



**Potentially Preventable Complications  
in Texas  
Calendar Year 2012 Report**

**As Required By  
82nd Texas Legislature, First Called, S.B. 7, Subchapter C,  
Chapter 98 of the Health and Safety Code**



**Department of State Health Services  
February 2015**

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## **Executive Summary**

Public reporting of Potentially Preventable Complications (PPC) results for hospitals is required by the Texas Legislature under Health and Safety Code, Chapter [98.1046](#) (Senate Bill 7, 82nd First Called Session).

### **Highlights**

- Overall, 6.8% of inpatient stays (single patient visit or admission through discharge) in 2012 had at least one potentially preventable complication (PPC). In comparison, the PPC rates in Maryland (fiscal year 2008) and California (fiscal year 2006)<sup>1</sup> are 7.7% and 5.5% respectively.
- Approximately 76.4% hospitals had fewer or equal numbers of PPC stays than expected and 82 hospitals (23.7%) had higher numbers of PPC stays than expected.

## **Introduction**

Health and Safety Code, Section 98.1046, which was adopted by the 82<sup>nd</sup> Legislature as part of SB 7 during the First Called Session, requires the Department of State Health Services (DSHS) to use data submitted pursuant to Chapter 108 of the Health and Safety Code to publicly report hospital risk-adjusted outcome rates for Potentially Preventable Complications that the agency, in consultation with the Texas Institute of Health Care Quality and Efficiency, determines to be the most effective measures of quality and efficiency. This provision requires DSHS to post the reports on its website without disclosing the identity of any patient or health care professional. This document contains the report on potentially preventable hospitalizations required by Sec. 98.1046.

## **Background**

PPCs are harmful events or negative outcomes that develop after hospital admission and may result from the process of care and treatment rather than from a natural progression of underlying disease and therefore are potentially preventable<sup>2</sup>. It is an important measure for quantifying the quality of health care. The 3M<sup>TM</sup> PPC Grouping Software was utilized to generate the measures using applied clinical logic to review complications occurring during a hospital stay. “The software identifies conditions not present on admission and determines whether the conditions were potentially preventable given patient characteristics, reason for admission, clinical procedures, and interrelationships between underlying medical conditions. 3M<sup>TM</sup> software considers a broad group of more than 60 distinct infections and medical errors that include, but are not limited to:

- Hospital-acquired infections and Medicare hospital-acquired conditions (HACs)
- Medicaid healthcare-acquired conditions (HCACs)
- Other patient safety indicators and additional conditions of interest”<sup>3</sup>

In an effort to improve health care quality in Texas, public reporting of PPC results was required by the Texas Legislature under Health and Safety Code, Chapter 98.1046 (Senate Bill 7, 82nd First Called).

The data source for this report is the Texas Hospital Inpatient Discharge Research Data File (RDF), 2012 (Texas Department of State Health Services, Center for Health Statistics, Austin, Texas)<sup>4</sup>. This dataset was collected by the Texas Health Care Information Collection program (THCIC) overseen by DSHS. The data was collected in accordance with [Chapter 108, Health and Safety Code \(HSC\)](#).

This report used the 3M<sup>TM</sup> PPC methodology to identify PPCs. For fair comparisons of performance across hospitals, a hospital’s actual PPC stay is compared with the PPC stay that would be expected for the same mixed condition of patients in this particular hospital.

## **Results**

In 2012, a total of 2,965,961 inpatient records were reported and captured from 592 hospitals in Texas. The data went through a series of steps to clean the data ([Appendix B: Methods](#)). Only 87.9% of the total records were included in the PPC analysis, which accounted for 2,607,233 records (i.e., 2,607,233 stays).

About 6.8% of the 2,607,233 inpatient stays had at least one PPC. These stays are referred as “PPC stay.” Multiple PPCs can be assigned to one stay if they are not clinically overlapped (the disease processes of one PPC do not directly affect the other disease processes or organs of another PPC). Overall 243,418 PPCs had been identified from 177,162 PPC stays, which was about 1.4 PPCs per PPC stay.

Out of the hospitals that submitted data, 245 hospitals were exempt from reporting diagnosis present on admission (POA) indicators (Exempt Hospital Types), thus had been excluded from the analysis ([Appendix B: Methods](#)). Among the 347 hospitals included in the analysis, more than 50% of hospitals had PPC rates lower than statewide average ([Table 1](#)). The PPC rate refers to the number of PPC stays divided by the total number of stays. Approximately 75% of hospitals had PPC rates lower than 7.5%.

**Table 1: Distribution of PPC Performance of Hospitals**

|                        | <b>Total Stays</b> | <b>Stays At Risk</b> | <b>PPC Stays</b> | <b>Average Length of Stay</b> | <b>PPC Rate</b> | <b>Actual-to-Expected Ratio</b> |
|------------------------|--------------------|----------------------|------------------|-------------------------------|-----------------|---------------------------------|
| <b>90th percentile</b> | 19,043             | 15,450               | 1,235            | 6                             | 11.2%           | 1.51                            |
| <b>75th percentile</b> | 11,719             | 9,392                | 744              | 5                             | 7.5%            | 1.09                            |
| <b>50th percentile</b> | 4,545              | 3,703                | 247              | 4                             | 5.3%            | 0.88                            |
| <b>25th percentile</b> | 871                | 850                  | 39               | 3                             | 3.4%            | 0.54                            |
| <b>Statewide</b>       | <b>2,607,233</b>   | <b>2,119,248</b>     | <b>177,162</b>   | <b>4</b>                      | <b>6.8%</b>     | <b>1.00</b>                     |

In this report, the statewide average PPC result adjusting 3M<sup>TM</sup>'s All Patient Refined Diagnosis-Related Group (APR-DRG) is calculated as the norm ([Appendix B: Methods](#)). The norms were used to calculate expected PPC results for each hospital. When making comparisons across hospitals, the patient's condition is considered for fair comparisons. Following the 3M<sup>TM</sup> PPC methodology, total 1,256 combinations of 314 base APR-DRG and 4 levels of illness severity subclasses are used to classify patients based on diagnoses or major procedures as well as patient characteristics. This classification can reflect the underlying clinical complexity and the reason for admission<sup>5</sup>. The “Expected PPC Stays” are the sum of expected PPC stays in the hospital for all levels of APR-DRG. The “Actual to Expected Ratio” is the actual PPC stays divided by the expected PPC stays.

[Table 2](#) shows the number of hospitals by PPC actual-to-expected ratio. The categories used were following Texas Medicaid PPC report<sup>6</sup>. In 2012, there were 347 hospitals included for analysis. Approximately 76.4% hospitals (n=265) performed about as expected as or had lower PPC stays than expected and 82 hospitals (23.7%) had higher PPC stays than expected. PPC performance information for each hospital is listed in [Table A1](#). [Table A2](#) shows PPC results for hospitals which have indicated to DSHS they are long term acute care facilities. Their lengths of stays are much longer than acute care hospitals. Hospitals with less than fifty stays are masked for some statistics to prohibit attempts to identify individual patients under Section [98.1046 \(c\)](#).

**Table 2: Number of Hospitals by PPC Actual-to-Expected Ratio**

| <b>Actual-to-Expected Ratio</b> | <b>Actual-to-Expected Ratio Interpretation</b> | <b>Number of Hospitals</b> | <b>% of Total Hospitals</b> |
|---------------------------------|--|----------------------------|-----------------------------|
| less than 0.75                  | Much lower than expected                       | 127                        | 36.6%                       |
| 0.75-0.89                       | Lower than expected                            | 54                         | 15.6%                       |
| 0.90-1.10                       | About as expected                              | 84                         | 24.2%                       |
| 1.11-1.25                       | Higher than expected                           | 29                         | 8.4%                        |
| more than 1.25                  | Much higher than expected                      | 53                         | 15.3%                       |
| <b>Total Hospitals</b>          |  | <b>347</b>                 | <b>100.0%</b>               |

### **Conclusions**

The Texas hospital inpatient discharge database, including a total of 2,965,961 inpatient records was used for reporting PPC results in 2012. This is the first time to develop a PPC report in an effort to improve health care quality in Texas. Overall, 6.8% of inpatient visits in 2012 had at least one PPC, which is comparable to the some PPC rates available from other states (Maryland Fiscal Year 2008, 7.7%; and California Fiscal Year 2006, 5.5%). When using statewide PPC results as a benchmark, approximately 76.4% hospitals had fewer or equal numbers of PPC stays than expected; and 82 hospitals (23.7%) had higher numbers of PPC stays than expected. The results will expand the policy options open for further improvement of the healthcare outcomes in Texas.

## Appendix A: Tables

### Table A1: Hospital Level PPC Report, TX 2012 – Part I

(Hospitals with less than fifty total stays were masked for total stays and stays at risk)

1. Stays at risk refer to stays that do not meet any of the exclusion criteria for the PPC assignment.
2. Average length of stay refers to average length of stay in days
3. Actual-to-Expected Ratio refers to actual PPC stays / expected PPC stays. Expected PPC stays were calculated based on statewide norms. For each hospital, the number of stays for each APR-DRG/ Severity of Illness category = statewide norm for each category times the admissions at risk for that category. The Expected PPC Stays are the sum of numbers for all levels of APR-DRG / Severity of Illness category.

| Hospital County                                 | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                               | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|---|--|---|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
| Anderson  | Palestine, TX                                      | Palestine Regional Medical Center           | 629001   | 6,617       | 5,505                      | 3                                   | 0.79                                  | Lower than Expected                     |
| Angelina  | Lufkin, TX   | Memorial Medical Center East Texas          | 129000   | 7,643       | 6,523                      | 4                                   | 0.95                                  | About as Expected                       |
|   |  | Woodland Heights Medical Center             | 481000   | 5,437       | 4,473                      | 4                                   | 1.26                                  | Much Higher than Expected               |
| Atascosa  | San Antonio-New Braunfels, TX                      | South Texas Regional Medical Center         | 334002   | 1,965       | 1,649                      | 3                                   | 0.53                                  | Much Lower than Expected                |
| Bastrop   | Austin-Round Rock, TX                              | Seton Smithville Regional Hospital          | 424500   | 553         | 529                        | 3                                   | 0.36                                  | Much Lower than Expected                |
| Bee   | Beeville, TX                                       | CHRISTUS Spohn Hospital-Beeville            | 429001   | 2,268       | 1,852                      | 3                                   | 0.63                                  | Much Lower than Expected                |
| Bell  | Killeen-Temple, TX                                 | Metroplex Hospital                          | 397001   | 9,221       | 7,487                      | 3                                   | 0.99                                  | About as Expected                       |
|   |  | Scott & White Memorial Hospital             | 537000   | 30,322      | 24,768                     | 5                                   | 1.08                                  | About as Expected                       |
|   |  | Seton Medical Center Harker Heights         | 971000   | 763         | 613                        | 3                                   | 0.79                                  | Lower than Expected                     |
| Bexar   | San Antonio-New Braunfels, TX                      | Baptist Emergency Hospital Thousand Oaks    | 647000   | 122         | 122                        | 2                                   | 0.60                                  | Much Lower than Expected                |
|   |  | Baptist Medical Center                      | 114001   | 17,515      | 15,450                     | 5                                   | 1.15                                  | Higher than Expected                    |
|   |  | CHRISTUS Santa Rosa Hospital                | 339000   | 6,788       | 5,362                      | 4                                   | 1.12                                  | Higher than Expected                    |
|   |  | CHRISTUS Santa Rosa Hospital-Westover Hills | 339002   | 7,967       | 6,533                      | 4                                   | 1.02                                  | About as Expected                       |
|   |  | CHRISTUS Santa Rosa Medical Center          | 339001   | 5,364       | 4,801                      | 5                                   | 0.92                                  | About as Expected                       |
|   |  | CHRISTUS Santa Rose-Alamo Heights           | 339003   | 80          | 80                         | 2                                   | 0.56                                  | Much Lower than Expected                |
|   |  | Foundation Bariatric Hospital-San Antonio   | 852100   | 736         | 736                        | 2                                   | 0.39                                  | Much Lower than Expected                |
|   |  | Innova Hospital-San Antonio                 | 820600   | 272         | 272                        | 3                                   | 0.14                                  | Much Lower than Expected                |
| Methodist Ambulatory Surgery Hospital-Northwest | 681001   | 729   | 729      | 3           | 0.25                       | Much Lower than Expected            |                                       |   |

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                             | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|---|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
|                 |  | Methodist Hospital                        | 154000   | 40,654      | 33,017                     | 5                                   | 0.93                                  | About as Expected                       |
|                 |  | Methodist Specialty & Transplant Hospital | 154001   | 11,671      | 10,812                     | 5                                   | 1.12                                  | Higher than Expected                    |
|                 |  | Methodist Stone Oak Hospital              | 874100   | 8,732       | 7,224                      | 4                                   | 1.09                                  | About as Expected                       |
|                 |  | Methodist Texsan Hospital                 | 154003   | 2,713       | 2,645                      | 4                                   | 0.75                                  | Much Lower than Expected                |
|                 |  | Metropolitan Methodist Hospital           | 283000   | 19,654      | 15,087                     | 4                                   | 1.08                                  | About as Expected                       |
|                 |  | Mission Trail Baptist Hospital            | 081001   | 6,942       | 5,927                      | 4                                   | 1.12                                  | Higher than Expected                    |
|                 |  | Nix Health Care System                    | 396002   | 7,254       | 7,074                      | 5                                   | 0.61                                  | Much Lower than Expected                |
|                 |  | North Central Baptist Hospital            | 677001   | 19,000      | 14,403                     | 4                                   | 1.02                                  | About as Expected                       |
|                 |  | Northeast Baptist Hospital                | 134001   | 14,247      | 12,372                     | 4                                   | 1.08                                  | About as Expected                       |
|                 |  | Northeast Methodist Hospital              | 154002   | 9,083       | 8,148                      | 5                                   | 1.02                                  | About as Expected                       |
|                 |  | South Texas Spine & Surgical Hospital     | 786800   | 1,052       | 1,052                      | 2                                   | 0.51                                  | Much Lower than Expected                |
|                 |  | Southwest General Hospital                | 228001   | 10,974      | 8,970                      | 4                                   | 0.96                                  | About as Expected                       |
|                 |  | St Lukes Baptist Hospital                 | 503001   | 16,039      | 12,200                     | 4                                   | 1.12                                  | Higher than Expected                    |
|                 |  | University Hospital                       | 158000   | 23,179      | 18,054                     | 6                                   | 1.09                                  | About as Expected                       |
| Bowie           | Texarkana, TX-AR                                   | CHRISTUS St Michael Health System         | 788001   | 16,095      | 13,651                     | 4                                   | 0.86                                  | Lower than Expected                     |
|                 |  | Wadley Regional Medical Center            | 144000   | 8,714       | 7,121                      | 4                                   | 0.92                                  | About as Expected                       |
| Brazoria        | Houston-The Woodlands-Sugar Land, TX               | Angleton Danbury Medical Center           | 126000   | 1,929       | 1,529                      | 3                                   | 0.60                                  | Much Lower than Expected                |
|                 |  | Brazosport Regional Health System         | 436000   | 5,468       | 4,497                      | 3                                   | 0.69                                  | Much Lower than Expected                |
| Brazos          | College Station-Bryan, TX                          | College Station Medical Center            | 071000   | 8,789       | 6,573                      | 3                                   | 0.99                                  | About as Expected                       |
|                 |  | Physicians Centre Hospital                | 717500   | 354         | 354                        | 2                                   | 0.07                                  | Much Lower than Expected                |
|                 |  | St Joseph Regional Health Center          | 002001   | 18,102      | 15,499                     | 4                                   | 0.76                                  | Lower than Expected                     |
| Brown           | Brownwood, TX                                      | Brownwood Regional Medical Center         | 058000   | 5,338       | 4,500                      | 4                                   | 1.18                                  | Higher than Expected                    |
| Cameron         | Brownsville-Harlingen, TX                          | Brownsville Doctors Hospital              | 724900   | 366         | 317                        | 4                                   | 0.60                                  | Much Lower than Expected                |
|                 |  | Harlingen Medical Center                  | 788002   | 5,979       | 4,939                      | 7                                   | 0.59                                  | Much Lower than Expected                |
|                 |  | Valley Baptist Medical Center             | 400000   | 20,175      | 15,928                     | 4                                   | 0.93                                  | About as Expected                       |
|                 |  | Valley Baptist Medical Center-Brownsville | 314001   | 11,818      | 9,176                      | 4                                   | 0.90                                  | About as Expected                       |
|                 |  | Valley Regional Medical Center            | 019000   | 11,987      | 9,113                      | 4                                   | 0.95                                  | About as Expected                       |
| Cherokee        | Jacksonville, TX                                   | East Texas Medical Center-Jacksonville    | 416000   | 2,143       | 1,695                      | 3                                   | 1.19                                  | Higher than Expected                    |
| Collin          | Dallas-Fort Worth-                                 | Baylor Medical Center McKinney            | 971900   | 2,211       | 1,631                      | 3                                   | 0.99                                  | About as Expected                       |

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                   | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|---|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
|                 | Arlington, TX                                      | Baylor Medical Center-Frisco                    | 787400   | 6,954       | 4,510                      | 3                                   | 0.70                                  | Much Lower than Expected                |
|                 |  | Baylor Regional Medical Center-Plano            | 814001   | 5,519       | 5,037                      | 5                                   | 1.26                                  | Much Higher than Expected               |
|                 |  | Centennial Medical Center                       | 806300   | 4,938       | 4,071                      | 4                                   | 1.18                                  | Higher than Expected                    |
|                 |  | Columbia Medical Center-McKinney                | 246000   | 11,905      | 10,434                     | 5                                   | 1.05                                  | About as Expected                       |
|                 |  | Forest Park Medical Center Frisco               | 971800   | 343         | 342                        | 2                                   | 1.06                                  | About as Expected                       |
|                 |  | Heart Hospital Baylor Plano                     | 844000   | 3,331       | 3,290                      | 5                                   | 1.26                                  | Much Higher than Expected               |
|                 |  | Medical Center-Plano                            | 214000   | 17,887      | 14,474                     | 5                                   | 0.95                                  | About as Expected                       |
|                 |  | Methodist McKinney Hospital                     | 937000   | 577         | 570                        | 2                                   | 0.41                                  | Much Lower than Expected                |
|                 |  | Texas Health Center-Diagnostics & Surgery Plano | 815300   | 632         | 632                        | 2                                   | 0.38                                  | Much Lower than Expected                |
|                 |  | Texas Health Presbyterian Hospital Allen        | 724200   | 5,007       | 3,890                      | 3                                   | 0.96                                  | About as Expected                       |
|                 |  | Texas Health Presbyterian Hospital-Plano        | 664000   | 18,894      | 14,580                     | 4                                   | 0.95                                  | About as Expected                       |
|                 |  | The Hospital at Craig Ranch                     | 922000   | 154         | 154                        | 3                                   | 0.34                                  | Much Lower than Expected                |
|                 |  | Victory Medical Center Plano                    | 972910   | 89          | 89                         | 2                                   | 0.25                                  | Much Lower than Expected                |
| Comal           | San Antonio-New Braunfels, TX                      | CHRISTUS Santa Rosa Hospital New Braunfels      | 863300   | 6,229       | 5,036                      | 4                                   | 1.08                                  | About as Expected                       |
| Coryell         | Killeen-Temple, TX                                 | Coryell Memorial Hospital                       | 346000   | 560         | 535                        | 3                                   | 8.41                                  | Much Higher than Expected               |
| Dallas          | Dallas-Fort Worth-Arlington, TX                    | Baylor Heart & Vascular Center                  | 784400   | 2,085       | 2,061                      | 3                                   | 0.80                                  | Lower than Expected                     |
|                 |  | Baylor Medical Center at Uptown                 | 008001   | 1,126       | 1,126                      | 2                                   | 0.16                                  | Much Lower than Expected                |
|                 |  | Baylor Medical Center-Garland                   | 027000   | 11,898      | 9,726                      | 4                                   | 1.30                                  | Much Higher than Expected               |
|                 |  | Baylor Medical Center-Irving                    | 300000   | 11,172      | 8,809                      | 4                                   | 1.41                                  | Much Higher than Expected               |
|                 |  | Baylor University Medical Center                | 331000   | 39,992      | 31,043                     | 6                                   | 1.29                                  | Much Higher than Expected               |
|                 |  | Dallas Medical Center                           | 449000   | 1,468       | 1,418                      | 5                                   | 1.24                                  | Higher than Expected                    |
|                 |  | Dallas Regional Medical Center                  | 315003   | 4,545       | 4,199                      | 4                                   | 0.63                                  | Much Lower than Expected                |
|                 |  | Doctors Hospital-White Rock Lake                | 511000   | 6,831       | 5,875                      | 4                                   | 0.80                                  | Lower than Expected                     |
|                 |  | Forest Park Medical Center                      | 900000   | 5,109       | 5,106                      | 2                                   | 0.82                                  | Lower than Expected                     |
|                 |  | Irving Coppell Surgical Hospital                | 799500   | 500         | 500                        | 2                                   | 0.07                                  | Much Lower than Expected                |
|                 |  | Las Colinas Medical Center                      | 814000   | 6,744       | 4,935                      | 3                                   | 0.91                                  | About as Expected                       |
|                 |  | Medical City Dallas Hospital                    | 340000   | 26,917      | 21,929                     | 5                                   | 0.82                                  | Lower than Expected                     |
|                 |  | Methodist Charlton Medical Center               | 142000   | 14,612      | 12,021                     | 5                                   | 1.00                                  | About as Expected                       |

| Hospital County                                 | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name  | THCIC_ID | Total Stays                               | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|---|--|--|----------|---|----------------------------|-------------------------------------|---------------------------------------|---|
|   |  | Methodist Dallas Medical Center                              | 255000   | 21,689                                    | 16,342                     | 5                                   | 0.78                                  | Lower than Expected                     |
|   |  | Methodist Hospital for Surgery                               | 750000   | 2,017                                     | 2,016                      | 2                                   | 0.15                                  | Much Lower than Expected                |
|   |  | Methodist Richardson Medical Center                          | 549000   | 5,579                                     | 4,797                      | 5                                   | 0.68                                  | Much Lower than Expected                |
|   |  | North Central Surgical Center                                | 860600   | 963                                       | 962                        | 2                                   | 0.12                                  | Much Lower than Expected                |
|   |  | Parkland Memorial Hospital                                   | 474000   | 48,158                                    | 34,467                     | 5                                   | 1.28                                  | Much Higher than Expected               |
|   |  | Pine Creek Medical Center                                    | 818200   | 1,084                                     | 1,084                      | 2                                   | 0.25                                  | Much Lower than Expected                |
|   |  | South Hampton Community Hospital                             | 908000   | 1,373                                     | 1,331                      | 4                                   | 0.49                                  | Much Lower than Expected                |
|   |  | Texas Health Presbyterian Hospital Dallas                    | 431000   | 31,548                                    | 25,218                     | 5                                   | 1.13                                  | Higher than Expected                    |
|   |  | Texas Institute for Surgery-Texas Health Presbyterian-Dallas | 813100   | 143                                       | 143                        | 2                                   | 0.00                                  | Much Lower than Expected                |
|   |  | Texas Regional Medical Center Sunnyvale                      | 919000   | 3,128                                     | 2,346                      | 3                                   | 0.87                                  | Lower than Expected                     |
|   |  | UT Southwestern University Hospital-St Paul                  | 448001   | 15,877                                    | 12,436                     | 6                                   | 1.07                                  | About as Expected                       |
|   |  | UT Southwestern University Hospital-Zale Lipshy              | 653001   | 6,165                                     | 5,884                      | 6                                   | 1.11                                  | Higher than Expected                    |
|   |  | Denton   |          | Baylor Emergency Medical Center at Aubrey | 873200                     | 76                                  | 76                                    | 2                                       |
| Baylor Medical Center at Carrollton             | 042000   |  |          | 7,651                                     | 5,787                      | 4                                   | 1.32                                  | Much Higher than Expected               |
| Baylor Medical Center Trophy Club               | 805100   |  |          | 645                                       | 645                        | 2                                   | 0.29                                  | Much Lower than Expected                |
| Denton Regional Medical Center                  | 336001   |  |          | 10,866                                    | 9,392                      | 4                                   | 0.84                                  | Lower than Expected                     |
| Medical Center-Lewisville                       | 394000   |  |          | 8,801                                     | 7,086                      | 4                                   | 0.84                                  | Lower than Expected                     |
| North Texas Hospital                            | 816500   |  |          | 358                                       | 358                        | 2                                   | 0.13                                  | Much Lower than Expected                |
| Texas Health Presbyterian Hospital Flower Mound | 943000   |  |          | 4,751                                     | 3,557                      | 3                                   | 1.01                                  | About as Expected                       |
| Texas Health Presbyterian Hospital-Denton       | 820800   |  |          | 11,489                                    | 9,139                      | 4                                   | 1.10                                  | About as Expected                       |
| Ector   | Odessa, TX   | Basin Healthcare Center                                      | 938000   | 421                                       | 417                        | 2                                   | 0.24                                  | Much Lower than Expected                |
|   |  | Medical Center Hospital                                      | 181000   | 15,374                                    | 12,838                     | 4                                   | 0.68                                  | Much Lower than Expected                |
|   |  | Odessa Regional Medical Center                               | 425000   | 8,538                                     | 6,365                      | 4                                   | 0.98                                  | About as Expected                       |
| El Paso   | El Paso, TX  | Del Sol Medical Center                                       | 319000   | 19,043                                    | 15,368                     | 4                                   | 1.03                                  | About as Expected                       |
|   |  | East El Paso Physicians Medical Center                       | 801300   | 871                                       | 850                        | 3                                   | 0.44                                  | Much Lower than Expected                |

| Hospital County              | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                       | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|------------------------------|--|---|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
|                              |  | El Paso Specialty Hospital                          | 728200   | 521         | 518                        | 3                                   | 0.40                                  | Much Lower than Expected                |
|                              |  | Las Palmas Medical Center                           | 180000   | 12,980      | 10,526                     | 4                                   | 0.80                                  | Lower than Expected                     |
|                              |  | Providence Memorial Hospital                        | 130000   | 20,405      | 15,972                     | 4                                   | 0.85                                  | Lower than Expected                     |
|                              |  | Sierra Medical Center                               | 266000   | 12,506      | 9,889                      | 4                                   | 1.02                                  | About as Expected                       |
|                              |  | Sierra Providence East Medical Center               | 865000   | 8,922       | 7,018                      | 4                                   | 0.98                                  | About as Expected                       |
|                              |  | University Medical Center of El Paso                | 263000   | 17,520      | 13,153                     | 4                                   | 0.84                                  | Lower than Expected                     |
| Ellis                        | Dallas-Fort Worth-Arlington, TX                    | Baylor Medical Center-Waxahachie                    | 285000   | 2,535       | 2,379                      | 4                                   | 1.77                                  | Much Higher than Expected               |
|                              |  | Ennis Regional Medical Center                       | 714500   | 2,730       | 2,040                      | 3                                   | 0.59                                  | Much Lower than Expected                |
| Erath                        | Stephenville, TX                                   | Texas Health Harris Methodist Hospital-Stephenville | 256000   | 2,301       | 1,773                      | 3                                   | 1.14                                  | Higher than Expected                    |
| Fayette                      | Not Available                                      | St Marks Medical Center                             | 823400   | 1,277       | 1,065                      | 3                                   | 2.10                                  | Much Higher than Expected               |
| Fort Bend                    | Houston-The Woodlands-Sugar Land, TX               | Emerus Hospital                                     | 916000   | 66          | 66                         | 2                                   | 0.00                                  | Much Lower than Expected                |
|                              |  | Memorial Hermann Katy Hospital                      | 534001   | 11,068      | 8,302                      | 3                                   | 0.87                                  | Lower than Expected                     |
|                              |  | Memorial Hermann Sugar Land                         | 609001   | 5,395       | 4,139                      | 3                                   | 0.87                                  | Lower than Expected                     |
|                              |  | Methodist Sugar Land Hospital                       | 823000   | 15,076      | 11,778                     | 4                                   | 0.87                                  | Lower than Expected                     |
|                              |  | Oakbend Medical Center                              | 230000   | 2,495       | 2,230                      | 5                                   | 0.97                                  | About as Expected                       |
|                              |  | Oakbend Medical Center (Southwest Freeway)          | 230001   | 3,715       | 2,415                      | 3                                   | 0.90                                  | Lower than Expected                     |
|                              |  | St Lukes Sugar Land Hospital                        | 869700   | 3,322       | 2,994                      | 4                                   | 1.02                                  | About as Expected                       |
| Sugar Land Surgical Hospital | 790500   | 322   | 322      | 2           | 0.32                       | Much Lower than Expected            |                                       |   |
| Franklin                     | Not Available                                      | East Texas Medical Center-Mount Vernon              | 282000   | 463         | 447                        | 3                                   | 0.45                                  | Much Lower than Expected                |
| Freestone                    |  | East Texas Medical Center-Fairfield                 | 401000   | 470         | 427                        | 3                                   | 0.56                                  | Much Lower than Expected                |
| Frio                         |  | Community General Hospital Dilley Texas             | 803000   | 333         | 325                        | 2                                   | 0.64                                  | Much Lower than Expected                |
| Galveston                    | Houston-The Woodlands-Sugar Land, TX               | Mainland Medical Center                             | 793000   | 8,071       | 7,207                      | 5                                   | 0.88                                  | Lower than Expected                     |
|                              |  | UT Medical Branch Hospital                          | 000102   | 25,688      | 19,337                     | 4                                   | 0.80                                  | Lower than Expected                     |
| Gillespie                    | Fredericksburg, TX                                 | Hill Country Memorial Hospital                      | 219000   | 3,205       | 2,591                      | 3                                   | 0.75                                  | Much Lower than Expected                |
| Gray                         | Pampa, TX  | Pampa Regional Medical Center                       | 832900   | 2,040       | 1,770                      | 4                                   | 1.22                                  | Higher than Expected                    |
| Grayson                      | Sherman-Denison, TX                                | Heritage Park Surgical Hospital                     | 100076   | 252         | 249                        | 3                                   | 0.38                                  | Much Lower than Expected                |
|                              |  | Texas Health Presbyterian Hospital - WNJ            | 297000   | 6,957       | 5,971                      | 4                                   | 1.02                                  | About as Expected                       |
|                              |  | Texoma Medical Center                               | 847000   | 11,765      | 10,039                     | 5                                   | 0.64                                  | Much Lower than Expected                |

| Hospital County                              | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                 | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|--|--|---|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
| Gregg  | Longview, TX                                       | Allegiance Specialty Hospital-Kilgore         | 031001   | 594         | 584                        | 12                                  | 0.47                                  | Much Lower than Expected                |
|  |  | Good Shepherd Medical Center                  | 029000   | 17,672      | 14,899                     | 4                                   | 1.83                                  | Much Higher than Expected               |
|  |  | Longview Regional Medical Center              | 525000   | 7,110       | 5,807                      | 3                                   | 1.79                                  | Much Higher than Expected               |
| Guadalupe                                    | San Antonio-New Braunfels, TX                      | Guadalupe Regional Medical Center             | 155000   | 4,678       | 3,703                      | 3                                   | 0.59                                  | Much Lower than Expected                |
| Hale   | Plainview, TX                                      | Covenant Hospital-Plainview                   | 146000   | 2,855       | 2,270                      | 3                                   | 0.64                                  | Much Lower than Expected                |
| Harris                                       | Houston-The Woodlands-Sugar Land, TX               | Bayshore Medical Center                       | 349001   | 15,433      | 12,490                     | 5                                   | 1.11                                  | Higher than Expected                    |
|  |  | Ben Taub General Hospital                     | 459000   | 24,004      | 18,010                     | 6                                   | 1.03                                  | About as Expected                       |
|  |  | CHRISTUS St Catherine Hospital                | 715901   | 5,274       | 4,206                      | 3                                   | 0.93                                  | About as Expected                       |
|  |  | CHRISTUS St John Hospital                     | 600001   | 6,993       | 5,896                      | 4                                   | 1.09                                  | About as Expected                       |
|  |  | Clear Lake Regional Medical Center            | 212000   | 25,058      | 20,367                     | 5                                   | 1.06                                  | About as Expected                       |
|  |  | Cypress Fairbanks Medical Center              | 606000   | 11,022      | 8,079                      | 3                                   | 1.08                                  | About as Expected                       |
|  |  | Doctors Hospital-Tidwell                      | 030000   | 5,064       | 3,783                      | 3                                   | 0.93                                  | About as Expected                       |
|  |  | East Houston Regional Medical Center          | 458001   | 7,841       | 6,129                      | 4                                   | 0.90                                  | Lower than Expected                     |
|  |  | First Street Hospital                         | 840100   | 458         | 457                        | 2                                   | 0.00                                  | Much Lower than Expected                |
|  |  | Houston Hospital for Specialized Surgery      | 758000   | 150         | 150                        | 2                                   | 0.13                                  | Much Lower than Expected                |
|  |  | Houston Northwest Medical Center              | 229000   | 18,376      | 14,617                     | 4                                   | 1.08                                  | About as Expected                       |
|  |  | Houston Orthopedic & Spine Hospital           | 831900   | 2,209       | 2,208                      | 3                                   | 0.43                                  | Much Lower than Expected                |
|  |  | Houston Physicians Hospital                   | 822001   | 540         | 539                        | 2                                   | 0.16                                  | Much Lower than Expected                |
|  |  | Kingwood Medical Center                       | 675000   | 16,602      | 13,309                     | 5                                   | 1.02                                  | About as Expected                       |
|  |  | Lyndon B Johnson General Hospital             | 384000   | 14,479      | 10,476                     | 5                                   | 1.06                                  | About as Expected                       |
|  |  | Memorial Hermann Hospital                     | 347000   | 36,655      | 29,478                     | 6                                   | 0.86                                  | Lower than Expected                     |
|  |  | Memorial Hermann Memorial City Medical Center | 302000   | 21,649      | 17,275                     | 4                                   | 0.89                                  | Lower than Expected                     |
|  |  | Memorial Hermann Northeast                    | 847100   | 11,482      | 9,640                      | 4                                   | 0.73                                  | Much Lower than Expected                |
|  |  | Memorial Hermann Northwest Hospital           | 172000   | 13,465      | 10,395                     | 4                                   | 0.76                                  | Lower than Expected                     |
|  |  | Memorial Hermann Southeast Hospital           | 119000   | 14,632      | 12,371                     | 4                                   | 1.06                                  | About as Expected                       |
| Memorial Hermann Southwest Hospital          | 407000   | 20,661  | 15,908   | 5           | 0.95                       | About as Expected                   |                                       |   |
| Memorial Hermann Specialty Hospital Kingwood | 813800   | 158   | 158      | 2           | 0.00                       | Much Lower than Expected            |                                       |   |

| Hospital County             | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name  | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------------------|--|--|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
|                             |  | Methodist Hospital                                       | 124000   | 35,184      | 29,762                     | 6                                   | 0.93                                  | About as Expected                       |
|                             |  | Methodist West Houston Hospital                          | 800010   | 7,246       | 5,547                      | 3                                   | 0.71                                  | Much Lower than Expected                |
|                             |  | Methodist Willowbrook Hospital                           | 724700   | 16,098      | 12,491                     | 4                                   | 0.84                                  | Lower than Expected                     |
|                             |  | North Cypress Medical Center                             | 843200   | 7,626       | 7,049                      | 5                                   | 0.81                                  | Lower than Expected                     |
|                             |  | Park Plaza Hospital                                      | 390000   | 5,896       | 4,789                      | 5                                   | 1.12                                  | Higher than Expected                    |
|                             |  | Pristine Hospital of Pasadena                            | 972700   | <50         | <50                        | 6                                   | 0.00                                  | Much Lower than Expected                |
|                             |  | Riverside General Hospital                               | 460000   | 826         | 799                        | 8                                   | 1.79                                  | Much Higher than Expected               |
|                             |  | San Jacinto Methodist Hospital                           | 405000   | 10,344      | 8,624                      | 5                                   | 1.35                                  | Much Higher than Expected               |
|                             |  | St Anthonys Hospital                                     | 909000   | 1,116       | 1,069                      | 4                                   | 0.27                                  | Much Lower than Expected                |
|                             |  | St Joseph Medical Center                                 | 838600   | 19,829      | 15,167                     | 5                                   | 0.75                                  | Lower than Expected                     |
|                             |  | St Lukes Episcopal Hospital                              | 118000   | 29,444      | 26,053                     | 6                                   | 1.12                                  | Higher than Expected                    |
|                             |  | St Lukes Hospital at the Vintage                         | 740000   | 3,583       | 3,019                      | 4                                   | 0.93                                  | About as Expected                       |
|                             |  | St Lukes Patients Medical Center                         | 846100   | 3,538       | 3,387                      | 4                                   | 1.09                                  | About as Expected                       |
|                             |  | Surgery Specialty Hospitals of America-Southeast Houston | 694100   | 125         | 125                        | 2                                   | 0.83                                  | Lower than Expected                     |
|                             |  | Texas Orthopedic Hospital                                | 792000   | 2,811       | 2,808                      | 3                                   | 0.43                                  | Much Lower than Expected                |
|                             |  | Tomball Regional Medical Center                          | 076000   | 9,965       | 8,774                      | 5                                   | 1.42                                  | Much Higher than Expected               |
|                             |  | TOPS Surgical Specialty Hospital                         | 674000   | 643         | 643                        | 2                                   | 0.37                                  | Much Lower than Expected                |
|                             |  | University General Hospital                              | 840200   | 2,760       | 2,676                      | 5                                   | 0.07                                  | Much Lower than Expected                |
|                             |  | Victory Medical Center Houston                           | 945500   | 544         | 544                        | 2                                   | 0.11                                  | Much Lower than Expected                |
|                             |  | Victory Surgical Hospital East Houston                   | 972970   | <50         | <50                        | 3                                   | 0.00                                  | Much Lower than Expected                |
|                             |  | West Houston Medical Center                              | 337001   | 13,484      | 10,638                     | 5                                   | 1.23                                  | Higher than Expected                    |
| Westbury Community Hospital | 956000   | 1,978  | 1,946    | 8           | 0.16                       | Much Lower than Expected            |                                       |   |
| Womans Hospital-Texas       | 007000   | 22,392   | 13,347   | 4           | 1.30                       | Much Higher than Expected           |                                       |   |
| Harrison                    | Marshall, TX                                       | Good Shepherd Medical Center-Marshall                    | 020000   | 4,567       | 3,895                      | 3                                   | 4.51                                  | Much Higher than Expected               |
| Hays                        | Austin-Round Rock, TX                              | Central Texas Medical Center                             | 556000   | 5,179       | 4,010                      | 3                                   | 1.15                                  | Higher than Expected                    |
|                             |  | Seton Medical Center Hays                                | 921000   | 6,510       | 5,413                      | 4                                   | 1.33                                  | Much Higher than Expected               |
| Henderson                   | Athens, TX   | East Texas Medical Center-Athens                         | 374000   | 7,519       | 6,368                      | 3                                   | 0.84                                  | Lower than Expected                     |
| Hidalgo                     | McAllen-Edinburg-Mission, TX                       | Cornerstone Regional Hospital                            | 830000   | 389         | 389                        | 2                                   | 0.25                                  | Much Lower than Expected                |
|                             |  | Doctors Hospital-Renaissance                             | 797100   | 37,538      | 27,471                     | 4                                   | 0.75                                  | Lower than Expected                     |

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                   | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|---|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
|                 |  | Edinburg Regional Medical Center                | 140002   | 5,222       | 4,898                      | 5                                   | 0.38                                  | Much Lower than Expected                |
|                 |  | Knapp Medical Center                            | 480000   | 11,377      | 8,990                      | 3                                   | 0.66                                  | Much Lower than Expected                |
|                 |  | McAllen Medical Center                          | 802001   | 18,894      | 16,550                     | 5                                   | 0.59                                  | Much Lower than Expected                |
|                 |  | Mission Regional Medical Center                 | 370000   | 11,719      | 9,059                      | 5                                   | 0.98                                  | About as Expected                       |
|                 |  | Rio Grande Regional Hospital                    | 601000   | 18,006      | 14,414                     | 4                                   | 1.09                                  | About as Expected                       |
| Hill            | Not Available                                      | Hill Regional Hospital                          | 383000   | 1,809       | 1,503                      | 3                                   | 0.79                                  | Lower than Expected                     |
|                 |  | Lake Whitney Medical Center                     | 161000   | 502         | 485                        | 3                                   | 0.37                                  | Much Lower than Expected                |
| Hockley         | Levelland, TX                                      | Covenant Hospital-Levelland                     | 307000   | 1,324       | 1,007                      | 3                                   | 1.06                                  | About as Expected                       |
| Hood            | Dallas-Fort Worth-Arlington, TX                    | Lake Granbury Medical Center                    | 424000   | 2,942       | 2,362                      | 3                                   | 0.81                                  | Lower than Expected                     |
| Houston         | Not Available                                      | East Texas Medical Center-Crockett              | 185000   | 1,831       | 1,522                      | 3                                   | 0.94                                  | About as Expected                       |
| Howard          | Big Spring, TX                                     | Scenic Mountain Medical Center                  | 221000   | 2,957       | 2,580                      | 3                                   | 0.70                                  | Much Lower than Expected                |
| Hunt            | Dallas-Fort Worth-Arlington, TX                    | Hunt Regional Medical Center Greenville         | 085000   | 6,687       | 5,319                      | 4                                   | 0.91                                  | About as Expected                       |
| Jasper          | Not Available                                      | CHRISTUS Jasper Memorial Hospital               | 038001   | 1,977       | 1,574                      | 3                                   | 1.06                                  | About as Expected                       |
| Jefferson       | Beaumont-Port Arthur, TX                           | Baptist Hospitals of Southeast Texas            | 389000   | 17,707      | 15,626                     | 4                                   | 0.38                                  | Much Lower than Expected                |
|                 |  | Beaumont Bone & Joint Institute                 | 826500   | <50         | <50                        | 1                                   | 0.00                                  | Much Lower than Expected                |
|                 |  | CHRISTUS Hospital-St Mary                       | 299001   | 4,345       | 3,762                      | 4                                   | 0.78                                  | Lower than Expected                     |
|                 |  | CHRISTUS St Elizabeth Hospital                  | 444001   | 17,169      | 14,636                     | 4                                   | 0.77                                  | Lower than Expected                     |
|                 |  | Medical Center-Southeast Texas                  | 464002   | 8,537       | 7,147                      | 4                                   | 0.45                                  | Much Lower than Expected                |
|                 |  | Renaissance Hospital-Groves                     | 907000   | 94          | 93                         | 4                                   | 0.27                                  | Much Lower than Expected                |
| Jim Wells       | Alice, TX  | CHRISTUS Spohn Hospital Alice                   | 689401   | 4,299       | 3,687                      | 3                                   | 0.50                                  | Much Lower than Expected                |
| Johnson         | Dallas-Fort Worth-Arlington, TX                    | Texas Health Harris Methodist Hospital Cleburne | 323000   | 4,101       | 3,444                      | 3                                   | 1.11                                  | Higher than Expected                    |
| Kaufman         |  | Renaissance Hospital Terrell                    | 848600   | 523         | 503                        | 3                                   | 0.59                                  | Much Lower than Expected                |
|                 |  | Texas Health Presbyterian Hospital-Kaufman      | 303000   | 2,405       | 2,022                      | 3                                   | 0.88                                  | Lower than Expected                     |
| Kerr            | Kerrville, TX                                      | Peterson Regional Medical Center                | 406000   | 4,655       | 3,974                      | 3                                   | 1.14                                  | Higher than Expected                    |
| Kleberg         | Kingsville, TX                                     | CHRISTUS Spohn Hospital-Kleberg                 | 216001   | 4,016       | 3,613                      | 4                                   | 0.49                                  | Much Lower than Expected                |
| Lamar           | Paris, TX  | Paris Regional Medical Center South Campus      | 095002   | 6,599       | 5,727                      | 4                                   | 0.65                                  | Much Lower than Expected                |

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                    | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|--|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
| Liberty         | Houston-The Woodlands-Sugar Land, TX               | Cleveland Regional Medical Center                | 108000   | 2,564       | 2,069                      | 3                                   | 0.46                                  | Much Lower than Expected                |
|                 |  | Doctors Diagnostic Hospital                      | 840400   | 109         | 107                        | 3                                   | 2.03                                  | Much Higher than Expected               |
| Limestone       | Not Available                                      | Parkview Regional Hospital                       | 505000   | 912         | 884                        | 4                                   | 0.40                                  | Much Lower than Expected                |
| Lubbock         | Lubbock, TX  | Covenant Medical Center                          | 465000   | 17,255      | 15,926                     | 5                                   | 1.06                                  | About as Expected                       |
|                 |  | Covenant Medical Center-Lakeside                 | 109000   | 8,345       | 5,729                      | 3                                   | 0.78                                  | Lower than Expected                     |
|                 |  | Grace Medical Center                             | 013001   | 979         | 972                        | 3                                   | 0.65                                  | Much Lower than Expected                |
|                 |  | Lubbock Heart Hospital                           | 801500   | 3,248       | 3,181                      | 4                                   | 0.68                                  | Much Lower than Expected                |
|                 |  | TrustPoint Hospital                              | 865800   | 1,287       | 1,251                      | 14                                  | 2.15                                  | Much Higher than Expected               |
|                 |  | University Medical Center                        | 145000   | 21,954      | 18,385                     | 5                                   | 0.99                                  | About as Expected                       |
| Matagorda       | Bay City, TX                                       | Matagorda Regional Medical Center                | 006000   | 2,545       | 2,092                      | 3                                   | 1.38                                  | Much Higher than Expected               |
| Maverick        | Eagle Pass, TX                                     | Fort Duncan Regional Medical Center              | 547001   | 6,079       | 4,623                      | 4                                   | 0.50                                  | Much Lower than Expected                |
| McLennan        | Waco, TX   | Hillcrest Baptist Medical Center                 | 506000   | 14,339      | 11,188                     | 4                                   | 1.09                                  | About as Expected                       |
|                 |  | Providence Health Center                         | 040000   | 15,661      | 13,450                     | 4                                   | 0.80                                  | Lower than Expected                     |
| Midland         | Midland, TX  | Allegiance Health Center Permian Basin           | 924000   | 1,203       | 1,159                      | 7                                   | 1.61                                  | Much Higher than Expected               |
|                 |  | BCA Permian Basin                                | 874500   | 1,151       | 1,133                      | 7                                   | 1.56                                  | Much Higher than Expected               |
|                 |  | Midland Memorial Hospital                        | 452000   | 12,708      | 9,932                      | 4                                   | 0.90                                  | About as Expected                       |
| Milam           | Not Available                                      | Central Texas Hospital                           | 665000   | 372         | 365                        | 3                                   | 0.12                                  | Much Lower than Expected                |
| Montgomery      | Houston-The Woodlands-Sugar Land, TX               | Conroe Regional Medical Center                   | 508001   | 14,768      | 13,049                     | 5                                   | 1.32                                  | Much Higher than Expected               |
|                 |  | Memorial Hermann The Woodlands Hospital          | 615000   | 16,898      | 12,236                     | 4                                   | 0.94                                  | About as Expected                       |
|                 |  | St Lukes Lakeside Hospital                       | 923000   | 747         | 746                        | 3                                   | 0.42                                  | Much Lower than Expected                |
|                 |  | St Lukes The Woodlands Hospital                  | 793100   | 11,864      | 9,223                      | 4                                   | 1.04                                  | About as Expected                       |
| Nacogdoches     | Nacogdoches, TX                                    | Nacogdoches Medical Center                       | 392000   | 4,897       | 4,018                      | 3                                   | 0.84                                  | Lower than Expected                     |
|                 |  | Nacogdoches Memorial Hospital                    | 478000   | 5,444       | 4,506                      | 7                                   | 1.62                                  | Much Higher than Expected               |
| Navarro         | Corsicana, TX                                      | Navarro Regional Hospital                        | 141000   | 3,908       | 3,239                      | 3                                   | 0.52                                  | Much Lower than Expected                |
| Nueces          | Corpus Christi, TX                                 | CHRISTUS Spohn Hospital Corpus Christi           | 398000   | 9,137       | 8,334                      | 5                                   | 1.34                                  | Much Higher than Expected               |
|                 |  | CHRISTUS Spohn Hospital Corpus Christi-Shoreline | 398001   | 16,183      | 14,530                     | 6                                   | 0.98                                  | About as Expected                       |
|                 |  | CHRISTUS Spohn Hospital Corpus Christi-South     | 398002   | 9,782       | 7,050                      | 3                                   | 0.96                                  | About as Expected                       |

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                    | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|--|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
|                 |  | Corpus Christi Medical Center-Bay Area           | 703000   | 10,528      | 6,830                      | 3                                   | 0.92                                  | About as Expected                       |
|                 |  | Corpus Christi Medical Center-Doctors Regional   | 703002   | 5,858       | 5,504                      | 5                                   | 0.87                                  | Lower than Expected                     |
|                 |  | Corpus Christi Medical Center-Heart Hospital     | 703003   | 1,681       | 1,539                      | 5                                   | 1.01                                  | About as Expected                       |
|                 |  | Corpus Christi Medical Center-Northwest          | 704004   | 1,326       | 1,271                      | 4                                   | 1.14                                  | Higher than Expected                    |
|                 |  | South Texas Surgical Hospital                    | 931000   | 931         | 929                        | 3                                   | 0.60                                  | Much Lower than Expected                |
| Orange          | Beaumont-Port Arthur, TX                           | Baptist Orange Hospital                          | 121000   | 2,407       | 2,060                      | 3                                   | 0.59                                  | Much Lower than Expected                |
| Palo Pinto      | Mineral Wells, TX                                  | Palo Pinto General Hospital                      | 034000   | 2,247       | 1,830                      | 3                                   | 0.52                                  | Much Lower than Expected                |
| Panola          | Not Available                                      | East Texas Medical Center-Carthage               | 484000   | 962         | 924                        | 2                                   | 0.53                                  | Much Lower than Expected                |
| Parker          | Dallas-Fort Worth-Arlington, TX                    | Weatherford Regional Medical Center              | 844800   | 4,179       | 3,606                      | 3                                   | 0.55                                  | Much Lower than Expected                |
| Polk            | Not Available                                      | Memorial Medical Center-Livingston               | 466000   | 2,696       | 2,318                      | 4                                   | 1.26                                  | Much Higher than Expected               |
| POTTER          | Amarillo, TX                                       | Baptist St Anthonys Health System-Baptist Campus | 001000   | 21,185      | 17,886                     | 4                                   | 0.88                                  | Lower than Expected                     |
|                 |  | Northwest Texas Hospital                         | 318000   | 21,322      | 18,070                     | 4                                   | 0.89                                  | Lower than Expected                     |
|                 |  | Physicians Surgical Hospital-Panhandle Campus    | 852901   | 611         | 611                        | 2                                   | 0.43                                  | Much Lower than Expected                |
|                 |  | Physicians Surgical Hospital-Quail Creek         | 852900   | 784         | 784                        | 2                                   | 0.41                                  | Much Lower than Expected                |
| Randall         |  | Northwest Texas Surgery Center                   | 714000   | 135         | 135                        | 4                                   | 0.00                                  | Much Lower than Expected                |
| Red River       | Not Available                                      | East Texas Medical Center-Clarksville            | 292000   | 1,057       | 1,010                      | 4                                   | 0.35                                  | Much Lower than Expected                |
| Rockwall        | Dallas-Fort Worth-Arlington, TX                    | Lake Pointe Medical Center                       | 625000   | 6,957       | 5,808                      | 3                                   | 0.54                                  | Much Lower than Expected                |
|                 |  | Texas Health Presbyterian Hospital-Rockwall      | 859900   | 4,284       | 3,398                      | 3                                   | 0.98                                  | About as Expected                       |
| Rusk            | Longview, TX                                       | East Texas Medical Center Henderson              | 248000   | 1,845       | 1,548                      | 3                                   | 1.44                                  | Much Higher than Expected               |
| San Patricio    | Corpus Christi, TX                                 | Care Regional Medical Center                     | 239001   | 1,277       | 1,172                      | 5                                   | 0.45                                  | Much Lower than Expected                |
| Shelby          | Not Available                                      | Shelby Regional Medical Center                   | 860500   | 398         | 386                        | 3                                   | 0.00                                  | Much Lower than Expected                |
| Smith           | Tyler, TX  | East Texas Medical Center                        | 410000   | 21,390      | 19,009                     | 5                                   | 1.15                                  | Higher than Expected                    |
|                 |  | Mother Frances Hospital                          | 286000   | 25,326      | 21,252                     | 4                                   | 0.88                                  | Lower than Expected                     |
|                 |  | Texas Spine & Joint Hospital                     | 790200   | 1,430       | 1,429                      | 2                                   | 0.40                                  | Much Lower than Expected                |
|                 |  | UT Health Center-Tyler                           | 000112   | 1,472       | 1,285                      | 5                                   | 0.53                                  | Much Lower than Expected                |

| Hospital County               | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name   | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-------------------------------|--|---|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
| Starr                         | Rio Grande City, TX                                | Starr County Memorial Hospital                              | 393000   | 2,087       | 1,695                      | 3                                   | 0.38                                  | Much Lower than Expected                |
| Tarrant                       | Dallas-Fort Worth-Arlington, TX                    | Baylor All Saints Medical Center-Fort Worth                 | 363000   | 23,600      | 16,656                     | 4                                   | 1.19                                  | Higher than Expected                    |
|                               |  | Baylor Medical Center-Southwest Fort Worth                  | 363001   | 166         | 162                        | 4                                   | 1.24                                  | Higher than Expected                    |
|                               |  | Baylor Orthopedic and Spine Hospital - Arlington            | 936000   | 987         | 985                        | 3                                   | 0.13                                  | Much Lower than Expected                |
|                               |  | Baylor Regional Medical Center-Grapevine                    | 513000   | 14,676      | 11,328                     | 4                                   | 1.58                                  | Much Higher than Expected               |
|                               |  | Baylor Surgical Hospital-Fort Worth                         | 804500   | 1,033       | 1,032                      | 3                                   | 0.23                                  | Much Lower than Expected                |
|                               |  | John Peter Smith Hospital                                   | 409000   | 28,127      | 21,969                     | 5                                   | 0.71                                  | Much Lower than Expected                |
|                               |  | Medical Center-Arlington                                    | 502000   | 17,704      | 13,214                     | 4                                   | 0.97                                  | About as Expected                       |
|                               |  | Methodist Mansfield Medical Center                          | 842800   | 10,033      | 7,780                      | 4                                   | 0.91                                  | About as Expected                       |
|                               |  | North Hills Hospital  | 437000   | 8,658       | 7,527                      | 4                                   | 0.89                                  | Lower than Expected                     |
|                               |  | Plaza Medical Center-Fort Worth                             | 477000   | 11,245      | 10,685                     | 5                                   | 1.02                                  | About as Expected                       |
|                               |  | Southwest Surgical Hospital                                 | 812300   | 232         | 232                        | 2                                   | 0.54                                  | Much Lower than Expected                |
|                               |  | Texas General Hospital                                      | 115100   | 92          | 92                         | 3                                   | 0.00                                  | Much Lower than Expected                |
|                               |  | Texas Health Arlington Memorial Hospital                    | 422000   | 13,906      | 11,356                     | 5                                   | 1.16                                  | Higher than Expected                    |
|                               |  | Texas Health Harris Methodist HEB                           | 182000   | 14,767      | 12,020                     | 4                                   | 1.03                                  | About as Expected                       |
|                               |  | Texas Health Harris Methodist Hospital Alliance             | 972900   | 645         | 496                        | 3                                   | 1.09                                  | About as Expected                       |
|                               |  | Texas Health Harris Methodist Hospital Azle                 | 469000   | 1,615       | 1,555                      | 3                                   | 0.52                                  | Much Lower than Expected                |
|                               |  | Texas Health Harris Methodist Hospital Southlake            | 812800   | 850         | 850                        | 3                                   | 0.52                                  | Much Lower than Expected                |
|                               |  | Texas Health Harris Methodist Hospital-Fort Worth           | 235000   | 37,305      | 31,701                     | 5                                   | 1.09                                  | About as Expected                       |
|                               |  | Texas Health Harris Methodist Hospital-Southwest Fort Worth | 627000   | 13,364      | 10,078                     | 3                                   | 1.16                                  | Higher than Expected                    |
|                               |  | Texas Health Heart & Vascular Hospital                      | 730001   | 1,255       | 1,237                      | 4                                   | 1.06                                  | About as Expected                       |
| Texas Health Huguley Hospital | 047000   | 10,183  | 8,698    | 4           | 0.88                       | Lower than Expected                 |                                       |   |
| USMD Hospital Fort Worth      | 861400   | 467   | 467      | 3           | 0.36                       | Much Lower than Expected            |                                       |   |

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                          | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|--|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
|                 |  | USMD Hospital-Arlington                | 799001   | 1,765       | 1,758                      | 3                                   | 0.57                                  | Much Lower than Expected                |
|                 |  | Victory Medical Center Mid-Cities      | 972990   | <50         | <50                        | 2                                   | 0.00                                  | Much Lower than Expected                |
| Taylor          | Abilene, TX  | Abilene Regional Medical Center        | 091001   | 8,216       | 6,649                      | 4                                   | 1.11                                  | Higher than Expected                    |
|                 |  | Hendrick Medical Center                | 500000   | 16,830      | 14,192                     | 5                                   | 1.56                                  | Much Higher than Expected               |
| Tom Green       | San Angelo, TX                                     | San Angelo Community Medical Center    | 056000   | 5,899       | 4,908                      | 4                                   | 0.69                                  | Much Lower than Expected                |
|                 |  | Shannon West Texas Memorial Hospital   | 168000   | 12,245      | 10,535                     | 4                                   | 0.89                                  | Lower than Expected                     |
| Travis          | Austin-Round Rock, TX                              | Austin Surgical Hospital               | 798500   | 855         | 855                        | 2                                   | 0.47                                  | Much Lower than Expected                |
|                 |  | Heart Hospital-Austin                  | 829000   | 3,381       | 3,300                      | 4                                   | 0.91                                  | About as Expected                       |
|                 |  | Lakeway Regional Medical Center        | 970200   | 1,133       | 969                        | 3                                   | 0.87                                  | Lower than Expected                     |
|                 |  | North Austin Medical Center            | 829900   | 22,297      | 16,436                     | 4                                   | 1.11                                  | Higher than Expected                    |
|                 |  | Northwest Hills Surgical Hospital      | 794000   | 590         | 590                        | 1                                   | 0.27                                  | Much Lower than Expected                |
|                 |  | Seton Medical Center                   | 497000   | 23,749      | 19,340                     | 4                                   | 1.15                                  | Higher than Expected                    |
|                 |  | Seton Northwest Hospital               | 797600   | 5,646       | 4,494                      | 3                                   | 1.05                                  | About as Expected                       |
|                 |  | Seton Southwest Hospital               | 797500   | 1,847       | 1,189                      | 2                                   | 0.95                                  | About as Expected                       |
|                 |  | St Davids Hospital                     | 035000   | 21,287      | 16,381                     | 4                                   | 0.93                                  | About as Expected                       |
|                 |  | St Davids South Austin Hospital        | 602000   | 15,238      | 12,659                     | 4                                   | 1.02                                  | About as Expected                       |
|                 |  | University Medical Center-Brackenridge | 335000   | 15,922      | 12,580                     | 4                                   | 1.06                                  | About as Expected                       |
|                 |  | UTMB Austin Womens Hospital            | 000119   | 85          | 48                         | 2                                   | 0.85                                  | Lower than Expected                     |
|                 |  | Westlake Medical Center                | 822800   | 1,007       | 993                        | 3                                   | 0.38                                  | Much Lower than Expected                |
| Trinity         | Huntsville, TX                                     | East Texas Medical Center-Trinity      | 287000   | 628         | 614                        | 4                                   | 0.13                                  | Much Lower than Expected                |
| Upshur          | Longview, TX                                       | East Texas Medical Center-Gilmer       | 806800   | 571         | 538                        | 4                                   | 0.49                                  | Much Lower than Expected                |
| Uvalde          | Uvalde, TX   | Uvalde Memorial Hospital               | 063000   | 2,132       | 1,699                      | 3                                   | 0.35                                  | Much Lower than Expected                |
| Val Verde       | Del Rio, TX  | Val Verde Regional Medical Center      | 462000   | 3,957       | 2,912                      | 3                                   | 0.55                                  | Much Lower than Expected                |
| Van Zandt       | Not Available                                      | Cozby-Germany Hospital                 | 138000   | 228         | 219                        | 2                                   | 0.56                                  | Much Lower than Expected                |
| Victoria        | Victoria, TX                                       | Citizens Medical Center                | 064000   | 8,781       | 7,478                      | 5                                   | 0.68                                  | Much Lower than Expected                |
|                 |  | DeTar Hospital-Navarro                 | 453000   | 9,573       | 8,005                      | 4                                   | 0.99                                  | About as Expected                       |
| Walker          | Huntsville, TX                                     | Huntsville Memorial Hospital           | 061000   | 4,159       | 3,475                      | 4                                   | 2.97                                  | Much Higher than Expected               |
| Webb            | Laredo, TX   | Doctors Hospital-Laredo                | 301000   | 10,912      | 7,978                      | 4                                   | 0.55                                  | Much Lower than Expected                |
|                 |  | Laredo Medical Center                  | 207001   | 19,056      | 15,231                     | 4                                   | 0.80                                  | Lower than Expected                     |

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                      | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|--|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
| Wharton         | El Campo, TX                                       | El Campo Memorial Hospital                         | 426000   | 397         | 370                        | 4                                   | 0.07                                  | Much Lower than Expected                |
|                 |  | Gulf Coast Medical Center                          | 833000   | 1,652       | 1,312                      | 4                                   | 1.00                                  | About as Expected                       |
| Wichita         | Wichita Falls, TX                                  | Kell West Regional Hospital                        | 681400   | 781         | 738                        | 4                                   | 0.66                                  | Much Lower than Expected                |
|                 |  | United Regional Health Care System                 | 417000   | 17,001      | 14,393                     | 4                                   | 5.42                                  | Much Higher than Expected               |
| Williamson      | Austin-Round Rock, TX                              | Cedar Park Regional Medical Center                 | 858300   | 4,943       | 3,917                      | 3                                   | 0.78                                  | Lower than Expected                     |
|                 |  | Round Rock Medical Center                          | 608000   | 9,313       | 6,952                      | 4                                   | 0.83                                  | Lower than Expected                     |
|                 |  | Scott & White Hospital Round Rock                  | 852600   | 5,208       | 4,225                      | 3                                   | 1.02                                  | About as Expected                       |
|                 |  | Seton Medical Center Williamson                    | 861700   | 8,539       | 7,017                      | 4                                   | 1.31                                  | Much Higher than Expected               |
|                 |  | St Davids Georgetown Hospital                      | 835700   | 4,380       | 3,304                      | 4                                   | 0.53                                  | Much Lower than Expected                |
| Wilson          | San Antonio-New Braunfels, TX                      | Connally Memorial Medical Center                   | 433000   | 977         | 937                        | 3                                   | 0.39                                  | Much Lower than Expected                |
| Wise            | Dallas-Fort Worth-Arlington, TX                    | North Texas Community Hospital                     | 868700   | 1,071       | 822                        | 3                                   | 0.39                                  | Much Lower than Expected                |
|                 |  | Wise Regional Health System                        | 254000   | 175         | 171                        | 11                                  | 0.84                                  | Lower than Expected                     |
|                 |  | Wise Regional Health System (Medical Center Drive) | 254001   | 4,193       | 3,643                      | 4                                   | 0.85                                  | Lower than Expected                     |

**Table A2: Hospital Level PPC Report, TX 2012 – Part II**

(Hospitals with less than fifty total stays were masked for total stays and stays at risk)

\* Hospitals indicated to DSHS they are long term acute care facilities.

| Hospital County | Metropolitan / Micropolitan statistical area (MSA) | Hospital Name                                | THCIC_ID | Total Stays | Stays At Risk <sup>1</sup> | Average Length of Stay <sup>2</sup> | Actual-to-Expected Ratio <sup>3</sup> | Actual-to-Expected Ratio Interpretation |
|-----------------|--|--|----------|-------------|----------------------------|-------------------------------------|---------------------------------------|---|
| Angelina        | Lufkin, TX   | Memorial Specialty Hospital                  | 691000   | 290         | 277                        | 27                                  | 6.52                                  | Much Higher than Expected               |
| Bexar           | San Antonio-New Braunfels, TX                      | Kindred Hospital-San Antonio                 | 645000   | 410         | 360                        | 27                                  | 3.26                                  | Much Higher than Expected               |
|                 |  | Select Specialty Hospital-San Antonio        | 719300   | 496         | 446                        | 27                                  | 2.60                                  | Much Higher than Expected               |
| Bowie           | Texarkana, TX-AR                                   | Dubuis Hospital-Texarkana                    | 822000   | 234         | 175                        | 24                                  | 0.83                                  | Lower than Expected                     |
| Caldwell        | Austin-Round Rock, TX                              | Warm Springs Specialty Hospital-Luling       | 848200   | 364         | 332                        | 26                                  | 8.10                                  | Much Higher than Expected               |
| Collin          | Dallas-Fort Worth-Arlington, TX                    | Plano Specialty Hospital                     | 805000   | 306         | 296                        | 27                                  | 7.33                                  | Much Higher than Expected               |
| Dallas          |  | Baylor Specialty Hospital                    | 586000   | 539         | 465                        | 28                                  | 2.42                                  | Much Higher than Expected               |
| Harris          | Houston-The Woodlands-Sugar Land, TX               | CHRISTUS Dubuis Hospital-Houston             | 807000   | 144         | 120                        | 23                                  | 2.85                                  | Much Higher than Expected               |
|                 |  | Kindred Hospital East Houston                | 720400   | 469         | 406                        | 26                                  | 1.51                                  | Much Higher than Expected               |
|                 |  | Kindred Hospital Houston NW                  | 706000   | 738         | 674                        | 27                                  | 4.21                                  | Much Higher than Expected               |
|                 |  | Kindred Hospital Midtown                     | 678000   | 184         | 135                        | 30                                  | 1.84                                  | Much Higher than Expected               |
|                 |  | Kindred Hospital-Houston Medical Center      | 676000   | 971         | 705                        | 28                                  | 2.95                                  | Much Higher than Expected               |
|                 |  | Plaza Specialty Hospital                     | 763000   | 319         | 258                        | 29                                  | 2.37                                  | Much Higher than Expected               |
| Hidalgo         | McAllen-Edinburg-Mission, TX                       | Solara Hospital                              | 816300   | 487         | 440                        | 27                                  | 5.61                                  | Much Higher than Expected               |
| Lubbock         | Lubbock, TX  | Covenant Specialty Hospital                  | 846200   | 463         | 402                        | 25                                  | 2.54                                  | Much Higher than Expected               |
| Montgomery      | Houston-The Woodlands-Sugar Land, TX               | Nexus Specialty Hospital                     | 795001   | <50         | <50                        | 30                                  | 9.54                                  | Much Higher than Expected               |
| POTTER          | Not Available                                      | Kindred Hospital Amarillo                    | 818000   | 803         | 757                        | 26                                  | 2.16                                  | Much Higher than Expected               |
| Smith           | Tyler, TX  | East Texas Medical Center Specialty Hospital | 777000   | 398         | 370                        | 27                                  | 5.12                                  | Much Higher than Expected               |
| Tarrant         | Dallas-Fort Worth-Arlington, TX                    | Kindred Hospital-Tarrant County              | 690000   | 578         | 510                        | 26                                  | 3.13                                  | Much Higher than Expected               |
|                 |  | LifeCare Hospital-Fort Worth                 | 690600   | 668         | 646                        | 28                                  | 9.30                                  | Much Higher than Expected               |

## **Appendix B: Methods**

### **B.1 Data**

The data were subjected to several validation steps. After these steps, the dataset consisted of 2,607,233 records and was subjected to PPC assignment. Table B1 shows the excluded records number of each step. These numbers were affected by the sequence of validation steps.

**Table B1: Summary of Data Excluded from PPC Analysis**

|   | <b>Count*</b>    | <b>% of Total</b> |
|---|------------------|-------------------|
| <b>Total records for year 2012</b>                                  | 2,965,961        | 100.0%            |
| Records from hospitals that are exempt from POA reporting           | 324,272          | 10.9%             |
| Not an inpatient record   | 13,695           | 0.5%              |
| Error APR_DRGs  | 4,452            | 0.2%              |
| Invalid or unreliable patient age /discharge status /length of stay | 16,309           | 0.6%              |
| <b>Total records processed by 3M™ PPC software</b>                  | <b>2,607,233</b> | <b>87.9%</b>      |

\* The counts shown in each row of the table depend on the sequence of analytical steps

1. A total of 324,272 Records were excluded because they were from hospitals that are exempt from reporting diagnosis present on admission (POA). THCIC followed the rules and guidelines of the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services (CMS) of exempting six facility types. These hospitals might submit POA indicators, but the POA values reported might not be complete and accurate.

#### Exempt Hospital Types:

- Critical Access Hospitals
  - Inpatient Rehabilitation Hospitals
  - Inpatient Psychiatric Hospitals
  - Cancer Hospitals
  - Children's or Pediatric Hospitals
  - Long Term Care Hospitals.
2. A total of 13,695 records were excluded because the type-of-bill codes represent non-inpatient visit record. Some facilities submit outpatient data in with their inpatient data and are notified of the error, but do not remove that data prior to certification.
  3. A total of 4,452 records were excluded because they were ungroupable in APR-DRG. For example, data with principal diagnosis codes or principal procedure codes are missing or invalid; data with admission dates or discharge dates are not valid dates or missing.
  4. Another 16,309 records were removed after examining patient age, discharge status and length of stay. They were either invalid or unreliable.

## B.2 POA Quality Assessment

POA quality assessment was performed before PPC assignment. The POA indicator differentiates diagnoses, symptoms or conditions which are present at the time of admission from those conditions that develop during the inpatient admission from either natural disease progression or from potentially faulty equipment or inadequate processes or procedures. An accurate and reliable POA is very important for PPC identifying. The evaluation methodology was developed by 3M™, which includes four assessment criteria. If a hospital doesn't pass the assessment, the data from that hospital will not be included in calculating state benchmark (norm).

## B.3 PPC Methodology

PPC assignment was through 3M™ Core Grouping Software PPC Version 31. The PPC software first identifies and excludes records based on global exclusions (such as organ transplants, HIV, major or metastatic cancers) and specific clinical exclusions related to each PPC. The remaining records will be analyzed based on patient age, sex, discharge status, APR-DRG, length of stay, diagnosis codes and procedure codes and dates. PPC assignment also relies upon POA indicator for each diagnosis. The PPC approach includes around 1,600 complications that are potentially preventable. Based on the clinical similarities (diagnoses, symptoms, test results and other examination findings), the 3M™ PPC Classification System defines 65 mutually exclusive PPCs. Multiple PPCs can be assigned to a stay if they are not clinically overlapped (the disease processes of one PPC do not directly affect the other disease processes or organs of another PPC).

**Table B2: 3M™ Defined PPCs**

| PPC | PPC Description  |
|-----|--|
| 1   | Stroke & Intracranial Hemorrhage   |
| 2   | Extreme Central Nervous System (CNS) Complications                               |
| 3   | Acute Pulmonary Edema and Respiratory Failure without Ventilation                |
| 4   | Acute Pulmonary Edema and Respiratory Failure with Ventilation                   |
| 5   | Pneumonia & Other Lung Infections  |
| 6   | Aspiration Pneumonia   |
| 7   | Pulmonary Embolism   |
| 8   | Other Pulmonary Complications  |
| 9   | Shock  |
| 10  | Congestive Heart Failure   |
| 11  | Acute Myocardial Infarction  |
| 12  | Cardiac Arrhythmias & Conduction Disturbances                                    |
| 13  | Other Acute Cardiac Complications  |
| 14  | Ventricular Fibrillation/Cardiac Arrest  |
| 15  | Peripheral Vascular Complications except Venous Thrombosis                       |
| 16  | Venous Thrombosis  |
| 17  | Major Gastrointestinal Complications without Transfusion or Significant Bleeding |
| 18  | Major Gastrointestinal Complications with Transfusion or Significant Bleeding    |
| 19  | Major Liver Complications  |

| <b>PPC</b> | <b>PPC Description</b>   |
|------------|--|
| 20         | Other Gastrointestinal Complications without Transfusion or Significant Bleeding                                   |
| 21         | Clostridium Difficile Colitis  |
| 23         | Genito-Urinary (GU) Complications except Urinary Tract Infection (UTI)   |
| 24         | Renal Failure without Dialysis   |
| 25         | Renal Failure with Dialysis  |
| 26         | Diabetic Ketoacidosis & Coma   |
| 27         | Post-Hemorrhagic & Other Acute Anemia with Transfusion   |
| 28         | In-Hospital Trauma and Fractures   |
| 29         | Poisonings except from Anesthesia  |
| 30         | Poisonings due to Anesthesia   |
| 31         | Decubitus Ulcer  |
| 32         | Transfusion Incompatibility Reaction   |
| 33         | Cellulitis   |
| 34         | Moderate Infections  |
| 35         | Septicemia & Severe Infections   |
| 36         | Acute Mental Health Changes  |
| 37         | Post-Operative Infection & Deep Wound Disruption without Procedure   |
| 38         | Post-Operative Wound Infection & Deep Wound Disruption with Procedure  |
| 39         | Reopening Surgical Site  |
| 40         | Post-Operative Hemorrhage & Hematoma without Hemorrhage Control Procedure or Incision and Drainage (I&D) Procedure |
| 41         | Post-Operative Hemorrhage & Hematoma with Hemorrhage Control Procedure or Incision and Drainage (I&D) Procedure    |
| 42         | Accidental Puncture/Laceration during Invasive Procedure   |
| 43         | Accidental Cut or Hemorrhage during Other Medical Care   |
| 44         | Other Surgical Complication - Moderate   |
| 45         | Post-procedure Foreign Bodies  |
| 46         | Post-Operative Substance Reaction & Non-O.R. Procedure for Foreign Body  |
| 47         | Encephalopathy   |
| 48         | Other Complications of Medical Care  |
| 49         | Iatrogenic Pneumothorax  |
| 50         | Mechanical Complication of Device, Implant & Graft   |
| 51         | Gastrointestinal Ostomy Complications  |
| 52         | Infection, Inflammation & Other Complications of Devices, Implants or Grafts except Vascular infection             |
| 53         | Infection, Inflammation and Clotting Complications of Peripheral Vascular Catheters and infusions                  |
| 54         | Central Venous Catheter-Related Blood Stream Infection   |
| 55         | Obstetrical Hemorrhage without Transfusion   |
| 56         | Obstetrical Hemorrhage with Transfusion  |
| 57         | Obstetric Lacerations & Other Trauma without Instrumentation   |
| 58         | Obstetric Lacerations & Other Trauma with Instrumentation  |
| 59         | Medical & Anesthesia Obstetric Complications   |
| 60         | Major Puerperal Infection and Other Major Obstetric Complications  |

| PPC | PPC Description   |
|-----|---|
| 61  | Other Complications of Obstetrical Surgical & Perineal Wounds |
| 62  | Delivery with Placental Complications                         |
| 63  | Post-Operative Respiratory Failure with Tracheostomy          |
| 64  | Other In-Hospital Adverse Events                              |
| 65  | Urinary Tract Infection (UTI)                                 |
| 66  | Catheter-Related Urinary Tract Infection (CAUTI)              |

#### **B.4 PPC Statewide Norm**

Texas state norm (Benchmark, a reference point, or average) was calculated by using PPC data from all hospitals passing the POA quality checks (2,186,568 records). Texas state norm was defined as the state average PPC rate in 2012, which would be the total number of stays with at least one PPC in each APR-DRG / Severity of Illness category (1,256 categories) divided by the total number of stays at risk for a PPC in that category. A “Stay at Risk for a PPC” is a stay that did not meet any of the exclusion criteria for the PPC assignment. These stays at risk were identified by the PPC software.

#### **B.5 Actual-to Expected Ratio**

PPC statewide norms by APR-DRG were used to calculate the expected number of PPC stays of each hospital. For each hospital, the expected PPC stays for each APR-DRG/ Severity of Illness category were calculated by using the statewide norm for that category multiplied by the admissions in the hospital at risk for that category. The “Total Expected PPC Stays” are the sum of expected PPC stays in the hospital for all levels of APR-DRG / Severity of Illness category. The “Actual-to-Expected Ratio” is the actual PPC stays divided by the expected PPC stays.

## **Appendix C: Definitions**

**Actual-to-Expected Ratio** – Actual-to-Expected Ratio = actual PPC stays / expected PPC stays. The expected number of PPC stays is calculated based on the statewide averages (Norms/Benchmarks) according to the method provided by 3M™ Health Information Systems

**All Patient Refined Diagnosis-Related Group (APR-DRG)** – A diagnosis and procedure code classification system for inpatient services. The All Patient Refined DRG algorithm is proprietary to 3M™ Health Information Systems and was designed for use with all types of patients. There are 314 base APR-DRGs (i.e., the reason for admission) and each APR-DRG has 4 levels of severity of illness subclass.

**Expected PPC Stay** – Expected PPC results were calculated based on statewide norms calculated from Texas hospital inpatient discharge data 2012. For each hospital, the expected PPC stays for each APR-DRG/ Severity of Illness category were calculated by using statewide norm for that category multiplied by the admissions in the hospital at risk for that category. The “Total Expected PPC Stays” are the sum of expected PPC stays in the hospital for all levels of APR-DRG / Severity of Illness category.

**Inpatient Stay** – A hospital inpatient stay refers to a hospital discharge record. A patient who is admitted to the hospital multiple times will be counted each time as a separate stay.

**Norm / Benchmark** – The benchmark, or norm, is the standard by which hospital PPC performance is compared. For this PPC report, the benchmark is the Texas statewide average.

**Potentially Preventable Complications (PPCs)** – PPCs are harmful events or negative outcomes that develop after hospital admission and may result from the process of care and treatment rather than from a natural progression of underlying disease and therefore are potentially preventable. There are 65 PPCs in V.31 of the PPC Classification System.

**PPC Classification System** – A clinically-based classification system, developed by 3M™ Health Information Systems, identifies hospital complications that are potentially preventable based on computerized discharge data. The output from the PPC Classification system enables accurate reporting of complications and quality improvement efforts

**PPC Stay** – A PPC stay is an inpatient stay that includes one or more PPCs. For example, a stay with both renal failure without dialysis (PPC 24) and urinary tract infection (PPC 65) would count as one PPC stay.

**PPC Rate** – PPC rate refers to the number PPC stays divided by the total number of stays (PPC stays / total stays).

**Present-on-admission (POA) Indicator** – The POA indicator is a coding system on the inpatient claim (e.g., UB-04) that indicates if a principal or secondary diagnosis was present at the time of admission.

**Stay at Risk for a PPC** – A stay at risk for a PPC is a stay that does not meet any of the exclusion criteria for the PPC assignment.

## **Appendix D: Reference**

1. Fuller RL, McCullough EC, Bao MZ, Averill RF. Estimating the costs of potentially preventable hospital acquired complications. Health Care Financing Review 30:4 2009 pg 17-32.
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