



**Potentially Preventable
Complications
in Texas**

Calendar Year 2016 Report

As Required by

**Section 98.1046, Health and
Safety Code**



TEXAS
Health and Human
Services

Texas Department of
State Health Services

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Services
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1. Executive Summary

Public reporting of Potentially Preventable Complications (PPC) for non-exempt hospitals is required by the Texas Legislature under Section [98.1046](#), Texas Health and Safety Code (HSC).

PPCs are harmful events or negative outcomes that develop after hospital admission and may result from processes involved in care and treatment rather than from natural progression of the underlying illness. Therefore, these complications are potentially preventable. In analyzing 2016 hospital inpatient discharge data provided from the Texas Health Care Information Collection program (THCIC), the following trends were observed:

- Overall, fewer than four percent (3.7%) of inpatient stays (single patient visit or admission through discharge) in 2016 had at least one PPC.
- Approximately 74.4% of non-exempt* acute care hospitals ($n=293$) had fewer or equal numbers of PPC stays than expected and 25.6% ($n=101$) had higher numbers of PPC stays than expected.
- Approximately 67.0% ($n=264$) of non-exempt acute care hospitals had a number of PPC stays that was lower than or equal to the statewide average of 3.7 PPC stays per 100 at-risk admissions.
- Approximately 33.0% ($n=130$) of non-exempt acute care hospitals had more PPC stays than the statewide average.

* According to the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services (CMS), exempt hospitals are those that are not required to report diagnosis present on admission (POA) indicators. Because the PPC methodology requires POA indicators to identify PPCs, only non-exempt acute care hospitals were included in this report.

2. Introduction

Potentially Preventable Complications (PPCs) are harmful events or negative outcomes that develop after hospital admission and may result from processes involved in care and treatment rather than from natural progression of the underlying illness.¹ Therefore, these complications are potentially preventable. Ideally, all PPCs should be preventable with the provision of quality care. However, in practice, varying levels of PPCs are observed. As such, PPCs are an important measure for quantifying the quality of health care.

The Department of State Health Services (DSHS) is required to publicly report information on Texas hospitals regarding risk-adjusted outcome rates for PPCs. The outcome rates are determined by DSHS to be the most effective measures of quality and efficiency. In publishing the report, DSHS may not disclose the identity of a patient or health care professional.

This report presents data analysis on PPCs for calendar year 2016.

3. Background

In an effort to improve health care quality in Texas, public reporting of PPC results was required by the Texas Legislature under Section 98.1046, Texas HSC (S.B. 7, 82nd Legislature, First Called Session, 2011).

The data source for this report is *Texas Hospital Inpatient Discharge Research Data File, 2016* (Texas Department of State Health Services, Center for Health Statistics, Austin, Texas. September, 2017).² This dataset was collected by the THCIC overseen by DSHS. The data was collected in accordance with [Chapter 108, Texas HSC](#).

This report used the 3M™ PPC methodology to identify PPCs.³ To enable comparisons of performance across hospitals, each hospital's actual PPC stays were compared with the number of PPC stays that could be expected given the hospital's patient case mix ([Appendix B: Methods](#)).

4. Results

Calculation Method Overview

This report used the 3M™ PPC methodology to identify admissions at risk and PPCs. The 3M™ PPC methodology analyzes data contained in hospital discharge records, including patient age, sex, discharge status, length of stay, and diagnosis and procedure codes. This methodology also relies on the POA indicator for each diagnosis. The 3M™ PPC methodology includes approximately 1,600 complications that are potentially preventable ([Appendix B: Methods](#)).

In 2016, a total of 3,088,978 inpatient records were captured from 729 hospitals in Texas. Out of the 729 hospitals that submitted data in 2016, 394 hospitals were included in the analysis. All hospital admissions are considered at risk for PPC, with the exception of non-acute care admissions, admissions to hospitals that are exempt from reporting diagnosis present-on-admission (POA) indicators, and other admissions meeting the exclusion criteria listed in the 3M™ PPC Methodology ([Appendix B: Methods](#)). In 2016, 326 hospitals were exempt from reporting POA indicators that are necessary for conducting PPC processing. Also, nine (9) hospitals that had fewer than 30 admissions in 2016 were excluded because low numbers of admissions can yield unreliable PPC rates.

The POA reporting exemption comes from guidelines provided by the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services (CMS). Six facility types (Exempt Hospital Types) are required to be exempted from POA reporting: Critical Access Hospitals, Inpatient Rehabilitation Hospitals, Cancer Hospitals, Inpatient Psychiatric Hospitals, Long-Term Care Hospitals, and Children's or Pediatric Hospitals ([Appendix B: Methods](#)).

The remaining records went through a series of steps to cleanse the data ([Appendix B: Methods](#)). After data cleansing and processing, 82.1% of the total records were included in the PPC analysis, which accounted for 2,536,018 records (i.e., 2,536,018 inpatient stays).

In order to enable comparisons of performance across hospitals, hospital PPC results were risk-adjusted using 3M™ All Patient Refined Diagnosis-Related Groups (APR-DRGs), a diagnosis and procedure code classification system for inpatient services, and 3M™ Severity of Illness (SOI) categories.⁴ The APR-DRG classification system is designed to reflect the clinical complexity and severity of each case, and the SOI reflects the extent of physiologic or functional deterioration. The levels of severity are: 1 - Minor, 2 - Moderate, 3 - Major and 4 - Extreme.

For each hospital, the actual-to-expected ratio was calculated as the actual number of PPC stays divided by the risk-adjusted number of PPC stays ([Appendix B: Methods](#)).

According to the 3M™ PPC methodology, the overall PPC summary statistic is expressed as a percentage (i.e., number of occurrences per 100 events), calculated by dividing the number of PPC stays by the number of admissions at risk and multiplying by 100.

Results Overview

Of the 2,536,018 inpatient stays included in the PPC analysis, 2,001,311 were classified as at-risk for a PPC by the 3M™ PPC Methodology. Of these, a total of 74,807 had at least one PPC, resulting in a statewide average of approximately 3.7 PPC stays per 100 at-risk admissions, or 3.7%.

Among the 394 hospitals included in the analysis, 264 (67.0%) had a number of PPC stays that was lower than or equal to the statewide average of 3.7 PPC stays per 100 at-risk admissions. 130 hospitals (33.0%) had a number of PPC stays that was higher than the statewide average. Seventy-five percent of hospitals had fewer than 4.3 PPC stays per 100 at-risk admissions (See [Appendix A: Table A1](#) for further details).

[Table 1](#) shows number and percentage of hospitals grouped by calculated Actual-to-Expected ratios. The categories used (e.g., “lower than expected”, “about as expected”, “higher than expected”) provide a qualitative description of each performance grouping, and follow the methodology of the Texas Medicaid PPC reports.⁵ In 2016, 394 hospitals were included in the

statewide PPC analysis. Approximately 74.4% of hospitals ($n=293$) performed about as expected or had fewer PPC stays than expected, whereas 25.6% ($n=101$) had more PPC stays than expected.

Table 1: Number and Percentage of Hospitals by PPC Actual-to-Expected Ratio, Texas, 2016

Actual-to-Expected Ratio	Actual-to-Expected Ratio Interpretation	Number of Hospitals	% of Hospitals
less than 0.75	Much lower than expected	166	42.1%
0.75-0.89	Lower than expected	52	13.2%
0.90-1.10	About as expected	75	19.0%
1.11-1.25	Higher than expected	46	11.7%
more than 1.25	Much higher than expected	55	14.0%
Total Hospitals		394	100.0%

Source: *Texas Hospital Inpatient Discharge Research Data File, 2016*. Texas Department of State Health Services, Center for Health Statistics, Austin, Texas. September, 2017.

Detailed PPC performance indicators for each hospital are presented in [Table A2](#). Additionally, [Table A3](#) shows PPC results for hospitals that have indicated to DSHS that they are long-term acute care facilities having an average length-of-stay of 20 days or longer. The lengths of stay for long-term acute care hospitals are considerably longer than those for other acute care hospitals.

For both [Tables A2](#) and [A3](#), hospitals with fewer than 40 at-risk stays or fewer than 5 PPC stays were masked for some statistics to protect patient confidentiality under HSC Section [98.1046 \(c\)](#).

5. Conclusion

A total of 2,536,018 inpatient records from the 2016 Texas hospital inpatient discharge database were used for analyzing and reporting PPC results. Overall, 3.7% of inpatient visits in 2016 had at least one PPC.

The reader should be aware that this report is cross sectional in nature, using only calendar year 2016 data. The number of PPCs and the PPC rate will vary from hospital to hospital and year by year. The 3M™ PPC methodology utilized in this report accounts for differences in the types of diagnoses and procedures and different severity of illness subclasses when adjusting for risk. However, there may be other factors that affect PPCs that are not accounted for by the current methodology.^{6,7}

The Department of State Health Services will continue to calculate PPCs for Texas hospitals each year to enable comparisons over time, using the same methodology. The reader is advised to be aware that attempting any comparison of the PPC results in this report with those based on data from other states or national databases may not be correct or valid due to potential differences in the way data are collected, prepared, and analyzed.

List of Acronyms

Acronym	Full Name
AIDS	Acquired Immune Deficiency Syndrome
APR-DRG	All-Payer Refined - Diagnosis Related Group
CHS	Center for Health Statistics
CMS	Centers for Medicare and Medicaid Services
DSHS	Department of State Health Services
HIV	Human Immunodeficiency Virus
HSC	Health and Safety Code
POA	Diagnosis Present on Admission
PPC	Potentially Preventable Complication
RDF	Research Data File
SOI	Severity of Illness
THCIC	Texas Health Care Information Collection

Appendix A: Tables

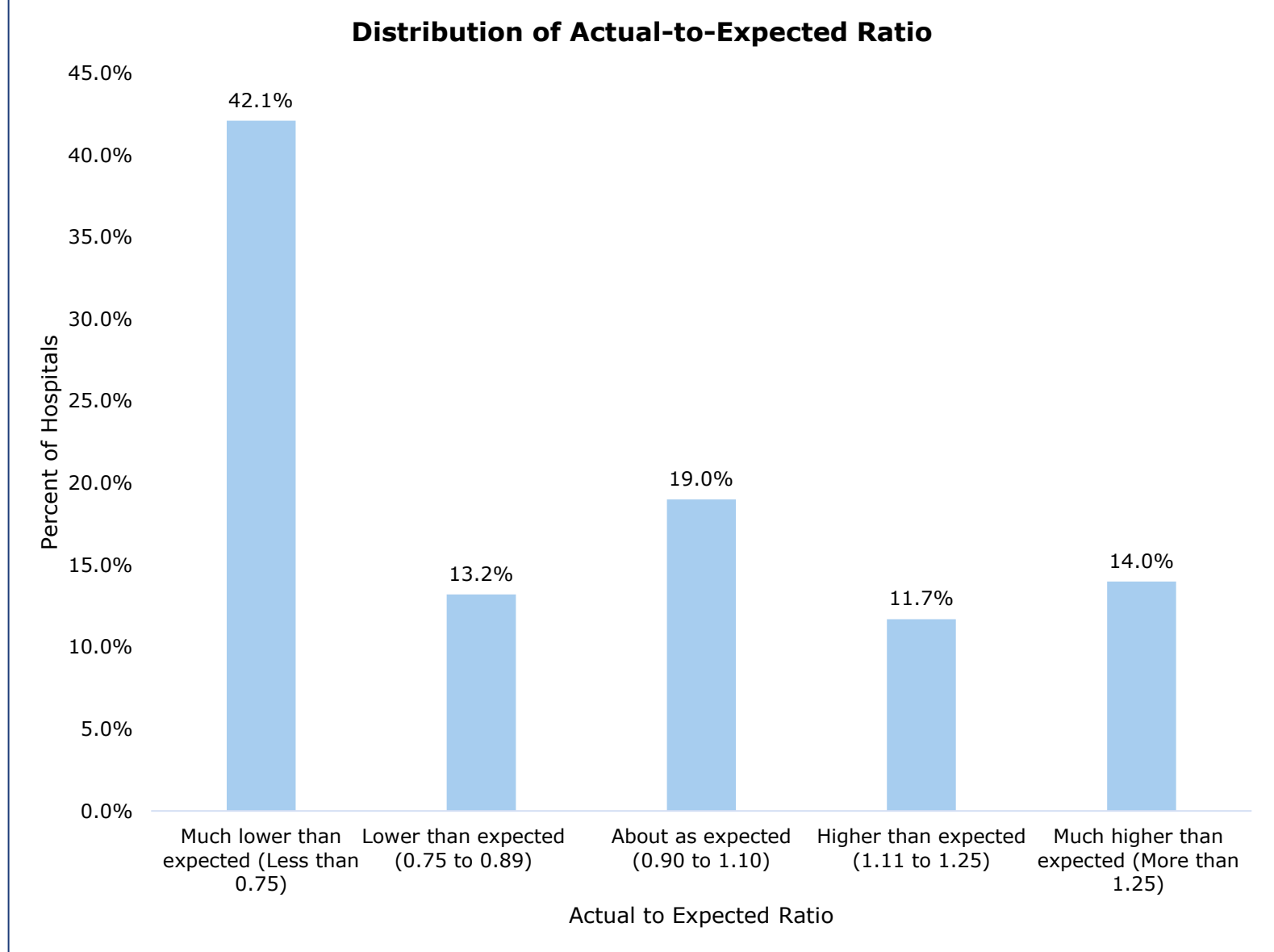
Table A1: PPC Performance Indicators for Texas Hospitals, 2016

Total Admissions	Records Processed	Admissions at Risk	PPC Stays	PPC Stays/ 100 At-risk Admissions	Actual-to-Expected Ratio
3,088,978	2,563,018	2,001,311	74,807	3.7	1.00

Source: *Texas Hospital Inpatient Discharge Research Data File, 2016*. Texas Department of State Health Services, Center for Health Statistics, Austin, Texas. September, 2017.

Note: Table A1 shows statewide totals and/or averages for all PPC indicators.

Figure A1: Distribution of PPC Actual-to-Expected Ratio for Texas Hospitals, 2016



Source: *Texas Hospital Inpatient Discharge Research Data File, 2016*. Texas Department of State Health Services, Center for Health Statistics, Austin, Texas. September, 2017.

Table A2: Hospital Level PPC Report, Texas, 2016 – Part I

Numbers of total stays, at-risk stays, and PPC stays were masked for low-volume [*lv*] hospitals (i.e., those with fewer than 40 at-risk stays or fewer than 5 PPC stays).

- a. Stays at risk refer to stays that do not meet any of the exclusion criteria for PPC processing.
- b. 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 expected PPC stays within each APR-DRG / Severity of Illness category = the statewide norm for each category times the stays at risk within that category. The Expected PPC Stays are the sum of expected numbers across all APR-DRG / Severity of Illness categories.

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual-to-Expected Ratio ^b	Actual-to-Expected Ratio Interpretation
Anderson	Palestine, TX	Palestine Regional Medical Center	629001	4,614	3,710	101	0.95	About as expected
Andrews	Andrews, TX	Permian Regional Medical Center	187000	1,116	788	5	0.74	Much lower than expected
Angelina	Lufkin, TX	CHI St Lukes Health Memorial Lufkin	129000	6,448	5,622	378	1.41	Much higher than expected
		Woodland Heights Medical Center	481000	5,676	4,342	223	1.25	Higher than expected
Atascosa	San Antonio-New Braunfels, TX	South Texas Regional Medical Center	334002	1,841	1,517	35	0.82	Lower than expected
Austin	Houston-The Woodlands-Sugar Land, TX	CHI St Joseph Health Bellville Hospital	552000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Bastrop	Austin-Round Rock, TX	Seton Smithville Regional Hospital	424500	165	155	11	2.26	Much higher than expected
Baylor	Not Available	Seymour Hospital	546000	338	282	9	0.47	Much lower than expected
Bee	Beeville, TX	CHRISTUS Spohn Hospital-Beeville	429001	1,870	1,531	32	0.85	Lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
Bell	Killeen-Temple, TX	Metroplex Hospital	397001	6,161	4,860	163	1.29	Much higher than expected
		Scott & White Medical Center Temple	537000	31,599	25,769	1,209	1.22	Higher than expected
		Seton Medical Center Harker Heights	971000	4,647	3,507	106	0.92	About as expected
Bexar	San Antonio- New Braunfels, TX	Baptist Emergency Hospital Hausman	101100	lv	lv	lv	0.00	Much lower than expected
		Baptist Emergency Hospital Overlook	972810	lv	lv	lv	0.00	Much lower than expected
		Baptist Emergency Hospital Thousand Oaks	647000	lv	lv	lv	0.00	Much lower than expected
		Baptist Emergency Hospital Westover Hills	973000	lv	lv	lv	0.00	Much lower than expected
		Baptist Medical Center	114001	17,387	14,878	712	1.00	About as expected
		CHRISTUS Santa Rosa Hospital Alamo Heights	973930	587	587	18	0.86	Lower than expected
		CHRISTUS Santa Rosa Hospital-Westover Hills	339002	9,848	7,953	289	0.93	About as expected
		CHRISTUS Santa Rosa Medical Center	339001	4,477	4,042	205	1.03	About as expected
		Cumberland Surgical Hospital	974980	286	285	6	0.53	Much lower than expected
		Foundation Surgical Hospital-San Antonio	852100	1,234	1,234	8	0.17	Much lower than expected
		Methodist Ambulatory Surgery Hospital-Northwest	681001	481	481	7	0.38	Much lower than expected
		Methodist Hospital	154000	40,309	31,231	1,033	0.92	About as expected
		Methodist Specialty & Transplant Hospital	154001	8,572	7,307	166	0.57	Much lower than expected
		Methodist Stone Oak Hospital	874100	12,255	9,611	230	0.66	Much lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
		Methodist Texsan Hospital	154003	4,044	3,822	255	0.84	Lower than expected
		Metropolitan Methodist Hospital	283000	18,751	14,344	398	0.79	Lower than expected
		Mission Trail Baptist Hospital	081001	6,156	5,506	215	0.83	Lower than expected
		Nix Health Care System	396002	3,388	3,137	100	0.71	Much lower than expected
		North Central Baptist Hospital	677001	19,022	14,408	383	1.08	About as expected
		Northeast Baptist Hospital	134001	12,067	10,164	456	1.00	About as expected
		Northeast Methodist Hospital	154002	7,877	6,857	293	0.88	Lower than expected
		South Texas Spine & Surgical Hospital	786800	1,157	1,157	17	0.29	Much lower than expected
		Southwest General Hospital	228001	10,411	8,438	372	1.49	Much higher than expected
		St Lukes Baptist Hospital	503001	15,291	10,928	420	1.01	About as expected
		University Hospital	158000	29,912	23,349	490	0.68	Much lower than expected
Bosque	Not Available	Goodall - Witcher Hospital	070000	351	281	12	1.94	Much higher than expected
Bowie	Texarkana, TX-AR	CHRISTUS St Michael Health System	788001	13,071	10,038	359	0.88	Lower than expected
		Wadley Regional Medical Center	144000	7,921	6,371	288	1.14	Higher than expected
Brazoria	Houston-The Woodlands-Sugar Land, TX	CHI St Lukes Health Brazosport	436000	4,711	4,027	31	0.33	Much lower than expected
		Memorial Hermann Pearland Hospital	975138	2,357	2,104	70	0.99	About as expected
		Pearland Medical Center	974390	1,964	1,630	32	0.66	Much lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
		UTMB Angleton Danbury Medical Center	126000	1,977	1,567	16	0.47	Much lower than expected
Brazos	College Station-Bryan, TX	Baylor Scott & White Hospital College Station	206100	6,653	5,164	191	0.99	About as expected
		College Station Medical Center	071000	4,970	3,704	102	0.87	Lower than expected
		Physicians Centre Hospital	717500	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.19	Much lower than expected
		St Joseph Regional Health Center	002001	12,750	10,398	359	0.85	Lower than expected
Brown	Brownwood, TX	Brownwood Regional Medical Center	058000	3,356	2,567	86	0.96	About as expected
Burnet	Not Available	Baylor Scott & White Medical Center Marble Falls	974940	2,372	1,820	35	0.55	Much lower than expected
Caldwell	Austin-Round Rock, TX	PAM Specialty Hospital of Luling	848200	124	110	33	4.14	Much higher than expected
Cameron	Brownsville-Harlingen, TX	Harlingen Medical Center	788002	6,139	4,905	41	0.14	Much lower than expected
		Valley Baptist Medical Center	400000	17,880	14,300	462	0.86	Lower than expected
		Valley Baptist Medical Center-Brownsville	314001	12,835	10,159	233	0.81	Lower than expected
		Valley Regional Medical Center	019000	10,475	7,654	211	0.97	About as expected
Cass	Not Available	Christus St Michael Hospital Atlanta	788003	600	512	27	0.96	About as expected
Cherokee	Jacksonville, TX	East Texas Medical Center-Jacksonville	416000	1,834	1,385	20	0.64	Much lower than expected
Childress	Not Available	Childress Regional Medical Center	026000	873	641	8	0.60	Much lower than expected
Collin		Baylor Emergency Medical Center at Murphy	973550	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
	Dallas-Fort Worth- Arlington, TX	Baylor Scott & White Medical Center Centennial	806300	3,721	2,911	130	1.53	Much higher than expected
		Baylor Scott & White Medical Center McKinney	971900	8,633	6,107	170	0.93	About as expected
		Baylor Scott & White Medical Center-Frisco	787400	6,515	4,394	75	0.96	About as expected
		Baylor Scott & White Medical Center-Plano	814001	5,897	5,198	285	0.96	About as expected
		Bush Renner	549001	8,336	6,097	220	1.13	Higher than expected
		Columbia Medical Center- McKinney	246000	9,944	7,955	181	0.83	Lower than expected
		Heart Hospital Baylor Plano	844000	4,161	4,053	653	0.85	Lower than expected
		Medical Center-Plano	214000	18,044	13,975	601	1.09	About as expected
		Medical City Frisco	975139	445	443	23	1.14	Higher than expected
		Methodist McKinney Hospital	937000	889	887	50	1.01	About as expected
		Star Medical Center	973390	173	173	6	0.61	Much lower than expected
		Texas Health Center- Diagnostics & Surgery Plano	815300	539	539	6	0.31	Much lower than expected
		Texas Health Presbyterian Hospital Allen	724200	3,669	2,820	48	0.57	Much lower than expected
Texas Health Presbyterian Hospital-Plano	664000	17,462	12,642	381	0.86	Lower than expected		
Colorado	Not Available	Weimar Medical Center	974480	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.45	Much lower than expected
Comal	San Antonio- New Braunfels, TX	Baptist Emergency Hospital Schertz	973120	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		CHRISTUS Santa Rosa Hospital New Braunfels	863300	4,089	3,493	131	0.65	Much lower than expected

Hospital County	Metropolitan/Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual-to-Expected Ratio ^b	Actual-to-Expected Ratio Interpretation
		Resolute Health	973850	4,312	3,448	73	0.75	Much lower than expected
Cooke	Gainesville, TX	North Texas Medical Center	298000	1,384	1,023	21	1.08	About as expected
Coryell	Killeen-Temple, TX	Coryell Memorial Hospital	346000	436	423	100	11.00	Much higher than expected
Dallas	Dallas-Fort Worth-Arlington, TX	Baylor Heart & Vascular Center	784400	1,814	1,784	144	0.93	About as expected
		Baylor Medical Center at Uptown	008001	1,286	1,285	14	0.31	Much lower than expected
		Baylor Scott & White Medical Center Sunnyvale	919000	4,466	3,664	110	0.83	Lower than expected
		Baylor Scott & White Medical Center White Rock	511000	7,028	5,440	179	1.18	Higher than expected
		Baylor Scott & White Medical Center-Garland	027000	5,674	4,917	215	1.06	About as expected
		Baylor Scott & White Medical Center-Irving	300000	10,404	7,904	260	0.96	About as expected
		Baylor Surgical Hospital at Las Colinas	799500	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.12	Much lower than expected
		Baylor University Medical Center	331000	33,607	24,731	1,252	1.13	Higher than expected
		Crescent Medical Center Lancaster	973180	350	342	13	0.87	Lower than expected
		Dallas Medical Center	449000	4,122	3,239	33	0.19	Much lower than expected
		Dallas Regional Medical Center	315003	5,317	4,415	45	0.32	Much lower than expected
		First Baptist Medical Center	975129	309	309	18	0.72	Much lower than expected
		Las Colinas Medical Center	814000	5,800	4,085	68	0.96	About as expected
		Medical City Dallas Hospital	340000	25,175	19,715	481	0.75	Much lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
		Methodist Charlton Medical Center	142000	10,736	7,913	238	0.71	Much lower than expected
		Methodist Dallas Medical Center	255000	14,745	10,602	329	0.69	Much lower than expected
		Methodist Hospital for Surgery	750000	2,272	2,270	149	1.16	Higher than expected
		Methodist Richardson Medical Center	549000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.37	Much lower than expected
		North Central Surgical Center	860600	1,373	1,373	13	0.27	Much lower than expected
		Parkland Memorial Hospital	474000	42,594	28,399	1,244	1.28	Much higher than expected
		Pine Creek Medical Center	818200	1,380	1,380	20	0.42	Much lower than expected
		Texas Health Presbyterian Hospital Dallas	431000	26,068	19,706	892	1.14	Higher than expected
		Texas Institute for Surgery-Texas Health Presbyterian-Dallas	813100	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.35	Much lower than expected
		UT Southwestern University Hospital-St Paul	448001	18,306	13,475	891	1.17	Higher than expected
		UT Southwestern University Hospital-Zale Lipshy	653001	4,949	4,585	274	1.16	Higher than expected
		Walnut Hill Medical Center	973750	1,611	1,551	149	1.19	Higher than expected
Dawson	Lamesa, TX	Medical Arts Hospital	341000	456	329	9	1.20	Higher than expected
DeWitt	Not Available	Cuero Regional Hospital	074000	915	767	13	0.36	Much lower than expected
Deaf Smith	Hereford, TX	Hereford Regional Medical Center	420000	321	311	5	0.30	Much lower than expected
Denton		Baylor Emergency Medical Center at Aubrey	873200	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual-to-Expected Ratio ^b	Actual-to-Expected Ratio Interpretation
	Dallas-Fort Worth-Arlington, TX	Baylor Medical Center Trophy Club	805100	935	934	14	0.42	Much lower than expected
		Baylor Scott & White Medical Center Carrollton	042000	5,196	3,991	234	1.69	Much higher than expected
		Denton Regional Medical Center	336001	7,381	6,593	201	0.68	Much lower than expected
		Medical Center-Lewisville	394000	7,311	5,537	112	0.74	Much lower than expected
		Plano Surgical Hospital	974920	198	198	5	0.29	Much lower than expected
		Texas Health Presbyterian Hospital Flower Mound	943000	7,012	4,997	103	0.88	Lower than expected
		Texas Health Presbyterian Hospital-Denton	820800	11,063	8,099	208	0.79	Lower than expected
		The Heart Hospital Baylor Denton	208100	467	459	31	0.42	Much lower than expected
Dimmit	Not Available	Dimmit Regional Hospital	156000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.14	Much lower than expected
Eastland	Not Available	Eastland Memorial Hospital	222000	484	457	26	1.41	Much higher than expected
Ector	Odessa, TX	Medical Center Hospital	181000	14,311	11,401	575	1.20	Higher than expected
		Odessa Regional Medical Center	425000	7,811	5,553	227	1.43	Much higher than expected
El Paso	El Paso, TX	Del Sol Medical Center	319000	18,152	14,276	357	0.71	Much lower than expected
		El Paso Specialty Hospital	728200	657	656	8	0.43	Much lower than expected
		Foundation Surgical Hospital of El Paso	801300	745	745	8	0.28	Much lower than expected
		Las Palmas Medical Center	180000	12,459	9,974	257	0.85	Lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual-to-Expected Ratio ^b	Actual-to-Expected Ratio Interpretation
		The Hospitals of Providence East Campus	865000	13,191	10,443	318	1.08	About as expected
		The Hospitals of Providence Memorial Campus	130000	19,112	14,955	393	1.13	Higher than expected
		The Hospitals of Providence Sierra Campus	266000	11,037	9,124	486	1.11	Higher than expected
		University Medical Center of El Paso	263000	17,166	12,657	479	1.18	Higher than expected
Ellis	Dallas-Fort Worth-Arlington, TX	Baylor Scott & White Medical Center Waxahachie	285000	6,452	5,044	198	1.41	Much higher than expected
		Ennis Regional Medical Center	714500	732	652	8	0.38	Much lower than expected
Erath	Stephenville, TX	Texas Health Harris Methodist Hospital-Stephenville	256000	2,198	1,688	40	0.85	Lower than expected
Falls	Waco, TX	Falls Community Hospital & Clinic	517000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.36	Much lower than expected
Fayette	Not Available	St Marks Medical Center	823400	1,279	1,064	19	0.44	Much lower than expected
Fort Bend	Houston-The Woodlands-Sugar Land, TX	Emerus Hospital	916000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Hospital for Surgical Excellence of Oakbend Medical Center	230002	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Houston Methodist Sugar Land Hospital	823000	19,761	14,972	719	1.25	Higher than expected
		Memorial Hermann Katy Hospital	534001	12,025	9,147	229	0.71	Much lower than expected
		Memorial Hermann Sugar Land	609001	7,985	5,967	182	0.91	About as expected
		Memorial Hermann Surgical Hospital First Colony	790500	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.17	Much lower than expected
		Oakbend Medical Center	230000	3,447	3,036	157	1.46	Much higher than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
		Oakbend Medical Center (Southwest Freeway)	230001	3,560	2,210	48	1.25	Higher than expected
		St Lukes Sugar Land Hospital	869700	5,110	3,830	178	1.39	Much higher than expected
Freestone	Not Available	East Texas Medical Center- Fairfield	401000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.51	Much lower than expected
Frio	Not Available	Frio Regional Hospital	441000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.32	Much lower than expected
		Nix Community General Hospital	973150	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Galveston	Houston-The Woodlands- Sugar Land, TX	League City Campus Hospital	975140	1,036	700	8	0.16	Much lower than expected
		Mainland Medical Center	793000	7,342	6,599	256	1.04	About as expected
		UT Medical Branch Hospital	000102	27,500	20,547	785	0.97	About as expected
Gillespie	Fredericksburg, TX	Hill Country Memorial Hospital	219000	2,785	2,202	59	0.72	Much lower than expected
Gonzales	Not Available	Memorial Hospital	103000	736	526	6	0.42	Much lower than expected
Gray	Pampa, TX	Pampa Regional Medical Center	832900	2,499	2,163	23	0.27	Much lower than expected
Grayson	Sherman- Denison, TX	Baylor Scott & White Surgical Hospital at Sherman	974910	526	526	10	0.54	Much lower than expected
		Texoma Medical Center	847000	16,049	13,431	638	1.18	Higher than expected
		Wilson N Jones Regional Medical Center	297000	4,429	3,772	116	0.82	Lower than expected
Gregg	Longview, TX	Allegiance Specialty Hospital-Kilgore	031001	330	325	5	0.61	Much lower than expected
		CHRISTUS Good Shepherd Medical Center-Longview	029000	15,400	12,327	451	0.96	About as expected
		Longview Regional Medical Center	525000	10,365	8,100	353	1.12	Higher than expected

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Guadalupe	San Antonio-New Braunfels, TX	Guadalupe Regional Medical Center	155000	4,587	3,527	136	1.42	Much higher than expected
Hale	Plainview, TX	Covenant Hospital-Plainview	146000	2,015	1,606	47	0.77	Lower than expected
Hamilton	Not Available	Hamilton General Hospital	640000	742	702	26	1.72	Much higher than expected
Harris	Houston-The Woodlands-Sugar Land, TX	AD Hospital East	975130	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.44	Much lower than expected
		Altus Baytown Hospital	973860	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Bay Area Regional Medical Center	973960	5,180	4,844	231	1.00	About as expected
		Bayshore Medical Center	349001	14,803	11,691	365	0.98	About as expected
		Bellaire Surgical Hospital	975131	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		CHI St Lukes Health Baylor College of Medicine Medical Center	118000	23,542	20,809	2,004	1.28	Much higher than expected
		Clear Lake Regional Medical Center	212000	23,710	18,757	541	0.92	About as expected
		Cypress Fairbanks Medical Center	606000	11,981	8,213	184	1.16	Higher than expected
		East Houston Regional Medical Center	458001	7,982	6,100	158	0.93	About as expected
		Emerus Community Hospital	973600	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		First Nobilis Hospital	974450	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Harris Health System Ben Taub Hospital	459000	23,829	17,604	636	1.11	Higher than expected
		Harris Health System Lyndon B Johnson Hospital	384000	13,693	9,959	355	1.03	About as expected

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		Houston Hospital for Specialized Surgery	758000	/v	/v	/v	0.00	Much lower than expected
		Houston Methodist Hospital	124000	36,595	30,555	2,436	1.26	Much higher than expected
		Houston Methodist San Jacinto Hospital	405000	13,344	11,012	576	1.32	Much higher than expected
		Houston Methodist St John Hospital	973640	5,699	4,715	191	1.20	Higher than expected
		Houston Methodist West Hospital	800010	13,167	9,778	375	1.11	Higher than expected
		Houston Methodist Willowbrook Hospital	724700	20,786	16,290	791	1.41	Much higher than expected
		Houston Northwest Medical Center	229000	20,229	14,948	563	1.33	Much higher than expected
		Houston Physicians Hospital	822001	/v	/v	/v	0.15	Much lower than expected
		Memorial Hermann Greater Heights Hospital	172000	13,710	10,666	410	0.96	About as expected
		Memorial Hermann Hospital	347000	41,033	32,186	1,463	1.07	About as expected
		Memorial Hermann Memorial City Medical Center	302000	24,176	19,010	790	0.99	About as expected
		Memorial Hermann Northeast	847100	13,436	11,279	381	0.92	About as expected
		Memorial Hermann Orthopedic and Spine Hospital	974820	1,742	1,741	70	0.89	Lower than expected
		Memorial Hermann Southeast Hospital	119000	16,336	14,000	509	0.92	About as expected
		Memorial Hermann Southwest Hospital	407000	20,111	15,674	675	1.09	About as expected
		Memorial Hermann Specialty Hospital Kingwood	813800	/v	/v	/v	0.30	Much lower than expected

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		North Cypress Medical Center	843200	9,080	8,227	461	1.27	Much higher than expected
		Park Plaza Hospital	390000	3,379	3,015	132	1.12	Higher than expected
		Providence Hospital of North Houston	975152	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		St Joseph Medical Center	838600	16,562	12,111	363	1.12	Higher than expected
		St Joseph Medical Center-Heights	973100	747	706	10	0.40	Much lower than expected
		St Lukes Hospital at the Vintage	740000	4,999	3,692	141	1.26	Much higher than expected
		St Lukes Patients Medical Center	846100	3,085	2,891	129	0.97	About as expected
		Surgery Specialty Hospitals of America-Southeast Houston	694100	71	71	6	2.32	Much higher than expected
		TOPS Surgical Specialty Hospital	674000	720	720	5	0.28	Much lower than expected
		Texas Orthopedic Hospital	792000	3,570	3,566	50	0.35	Much lower than expected
		Tomball Regional Medical Center	076000	9,444	7,813	352	1.23	Higher than expected
		United Memorial Medical Center	030000	920	880	10	0.26	Much lower than expected
		University General Hospital	840200	1,361	1,290	17	0.21	Much lower than expected
		Victory Medical Center Houston	945500	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		West Houston Medical Center	337001	14,517	10,870	399	1.14	Higher than expected
		Westside Surgical Hospital	101300	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected

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		Womans Hospital-Texas	007000	25,320	15,423	106	0.70	Much lower than expected
Harrison	Marshall, TX	CHRISTUS Good Shepherd Medical Center-Marshall	020000	3,801	3,146	84	0.83	Lower than expected
Hays	Austin-Round Rock, TX	Central Texas Medical Center	556000	4,286	3,359	75	0.72	Much lower than expected
		Seton Medical Center Hays	921000	7,755	6,037	211	0.81	Lower than expected
Hemphill	Not Available	Hemphill County Hospital	457000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Henderson	Athens, TX	East Texas Medical Center-Athens	374000	5,670	4,516	133	1.20	Higher than expected
Hidalgo	McAllen-Edinburg-Mission, TX	Cornerstone Regional Hospital	830000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Doctors Hospital-Renaissance	797100	21,119	18,815	987	1.18	Higher than expected
		Edinburg Regional Medical Center	140002	7,416	6,313	115	0.98	About as expected
		Knapp Medical Center	480000	9,637	7,543	42	0.21	Much lower than expected
		McAllen Heart Hospital	802003	2,861	2,726	206	0.85	Lower than expected
		McAllen Medical Center	802001	16,210	14,182	305	1.04	About as expected
		Mission Regional Medical Center	370000	10,407	7,822	238	1.09	About as expected
		Rio Grande Regional Hospital	601000	16,045	12,735	342	0.87	Lower than expected
		Womens Hospital-Renaissance	797101	17,712	10,416	52	0.43	Much lower than expected
Hill	Not Available	Hill Regional Hospital	383000	1,106	873	14	0.73	Much lower than expected
Hockley	Levelland, TX	Covenant Hospital-Levelland	307000	841	626	7	0.30	Much lower than expected

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Hood	Dallas-Fort Worth- Arlington, TX	Lake Granbury Medical Center	424000	3,359	2,650	94	1.23	Higher than expected
Hopkins	Sulphur Springs, TX	Christus Mother Frances Hospital Sulphur Springs	975159	1,680	1,259	32	0.89	Lower than expected
		Hopkins County Memorial Hospital	280000	1,794	1,374	43	1.21	Higher than expected
Houston	Not Available	Houston County Medical Center	974710	549	415	9	0.48	Much lower than expected
		Timberlands Hospital	975180	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.69	Much lower than expected
Howard	Big Spring, TX	Scenic Mountain Medical Center	221000	2,579	2,188	29	0.55	Much lower than expected
Hunt	Dallas-Fort Worth- Arlington, TX	Hunt Regional Medical Center Greenville	085000	5,656	4,555	162	1.12	Higher than expected
Jack	Not Available	Faith Community Hospital	046000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.60	Much lower than expected
Jasper	Not Available	CHRISTUS Southeast Texas - Jasper Memorial	038001	1,371	1,087	14	0.41	Much lower than expected
Jefferson	Beaumont-Port Arthur, TX	Baptist Hospitals of Southeast Texas	389000	17,454	15,096	181	0.36	Much lower than expected
		CHRISTUS Southeast Texas - St Elizabeth	444001	16,143	13,129	450	0.93	About as expected
		CHRISTUS Southeast Texas -St Mary	299001	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.77	Lower than expected
		Medical Center of Southeast Texas Victory Campus	975111	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Medical Center-Southeast Texas	464002	9,798	8,047	123	0.52	Much lower than expected
Jim Wells	Alice, TX	CHRISTUS Spohn Hospital Alice	689401	3,049	2,607	97	0.87	Lower than expected

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Johnson	Dallas-Fort Worth-Arlington, TX	Texas Health Harris Methodist Hospital Cleburne	323000	3,206	2,615	97	1.14	Higher than expected
Jones	Abilene, TX	Anson General Hospital	016000	323	316	13	1.25	Higher than expected
		Hamlin Memorial Hospital	305000	90	80	18	7.90	Much higher than expected
		Stamford Memorial Hospital	043000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.18	Much lower than expected
Kaufman	Dallas-Fort Worth-Arlington, TX	Texas Health Presbyterian Hospital-Kaufman	303000	1,271	1,098	15	0.74	Much lower than expected
Kerr	Kerrville, TX	Peterson Regional Medical Center	406000	4,868	3,960	143	1.02	About as expected
Kleberg	Kingsville, TX	CHRISTUS Spohn Hospital-Kleberg	216001	2,997	2,588	62	0.83	Lower than expected
Knox	Not Available	Knox County Hospital	568000	<i>lv</i>	<i>lv</i>	<i>lv</i>	1.57	Much higher than expected
Lamar	Paris, TX	Paris Regional Medical Center South Campus	095002	6,721	5,426	195	0.85	Lower than expected
Lamb	Not Available	Lamb Healthcare Center	217000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Liberty	Houston-The Woodlands-Sugar Land, TX	Cleveland Emergency Hospital	975112	<i>lv</i>	<i>lv</i>	<i>lv</i>	3.34	Much higher than expected
Limestone	Not Available	Parkview Regional Hospital	505000	458	443	19	1.44	Much higher than expected
Llano	Not Available	Baylor Scott & White Medical Center Llano	476000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.26	Much lower than expected
Lubbock	Lubbock, TX	Covenant Medical Center	465000	15,651	13,544	572	0.59	Much lower than expected
		Covenant Medical Center-Lakeside	109000	5,523	3,257	14	0.45	Much lower than expected

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		Grace Medical Center	013001	1,134	1,123	28	0.53	Much lower than expected
		Lubbock Heart Hospital	801500	2,817	2,721	135	0.80	Lower than expected
		University Medical Center	145000	19,458	14,785	611	0.95	About as expected
Matagorda	Bay City, TX	Matagorda Regional Medical Center	006000	2,645	1,987	87	1.50	Much higher than expected
Maverick	Eagle Pass, TX	Fort Duncan Regional Medical Center	547001	5,226	3,857	63	0.48	Much lower than expected
McLennan	Waco, TX	Baylor Scott & White Medical Center Hillcrest	506000	11,447	8,599	349	1.19	Higher than expected
		Baylor Scott & White Medical Center Hillcrest	506001	4,062	3,016	109	1.02	About as expected
		Providence Health Center	040000	17,156	14,734	848	1.37	Much higher than expected
Midland	Midland, TX	Midland Memorial Hospital	452000	13,520	10,004	456	1.40	Much higher than expected
Milam	Not Available	Little River Healthcare - Cameron Hospital	973740	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Montague	Not Available	Nocona General Hospital	348000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.13	Much lower than expected
Montgomery	Houston-The Woodlands-Sugar Land, TX	Apollo Hospital	973440	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.82	Lower than expected
		Conroe Regional Medical Center	508001	14,744	12,320	444	0.86	Lower than expected
		Kingwood Medical Center	675000	18,716	15,060	512	0.86	Lower than expected
		Memorial Hermann The Woodlands Hospital	615000	22,200	16,899	524	0.94	About as expected
		Nexus Specialty Hospital	795001	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.17	Much lower than expected
		St Lukes Lakeside Hospital	923000	764	761	27	0.78	Lower than expected

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		St Lukes The Woodlands Hospital	793100	12,426	9,559	431	1.07	About as expected
		Woodlands Specialty Hospital	974150	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Nacogdoches	Nacogdoches, TX	Nacogdoches Medical Center	392000	4,242	3,429	123	1.08	About as expected
		Nacogdoches Memorial Hospital	478000	5,117	3,836	216	2.40	Much higher than expected
Navarro	Corsicana, TX	Navarro Regional Hospital	141000	3,073	2,342	31	0.41	Much lower than expected
Nolan	Sweetwater, TX	Rolling Plains Memorial Hospital	471000	1,157	891	15	0.56	Much lower than expected
Nueces	Corpus Christi, TX	CHRISTUS Spohn Hospital Corpus Christi	398000	3,876	3,501	83	1.25	Higher than expected
		CHRISTUS Spohn Hospital Corpus Christi-Shoreline	398001	16,857	15,007	913	1.11	Higher than expected
		CHRISTUS Spohn Hospital Corpus Christi-South	398002	8,176	5,902	155	0.86	Lower than expected
		Corpus Christi Medical Center-Bay Area	703000	11,934	7,583	67	0.42	Much lower than expected
		Corpus Christi Medical Center-Doctors Regional	703002	5,689	5,267	240	0.77	Lower than expected
		Corpus Christi Medical Center-Heart Hospital	703003	1,331	1,201	72	0.65	Much lower than expected
		Corpus Christi Medical Center-Northwest	704004	187	177	7	1.34	Much higher than expected
		South Texas Surgical Hospital	931000	829	826	18	0.43	Much lower than expected
Palo Pinto	Mineral Wells, TX	Palo Pinto General Hospital	034000	1,724	1,384	32	1.13	Higher than expected
Panola	Not Available	East Texas Medical Center-Carthage	484000	635	588	8	0.56	Much lower than expected

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Parker	Dallas-Fort Worth- Arlington, TX	Weatherford Regional Medical Center	844800	4,493	3,849	95	0.86	Lower than expected
Pecos	Not Available	Pecos County Memorial Hospital	356000	807	636	13	0.72	Much lower than expected
Polk	Not Available	CHI St Lukes Health - Memorial Livingston	466000	2,041	1,574	24	0.72	Much lower than expected
Potter	Amarillo, TX	Baptist St Anthonys Hospital	001000	21,467	17,810	802	1.03	About as expected
		Northwest Texas Hospital	318000	19,061	15,628	463	0.99	About as expected
		Physicians Surgical Hospital-Panhandle Campus	852901	935	933	12	0.48	Much lower than expected
		Physicians Surgical Hospital-Quail Creek	852900	1,200	1,200	13	0.36	Much lower than expected
Randall	Amarillo, TX	Northwest Texas Surgery Center	714000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Rockwall	Dallas-Fort Worth- Arlington, TX	Baylor Emergency Medical Center at Rockwall	973610	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Baylor Scott & White Medical Center Lake Pointe	625000	7,492	5,656	106	0.65	Much lower than expected
		Texas Health Presbyterian Hospital-Rockwall	859900	4,427	3,527	149	1.36	Much higher than expected
Rusk	Longview, TX	East Texas Medical Center Henderson	248000	1,596	1,326	20	0.85	Lower than expected
San Patricio	Corpus Christi, TX	Care Regional Medical Center	239001	752	709	13	0.71	Much lower than expected
Scurry	Snyder, TX	Cogdell Memorial Hospital	439000	774	559	18	1.32	Much higher than expected
Smith	Tyler, TX	Christus Mother Frances Hospital Tyler	286000	25,395	20,687	1,137	1.05	About as expected
		East Texas Medical Center	410000	20,917	18,267	957	0.98	About as expected
		Texas Spine & Joint Hospital	790200	2,236	2,236	60	0.78	Lower than expected

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		UT Health Center-Tyler	000112	1,677	1,518	61	0.92	About as expected
Somervell	Dallas-Fort Worth-Arlington, TX	Glen Rose Medical Center	059000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.10	Much lower than expected
Starr	Rio Grande City, TX	Starr County Memorial Hospital	393000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Stephens	Not Available	Stephens Memorial Hospital	430000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Tarrant	Dallas-Fort Worth-Arlington, TX	Baylor Emergency Medical Center	973920	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Baylor Emergency Medical Center at Keller	973540	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Baylor Orthopedic and Spine Hospital - Arlington	936000	1,566	1,563	27	0.51	Much lower than expected
		Baylor Scott & White All Saints Medical Center-Fort Worth	363000	20,293	13,842	449	0.99	About as expected
		Baylor Scott & White Medical Center-Grapevine	513000	13,609	10,150	378	1.02	About as expected
		Baylor Surgical Hospital-Fort Worth	804500	1,658	1,658	15	0.31	Much lower than expected
		Forest Park Medical Center at Fort Worth	974230	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.26	Much lower than expected
		John Peter Smith Hospital	409000	16,785	12,452	429	0.97	About as expected
		Medical Center-Arlington	502000	17,086	12,229	248	0.79	Lower than expected
		Medical City Alliance	974490	2,804	2,027	25	0.59	Much lower than expected
		Methodist Mansfield Medical Center	842800	9,158	6,713	241	0.87	Lower than expected
		Methodist Southlake Hospital	975153	250	249	8	0.44	Much lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
		North Hills Hospital	437000	5,209	4,828	141	0.57	Much lower than expected
		Parkway Surgical and Cardiovascular Hospital	973840	413	391	20	1.56	Much higher than expected
		Plaza Medical Center-Fort Worth	477000	8,144	7,368	348	0.87	Lower than expected
		Saint Camillus Medical Center	975154	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Texas General Hospital	115100	422	413	14	0.60	Much lower than expected
		Texas Health Arlington Memorial Hospital	422000	11,772	9,278	351	1.22	Higher than expected
		Texas Health Harris Methodist HEB	182000	11,207	8,390	321	1.03	About as expected
		Texas Health Harris Methodist Hospital Alliance	972900	6,283	4,490	97	0.97	About as expected
		Texas Health Harris Methodist Hospital Azle	469000	990	893	15	0.60	Much lower than expected
		Texas Health Harris Methodist Hospital Southlake	812800	938	937	18	0.45	Much lower than expected
		Texas Health Harris Methodist Hospital-Fort Worth	235000	29,923	23,708	1,026	0.97	About as expected
		Texas Health Harris Methodist Hospital-Southwest Fort Worth	627000	14,512	11,067	253	0.77	Lower than expected
		Texas Health Heart & Vascular Hospital	730001	967	934	98	0.88	Lower than expected
		Texas Health Hospital Clearfork	975167	741	741	15	0.51	Much lower than expected
		Texas Health Huguley Hospital	047000	8,497	6,801	489	1.60	Much higher than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
		USMD Hospital Fort Worth	861400	222	222	7	0.71	Much lower than expected
		USMD Hospital-Arlington	799001	1,738	1,710	88	1.65	Much higher than expected
Taylor	Abilene, TX	Abilene Regional Medical Center	091001	7,191	5,395	191	1.08	About as expected
		Hendrick Medical Center	500000	16,739	13,963	619	0.93	About as expected
Terry	Not Available	Brownfield Regional Medical Center	078000	812	678	17	1.29	Much higher than expected
Titus	Mount Pleasant, TX	Titus Regional Medical Center	137000	4,263	3,114	53	0.72	Much lower than expected
Tom Green	San Angelo, TX	San Angelo Community Medical Center	056000	5,457	4,349	108	0.61	Much lower than expected
		Shannon West Texas Memorial Hospital	168000	11,685	9,724	424	0.96	About as expected
Travis	Austin-Round Rock, TX	Arise Austin Medical Center	973290	929	928	29	0.62	Much lower than expected
		Baylor Scott & White Medical Center Lakeway	975165	1,085	946	54	1.11	Higher than expected
		Heart Hospital-Austin	829000	3,147	3,024	304	0.73	Much lower than expected
		Lakeway Regional Medical Center	970200	1,566	1,353	78	0.82	Lower than expected
		North Austin Medical Center	829900	24,956	17,801	317	0.62	Much lower than expected
		Northwest Hills Surgical Hospital	794000	445	445	5	0.26	Much lower than expected
		Seton Medical Center	497000	24,504	18,417	773	1.02	About as expected
		Seton Northwest Hospital	797600	6,394	4,830	137	0.97	About as expected
		Seton Southwest Hospital	797500	1,550	910	16	1.18	Higher than expected
		St Davids Hospital	035000	18,905	14,343	406	0.79	Lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
		St Davids South Austin Hospital	602000	16,869	13,282	398	0.71	Much lower than expected
		University Medical Center-Brackenridge	335000	11,614	9,794	455	1.18	Higher than expected
		Westlake Medical Center	822800	924	916	22	0.79	Lower than expected
Trinity	Huntsville, TX	East Texas Medical Center-Trinity	287000	<i>lv</i>	<i>lv</i>	<i>lv</i>	1.04	About as expected
Tyler	Not Available	Tyler County Hospital	569000	438	411	9	0.63	Much lower than expected
Uvalde	Uvalde, TX	Uvalde Memorial Hospital	063000	1,643	1,179	12	0.34	Much lower than expected
Val Verde	Del Rio, TX	Val Verde Regional Medical Center	462000	3,085	2,188	48	1.07	About as expected
Van Zandt	Not Available	Texas General Hospital Van Zandt Regional Medical Center	974380	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
Victoria	Victoria, TX	Citizens Medical Center	064000	8,136	6,702	201	0.73	Much lower than expected
		DeTar Hospital-Navarro	453000	7,761	6,990	254	0.98	About as expected
		DeTar Hospital-North	453001	2,589	1,636	25	2.00	Much higher than expected
Walker	Huntsville, TX	Huntsville Memorial Hospital	061000	4,835	4,139	180	1.29	Much higher than expected
Webb	Laredo, TX	Doctors Hospital-Laredo	301000	9,673	7,202	173	0.85	Lower than expected
		Laredo Medical Center	207001	15,950	11,830	335	1.05	About as expected
Wharton	El Campo, TX	El Campo Memorial Hospital	426000	396	382	7	0.47	Much lower than expected
Wichita	Wichita Falls, TX	Kell West Regional Hospital	681400	903	853	12	0.30	Much lower than expected
		United Regional Health Care System	417000	16,390	13,073	306	0.55	Much lower than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual- to- Expected Ratio ^b	Actual-to- Expected Ratio Interpretation
Wilbarger	Vernon, TX	Wilbarger General Hospital	084000	350	312	16	1.25	Higher than expected
Williamson	Austin-Round Rock, TX	Baylor Scott & White Medical Center Round Rock	852600	6,910	5,726	341	1.42	Much higher than expected
		Cedar Park Regional Medical Center	858300	5,795	4,393	99	0.91	About as expected
		Round Rock Medical Center	608000	9,842	7,232	221	0.73	Much lower than expected
		Seton Medical Center Williamson	861700	7,674	6,444	264	1.03	About as expected
		St Davids Georgetown Hospital	835700	5,566	4,055	83	0.65	Much lower than expected
		St Davids Surgical Hospital	975169	<i>lv</i>	<i>lv</i>	<i>lv</i>	1.02	About as expected
Wilson	San Antonio- New Braunfels, TX	Connally Memorial Medical Center	433000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.08	Much lower than expected
Wise	Dallas-Fort Worth- Arlington, TX	Wise Health System	254000	105	97	5	0.73	Much lower than expected
		Wise Health System (Medical Center Drive)	254001	4,006	3,222	127	1.11	Higher than expected
Young	Not Available	Graham Regional Medical Center	094000	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected

Source: *Texas Hospital Inpatient Discharge Research Data File, 2016*. Texas Department of State Health Services, Center for Health Statistics, Austin, Texas. September, 2017.

Table A3: Hospital Level PPC Report, Texas, 2016 – Part II

The following hospitals had an average length-of-stay of over 20 days in 2016.

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk ^a	Actual PPC Stays	Actual-to-Expected Ratio ^b	Actual-to-Expected Ratio Interpretation
Angelina	Lufkin, TX	CHI St Lukes Health Memorial Specialty Hospital	691000	174	166	116	13.10	Much higher than expected
Bexar	San Antonio-New Braunfels, TX	Kindred Hospital-San Antonio	645000	452	377	69	1.67	Much higher than expected
		Select Specialty Hospital-San Antonio	719300	158	138	26	1.43	Much higher than expected
Dallas	Dallas-Fort Worth-Arlington, TX	Texas Health Hospital	974800	338	332	15	1.40	Much higher than expected
Harris	Houston-The Woodlands-Sugar Land, TX	First Texas Hospital	975166	<i>lv</i>	<i>lv</i>	<i>lv</i>	0.00	Much lower than expected
		Houston Methodist St Catherine Hospital	973620	426	299	72	2.30	Much higher than expected
		Kindred Hospital Houston NW	706000	597	516	93	2.44	Much higher than expected
		Kindred Hospital Medical Center Holcombe	975141	79	64	29	3.98	Much higher than expected
		Kindred Hospital-Houston Medical Center	676000	884	666	215	3.47	Much higher than expected
		Plaza Specialty Hospital	763000	347	242	31	1.89	Much higher than expected
Hidalgo	McAllen-Edinburg-Mission, TX	Solara Hospital McAllen	816300	394	329	93	3.03	Much higher than expected
Lubbock	Lubbock, TX	Covenant Specialty Hospital	846200	305	261	46	1.08	About as expected
Smith	Tyler, TX	East Texas Medical Center Specialty Hospital	777000	276	242	62	2.80	Much higher than expected

Hospital County	Metropolitan/ Micropolitan Statistical Area (MSA)	Hospital Name	THCIC ID	Total Stays	Stays At Risk^a	Actual PPC Stays	Actual- to- Expected Ratio^b	Actual-to- Expected Ratio Interpretation
Tarrant	Dallas-Fort Worth- Arlington, TX	Kindred Hospital-Tarrant County	690000	413	360	93	2.38	Much higher than expected

Source: *Texas Hospital Inpatient Discharge Research Data File, 2016*. Texas Department of State Health Services, Center for Health Statistics, Austin, Texas. September, 2017.

Appendix B: Methods

B.1 Data

The total number of records from the 2016 Texas Hospital Inpatient Discharge Research Data File was 3,088,094. The data were subjected to several validation steps. After these steps, the dataset consisted of 2,536,018 records that were subjected to PPC processing. Table B1 shows the number of records excluded at each step. These numbers were affected by the sequence of data cleansing steps.

Table B1: Summary of Data Excluded from PPC Processing

	Count	% of Total
Total records for year 2016	3,088,978	100.0%
Records from hospitals that are exempt from POA reporting	365,262	11.8%
Records with invalid or unreliable patient information and non-inpatient stays	187,607	6.0%
Records from hospitals with fewer than 30 total admissions	91	< 0.1%
Total records subjected to 3M™ PPC processing	2,536,018	82.1%

Source: *Texas Hospital Inpatient Discharge Research Data File, 2016*. Texas Department of State Health Services, Center for Health Statistics, Austin, Texas. September, 2017.

1. Records from 326 hospitals that are not required to report diagnosis present-on-admission (POA) indicators are excluded from PPC processing. A total of 365,262 records were excluded because they were from hospitals that are exempt from reporting diagnosis present on admission. THCIC followed rules and guidelines provided by the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services (CMS), which require exemption of six facility types.

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 187,607 records were excluded because the type-of-bill code indicated a non-inpatient visit record, or because missing information prevented processing by the 3M™ software. For instance: records with invalid or unreliable patient age, discharge status, and length of stay. In addition, records in this category were excluded if they were ungroupable by All Patient Refined Diagnosis-Related Group (APR-DRG). For example: data with principal diagnosis or principal procedure codes that are missing or invalid, and data with admission or discharge dates that are missing or invalid.
 3. Finally, 91 records from hospitals with fewer than 30 total admits for 2016 were excluded from the analysis because the 3M™ logic is not deemed reliable or accurate when the hospital claims volume is low.

B.2 POA Quality Assessment

Quality assessment of POA indicator reporting was performed prior to PPC processing. The POA indicator differentiates diagnoses, symptoms, or conditions that are present at the time of admission from those conditions that develop during the inpatient admission, either due to natural disease progression or due to potentially faulty equipment or inadequate clinical care or procedures.

Logic developed by 3M™ was used to assess the reporting and validity of the POA indicator in the hospital discharge data. This logic measures the percentage of secondary diagnoses at each hospital coded as present on admission, not present on admission, or uncertain (high numbers would suggest inconsistent coding).

The POA quality assessment also measures the percent of diagnosis codes known to be pre-existing not coded as present on admission, and the percent of secondary diagnoses on elective surgery discharges coded as present on admission.

Taken together these measures provide an indication of whether the hospital is coding the present on admission variable appropriately. Of the 394 hospitals included in the 2016 PPC report, 324 (82.2%) met or exceeded the 3M™ POA quality criteria, whereas 70 hospitals (17.8%) did not meet the 3M™ quality criteria. If a hospital does not pass the assessment, the data from that hospital will not be included in calculating state benchmark (norm) for each APR-DRG and Severity of Illness level.

B.3 PPC Methodology

PPC processing and assignment was conducted through 3M™ Core Grouping Software PPC Version 35. The 3M™ software first identifies and excludes records based on global exclusions (such as organ transplants, HIV-AIDS, major or metastatic cancers) and specific clinical exclusions related to each PPC.

The remaining records were analyzed based on patient age, sex, discharge status, APR-DRG, length of stay, diagnosis codes and procedure codes and dates. PPC processing and assignment also relies upon the POA indicator for each diagnosis. The 3M™ Core Grouping 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 66 mutually exclusive PPCs. Multiple PPCs can be assigned to a stay if they do not overlap clinically (i.e., the disease processes of one PPC do not directly affect the other disease processes of another PPC).

Table B2: 3M™ Defined PPCs

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
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

PPC	Description
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

PPC	Description
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
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

The state norm (benchmark, a reference point, or average) was calculated by using PPC data from all hospitals meeting POA quality criteria. The norm was defined as the statewide average PPC stays per 100 at-risk admissions in 2016 for each APR-DRG / Severity of Illness category, 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 PPC assignment. Stays at risk were identified by the 3M™ Core Grouping software.

B.5 Actual-to-Expected Ratio

PPC statewide norms by APR-DRG were used to calculate the expected number of PPC stays in each hospital. For each hospital, the expected PPC stays within each APR-DRG/ Severity of Illness category were calculated by

using the statewide norm for that category multiplied by the admissions at risk in 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 number of PPC stays divided by the expected number of 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 severity of illness subclasses.

Expected PPC Stay – Expected PPC results were calculated based on statewide norms calculated from Texas hospital inpatient discharge data 2016. 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.

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.

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.

Diagnosis 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.

Severity of Illness (SOI) – The extent of physiologic or functional deterioration of an organ system. The levels of severity are: 1 - Minor, 2 - Moderate, 3 - Major and 4 - Extreme.

Stay at Risk for PPCs – A stay at risk for a PPC is a stay that does not meet any of the following exclusion criteria for PPC processing:

- **Exempted hospitals** – Claims from hospitals that were not required to report POA indicators were excluded from the analysis.
- **Outpatient admissions** – Only inpatient admissions bill types were included in the analysis. Claims with other bill types were excluded from this analysis.
- **Hospitals with less than 30 admissions** – Admissions from hospitals with less than 30 total admissions were excluded because the POA indicator quality check results are not deemed reliable when the claims volume is this low.
- **3M™ defined PPC exclusions** – A defined subset of diagnosis codes and procedure codes are eligible for consideration for PPCs. The 66 categories of PPCs are defined based on diagnoses and POA indicators, procedures and procedure dates, and patient age. A complication may be preventable for some type of patients, but not for others and some complication groups apply to only certain types of patients, e.g.

Obstetric complications occur in only females who deliver after an admission. Admissions for patients with certain severe or catastrophic illnesses that are particularly susceptible to a range of complications, including those with trauma, HIV-AIDS, and major or metastatic malignancies are also excluded.

Appendix D: References

1. 3M™ Health Information Systems, Potentially Preventable Complications: Definitions Manual V.32 by Hughes, et al.
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