br>(0.11)           |
| Male             | 16,230<br>(324)                                    | 15,937<br>(728)    | 4.95<br>(0.04)                                  | 5.02<br>(0.36)           | 2.36<br>(0.03)                                      | 2.17<br>(0.14)           |
| <b>Race</b>      |  |                    |   |                          |   |                          |
| White            | 18,459<br>(672)                                    | 22,620*<br>(1,477) | 4.69<br>(0.03)                                  | 4.71<br>(0.47)           | 2.22<br>(0.03)                                      | 2.02<br>(0.18)           |
| Black            | 4,138<br>(312)                                     | 4,779<br>(334)     | 5.22<br>(0.08)                                  | 5.33<br>(0.59)           | 1.83<br>(0.05)                                      | 1.97<br>(0.19)           |
| Other            | 5,912<br>(387)                                     | 1,508**<br>(207)   | 4.35<br>(0.09)                                  | 4.54 <sup>1</sup><br>(c) | 1.35<br>(0.04)                                      | 1.51 <sup>1</sup><br>(c) |
| Unknown          | 11,031<br>(799)                                    | 9,507<br>(1,238)   | 4.29<br>(0.06)                                  | 4.29 <sup>1</sup><br>(c) | 1.80<br>(0.05)                                      | 1.73 <sup>1</sup><br>(c) |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

<sup>1</sup>A significance test was not performed because a valid standard error was not available.

(c) A valid standard error could not be calculated.

**Table 11. NIS and NHDS Comparisons by Principal Payer, 2007**

|                   | Number of Discharges in Thousands (Standard Error) |                       | Average Length of Stay in Days (Standard Error) |                          | In-Hospital Mortality Rate Percent (Standard Error) |                          |
|-------------------|--|-----------------------|---|--------------------------|---|--------------------------|
|                   | NIS  | NHDS                  | NIS   | NHDS                     | NIS   | NHDS                     |
| Medicare          | 14,381<br>(294)                                    | 13,277<br>(678)       | 5.62<br>(0.04)                                  | 5.72<br>(0.44)           | 3.56<br>(0.04)                                      | 3.57<br>(0.25)           |
| Medicaid          | 7,663<br>(301)                                     | 7,589<br>(603)        | 4.33<br>(0.08)                                  | 4.62 <sup>1</sup><br>(c) | 0.80<br>(0.02)                                      | 0.81<br>(0.09)           |
| Private Insurance | 13,719<br>(459)                                    | 13,280<br>(768)       | 3.76<br>(0.03)                                  | 3.83<br>(0.36)           | 1.00<br>(0.03)                                      | 1.00<br>(0.08)           |
| Self Pay          | 2,104<br>(106)                                     | 1,737*<br>(109)       | 3.89<br>(0.07)                                  | 3.72<br>(0.39)           | 1.25<br>(0.05)                                      | 1.39<br>(0.12)           |
| No Charge         | 205<br>(53)  | 94<br>(18)            | 4.91<br>(0.48)                                  | 4.35 <sup>1</sup><br>(c) | 1.21<br>(0.15)                                      | 1.80 <sup>1</sup><br>(c) |
| Other             | 1,383<br>(92)                                      | 2,436*<br>(461)       | 4.45<br>(0.10)                                  | 4.44 <sup>1</sup><br>(c) | 1.69<br>(0.12)                                      | 1.82 <sup>1</sup><br>(c) |
| Missing           | 41<br>(16)   | 0 <sup>1</sup><br>(a) | 4.18<br>(0.26)                                  | 0.00 <sup>1</sup><br>(a) | 1.61<br>(0.23)                                      | 0.00 <sup>1</sup><br>(a) |

\*Significant at p<0.05.

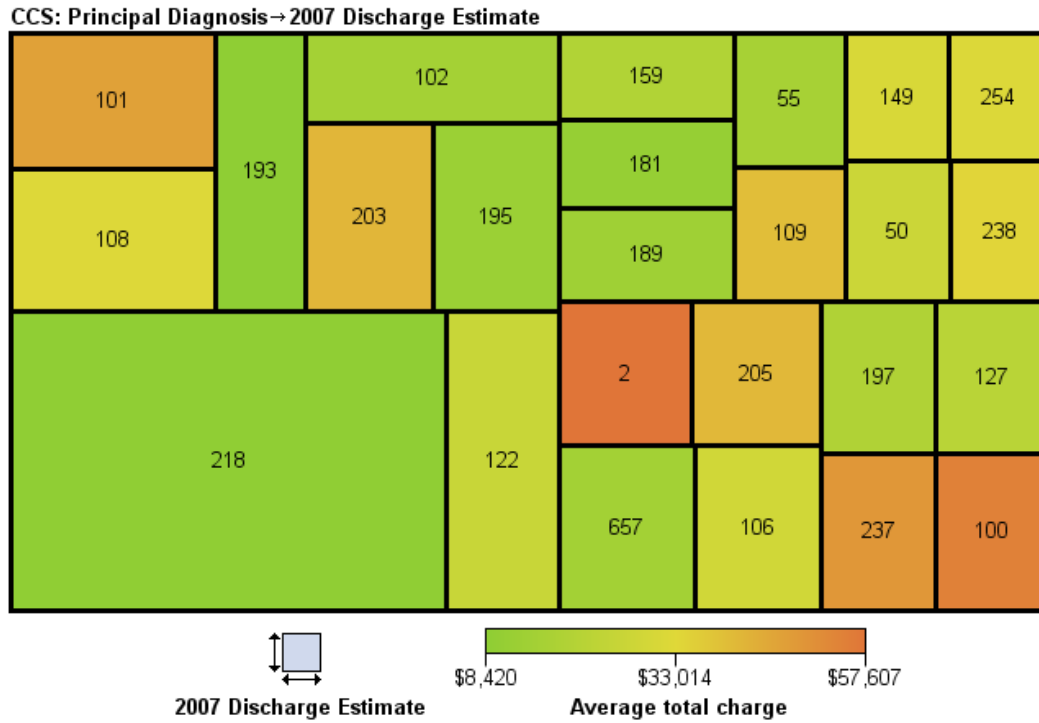
\*\*Significant at p<0.01.

<sup>1</sup>A significance test was not performed because a valid standard error was not available.

(a) Because of very small sample size, the NHDS estimate and standard error were unreliable and not reported.

(c) A valid standard error could not be calculated.

**Figure 2. Discharge Estimates for the 25 Most Common Principal Diagnoses, NIS, 2007**



| DXCCS | Average Total Charge | Discharge Estimate | Diagnosis   |
|-------|----------------------|--------------------|---|
| 2     | \$57,607             | 134,019            | Septicemia (except in labor)  |
| 50    | \$26,308             | 101,574            | Diabetes mellitus with complications                                      |
| 55    | \$15,488             | 103,450            | Fluid and electrolyte disorders   |
| 100   | \$54,714             | 122,764            | Acute myocardial infarction   |
| 101   | \$46,842             | 192,378            | Coronary atherosclerosis and other heart disease                          |
| 102   | \$14,854             | 157,578            | Nonspecific chest pain  |
| 106   | \$27,964             | 145,474            | Cardiac dysrhythmias  |
| 108   | \$31,730             | 203,354            | Congestive heart failure; nonhypertensive                                 |
| 109   | \$39,621             | 104,005            | Acute cerebrovascular disease   |
| 122   | \$25,652             | 232,808            | Pneumonia (except caused by tuberculosis or sexually transmitted disease) |
| 127   | \$20,890             | 118,110            | Chronic obstructive pulmonary disease and bronchiectasis                  |
| 149   | \$30,265             | 91,077             | Biliary tract disease   |
| 159   | \$18,513             | 106,450            | Urinary tract infections  |
| 181   | \$10,411             | 107,026            | Other complications of pregnancy  |
| 189   | \$13,114             | 114,254            | Previous C-section  |
| 193   | \$8,420              | 173,297            | OB-related trauma to perineum and vulva                                   |
| 195   | \$11,946             | 162,915            | Other complications of birth; puerperium affecting management of mother   |
| 197   | \$18,205             | 120,667            | Skin and subcutaneous tissue infections                                   |
| 203   | \$41,518             | 165,657            | Osteoarthritis  |
| 205   | \$41,140             | 129,443            | Spondylosis; intervertebral disc disorders; other back problems           |
| 218   | \$8,642              | 903,719            | Liveborn  |
| 237   | \$49,275             | 124,544            | Complication of device; implant or graft                                  |
| 238   | \$33,896             | 95,530             | Complications of surgical procedures or medical care                      |
| 254   | \$31,590             | 88,039             | Rehabilitation care; fitting of prostheses; and adjustment of devices     |
| 657   | \$14,382             | 155,154            | Mood disorders  |

**Table 12. NIS and NHDS Comparisons by the 25 Most Common Principal Diagnoses, 2007**

|   | Number of Discharges in Thousands (Standard Error) |                        | Average Length of Stay in Days (Standard Error) |                          | In-Hospital Mortality Rate Percent (Standard Error) |                          |
|---|--|------------------------|---|--------------------------|---|--------------------------|
|   | NIS  | NHDS                   | NIS   | NHDS                     | NIS   | NHDS                     |
| 218: Liveborn   | 4,542<br>(180)                                     | 4,051<br>(188)         | 3.35<br>(0.06)                                  | 3.46<br>(0.25)           | 0.33<br>(0.01)                                      | 0.41*<br>(0.02)          |
| 122: Pneumonia (except that caused by tuberculosis or sexually transmitted disease) | 1,171<br>(21)                                      | 1,072<br>(52)          | 5.41<br>(0.04)                                  | 5.04<br>(0.38)           | 3.52<br>(0.07)                                      | 3.71<br>(0.25)           |
| 108: Congestive heart failure; nonhypertensive                                      | 1,024<br>(23)                                      | 1,023<br>(50)          | 5.26<br>(0.04)                                  | 5.10<br>(0.38)           | 3.31<br>(0.06)                                      | 2.91<br>(0.20)           |
| 101: Coronary atherosclerosis and other heart disease                               | 963<br>(40)  | 968<br>(47)            | 3.31<br>(0.04)                                  | 3.22<br>(0.24)           | 0.51<br>(0.01)                                      | 0.58<br>(0.04)           |
| 193: OB-related trauma to perineum and vulva  | 867<br>(48)  | -- <sup>1</sup><br>(a) | 2.08<br>(0.01)                                  | -- <sup>1</sup><br>(a)   | 0.00<br>(0.00)                                      | -- <sup>1</sup><br>(a)   |
| 203: Osteoarthritis   | 814<br>(37)  | 718<br>(36)            | 3.52<br>(0.04)                                  | 3.67<br>(0.28)           | 0.09<br>(0.00)                                      | 0.06**<br>(0.00)         |
| 195: Other complications of birth; puerperium affecting management of mother        | 810<br>(33)  | 71**<br>(5)            | 2.79<br>(0.03)                                  | 3.92*<br>(0.44)          | 0.02<br>(0.00)                                      | 0.20**<br>(0.02)         |
| 102: Nonspecific chest pain   | 788<br>(28)  | 31**<br>(3)            | 1.87<br>(0.01)                                  | 1.71 <sup>1</sup><br>(c) | 0.06<br>(0.00)                                      | 0.00 <sup>1</sup><br>(c) |
| 657: Mood Disorders   | 774<br>(44)  | 1,070**<br>(52)        | 6.89<br>(0.18)                                  | 7.00<br>(0.53)           | 0.03<br>(0.00)                                      | 0.07**<br>(0.00)         |
| 106: Cardiac dysrhythmias   | 731<br>(19)  | 807<br>(40)            | 3.45<br>(0.03)                                  | 3.56<br>(0.27)           | 0.97<br>(0.03)                                      | 1.24**<br>(0.08)         |
| 2: Septicemia (except in labor)   | 675<br>(17)  | 596*<br>(30)           | 9.05<br>(0.11)                                  | 9.32<br>(0.72)           | 17.26<br>(0.25)                                     | 18.53<br>(1.34)          |
| 205: Spondylosis; intervertebral disc disorders; other back problems                | 633<br>(25)  | 609<br>(31)            | 3.01<br>(0.04)                                  | 3.46<br>(0.27)           | 0.15<br>(0.01)                                      | 0.24**<br>(0.01)         |
| 100: Acute myocardial infarction  | 624<br>(21)  | 577<br>(29)            | 5.03<br>(0.05)                                  | 5.09<br>(0.40)           | 6.13<br>(0.10)                                      | 6.68<br>(0.48)           |
| 237: Complication of device; implant or graft                                       | 623<br>(20)  | 547*<br>(28)           | 5.99<br>(0.07)                                  | 5.95<br>(0.46)           | 1.66<br>(0.05)                                      | 1.73<br>(0.12)           |
| 197: Skin and subcutaneous tissue infections  | 604<br>(13)  | 569<br>(29)            | 4.51<br>(0.03)                                  | 4.46<br>(0.35)           | 0.35<br>(0.02)                                      | 0.30<br>(0.02)           |
| 127: Chronic obstructive pulmonary disease and bronchiectasis                       | 593<br>(13)  | 648<br>(33)            | 4.67<br>(0.04)                                  | 4.42<br>(0.34)           | 1.79<br>(0.05)                                      | 1.55<br>(0.11)           |
| 189: Previous C-section   | 561<br>(23)  | -- <sup>1</sup><br>(a) | 2.85<br>(0.02)                                  | -- <sup>1</sup><br>(a)   | 0.00<br>(0.00)                                      | -- <sup>1</sup><br>(a)   |
| 159: Urinary tract infections   | 535<br>(11)  | 669**<br>(34)          | 4.38<br>(0.03)                                  | 4.42<br>(0.34)           | 0.99<br>(0.03)                                      | 1.23*<br>(0.08)          |

|  | Number of Discharges in Thousands (Standard Error) |               | Average Length of Stay in Days (Standard Error) |                 | In-Hospital Mortality Rate Percent (Standard Error) |                  |
|--|--|---------------|---|-----------------|---|------------------|
|  | NIS  | NHDS          | NIS   | NHDS            | NIS   | NHDS             |
| 181: Other complications of pregnancy                                      | 531<br>(19)  | 181**<br>(11) | 2.41<br>(0.01)                                  | 2.37<br>(0.22)  | 0.03<br>(0.00)                                      | 0.00**<br>(0.00) |
| 109: Acute cerebrovascular disease   | 527<br>(13)  | 486<br>(25)   | 6.16<br>(0.09)                                  | 6.26<br>(0.49)  | 9.34<br>(0.19)                                      | 9.22<br>(0.68)   |
| 55: Fluid and electrolyte disorders  | 519<br>(11)  | 753**<br>(37) | 3.59<br>(0.03)                                  | 3.64<br>(0.28)  | 1.63<br>(0.05)                                      | 1.81<br>(0.12)   |
| 50: Diabetes mellitus with complications                                   | 510<br>(11)  | 500<br>(26)   | 5.15<br>(0.05)                                  | 5.62<br>(0.44)  | 0.79<br>(0.03)                                      | 0.73<br>(0.05)   |
| 238: Complications of surgical procedures or medical care                  | 481<br>(12)  | 478<br>(25)   | 6.13<br>(0.07)                                  | 6.25<br>(0.49)  | 1.32<br>(0.04)                                      | 0.91**<br>(0.06) |
| 149: Biliary tract disease   | 454<br>(10)  | 419<br>(22)   | 4.17<br>(0.03)                                  | 3.96<br>(0.32)  | 0.67<br>(0.02)                                      | 0.48**<br>(0.03) |
| 254: Rehabilitation care; fitting of prostheses; and adjustment of devices | 438<br>(29)  | 397<br>(21)   | 12.85<br>(0.22)                                 | 12.88<br>(1.02) | 0.62<br>(0.06)                                      | 0.11**<br>(0.00) |

\*Significant at  $p < 0.05$ .

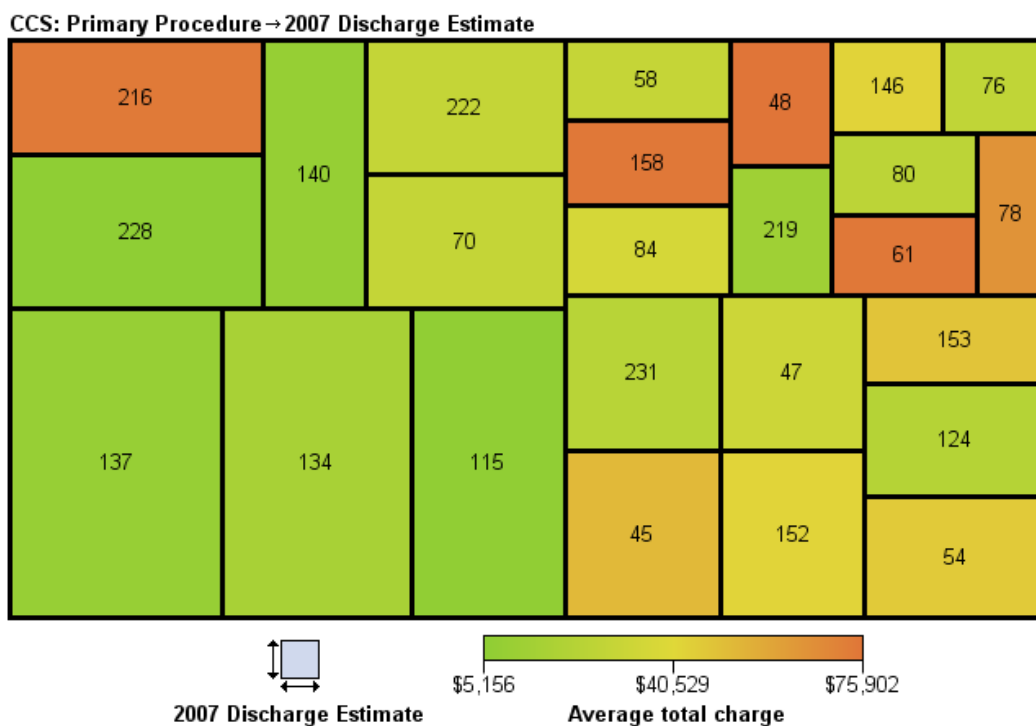
\*\*Significant at  $p < 0.01$ .

<sup>1</sup>A significance test was not performed because a valid standard error was not available.

(a) Because of very small sample size, the NHDS estimate and standard error were unreliable and not reported.

(c) A valid standard error could not be calculated.

**Figure 3. Discharge Estimates for the 25 Most Common Principal Procedures, NIS, 2007**



| PRCCS | Average Total Charge | 2007 Discharge Estimate | Procedure  |
|-------|----------------------|-------------------------|--|
| 45    | \$51,812             | 133,318                 | Percutaneous transluminal coronary angioplasty (PTCA)  |
| 47    | \$31,275             | 115,223                 | Diagnostic cardiac catheterization; coronary arteriography                                   |
| 48    | \$75,902             | 65,747                  | Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator |
| 54    | \$45,726             | 111,687                 | Other vascular catheterization; not heart  |
| 58    | \$28,277             | 68,227                  | Hemodialysis   |
| 61    | \$74,813             | 60,432                  | Other OR procedures on vessels other than head and neck                                      |
| 70    | \$27,900             | 136,794                 | Upper gastrointestinal endoscopy; biopsy   |
| 76    | \$26,472             | 48,963                  | Colonoscopy and biopsy   |
| 78    | \$65,266             | 56,830                  | Colorectal resection   |
| 80    | \$24,639             | 60,270                  | Appendectomy   |
| 84    | \$35,414             | 76,864                  | Cholecystectomy and common duct exploration  |
| 115   | \$5,980              | 242,709                 | Circumcision   |
| 124   | \$21,738             | 104,260                 | Hysterectomy; abdominal and vaginal  |
| 134   | \$15,889             | 298,240                 | Cesarean section   |
| 137   | \$8,803              | 335,883                 | Other procedures to assist delivery  |
| 140   | \$8,210              | 141,680                 | Repair of current obstetric laceration   |
| 146   | \$42,567             | 53,409                  | Treatment; fracture or dislocation of hip and femur  |
| 152   | \$42,474             | 123,019                 | Arthroplasty knee  |
| 153   | \$48,035             | 81,268                  | Hip replacement; total and partial   |
| 158   | \$74,954             | 72,106                  | Spinal fusion  |
| 216   | \$74,120             | 149,183                 | Respiratory intubation and mechanical ventilation  |
| 219   | \$12,067             | 67,587                  | Alcohol and drug rehabilitation/detoxification   |
| 222   | \$27,836             | 136,708                 | Blood transfusion  |
| 228   | \$5,156              | 199,108                 | Prophylactic vaccinations and inoculations   |
| 231   | \$23,007             | 122,996                 | Other therapeutic procedures   |

**Table 13. NIS and NHDS Comparisons by the 25 Most Common Principal Procedures, 2007**

|  | Number of Discharges in Thousands (Standard Error) |                 | Average Length of Stay in Days (Standard Error) |                | In-Hospital Mortality Rate Percent (Standard Error) |                  |
|--|--|-----------------|---|----------------|---|------------------|
|  | NIS  | NHDS            | NIS   | NHDS           | NIS   | NHDS             |
| 137: Other procedures to assist delivery                       | 1,677<br>(84)                                      | 1,150**<br>(56) | 2.15<br>(0.02)                                  | 2.15<br>(0.16) | 0.00<br>(0.00)                                      | 0.00*<br>(0.00)  |
| 134: Cesarean section  | 1,479<br>(64)                                      | 1,336<br>(64)   | 3.61<br>(0.04)                                  | 3.49<br>(0.26) | 0.01<br>(0.00)                                      | 0.01<br>(0.00)   |
| 115: Circumcision  | 1,238<br>(55)                                      | 1,147<br>(55)   | 3.03<br>(0.04)                                  | 2.99<br>(0.22) | 0.00<br>(0.00)                                      | 0.07**<br>(0.00) |
| 228: Prophylactic vaccinations and inoculations                | 1,025<br>(105)                                     | 922<br>(45)     | 2.58<br>(0.04)                                  | 2.55<br>(0.19) | 0.02<br>(0.00)                                      | 0.08**<br>(0.00) |
| 216: Respiratory intubation and mechanical ventilation         | 754<br>(18)  | 671*<br>(34)    | 10.57<br>(0.18)                                 | 9.82<br>(0.75) | 25.18<br>(0.34)                                     | 24.28<br>(1.74)  |
| 140: Repair of current obstetric laceration                    | 708<br>(41)  | 770<br>(38)     | 2.18<br>(0.01)                                  | 2.19<br>(0.17) | 0.00<br>(0.00)                                      | 0.00<br>(0.00)   |
| 222: Blood transfusion   | 694<br>(22)  | 615*<br>(31)    | 5.62<br>(0.05)                                  | 5.68<br>(0.44) | 4.18<br>(0.09)                                      | 4.49<br>(0.32)   |
| 70: Upper gastrointestinal endoscopy; biopsy                   | 685<br>(16)  | 653<br>(33)     | 5.27<br>(0.04)                                  | 5.26<br>(0.41) | 1.24<br>(0.03)                                      | 0.95**<br>(0.06) |
| 45: Percutaneous transluminal coronary angioplasty (PTCA)      | 668<br>(36)  | 557*<br>(28)    | 2.70<br>(0.04)                                  | 2.72<br>(0.21) | 0.80<br>(0.03)                                      | 0.70<br>(0.05)   |
| 231: Other therapeutic procedures                              | 637<br>(61)  | 570<br>(29)     | 5.10<br>(0.12)                                  | 5.21<br>(0.41) | 2.62<br>(0.19)                                      | 3.59**<br>(0.26) |
| 152: Arthroplasty knee   | 605<br>(26)  | 554<br>(28)     | 3.62<br>(0.04)                                  | 3.54<br>(0.28) | 0.08<br>(0.00)                                      | 0.24**<br>(0.01) |
| 47: Diagnostic cardiac catheterization; coronary arteriography | 576<br>(22)  | 512<br>(26)     | 3.59<br>(0.04)                                  | 3.75<br>(0.30) | 0.81<br>(0.04)                                      | 1.09**<br>(0.08) |
| 54: Other vascular catheterization; not heart                  | 558<br>(18)  | 520<br>(27)     | 8.89<br>(0.12)                                  | 8.66<br>(0.67) | 6.99<br>(0.14)                                      | 6.72<br>(0.49)   |
| 124: Hysterectomy; abdominal and vaginal                       | 516<br>(17)  | 498<br>(26)     | 2.58<br>(0.04)                                  | 2.42<br>(0.19) | 0.07<br>(0.00)                                      | 0.05*<br>(0.00)  |
| 153: Hip replacement; total and partial                        | 402<br>(17)  | 372<br>(20)     | 4.64<br>(0.05)                                  | 4.60<br>(0.37) | 0.83<br>(0.04)                                      | 0.74<br>(0.05)   |
| 84: Cholecystectomy and common duct exploration                | 382<br>(9)   | 357<br>(19)     | 4.62<br>(0.04)                                  | 4.56<br>(0.37) | 0.65<br>(0.03)                                      | 0.78<br>(0.06)   |
| 158: Spinal fusion   | 350<br>(18)  | 339<br>(18)     | 3.91<br>(0.09)                                  | 4.13<br>(0.34) | 0.23<br>(0.02)                                      | 0.09**<br>(0.00) |
| 219: Alcohol and drug rehabilitation/detoxification            | 346<br>(35)  | 336<br>(18)     | 5.55<br>(0.43)                                  | 5.05<br>(0.41) | 0.12<br>(0.02)                                      | 0.28**<br>(0.02) |
| 58: Hemodialysis   | 343<br>(13)  | 337<br>(18)     | 5.35<br>(0.09)                                  | 5.15<br>(0.42) | 2.69<br>(0.09)                                      | 2.72<br>(0.21)   |



|  | Number of Discharges in Thousands (Standard Error) |               | Average Length of Stay in Days (Standard Error) |                | In-Hospital Mortality Rate Percent (Standard Error) |                  |
|--|--|---------------|---|----------------|---|------------------|
|  | NIS  | NHDS          | NIS   | NHDS           | NIS   | NHDS             |
| 48: Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator | 329<br>(13)  | 273**<br>(15) | 4.63<br>(0.07)                                  | 4.77<br>(0.40) | 0.89<br>(0.04)                                      | 1.13*<br>(0.09)  |
| 61: Other OR procedures on vessels other than head and neck                                      | 305<br>(10)  | 260*<br>(15)  | 8.71<br>(0.26)                                  | 8.81<br>(0.73) | 3.75<br>(0.12)                                      | 3.68<br>(0.30)   |
| 80: Appendectomy   | 300<br>(8)   | 303<br>(17)   | 2.74<br>(0.03)                                  | 2.77<br>(0.23) | 0.11<br>(0.01)                                      | 0.21**<br>(0.01) |
| 78: Colorectal resection   | 287<br>(7)   | 250*<br>(14)  | 9.77<br>(0.08)                                  | 9.43<br>(0.79) | 3.72<br>(0.10)                                      | 2.90**<br>(0.24) |
| 146: Treatment; fracture or dislocation of hip and femur   | 269<br>(6)   | 269<br>(15)   | 6.07<br>(0.07)                                  | 5.99<br>(0.50) | 1.60<br>(0.06)                                      | 1.81<br>(0.14)   |
| 76: Colonoscopy and biopsy   | 246<br>(5)   | 226<br>(13)   | 5.39<br>(0.04)                                  | 5.16<br>(0.44) | 0.74<br>(0.04)                                      | 0.75<br>(0.06)   |

\* Significant at p<0.05.

\*\* Significant at p<0.01.

**Table 14. NIS and NHDS Comparisons by Infrequent Principal Diagnoses, 2007**

|  | Number of Discharges<br>(Standard Error) |                         | Average Length of Stay in Days<br>(Standard Error) |                               | In-Hospital Mortality Rate Percent<br>(Standard Error) |                              |
|--|--|-------------------------|--|-------------------------------|--|------------------------------|
|  | NIS                                      | NHDS                    | NIS  | NHDS                          | NIS  | NHDS                         |
| 1: Tuberculosis                                | 8<br>(0)                                 | 11<br>(2)               | 15.66<br>(1.15)                                    | 7.49 <sup>1</sup><br>(c)      | 3.38<br>(0.49)   | 0.65 <sup>1</sup><br>(c)     |
| 11: Cancer of head and neck                    | 32<br>(3)                                | 29<br>(3)               | 7.67<br>(0.19)                                     | 6.22 <sup>1</sup><br>(c)      | 3.77<br>(0.39)   | 6.59 <sup>1</sup><br>(c)     |
| 12: Cancer of esophagus                        | 13<br>(0)                                | 8 <sup>**</sup><br>(1)  | 9.44<br>(0.29)                                     | 10.72 <sup>1</sup><br>(c)     | 9.54<br>(0.76)   | 11.01 <sup>1</sup><br>(c)    |
| 123: Influenza                                 | 17<br>(0)                                | 23<br>(3)               | 3.74<br>(0.10)                                     | 4.09 <sup>1</sup><br>(c)      | 1.07<br>(0.20)   | 0.53 <sup>1</sup><br>(c)     |
| 13: Cancer of stomach                          | 25<br>(1)                                | 17<br>(2)               | 10.55<br>(0.21)                                    | 8.70 <sup>1</sup><br>(c)      | 8.27<br>(0.51)   | 11.90 <sup>1</sup><br>(c)    |
| 148: Peritonitis and intestinal abscess        | 27<br>(0)                                | 37 <sup>1</sup><br>(3)  | 7.90<br>(0.12)                                     | 7.96 <sup>1</sup><br>(c)      | 4.05<br>(0.25)   | 1.77 <sup>1</sup><br>(c)     |
| 15: Cancer of rectum and anus                  | 47<br>(2)                                | 37 <sup>1</sup><br>(3)  | 8.58<br>(0.11)                                     | 7.88 <sup>1</sup><br>(c)      | 3.08<br>(0.21)   | 3.57 <sup>1</sup><br>(c)     |
| 16: Cancer of liver and intrahepatic bile duct | 20<br>(1)                                | 17<br>(2)               | 6.49<br>(0.17)                                     | 7.65 <sup>1</sup><br>(c)      | 12.38<br>(0.93)  | 15.17 <sup>1</sup><br>(c)    |
| 17: Cancer of pancreas                         | 35<br>(1)                                | 35<br>(3)               | 8.51<br>(0.14)                                     | 8.13 <sup>1</sup><br>(c)      | 10.25<br>(0.48)  | 9.53 <sup>1</sup><br>(c)     |
| 21: Cancer of bone and connective tissue       | 17<br>(2)                                | 11<br>(2)               | 7.52<br>(0.29)                                     | 6.02 <sup>1</sup><br>(c)      | 3.22<br>(0.47)   | 4.67 <sup>1</sup><br>(c)     |
| 227: Spinal cord injury                        | 13<br>(0)                                | 8<br>(1)                | 14.01<br>(0.61)                                    | 11.51 <sup>1</sup><br>(c)     | 5.57<br>(0.45)   | 4.72 <sup>1</sup><br>(c)     |
| 240: Burns                                     | 27<br>(4)                                | 78 <sup>**</sup><br>(6) | 8.75<br>(0.51)                                     | 6.81 <sup>1</sup><br>(0.72)   | 3.17<br>(0.37)   | 2.10<br>(0.23)               |
| 243: Poisoning by nonmedicinal substances      | 19<br>(0)                                | 18<br>(2)               | 3.32<br>(0.11)                                     | 3.63 <sup>1</sup><br>(c)      | 1.58<br>(0.23)   | 2.13 <sup>1</sup><br>(c)     |
| 25: Cancer of uterus                           | 41<br>(2)                                | 30<br>(3)               | 4.19<br>(0.10)                                     | 4.15 <sup>1</sup><br>(c)      | 1.26<br>(0.14)   | 1.35 <sup>1</sup><br>(c)     |
| 26: Cancer of cervix                           | 23<br>(1)                                | 20<br>(2)               | 3.55<br>(0.09)                                     | 3.66 <sup>1</sup><br>(c)      | 1.60<br>(0.18)   | 0.79 <sup>1</sup><br>(c)     |
| 27: Cancer of ovary                            | 25<br>(1)                                | 25<br>(3)               | 6.76<br>(0.15)                                     | 6.00 <sup>1</sup><br>(c)      | 4.48<br>(0.38)   | 3.97 <sup>1</sup><br>(c)     |
| 30: Cancer of testis                           | 2<br>(0)                                 | -- <sup>1</sup><br>(a)  | 6.31<br>(0.39)                                     | -- <sup>1</sup><br>(a)        | 2.38<br>(0.79)   | -- <sup>1</sup><br>(a)       |
| 32: Cancer of bladder                          | 38<br>(2)                                | 34<br>(3)               | 6.23<br>(0.18)                                     | 5.48 <sup>1</sup><br>(c)      | 3.13<br>(0.22)   | 1.79 <sup>1</sup><br>(c)     |
| 35: Cancer of brain and nervous system         | 37<br>(3)                                | 33<br>(3)               | 7.08<br>(0.19)                                     | 7.56 <sup>1</sup><br>(c)      | 3.88<br>(0.30)   | 5.34 <sup>1</sup><br>(c)     |
| 36: Cancer of thyroid                          | 29<br>(2)                                | 25<br>(3)               | 2.29<br>(0.07)                                     | 1.81 <sup>1</sup><br>(c)      | 0.66<br>(0.10)   | 0.19 <sup>1</sup><br>(c)     |
| 37: Hodgkin`s disease                          | 5<br>(0)                                 | 7<br>(1)                | 11.16<br>(0.95)                                    | 5.06 <sup>1</sup><br>(c)      | 4.75<br>(0.63)   | 1.95 <sup>1</sup><br>(c)     |
| 39: Leukemias                                  | 43<br>(3)                                | 56<br>(5)               | 15.07<br>(0.72)                                    | 10.96 <sup>**</sup><br>(1.23) | 13.52<br>(0.63)  | 13.24<br>(1.69)              |
| 60: Acute posthemorrhagic anemia               | 14<br>(0)                                | 65 <sup>**</sup><br>(5) | 3.50<br>(0.08)                                     | 8.16 <sup>**</sup><br>(0.90)  | 0.93<br>(0.17)   | 0.07 <sup>**</sup><br>(0.00) |

|   | Number of Discharges<br>(Standard Error) |           | Average Length of Stay in Days<br>(Standard Error) |                          | In-Hospital Mortality Rate Percent<br>(Standard Error) |                          |
|---|--|-----------|--|--------------------------|--|--------------------------|
|   | NIS                                      | NHDS      | NIS  | NHDS                     | NIS  | NHDS                     |
| 76: Meningitis (except that caused by tuberculosis or sexually transmitted disease)   | 42<br>(1)                                | 42<br>(4) | 5.03<br>(0.09)                                     | 5.04 <sup>1</sup><br>(c) | 1.45<br>(0.13)   | 0.48 <sup>1</sup><br>(c) |
| 77: Encephalitis (except that caused by tuberculosis or sexually transmitted disease) | 9<br>(0)                                 | 10<br>(1) | 9.57<br>(0.31)                                     | 9.54 <sup>1</sup><br>(c) | 3.66<br>(0.43)   | 7.55 <sup>1</sup><br>(c) |

\* Significant at p<0.05.

\*\* Significant at p<0.01.

<sup>1</sup>A significance test was not performed because a valid standard error was not available.

(a) Because of very small sample size, the NHDS estimate and standard error were unreliable and not reported.

(b) The NHDS estimate was reported but is not considered reliable; the standard error was not reported.

(c) A valid standard error could not be calculated.

## Summary of NIS-MedPAR Comparisons

- With the exception of discharge counts, NIS estimates of Medicare measures were generally consistent with MedPAR statistics.
- NIS discharge estimates were uniformly higher than the MedPAR numbers by approximately 11%, consistent with the omission of most managed care enrollees from the MedPAR. While 19.0% of Medicare patients were enrolled in managed care programs, the MedPAR data contain a very small number of managed care discharges (only 3.16% of 13,306,427 total discharges).
- The NIS provides a large sample of Medicare discharges both in managed care and fee-for-service plans; it would therefore, be the choice of researchers who wished to include all discharges regardless of payment type. Inclusion of Medicare managed care discharges leads to discrepancies in estimated discharge counts, but most other NIS Medicare estimates were similar to MedPAR statistics, particularly with respect to comparisons by hospital characteristics.
- The NIS contains significant numbers of discharges for which race was missing (26 percent). While the NHDS also suffers from this problem (25% of discharges without race), race information is present for nearly all MedPAR discharges.
- New to the NIS Comparison Report are tile charts that provide visual representation of discharge estimates representing the frequency and average total charges for the most frequent diagnosis-related groups (DRG) (Figure 4), principal diagnoses (Figure 5), and procedures (Figure 6) among the Medicare population in the NIS.

Table 15. NIS and MedPAR Comparisons by Region, 2007

|               | Number of Discharges in Thousands<br>(Standard Error) |          | Percentage of Discharges<br>(Standard Error) |         | Average Length of Stay in Days<br>(Standard Error) |        | In-Hospital Mortality Rate Percent<br>(Standard Error) |        | Average Total Hospital charge<br>(Standard Error) |          |
|---------------|---|----------|--|---------|--|--------|--|--------|---|----------|
|               | NIS   | MedPAR   | NIS  | MedPAR  | NIS  | MedPAR | NIS  | MedPAR | NIS   | MedPAR   |
| U.S.          | 14,381<br>(293)                                       | 12,912** | n/a  | n/a     | 5.63<br>(0.04)                                     | 5.80** | 3.56<br>(0.04)   | 3.51   | \$32,752<br>(689)                                 | \$32,794 |
| <b>Region</b> |   |          |  |         |  |        |  |        |   |          |
| Northeast     | 2,939<br>(148)  | 2,554**  | 20.43<br>(0.89)                              | 19.78   | 6.29<br>(0.10)                                     | 6.42   | 4.12<br>(0.11)   | 3.85*  | \$34,985<br>(1,947)                               | \$36,837 |
| South         | 3,545<br>(131)  | 3,503    | 24.65<br>(0.82)                              | 27.13** | 5.18<br>(0.06)                                     | 5.35** | 3.06<br>(0.07)   | 3.12   | \$25,899<br>(830)                                 | \$26,705 |
| Midwest       | 5,620<br>(195)  | 5,053**  | 39.08<br>(1.02)                              | 39.13   | 5.65<br>(0.06)                                     | 5.89** | 3.48<br>(0.06)   | 3.54   | \$29,865<br>(816)                                 | \$30,575 |
| West          | 2,276<br>(92)   | 1,800**  | 15.82<br>(0.62)                              | 13.94** | 5.45<br>(0.10)                                     | 5.50   | 3.81<br>(0.11)   | 3.75   | \$48,668<br>(2,577)                               | \$45,135 |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

**Table 16. NIS and MedPAR Comparisons by Hospital Control, 2007**

|                          | Number of Discharges in Thousands (Standard Error) |         | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |           |
|--------------------------|--|---------|---|--------|---|--------|---|--------|--|-----------|
|                          | NIS  | MedPAR  | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR    |
| Total Public             | 1,817<br>(170)                                     | 1,603   | 12.63<br>(1.19)                           | 12.42  | 5.60<br>(0.14)                                  | 5.54   | 3.64<br>(0.09)                                      | 3.58   | \$26,698<br>(1,426)                            | \$27,207  |
| 1-99 Beds                | 485<br>(29)  | 431     | 26.72<br>(2.03)                           | 26.92  | 4.68<br>(0.15)                                  | 4.33*  | 3.43<br>(0.11)                                      | 3.15*  | \$12,610<br>(556)                              | \$11,773  |
| 100-199 Beds             | 297<br>(48)  | 286     | 16.35<br>(2.65)                           | 17.86  | 5.09<br>(0.15)                                  | 5.31   | 3.95<br>(0.24)                                      | 3.56   | \$30,170<br>(4,707)                            | \$24,187  |
| 200-299 Beds             | 224<br>(48)  | 197     | 12.35<br>(2.88)                           | 12.32  | 5.49<br>(0.21)                                  | 5.64   | 3.50<br>(0.36)                                      | 3.61   | \$25,715<br>(2,058)                            | \$30,030* |
| 300-499 Beds             | 235<br>(76)  | 313     | 12.95<br>(4.05)                           | 19.57  | 6.15<br>(0.36)                                  | 6.21   | 3.60<br>(0.34)                                      | 3.85   | \$33,324<br>(4,052)                            | \$34,207  |
| 500+ Beds                | 574<br>(100)                                       | 373*    | 31.61<br>(4.60)                           | 23.30  | 6.45<br>(0.32)                                  | 6.49   | 3.73<br>(0.17)                                      | 3.86   | \$34,311<br>(2,822)                            | \$39,981* |
| Total Private Non-Profit | 10,480<br>(336)                                    | 9,422** | 72.87<br>(1.47)                           | 72.97  | 5.59<br>(0.04)                                  | 5.64   | 3.58<br>(0.05)                                      | 3.49   | \$31,741<br>(847)                              | \$31,963  |
| 1-99 Beds                | 1,042<br>(50)                                      | 1,026   | 9.94<br>(0.53)                            | 10.89  | 4.68<br>(0.10)                                  | 4.75   | 3.62<br>(0.10)                                      | 3.22** | \$18,284<br>(883)                              | \$17,240  |
| 100-199 Beds             | 1,826<br>(113)                                     | 1,668   | 17.42<br>(1.11)                           | 17.70  | 5.28<br>(0.07)                                  | 5.44*  | 3.66<br>(0.10)                                      | 3.44*  | \$26,601<br>(1,476)                            | \$25,949  |
| 200-299 Beds             | 2,346<br>(196)                                     | 1,921*  | 22.39<br>(1.89)                           | 20.39  | 5.53<br>(0.09)                                  | 5.54   | 3.39<br>(0.10)                                      | 3.53   | \$28,973<br>(1,384)                            | \$30,404  |
| 300-499 Beds             | 3,517<br>(305)                                     | 2,696** | 33.55<br>(2.79)                           | 28.61  | 5.79<br>(0.08)                                  | 5.73   | 3.60<br>(0.11)                                      | 3.47   | \$34,709<br>(1,631)                            | \$34,766  |
| 500+ Beds                | 1,748<br>(284)                                     | 2,109   | 16.67<br>(2.56)                           | 22.38* | 6.16<br>(0.14)                                  | 6.21   | 3.68<br>(0.15)                                      | 3.68   | \$42,449<br>(2,677)                            | \$41,726  |

|                   | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |         | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |            |
|-------------------|--|--------|---|---------|---|--------|---|--------|--|------------|
|                   | NIS  | MedPAR | NIS                                       | MedPAR  | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR     |
| Total Proprietary | 2,083<br>(130)                                     | 1,885  | 14.48<br>(0.91)                           | 14.60   | 5.88<br>(0.14)                                  | 6.79** | 3.38<br>(0.11)                                      | 3.55   | \$43,050<br>(2,040)                            | \$41,700   |
| 1-99 Beds         | 423<br>(39)  | 471    | 20.31<br>(1.77)                           | 24.98** | 6.38<br>(0.47)                                  | 8.79** | 3.68<br>(0.29)                                      | 3.50   | \$33,721<br>(2,210)                            | \$34,735   |
| 100-199 Beds      | 669<br>(54)  | 557*   | 32.12<br>(2.42)                           | 29.55   | 5.63<br>(0.20)                                  | 5.94   | 3.12<br>(0.17)                                      | 3.41   | \$41,829<br>(3,543)                            | \$37,664   |
| 200-299 Beds      | 529<br>(82)  | 412    | 25.39<br>(3.60)                           | 21.89   | 5.75<br>(0.26)                                  | 6.17   | 3.36<br>(0.16)                                      | 3.72*  | \$41,029<br>(3,486)                            | \$44,081   |
| 300-499 Beds      | 368<br>(67)  | 294    | 17.68<br>(3.29)                           | 15.60   | 5.80<br>(0.15)                                  | 6.26** | 3.37<br>(0.23)                                      | 3.60   | \$54,077<br>(5,466)                            | \$53,768   |
| 500+ Beds         | 93<br>(40)   | 150    | 4.48<br>(1.92)                            | 7.95    | 6.30<br>(0.25)                                  | 6.38   | 3.97<br>(0.53)                                      | 3.68   | \$61,564<br>(3,157)                            | \$48,342** |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

**Table 17. NIS and MedPAR Comparisons by Hospital Location and Teaching Status, 2007**

|                     | Number of Discharges in Thousands (Standard Error) |         | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |          |
|---------------------|--|---------|---|--------|---|--------|---|--------|--|----------|
|                     | NIS  | MedPAR  | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR   |
| Rural               | 2,308<br>(98)                                      | 2,121   | 16.05<br>(0.65)                           | 16.42  | 4.87<br>(0.07)                                  | 4.76   | 3.56<br>(0.07)                                      | 3.36** | \$17,763<br>(597)                              | \$17,334 |
| Small               | 641<br>(26)  | 561**   | 27.79<br>(1.49)                           | 26.46  | 4.25<br>(0.09)                                  | 4.08   | 3.51<br>(0.12)                                      | 3.10** | \$11,240<br>(500)                              | \$10,849 |
| Medium              | 473<br>(43)  | 528     | 20.51<br>(2.19)                           | 24.90* | 4.59<br>(0.09)                                  | 4.57   | 3.45<br>(0.11)                                      | 3.33   | \$16,582<br>(705)                              | \$16,189 |
| Large               | 1,193<br>(110)                                     | 1,031   | 51.68<br>(2.93)                           | 48.63  | 5.31<br>(0.11)                                  | 5.23   | 3.63<br>(0.11)                                      | 3.51   | \$21,718<br>(927)                              | \$21,449 |
| Urban, Non-teaching | 6,395<br>(181)                                     | 5,647** | 44.47<br>(1.00)                           | 43.73  | 5.66<br>(0.06)                                  | 5.94** | 3.53<br>(0.06)                                      | 3.51   | \$34,099<br>(999)                              | \$33,810 |
| Small               | 801<br>(52)  | 792     | 12.52<br>(0.82)                           | 14.03  | 5.95<br>(0.28)                                  | 7.44** | 3.74<br>(0.18)                                      | 3.39   | \$29,107<br>(1,476)                            | \$29,307 |
| Medium              | 1,891<br>(98)                                      | 1,536** | 29.57<br>(1.59)                           | 27.20  | 5.45<br>(0.09)                                  | 5.64   | 3.54<br>(0.10)                                      | 3.49   | \$33,464<br>(1,989)                            | \$31,119 |
| Large               | 3,702<br>(181)                                     | 3,318*  | 57.89<br>(1.72)                           | 58.75  | 5.70<br>(0.07)                                  | 5.72   | 3.48<br>(0.08)                                      | 3.55   | \$35,501<br>(1,427)                            | \$36,131 |
| Urban, Teaching     | 5,676<br>(208)                                     | 5,143*  | 39.47<br>(1.04)                           | 39.83  | 5.92<br>(0.06)                                  | 6.07*  | 3.59<br>(0.08)                                      | 3.58   | \$37,376<br>(1,296)                            | \$38,055 |
| Small               | 907<br>(124)                                       | 672     | 15.99<br>(2.13)                           | 13.06  | 5.53<br>(0.15)                                  | 5.92*  | 3.37<br>(0.22)                                      | 3.44   | \$30,418<br>(2,190)                            | \$32,867 |
| Medium              | 1,636<br>(222)                                     | 1,321   | 28.83<br>(4.00)                           | 25.69  | 5.93<br>(0.11)                                  | 6.02   | 3.74<br>(0.17)                                      | 3.57   | \$38,462<br>(2,873)                            | \$36,779 |
| Large               | 3,132<br>(293)                                     | 3,150   | 55.17<br>(4.33)                           | 61.24  | 6.02<br>(0.11)                                  | 6.12   | 3.58<br>(0.11)                                      | 3.62   | \$38,658<br>(1,713)                            | \$39,698 |

\*Significant at p<0.05.

\*\*Significant at p<0.01.



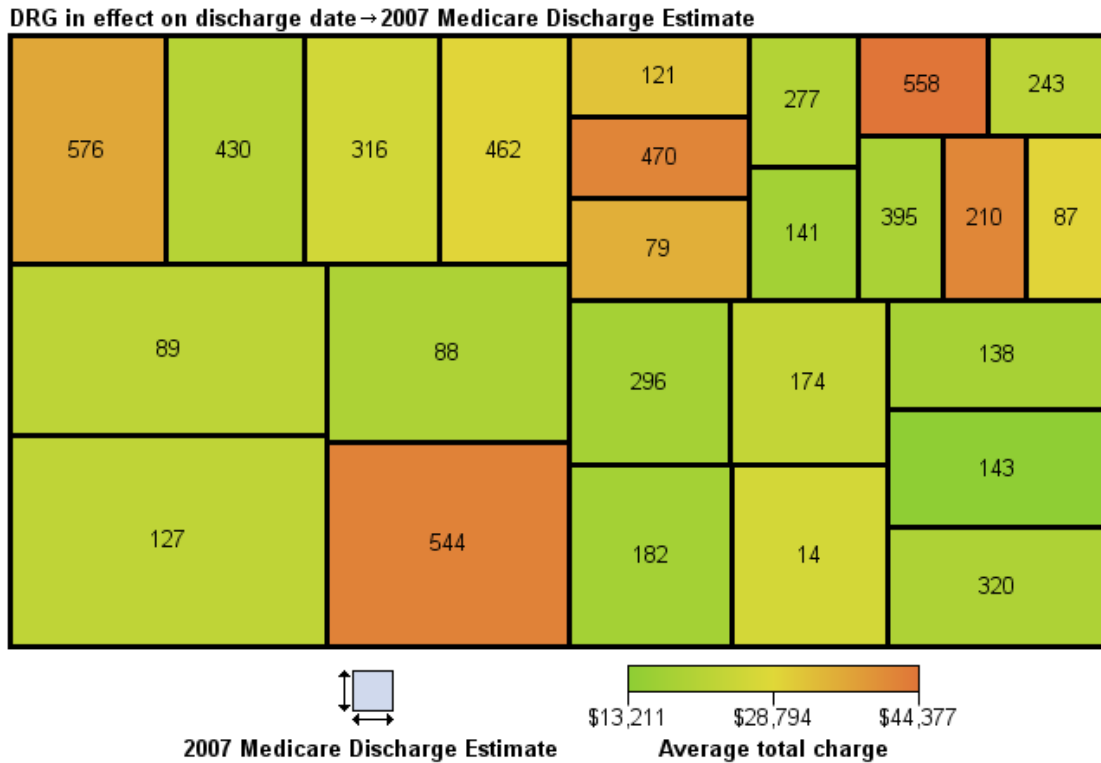
Table 18. NIS and MedPAR Comparisons by Patient Characteristics, 2007

|                  | Number of Discharges in Thousands (Standard Error) |          | Percentage of Discharges (Standard Error) |         | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |            |
|------------------|--|----------|---|---------|---|--------|---|--------|--|------------|
|                  | NIS  | MedPAR   | NIS                                       | MedPAR  | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR     |
| <b>Age Group</b> |  |          |   |         |   |        |   |        |  |            |
| 0-64 Years       | 2,601<br>(67)                                      | 2,382**  | 18.09<br>(0.35)                           | 18.45   | 5.92<br>(0.06)                                  | 6.15** | 1.83<br>(0.03)                                      | 1.85   | \$32,258<br>(769)                              | \$32,883   |
| 65-74 Years      | 4,187<br>(91)                                      | 3,788**  | 29.11<br>(0.20)                           | 29.34   | 5.39<br>(0.03)                                  | 5.58** | 2.75<br>(0.03)                                      | 2.81   | \$35,552<br>(734)                              | \$35,938   |
| 75-84 Years      | 4,842<br>(109)                                     | 4,152**  | 33.67<br>(0.20)                           | 32.15** | 5.67<br>(0.04)                                  | 5.80** | 3.92<br>(0.05)                                      | 3.77** | \$33,334<br>(706)                              | \$33,136   |
| 85+ Years        | 2,747<br>(66)                                      | 2,588*   | 19.10<br>(0.23)                           | 20.04** | 5.66<br>(0.05)                                  | 5.79*  | 5.80<br>(0.08)                                      | 5.66   | \$27,925<br>(692)                              | \$27,561   |
| <b>Gender</b>    |  |          |   |         |   |        |   |        |  |            |
| Female           | 8,110<br>(164)                                     | 7,244**  | 56.39<br>(0.15)                           | 56.10   | 5.58<br>(0.04)                                  | 5.75** | 3.31<br>(0.04)                                      | 3.26   | \$30,845<br>(644)                              | \$30,816   |
| Male             | 6,263<br>(132)                                     | 5,667**  | 43.54<br>(0.15)                           | 43.89*  | 5.71<br>(0.04)                                  | 5.86** | 3.89<br>(0.04)                                      | 3.83   | \$35,218<br>(754)                              | \$35,322   |
| <b>Race</b>      |  |          |   |         |   |        |   |        |  |            |
| White            | 8,177<br>(303)                                     | 10,657** | 56.86<br>(1.60)                           | 82.53** | 5.59<br>(0.04)                                  | 5.64   | 3.66<br>(0.05)                                      | 3.53*  | \$33,424<br>(847)                              | \$31,976   |
| Black            | 1,258<br>(98)                                      | 1,598**  | 8.75<br>(0.66)                            | 12.38** | 6.51<br>(0.10)                                  | 6.63   | 3.47<br>(0.08)                                      | 3.42   | \$36,841<br>(1,700)                            | \$34,711   |
| Other            | 1,148<br>(81)                                      | 616**    | 7.98<br>(0.56)                            | 4.77**  | 6.25<br>(0.11)                                  | 6.23   | 3.69<br>(0.11)                                      | 3.60   | \$42,391<br>(1,628)                            | \$41,912   |
| Unknown          | 3,796<br>(267)                                     | 39**     | 26.40<br>(1.82)                           | 0.30**  | 5.25<br>(0.06)                                  | 5.74** | 3.34<br>(0.07)                                      | 2.62** | \$27,111<br>(939)                              | \$33,533** |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

**Figure 4. Medicare Discharge Estimates for the 25 Most Common DRGs in the NIS, 2007**



| DRG | Average Total Charge | 2007 Discharge Estimate | Diagnosis Related Group   |
|-----|----------------------|-------------------------|---|
| 14  | \$26,192             | 45,148                  | Intracranial Hemorrhage Or Cerebral Infarction                      |
| 79  | \$35,398             | 29,020                  | Respiratory Infections & Inflammations Age >17 W CC                 |
| 87  | \$29,518             | 21,199                  | Pulmonary Edema & Respiratory Failure                               |
| 88  | \$18,950             | 68,577                  | Chronic Obstructive Pulmonary Disease                               |
| 89  | \$21,926             | 86,190                  | Simple Pneumonia & Pleurisy Age >17 W CC                            |
| 121 | \$32,258             | 23,321                  | Circulatory Disorders W Ami & Major Comp, Discharged Alive          |
| 127 | \$22,327             | 107,649                 | Heart Failure & Shock   |
| 138 | \$17,766             | 38,468                  | Cardiac Arrhythmia & Conduction Disorders W CC                      |
| 141 | \$17,074             | 23,159                  | Syncope & Collapse W CC   |
| 143 | \$13,211             | 41,297                  | Chest Pain  |
| 174 | \$22,999             | 42,074                  | G.I. Hemorrhage W CC  |
| 182 | \$17,261             | 47,167                  | Esophagitis, Gastroent & Misc Digest Disorders Age >17 W CC         |
| 210 | \$41,571             | 21,838                  | Hip & Femur Procedures Except Major Joint Age >17 W CC              |
| 243 | \$21,582             | 19,201                  | Medical Back Problems   |
| 277 | \$20,099             | 22,857                  | Cellulitis Age >17 W CC   |
| 296 | \$17,399             | 42,492                  | Nutritional & Misc Metabolic Disorders Age >17 W CC                 |
| 316 | \$25,777             | 49,522                  | Renal Failure   |
| 320 | \$19,051             | 41,792                  | Kidney & Urinary Tract Infections Age >17 W CC                      |
| 395 | \$18,425             | 22,095                  | Red Blood Cell Disorders Age >17                                    |
| 430 | \$20,531             | 50,969                  | Psychoses   |
| 462 | \$29,362             | 47,805                  | Rehabilitation  |
| 470 | \$41,898             | 23,704                  | Ungroupable   |
| 544 | \$42,280             | 79,353                  | Major Joint Replacement Or Reattachment Of Lower Extremity          |
| 558 | \$44,377             | 20,728                  | Percutaneous Cardiovascular Proc W Drug-Eluting Stent W/O Maj Cv Dx |
| 576 | \$36,618             | 56,908                  | Septicemia W/O Mv 96+ Hours Age >17                                 |

**Table 19. NIS and MedPAR Comparisons by DRG, 2007**

|   | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |          |
|---|--|--------|---|--------|---|--------|---|--------|--|----------|
|   | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR   |
| 127: Heart Failure & Shock  | 545<br>(12)  | 626**  | 3.79<br>(0.05)                            | 4.84** | 5.00<br>(0.03)                                  | 5.01   | 3.41<br>(0.07)                                      | 3.38   | \$22,166<br>(578)                              | \$21,829 |
| 89: Simple Pneumonia & Pleurisy Age >17 w CC                          | 437<br>(9)   | 479**  | 3.04<br>(0.04)                            | 3.71** | 5.30<br>(0.04)                                  | 5.29   | 3.58<br>(0.08)                                      | 3.57   | \$21,714<br>(512)                              | \$21,324 |
| 544: Major Joint and Limb Reattachments Procedures of Lower Extremity | 393<br>(16)  | 461**  | 2.73<br>(0.09)                            | 3.57** | 4.19<br>(0.03)                                  | 4.19   | 0.54<br>(0.02)                                      | 0.56   | \$41,944<br>(839)                              | \$41,944 |
| 88: Chronic Obstructive Pulmonary Disease                             | 346<br>(8)   | 406**  | 2.40<br>(0.04)                            | 3.14** | 4.67<br>(0.04)                                  | 4.71   | 1.28<br>(0.05)                                      | 1.22   | \$18,762<br>(432)                              | \$18,977 |
| 576: Septicemia without Mechanical Ventilation 96 + Hours Age >17     | 287<br>(8)   | 335**  | 1.99<br>(0.04)                            | 2.59** | 7.11<br>(0.08)                                  | 7.11   | 17.49<br>(0.29)                                     | 17.25  | \$36,472<br>(944)                              | \$35,613 |
| 430: Psychoses  | 256<br>(15)  | 329**  | 1.78<br>(0.10)                            | 2.55** | 10.50<br>(0.28)                                 | 10.53  | 0.09<br>(0.01)                                      | 0.08   | \$20,613<br>(732)                              | \$20,379 |
| 316: Renal Failure  | 251<br>(6)   | 275**  | 1.74<br>(0.03)                            | 2.13** | 5.72<br>(0.05)                                  | 5.85*  | 5.31<br>(0.13)                                      | 5.31   | \$25,551<br>(605)                              | \$25,843 |

|  | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |         | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |          |
|--|--|--------|---|--------|---|---------|---|--------|--|----------|
|  | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR  | NIS   | MedPAR | NIS  | MedPAR   |
| 182: Esophagitis   | 239<br>(5)   | 269**  | 1.66<br>(0.02)                            | 2.09** | 3.93<br>(0.03)                                  | 3.95    | 0.77<br>(0.04)                                      | 0.78   | \$17,125<br>(376)                              | \$17,075 |
| 462: Rehabilitation                                      | 237<br>(16)  | 339**  | 1.65<br>(0.11)                            | 2.63** | 12.08<br>(0.17)                                 | 13.03** | 0.70<br>(0.07)                                      | 0.25** | \$29,202<br>(1,074)                            | \$29,673 |
| 14: Intracranial hemorrhage and stroke with infarction   | 228<br>(5)   | 271**  | 1.58<br>(0.02)                            | 2.10** | 5.11<br>(0.04)                                  | 5.36**  | 9.33<br>(0.23)                                      | 9.10   | \$26,126<br>(644)                              | \$26,155 |
| 296: Nutritional & Misc Metabolic Disorders Age >17 w CC | 215<br>(4)   | 241**  | 1.49<br>(0.02)                            | 1.86** | 4.34<br>(0.03)                                  | 4.41    | 2.82<br>(0.10)                                      | 2.65   | \$17,273<br>(431)                              | \$17,180 |
| 174: G.I. Hemorrhage w CC                                | 212<br>(5)   | 243**  | 1.47<br>(0.01)                            | 1.88** | 4.55<br>(0.03)                                  | 4.58    | 2.43<br>(0.07)                                      | 2.54   | \$22,933<br>(527)                              | \$22,557 |
| 320: Kidney & Urinary Tract Infections Age >17 w CC      | 211<br>(5)   | 246**  | 1.47<br>(0.02)                            | 1.90** | 4.78<br>(0.04)                                  | 4.82    | 1.47<br>(0.06)                                      | 1.49   | \$18,971<br>(570)                              | \$18,386 |
| 143: Chest Pain  | 208<br>(7)   | 225*   | 1.45<br>(0.03)                            | 1.74** | 2.08<br>(0.02)                                  | 2.08    | 0.09<br>(0.01)                                      | 0.11   | \$13,090<br>(346)                              | \$12,733 |
| 138: Cardiac Arrhythmia & Conduction Disorders w CC      | 194<br>(4)   | 224**  | 1.35<br>(0.01)                            | 1.74** | 3.76<br>(0.03)                                  | 3.79    | 2.02<br>(0.08)                                      | 2.09   | \$17,679<br>(431)                              | \$17,682 |

|   | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |                   | Average Total Hospital charge (Standard Error) |           |
|---|--|--------|---|--------|---|--------|---|-------------------|--|-----------|
|   | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR            | NIS  | MedPAR    |
| 79: Respiratory Infections & Inflammations Age >17 w CC     | 146<br>(4)   | 168**  | 1.01<br>(0.02)                            | 1.30** | 8.07<br>(0.10)                                  | 8.13   | 10.18<br>(0.23)                                     | 10.02             | \$35,040<br>(976)                              | \$35,147  |
| 121: Circulatory Disorders w AMI & Major Comp               | 119<br>(3)   | 134**  | 0.83<br>(0.01)                            | 1.04** | 5.81<br>(0.05)                                  | 5.88   | 0.00<br>(0.00)                                      | 0.00 <sup>1</sup> | \$32,147<br>(830)                              | \$31,929  |
| 141: Syncope & Collapse w CC                                | 117<br>(3)   | 131**  | 0.81<br>(0.01)                            | 1.01** | 3.30<br>(0.03)                                  | 3.29   | 0.40<br>(0.04)                                      | 0.39              | \$16,966<br>(462)                              | \$16,640  |
| 470: Ungroupable  | 116<br>(5)   | 0**    | 0.80<br>(0.03)                            | 0.00** | 3.90<br>(0.04)                                  | 2.50** | 0.21<br>(0.03)                                      | 0.00**            | \$41,572<br>(858)                              | \$8,887** |
| 277: Cellulitis Age >17 w CC                                | 115<br>(2)   | 133**  | 0.80<br>(0.01)                            | 1.03** | 5.39<br>(0.05)                                  | 5.45   | 0.78<br>(0.06)                                      | 0.77              | \$19,919<br>(543)                              | \$19,602  |
| 395: Red Blood Cell Disorders Age >17                       | 112<br>(2)   | 121**  | 0.77<br>(0.01)                            | 0.94** | 3.92<br>(0.04)                                  | 4.04*  | 1.02<br>(0.07)                                      | 1.21*             | \$18,314<br>(465)                              | \$18,196  |
| 210: Hip & Femur Procedures Except Major Joint Age >17 w CC | 110<br>(3)   | 130**  | 0.76<br>(0.01)                            | 1.01** | 6.43<br>(0.05)                                  | 6.45   | 2.11<br>(0.10)                                      | 2.32*             | \$41,365<br>(951)                              | \$41,359  |
| 87: Pulmonary Edema & Respiratory Failure                   | 106<br>(4)   | 124**  | 0.73<br>(0.02)                            | 0.96** | 6.32<br>(0.09)                                  | 6.74** | 12.06<br>(0.33)                                     | 11.90             | \$29,204<br>(741)                              | \$30,927* |

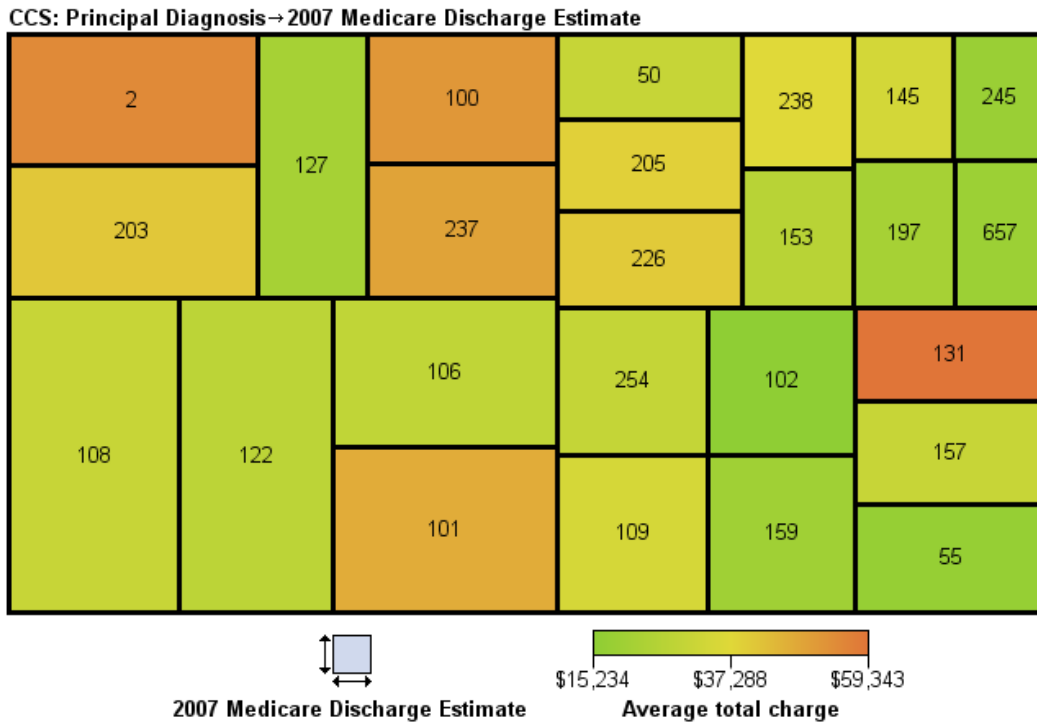
|  | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |            |
|--|--|--------|---|--------|---|--------|---|--------|--|------------|
|  | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR     |
| 558: Percutaneous Cardiovascular Proc w Drug-Eluting Stent w/o Maj CV DX | 103<br>(6)   | 119*   | 0.71<br>(0.03)                            | 0.92** | 1.82<br>(0.02)                                  | 1.72** | 0.02<br>(0.01)                                      | 0.03   | \$44,151<br>(1,367)                            | \$45,973   |
| 243: Medical Back Problems   | 97<br>(2)  | 105**  | 0.67<br>(0.01)                            | 0.81** | 4.39<br>(0.03)                                  | 4.59** | 0.89<br>(0.06)                                      | 0.95   | \$21,393<br>(483)                              | \$17,633** |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

<sup>1</sup>A significance test was not performed because a valid standard error was not available.

**Figure 5. Medicare Discharge Estimates for the 25 Most Common Principal Diagnoses, NIS, 2007**



| DXCCS | Average Total Charge | Discharge Estimate | Diagnosis  |
|-------|----------------------|--------------------|--|
| 2     | \$54,674             | 92,040             | Septicemia (except in labor)   |
| 50    | \$30,027             | 43,896             | Diabetes mellitus with complications   |
| 55    | \$17,226             | 58,477             | Fluid and electrolyte disorders  |
| 100   | \$51,813             | 68,970             | Acute myocardial infarction  |
| 101   | \$47,310             | 104,923            | Coronary atherosclerosis and other heart disease                               |
| 102   | \$15,234             | 61,307             | Nonspecific chest pain   |
| 106   | \$28,403             | 94,166             | Cardiac dysrhythmias   |
| 108   | \$30,243             | 151,515            | Congestive heart failure; nonhypertensive                                      |
| 109   | \$33,930             | 66,674             | Acute cerebrovascular disease  |
| 122   | \$27,211             | 135,971            | Pneumonia (except that caused by tuberculosis or sexually transmitted disease) |
| 127   | \$21,307             | 82,497             | Chronic obstructive pulmonary disease and bronchiectasis                       |
| 131   | \$59,343             | 50,812             | Respiratory failure; insufficiency; arrest (adult)                             |
| 145   | \$33,651             | 35,749             | Intestinal obstruction without hernia  |
| 153   | \$26,240             | 43,634             | Gastrointestinal hemorrhage  |
| 157   | \$30,200             | 55,163             | Acute and unspecified renal failure  |
| 159   | \$19,828             | 65,265             | Urinary tract infections   |
| 197   | \$21,361             | 42,144             | Skin and subcutaneous tissue infections  |
| 203   | \$41,329             | 92,374             | Osteoarthritis   |
| 205   | \$39,171             | 47,449             | Spondylosis; intervertebral disc disorders; other back problems                |
| 226   | \$40,596             | 50,139             | Fracture of neck of femur (hip)  |
| 237   | \$49,244             | 72,281             | Complication of device; implant or graft                                       |
| 238   | \$37,049             | 42,381             | Complications of surgical procedures or medical care                           |
| 245   | \$18,216             | 33,047             | Syncope  |
| 254   | \$29,436             | 62,734             | Rehabilitation care; fitting of prostheses; and adjustment of devices          |
| 657   | \$18,755             | 37,655             | Mood disorders   |

**Table 20. NIS and MedPAR Comparisons by the 25 Most Common Principal Diagnoses, 2007**

|   | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |          |
|---|--|--------|---|--------|---|--------|---|--------|--|----------|
|   | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR   |
| 108: Congestive heart failure; nonhypertensive                                      | 764<br>(17)  | 677**  | 5.31<br>(0.06)                            | 5.24   | 5.31<br>(0.04)                                  | 5.39   | 3.55<br>(0.06)                                      | 3.62   | \$30,103<br>(801)                              | \$30,279 |
| 122: Pneumonia (except that caused by tuberculosis or sexually transmitted disease) | 687<br>(13)  | 597**  | 4.78<br>(0.06)                            | 4.62*  | 5.96<br>(0.05)                                  | 5.98   | 4.78<br>(0.09)                                      | 4.70   | \$26,983<br>(706)                              | \$26,446 |
| 101: Coronary atherosclerosis and other heart disease                               | 525<br>(23)  | 481    | 3.65<br>(0.13)                            | 3.72   | 3.55<br>(0.04)                                  | 3.59   | 0.71<br>(0.02)                                      | 0.73   | \$47,057<br>(1,329)                            | \$47,671 |
| 106: Cardiac dysrhythmias   | 473<br>(13)  | 423**  | 3.29<br>(0.04)                            | 3.27   | 3.75<br>(0.03)                                  | 3.78   | 1.20<br>(0.04)                                      | 1.23   | \$28,348<br>(635)                              | \$28,510 |
| 2: Septicemia (except in labor)   | 463<br>(13)  | 402**  | 3.22<br>(0.07)                            | 3.12   | 8.98<br>(0.13)                                  | 8.94   | 18.85<br>(0.29)                                     | 18.72  | \$54,700<br>(1,631)                            | \$53,188 |
| 203: Osteoarthritis   | 454<br>(20)  | 413*   | 3.16<br>(0.12)                            | 3.20   | 3.67<br>(0.03)                                  | 3.72   | 0.12<br>(0.01)                                      | 0.12   | \$40,983<br>(837)                              | \$40,234 |
| 127: Chronic obstructive pulmonary disease and bronchiectasis                       | 414<br>(9)   | 366**  | 2.88<br>(0.04)                            | 2.83   | 4.89<br>(0.04)                                  | 4.94   | 1.98<br>(0.06)                                      | 1.92   | \$21,125<br>(497)                              | \$21,180 |
| 237: Complication of device; implant or graft                                       | 362<br>(11)  | 340    | 2.51<br>(0.05)                            | 2.63*  | 6.20<br>(0.07)                                  | 6.24   | 2.01<br>(0.06)                                      | 2.09   | \$49,066<br>(1,351)                            | \$48,870 |



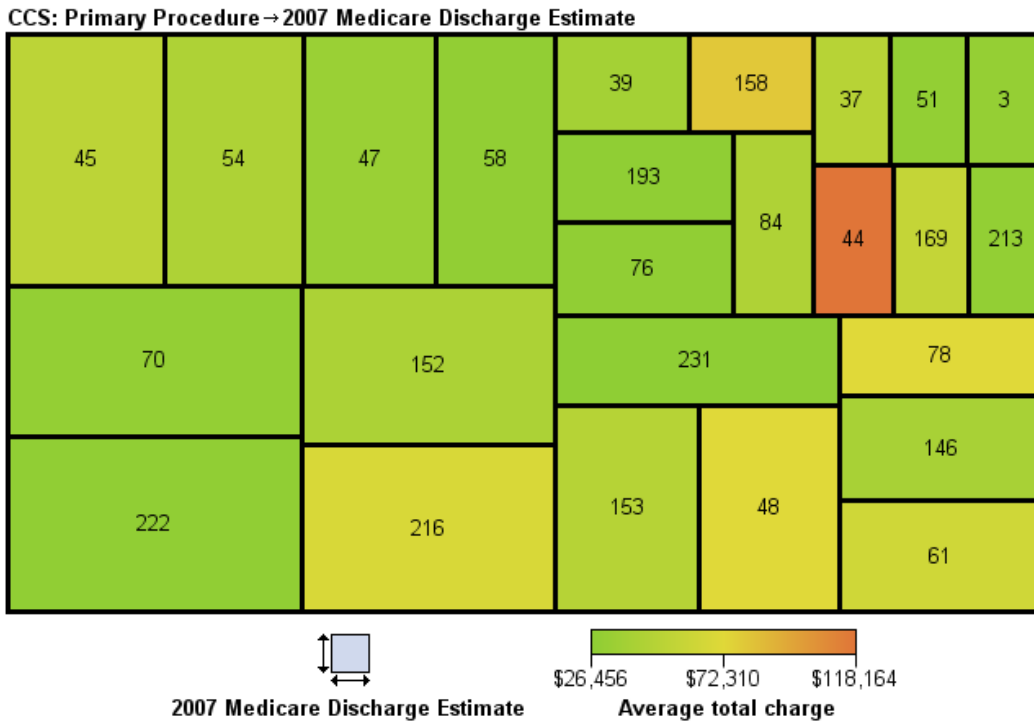
|  | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |         | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |          |
|--|--|--------|---|--------|---|---------|---|--------|--|----------|
|  | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR  | NIS   | MedPAR | NIS  | MedPAR   |
| 100: Acute myocardial infarction   | 351<br>(11)  | 314**  | 2.44<br>(0.05)                            | 2.43   | 5.63<br>(0.05)                                  | 5.68    | 8.39<br>(0.14)                                      | 8.36   | \$51,614<br>(1,379)                            | \$52,361 |
| 109: Acute cerebrovascular disease   | 337<br>(8)   | 306**  | 2.34<br>(0.03)                            | 2.37   | 5.79<br>(0.06)                                  | 5.99**  | 9.67<br>(0.23)                                      | 9.51   | \$33,928<br>(1,012)                            | \$33,516 |
| 159: Urinary tract infections  | 330<br>(7)   | 293**  | 2.29<br>(0.03)                            | 2.27   | 4.82<br>(0.04)                                  | 4.83    | 1.37<br>(0.05)                                      | 1.37   | \$19,753<br>(576)                              | \$18,882 |
| 254: Rehabilitation care; fitting of prostheses; and adjustment of devices | 311<br>(21)  | 343    | 2.16<br>(0.14)                            | 2.66** | 12.24<br>(0.17)                                 | 13.09** | 0.73<br>(0.07)                                      | 0.26** | \$29,304<br>(1,135)                            | \$30,029 |
| 102: Nonspecific chest pain  | 308<br>(10)  | 266**  | 2.14<br>(0.05)                            | 2.06   | 2.18<br>(0.02)                                  | 2.19    | 0.11<br>(0.01)                                      | 0.12   | \$15,099<br>(375)                              | \$14,737 |
| 55: Fluid and electrolyte disorders  | 294<br>(6)   | 263**  | 2.05<br>(0.02)                            | 2.04   | 4.10<br>(0.03)                                  | 4.13    | 2.13<br>(0.07)                                      | 2.20   | \$17,109<br>(436)                              | \$16,703 |
| 157: Acute and unspecified renal failure                                   | 279<br>(7)   | 239**  | 1.94<br>(0.03)                            | 1.85*  | 6.41<br>(0.06)                                  | 6.49    | 5.76<br>(0.13)                                      | 5.81   | \$29,990<br>(791)                              | \$29,816 |
| 131: Respiratory failure; insufficiency; arrest (adult)                    | 254<br>(7)   | 230**  | 1.76<br>(0.04)                            | 1.78   | 9.37<br>(0.18)                                  | 10.17** | 18.65<br>(0.34)                                     | 18.70  | \$58,948<br>(1,818)                            | \$61,588 |
| 226: Fracture of neck of femur (hip)                                       | 252<br>(6)   | 226**  | 1.75<br>(0.02)                            | 1.75   | 6.17<br>(0.05)                                  | 6.28*   | 2.81<br>(0.08)                                      | 2.84   | \$40,384<br>(865)                              | \$39,481 |
| 205: Spondylosis; intervertebral disc disorders; other back problems       | 234<br>(8)   | 224    | 1.62<br>(0.04)                            | 1.73*  | 3.69<br>(0.04)                                  | 3.73    | 0.29<br>(0.02)                                      | 0.29   | \$38,799<br>(1,047)                            | \$37,743 |

|   | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |          |
|---|--|--------|---|--------|---|--------|---|--------|--|----------|
|   | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR   |
| 50: Diabetes mellitus with complications                  | 221<br>(5)   | 195**  | 1.54<br>(0.02)                            | 1.51   | 5.95<br>(0.07)                                  | 6.16** | 1.30<br>(0.05)                                      | 1.30   | \$29,763<br>(791)                              | \$30,621 |
| 153: Gastrointestinal hemorrhage                          | 219<br>(5)   | 192**  | 1.52<br>(0.01)                            | 1.49   | 4.82<br>(0.04)                                  | 4.79   | 3.42<br>(0.09)                                      | 3.38   | \$26,148<br>(614)                              | \$25,196 |
| 238: Complications of surgical procedures or medical care | 213<br>(5)   | 192**  | 1.48<br>(0.02)                            | 1.48   | 6.87<br>(0.09)                                  | 7.13** | 2.06<br>(0.07)                                      | 2.12   | \$36,841<br>(1,055)                            | \$37,112 |
| 197: Skin and subcutaneous tissue infections              | 212<br>(4)   | 188**  | 1.47<br>(0.01)                            | 1.46   | 5.45<br>(0.05)                                  | 5.49   | 0.72<br>(0.04)                                      | 0.70   | \$21,164<br>(542)                              | \$20,422 |
| 657: Mood Disorders                                       | 189<br>(10)  | 188    | 1.31<br>(0.07)                            | 1.46   | 9.15<br>(0.23)                                  | 9.25   | 0.09<br>(0.01)                                      | 0.07   | \$18,833<br>(680)                              | \$18,378 |
| 145: Intestinal obstruction without hernia                | 179<br>(4)   | 159**  | 1.24<br>(0.01)                            | 1.23   | 6.62<br>(0.05)                                  | 6.69   | 3.66<br>(0.11)                                      | 3.66   | \$33,424<br>(706)                              | \$33,153 |
| 245: Syncope  | 166<br>(5)   | 142**  | 1.16<br>(0.02)                            | 1.10   | 3.04<br>(0.03)                                  | 3.03   | 0.31<br>(0.03)                                      | 0.33   | \$18,141<br>(514)                              | \$17,510 |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

**Figure 6. Medicare Discharge Estimates for the 25 Most Common Principal Procedures, NIS, 2007**



| PRCS | Average Total Charge | 2007 Discharge Estimate | Label  |
|------|----------------------|-------------------------|--|
| 3    | \$29,596             | 16,875                  | Laminectomy; excision intervertebral disc  |
| 37   | \$48,679             | 17,099                  | Diagnostic bronchoscopy and biopsy of bronchus   |
| 39   | \$38,281             | 22,188                  | Incision of pleura; thoracentesis; chest drainage  |
| 44   | \$118,164            | 20,227                  | Coronary artery bypass graft (CABG)  |
| 45   | \$51,499             | 66,848                  | Percutaneous transluminal coronary angioplasty (PTCA)  |
| 47   | \$32,807             | 56,162                  | Diagnostic cardiac catheterization; coronary arteriography                                   |
| 48   | \$71,967             | 48,558                  | Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator |
| 51   | \$28,640             | 16,964                  | Endarterectomy; vessel of head and neck  |
| 54   | \$43,968             | 58,937                  | Other vascular catheterization; not heart  |
| 58   | \$28,181             | 50,699                  | Hemodialysis   |
| 61   | \$62,243             | 38,245                  | Other OR procedures on vessels other than head and neck                                      |
| 70   | \$29,265             | 74,896                  | Upper gastrointestinal endoscopy; biopsy   |
| 76   | \$27,776             | 27,487                  | Colonoscopy and biopsy   |
| 78   | \$71,850             | 27,871                  | Colorectal resection   |
| 84   | \$44,194             | 24,934                  | Cholecystectomy and common duct exploration  |
| 146  | \$40,344             | 36,555                  | Treatment; fracture or dislocation of hip and femur  |
| 152  | \$42,873             | 68,431                  | Arthroplasty knee  |
| 153  | \$48,276             | 49,979                  | Hip replacement; total and partial   |
| 158  | \$80,053             | 20,601                  | Spinal fusion  |
| 169  | \$55,958             | 18,993                  | Debridement of wound; infection or burn  |
| 193  | \$27,096             | 26,970                  | Diagnostic ultrasound of heart (echocardiogram)  |
| 213  | \$28,718             | 18,822                  | Physical therapy exercises; manipulation; and other procedures                               |
| 216  | \$67,319             | 71,602                  | Respiratory intubation and mechanical ventilation  |
| 222  | \$27,574             | 86,521                  | Blood transfusion  |
| 231  | \$26,456             | 43,363                  | Other therapeutic procedures   |

**Table 21. NIS and MedPAR Comparisons by the 25 Most Common Principal Procedures, 2007**

|  | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |          |
|--|--|--------|---|--------|---|--------|---|--------|--|----------|
|  | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR   |
| 222: Blood transfusion   | 441<br>(14)  | 374**  | 3.06<br>(0.08)                            | 2.89*  | 5.85<br>(0.06)                                  | 5.96   | 4.71<br>(0.11)                                      | 4.87   | \$27,265<br>(689)                              | \$27,013 |
| 70: Upper gastrointestinal endoscopy; biopsy   | 375<br>(9)   | 338**  | 2.61<br>(0.04)                            | 2.62   | 5.77<br>(0.04)                                  | 5.82   | 1.62<br>(0.05)                                      | 1.55   | \$29,163<br>(682)                              | \$28,145 |
| 216: Respiratory intubation and mechanical ventilation   | 362<br>(9)   | 314**  | 2.52<br>(0.04)                            | 2.43   | 9.28<br>(0.12)                                  | 9.71** | 33.57<br>(0.40)                                     | 34.26  | \$66,824<br>(1,970)                            | \$67,606 |
| 152: Arthroplasty knee   | 336<br>(15)  | 305*   | 2.34<br>(0.09)                            | 2.36   | 3.76<br>(0.04)                                  | 3.75   | 0.12<br>(0.01)                                      | 0.12   | \$42,523<br>(874)                              | \$42,269 |
| 45: Percutaneous transluminal coronary angioplasty (PTCA)  | 334<br>(19)  | 321    | 2.32<br>(0.11)                            | 2.49   | 2.93<br>(0.04)                                  | 2.96   | 1.16<br>(0.05)                                      | 1.14   | \$51,215<br>(1,534)                            | \$51,412 |
| 54: Other vascular catheterization; not heart  | 294<br>(10)  | 273*   | 2.04<br>(0.05)                            | 2.11   | 8.78<br>(0.10)                                  | 8.88   | 9.57<br>(0.20)                                      | 9.77   | \$43,592<br>(1,041)                            | \$42,802 |
| 47: Diagnostic cardiac catheterization; coronary arteriography                                   | 281<br>(11)  | 257    | 1.95<br>(0.06)                            | 1.99   | 4.06<br>(0.04)                                  | 4.07   | 1.16<br>(0.06)                                      | 1.25   | \$32,631<br>(817)                              | \$32,111 |
| 58: Hemodialysis   | 254<br>(8)   | 234*   | 1.77<br>(0.05)                            | 1.81   | 5.48<br>(0.06)                                  | 5.63*  | 2.91<br>(0.09)                                      | 2.96   | \$28,031<br>(813)                              | \$27,913 |
| 153: Hip replacement; total and partial  | 248<br>(9)   | 221**  | 1.72<br>(0.05)                            | 1.71   | 5.10<br>(0.04)                                  | 5.11   | 1.21<br>(0.06)                                      | 1.23   | \$47,985<br>(1,089)                            | \$46,906 |
| 48: Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator | 243<br>(10)  | 216*   | 1.69<br>(0.05)                            | 1.67   | 4.65<br>(0.07)                                  | 4.79   | 1.01<br>(0.05)                                      | 1.08   | \$71,938<br>(1,720)                            | \$73,147 |
| 231: Other therapeutic procedures  | 226<br>(27)  | 166*   | 1.57<br>(0.18)                            | 1.29   | 5.59<br>(0.17)                                  | 5.77   | 5.36<br>(0.31)                                      | 5.61   | \$26,270<br>(1,387)                            | \$26,545 |
| 61: Other OR procedures on vessels other than head and neck                                      | 192<br>(7)   | 174*   | 1.33<br>(0.03)                            | 1.35   | 7.14<br>(0.15)                                  | 7.22   | 3.65<br>(0.15)                                      | 3.78   | \$62,148<br>(1,663)                            | \$62,231 |

|   | Number of Discharges in Thousands (Standard Error) |        | Percentage of Discharges (Standard Error) |        | Average Length of Stay in Days (Standard Error) |        | In-Hospital Mortality Rate Percent (Standard Error) |        | Average Total Hospital charge (Standard Error) |           |
|---|--|--------|---|--------|---|--------|---|--------|--|-----------|
|   | NIS  | MedPAR | NIS                                       | MedPAR | NIS   | MedPAR | NIS   | MedPAR | NIS  | MedPAR    |
| 146: Treatment; fracture or dislocation of hip and femur            | 184<br>(4)   | 164**  | 1.28<br>(0.02)                            | 1.27   | 6.14<br>(0.05)                                  | 6.17   | 1.95<br>(0.08)                                      | 2.12*  | \$40,187<br>(898)                              | \$39,672  |
| 78: Colorectal resection  | 140<br>(4)   | 123**  | 0.97<br>(0.01)                            | 0.95   | 10.76<br>(0.09)                                 | 10.91  | 5.78<br>(0.16)                                      | 6.03   | \$71,303<br>(1,534)                            | \$71,806  |
| 76: Colonoscopy and biopsy  | 138<br>(3)   | 122**  | 0.96<br>(0.01)                            | 0.94   | 5.85<br>(0.05)                                  | 5.89   | 1.06<br>(0.06)                                      | 1.08   | \$27,685<br>(707)                              | \$26,816  |
| 193: Diagnostic ultrasound of heart (echocardiogram)                | 137<br>(15)  | 125    | 0.95<br>(0.10)                            | 0.97   | 5.14<br>(0.09)                                  | 5.14   | 2.18<br>(0.13)                                      | 2.11   | \$26,920<br>(1,547)                            | \$25,190  |
| 84: Cholecystectomy and common duct exploration                     | 124<br>(3)   | 114**  | 0.86<br>(0.01)                            | 0.88   | 6.23<br>(0.06)                                  | 6.28   | 1.56<br>(0.08)                                      | 1.55   | \$43,840<br>(943)                              | \$43,333  |
| 39: Incision of pleura; thoracentesis; chest drainage               | 111<br>(2)   | 99**   | 0.77<br>(0.01)                            | 0.77   | 7.86<br>(0.07)                                  | 7.93   | 7.02<br>(0.19)                                      | 6.90   | \$38,050<br>(991)                              | \$37,726  |
| 44: Coronary artery bypass graft (CABG)                             | 102<br>(6)   | 97     | 0.70<br>(0.03)                            | 0.75   | 10.19<br>(0.14)                                 | 10.06  | 2.67<br>(0.12)                                      | 2.73   | 117,412<br>(3,762)                             | 115,644   |
| 158: Spinal fusion  | 100<br>(5)   | 103    | 0.70<br>(0.03)                            | 0.80** | 4.63<br>(0.10)                                  | 4.61   | 0.49<br>(0.05)                                      | 0.52   | \$79,688<br>(2,419)                            | \$76,626  |
| 169: Debridement of wound; infection or burn                        | 95<br>(2)  | 90     | 0.66<br>(0.01)                            | 0.70*  | 11.75<br>(0.29)                                 | 12.28  | 3.86<br>(0.20)                                      | 4.15   | \$55,523<br>(2,032)                            | \$56,069  |
| 213: Physical therapy exercises; manipulation; and other procedures | 93<br>(12)   | 82     | 0.65<br>(0.08)                            | 0.63   | 11.35<br>(0.51)                                 | 11.67  | 0.88<br>(0.16)                                      | 0.47*  | \$28,505<br>(2,080)                            | \$33,237* |
| 37: Diagnostic bronchoscopy and biopsy of bronchus                  | 85<br>(3)  | 79     | 0.59<br>(0.01)                            | 0.61   | 8.98<br>(0.11)                                  | 8.98   | 5.34<br>(0.21)                                      | 5.39   | \$48,471<br>(1,524)                            | \$47,726  |
| 51: Endarterectomy; vessel of head and neck                         | 84<br>(3)  | 71**   | 0.58<br>(0.02)                            | 0.55   | 2.60<br>(0.06)                                  | 2.65   | 0.40<br>(0.04)                                      | 0.35   | \$28,678<br>(871)                              | \$28,046  |
| 3: Laminectomy; excision intervertebral disc                        | 82<br>(4)  | 77     | 0.57<br>(0.02)                            | 0.59   | 3.33<br>(0.07)                                  | 3.28   | 0.33<br>(0.05)                                      | 0.28   | \$29,741<br>(1,090)                            | \$28,353  |

\*Significant at p<0.05.

\*\*Significant at p<0.01.

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