

# 2008 TEXAS

## TYPE 2 DIABETES REPORT

Featuring Demographic,  
Charges, Utilization, and  
Pharmacotherapy Data



**Texas Business Group on Health**



Presented by  
**sanofi aventis**

in conjunction with  
Texas Business Group on Health



# 2008 TEXAS TYPE 2 DIABETES REPORT

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## Introduction

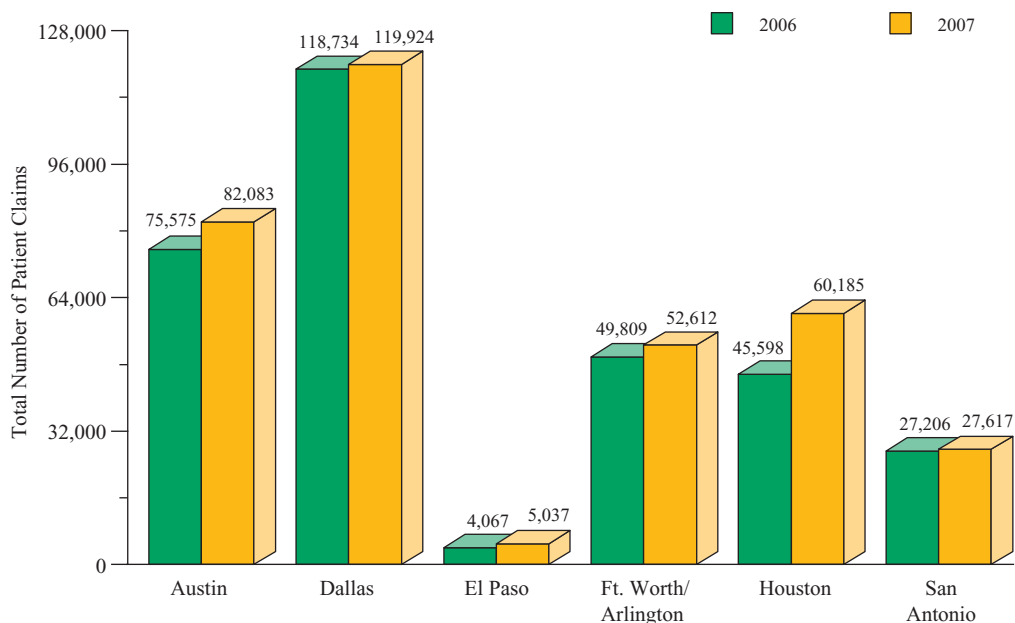
The Texas Business Group on Health (TBGH) is pleased to present the **Texas Type 2 Diabetes Report** for 2008, an overview of demographic, financial, utilization and pharmacotherapy measures for Type 2 diabetes patients in key local markets in the state of Texas. The report, intended to help providers and employers identify better opportunities to serve the needs of their patients, organizes Type 2 diabetes benchmarks into six local Texas markets and across Texas as a whole. All data are drawn from the **Managed Care Digest Series®**.

The 2008 **Texas Type 2 Diabetes Report** helps TBGH fulfill its mission to help Texas employers play an active and enthusiastic role in collaboration with health plans, providers and purchasers; and be a catalyst in promoting cost-effective delivery of quality health care to the benefit of the community.

This third edition features examples of the kinds of patient-level, disease-specific data on Type 2 diabetes that can be provided by TBGH using the **Managed Care Digest Series®** as a resource. Its focus on Texas locales allows for heightened scrutiny of community progress with Type 2 diabetes patient populations. TBGH chose Type 2 diabetes (high blood glucose levels caused by either a lack of insulin or the body's inability to use insulin efficiently) as the focus of this resource because the Centers for Disease Control estimate that 90% to 95% of all Americans with diabetes—translating to 5.7% of the U.S. population—have the Type 2 variety.

The data in this report (covering 2005 through 2007) were gathered by Verispan LLC, Yardley, Pa., a recognized leader in the health care information industry. The data provides employers with independent, third-party information against which they can benchmark their own data. Please see the back page for information on the data methodology.

**A1: TOTAL NUMBER OF TYPE 2 DIABETES PATIENT CLAIMS, BY MSA**



Data source: Verispan LLC © 2008



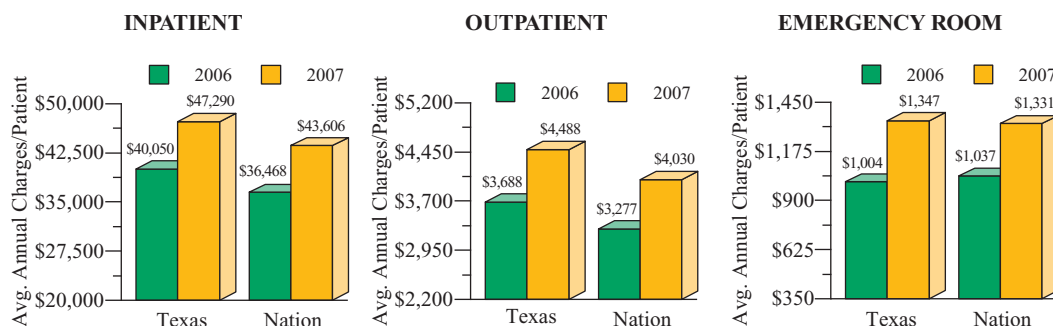
**B1: DEMOGRAPHICS:  
AGE AND GENDER<sup>1</sup>**

AGE GROUP	Percentage of Patients					
	Texas			Nation		
	2005	2006	2007	2005	2006	2007
0-17	0.5%	0.5%	0.4%	0.5%	0.4%	0.4%
18-35	4.7	4.7	4.4	3.8	3.6	3.4
36-64	60.0	57.9	56.0	52.0	50.6	49.5
65-79	27.5	28.8	30.2	32.5	33.3	34.1
80+	7.3	8.1	9.0	11.3	12.1	12.7
<b>GENDER</b>						
Male	40.9%	40.1%	40.1%	45.5%	45.1%	44.9%
Female	59.1	59.9	60.0	54.5	54.9	55.1

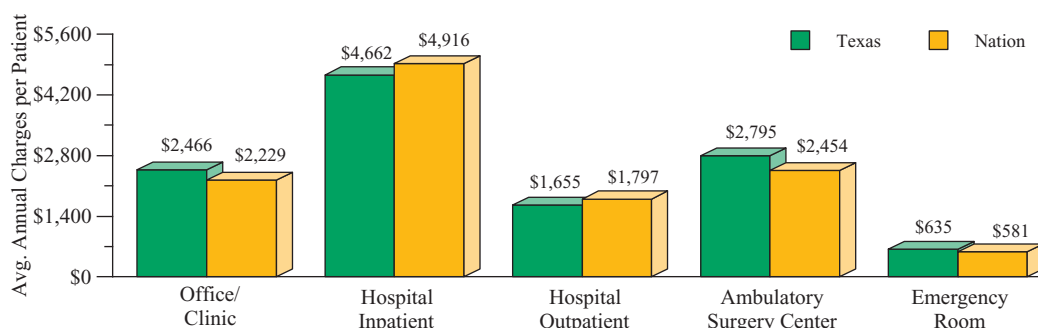
**B2: DEMOGRAPHICS: COMORBIDITIES  
AND COMPLICATIONS<sup>2,3</sup>**

COMORBIDITIES	Percentage of Patients					
	Texas			Nation		
	2005	2006	2007	2005	2006	2007
0	31.0%	35.9%	37.5%	41.6%	45.4%	46.7%
1	24.6	24.0	23.6	25.5	24.0	23.4
2	33.4	31.0	29.9	26.6	25.0	24.3
>2	11.0	9.1	9.0	6.3	5.6	5.5
<b>COMPLICATIONS</b>						
0	58.8%	61.6%	59.1%	62.7%	64.2%	62.5%
1	28.8	27.4	28.3	28.2	27.5	28.2
2	9.5	8.4	9.6	7.2	6.7	7.3
>2	3.0	2.6	3.0	2.0	1.7	2.0

**B3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS,  
COMMERCIAL INSURANCE PAYERS<sup>4,5</sup>**



**B4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS,  
COMMERCIAL INSURANCE PAYERS<sup>5,6</sup>**



## NO COMPLICATIONS TEXAS PATIENT SHARE DECLINES

The share of patients across the state of Texas who were diagnosed with Type 2 diabetes and had no complications from the disease dropped moderately in 2007, to 59.1% from 61.6% in 2006. As a consequence, the percentage gap between the Texas share and the corresponding national rate (62.5%) rose to 3.4 percentage points. Meanwhile, the share of Texas patients diagnosed with Type 2 diabetes and more than two complications from the disease increased to 3.0%, notably higher than the corresponding national rate (2.0%).

Data source: Verispan LLC © 2008

<sup>1</sup> On all pages, the percentages are representative of the universe of Type 2 diabetes patients on whom claims data have been collected in a given year.

<sup>2</sup> A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

<sup>3</sup> A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, congestive heart failure, coronary artery disease, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

<sup>4</sup> Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

<sup>5</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>6</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.



# TEXAS AND NATION

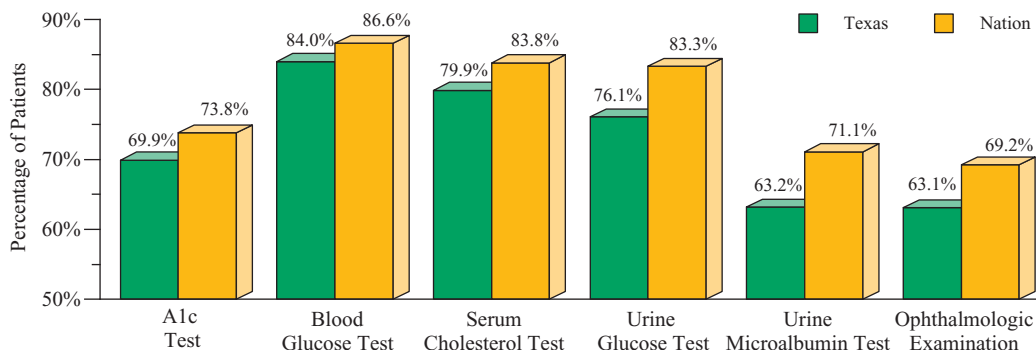
## TEXAS UTILIZATION MEASURES LAG BEHIND THE NATION

Patients diagnosed with Type 2 diabetes in Texas reported lower shares than their national counterparts in all six utilization categories profiled in 2007 (see graph B5). For example, just 63.2% of these Texas patients underwent urine microalbumin testing in 2007, notably lower than the 71.1% share of patients nationally. The Texas patient share for blood glucose testing (84.0%) was likewise lower than the national percentage (86.6%) in 2007.

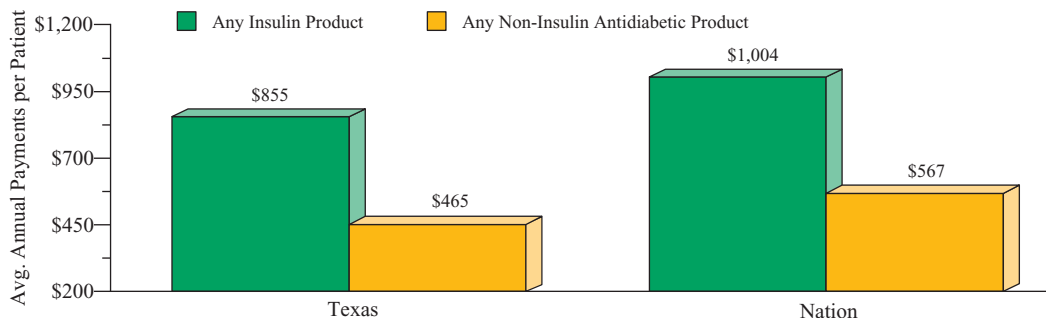
## TEXAS INSULIN AND NON-INSULIN PATIENT SHARES ARE LOWER

In 2007, the shares of Texas Type 2 diabetes patients using insulin and non-insulin therapies alike were smaller than the national shares in each of the four insulin an non-insulin categories profiled. Of Texas Type 2 diabetes patients, 34.4% used any insulin product, for example, compared with 35.6% nationally. Similarly, the share of Texas Type 2 diabetes patients using any non-insulin antidiabetic product was 83.5% in 2007, slightly less than the national average of 84.8%.

**B5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE, 2007**



**B6: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY, 2007**



**B7: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING INSULIN THERAPIES, 2007**

	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Texas	34.4%	\$855	3.9%	\$321	17.1%	\$589	12.9%	\$561	8.7%	\$660
Nation	35.6%	1,004	4.7%	364	19.1%	646	15.2%	654	8.9%	761

**B8: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES, 2007**

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Texas	83.5%	\$465	46.1%	\$92	33.1%	\$85	22.5%	\$851
Nation	84.8%	567	52.5%	110	39.5%	100	26.0%	985

Data source: Verispan LLC © 2008

### Biguanides

Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

### Sulfonylureas

Stimulate the release of insulin in the pancreas.

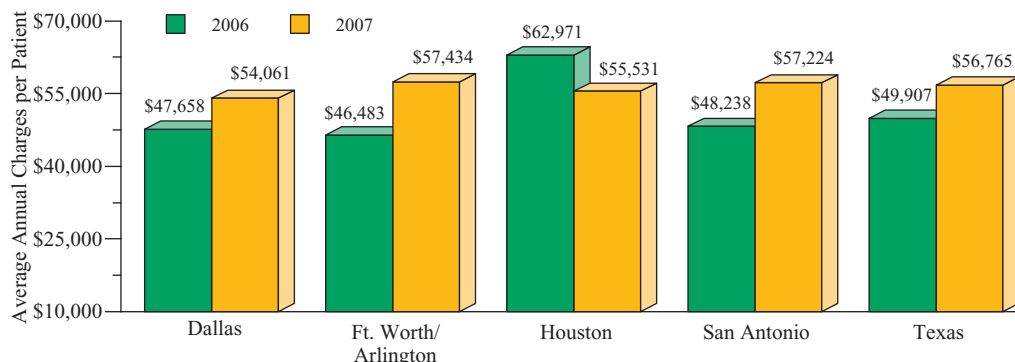
### Insulin Sensitizing Agents

Improve response to insulin in liver, adipose tissue, and skeletal muscle, resulting in decreased production of glucose by the liver and increased peripheral uptake and use of circulating glucose.

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.



**C1: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS<sup>1,2</sup>**



## HOUSTON HOSPITAL INPATIENT CHARGES DECREASE IN 2007

After averaging the highest profiled annual hospital inpatient charges for Type 2 diabetes patients in 2006 (\$62,971), the Houston MSA saw such charges fall notably in 2007, to \$55,531 (see table C1). The other three Texas MSAs profiled in this table each saw such charges increase, most notably Ft. Worth/Arlington, in which hospital inpatient charges rose to \$57,434 in 2007 from \$46,483 in 2006.

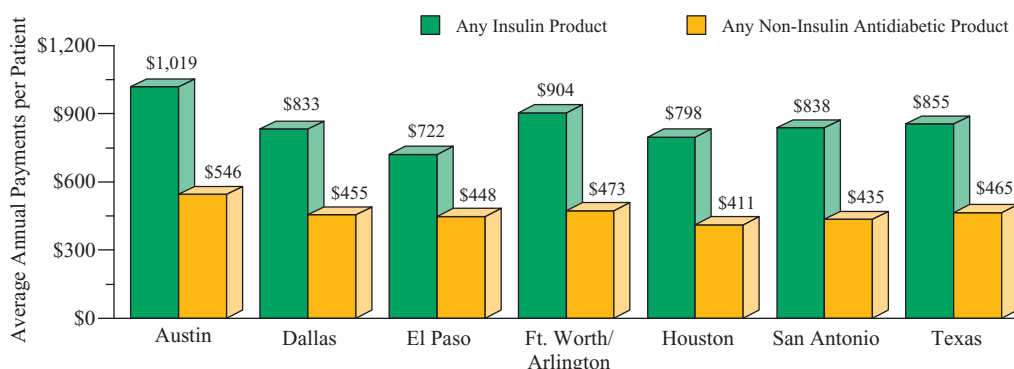
**C2: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS<sup>2,3</sup>**

MARKET	Hospital Inpatient		Hospital Outpatient		Ambulatory Surgery Center		Emergency Room		Office/Clinic	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Austin	\$2,503	\$2,335	\$958	\$1,285	\$3,195	\$3,145	\$589	—	\$1,408	\$1,452
Dallas	4,327	4,750	1,949	2,325	2,757	2,998	879	905	5,191	6,750
Ft. Worth/Arlington	5,913	5,282	1,966	1,998	1,586	1,362	747	818	950	1,022
Houston	4,954	7,434	3,361	2,668	7,175	4,779	669	732	1,806	1,751
San Antonio	4,244	4,293	946	1,094	3,055	4,251	514	596	784	1,298
Texas	4,573	5,276	1,737	1,856	3,247	3,272	698	741	2,724	3,198
NATION	\$5,653	\$6,070	\$1,814	\$1,919	\$2,791	\$3,055	\$575	\$647	\$2,630	\$2,818

## EMERGENCY ROOM CHARGES ARE HIGH THROUGHOUT TEXAS

Of the four Texas MSAs reporting average annual professional charges for emergency room (ER) care for Type 2 diabetes patients in 2007, three observed charges well above the national average of \$647. Most notable of these was Dallas, with average ER professional charges of \$905, substantially higher than the national average. In contrast, patients diagnosed with Type 2 diabetes in San Antonio paid an average of \$596 for ER care in 2007, lowest of the markets listed.

**C3: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY, 2007<sup>4</sup>**



Data source: Verispan LLC © 2008

NOTE: Facility and professional charges data were unavailable for the El Paso and Austin MSAs.

<sup>1</sup> Hospital charges reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

<sup>2</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>3</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

<sup>4</sup> Figures reflect the per-patient yearly payments for Type 2 diabetes patients receiving a particular type of therapy.





# TEXAS MSA COMPARISONS: A1C LEVELS

## SHARE OF EL PASO PATIENTS WITH POOR A1C RESULTS IS HIGH

Of patients diagnosed with Type 2 diabetes in the El Paso MSA, a noteworthy 14.5% had A1c test results greater than 9.0%, highest of the eight markets listed (L1). By comparison, the share of such patients across the state of Texas who had A1c test results in that range was 11.8%. The share of Type 2 diabetes patients in the Dallas MSA with A1c test results in this highest range was 11.0%, lowest of the Texas markets.

## LOW A1C RESULTS SHARE IS HIGHER IN TEXAS THAN NATION

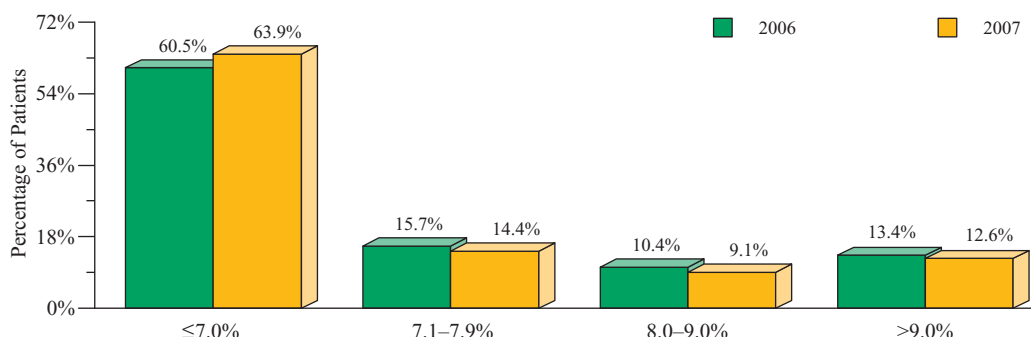
In 2007, the share of patients diagnosed with Type 2 diabetes who had A1c test results of 7.0% or less was slightly higher in the state of Texas (63.7%) than nationally (61.1%). Such patients diagnosed with Type 2 diabetes in the Dallas MSA were most likely, by Texas market, to be in that lowest A1c test results range (64.9%), while patients in the El Paso MSA were least likely (60.3%).

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

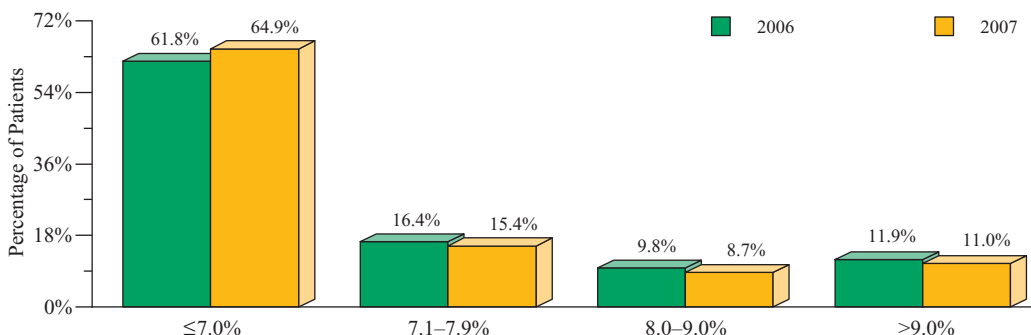
L1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE

MARKET	≤7.0%		7.1–7.9%		8.0–9.0%		>9.0%	
	2006	2007	2006	2007	2006	2007	2006	2007
Austin	60.5%	63.9%	15.7%	14.4%	10.4%	9.1%	13.4%	12.6%
Dallas	61.8%	64.9%	16.4%	15.4%	9.8%	8.7%	11.9%	11.0%
El Paso	61.6%	60.3%	15.8%	15.3%	10.7%	9.8%	11.9%	14.5%
Ft. Worth/ Arlington	61.5%	63.4%	16.8%	15.9%	10.2%	9.0%	11.5%	11.7%
Houston	61.4%	64.0%	16.1%	14.8%	10.0%	9.0%	12.5%	12.2%
San Antonio	57.2%	61.0%	17.6%	15.5%	11.6%	9.9%	13.7%	13.6%
Texas	60.7%	63.7%	16.7%	15.5%	10.3%	9.1%	12.4%	11.8%
NATION	58.3%	61.1%	18.6%	17.4%	10.9%	9.8%	12.2%	11.7%

L2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, AUSTIN



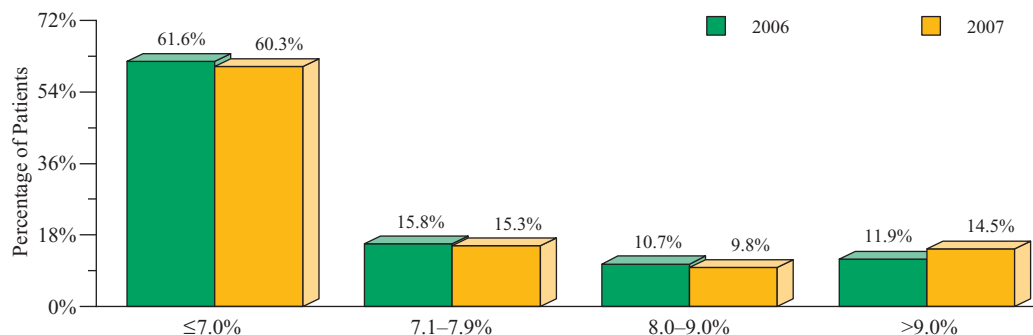
L3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, DALLAS



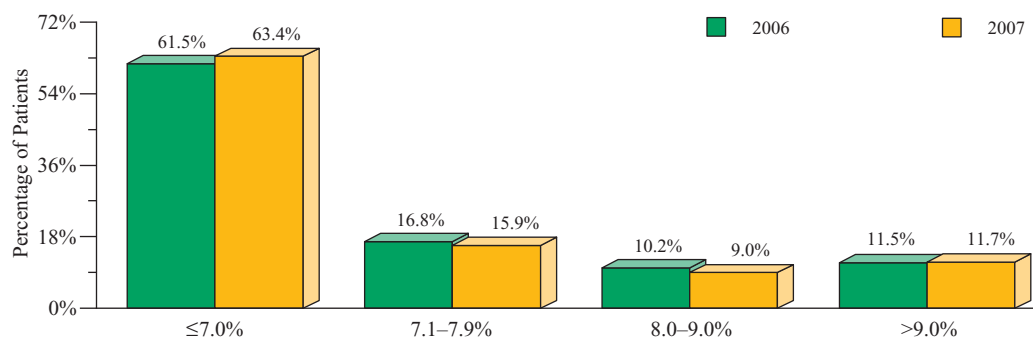
Data source: Verispan LLC © 2008



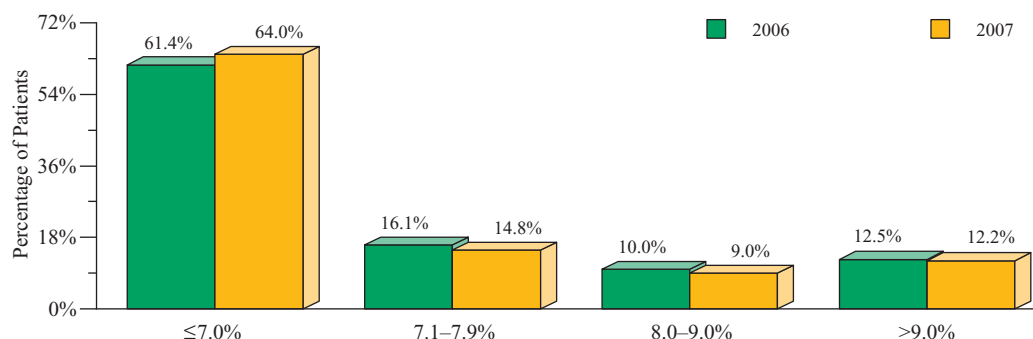
**L4: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, EL PASO**



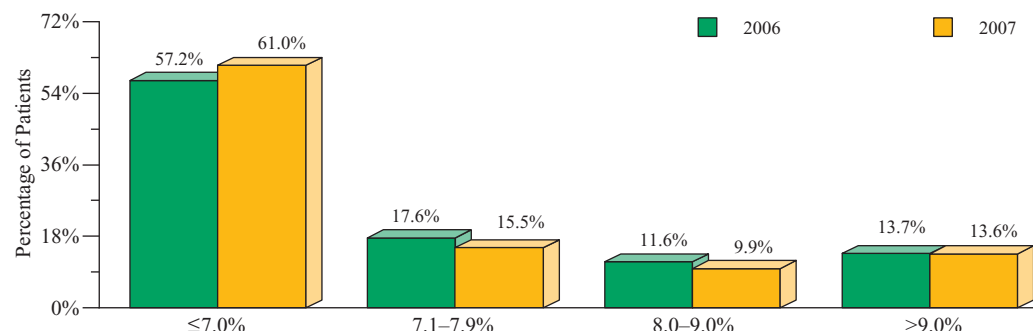
**L5: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, FT. WORTH/ARLINGTON**



**L6: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, HOUSTON**



**L7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, SAN ANTONIO**



## EL PASO PATIENTS HAVE HIGHEST A1C TEST RESULTS SHARE

In 2007, the share of patients diagnosed with Type 2 diabetes who had A1c test results greater than 8.0% was highest, at 24.3% (up from 22.6% in 2006), in the El Paso MSA (L4). The percentage of Type 2 diabetes patients across the state of Texas with A1c test results in that range was a comparatively small 20.9% (down moderately from 22.7% the previous year).

## HOUSTON PATIENT SHARE WITH LOW A1C TEST RESULTS RISES

Of patients with Type 2 diabetes who were diagnosed in the Houston MSA in 2007, 64.0% had A1c test results in the 7.0% or less range, up from 61.4% in 2006. Of the Texas markets profiled, only the El Paso MSA accounted for an annual decrease (to 60.3% from 61.6% the previous year) in the share of Type 2 diabetes patients with A1c test results in this lowest range. In the state of Texas, the Type 2 diabetes patient share in this range rose to 61.1% from 58.3% in 2006.

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

Data source: Verispan LLC © 2008



# NATIONAL MSA COMPARISONS: USE OF SERVICES

## DALLAS UTILIZATION SHARES ARE LOW ACROSS THE BOARD

For each of the four services profiled in the report, Type 2 diabetes patients in the Dallas MSA had the lowest percentages of use among the various MSAs profiled (see table D1). For example, just 62.6% of such patients in Dallas had at least one urine microalbumin test in 2007, down from 62.9% in 2006, lowest by far of the listed MSAs. Meanwhile, Denver had the second lowest urine microalbumin patient share in 2007, at 71.4%, still nearly nine percentage points higher than the patient share in Dallas.

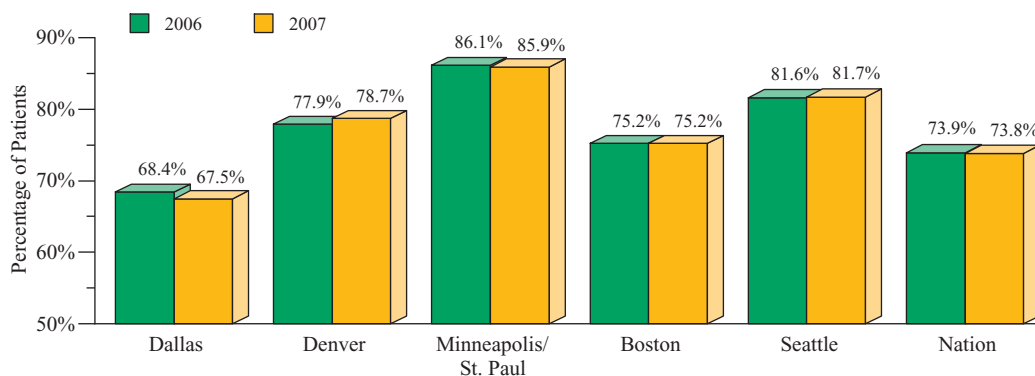
## DALLAS TYPE 2 DIABETES EYE EXAM PATIENT SHARE RISES

In 2007, 62.9% of diabetes patients diagnosed with Type 2 diabetes in the Dallas MSA had an ophthalmologic examination, up from 62.1% in 2006, and the only utilization measure listed with an annual increase. By comparison, this percentage decreased in Minneapolis/St. Paul, to 77.8% from 78.1% in 2006, still the highest share of the profiled markets. Overall, 69.2% of Type 2 diabetes patients nationally had at least one ophthalmologic examinations in 2007.

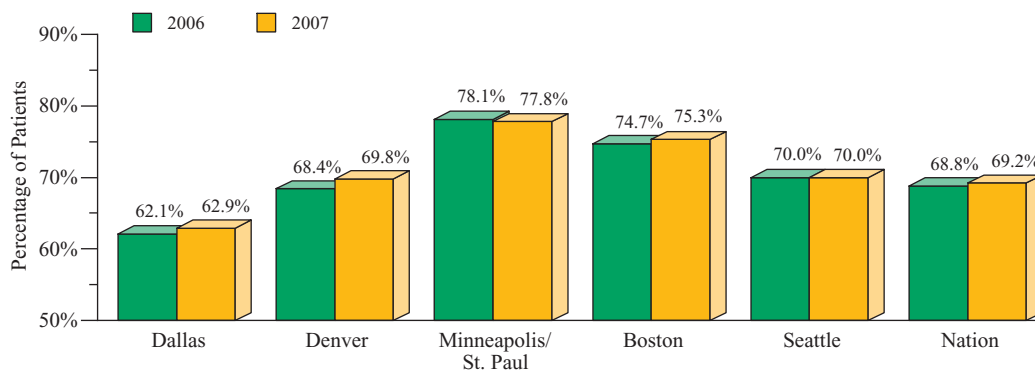
**D1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE**

MARKET	A1c Test*		Serum Cholesterol Test		Ophthalmologic Exam		Urine Microalbumin Test	
	2006	2007	2006	2007	2006	2007	2006	2007
Dallas	68.4%	67.5%	79.0%	78.5%	62.1%	62.9%	62.9%	62.6%
Denver	77.9	78.7	83.3	83.7	68.4	69.8	72.3	71.4
Minneapolis/St. Paul	86.1	85.9	87.7	88.3	78.1	77.8	81.6	82.5
Boston	75.2	75.2	89.2	89.2	74.7	75.3	81.6	82.5
Seattle	81.6	81.7	83.6	84.4	70.0	70.0	75.8	75.5
NATION	73.9%	73.8%	83.7%	83.8%	68.8%	69.2%	70.8%	71.1%

**D2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING A1C TESTS**



**D3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING OPHTHALMOLOGIC EXAMS**



\* A1c tests measure how much glucose has been in the blood during the past 3-4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

NOTE: The Seattle MSA also includes Bellevue and Everett, WA.

Data source: Verispan LLC © 2008

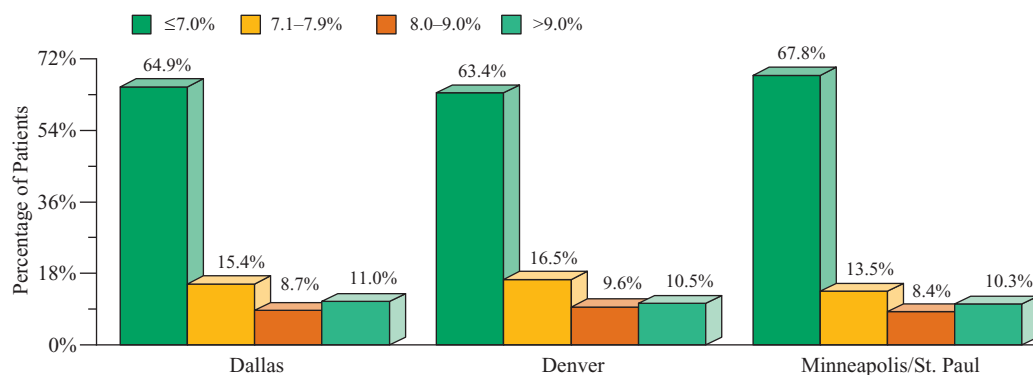




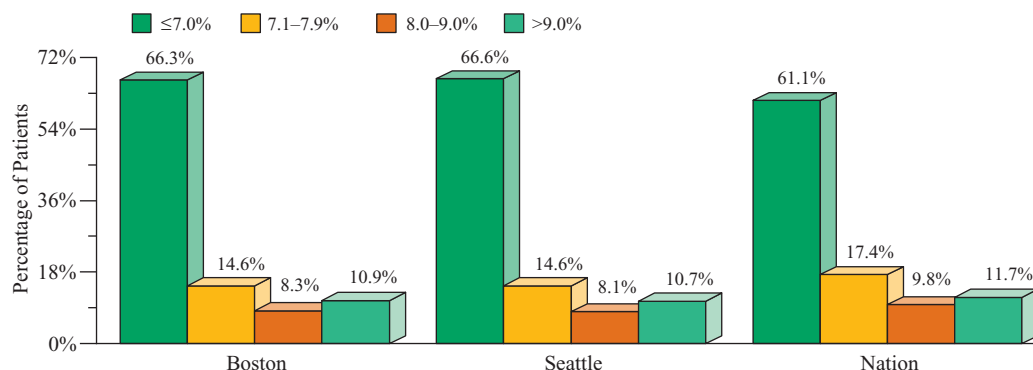
**D4: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE**

MARKET	≤7.0%		7.1–7.9%		8.0–9.0%		>9.0%	
	2006	2007	2006	2007	2006	2007	2006	2007
Dallas	61.8%	64.9%	16.4%	15.4%	9.8%	8.7%	11.9%	11.0%
Denver	61.3	63.4	17.7	16.5	10.0	9.6	11.0	10.5
Minneapolis/ St. Paul	64.0	67.8	15.6	13.5	9.1	8.4	11.4	10.3
Boston	63.8	66.3	15.5	14.6	9.2	8.3	11.4	10.9
Seattle	63.9	66.6	15.6	14.6	9.1	8.1	11.4	10.7
<b>NATION</b>	<b>58.3%</b>	<b>61.1%</b>	<b>18.6%</b>	<b>17.4%</b>	<b>10.9%</b>	<b>9.8%</b>	<b>12.2%</b>	<b>11.7%</b>

**D5: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, 2007**



**D6: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE, 2007**



Data source: Verispan LLC © 2008

## SHARE OF DALLAS PATIENTS WITH LOW A1C LEVELS GROWS

In 2007, 64.9% of patients in Dallas diagnosed with Type 2 diabetes had A1c test levels at or below 7.0%, up from 61.8% in 2006 (see table D4). This share was well above the national percentage of 61.1%. Of the remaining four MSAs listed, only Denver (63.4%) reported a lower Type 2 diabetes patient share for this measure than that of Dallas.

## DALLAS PATIENT SHARE WITH HIGHEST A1C LEVELS SHRINKS

The share of Dallas Type 2 diabetes patients with A1c levels above 9.0% fell to 11.0% in 2007 from 11.9% in 2006. In spite of this decrease, Dallas Type 2 diabetes patients were most likely, by MSA, to fall within this highest A1c level range. Minneapolis/St. Paul's share of Type 2 diabetes patients with very high A1c levels was 10.3%, down from 11.4% the year before, lowest of the five MSAs profiled. Each of the MSAs reported shares lower than the 2007 national share of 11.7%.



# NATIONAL MSA COMPARISONS: HOSPITAL CHARGES

## DALLAS ER CHARGES ARE BELOW THE NATIONAL AVERAGE

Hospital charges per year for emergency room care delivered to Type 2 diabetes patients in 2007 were \$1,448 in the Dallas MSA, up 17.5% from \$1,232 in 2006 (see table E1). Despite the increase, such charges were 12.3% lower than average charges for the nation (\$1,651) in 2007.

## OUTPATIENT CHARGES ARE HIGH AT DALLAS HOSPITALS IN 2007

Dallas patients diagnosed with Type 2 diabetes paid an average of \$5,406 in hospital outpatient charges in 2007, up nearly \$1,000 from \$4,440 in 2006 and the highest of the markets profiled. In contrast, such charges were just \$3,350 in Denver in 2007, the lowest of all the listed markets.

## HOSPITAL INPATIENT CHARGES INCREASE ACROSS THE BOARD

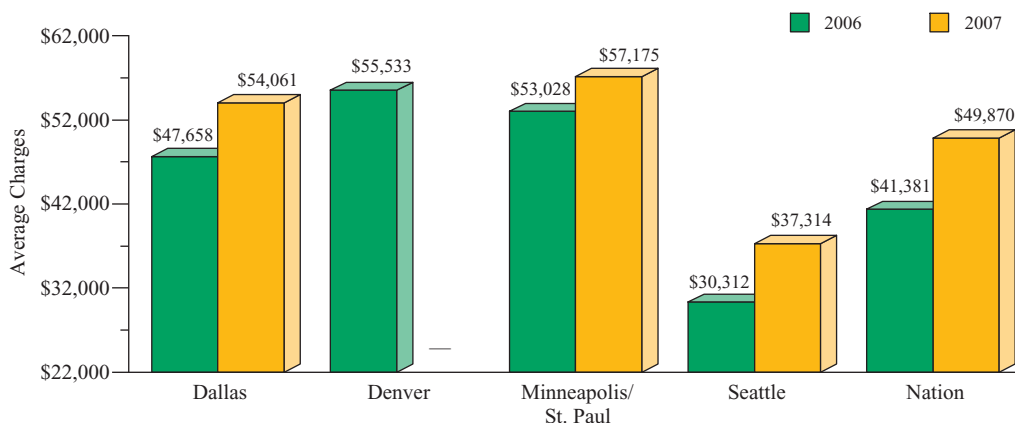
Average hospital inpatient charges per year for Type 2 diabetes patients increased between 2006 and 2007 for each of the four markets reporting data for both years. For example, Dallas's average annual hospital inpatient charges grew more than 10%, to \$54,061 in 2007 from \$47,658 in 2006.

\* Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

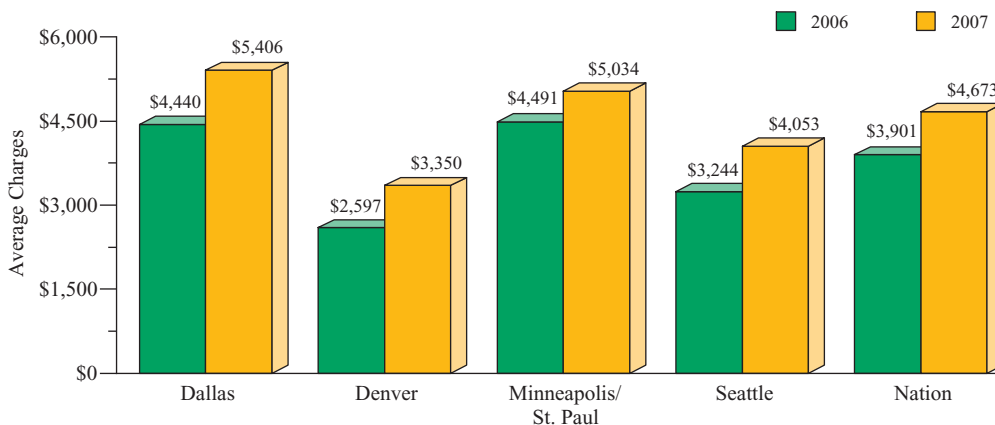
**E1: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS\***

MARKET	Emergency Room		Hospital Inpatient		Hospital Outpatient	
	2006	2007	2006	2007	2006	2007
Dallas	\$1,232	\$1,448	\$47,658	\$54,061	\$4,440	\$5,406
Denver	1,433	951	55,533	—	2,597	3,350
Minneapolis/ St. Paul	1,614	1,958	53,028	57,175	4,491	5,034
Seattle	2,013	2,398	30,312	37,314	3,244	4,053
NATION	\$1,299	\$1,651	\$41,381	\$49,870	\$3,901	\$4,673

**E2: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS\***



**E3: HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS\***



NOTE: Hospital charge data were unavailable for the Boston MSA.

Data source: Verispan LLC © 2008



## E4: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER\*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2006	2007	2006	2007	2006	2007
Dallas	\$37,462	\$42,746	\$40,027	\$55,165	\$52,483	\$58,997
Denver	32,025	—	—	—	34,651	—
Minneapolis/ St. Paul	43,095	48,666	48,259	60,267	58,182	58,665
Seattle	25,554	32,530	31,639	42,124	32,134	37,292
NATION	\$36,468	\$43,606	\$37,917	\$47,039	\$41,689	\$48,839

## INPATIENT CHARGES RISE SHARPLY FOR MEDICAID PATIENTS

Between 2006 and 2007, average hospital inpatient charges generated by Type 2 patients with Medicaid coverage in the Dallas MSA jumped, to \$55,165 per year from \$40,027. Nationwide, inpatient charges for Medicaid recipients increased 24.1% during this time, to \$47,039 from \$37,917. Meanwhile, average hospital outpatient charges generated by Dallas Type 2 diabetes patients with Medicaid coverage grew by a comparatively slight 4.8%, to \$4,449 from \$4,247 the previous year.

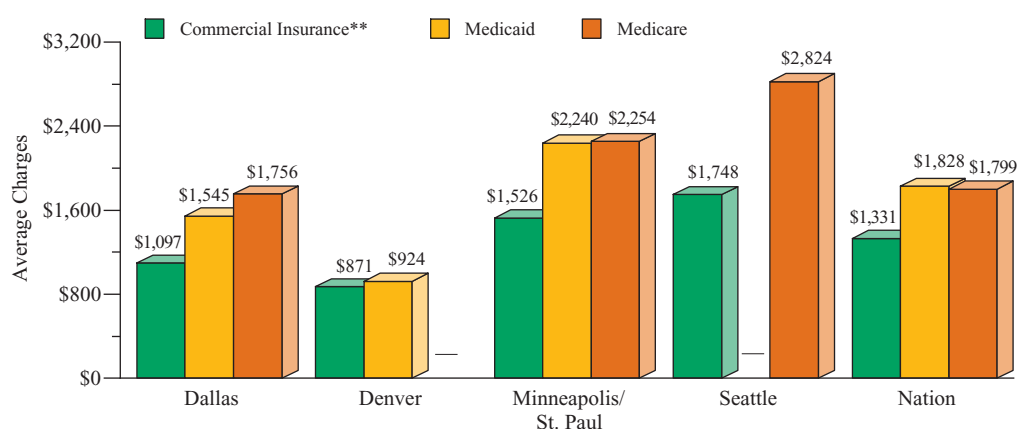
## E5: HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER\*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2006	2007	2006	2007	2006	2007
Dallas	\$3,367	\$4,162	\$4,247	\$4,449	\$5,561	\$7,169
Denver	2,119	2,667	2,684	—	3,174	—
Minneapolis/ St. Paul	3,896	4,590	3,476	3,894	4,737	5,270
Seattle	2,585	3,305	3,657	4,911	4,137	5,004
NATION	\$3,277	\$4,030	\$3,735	\$4,317	\$4,347	\$5,103

## ER CHARGES IN DALLAS AREA TRAIL NATIONAL AVERAGES

In 2007, ER charges per Type 2 diabetes patient in the Dallas MSA were lower than the national averages, regardless of payer type. For such patients covered by a commercial health plan, for example, such charges were significantly lower in Dallas (\$1,097) than nationally (\$1,331). For Medicaid recipients, charges for ER care in Dallas (\$1,545) were 15.5% lower than the national average (\$1,828) in 2007.

## E6: HOSPITAL EMERGENCY ROOM CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER, 2007\*



Data source: Verispan LLC © 2008

\* Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

\*\* Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.



# AUSTIN

**F1: DEMOGRAPHICS:  
AGE AND GENDER<sup>1</sup>**

AGE GROUP	Percentage of Patients			
	Austin			Texas
	2005	2006	2007	2007
0-17	0.4%	0.5%	0.3%	0.4%
18-35	6.6	6.5	6.1	4.4
36-64	70.9	71.4	68.9	56.0
65-79	18.4	17.9	20.3	30.2
80+	3.8	3.7	4.5	9.0
<b>GENDER</b>				
Male	38.4%	37.4%	36.9%	40.1%
Female	61.6	62.6	63.1	60.0

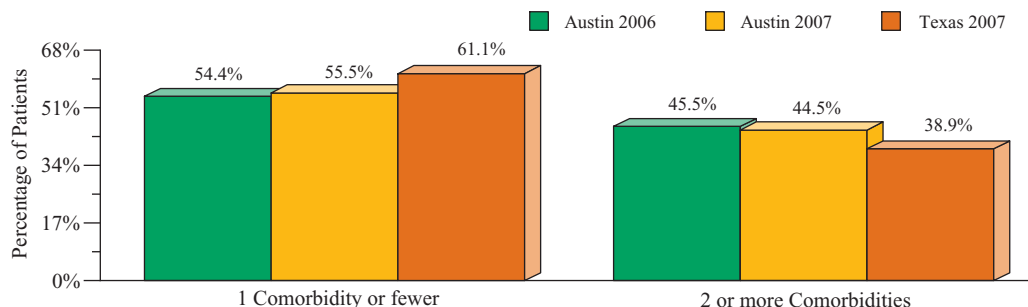
**F2: DEMOGRAPHICS:  
COMORBIDITIES AND COMPLICATIONS<sup>2,3</sup>**

COMORBIDITIES	Percentage of Patients			
	Austin			Texas
	2005	2006	2007	2007
0	23.6%	27.3%	28.8%	37.5%
1	27.3	27.1	26.7	23.6
2	37.8	36.3	35.2	29.9
>2	11.3	9.2	9.3	9.0
<b>COMPLICATIONS</b>				
0	62.4%	65.1%	62.7%	59.1%
1	26.7	25.5	26.5	28.3
2	8.4	7.3	8.3	9.6
>2	2.5	2.2	2.5	3.0

## GROWING SHARE OF PATIENTS HAS NO COMORBIDITIES

The percentage of Austin-area Type 2 diabetes patients who had no comorbidities edged up to 28.8% in 2007 from 27.3% in 2006. In spite of this rise, the Austin patient share remained 10 percentage points less than the overall Texas share of patients with no comorbidities (37.5%).

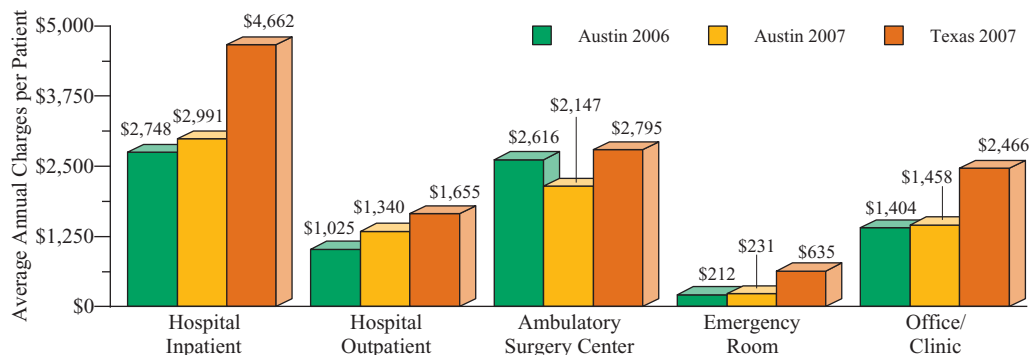
**F3: DEMOGRAPHICS: COMORBIDITIES<sup>3</sup>**



## PROFESSIONAL CHARGES REMAIN LOW IN AUSTIN MSA

In 2007, average professional charges for care delivered to Type 2 patients with commercial health plan coverage were sharply lower in Austin than statewide across all facility types profiled. For example, 2007 average professional charges for office/clinic services for such patients were 40% lower in Austin (\$1,458) than in Texas (\$2,466).

**F4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS<sup>5,7</sup>**



Data source: Verispan LLC © 2008

<sup>1</sup> On all pages, the percentages are representative of the universe of Type 2 diabetes patients on whom claims data have been collected in a given year.

<sup>2</sup> A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

<sup>3</sup> A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, congestive heart failure, coronary artery disease, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

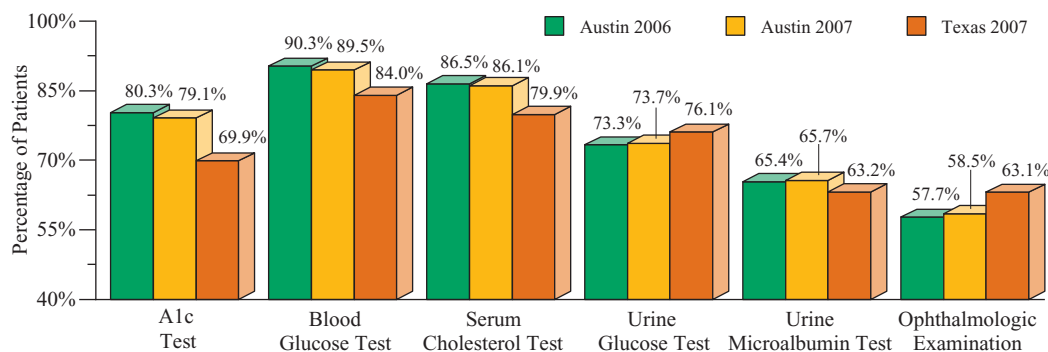
<sup>4</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>5</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

NOTE: Hospital charge data were unavailable for the Austin MSA in 2006 and 2007.



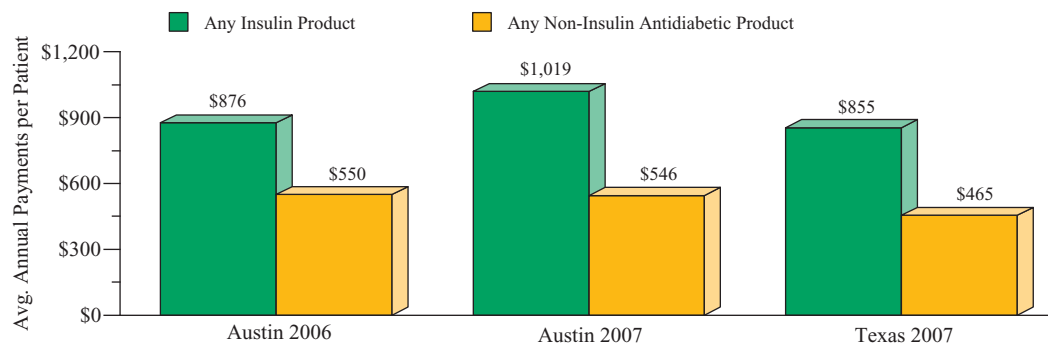
F5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE



## SHARE OF AUSTIN PATIENTS RECEIVING A1C TEST DECLINES

In 2007, 79.1% of Type 2 diabetes patients in the Austin MSA were administered an A1c test, down from 80.3% the year before. Despite the moderate decrease, the Austin A1c rate exceeded the statewide A1c rate (69.9%) by nearly 10 percentage points.

F6: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY



## USE OF LONG-ACTING INSULIN INCREASES

The percentage of Type 2 diabetes patients in the Austin MSA who used a long-acting insulin product increased slightly in 2007, to 19.4% from 18.1% in 2006. However, overall insulin use among Type 2 diabetes patients in Austin fell in 2007, to 34.3% of Type 2 patients from 34.8% in 2006. Statewide, 34.4% of Type 2 diabetes patients used any insulin product in 2007, and 17.1% used a long-acting insulin product.

F7: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Austin 2006	34.8%	\$876	2.5%	\$296	18.1%	\$546	14.8%	\$628	5.6%	\$655
Austin 2007	34.3	1,019	2.1	264	19.4	641	14.8	683	5.4	665
Texas 2007	34.4	855	3.9	321	17.1	589	12.9	561	8.7	660

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

### Biguanides

Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

### Sulfonylureas

Stimulate the release of insulin in the pancreas.

### Insulin Sensitizing Agents

Improve response to insulin in liver, adipose tissue, and skeletal muscle, resulting in decreased production of glucose by the liver and increased peripheral uptake and use of circulating glucose.

F8: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Austin 2006	82.7%	\$550	44.6%	\$128	28.9%	\$104	33.2%	\$878
Austin 2007	83.7	546	44.7	99	29.8	87	26.2	927
Texas 2007	83.5	465	46.1	92	33.1	85	22.5	851

Data source: Verispan LLC © 2008





## G1: DEMOGRAPHICS: AGE AND GENDER<sup>1</sup>

AGE GROUP	Percentage of Patients			
	Dallas			Texas
	2005	2006	2007	2007
0-17	0.6%	0.5%	0.4%	0.4%
18-35	4.9	4.6	4.2	4.4
36-64	59.8	56.8	54.2	56.0
65-79	27.6	29.9	31.8	30.2
80+	7.2	8.2	9.4	9.0
<b>GENDER</b>				
Male	39.9%	38.6%	38.5%	40.1%
Female	60.1	61.4	61.5	60.0

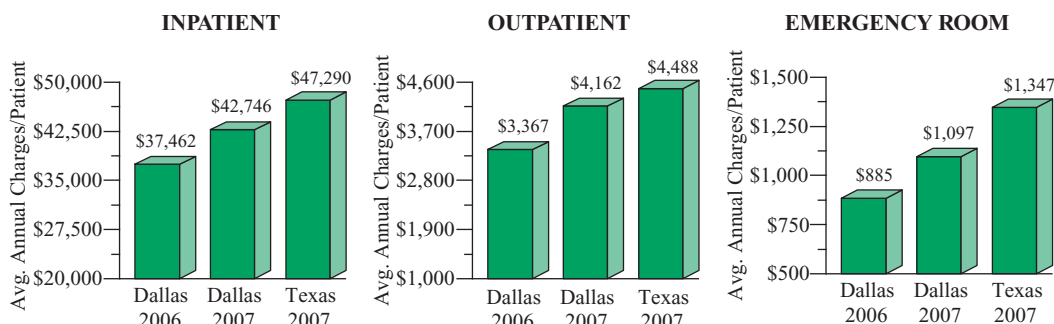
## G2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS<sup>2,3</sup>

COMORBIDITIES	Percentage of Patients			
	Dallas			Texas
	2005	2006	2007	2007
0	29.3%	35.8%	39.6%	37.5%
1	24.1	23.6	22.6	23.6
2	33.9	30.5	28.0	29.9
>2	12.8	10.1	9.8	9.0
<b>COMPLICATIONS</b>				
0	57.1%	60.3%	57.7%	59.1%
1	29.0	27.6	28.4	28.3
2	10.4	9.2	10.4	9.6
>2	3.6	2.9	3.5	3.0

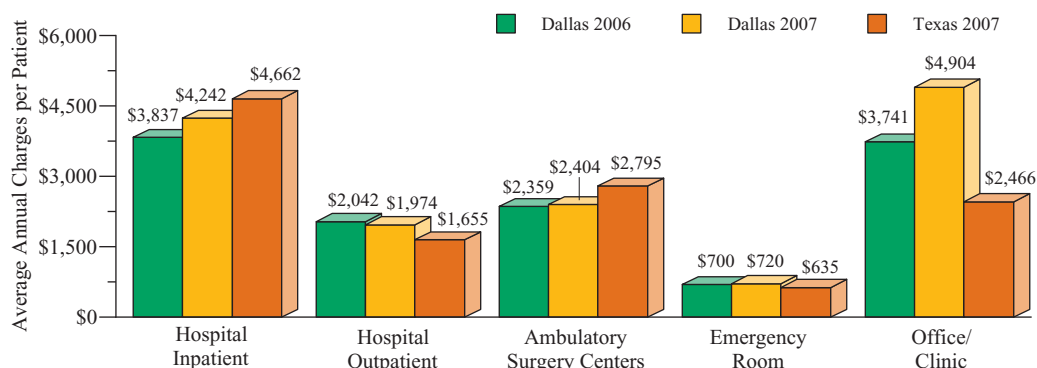
## LARGER SHARE OF DALLAS PATIENTS IS COMORBIDITY-FREE

Of all Type 2 diabetes patients in the Dallas MSA, 39.6% were without a diagnosed comorbidity in 2007, up from 35.8% in 2006 and from 29.3% in 2005 (see table G2). A higher percentage of Type 2 diabetes patients in Dallas (13.9%) had two or more complications from this disease than did such patients in Texas (12.6%).

## G3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS<sup>4,5</sup>



## G4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS<sup>5,6</sup>



## HOSPITAL INPATIENT CHARGES CLIMB FOR DALLAS PATIENTS

Average annual hospital inpatient charges for Type 2 diabetes patients in Dallas with commercial insurance payers grew 14.1%, to \$42,746 from \$37,462 in 2006. Still, these charges were notably lower than the statewide average (\$47,290) in 2007. Average professional office charges for commercially insured Type 2 diabetes patients were nearly twice as high in Dallas (\$4,904) as in Texas (\$2,466).

Data source: Verispan LLC © 2008

<sup>1</sup> On all pages, the percentages are representative of the universe of Type 2 diabetes patients on whom claims data have been collected in a given year.

<sup>2</sup> A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

<sup>3</sup> A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, congestive heart failure, coronary artery disease, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

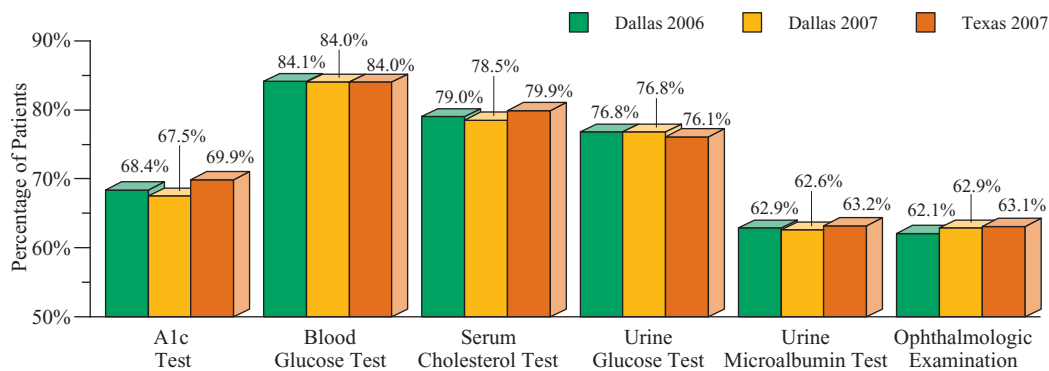
<sup>4</sup> Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

<sup>5</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>6</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.



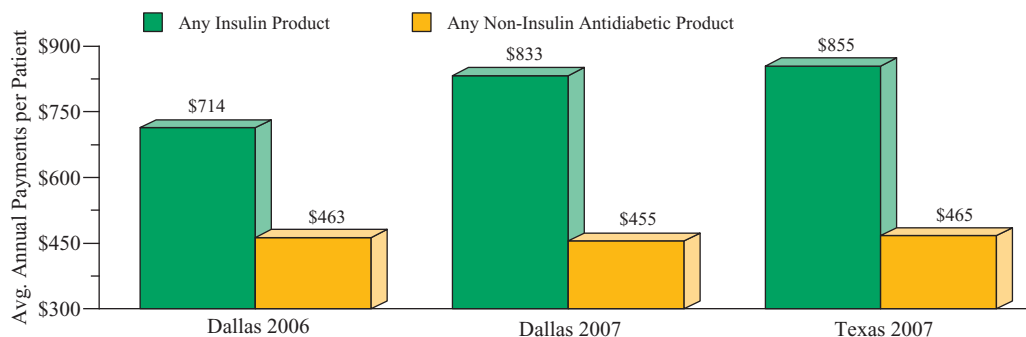
**G5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE**



## DALLAS A1C PATIENT TEST SHARE TRAILS THE STATE OF TEXAS

In 2007, the share of Type 2 diabetes patients in Dallas who received an A1c test was 67.5%, down slightly from 68.4% in 2006 (G5). Statewide, 69.9% of Type 2 diabetes patients were administered at least one A1c test, down fractionally from 70.1% the year before.

**G6: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY**



## NON-INSULIN COSTS DECLINE FOR DALLAS TYPE 2 PATIENTS

Average costs per Type 2 diabetes patient per year in the Dallas MSA for any non-insulin antidiabetic product fell slightly in 2007, to \$455 from \$463 in 2006. During the same period, any insulin product costs for these Type 2 diabetes patients climbed, to \$833 from \$714 the prior year. In spite of this increase, insulin costs remained higher for Type 2 diabetes patients statewide (\$855) in 2007.

**G7: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES**

	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Dallas 2006	33.0%	\$714	4.8%	\$296	13.4%	\$512	12.3%	\$468	10.6%	\$582
Dallas 2007	34.4	833	4.0	333	15.7	584	13.1	535	10.1	670
Texas 2007	34.4	855	3.9	321	17.1	589	12.9	561	8.7	660

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

**G8: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES**

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Dallas 2006	82.3%	\$463	47.1%	\$121	34.2%	\$102	27.8%	\$819
Dallas 2007	82.3	455	47.9	93	33.1	84	21.9	845
Texas 2007	83.5	465	46.1	92	33.1	85	22.5	851

Data source: Verispan LLC © 2008

### Biguanides

Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

### Sulfonylureas

Stimulate the release of insulin in the pancreas.

### Insulin Sensitizing Agents

Improve response to insulin in liver, adipose tissue, and skeletal muscle, resulting in decreased production of glucose by the liver and increased peripheral uptake and use of circulating glucose.



# EL PASO

**H1: DEMOGRAPHICS:  
AGE AND GENDER<sup>1</sup>**

AGE GROUP	Percentage of Patients			
	El Paso			Texas
	2005	2006	2007	2007
0-17	0.6%	0.5%	0.6%	0.4%
18-35	5.9	5.1	5.9	4.4
36-64	58.8	53.9	54.5	56.0
65-79	27.4	31.7	29.5	30.2
80+	7.3	8.9	9.5	9.0
<b>GENDER</b>				
Male	39.0%	41.3%	41.8%	40.1%
Female	61.0	58.7	58.2	60.0

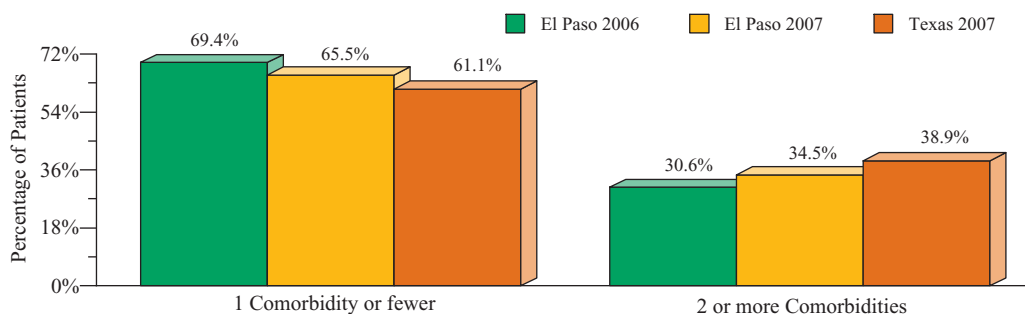
**H2: DEMOGRAPHICS:  
COMORBIDITIES AND COMPLICATIONS<sup>2,3</sup>**

COMORBIDITIES	Percentage of Patients			
	El Paso			Texas
	2005	2006	2007	2007
0	40.9%	44.2%	39.4%	37.5%
1	25.0	25.2	26.1	23.6
2	26.6	24.9	27.7	29.9
>2	7.5	5.7	6.8	9.0
<b>COMPLICATIONS</b>				
0	65.3%	69.8%	65.2%	59.1%
1	24.6	21.5	24.9	28.3
2	7.9	7.0	7.9	9.6
>2	2.2	1.7	2.0	3.0

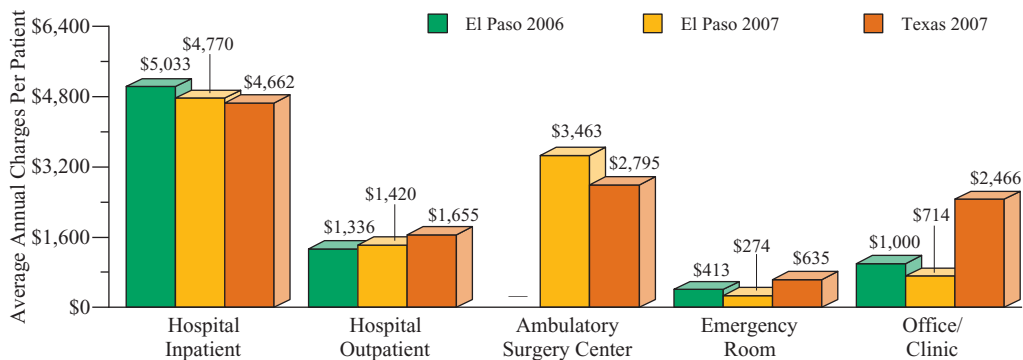
## PATIENT SHARE WITH 2+ COMORBIDITIES RISES IN EL PASO

The percentage of Type 2 diabetes patients in the El Paso MSA with two or more diagnosed comorbidities grew to 34.5% in 2007 from 30.6% in 2006 (H3). By comparison, a moderately larger share of Type 2 diabetes patients in the state of Texas (38.9%) were diagnosed with at least two comorbidities in 2007.

**H3: DEMOGRAPHICS: COMORBIDITIES<sup>3</sup>**



**H4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS,  
COMMERCIAL INSURANCE PAYERS<sup>5,6</sup>**



Data source: Verispan LLC © 2008

## OFFICE PROVIDER COSTS ARE LOW FOR EL PASO PATIENTS

Average professional office charges for care delivered to Type 2 diabetes patients in El Paso with commercial insurance coverage dropped notably in 2007, to \$714 from \$1,000 in 2006. Such charges were substantially less than the statewide average of \$2,466 in 2007.

NOTE: Hospital charge data were unavailable for the El Paso MSA in 2006 and 2007.

<sup>1</sup> On all pages, the percentages are representative of the universe of Type 2 diabetes patients on whom claims data have been collected in a given year.

<sup>2</sup> A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

<sup>3</sup> A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, congestive heart failure, coronary artery disease, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

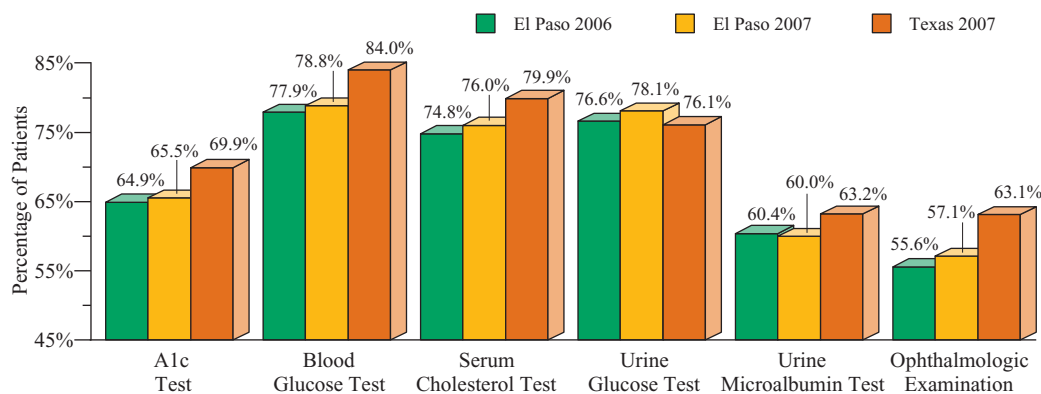
<sup>4</sup> Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

<sup>5</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>6</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.



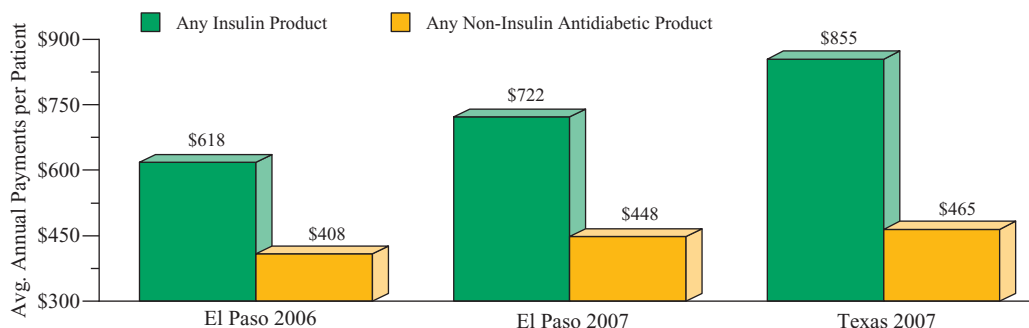
## H5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE



## LARGER SHARE OF EL PASO PATIENTS RECEIVES EYE EXAMS

The share of El Paso Type 2 diabetes patients receiving ophthalmologic exams rose moderately in 2007, to 57.1% from 55.6% in 2006 (H5), but still trailed the statewide average (63.1%) by six percentage points. With the exception of urine glucose tests, the shares of Type 2 diabetes patients receiving at least one test per year was lower in El Paso than in Texas in every utilization category profiled.

## H6: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY



## PER-PATIENT INSULIN COSTS ARE LOW IN THE EL PASO MSA

Insulin treatment costs per Type 2 diabetes patient per year in the El Paso MSA were \$722, up notably from \$618 in 2006. However, these patients paid considerably less for insulin therapy, on average, than their counterparts across the state of Texas (\$855, up from \$736 the previous year).

## H7: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
El Paso 2006	29.2%	\$618	4.3%	\$255	13.7%	\$497	9.0%	\$447	11.0%	\$480
El Paso 2007	29.1	722	2.7	254	16.2	512	8.7	535	9.8	580
Texas 2007	34.4	855	3.9	321	17.1	589	12.9	561	8.7	660

NOTE: A1c tests measure how much glucose has been in the blood during the past 3-4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

## H8: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
El Paso 2006	86.6%	\$408	48.6%	\$103	35.0%	\$95	27.5%	\$701
El Paso 2007	88.1	448	49.3	80	34.4	82	24.4	756
Texas 2007	83.5	465	46.1	92	33.1	85	22.5	851

Data source: Verispan LLC © 2008

### Biguanides

Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

### Sulfonylureas

Stimulate the release of insulin in the pancreas.

### Insulin Sensitizing Agents

Improve response to insulin in liver, adipose tissue, and skeletal muscle, resulting in decreased production of glucose by the liver and increased peripheral uptake and use of circulating glucose.



# FT. WORTH/ARLINGTON

## 11: DEMOGRAPHICS: AGE AND GENDER<sup>1</sup>

AGE GROUP	Percentage of Patients			
	Ft. Worth/Arlington			Texas
	2005	2006	2007	2007
0-17	0.8%	0.8%	0.4%	0.4%
18-35	5.1	5.1	4.9	4.4
36-64	63.2	60.4	59.3	56.0
65-79	24.6	26.5	27.5	30.2
80+	6.3	7.3	7.9	9.0
<b>GENDER</b>				
Male	41.4%	41.5%	41.1%	40.1%
Female	58.6	58.5	58.9	60.0

## 12: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS<sup>2,3</sup>

COMORBIDITIES	Percentage of Patients			
	Ft. Worth/Arlington			Texas
	2005	2006	2007	2007
0	24.0%	27.6%	29.2%	37.5%
1	24.8	24.9	25.2	23.6
2	38.2	36.5	35.0	29.9
>2	13.1	11.1	10.7	9.0
<b>COMPLICATIONS</b>				
0	54.8%	57.4%	55.2%	59.1%
1	30.0	28.8	29.1	28.3
2	11.4	10.0	11.5	9.6
>2	3.8	3.8	4.2	3.0

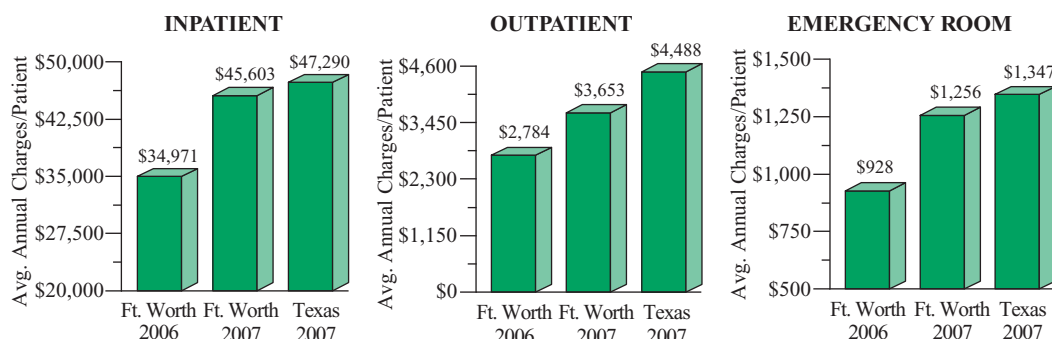
## COMPLICATION-FREE FT. WORTH PATIENT SHARE DECREASES

The share of patients in the Ft. Worth/Arlington MSA diagnosed with Type 2 diabetes and no complications from the disease dropped in 2007, to 55.2% from 57.4% in 2006 (12). Conversely, the share of these same Type 2 diabetes patients with two or more diagnosed complications from the disease was 15.7%, notably higher than the Texas mark (12.6%).

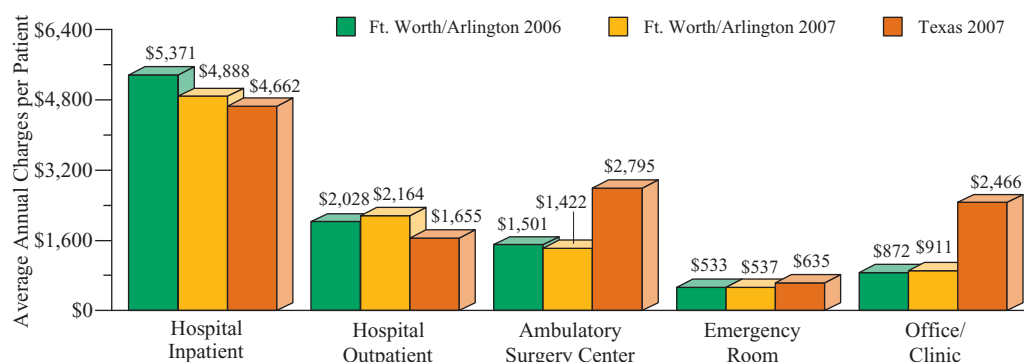
## FT. WORTH HOSPITAL INPATIENT CHARGES DECLINE SHARPLY

Average professional inpatient charges for Type 2 diabetes patients in the Ft. Worth/Arlington MSA with commercial insurance decreased in 2007, to \$4,888 from \$5,371 in 2006 and from \$5,572 in 2005. However, these charges continued to exceed the statewide average (to \$4,662 from \$4,448 the previous year) by more than \$200.

## 13: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS<sup>4,5</sup>



## 14: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS<sup>5,6</sup>



<sup>1</sup> On all pages, the percentages are representative of the universe of Type 2 diabetes patients on whom claims data have been collected in a given year.

Data source: Verispan LLC © 2008

<sup>2</sup> A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

<sup>3</sup> A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, congestive heart failure, coronary artery disease, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

<sup>4</sup> Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

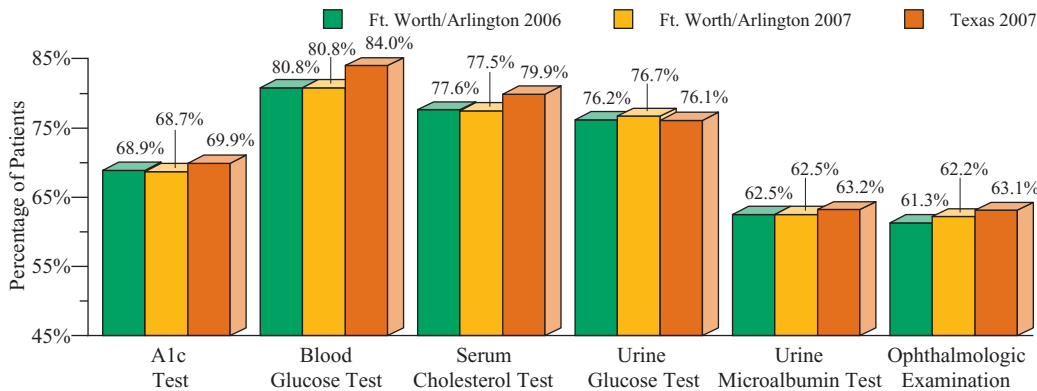
<sup>5</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>6</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.





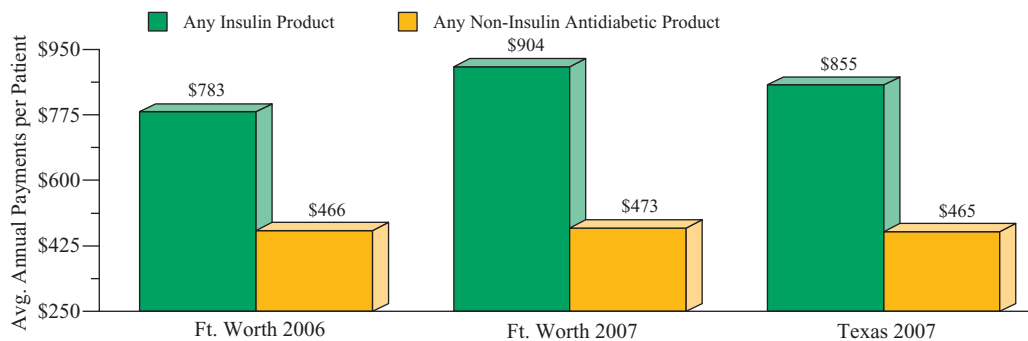
**15: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE**



## FT. WORTH PATIENTS ARE LESS LIKELY TO RECEIVE SERVICES

Patients diagnosed with Type 2 diabetes in the Ft. Worth/Arlington MSA were less likely than Type 2 diabetes patients across the state of Texas to receive any of six profiled services (15). For example, 68.7% of Type 2 diabetes patients in the Ft. Worth/Arlington MSA underwent A1c testing in 2007, compared with 69.9% of such patients statewide.

**16: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY**



## PER-PATIENT INSULIN COSTS CLIMB IN FT. WORTH/ARLINGTON

Type 2 diabetes patients in the Ft. Worth/Arlington MSA paid on average \$904 per year for insulin therapy in 2007, up considerably from \$783 in 2006. Non-insulin costs also increased for Type 2 diabetes patients in Ft. Worth/Arlington over this period, to \$473 from \$466 the previous year.

**17: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES**

	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Ft. Worth 2006	33.1%	\$783	3.8%	\$292	15.7%	\$548	13.0%	\$543	8.6%	\$590
Ft. Worth 2007	33.3	904	3.2	327	17.3	628	13.6	612	7.5	662
Texas 2007	34.4	855	3.9	321	17.1	589	12.9	561	8.7	660

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

**18: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES**

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Ft. Worth 2006	83.1%	\$466	47.8%	\$118	34.3%	\$98	28.5%	\$830
Ft. Worth 2007	83.3	473	47.2	91	32.3	84	22.2	887
Texas 2007	83.5	465	46.1	92	33.1	85	22.5	851

### Biguanides

Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

### Sulfonylureas

Stimulate the release of insulin in the pancreas.

### Insulin Sensitizing Agents

Improve response to insulin in liver, adipose tissue, and skeletal muscle, resulting in decreased production of glucose by the liver and increased peripheral uptake and use of circulating glucose.

Data source: Verispan LLC © 2008



# HOUSTON

**J1: DEMOGRAPHICS:  
AGE AND GENDER<sup>1</sup>**

AGE GROUP	Percentage of Patients			
	Houston			Texas
	2005	2006	2007	2007
0-17	0.4%	0.4%	0.4%	0.4%
18-35	5.3	5.5	5.0	4.4
36-64	66.4	63.8	59.6	56.0
65-79	22.3	24.0	26.6	30.2
80+	5.5	6.3	8.5	9.0
<b>GENDER</b>				
Male	39.2%	37.3%	37.6%	40.1%
Female	60.8	62.7	62.5	60.0

**J2: DEMOGRAPHICS:  
COMORBIDITIES AND COMPLICATIONS<sup>2,3</sup>**

COMORBIDITIES	Percentage of Patients			
	Houston			Texas
	2005	2006	2007	2007
0	29.9%	36.6%	38.2%	37.5%
1	23.9	23.1	23.3	23.6
2	33.8	30.1	28.6	29.9
>2	12.4	10.2	10.0	9.0
<b>COMPLICATIONS</b>				
0	57.4%	60.0%	57.5%	59.1%
1	29.8	28.2	29.3	28.3
2	9.8	9.0	10.2	9.6
>2	3.1	2.7	3.1	3.0

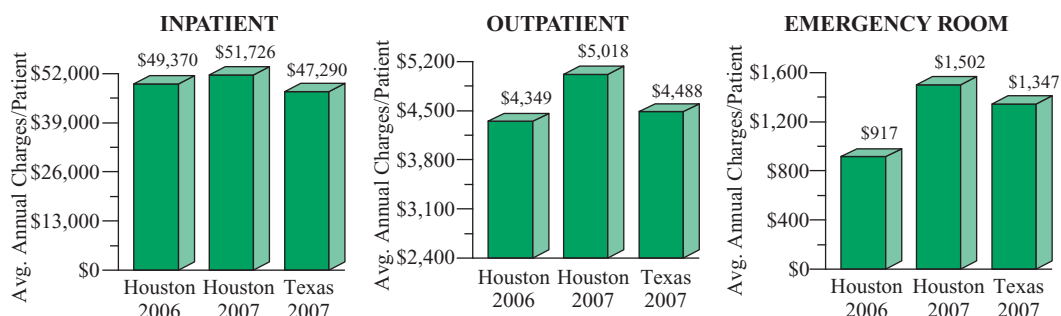
## HOUSTON WORKING AGE TYPE 2 DIABETES PATIENT SHARE FALLS

The share of patients diagnosed with Type 2 diabetes in the Houston MSA who were between 18 and 64 years of age declined in 2007, to 64.6% from 69.3% in 2006, yet still exceeded the corresponding rate across the state of Texas (60.4%) (J1). Meanwhile, the share of Houston Type 2 diabetes patients with two or more complications from the disease likewise exceeded the statewide average (13.3% vs. 12.6%).

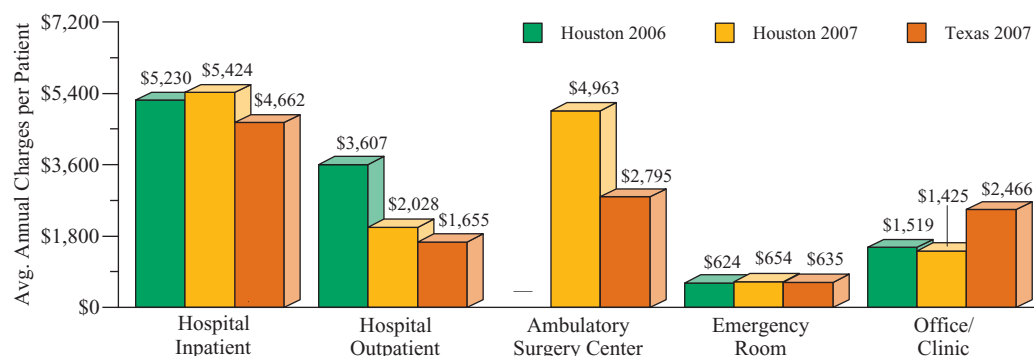
## PROFESSIONAL OFFICE CHARGES ARE HIGHEST IN HOUSTON

With the exception of office visits, professional charges are higher in Houston than in Texas for commercially insured type 2 diabetes patients in every patient setting profiled in 2007. For example, hospital charges per Type 2 diabetes patient per year were higher in Houston than Dallas for inpatient and outpatient hospital settings alike.

**J3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS,  
COMMERCIAL INSURANCE PAYERS<sup>4,5</sup>**



**J4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS,  
COMMERCIAL INSURANCE PAYERS<sup>5,6</sup>**



<sup>1</sup> On all pages, the percentages are representative of the universe of Type 2 diabetes patients on whom claims data have been collected in a given year.

Data source: Verispan LLC © 2008

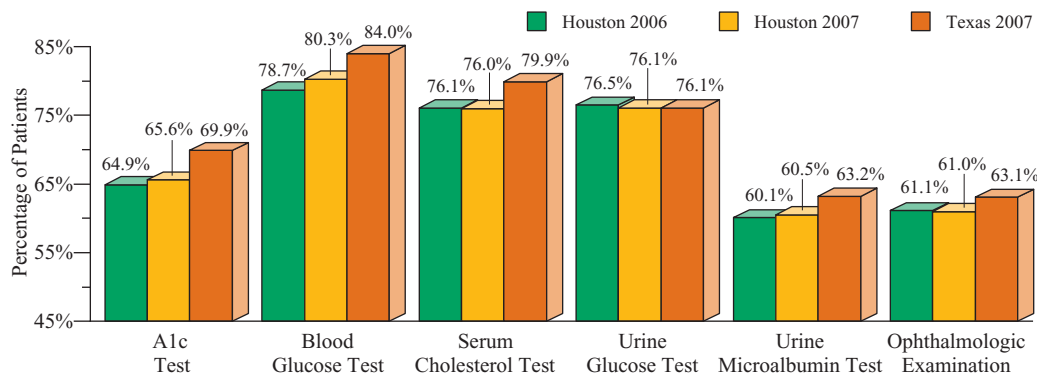
<sup>2</sup> A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

<sup>3</sup> A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, congestive heart failure, coronary artery disease, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

<sup>4</sup> Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

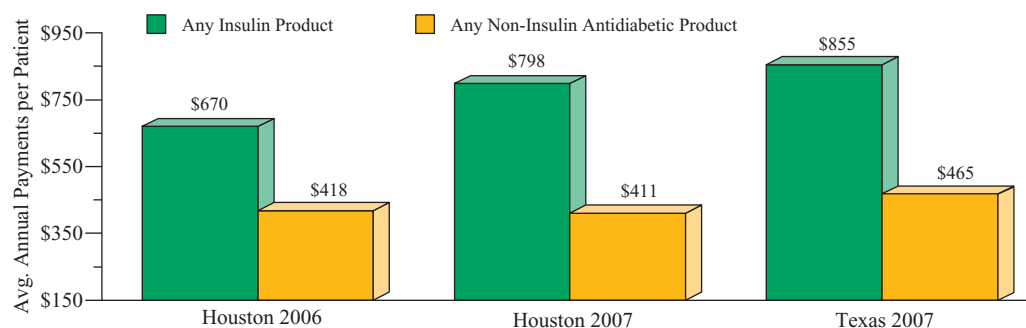
<sup>5</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>6</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

**J5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE**

## HOUSTON DIABETES SERVICES SHARES TRAIL STATE AVERAGE

The shares of patients diagnosed with Type 2 diabetes who received various services for the disease in 2007 were lower in the Houston MSA than across the state of Texas for every service profiled, with one exception: State and Houston averages for patients receiving at least one urine glucose test were both at 76.1% (J5).

**J6: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY**

## TEXAS PER-PATIENT INSULIN PAYMENTS TOP HOUSTON RATES

Although average annual payments per Houston Type 2 diabetes patient per year for any insulin product rose, to \$798 from \$670 in 2006, the ratio still trailed the statewide average for this measure (\$855) (J6). Type 2 diabetes patients across the state of Texas likewise had higher non-insulin antidiabetic product payments than than their Houston counterparts (\$465 vs. \$411).

**J7: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES**

	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Houston 2006	31.8%	\$670	4.5%	\$272	15.2%	\$472	11.3%	\$501	7.2%	\$525
Houston 2007	33.1	798	4.2	276	16.6	553	11.8	567	7.1	579
Texas 2007	34.4	855	3.9	321	17.1	589	12.9	561	8.7	660

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

**J8: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES**

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Houston 2006	84.2%	\$418	46.1%	\$118	34.4%	\$96	27.1%	\$710
Houston 2007	84.4	411	47.4	94	33.3	81	20.3	759
Texas 2007	83.5	465	46.1	92	33.1	85	22.5	851

Data source: Verispan LLC © 2008

### Biguanides

Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

### Sulfonylureas

Stimulate the release of insulin in the pancreas.

### Insulin Sensitizing Agents

Improve response to insulin in liver, adipose tissue, and skeletal muscle, resulting in decreased production of glucose by the liver and increased peripheral uptake and use of circulating glucose.



# SAN ANTONIO

**K1: DEMOGRAPHICS:  
AGE AND GENDER<sup>1</sup>**

AGE GROUP	Percentage of Patients			
	San Antonio			Texas
	2005	2006	2007	2007
0-17	0.5%	0.5%	0.5%	0.4%
18-35	4.4	4.6	4.1	4.4
36-64	56.1	57.0	51.3	56.0
65-79	30.1	31.8	32.9	30.2
80+	8.8	11.0	11.3	9.0
<b>GENDER</b>				
Male	39.0%	38.9%	39.0%	40.1%
Female	61.0	61.1	61.1	60.0

**K2: DEMOGRAPHICS:  
COMORBIDITIES AND COMPLICATIONS<sup>2,3</sup>**

COMORBIDITIES	Percentage of Patients			
	San Antonio			Texas
	2005	2006	2007	2007
0	32.3%	36.6%	38.7%	37.5%
1	23.5	22.9	23.7	23.6
2	33.0	31.2	29.0	29.9
>2	11.3	9.4	8.6	9.0
<b>COMPLICATIONS</b>				
0	55.0%	56.3%	54.5%	59.1%
1	31.1	30.5	30.9	28.3
2	10.5	10.3	11.3	9.6
>2	3.4	3.0	3.3	3.0

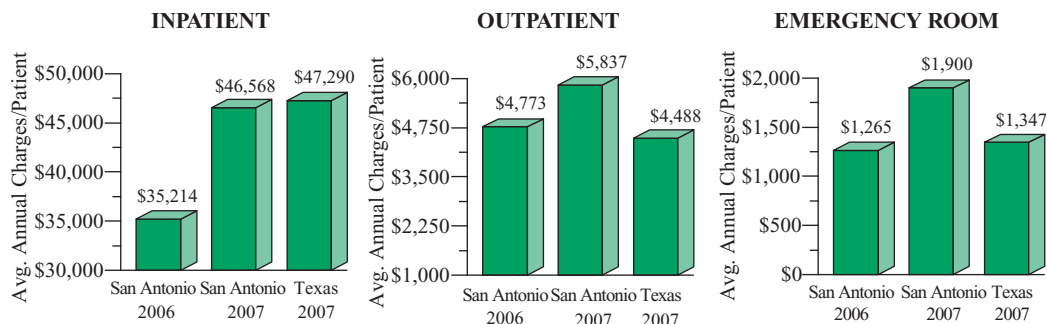
## SHARE OF OLDEST PATIENTS IN SAN ANTONIO INCREASES

The share of all patients diagnosed with Type 2 diabetes in the San Antonio MSA who were 65 years of age or older rose in 2007, to 44.2% from 42.8% in 2006, higher than their counterparts statewide (39.2%) (See table K1). Of the seven Texas markets listed, this San Antonio oldest Type 2 diabetes patient share was the highest.

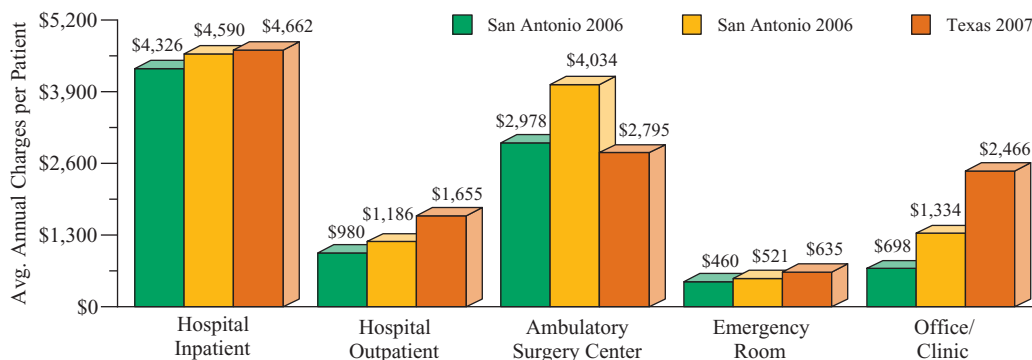
## HIGH COMPLICATION PATIENT SHARE FALLS IN SAN ANTONIO

Between 2006 and 2007, the share of patients diagnosed with Type 2 diabetes in San Antonio who had two or more comorbidities declined (to 37.6% from 40.6%). Conversely, the share of Type 2 diabetes patients in this MSA who had two or more complications from the disease increased during this period (to 14.6% from 13.3%), notably exceeding the statewide share (12.6%).

**K3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS<sup>4,5</sup>**



**K4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS<sup>5,6</sup>**



<sup>1</sup> On all pages, the percentages are representative of the universe of Type 2 diabetes patients on whom claims data have been collected in a given year.

Data source: Verispan LLC © 2008

<sup>2</sup> A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

<sup>3</sup> A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, congestive heart failure, coronary artery disease, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

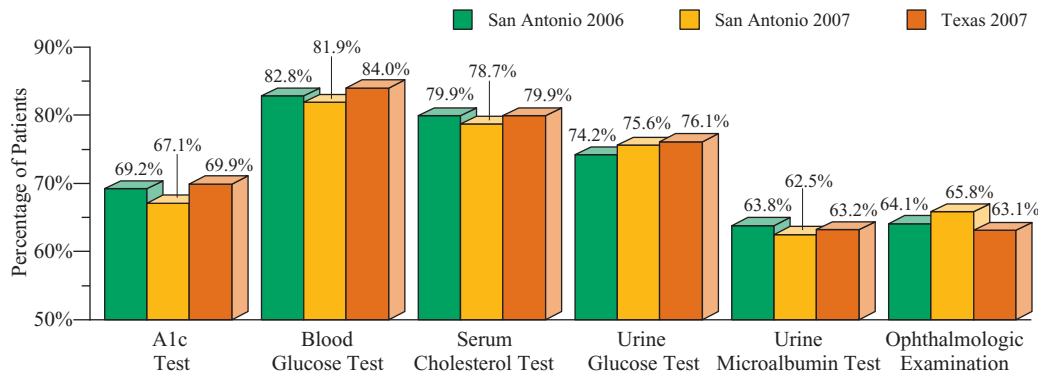
<sup>4</sup> Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

<sup>5</sup> Includes commercial insurance companies, Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

<sup>6</sup> Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.



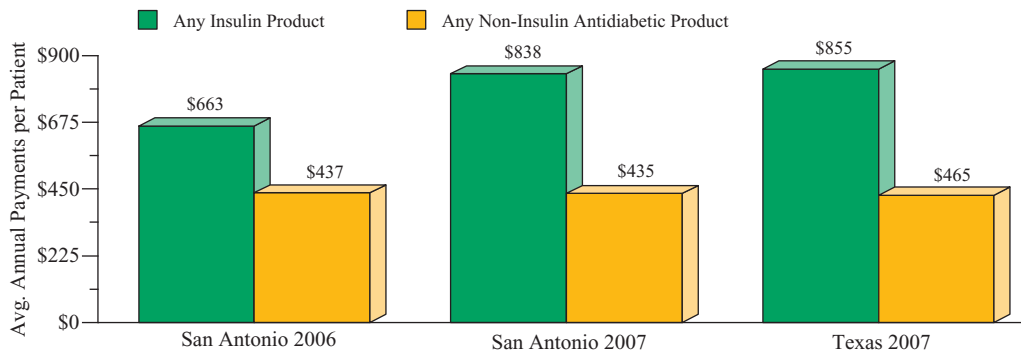
**K5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE**



## A1C TYPE 2 DIABETES PATIENT SHARE DROPS IN SAN ANTONIO MSA

The share of San Antonio Type 2 diabetes patients who received at least one A1c test in 2007 declined, to 67.1% from 69.2% in 2006, more than two percentage points beneath the statewide average (69.9%) (K5). In 2007, the San Antonio patient share exceeded the statewide average in only one of six services profiled: ophthalmologic examinations (65.8% vs. 63.1%).

**K6: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY**



## SAN ANTONIO MSA PER-PATIENT INSULIN PAYMENT INCREASES

San Antonio per-Type 2 diabetes patient payments per year for any insulin product jumped, to \$838 from \$663 in 2006, yet still lagged behind the statewide average for this measure (\$855). The San Antonio per-Type 2 diabetes patient average payment for any non-insulin antidiabetic product also trailed the state average (\$435 vs. \$465).

**K7: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES**

	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
S.A. 2006	32.3%	\$663	4.5%	\$246	15.8%	\$443	11.1%	\$504	8.8%	\$563
S.A. 2007	34.6	838	4.5	302	18.8	577	13.1	553	8.6	664
Texas 2007	34.4	855	3.9	321	17.1	589	12.9	561	8.7	660

NOTE: A1c tests measure how much glucose has been in the blood during the past 3–4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

**K8: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES**

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
S.A. 2006	83.7%	\$437	46.2%	\$128	36.5%	\$96	27.9%	\$745
S.A. 2007	83.9	435	47.3	96	35.9	78	24.1	802
Texas 2007	83.5	465	46.1	92	33.1	85	22.5	851

Data source: Verispan LLC © 2008

### Biguanides

Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

### Sulfonylureas

Stimulate the release of insulin in the pancreas.

### Insulin Sensitizing Agents

Improve response to insulin in liver, adipose tissue, and skeletal muscle, resulting in decreased production of glucose by the liver and increased peripheral uptake and use of circulating glucose.





## Texas Business Group on Health

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## Data Methodology

Verispan generates data for this **Managed Care Digest Series**® newsletter using health care professional (837p) and institutional (837i) insurance claims, representing more than 5.5 million unique patients nationally in 2007 with a range of Type 2 diabetes diagnoses (250.00–250.92). Data from physicians of all specialties and from all hospital types are included.

Verispan also gathers data on prescription activity from the National Council for Prescription Drug Programs (NCPDP). Data for all disease states collected account for some 8 billion prescription claims annually, or more than 50% of the prescription universe. These prescription data represent the sampling of prescription activity from a variety of sources, including retail chains, mass merchandisers and pharmacy benefit managers, and come from a near census of more than 59,000 pharmacies in the U.S. Cash, mail-order, Medicaid, and third-party transactions are tracked.

### DATA INTEGRITY

Data arriving into Verispan are put through a rigorous process to ensure that data elements match to valid references, such as product codes, ICD-9 (diagnosis) and CPT-4 (procedure) codes, and provider and facility data.

Claims undergo a careful de-duplication process to ensure that when multiple, voided, or adjusted claims are assigned to a patient encounter, they are applied to the database, but only for a single, unique patient.

Through its patient encryption methods, Verispan creates a unique, random numerical identifier for every patient, and then strips away all patient-specific health information that is protected under the Health Insurance Portability and Accountability Act (HIPAA). The identifier allows Verispan to track disease-specific diagnosis and procedure activity across the various settings where patient care is provided (hospital inpatient, hospital outpatient, emergency rooms, clinics, doctors' offices and pharmacies), while protecting the privacy of each patient.