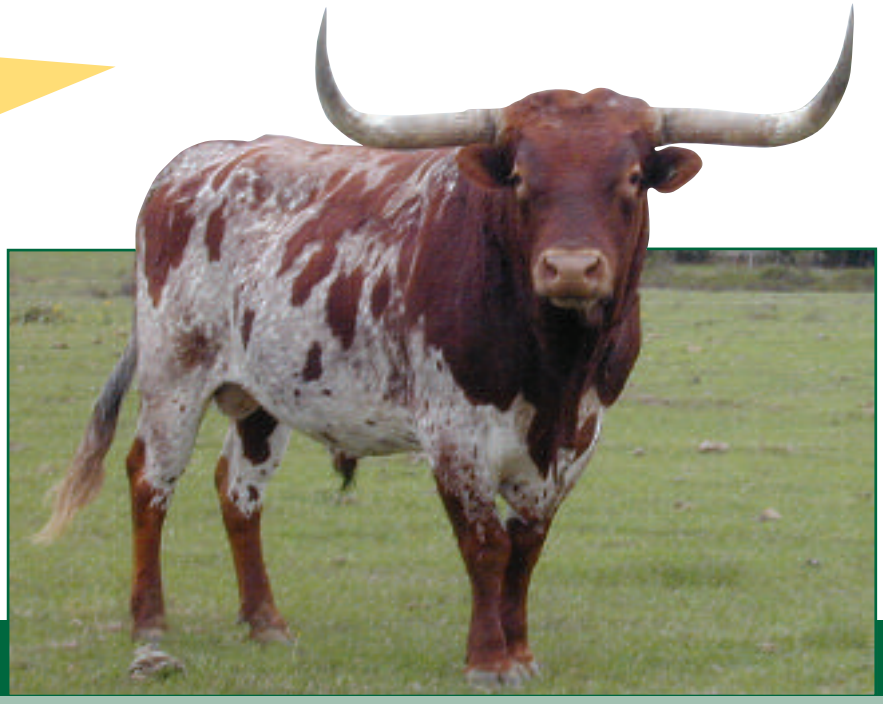
2010 TEXAS TYPE 2 DIABETES REPORT

SPECIAL FEATURE: MSA comparisons



Featuring Demographic, Utilization, Pharmacotherapy and Charge Data

Texas Business Group on Health

MANAGED CARE DIGEST SERIES®

Presented by

sanofi aventis

Because health matters

in partnership with

Texas Business Group on Health

www.tbgh.org

CONTENTS

www.tbgh.org

TBGH Members:
Bexar County
Brundage Management Co.
Chapman Shewe Benefits Consulting
City of Amarillo
City of Austin
City of Odessa
GlaxoSmithKline
H-E-B Grocery
Houston Metropolitan Transit Authority
Research & Planning Consultants
Texas Association of Counties
Travis County
Westlake Chemical Corporation
DFW Business Group on Health (126 Members)

Marianne Fazen, Ph.D. . .214-382-3036
fazen@dfwbgh.org
President & CEO
Texas Business Group on Health

Jean Berg 720-922-9451
jean.berg@sanofi-aventis.com
Employer National Account Manager, sanofi-aventis U.S. LLC

Dana McCormick
dana.mccormick@sanofi-aventis.com
Regional Account Manager, sanofi-aventis U.S. LLC

Kevin Womble
kevin.womble@sanofi-aventis.com
Regional Account Manager, sanofi-aventis U.S. LLC

Jim Listak
jim.listak@sanofi-aventis.com
Regional Account Manager, sanofi-aventis U.S. LLC

Managed Care Digest Series® 2010
Since 1987
www.managedcaredigest.com

Provided by
sanofi-aventis U.S. LLC
Bridgewater, NJ

Developed and produced by
Forte Information Resources LLC
Denver, CO
www.forteinformation.com

Data provided by
SDI, Plymouth Meeting, PA

Introduction

The Texas Business Group on Health (TBGH) is pleased to present the **Texas Type 2 Diabetes Report** for 2010, 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®**.

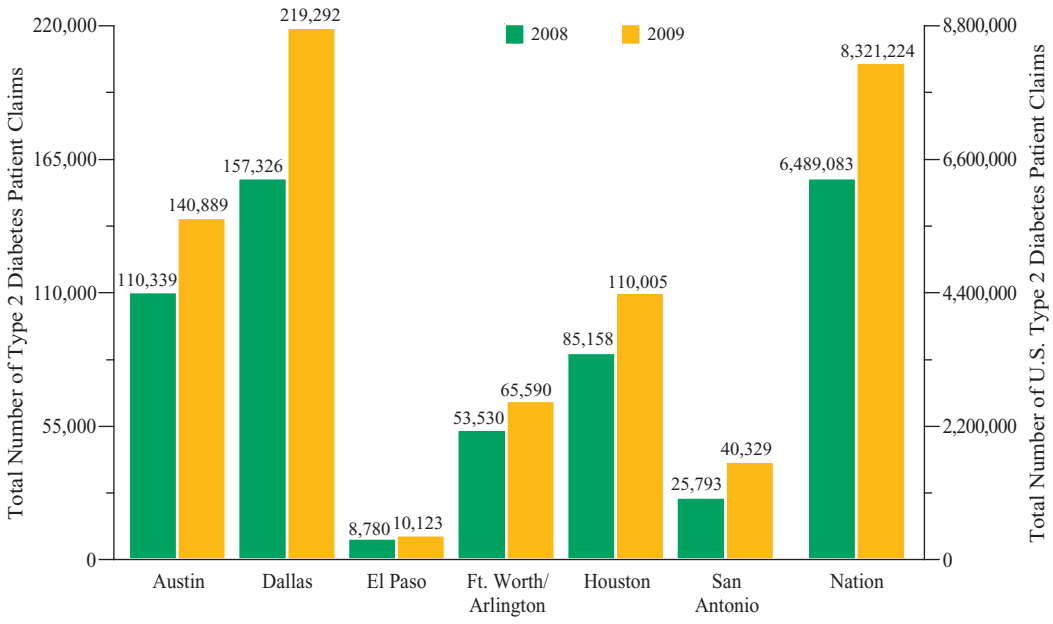
The **Texas Type 2 Diabetes Report** helps TBGH fulfill its mission of helping Texas employers play an active and enthusiastic role in collaboration with health plans, providers and purchasers; and of being a catalyst in promoting cost-effective delivery of quality health care to the benefit of the community.

This fifth 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. Type 2 diabetes is a chronic [lifelong] condition that affects the way the body metabolizes sugar [glucose], making diabetes patients resistant to the effects of the hormone insulin or unable to produce enough insulin to maintain a normal glucose level. TBGH chose Type 2 diabetes 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% to 7% of the U.S. population—have the Type 2 variety.

The data (covering 2008 through 2009) were gathered by SDI, Plymouth Meeting, Pa., a leading provider of innovative health care data products and analytic services. The data provide 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.

[1] Definition sources: National Institutes of Health and Mayo Foundation for Medical Education and Research.

A1: TOTAL NUMBER OF TYPE 2 DIABETES PATIENTS TRACKED IN THIS REPORT, BY MARKET



Data source: SDI © 2010

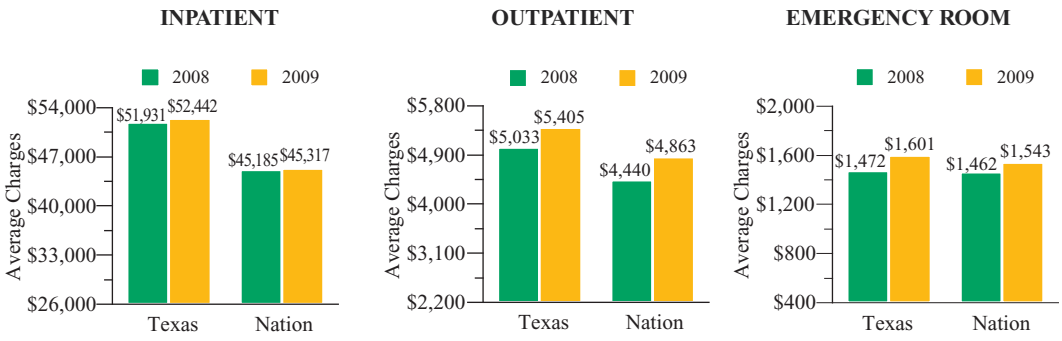
B1: DEMOGRAPHICS: AGE AND GENDER[1]

	Percentage of Patients					
	Texas			Nation		
AGE GROUP	2007	2008	2009	2007	2008	2009
0–17	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%
18–35	4.4	4.2	4.1	3.4	3.2	3.1
36–64	56.0	55.7	54.4	49.5	48.4	47.2
65–79	30.2	30.4	31.3	34.1	34.7	35.4
80+	9.0	9.2	9.8	12.7	13.4	13.9
GENDER						
Male	40.1%	40.5%	40.4%	44.9%	45.2%	45.4%
Female	60.0	59.5	59.6	55.1	54.8	54.7

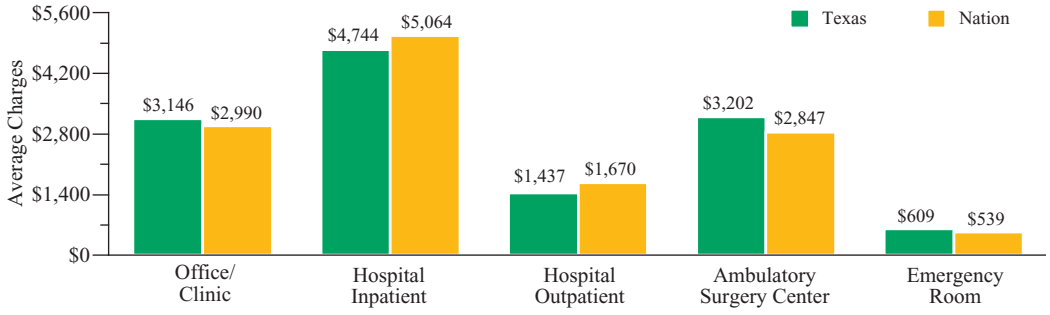
B2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS[2, 3]

	Percentage of Patients					
	Texas			Nation		
COMORBIDITIES	2007	2008	2009	2007	2008	2009
0	37.5%	37.9%	34.1%	46.7%	47.6%	46.0%
1	23.6	24.0	22.7	23.4	22.9	21.8
2	29.9	30.3	32.3	24.3	24.8	26.2
>2	9.0	7.8	10.9	5.5	4.7	6.1
COMPLICATIONS						
0	59.1%	58.5%	52.2%	62.5%	61.6%	58.5%
1	28.3	28.5	30.2	28.2	28.6	29.4
2	9.6	9.9	12.6	7.3	7.8	9.1
>2	3.0	3.2	5.0	2.0	2.1	2.9

B3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[4, 5]



B4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS, 2009 [5, 6]



Data source: SDI © 2010

[1] 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.

[2] 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.

[3] 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.

[4] Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

[5] Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

[6] Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

COMPLICATION RATES INCREASE FOR TEXAS TYPE 2 PATIENTS

The percentage of patients across the state of Texas who were diagnosed with Type 2 diabetes and had no complications from the disease fell notably in 2009, to 52.2% from 58.5% in 2008 (see table B2). As a result, the gap between the Texas share with no complications and the corresponding national rate (58.5%) increased to 6.3 percentage points. Over the same period, the share of Texas Type 2 diabetes patients with two or more diagnosed complications grew to 17.6% in 2009 from 13.1% the prior year.

TEXAS SERVICE UTILIZATION RATES TRAIL THE NATION

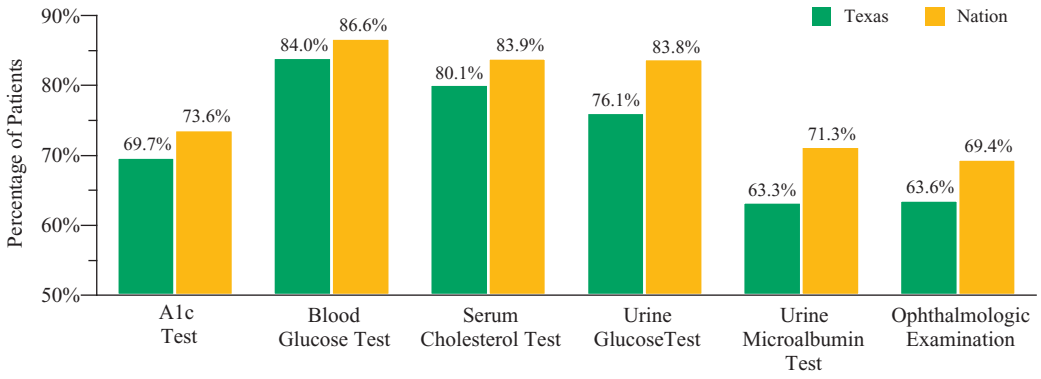
Patients diagnosed with Type 2 diabetes in the state of Texas reported lower service utilization rates than their national counterparts in all six utilization categories profiled in 2009 (see graph B5). For example, just 69.7% of Texas Type 2 diabetes patients received at least one A1c test in 2009, nearly four percentage points lower than the corresponding national average of 73.6%.

INSULIN RX FILL RATE IS LOW FOR TEXAS TYPE 2 PATIENTS

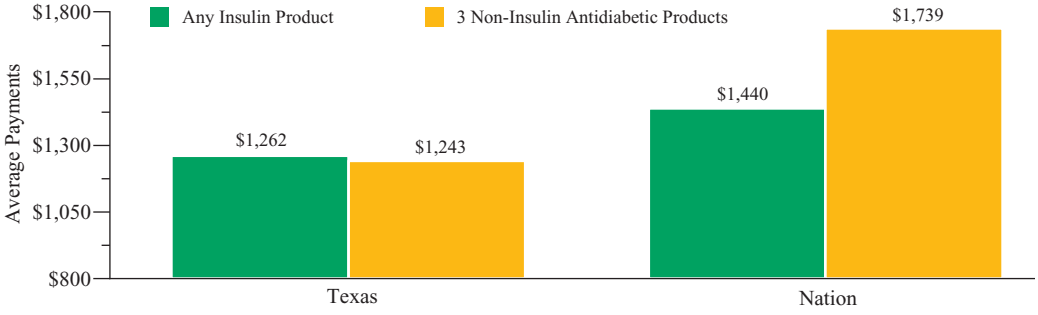
In 2009, the share of Texas Type 2 diabetes patients who filled prescriptions for any insulin product (35.0%) trailed the corresponding national average (36.4%). Similarly, patients diagnosed with Type 2 diabetes in Texas were also less likely to fill prescriptions for long-acting insulin pens (6.2% vs. 7.1%) and vials (14.0% vs. 15.4%) than such patients nationally (see table B7). In each of the five non-insulin antidiabetic product categories, Texas Type 2 diabetes patients were less apt to fill prescriptions than their counterparts nationally.

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

B5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE, 2009



B6: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY, 2009



B7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES, 2009

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Texas	35.0%	4.4%	9.9%	0.3%	3.2%	6.2%	14.0%	2.3%	6.6%
NATION	36.4%	5.4%	11.7%	0.4%	3.6%	7.1%	15.4%	2.5%	6.3%

B8: AVERAGE PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES, 2009

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Texas	$1,262	$906	$721	$594	$410	$876	$821	$1,340	$808
NATION	$1,440	$957	$845	$742	$455	$947	$854	$1,446	$866

B9: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES, 2009

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents		DPP-4 Inhibitors	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Texas	84.1%	$509	51.5%	$76	33.2%	$78	15.1%	$1,151	7.7%	$1,010
NATION	84.6%	$603	55.9%	$92	38.0%	$89	17.0%	$1,302	8.5%	$1,115

Data source: SDI © 2010

Short-Acting Insulin
Insulin replacement product with a short duration and onset of action.

Intermediate-Acting Insulin
Insulin replacement product with an intermediate duration of action.

Long-Acting Insulin
Insulin replacement product with a long duration of action.

Mixed Insulin
Insulin replacement product combining a short-acting and intermediate-acting insulin product.

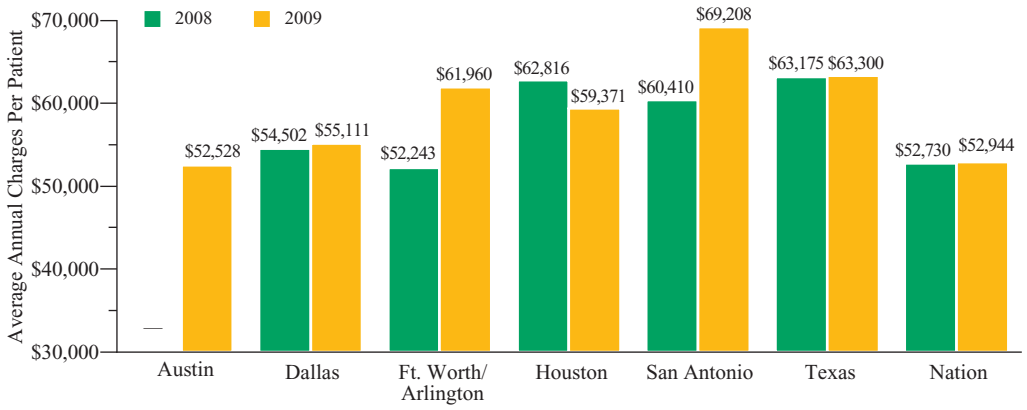
Biguanides
Improve insulin sensitivity; reduce the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the peripheral uptake and use of circulating glucose.

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.

Dipeptidyl Peptidase 4 (DPP-4) Inhibitors
Inhibit DPP-4 enzymes and slow inactivation of incretin hormones, helping to regulate glucose homeostasis through increased insulin release and decreased glucagon levels.

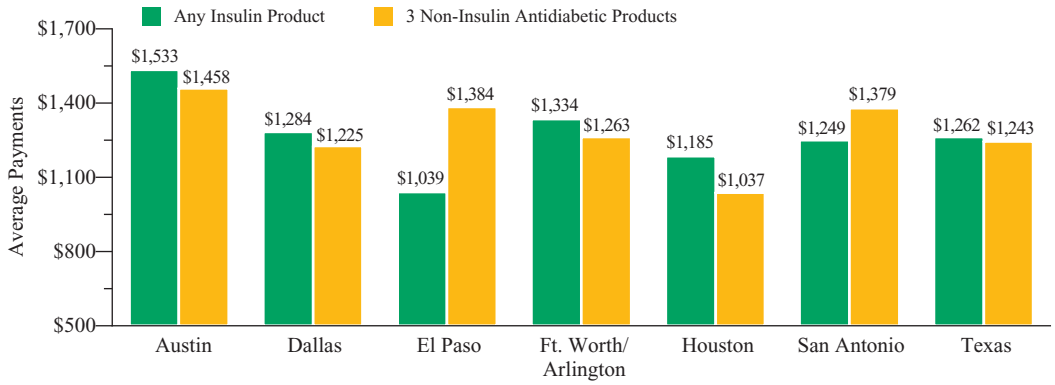
C1: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS[1]



C2: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS[2]

MARKET	Hospital Inpatient		Hospital Outpatient		Ambulatory Surgery Center		Emergency Room		Office/ Clinic	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Austin	$2,375	$2,901	$1,575	$1,684	$4,488	$7,005	$249	$148	$2,079	$2,179
Dallas	4,858	4,835	2,183	1,942	2,589	3,252	1,188	933	6,992	6,002
El Paso	4,822	4,347	1,605	1,300	2,816	3,451	210	115	3,067	4,521
Ft. Worth/ Arlington	4,618	2,960	1,638	—	—	5,083	733	406	1,578	1,554
Houston	—	—	2,209	1,262	4,553	6,744	847	815	2,226	2,469
San Antonio	5,508	6,721	1,592	1,868	4,010	3,720	774	824	1,955	2,345
Texas	6,442	6,777	2,036	1,557	3,061	4,562	926	706	3,871	3,921
NATION	**$6,570**	**$6,500**	**$2,042**	**$1,931**	**$3,077**	**$4,213**	**$722**	**$646**	**$3,399**	**$3,798**

C3: PHARMACOTHERAPY: AVERAGE ANNUAL PAYMENTS, BY TYPE OF DRUG THERAPY, 2009[3]



Data source: SDI © 2010

NOTE: Some hospital and professional charge data were unavailable for the Austin, El Paso, Fort Worth and Houston MSAs.

SAN ANTONIO INPATIENT CHARGES INCREASE SHARPLY

Between 2008 ($60,410) and 2009 ($69,208), hospital inpatient charges for Type 2 diabetes patients in San Antonio rose notably (see graph C1). Such charges were highest, by Texas local market, by a substantial margin. During this period, average hospital inpatient charges also rose fractionally for Type 2 diabetes patients across the state of Texas, to $63,300 in 2009 from $63,175 the previous year.

TEXAS PROFESSIONAL OP CHARGES ARE RELATIVELY LOW

Of the six Texas markets for which data were available, five (Dallas excepted) reported average professional outpatient charges below the national average of $1,931 in 2009 (see table C2). Such charges were lowest for patients diagnosed with Type 2 diabetes in the Houston market in 2009, at $1,262.

[1] Hospital charges reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care.

[2] Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

[3] Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

TEXAS MSA COMPARISONS: A1c LEVELS

HIGH SHARES OF EL PASO/AUSTIN TYPE 2s HAVE A1c LEVEL >9.0%

In 2009, a notable 14.4% of patients diagnosed with Type 2 diabetes in the El Paso market had A1c test results greater than 9.0% on their most recent exam, up from 12.9% in 2008, and the highest such share of the eight markets listed (see table D1). Similarly, the share of patients diagnosed with Type 2 diabetes in Austin who had A1c test results in this highest level range was 13.6%, up from 12.6% the previous year. By comparison, just 12.5% of Type 2 diabetes patients nationally had an A1c level greater than 9.0% in 2009.

NOTABLE SHARE OF FT. WORTH PATIENTS HAS A1c LEVEL ≤7.0%

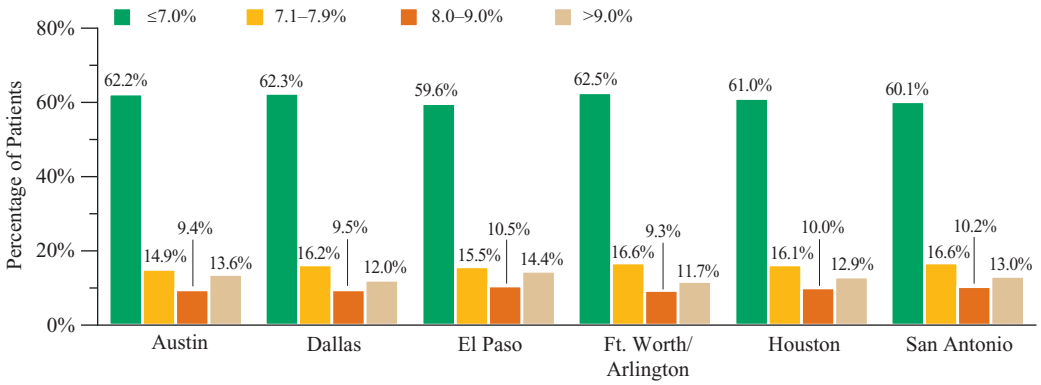
Of patients diagnosed with Type 2 diabetes in the Fort Worth/Arlington market in 2009, 62.5% had an A1c level at or below 7.0% on their most recent test, highest of the seven Texas markets listed. (see table D1). By comparison, just 58.1% of Type 2 diabetes patients nationally had an A1c level less than or equal to 7.0% on their most recent test.

NOTE: The A1c test measures how much glucose has been in the blood during the past 2–3 months.

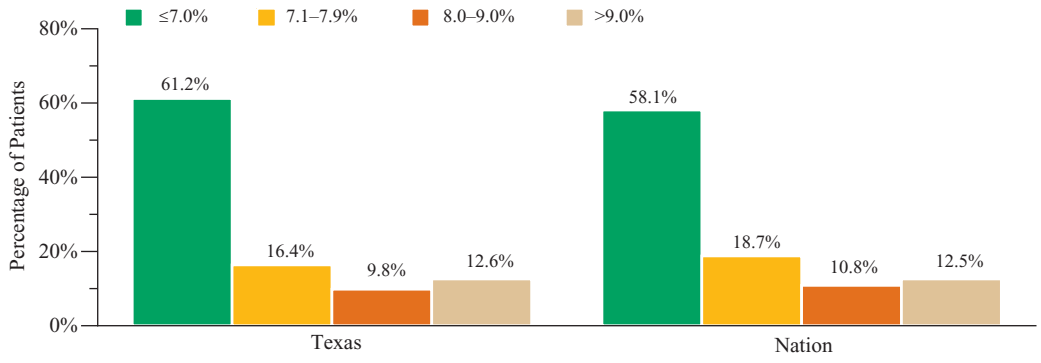
D1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE

	≤7.0%		7.1–7.9%		8.0–9.0%		>9.0%	
MARKET	2008	2009	2008	2009	2008	2009	2008	2009
Austin	63.9%	62.2%	14.4%	14.9%	9.1%	9.4%	12.6%	13.6%
Dallas	64.8	62.3	15.3	16.2	8.9	9.5	11.0	12.0
El Paso	62.8	59.6	15.1	15.5	9.3	10.5	12.9	14.4
Ft. Worth/ Arlington	63.0	62.5	15.9	16.6	9.2	9.3	11.8	11.7
Houston	63.4	61.0	15.1	16.1	9.2	10.0	12.3	12.9
San Antonio	62.4	60.1	15.7	16.6	9.8	10.2	12.1	13.0
Texas	63.5	61.2	15.6	16.4	9.2	9.8	11.8	12.6
NATION	**61.4%**	**58.1%**	**17.2%**	**18.7%**	**9.9%**	**10.8%**	**11.5%**	**12.5%**

D2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE, 2009



D3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE, 2009



Data source: SDI © 2010

TEXAS MSA COMPARISONS: PERSISTENCY

D4: PERSISTENCY, 2009*

		New Start Mo. 1	Mo. 6	Mo. 12
AUSTIN	Long-Acting Insulin: Pens	100.0	64.6%	47.7%
	Long-Acting Insulin: Vials	100.0	50.0	43.5
	Non-Insulin Antidiabetic Combos	100.0	62.3	62.3
DALLAS	Long-Acting Insulin: Pens	100.0%	54.6%	48.2%
	Long-Acting Insulin: Vials	100.0	52.3	42.3
	Non-Insulin Antidiabetic Combos	100.0	60.6	45.7
EL PASO	Long-Acting Insulin: Pens	100.0%	61.3%	54.8%
	Long-Acting Insulin: Vials	100.0	56.9	52.0
	Non-Insulin Antidiabetic Combos	100.0	64.1	41.8
FT. WORTH	Long-Acting Insulin: Pens	100.0%	57.2%	46.4%
	Long-Acting Insulin: Vials	100.0	54.6	50.0
	Non-Insulin Antidiabetic Combos	100.0	61.3	48.6
HOUSTON	Long-Acting Insulin: Pens	100.0%	55.9%	42.0%
	Long-Acting Insulin: Vials	100.0	53.2	43.3
	Non-Insulin Antidiabetic Combos	100.0	64.6	51.2
SAN ANTONIO	Long-Acting Insulin: Pens	100.0%	63.4%	57.7%
	Long-Acting Insulin: Vials	100.0	59.3	47.9
	Non-Insulin Antidiabetic Combos	100.0	56.7	43.3
TEXAS	Long-Acting Insulin: Pens	100.0%	59.0%	47.5%
	Long-Acting Insulin: Vials	100.0	54.7	45.0
	Non-Insulin Antidiabetic Combos	100.0	63.0	49.5
NATION	Long-Acting Insulin: Pens	100.0%	62.9%	52.5%
	Long-Acting Insulin: Vials	100.0	56.0	46.4
	Non-Insulin Antidiabetic Combos	100.0	64.1	51.6

Data source: SDI © 2010

* Persistency data track only patients who have filled a prescription for each therapeutic class listed.

NOTE: "Persistency" measures whether patients maintain their prescribed therapy. It is calculated by identifying patients who filled a prescription for the reported drug class in the four months prior to the reported year, and then tracking prescription fills for those same patients in each of the months in the current reported year. If a patient fills a prescription in a month they are reported among the patients who have continued or restarted on therapy. Continued means that the patient has filled the drug group in each of the preceding months. Restarted means that the patient did not fill in one or more of the preceding months. Continuing and restarting patients are reported together. Persistency data track patients who are "New-to-Brand", meaning they have not filled a prescription for their cohort product during the six months prior to initiation of therapy on that product.

LONG-ACTING PEN PERSISTENCY IS HIGH IN SAN ANTONIO

At month 12 of treatment, Type 2 diabetes patients in the San Antonio market who filled prescriptions for long-acting insulin pens were most likely, of the seven Texas markets profiled, to maintain their prescribed therapy, at 57.7% (see table D4). At month 6 of treatment, however, long-acting insulin pen persistency was highest, by Texas market, for Type 2 diabetes patients in Austin (64.6%). At both month 6 and month 12 of treatment, Type 2 diabetes patients across the state of Texas were less likely than such patients nationally to be persistent with their long-acting insulin pen prescription.

EL PASO NON-INSULIN COMBO PERSISTENCY RATES ARE VERY LOW

At month 12, El Paso Type 2 diabetes patients who filled a prescription for non-insulin antidiabetic combinations were less apt to maintain their prescribed therapy than their counterparts in each of the other six Texas markets listed (see table D4). By comparison, Type 2 diabetes patients in the Austin market who filled prescriptions for non-insulin antidiabetic combinations were most likely to be persistent with their prescribed therapy at month 12, at 62.3%.

SERVICE UTILIZATION RATES ARE LOW FOR TYPE 2s IN FT. WORTH

In three of four service utilization categories (A1c test excepted), Type 2 diabetes patients in the Fort Worth/Arlington market reported the lowest percentages among the six local markets profiled (see table E1). For example, just 61.9% of Type 2 diabetes patients in Fort Worth/ Arlington had at least one ophthalmologic exam in 2009, lowest of the six local markets, and more than seven percentage points below the national average (69.4%) for this category.

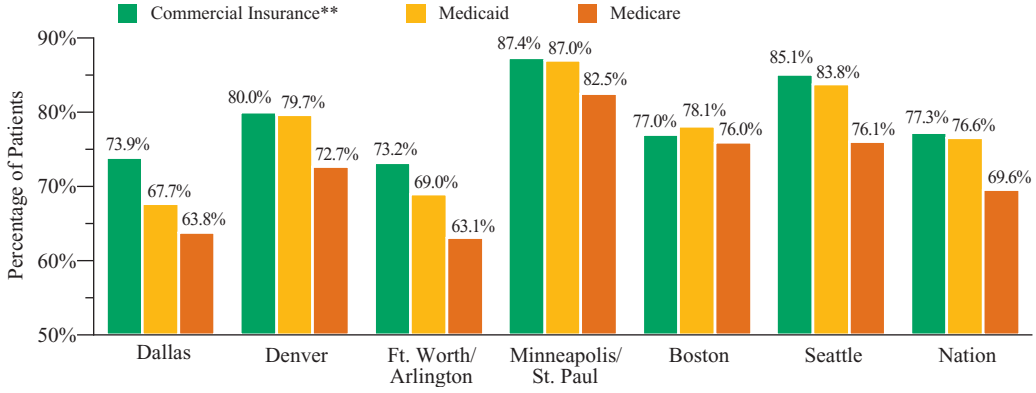
DALLAS TYPE 2 PATIENTS REPORT LOW A1c TEST RATES

In 2009, just 69.0% of patients diagnosed with Type 2 diabetes in the Dallas market received at least one A1c test, up slightly from 67.3% in 2008, but still the lowest share of the six local markets listed (see table E1). Dallas Type 2 diabetes patients with commercial insurance coverage (73.9%) and Medicaid (67.7%) were also least likely, compared with the same payer types in other markets, to receive an A1c test in calendar-year 2009 (see graph E2).

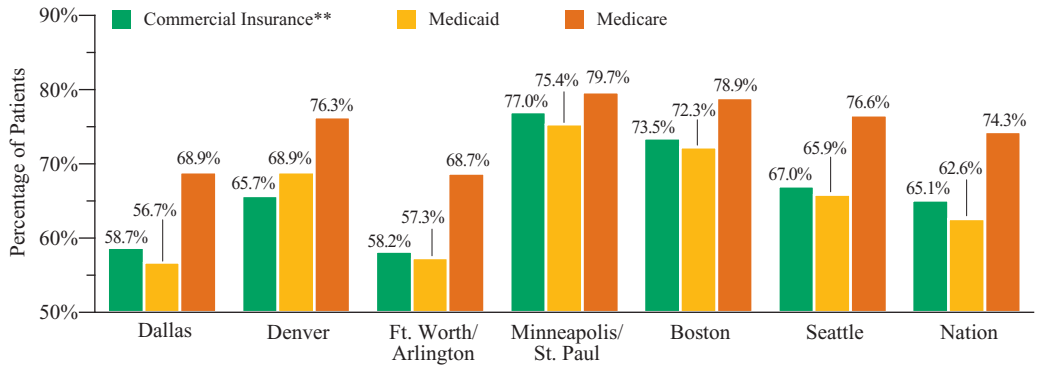
E1: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE

	A1c Test*		Serum Cholesterol Test		Ophthalmologic Exam		Urine Microalbumin Test	
MARKET	2008	2009	2008	2009	2008	2009	2008	2009
Dallas	67.3%	69.0%	79.1%	80.1%	63.3%	63.4%	62.8%	64.2%
Denver	76.9	77.2	84.3	84.2	70.5	69.8	72.7	73.4
Ft. Worth/ Arlington	69.4	69.4	78.5	79.3	61.5	61.9	63.5	63.9
Minneapolis/ St. Paul	86.0	85.5	87.5	88.2	77.6	77.9	82.3	82.4
Boston	74.9	76.5	89.8	90.5	75.6	75.8	82.6	83.0
Seattle	81.7	81.5	84.4	84.6	70.3	70.7	76.2	75.9
NATION	**73.8%**	**73.6%**	**83.9%**	**83.9%**	**69.4%**	**69.4%**	**71.1%**	**71.3%**

E2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING A1c TESTS, BY PAYER, 2009



E3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING OPHTHALMOLOGIC EXAMS, BY PAYER, 2009



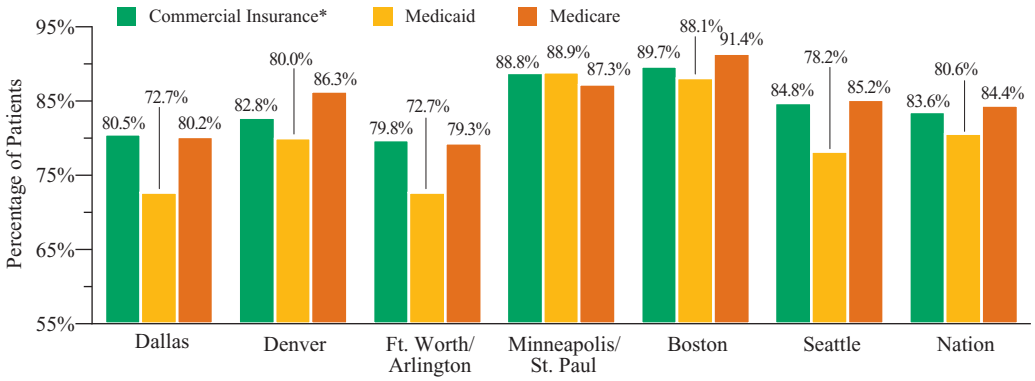
Data source: SDI © 2010

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

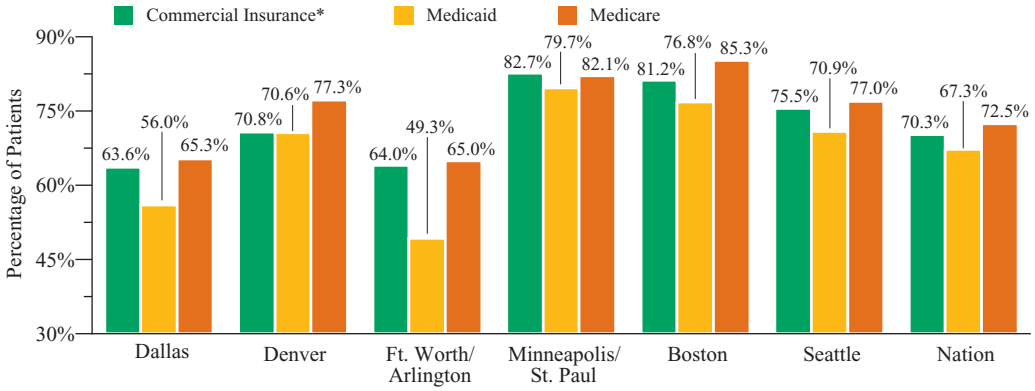
** Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

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

E4: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING SERUM CHOLESTEROL TESTS, BY PAYER, 2009*



E5: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING URINE MICROALBUMIN TESTS, BY PAYER, 2009*



E6: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE

	≤7.0%		7.1–7.9%		8.0–9.0%		>9.0%	
MARKET	2008	2009	2008	2009	2008	2009	2008	2009
Dallas	64.8%	62.3%	15.3%	16.2%	8.9%	9.5%	11.0%	12.0%
Denver	63.3	60.9	16.0	17.5	9.5	10.3	11.3	11.4
Ft. Worth/ Arlington	63.0	62.5	15.9	16.6	9.2	9.3	11.8	11.7
Minneapolis/ St. Paul	67.1	65.0	13.8	14.8	8.3	8.7	10.8	11.6
Boston	66.7	63.2	14.6	15.9	8.6	9.5	10.2	11.4
Seattle	66.1	63.5	14.3	15.5	8.6	8.9	11.0	12.1
NATION	**61.4%**	**58.1%**	**17.2%**	**18.7%**	**9.9%**	**10.8%**	**11.5%**	**12.5%**

Data source: SDI © 2010

DALLAS/FT. WORTH MEDICAID TEST SHARES ARE LOW

Of the six local markets profiled, Type 2 diabetes patients with Medicaid coverage in the Dallas and Fort Worth/Arlington markets reported the lowest serum cholesterol and urine microalbumin test rates in 2009 (see graphs E4 and E5). For example, just 49.3% of Type 2 diabetes patients in Fort Worth/ Arlington with Medicaid coverage and 56.0% of such patients in Dallas received a urine microalbumin test. By comparison, at least 70% of Type 2 diabetes patients with Medicaid coverage in each of the other four local markets received such tests.

FORT WORTH PATIENT SHARE WITH HIGHEST A1c LEVELS DIPS

The percentage of Type 2 diabetes patients in the Fort Worth/Arlington market with an A1c level greater than 9.0% in their most recent test fell to 11.7% in 2009 from 11.8% in 2008, the only market to report a decline in this measure over this time (see table E6). Of the six local markets listed, Boston and Denver reported the lowest percentages of Type 2 diabetes patients with A1c levels greater than 9.0% in 2009, at 11.4%.

* Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

NOTE: The A1c test measures how much glucose has been in the blood during the past 2–3 months.

DALLAS/FT. WORTH INPATIENT CHARGES TOP U.S. AVERAGE

Between 2008 and 2009, inpatient facility charges grew in all five local markets for which comparative data were available, most notably in the Fort Worth/Arlington market (to $61,960 from $52,243). Average inpatient facility charges in both the Dallas ($55,111) and Fort Worth markets exceeded the corresponding national mark of $52,944 (see table F1).

DALLAS ER CHARGES REMAIN BELOW THE NATIONAL MARK

In spite of a slight rise in average annual emergency room charges generated in the care of Dallas Type 2 patients between 2008 ($1,581) and 2009 ($1,695), such charges fell well below the nationwide average of $1,948 (see table F1). Of the five local markets studied in 2009, only Type 2 diabetes patients in Denver recorded lower emergency room charges than Dallas, at $995.

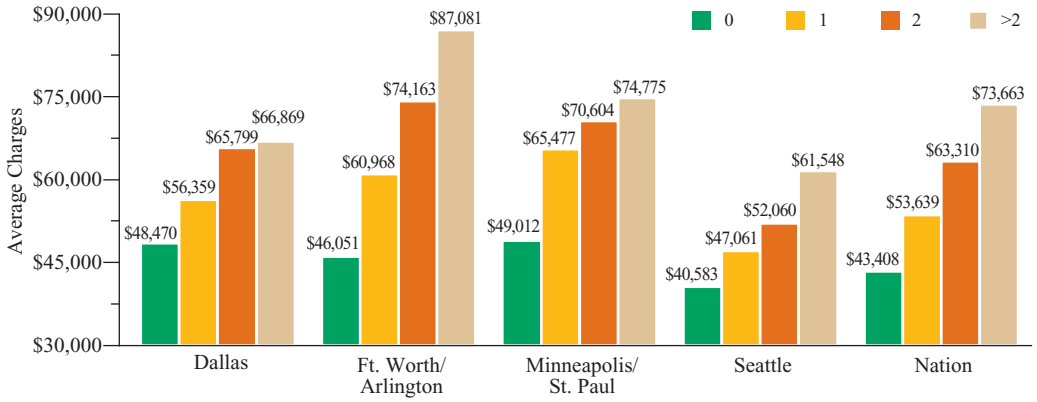
* Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

** 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.

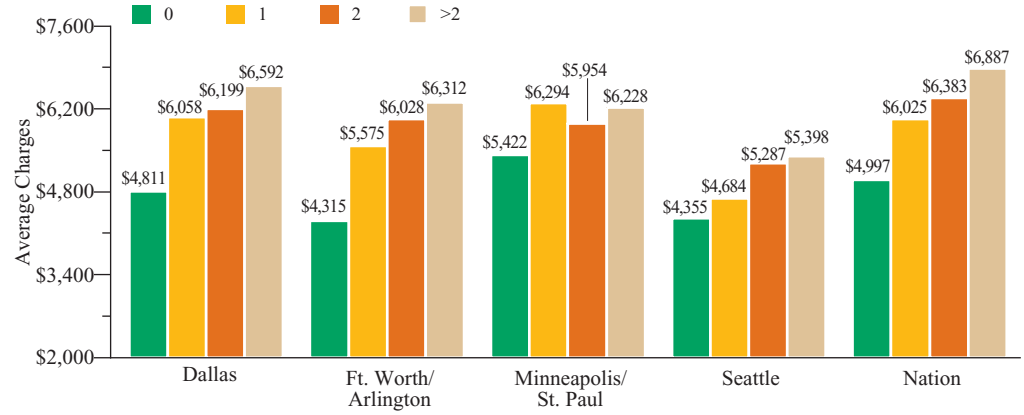
F1: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*

	Hospital Inpatient		Hospital Outpatient		Emergency Room	
MARKET	2008	2009	2008	2009	2008	2009
Dallas	$54,502	$55,111	$5,689	$5,515	$1,581	$1,695
Denver	—	99,806	2,816	5,700	714	995
Ft. Worth/ Arlington	52,243	61,960	4,580	5,171	1,463	1,870
Minneapolis/ St. Paul	58,209	58,791	5,406	5,816	2,120	2,338
Seattle	39,032	45,739	4,267	4,643	2,798	2,937
NATION	**$52,730**	**$52,944**	**$5,196**	**$5,656**	**$1,854**	**$1,948**

F2: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMPLICATIONS, 2009**



F3: HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMPLICATIONS, 2009**



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

Data source: SDI © 2010

F4: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER*

	Commercial Insurance**		Medicaid		Medicare	
MARKET	2008	2009	2008	2009	2008	2009
Dallas	$46,356	$44,951	$50,829	$38,846	$56,559	$57,278
Ft. Worth/ Arlington	42,631	51,301	52,479	52,320	53,129	58,152
Minneapolis/ St. Paul	46,420	47,194	56,366	54,128	58,050	55,716
Seattle	32,759	37,258	39,709	46,399	38,193	44,731
NATION	**$45,185**	**$45,317**	**$49,015**	**$47,550**	**$50,420**	**$49,511**

F5: HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER*

	Commercial Insurance**		Medicaid		Medicare	
MARKET	2008	2009	2008	2009	2008	2009
Dallas	$4,369	$4,607	$5,470	$5,262	$7,472	$6,587
Denver	1,627	4,813	5,312	9,494	—	3,812
Ft. Worth/ Arlington	3,961	4,604	4,035	4,680	5,691	5,951
Minneapolis/ St. Paul	4,888	5,248	3,823	4,811	5,750	6,096
Seattle	3,609	3,890	4,897	5,804	5,002	5,287
NATION	**$4,440**	**$4,863**	**$4,711**	**$5,381**	**$5,804**	**$6,138**

F6: HOSPITAL EMERGENCY ROOM CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER*

	Commercial Insurance**		Medicaid		Medicare	
MARKET	2008	2009	2008	2009	2008	2009
Dallas	$1,150	$1,273	$1,770	$1,870	$1,868	$1,937
Denver	—	860	—	1,122	—	—
Ft. Worth/ Arlington	1,191	1,402	1,809	1,947	1,591	2,133
Minneapolis/ St. Paul	1,660	1,820	2,210	2,263	2,334	2,497
Seattle	2,067	2,167	3,746	3,867	3,159	3,191
NATION	**$1,462**	**$1,543**	**$1,964**	**$2,114**	**$2,026**	**$2,073**

Data source: SDI © 2010

NOTE: Some hospital charge data were unavailable for the Boston and Denver MSAs.

* Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

** Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

MEDICARE INPATIENT CHARGES RISE FOR TYPE 2s IN DALLAS

After declining moderately between 2007 ($58,997) and 2008 ($56,559), hospital inpatient charges generated by Type 2 diabetes patients in Dallas with Medicare coverage jumped slightly in 2009, to $57,278 (see table F4). By contrast, national averages for this metric fell slightly between 2008 ($50,420) and 2009 ($49,511). Of the four local markets listed, only Seattle, at $44,731, reported such charges below the national average in 2009.

OP COMMERCIAL CHARGES ARE LOW IN DALLAS/FT. WORTH

Type 2 diabetes patients covered by commercial insurance in the Dallas (to $4,607 from $4,369) and Fort Worth (to $4,604 from $3,961) markets experienced slight gains in average annual outpatient charges between 2008 and 2009 (see table F5). Although such charges grew modestly for Type 2 diabetes patients in Seattle (to $3,890 in 2009 from $3,609 in 2008), such charges were lowest of the five local markets profiled by a wide margin.

AUSTIN

G1: DEMOGRAPHICS: AGE AND GENDER[1]

	Percentage of Patients			
	Austin			Texas
AGE GROUP	2007	2008	2009	2009
0–17	0.3%	0.3%	0.3%	0.4%
18–35	6.1	5.6	5.7	4.1
36–64	68.9	68.1	67.4	54.4
65–79	20.3	21.1	21.5	31.3
80+	4.5	4.8	5.2	9.8
GENDER				
Male	36.9%	37.1%	37.0%	40.4%
Female	63.1	62.9	63.0	59.6

G2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS[2,3]

	Percentage of Patients			
	Austin			Texas
COMORBIDITIES	2007	2008	2009	2009
0	28.8%	28.8%	25.9%	34.1%
1	26.7	26.5	24.4	22.7
2	35.2	36.1	37.3	32.3
>2	9.3	8.6	12.4	10.9
COMPLICATIONS				
0	62.7%	62.1%	55.0%	52.2%
1	26.5	26.6	28.6	30.2
2	8.3	8.6	11.8	12.6
>2	2.5	2.7	4.6	5.0

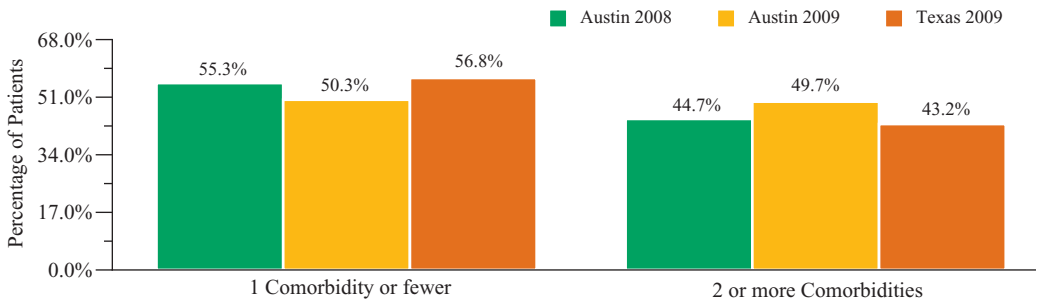
SHARE OF AUSTIN TYPE 2s WITH 2+ COMORBIDS GROWS

Between 2008 (44.7%) and 2009 (49.7%), Austin experienced a notable increase in its share of Type 2 diabetes patients with two or more diagnosed comorbidities. Further, Austin reported a higher share of these patients than the Texas average of 43.2% (see graph G3). Austin Type 2 diabetes patients were also more likely to be diagnosed with two or more complications in 2009 (16.4%) than they were in 2008 (11.3%) (see table G2).

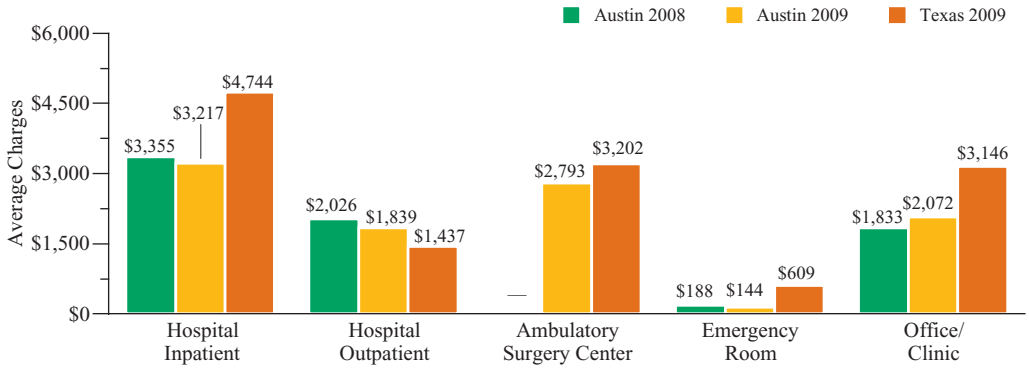
PROVIDER CHARGES FALL FOR AUSTIN TYPE 2 PATIENTS

Average annual provider charges per Austin Type 2 diabetes patient dropped between 2008 and 2009 in three of four settings for which data were available (office/clinic excepted). For example, professional outpatient charges were $1,839 in Austin in 2009, down from $2,026 the year before (see graph G4).

G3: DEMOGRAPHICS: COMORBIDITIES[3]



G4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[4,5]



Data source: SDI © 2010

[1] 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.

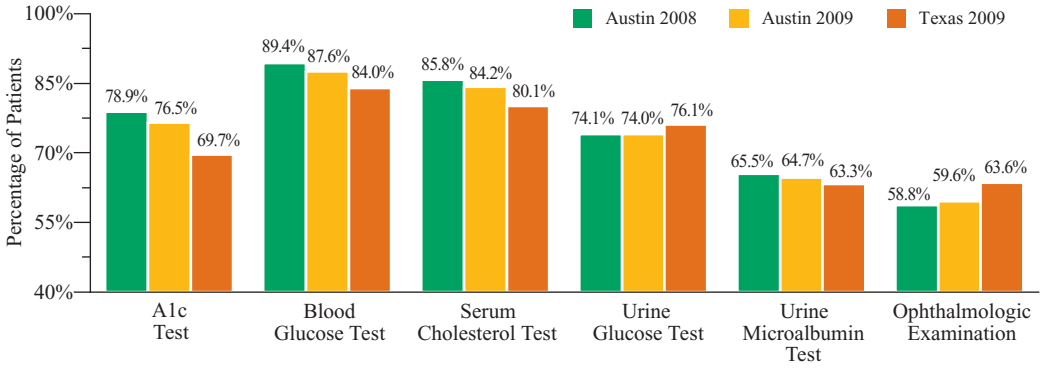
[2] A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

[3] 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.

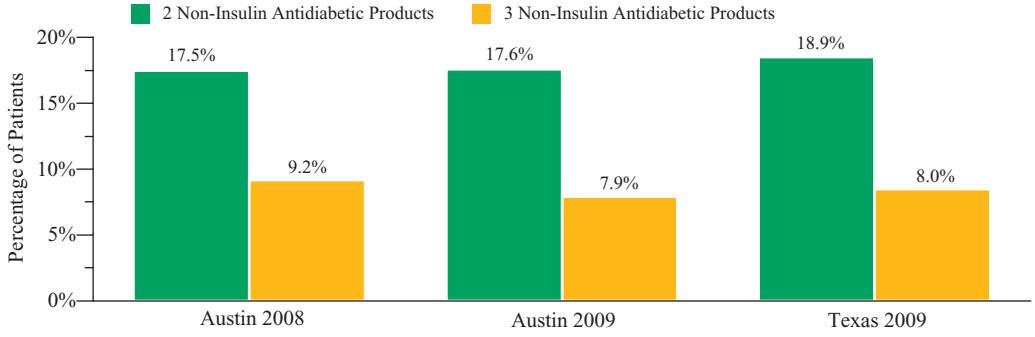
[4] Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

[5] 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



G6: PHARMACOTHERAPY: % OF TYPE 2 DIABETES PATIENTS, BY TYPE OF DRUG THERAPY



G7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Austin 2008	35.1%	6.3%	9.6%	0.2%	2.0%	7.6%	14.1%	1.7%	4.1%
Austin 2009	34.8	7.9	9.5	—	1.3	9.6	12.8	1.5	3.2
Texas 2009	33.7	4.8	9.4	0.3%	2.8	7.7	13.0	2.2	6.1

G8: AVERAGE PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Austin 2008	$1,121	$864	$638	$379	$308	$741	$689	$946	$615
Austin 2009	1,533	1,030	956	—	483	924	933	1,072	820
Texas 2009	1,262	906	721	594	410	876	821	1,340	808

G9: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents		DPP-4 Inhibitors	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Austin 2008	82.1%	$497	45.5%	$79	28.2%	$81	19.2%	$972	8.2%	$776
Austin 2009	82.3	586	50.8	73	29.0	72	16.8	1,249	8.2	1,041
Texas 2009	84.1	509	51.5	76	33.2	78	15.1	1,151	7.7	1,010

Data source: SDI © 2010

LOWER SHARE OF AUSTIN PATIENTS MEASURE A1c LEVELS

Although Austin Type 2 diabetes patients were more apt than their Texas counterparts to receive A1c (76.5%), blood glucose (87.6%) serum cholesterol (84.2%) and urine micro-albumin (64.7%) tests in 2009, the shares of Austin patients receiving these tests represented a decline from the shares reported in 2008. Compared to Texas averages, lower shares of Austin Type 2 diabetes patients received urine glucose tests and eye exams (see graph G5).

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

Short-Acting Insulin
Insulin replacement product with a short duration and onset of action.

Intermediate-Acting Insulin
Insulin replacement product with an intermediate duration of action.

Long-Acting Insulin
Insulin replacement product with a long duration of action.

Mixed Insulin
Insulin replacement product combining a short-acting and intermediate-acting insulin product.

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.

Dipeptidyl Peptidase 4 (DPP-4) Inhibitors
Inhibit DPP-4 enzymes and slow inactivation of incretin hormones, helping to regulate glucose homeostasis through increased insulin release and decreased glucagon levels.

DALLAS

H1: DEMOGRAPHICS: AGE AND GENDER[1]

	Percentage of Patients			
	Dallas			Texas
AGE GROUP	2007	2008	2009	2009
0–17	0.4%	0.5%	0.5%	0.4%
18–35	4.2	4.1	3.9	4.1
36–64	54.2	53.8	53.4	54.4
65–79	31.8	32.3	32.6	31.3
80+	9.4	9.3	9.6	9.8
GENDER				
Male	38.5%	39.5%	40.2%	40.4%
Female	61.5	60.6	59.8	59.6

H2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS[2, 3]

	Percentage of Patients			
	Dallas			Texas
COMORBIDITIES	2007	2008	2009	2009
0	39.6%	38.4%	32.0%	34.1%
1	22.6	23.5	22.4	22.7
2	28.0	29.2	33.0	32.3
>2	9.8	8.9	12.6	10.9
COMPLICATIONS				
0	57.7%	56.7%	49.7%	52.2%
1	28.4	28.8	30.5	30.2
2	10.4	10.9	13.8	12.6
>2	3.5	3.6	6.0	5.0

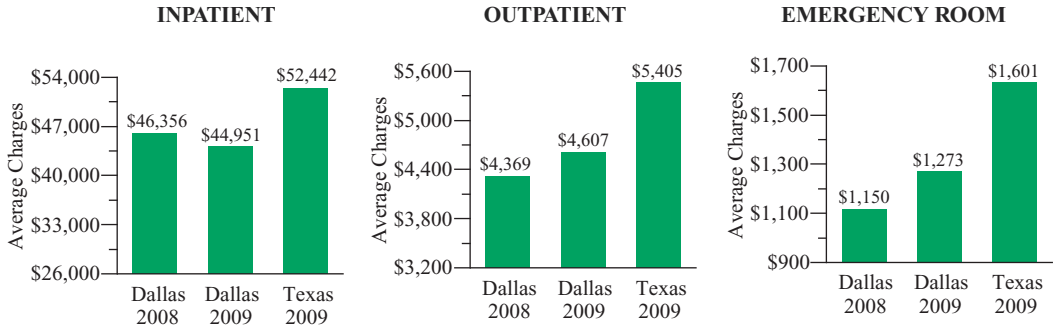
SHARE OF DALLAS TYPE 2 PATIENTS 65+ YEARS OLD GROWS

In 2009, 42.2% of Type 2 diabetes patients in Dallas were age 65 and older, up from 41.6% in 2008. This share was modestly higher than the Texas state average of 41.1% (see table H1). Dallas reported a significant rise in the percentages of Type 2 diabetes patients with two or more comorbidities (to 45.6% from 38.1%) and two or more complications (to 19.8% from 14.5%) between 2008 and 2009 (see table H2).

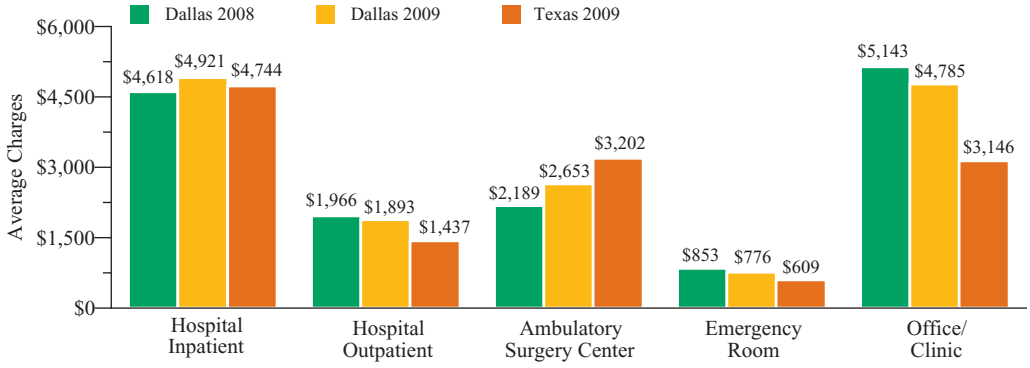
DALLAS TYPE 2 INPATIENT FACILITY CHARGES DECLINE

Average facility charges for the treatment of Dallas Type 2 diabetes inpatients with commercial payers fell in 2009, to $44,951 from $46,356 in 2008 (see graph H3). In 2009, facility charges for the treatment of Dallas Type 2 diabetes inpatients with commercial payers were notably less than corresponding state averages, regardless of hospital setting.

H3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[4, 5]



H4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[5, 6]



Data source: SDI © 2010

[1] 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.

[2] 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.

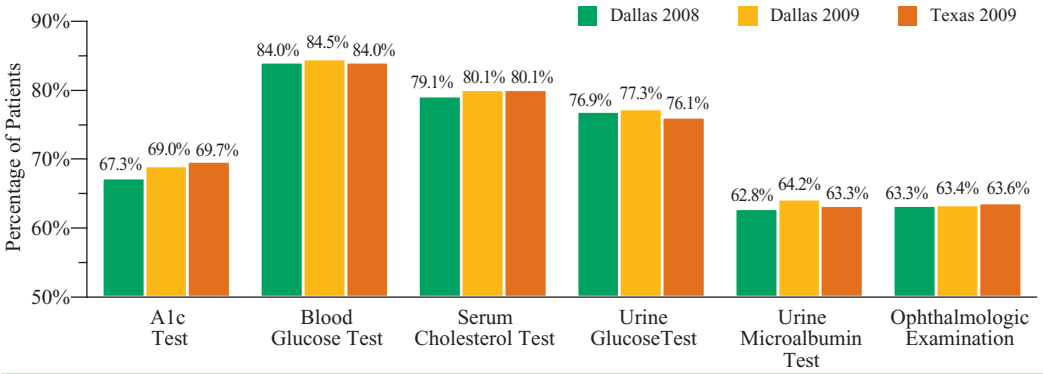
[3] A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited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

[4] Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

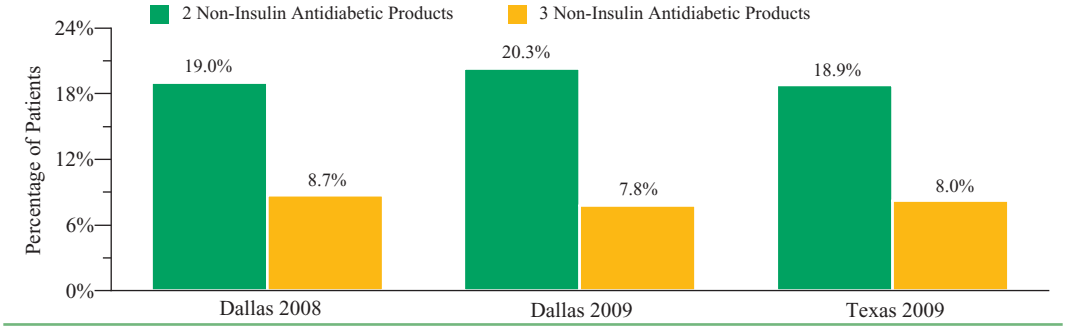
[5] Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

[6] 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



H6: PHARMACOTHERAPY: % OF TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES



H7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Dallas 2008	33.8%	4.6%	9.7%	0.3%	3.2%	5.9%	11.6%	2.7%	7.4%
Dallas 2009	31.7	4.9	8.9	0.3	2.7	7.1	10.5	2.5	6.5
Texas 2009	33.7	4.8	9.4	0.3	2.8	7.7	13.0	2.2	6.1

H8: AVERAGE PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Dallas 2008	$1,052	$747	$564	$645	$365	$739	$710	$1,179	$666
Dallas 2009	1,284	909	703	672	409	920	849	1,423	784
Texas 2009	1,262	906	721	594	410	876	821	1,340	808

H9: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents		DPP-4 Inhibitors	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Dallas 2008	82.7%	$451	51.4%	$73	32.8%	$75	15.4%	$1,017	7.1%	$807
Dallas 2009	84.4	472	55.4	71	33.4	75	13.9	1,129	7.3	971
Texas 2009	84.1	509	51.5	76	33.2	78	15.1	1,151	7.7	1,010

Data source: SDI © 2010

SMALLER SHARE OF DALLAS TYPE 2s FILL INSULIN RXs

The share of Dallas Type 2 diabetes patients who filled prescriptions for any insulin product dipped slightly between 2008 (33.8%) and 2009 (31.7%), placing Dallas below the Texas average of 33.7% (see table H7). In contrast, Dallas recorded higher percentages of Type 2 diabetes patients who filled non-insulin antidiabetic prescriptions than the state average (84.4% vs. 84.1% for Texas) in 2009 (see table H9).

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

Short-Acting Insulin
Insulin replacement product with a short duration and onset of action.

Intermediate-Acting Insulin
Insulin replacement product with an intermediate duration of action.

Long-Acting Insulin
Insulin replacement product with a long duration of action.

Mixed Insulin
Insulin replacement product combining a short-acting and intermediate-acting insulin product.

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.

Dipeptidyl Peptidase 4 (DPP-4) Inhibitors
Inhibit DPP-4 enzymes and slow inactivation of incretin hormones, helping to regulate glucose homeostasis through increased insulin release and decreased glucagon levels.

EL PASO

I1: DEMOGRAPHICS: AGE AND GENDER[1]

	Percentage of Patients			
	El Paso			Texas
AGE GROUP	2007	2008	2009	2009
0–17	0.6%	0.5%	0.7%	0.4%
18–35	5.9	5.2	5.3	4.1
36–64	54.5	57.7	58.8	54.4
65–79	29.5	28.5	28.8	31.3
80	9.5	8.2	6.5	9.8
GENDER				
Male	41.8%	39.2%	36.3%	40.4%
Female	58.2	60.8	63.7	59.6

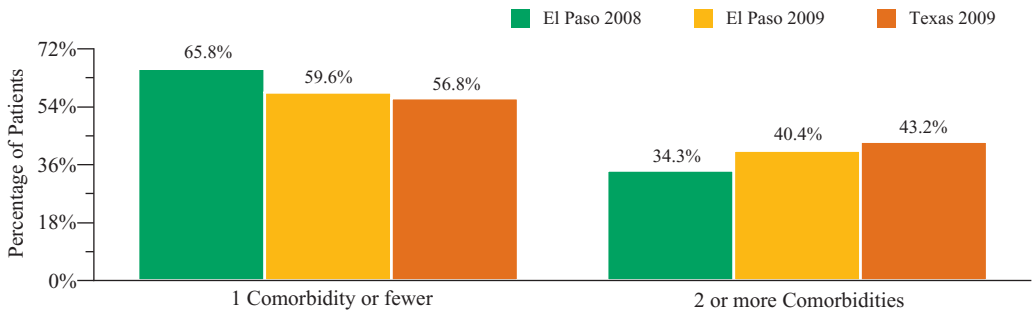
I2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS[2, 3]

	Percentage of Patients			
	El Paso			Texas
COMORBIDITIES	2007	2008	2009	2009
0	39.4%	40.8%	35.1%	34.1%
1	26.1	25.0	24.5	22.7
2	27.7	28.4	32.4	32.3
>2	6.8	5.9	8.0	10.9
COMPLICATIONS				
0	65.2%	63.2%	56.8%	52.2%
1	24.9	25.7	28.8	30.2
2	7.9	8.3	10.8	12.6
>2	2.0	2.8	3.6	5.0

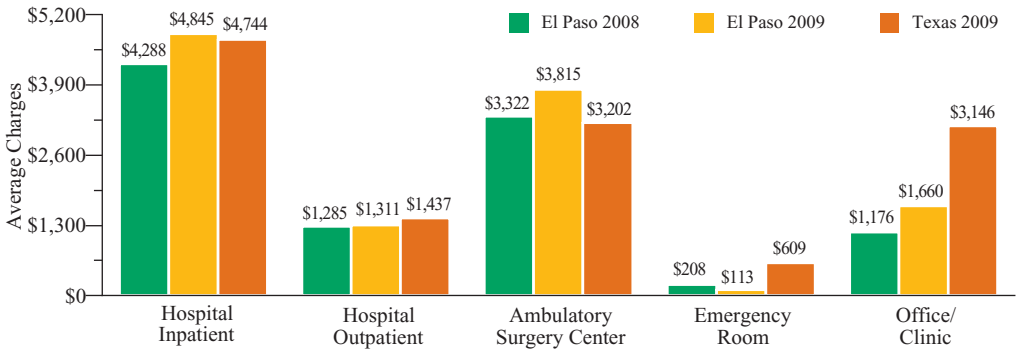
EL PASO TYPE 2 PATIENTS ARE LIKELY OF WORKING AGE

Nearly two out of three (64.1%) El Paso Type 2 diabetes patients were between the ages of 18 and 64 in 2009. This share represents a 1.9 percentage-point growth from 2008 levels (62.2%) and exceeds the corresponding Texas average of 58.5% by a considerable margin (see table I1). The shares of El Paso Type 2 diabetes patients with multiple comorbidities (to 40.4% from 34.3% in 2008) and multiple complications (to 14.4% from 11.1%) also grew in this timeframe (see table I2 and graph I3). These demographic shifts coincided with increased provider charges, which grew notably across four of five settings studied (emergency room charges excepted) between 2008 and 2009 (see graph I4).

I3: DEMOGRAPHICS: COMORBIDITIES[3]



I4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[4, 5]



Data source: SDI © 2010

[1] 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.

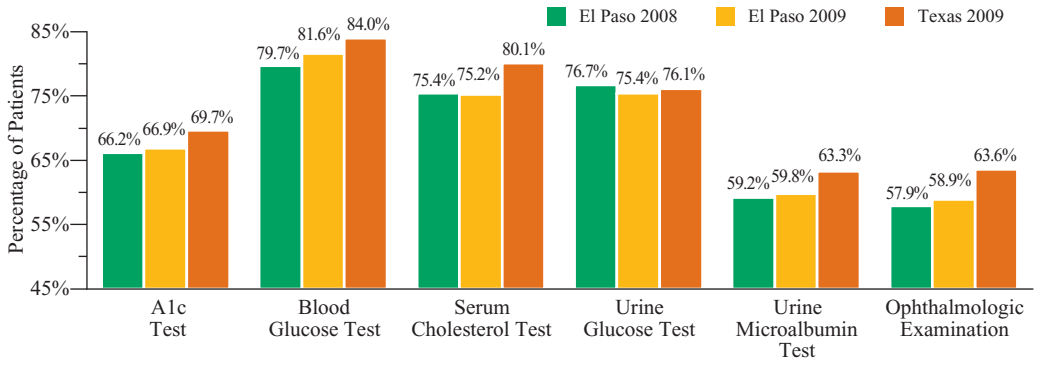
[2] A complication is defined as a patient condition caused by the Type 2 diabetes of the patient. These conditions are a direct result of having Type 2 diabetes. Complications of Type 2 diabetes include, but are not limited to, coronary artery disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

[3] 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.

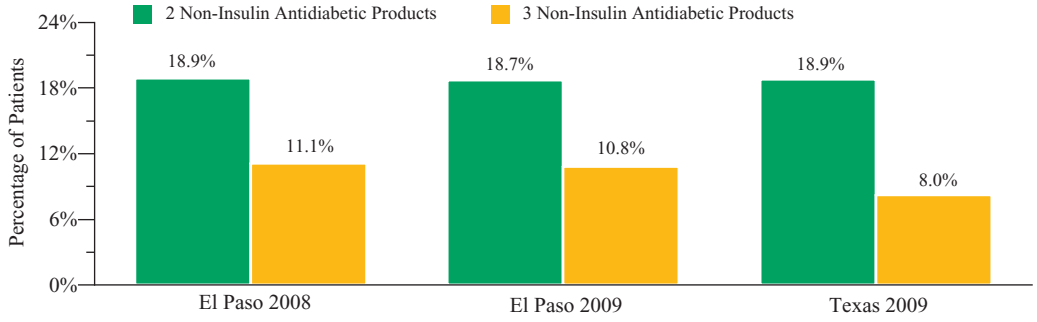
[4] Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

[5] Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

I5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE



I6: PHARMACOTHERAPY: % OF TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES



I7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
El Paso 2008	32.7%	3.4%	7.5%	—	2.1%	5.8%	14.7%	2.2%	8.1%
El Paso 2009	33.2	4.3	8.0	—	2.0	8.5	14.3	2.2	7.4
Texas 2009	33.7	4.8	9.4	0.3%	2.8	7.7	13.0	2.2	6.1

I8: AVERAGE PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
El Paso 2008	$918	$678	$498	—	$289	$747	$646	$1,101	$558
El Paso 2009	1,039	801	493	—	367	834	687	1,381	548
Texas 2009	1,262	906	721	$594	410	876	821	1,340	808

I9: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents		DPP-4 Inhibitors	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
El Paso 2008	85.9%	$508	50.4%	$86	33.3%	$82	17.8%	$939	9.3%	$889
El Paso 2009	85.4	561	53.5	83	35.6	79	16.4	1,116	9.7	1,091
Texas 2009	84.1	509	51.5	76	33.2	78	15.1	1,151	7.7	1,010

Data source: SDI © 2010

EL PASO SERVICE UTILIZATION RATES ARE RELATIVELY LOW

Compared to Type 2 patients across the state of Texas, such patients in the El Paso market were much less likely to receive all five diabetes-related utilization services profiled. For instance, 80.1% of Texas Type 2 diabetes patients received at least one serum cholesterol test in 2009, while just 75.2% of patients diagnosed with Type 2 diabetes in the El Paso market received such tests (see graph I5).

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

Short-Acting Insulin
Insulin replacement product with a short duration and onset of action.

Intermediate-Acting Insulin
Insulin replacement product with an intermediate duration of action.

Long-Acting Insulin
Insulin replacement product with a long duration of action.

Mixed Insulin
Insulin replacement product combining a short-acting and intermediate-acting insulin product.

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.

Dipeptidyl Peptidase 4 (DPP-4) Inhibitors
Inhibit DPP-4 enzymes and slow inactivation of incretin hormones, helping to regulate glucose homeostasis through increased insulin release and decreased glucagon levels.

FT. WORTH/ARLINGTON

J1: DEMOGRAPHICS: AGE AND GENDER[1]

	Percentage of Patients			
	Ft. Worth/Arlington			Texas
AGE GROUP	2007	2008	2009	2009
0–17	0.4%	0.6%	0.6%	0.4%
18–35	4.9	5.0	4.3	4.1
36–64	59.3	60.8	57.4	54.4
65–79	27.5	26.0	29.3	31.3
80+	7.9	7.7	8.5	9.8
GENDER				
Male	41.1%	41.7%	39.9%	40.4%
Female	58.9	58.3	60.2	59.6

J2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS[2, 3]

	Percentage of Patients			
	Ft. Worth/Arlington			Texas
COMORBIDITIES	2007	2008	2009	2009
0	29.2%	30.9%	27.6%	34.1%
1	25.2	25.1	22.6	22.7
2	35.0	34.6	36.1	32.3
>2	10.7	9.4	13.8	10.9
COMPLICATIONS				
0	55.2%	56.3%	47.5%	52.2%
1	29.1	28.2	31.0	30.2
2	11.5	11.5	14.9	12.6
>2	4.2	4.1	6.7	5.0

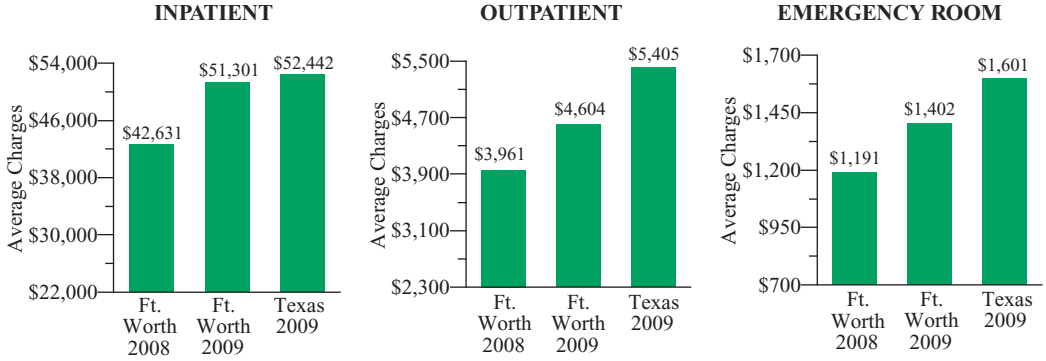
SHARE OF FT. WORTH TYPE 2 PATIENTS 65+ YEARS OF AGE RISES

After falling slightly between 2007 (35.4%) and 2008 (33.7%), the share of Fort Worth Type 2 diabetes patients age 65 and older increased notably in 2009, to 37.8% (see table J1). The share of Type 2 diabetes patients with multiple complications also expanded in the Fort Worth market, to 21.6% in 2009 from 15.6% the year before (see table J2).

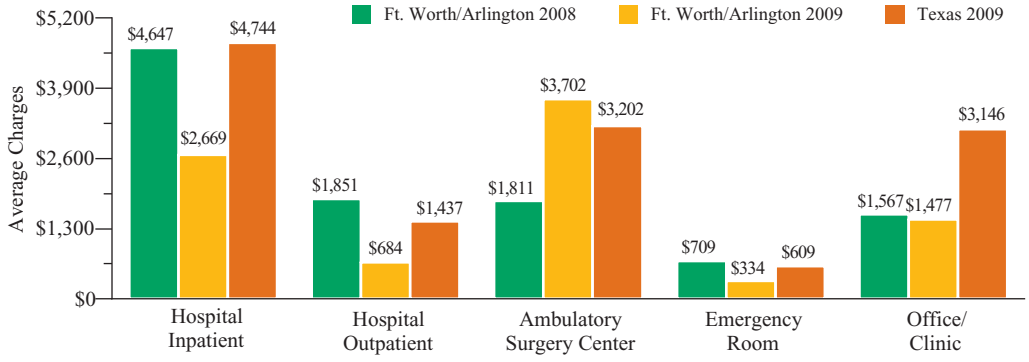
FT. WORTH FACILITY CHARGES CLIMB ACROSS ALL SETTINGS

Facility charges generated in the care of Fort Worth Type 2 patients rose between 2008 and 2009, regardless of setting (see graph J3). For example, hospital inpatient charges for Type 2 diabetes patients in Fort Worth grew to $51,301 from $42,631 the previous year (see graph J4).

J3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[4, 5]



J4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[5, 6]



Data source: SDI © 2010

[1] 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.

[2] 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.

[3] 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.

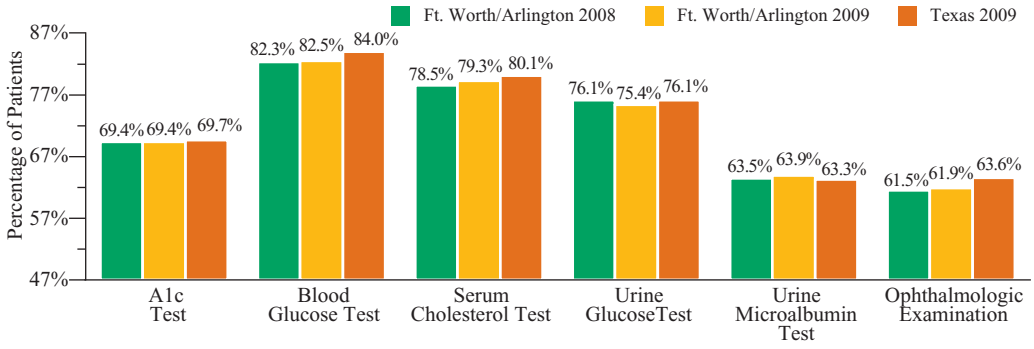
[4] Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

[5] Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

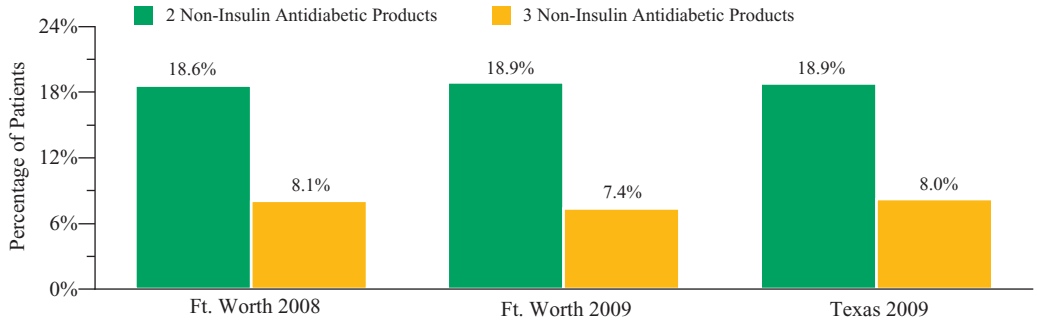
[6] Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

FT. WORTH/ARLINGTON

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



J6: PHARMACOTHERAPY: % OF TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES



J7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Ft. Worth 2008	33.4%	4.7%	10.3%	0.1%	2.5%	6.2%	14.0%	1.9%	5.4%
Ft. Worth 2009	32.1	5.1	10.4	0.1	2.2	7.8	12.9	1.5	4.6
Texas 2009	33.7	4.8	9.4	0.3	2.8	7.7	13.0	2.2	6.1

J8: AVERAGE PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Ft. Worth 2008	$1,107	$906	$626	$489	$388	$750	$749	$1,137	$632
Ft. Worth 2009	1,334	1,022	743	457	429	905	881	1,514	782
Texas 2009	1,262	906	721	594	410	876	821	1,340	808

J9: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents		DPP-4 Inhibitors	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Ft. Worth 2008	82.8%	$469	49.5%	$76	32.7%	$74	16.1%	$1,019	7.6%	$838
Ft. Worth 2009	83.8	485	53.5	78	33.7	76	13.1	1,172	7.6	1,051
Texas 2009	84.1	509	51.5	76	33.2	78	15.1	1,151	7.7	1,010

Data source: SDI © 2010

INSULIN FILL RATE DECLINES IN FORT WORTH MARKET

In 2009, the percentage of Fort Worth Type 2 diabetes patients who filled prescriptions for any insulin product dipped to 32.1% from 33.4% in 2008 (see table J7). The share of such patients who filled non-insulin antidiabetic products, however, rose to 83.8% from 82.8% over this period. A four percentage-point growth in the share of Fort Worth patients who filled biguanide prescriptions helped boost this average (see table J9).

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

Short-Acting Insulin
Insulin replacement product with a short duration and onset of action.

Intermediate-Acting Insulin
Insulin replacement product with an intermediate duration of action.

Long-Acting Insulin
Insulin replacement product with a long duration of action.

Mixed Insulin
Insulin replacement product combining a short-acting and intermediate-acting insulin product.

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.

Dipeptidyl Peptidase 4 (DPP-4) Inhibitors
Inhibit DPP-4 enzymes and slow inactivation of incretin hormones, helping to regulate glucose homeostasis through increased insulin release and decreased glucagon levels.

HOUSTON

K1: DEMOGRAPHICS: AGE AND GENDER[1]

	Percentage of Patients			
	Houston			Texas
AGE GROUP	2007	2008	2009	2009
0–17	0.4%	0.4%	0.4%	0.4%
18–35	5.0	4.7	4.2	4.1
36–64	59.6	59.0	55.5	54.4
65–79	26.6	26.9	29.3	31.3
80+	8.5	9.0	10.6	9.8
GENDER				
Male	37.6%	38.1%	37.8%	40.4%
Female	62.5	61.9	62.2	59.6

K2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS[2,3]

	Percentage of Patients			
	Houston			Texas
COMORBIDITIES	2007	2008	2009	2009
0	38.2%	37.5%	34.3%	34.1%
1	23.3	23.9	22.5	22.7
2	28.6	29.4	30.8	32.3
>2	10.0	9.2	12.4	10.9
COMPLICATIONS				
0	57.5%	55.9%	49.2%	52.2%
1	29.3	30.1	31.5	30.2
2	10.2	10.6	13.7	12.6
>2	3.1	3.4	5.7	5.0

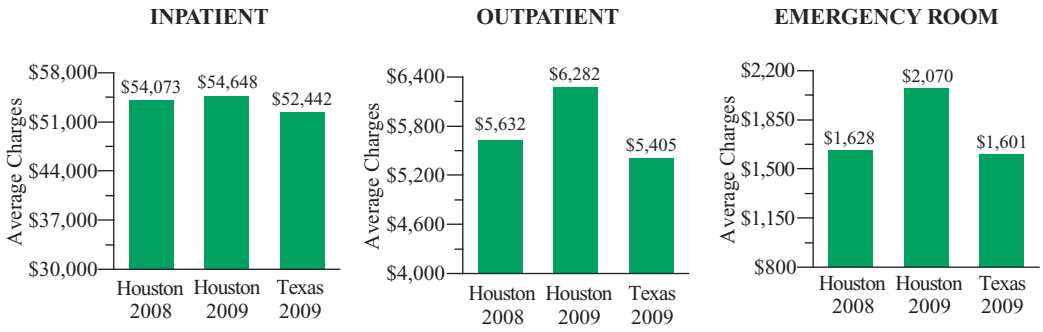
TYPE 2 PATIENT SHARE IN HOUSTON WITH 2+ COMORBIDITIES RISES

Between 2007 (38.6%) and 2009 (43.2%) the share of Houston Type 2 diabetes patients with multiple comorbidities increased nearly five percentage points. The share of Houston Type 2 diabetes patients with two or more complications also rose during this time (to 19.4% in 2009 from 13.3% in 2007), topping the Texas state average for this measure (17.6%) by a significant margin (see table K2).

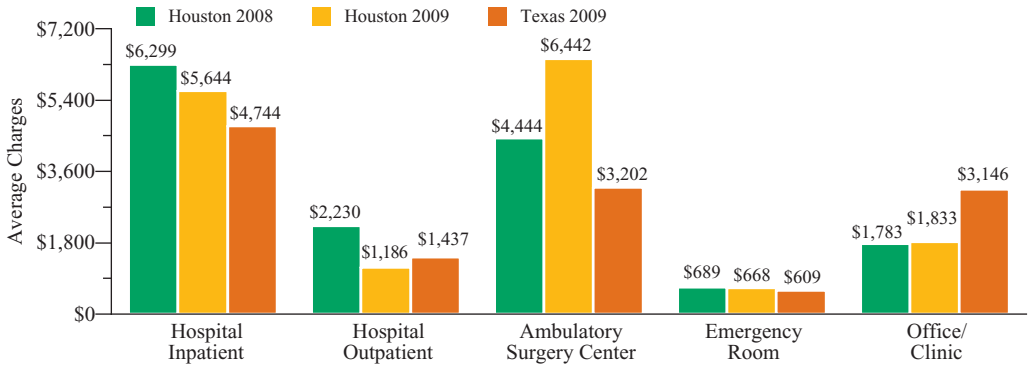
FACILITY CHARGES GROW FOR COMM'L PAYERS IN HOUSTON

Average annual facility charges per Houston Type 2 diabetes patient increased between 2008 and 2009 in all three settings studied. This growth was especially notable for facility charges generated in the emergency room setting, to $2,070 in 2009 from $1,628 the prior year. (see graph K3).

K3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[4,5]



K4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[5,6]



Data source: SDI © 2010

[1] 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.

[2] 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.

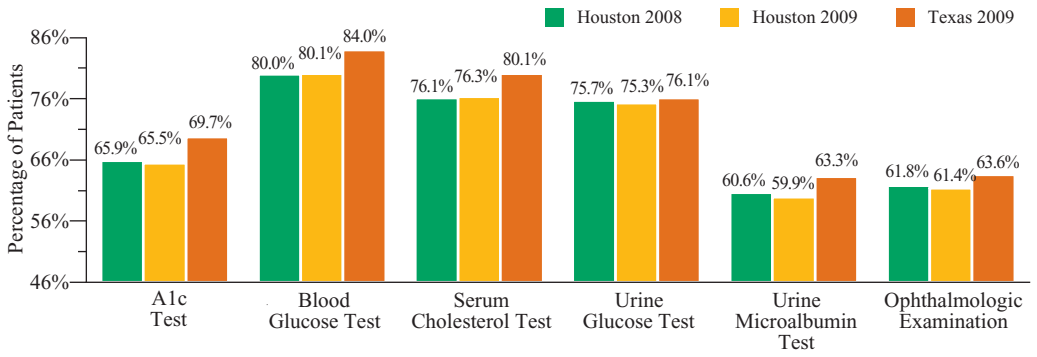
[3] A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited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

[4] Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

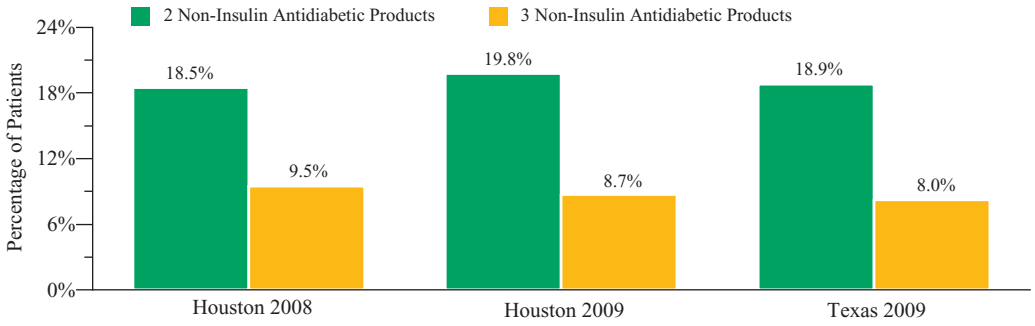
[5] Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

[6] 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



K6: PHARMACOTHERAPY: % OF TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES



K7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Houston 2008	33.8%	4.6%	9.0%	0.3%	3.5%	6.8%	12.9%	2.1%	5.1%
Houston 2009	31.2	4.6	8.1	0.3	2.8	8.0	11.4	2.0	4.6
Texas 2009	33.7	4.8	9.4	0.3	2.8	7.7	13.0	2.2	6.1

K8: AVERAGE PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
Houston 2008	$1,017	$721	$584	$528	$332	$691	$661	$1,006	$649
Houston 2009	1,185	825	780	540	383	799	759	1,231	754
Texas 2009	1,262	906	721	594	410	876	821	1,340	808

K9: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents		DPP-4 Inhibitors	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
Houston 2008	84.4%	$434	50.5%	$80	33.0%	$77	15.4%	$920	7.3%	$776
Houston 2009	86.0	459	54.9	82	34.3	84	13.7	1,066	6.9	948
Texas 2009	84.1	509	51.5	76	33.2	78	15.1	1,151	7.7	1,010

Data source: SDI © 2010

SERVICE UTILIZATION RATES ARE LOW FOR HOUSTON TYPE 2s

In 2009, Houston Type 2 diabetes patients were less apt than their Texas counterparts to receive all six diabetes-related services studied. For example, just 65.5% of Houston Type 2 diabetes patients received at least one A1c test in 2009, versus 69.7% of such patients across Texas. Notable gaps also occurred for Houston Type 2 diabetes patients who received blood glucose (80.1% vs. 84.0%) and serum cholesterol (76.3% vs. 80.1%) tests (59.9% vs. 63.3%) (see graph K5).

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

Short-Acting Insulin
Insulin replacement product with a short duration and onset of action.

Intermediate-Acting Insulin
Insulin replacement product with an intermediate duration of action.

Long-Acting Insulin
Insulin replacement product with a long duration of action.

Mixed Insulin
Insulin replacement product combining a short-acting and intermediate-acting insulin product.

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.

Dipeptidyl Peptidase 4 (DPP-4) Inhibitors
Inhibit DPP-4 enzymes and slow inactivation of incretin hormones, helping to regulate glucose homeostasis through increased insulin release and decreased glucagon levels.

SAN ANTONIO

L1: DEMOGRAPHICS: AGE AND GENDER[1]

	Percentage of Patients			
	San Antonio			Texas
AGE GROUP	2007	2008	2009	2009
0–17	0.5%	0.3%	0.4%	0.4%
18–35	4.1	3.0	3.2	4.1
36–64	51.3	50.6	51.1	54.4
65–79	32.9	34.2	33.8	31.3
80+	11.3	11.9	11.5	9.8
GENDER				
Male	39.0%	40.8%	40.6%	40.4%
Female	61.1	59.2	59.4	59.6

L2: DEMOGRAPHICS: COMORBIDITIES AND COMPLICATIONS[2, 3]

	Percentage of Patients			
	San Antonio			Texas
COMORBIDITIES	2007	2008	2009	2009
0	38.7%	42.1%	37.5%	34.1%
1	23.7	24.0	22.2	22.7
2	29.0	26.5	29.3	32.3
>2	8.6	7.4	11.1	10.9
COMPLICATIONS				
0	54.5%	51.2%	47.7%	52.2%
1	30.9	32.9	33.0	30.2
2	11.3	12.2	13.8	12.6
>2	3.3	3.8	5.4	5.0

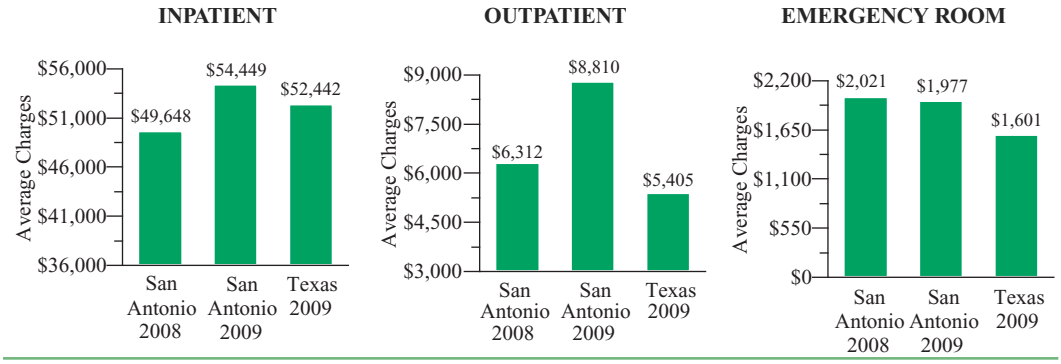
SAN ANTONIO SHARE OF TYPE 2 PATIENTS AGE 65+ INCREASES

The share of San Antonio Type 2 diabetes patients who were over the age of 64 shrank slightly between 2008 (46.1%) and 2009 (45.3%) (see table L1). Over the same period, the percentage of Type 2 patients in the San Antonio market with two or more diagnosed complications continued to rise (to 19.2% from 16.0%), again exceeding the Texas average of 17.6% (see table L2).

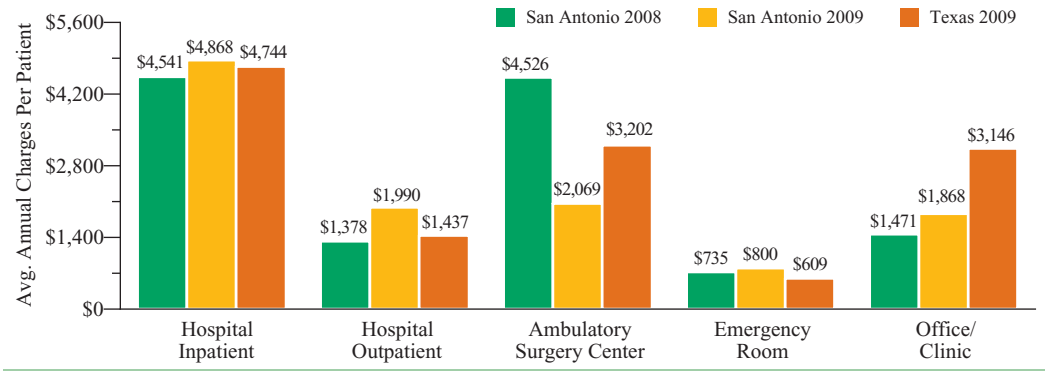
SAN ANTONIO TYPE 2 INPATIENT CHARGES, COMPLICATIONS RISE

A rise in the share of San Antonio Type 2 diabetes patients with multiple complications coincided with higher average annual facility and professional charges in both inpatient and outpatient settings. For example, average inpatient facility charges per San Antonio Type 2 diabetes patient per year were $54,449, a notable increase from the 2008 average of $49,648 (see graph L3).

L3: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[4, 5]



L4: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, COMMERCIAL INSURANCE PAYERS[5, 6]



Data source: SDI © 2010

[1] 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.

[2] 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.

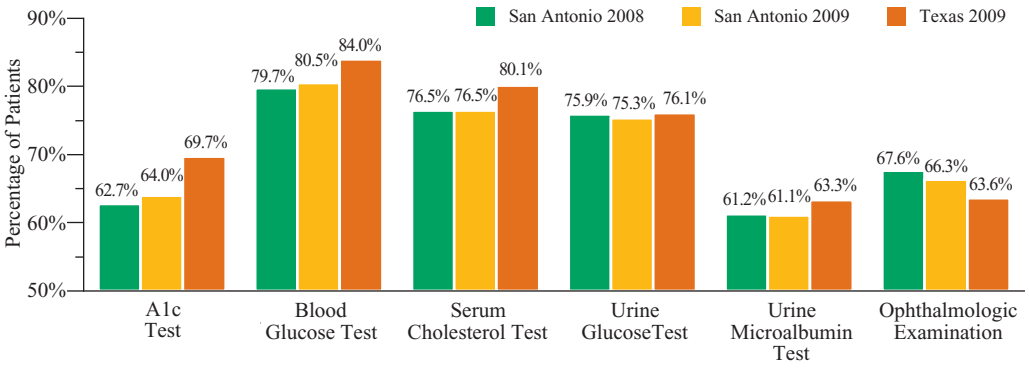
[3] A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited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

[4] Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. Facility charge data include charges for all services rendered, including prevention and charges asscociated with the treatment of other diseases. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

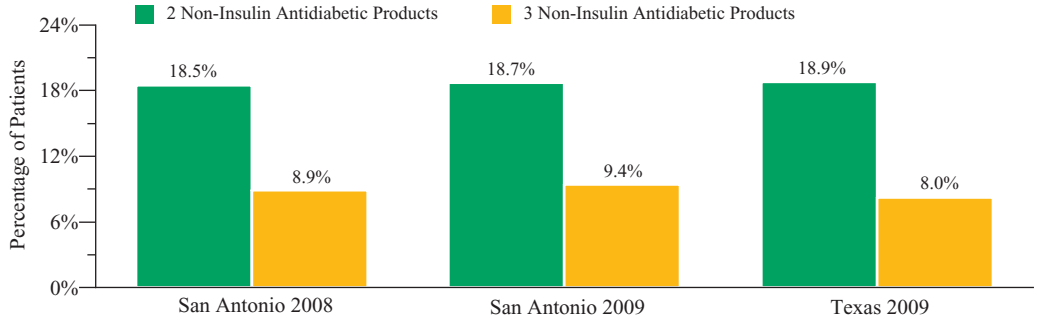
[5] Includes HMOs, PPOs, point-of-service plans and exclusive provider organizations.

[6] Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

L5: UTILIZATION: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE



L6: PHARMACOTHERAPY: % OF TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES



L7: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
S.A. 2008	36.6%	4.8%	8.5%	0.6%	3.2%	7.4%	15.1%	2.7%	6.7%
S.A. 2009	37.5	5.2	9.7	0.4	3.2	10.2	16.0	2.7	6.7
Texas 2009	33.7	4.8	9.4	0.3	2.8	7.7	13.0	2.2	6.1

L8: AVERAGE PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

	Any Insulin Product	Short-Acting Insulin		Intermediate-Acting Insulin		Long-Acting Insulin		Mixed Insulin	
		Pens	Vials	Pens	Vials	Pens	Vials	Pens	Vials
S.A. 2008	$966	$761	$524	$414	$335	$656	$624	$1,085	$656
S.A. 2009	1,249	965	701	551	386	869	797	1,193	871
Texas 2009	1,262	906	721	594	410	876	821	1,340	808

L9: % OF AND AVG. PAYMENTS FOR TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES

	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents		DPP-4 Inhibitors	
	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs	% of Pat.	Avg. Costs
S.A. 2008	82.3%	$445	46.0%	$86	34.0%	$72	18.8%	$891	6.5%	$740
S.A. 2009	83.2	573	50.1	80	37.0	76	20.8	1,225	7.4	966
Texas 2009	84.1	509	51.5	76	33.2	78	15.1	1,151	7.7	1,010

Data source: SDI © 2010

SAN ANTONIO INSULIN RX FILL RATE RISES, TOPS TEXAS AVERAGE

Compared to their Texas counterparts (33.7%), Type 2 diabetes patients in the San Antonio market were more likely to fill prescriptions for an insulin product in 2009, at 37.5% (see table L7). While 83.2% of San Antonio Type 2 diabetes patients filled non-insulin antidiabetic prescriptions in 2009 (a slight increase from 82.3% in 2008), this share still fell just shy of the Texas stare average of 84.1% (see table L9).

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

Short-Acting Insulin
Insulin replacement product with a short duration and onset of action.

Intermediate-Acting Insulin
Insulin replacement product with an intermediate duration of action.

Long-Acting Insulin
Insulin replacement product with a long duration of action.

Mixed Insulin
Insulin replacement product combining a short-acting and intermediate-acting insulin product.

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.

Dipeptidyl Peptidase 4 (DPP-4) Inhibitors
Inhibit DPP-4 enzymes and slow inactivation of incretin hormones, helping to regulate glucose homeostasis through increased insulin release and decreased glucagon levels.

Texas Business Group on Health
11520 North Central Expy.
Suite 201
Dallas, TX 75243

2009 ADA/EASD RECOMMENDATIONS

Consensus Statement: Strategies for the Management of Type 2 Diabetes Mellitus

STEP 1	**At diagnosis: Lifestyle + Metformin**	**Reinforce lifestyle interventions at every visit and check A1c every 3 months until A1c is <7% and then at least every 6 months.**	
STEP 2	**Tier 1: Well-validated core therapies**	**Lifestyle + Metformin + Basal Insulin** **Lifestyle + Metformin + Sulfonylurea**	
	Tier 2: Less well-validated therapies	**Lifestyle + Metformin + Pioglitazone** **Lifestyle + Metformin + GLP-1 agonist**	**Lifestyle + Metformin + Pioglitazone + Sulfonylurea** **Lifestyle + Metformin + Basal Insulin**
STEP 3	**Lifestyle + Metformin + Intensive Insulin**		

The 2009 American Diabetes Association (ADA)/European Association for the Study of Diabetes (EASD) consensus statement recommends timely use of insulin, as one approach, for patients who are not at their A1c goal. The ADA and EASD also recommend, as one approach, earlier addition of insulin in patients who do not meet glycemic goals after lifestyle intervention and metformin for 2 to 3 months.[1] To access the ADA's website for the latest ADA/EASD consensus statement and information on diabetes management, visit www.diabetes.org.

[1] *Nathan DM, Buse JB, Ferrannini E, et al. Medical management of hyperglycemia in type 2 diabetes: a consensus algorithm for the initiation and adjustment of therapy. Diabetes Care. 2009;32(1): 193–203.*

Important Safety Information for Insulin: The most common side effect of insulin is hypoglycemia, which can be serious. Other possible side effects include injection site reactions and allergic reactions, including itching and rash. Monitor blood glucose in all patients treated with insulin.

DATA METHODOLOGY

SDI generates data for this **Managed Care Digest Series®** newsletter using health care professional and institutional insurance claims, representing more than 8.3 million unique patients nationally in 2009 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. These data are derived exclusively from medical (and prescription) claims, not population management based sources.

SDI 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 SDI 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, SDI 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 SDI 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.