



# **Hospital Emergency Department Data Collection**

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**As Required by  
The 2016-17 General  
Appropriations Act, H.B. 1, 84th  
Texas Legislature, Regular Session,  
2015 (Article II, Department of  
State Health Services, Rider 65)**



**TEXAS**  
Health and Human  
Services

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Texas Department of  
State Health Services

**Department of State Health Services**

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## Executive Summary

The [2016-17 General Appropriations Act, House Bill \(H.B.\) 1, 84<sup>th</sup> Texas Legislature, Regular Session, 2015 \(Article II, Department of State Health Services, Rider 65\)](#), required the Department of State Health Services (DSHS) to collect emergency department (ED) data as set forth in Chapter 108, Health and Safety Code (HSC). DSHS is required to use the data to measure and report Potentially Preventable Emergency Visits (PPV), including potentially preventable mental health and substance abuse emergency visits (PPV(MH-SA)). DSHS must also submit a report annually to the Office of the Governor, Legislative Budget Board (LBB), and chairs of each house of public health oversight committees. This is a continuation of a requirement from the 2014-15 biennium.

The PPV methodology requires two full years of data – a benchmark year and a second year of data to make comparisons to accurately reflect the quality of care provided in hospital EDs. DSHS began collecting ED data in 2015. However, a significant change<sup>1</sup> in medical coding systems that occurred on October 1, 2015 makes 2015 data incomparable with 2016 data. This made 2015 data unable to serve as a benchmark for PPV analysis.

Even though DSHS does not have two years of comparable data for detailed information concerning PPVs, DSHS was able to analyze aggregated 2016 ED data, which is included in this report. The information provides some general statistics, overall numbers, selected breakdowns of top diagnosis codes, top clinical conditions, percentage of visits by payer source, and a comparison of average total charges by payer source.

As reported last year, DSHS anticipates the first in-depth PPV and PPV(MH-SA) reports to be available in summer 2019, which will utilize 2016 and 2017 ED data.

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<sup>1</sup>. Federal requirements necessitated the change in the medical diagnosis and inpatient procedure coding system, from the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) to the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS)

## 1. Introduction

The [2016-17 General Appropriations Act, House Bill \(H.B.\) 1, 84<sup>th</sup> Texas Legislature, Regular Session, 2015 \(Article II, Department of State Health Services, Rider 65\)](#) specified that DSHS shall collect ED data as set forth in Chapter 108, HSC. DSHS is required to use the data to measure and report PPV, including PPV (MH-SA) ED visits. DSHS must also submit a report annually to the Office of the Governor, LBB, and chairs of each house of public health oversight committees.

This rider is a continuation of a requirement from the FY 2014-15 biennium and is also included in the 2018-19 General Appropriations Act.

## 2. Background

Potentially Preventable Emergency Visits (PPVs) are emergency visits that may result from a lack of adequate access to care, education, or ambulatory care coordination. These ambulatory-sensitive conditions could be reduced or eliminated with adequate patient monitoring, education, and follow up.

DSHS currently collects inpatient and outpatient data from 580 hospitals and 400 ambulatory surgical centers. DSHS began collecting ED data from hospitals on January 1, 2015 per the rules established in [25 Texas Administrative Code, Sections 421.71-421.78](#), and in conjunction with the collection of inpatient and outpatient data. DSHS released the first complete quarter of ED data in January 2016 as part of the Inpatient and Outpatient Public Use Files following the final certification of the data as required by law.

The PPV methodology, developed by 3M™ Health Information Systems, requires two full years of data – a benchmark year and a second year of data to make comparisons to accurately reflect the quality of care provided in hospital EDs. By the end of 2017, DSHS collected two entire years of ED data (2015 and 2016 data). However, the significant change in coding systems during year 2015 makes it incomparable with 2016 data. Accordingly, 2015 data cannot serve as a benchmark for PPV analysis.

DSHS produced reports in 2014, 2015, and 2016, to describe progress in implementing the data collection and analysis and provide some preliminary aggregated data. This report for 2017 builds on previous reports regarding implementation and includes analysis of aggregated 2016 ED data.

### 3. Hospital Emergency Department (ED) Data in Texas, 2016

#### Overview of Hospital ED Data in Texas, 2016

In calendar year 2016, approximately 10,647,047 Hospital ED visits occurred in Texas. There was a 1.5 percent increase in the number of visits compared to 2015 (N=10,486,677). In [Table 1](#), the data indicates 1,471,871 (or 13.8 percent) of ED visits were severe enough to require the patient be admitted (Inpatient) to the hospital, while 9,175,176 (or 86.2 percent) of the ED visits were not admitted (Outpatient), but may have required additional follow ups. Some of those ED visits required the patient to stay in the hospital for observation. Those patients that enter the ED and remain for observation are not technically admitted, but charges are still incurred for their stay or for additional testing.

There are minor variations in the number of ED visits quarterly. First (1<sup>st</sup>) Quarter (January – March) had the highest number of ED visits (N=2,695,931), while 4<sup>th</sup> Quarter (October – December) had the least amount of visits (N=2,628,695). Additional years of data will allow further evaluation of the data.

**Table 1. Overview of Hospital Emergency Department Visits in Texas, 2016**

	2016Q1 N (%)	2016Q2 N (%)	2016Q3 N (%)	2016Q4 N (%)	Total N (%)
Visit Resulting in Inpatient Admission	371,668 (13.8%)	364,092 (13.6%)	367,523 (13.9%)	368,588 (14.0%)	<b>1,471,871 (13.8%)</b>
Outpatient (including observation)	2,324,263 (86.2%)	2,315,466 (86.4%)	2,275,340 (86.1%)	2,260,107 (86.0%)	<b>9,175,176 (86.2%)</b>
<b>Total</b>	<b>2,695,931 (100.0%)</b>	<b>2,679,558 (100.0%)</b>	<b>2,642,863 (100.0%)</b>	<b>2,628,695 (100.0%)</b>	<b>10,647,047 (100.0%)</b>

**Data Source:** Two data sources are used for the analysis: 1) Texas hospital inpatient discharge public user data file, 2016Q1-2016Q4, and 2) Texas outpatient surgical and radiological procedure public user data file, 2016Q1-2016Q4. Texas Health Care Information Collection, Center for Health Statistics, DSHS

## **Top Five Diagnosis Codes for Hospital ED Visits in Texas, 2016**

Observing the top five diagnosis codes for 2016 ([Table 2](#)), the most frequent diagnostic code reported for ED visits was “Essential (primary) hypertension (I10)”.

The second most frequently reported inpatient diagnosis codes was “Hyperlipidemia, unspecified (E785)<sup>2</sup>”. The top two ED visit diagnosis codes for patients who were not admitted to the hospital (outpatient) were “Essential (primary) hypertension (I10)” and “Other long term (current) drug therapy (Z79899)”.

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<sup>2</sup> Hyperlipidemia generally means an abnormally high concentration of fats or lipids in the blood.

**Table 2. Top Five Diagnosis Codes for Hospital Emergency Department Visits in Texas, 2016**

Type	Rank <sup>3</sup>	Diagnosis Code & Description <sup>4</sup>	Count
<b>Visits Resulting in Inpatient Admission</b>	1	I10, Essential (primary) hypertension	582,779
	2	E785, Hyperlipidemia, unspecified	408,985
	3	I2510, Chronic ischemic heart disease without angina pectoris	277,349
	4	N179, Acute kidney failure, unspecified	244,867
	5	E119, Type 2 diabetes mellitus without complications	221,939
<b>Outpatient (including observation)</b>	1	I10, Essential (primary) hypertension	1,763,083
	2	Z79899, Other long term (current) drug therapy	810,734
	3	E119, Type 2 diabetes mellitus without complications	728,343
	4	F17210, Nicotine dependence, cigarettes, uncomplicated	565,128
	5	F17200, Nicotine dependence, unspecified, uncomplicated	466,857

**Data Source:** Two data sources are used for the analysis: 1) Texas hospital inpatient discharge public user data file, 2016Q1-2016Q4, and. 2) Texas outpatient surgical and radiological procedure public user data file, 2016Q1-2016Q4. Texas Health Care Information Collection, Center for Health Statistics, DSHS.

<sup>3</sup> Rank diagnosis code collected by number within each type.

<sup>4</sup> Diagnosis Code are all-listed ICD-10-CM diagnostic codes (25 fields) from the data source



## Top Five Conditions for Hospital ED Visits in Texas, 2016

The Clinical Classifications Software (CCS)<sup>5</sup> is a tool for clustering patient diagnoses and procedures into a manageable number of clinically meaningful categories. The United States Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ) developed the tool to allow researchers the ability to group conditions and make it easier to quickly understand patterns of diagnoses and procedures. This will enable health plans, policy makers, and researchers to be able to analyze utilization and outcomes associated with particular illnesses and procedures.

This tool was used to categorize the patient conditions that brought the patient into hospital emergency department. The top five overall clinical conditions are:

- Other upper respiratory infections; (*coughing, sneezing, runny nose, fever etc.*)
- Abdominal pain; (*pain in the belly*)
- Nonspecific chest pain; (*pain in the chest area, which could be intense or persistent or comes and goes*)
- Superficial injury; contusion (*minor bump or contact of skin, which damages underlying skin generally causing a bruise*)
- Sprains and strains; (*pain in joints or muscles usually from activity*)

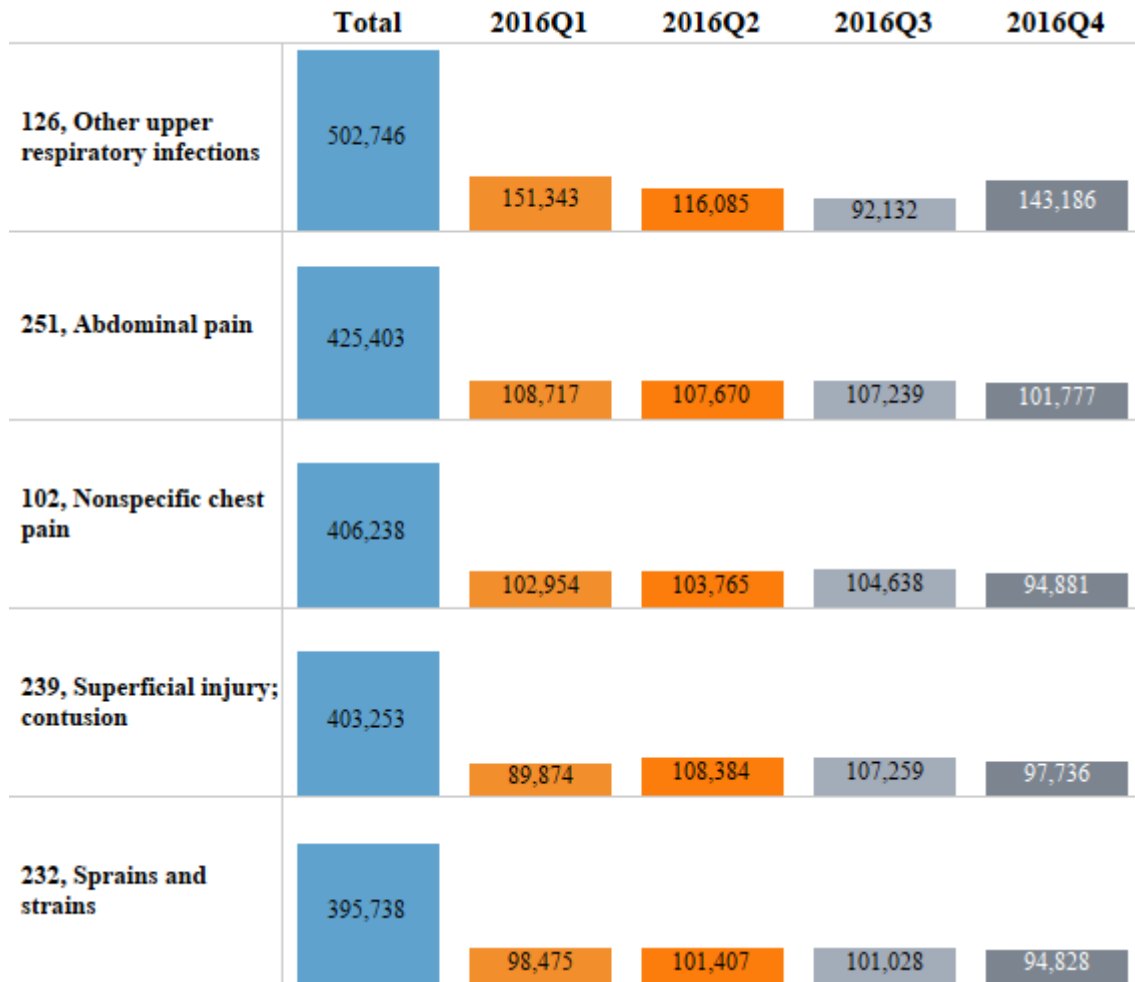
The variations in quarterly reporting are listed in [Figure 1](#) below.

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<sup>5</sup> HCUP Clinical Classifications Software (CCS). Healthcare Cost and Utilization Project (HCUP). U.S. Agency for Healthcare Research and Quality, Rockville, MD.

<https://www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp>. Accessed October 1, 2017.

**Figure 1. Top Five Conditions for Hospital Emergency Department Visits in Texas, 2016**



## **ED Visits by Expected Payment Source in Texas, 2016**

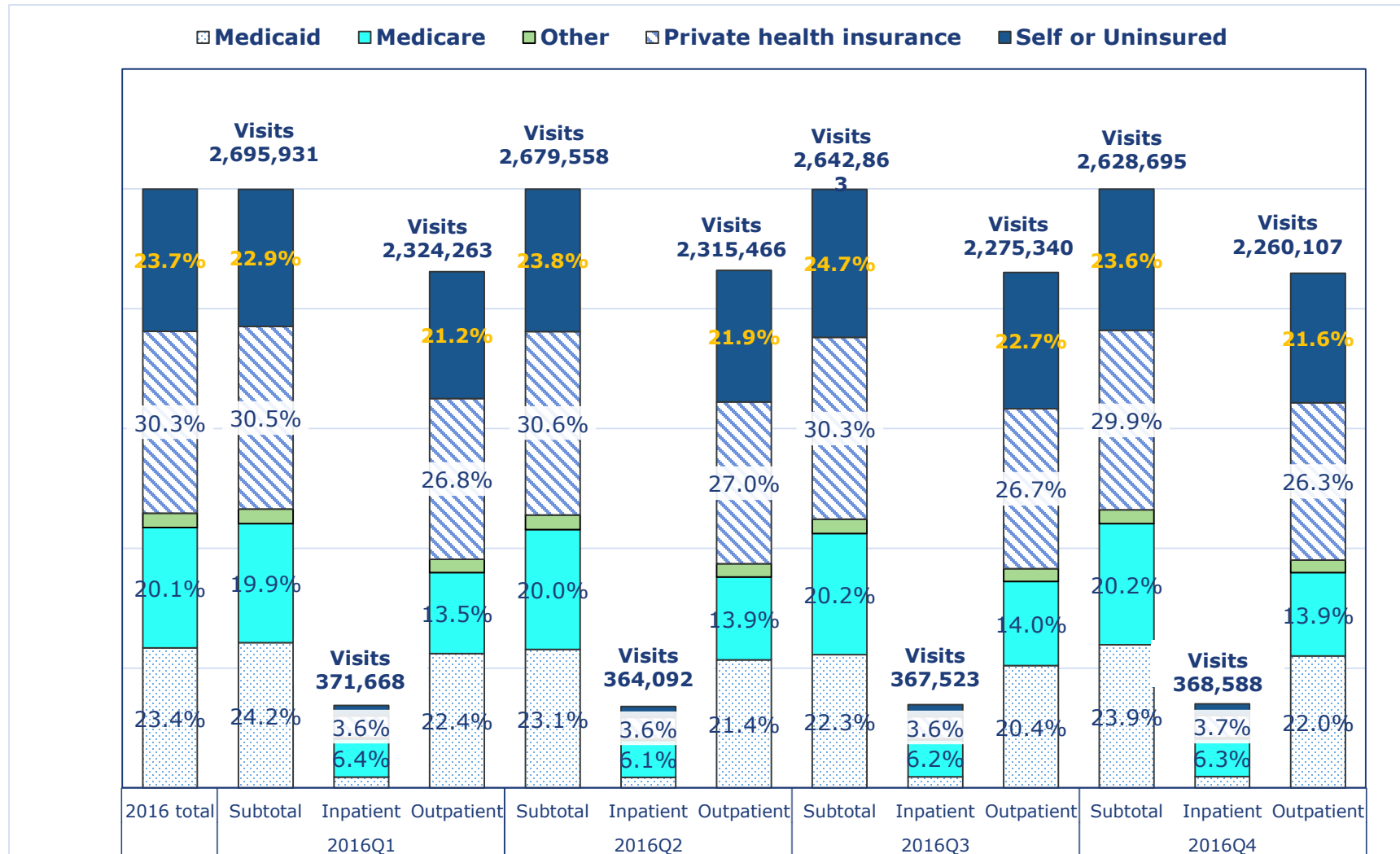
The data collected on payment source<sup>6</sup> is less precise, but still provides relevant information regarding to the payer source at the time the patient was seen in the hospital ED. Private insurance<sup>7</sup> was reported as the most common primary payer at about 30.3 percent. Self-pay or uninsured was listed as the second highest reported primary payer source at 23.7 percent. Medicaid was reported at 23.4 percent, followed by Medicare at 20.1 percent. See [Figure 2](#).

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<sup>6</sup> Expected Payment Source refers to the entity or organization which is expected to pay for the visit. It does not refer to the actual or final payment source, only the pay source identified when the facility submits the data to THCIC.

<sup>7</sup> Private insurance is defined as a commercial insurance plan that a patient would be purchasing that did not include payments through the federal or state government plans such as Medicare or Medicaid, or other special government health insurance plans.

**Figure 2. Emergency Room Visits by Expected Payment Source in Texas, 2016**



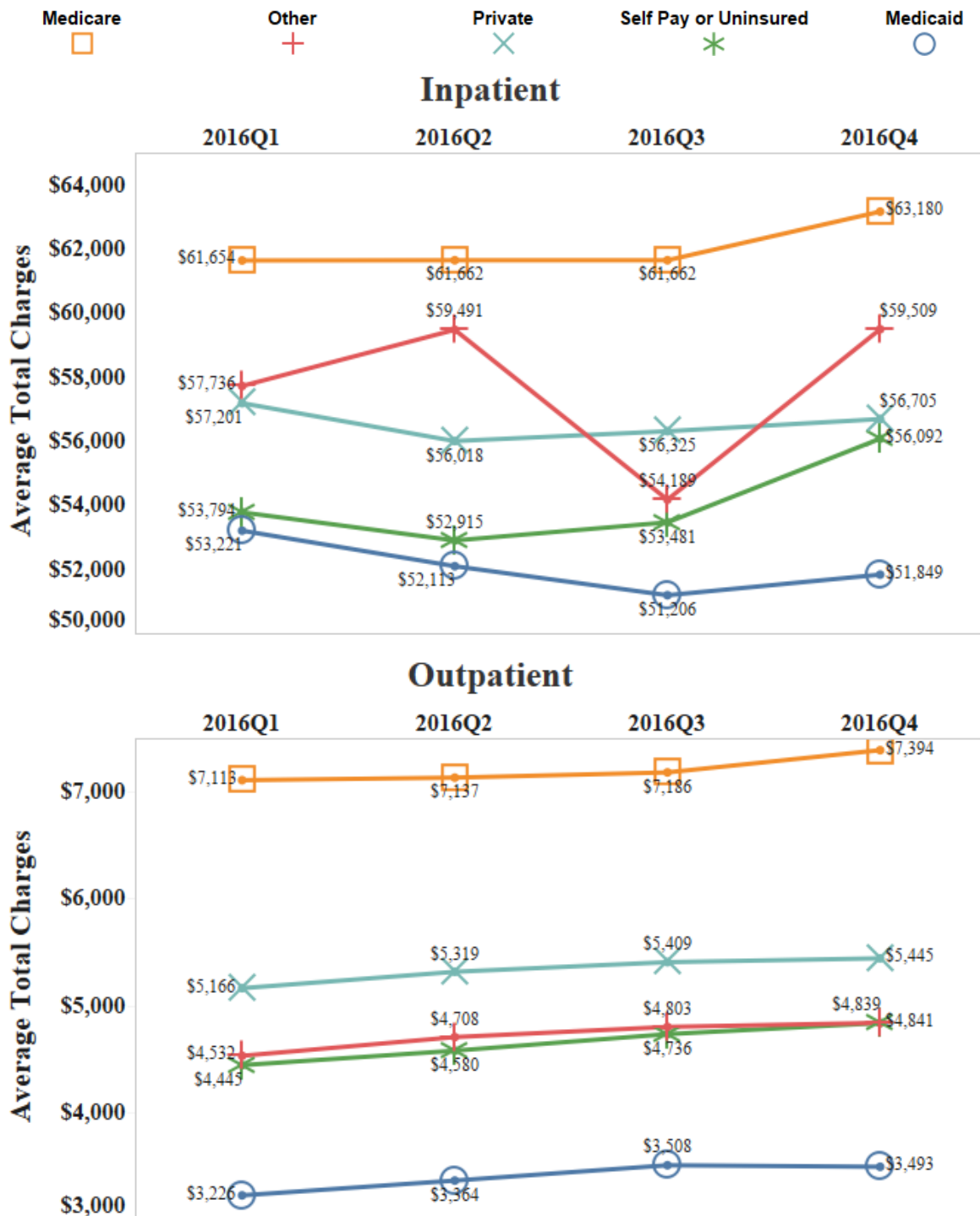
**Data Source:** Two data sources are used for the analysis: 1) Texas hospital inpatient discharge public user data file, 2016Q1-2016Q4, and 2) Texas outpatient surgical and radiological procedure public user data file, 2016Q1-2016Q4. Texas Health Care Information Collection, Center for Health Statistics, DSHS

## **Comparison between Average Total Charges of Expected Payer Sources of ED Visits**

Average total charges relating to ED visits varies among both visits with inpatient admissions and outpatient visits. (See [Figure 3.](#)) The average total charges for Medicare and Self Pay or Uninsured ED visits slightly increased from the 1<sup>st</sup> quarter to the 4<sup>th</sup> quarter in 2016, both in Inpatient and Outpatient setting.

Medicare has the highest average of total charges among expected payer sources; however, it may be affected by the timing of patient information being captured at the hospital emergency department. This holds true for Inpatient and Outpatient.

**Figure 3. Average Total Charges Emergency Department Visits by Expected Payer Sources in Texas, 2016**



## Conclusion

The 2016 ED data collected for this report indicate that hypertension is the most frequent diagnostic code reported for hospital ED visits, both Inpatient and Outpatient. Other upper respiratory infections rank highest among conditions for hospital ED visits. Finally, Medicare has the highest average of total charges among expected payer sources. This holds true for Inpatient and Outpatient.

While this data provides valuable information, it is not viable for in-depth PPV reporting due to the change in medical diagnosis and procedure coding systems from ICD-9 CM to ICD-10-CM and ICD-10-PCS on October 1, 2015. The coding change impacted the 2015 data to the extent it cannot be compared to future data sets. To establish benchmarks for comparison or for subsequent PPV reports, an additional year of data (2016) is needed for comparison to the following year (2017), before a more in-depth PPV and PPV(MH-SA) report can be produced.

The collection and analysis of future ED data will provide further insight and allow for more meaningful comparisons and trends over time looking at access to services, types of clients, and services being provided in Texas ED visits.

## **Appendix A. Tables**



**Table A. Emergency Room Visits by Expected Payment Source in Texas, 2016<sup>i</sup>**

		Medicaid	Medicare	Other	Private health insurance	Self or Uninsured	Visits
<b>2016Q1</b>	Inpatient	1.8%	6.4%	0.2%	3.6%	1.7%	<b>371,668</b>
	Outpatient	22.4%	13.5%	2.2%	26.8%	21.2%	<b>2,324,263</b>
	Subtotal	24.2%	19.9%	2.4%	30.5%	22.9%	<b>2,695,931</b>
<b>2016Q2</b>	Inpatient	1.8%	6.1%	0.2%	3.6%	1.8%	<b>364,092</b>
	Outpatient	21.4%	13.9%	2.2%	27.0%	21.9%	<b>2,315,466</b>
	Subtotal	23.1%	20.0%	2.4%	30.6%	23.8%	<b>2,679,558</b>
<b>2016Q3</b>	Inpatient	1.8%	6.2%	0.2%	3.6%	2.0%	<b>367,523</b>
	Outpatient	20.4%	14.0%	2.2%	26.7%	22.7%	<b>2,275,340</b>
	Subtotal	22.3%	20.2%	2.4%	30.3%	24.7%	<b>2,642,863</b>
<b>2016Q4</b>	Inpatient	1.9%	6.3%	0.2%	3.7%	1.9%	<b>368,588</b>
	<b>Outpatient</b>	<b>22.0%</b>	<b>13.9%</b>	<b>2.1%</b>	<b>26.3%</b>	<b>21.6%</b>	<b>2,260,107</b>
	<b>Subtotal</b>	<b>23.9%</b>	<b>20.2%</b>	<b>2.3%</b>	<b>29.9%</b>	<b>23.6%</b>	<b>2,628,695</b>

<sup>i</sup> This table shows the detailed percentages and number of visits by Expected Payment Source for Figure 2.