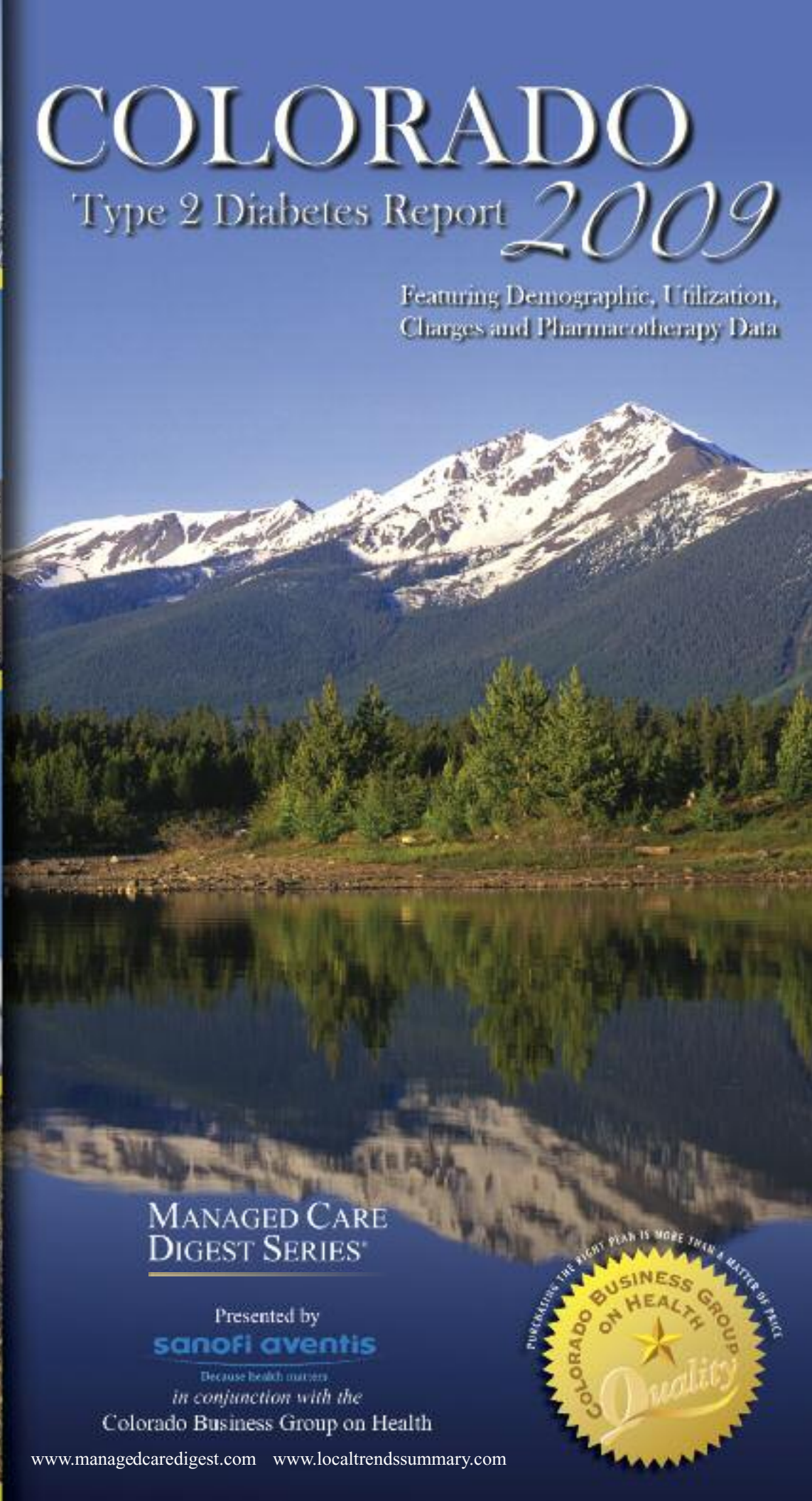


COLORADO

Type 2 Diabetes Report 2009

Featuring Demographic, Utilization,
Charges and Pharmacotherapy Data



MANAGED CARE
DIGEST SERIES[®]

Presented by
sanofi aventis

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RETIREMENT AGE PATIENT SHARE FALLS SHARPLY IN C.S.

The share of Type 2 diabetes patients in the Colorado Springs metropolitan statistical area (MSA) who were at least 65 years of age dropped to 26.2% in 2008 from 31.7% in 2007, the lowest percentage of the eight markets profiled (see table A1). By comparison, the share of Type 2 diabetes patients nationwide in this age category grew to 48.1% from 46.8% the prior year.

* 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.

INTRODUCTION

The Colorado Business Group on Health (CBGH) is pleased to present the **Colorado Type 2 Diabetes Report** for 2009, an overview of demographic, financial, utilization and pharmacotherapy measures for Type 2 diabetes patients in key local markets across the state of Colorado. The overview also provides state and national benchmarks that can help providers and employers identify better opportunities to serve the needs of their patients. All data are drawn from the **Managed Care Digest Series®**.

The **Colorado Type 2 Diabetes Report** helps CBGH to fulfill its mission to advance the purchaser role to accelerate cost-effective, high-quality healthcare.

This fifth edition features a number of examples of the kinds of patient-level,

disease-specific data on Type 2 diabetes that can be provided using the **Managed Care Digest Series®** as a resource. CBGH 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 its focus, as 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.

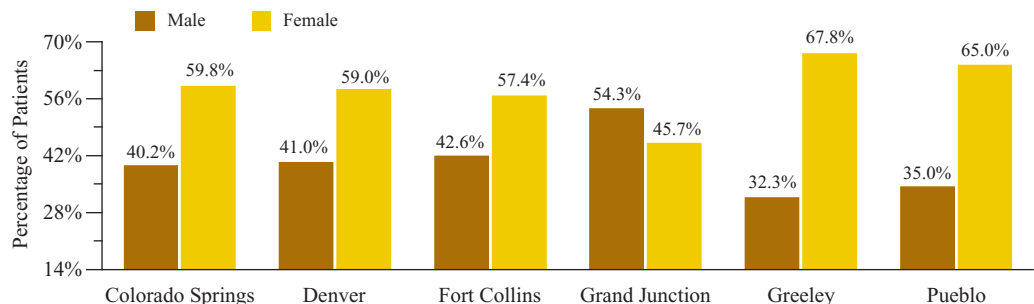
The data in this report (covering 2007 and 2008) were gathered by SDI, Plymouth Meeting, Pa., a leading provider of innovative health care data products and analytic services. The data provide employers with independent, third-party information against which they can benchmark their own data on patient demographics, professional and facility charges, service utilization and pharmacotherapy.

PATIENT DEMOGRAPHICS

A1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY AGE*

MARKET	0-17		18-35		36-64		65-79		80+	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	0.7%	0.4%	5.3%	5.8%	62.3%	67.7%	24.7%	21.7%	7.0%	4.5%
Denver	0.6	0.6	4.4	4.3	57.2	56.8	28.5	29.0	9.4	9.3
Fort Collins	—	—	4.1	3.6	53.9	56.4	30.5	30.4	11.4	9.5
Gr. Junction	—	—	—	1.2	33.2	39.2	49.8	44.2	16.6	15.4
Greeley	—	—	7.6	9.1	57.9	59.2	26.4	24.4	8.0	7.2
Pueblo	0.3	0.4	4.2	4.2	53.8	50.8	31.3	33.8	10.4	10.9
Colorado	0.5	0.5	4.4	4.4	56.4	57.1	29.2	28.9	9.5	9.2
NATION	0.4%	0.4%	3.4%	3.2%	49.5%	48.4%	34.1%	34.7%	12.7%	13.4%

A2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY GENDER, 2008*



Data source: SDI © 2009

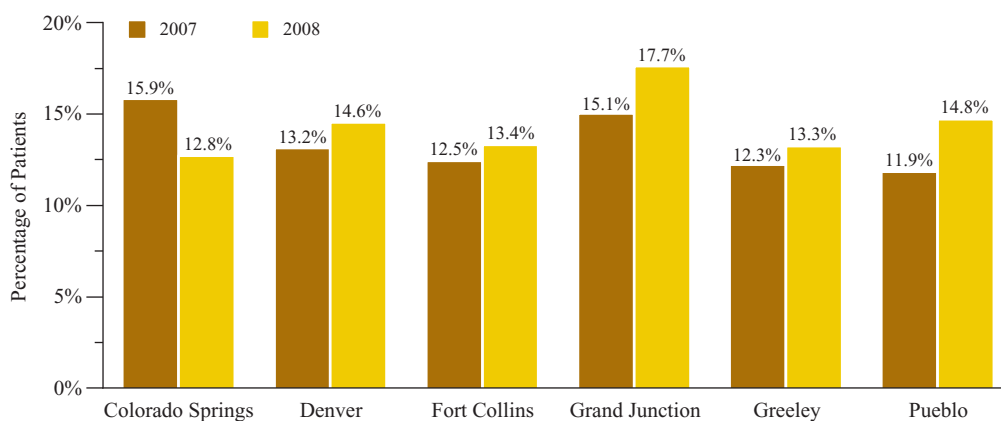
B1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMPLICATIONS*

MARKET	0		1		2		>2	
	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	53.9%	58.9%	30.3%	28.3%	12.3%	9.6%	3.6%	3.2%
Denver	57.4	55.1	29.5	30.3	9.9	10.8	3.3	3.8
Fort Collins	60.1	55.4	27.4	31.2	9.3	9.8	3.2	3.6
Grand Junction	37.1	37.0	47.8	45.3	11.2	13.7	3.9	4.0
Greeley	52.7	54.6	35.2	32.2	9.2	10.1	3.1	3.2
Pueblo	58.8	58.0	29.4	27.3	9.2	12.1	2.7	2.7
Colorado	57.1	56.2	29.8	29.8	9.9	10.6	3.3	3.5
NATION	62.5%	61.6%	28.2%	28.6%	7.3%	7.8%	2.0%	2.1%

GRAND JUNCTION PATIENTS HAVE MANY COMPLICATIONS

In 2008, 4.0% of Type 2 diabetes patients in the Grand Junction MSA were diagnosed with more than two complications from the disease (see table B1), up fractionally from 3.9% in 2007, and the highest share of the markets listed. The shares of Type 2 diabetes patients with more than two diagnosed complications surpassed the national average (2.1%) in all seven Colorado markets profiled.

B2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS WITH TWO OR MORE COMPLICATIONS*



FORT COLLINS COMPLICATION-FREE PATIENT SHARE FALLS

The share of Type 2 diabetes patients in the Fort Collins MSA with no diagnosed complications from the disease fell notably in 2008, to 55.4% from 60.1% in 2007 (see table B1). By comparison, the share of complication-free Type 2 diabetes patients grew sharply in Colorado Springs during this period, to 58.9% from 53.9% the year before.

B3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY TYPE OF COMPLICATION, 2008*

MARKET	Cardiovascular Disease	Neuropathy	Nephropathy	Retinopathy	Hypoglycemia
Colo. Springs	43.8%	24.1%	20.5%	7.7%	3.9%
Denver	40.7	21.7	18.4	15.9	3.4
Fort Collins	47.1	18.4	18.5	13.4	2.6
Grand Junction	65.2	13.3	13.2	6.7	1.6
Greeley	34.5	43.3	11.4	8.1	2.7
Pueblo	52.4	27.8	11.9	5.7	2.3
Colorado	43.2	23.3	17.8	12.5	3.2
NATION	46.2%	20.1%	18.2%	11.5%	4.0%

* 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, cardiovascular disease, hypoglycemia, nephropathy, neuropathy and retinopathy.

Data source: SDI © 2009

DENVER IMPROVES PATIENT RATIO WITH 2+ COMORBIDITIES

In 2008, the share of Type 2 diabetes patients in the Denver MSA who were diagnosed with at least two comorbidities dropped, to 8.2% from 9.1% in 2007 (see table C1). In contrast, the share of Type 2 diabetes patients with more than two comorbidities grew fractionally in Fort Collins, to 7.0% from 6.8% the previous year. Nationwide, this share fell to 4.7% from 5.5% in 2007, lowest of the eight markets listed.

CONGESTIVE HEART FAILURE RATE IS LOW IN COLORADO SPRINGS

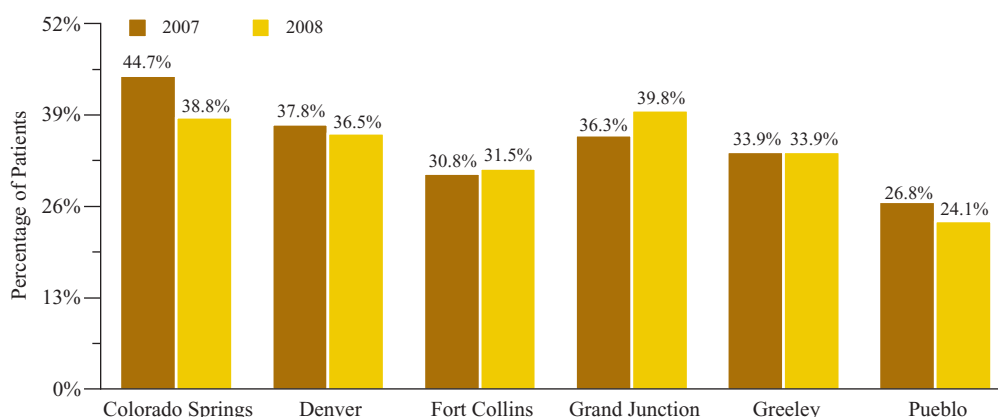
The percentage of Type 2 diabetes patients in the Colorado Springs MSA who were also diagnosed with congestive heart failure (CHF) was 5.5% in 2008 (see table C3), lowest of the eight markets profiled. The share of Type 2 diabetes patients also diagnosed with CHF in Colorado Springs was notably lower than the statewide (7.5%) and nationwide (7.7%) averages.

* 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 may include, but are not limited to, congestive heart failure, dysmetabolic syndrome, hyperlipidemia, hypertension and obesity.

C1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMORBIDITIES*

MARKET	0		1		2		>2	
	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	29.7%	34.7%	25.6%	26.5%	32.8%	30.2%	11.9%	8.6%
Denver	40.3	42.1	22.0	21.4	28.7	28.3	9.1	8.2
Fort Collins	48.6	47.7	20.6	20.9	24.0	24.5	6.8	7.0
Grand Junction	40.1	38.9	23.6	21.2	25.3	29.3	11.0	10.5
Greeley	43.6	44.2	22.5	22.0	24.8	26.5	9.1	7.4
Pueblo	56.2	61.5	17.0	14.4	19.8	19.0	7.0	5.1
Colorado	40.9	43.1	22.0	21.6	28.1	27.5	9.1	7.8
NATION	46.7%	47.6%	23.4%	22.9%	24.3%	24.8%	5.5%	4.7%

C2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS WITH TWO OR MORE COMORBIDITIES*



C3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY TYPE OF COMORBIDITY, 2008*

MARKET	Hypertension	Hyperlipidemia	Congestive Heart Failure	Obesity	Dysmetabolic Syndrome
Colo. Springs	46.7%	38.5%	5.5%	8.5%	0.8%
Denver	45.8	39.2	7.4	6.8	0.9
Fort Collins	46.3	37.7	8.1	6.8	1.1
Grand Junction	44.1	35.2	16.5	3.7	—
Greeley	45.6	40.0	5.7	7.8	1.0
Pueblo	45.8	38.6	8.3	6.5	0.7
Colorado	45.7	39.3	7.5	6.8	0.8
NATION	48.0%	38.9%	7.7%	4.8%	0.6%

Dysmetabolic Syndrome

A syndrome marked by the presence of usually three or more of a group of factors (such as high blood pressure, abdominal obesity, high triglyceride levels, low HDL levels, and high fasting levels of blood sugar) that are linked to an increased risk of cardiovascular disease and Type 2 diabetes.

Data source: SDI © 2009

Definition Source: Merriam-Webster's Online Medical Dictionary © 2009

D1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE

MARKET	A1c Test ¹		Serum Cholesterol Test		Ophthalmologic Exam		Urine Microalbumin Test	
	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	79.2%	80.3%	85.1%	83.1%	65.5%	66.5%	71.4%	69.8%
Denver	78.7	76.9	83.7	84.3	69.8	70.5	71.4	72.7
Fort Collins	76.0	72.4	85.3	82.7	76.0	78.2	72.0	72.4
Gr. Junction	75.6	79.3	87.4	88.2	70.9	63.9	68.5	70.4
Greeley	75.9	76.6	82.7	81.6	64.3	65.7	70.1	68.5
Pueblo	75.8	75.2	84.0	82.2	65.9	66.3	70.1	72.2
Colorado	78.4	77.2	84.0	84.1	69.2	69.2	71.3	72.4
NATION	73.8%	73.8%	83.8%	83.9%	69.2%	69.4%	71.1%	71.1%

SHARE OF DENVER PATIENTS GIVEN A1c TEST DECLINES

The percentage of Type 2 diabetes patients in the Denver MSA who had at least one A1c test in calendar year 2008 fell, to 76.9% from 78.7% in 2007 (see table D1). By comparison, a more notable 80.3% of Type 2 diabetes patients in the Colorado Springs market received an A1c test in 2008, up from 79.2% the previous year. Of the seven Colorado markets profiled, only Fort Collins (72.4%) trailed the national average (73.8%).

FORT COLLINS PATIENTS HAVE HIGH A1c TEST RESULTS

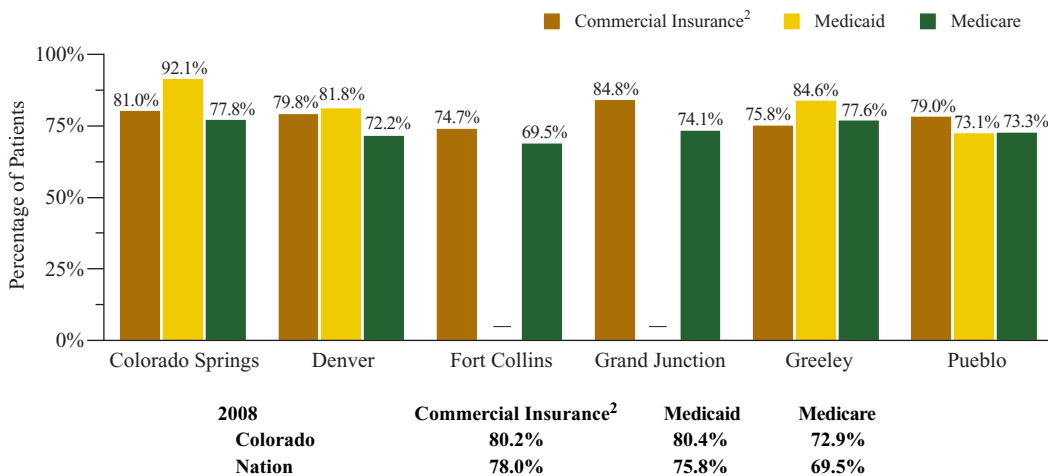
In 2008, 13.2% of Type 2 diabetes patients in the Fort Collins MSA had A1c test results greater than 9.0% on their most recent test, up considerably from 9.9% in 2007 (see table D3). In accordance, the share of Fort Collins Type 2 diabetes patients with A1c test results at or below 7.0% decreased sharply, to 63.6% from 70.1% the year before.

¹ 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.

² Includes Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

³ An A1c level of 9.0% or greater reflects poor control of the patient's blood sugar and is associated with greater risk of complications.

D2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING A1c TESTS, BY PAYER TYPE, 2008¹



D3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE³

MARKET	≤7.0%		7.1–7.9%		8.0–9.0%		>9.0%	
	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	65.6%	66.9%	14.1%	14.3%	9.0%	7.7%	11.4%	11.1%
Denver	63.4	63.3	16.5	16.0	9.6	9.5	10.5	11.3
Fort Collins	70.1	63.6	11.8	13.2	8.2	10.0	9.9	13.2
Gr. Junction	62.8	67.6	17.1	13.4	7.8	10.4	12.4	8.7
Greeley	62.4	65.4	17.1	15.6	8.5	7.3	12.0	11.8
Pueblo	63.7	61.7	16.0	16.5	8.3	10.3	12.1	11.5
Colorado	63.6	63.5	16.2	15.8	9.2	9.4	11.0	11.3
NATION	61.1%	61.4%	17.4%	17.2%	9.8%	9.9%	11.7%	11.5%

Data source: SDI © 2009

NOTABLE SHARE OF DENVER PATIENTS RECEIVES A1c TEST

The share of Type 2 diabetes patients in the Denver MSA who were given at least one A1c test was 76.9% in 2008 (see table E1), moderately higher than the national average (73.8%), but still notably lower than the share of such patients who were given at least one A1c test in the Minneapolis/St. Paul MSA (86.0%). Of the six markets listed, Type 2 diabetes patients in the Minneapolis/St. Paul MSA were also most likely to receive ophthalmologic exams (77.6%) in 2008.

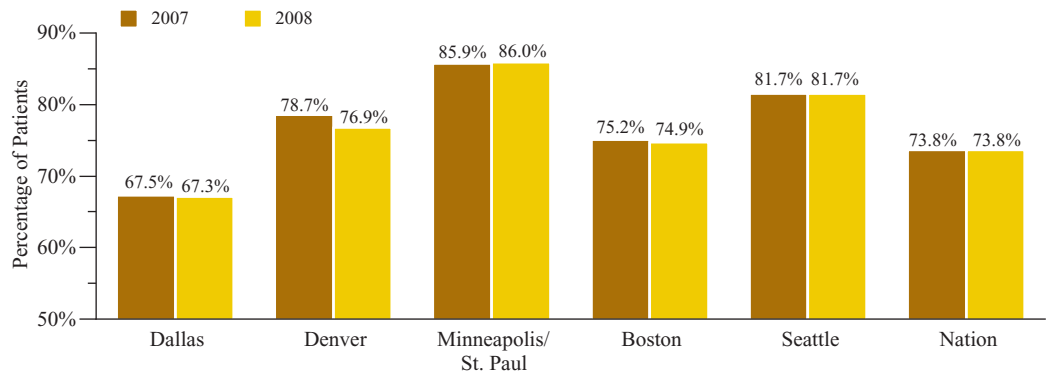
SHARE OF DENVER PATIENTS RECEIVING EYE TESTS TOPS 70%

The percentage of Type 2 diabetes patients in the Denver MSA who received an ophthalmologic exam rose slightly, to 70.5% in 2008 from 69.8% in 2007 (see table E1). In spite of this growth, the shares of Type 2 diabetes patients in Minneapolis/St. Paul (77.6%) and Boston (75.6%) who received an eye exam in 2008 were greater than in Denver.

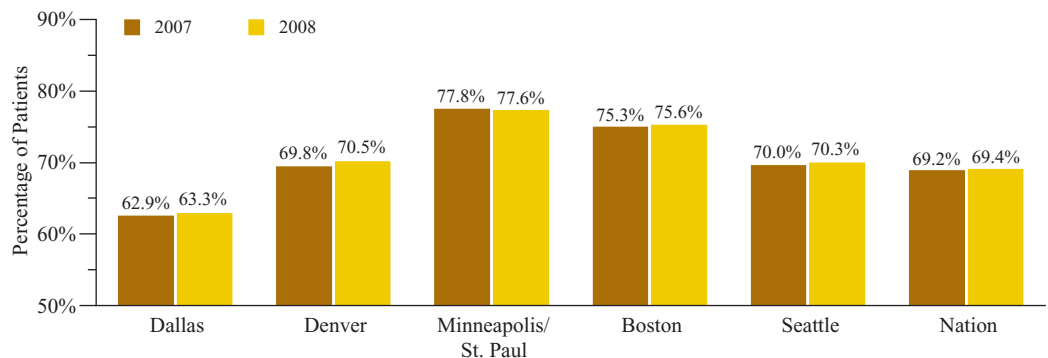
E1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE

MARKET	A1c Test*		Serum Cholesterol Test		Ophthalmologic Exam		Urine Microalbumin Test	
	2007	2008	2007	2008	2007	2008	2007	2008
Dallas	67.5%	67.3%	78.5%	79.1%	62.9%	63.3%	62.6%	62.8%
Denver	78.7	76.9	83.7	84.3	69.8	70.5	71.4	72.7
Minneapolis/St. Paul	85.9	86.0	88.3	87.5	77.8	77.6	82.5	82.3
Boston	75.2	74.9	89.2	89.8	75.3	75.6	82.5	82.6
Seattle	81.7	81.7	84.4	84.4	70.0	70.3	75.5	76.2
NATION	73.8%	73.8%	83.8%	83.9%	69.2%	69.4%	71.1%	71.1%

E2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING A1c TESTS*



E3: PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING OPHTHALMOLOGIC EXAMINATIONS



* 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.

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

Data source: SDI © 2009

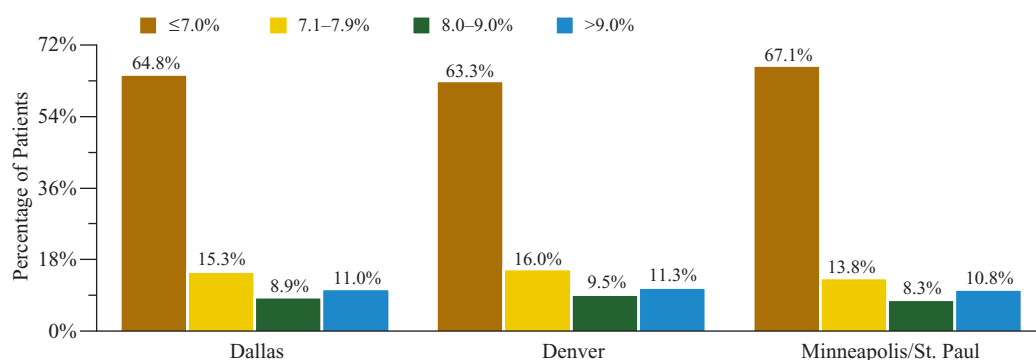
E4: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE*

MARKET	≤7.0%		7.1–7.9%		8.0–9.0%		>9.0%	
	2007	2008	2007	2008	2007	2008	2007	2008
Dallas	64.9%	64.8%	15.4%	15.3%	8.7%	8.9%	11.0%	11.0%
Denver	63.4	63.3	16.5	16.0	9.6	9.5	10.5	11.3
Minneapolis/ St. Paul	67.8	67.1	13.5	13.8	8.4	8.3	10.3	10.8
Boston	66.3	66.7	14.6	14.6	8.3	8.6	10.9	10.2
Seattle	66.6	66.1	14.6	14.3	8.1	8.6	10.7	11.0
NATION	61.1%	61.4%	17.4%	17.2%	9.8%	9.9%	11.7%	11.5%

SHARE OF DENVER PATIENTS WITH HIGH A1c LEVELS RISES

The percentage of Type 2 diabetes patients in the Denver MSA with A1c test results greater than 9.0% on their most recent test grew, to 11.3% in 2008 from 10.5% in 2007 (see table E4). The share of Denver Type 2 diabetes patients with A1c test levels in this highest range was just shy of the national average (11.5%), but noticeably higher than the Minneapolis/St. Paul (10.8%) and Boston (10.2%) MSAs.

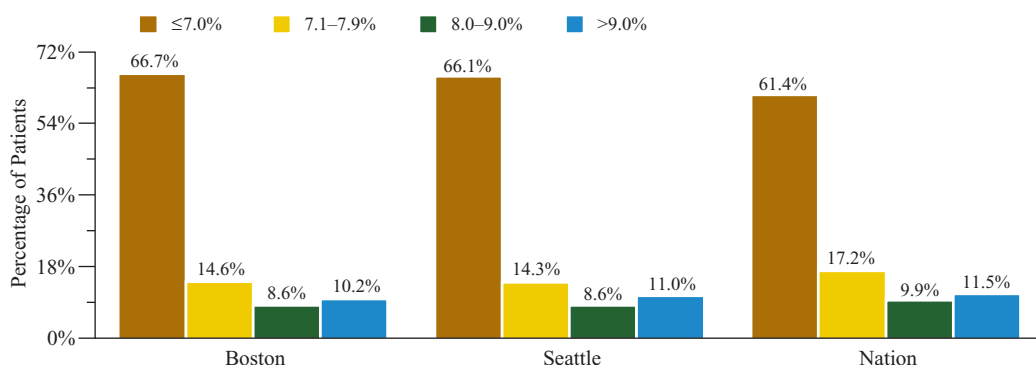
E5: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE, 2008*



LOW SHARE OF DENVER PATIENTS IS IN CONTROL

In 2008, just 63.3% of Type 2 diabetes patients in the Denver MSA had A1c test scores at or below 7.0% on their most recent A1c test (see table E4), down fractionally from 63.4% the year before, and lowest of the five MSAs profiled. By comparison, the share of Type 2 diabetes patients in Minneapolis/St. Paul with A1c test results in this lowest level range was 67.1% in 2008, highest among the five MSAs.

E6: PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE, 2008*



Data source: SDI © 2009

* 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.

ER CHARGES JUMP FOR COLORADO TYPE 2 DIABETES PATIENTS

Average emergency room (ER) charges per year for Type 2 diabetes patients in Colorado rose notably in 2008, to \$2,160 from \$1,698 in 2007 (see table F1). Such charges rose only slightly for Type 2 diabetes patients nationally over this time, to \$1,854 from \$1,651 the year before. Of the three markets for which 2008 data were available, average hospital ER charges were highest in Pueblo, at \$2,495, up considerably from \$1,963 in 2007.

COLORADO OP CHARGES ARE BELOW NATIONAL AVERAGE

In 2008, average hospital outpatient charges per Type 2 diabetes patient per year in the state of Colorado were \$4,269, up from \$3,087 in 2007 (see table F1). In spite of this notable increase, such charges remained well below the national average for this measure (to \$5,196 from \$4,673 the prior year).

* Figures reflect the charges generated for Type 2 diabetes patients by the facilities that delivered care. The data also reflect the average amounts charged in Type 2 diabetes patient claims, not the amount the claims paid.

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

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

MARKET	Emergency Room		Hospital Inpatient		Hospital Outpatient	
	2007	2008	2007	2008	2007	2008
Fort Collins	\$1,468	—	\$40,752	—	\$1,546	—
Pueblo	1,963	\$2,495	43,127	\$58,631	4,152	\$5,275
Colorado	1,698	2,160	29,964	41,382	3,087	4,269
NATION	\$1,651	\$1,854	\$49,870	\$52,730	\$4,673	\$5,196

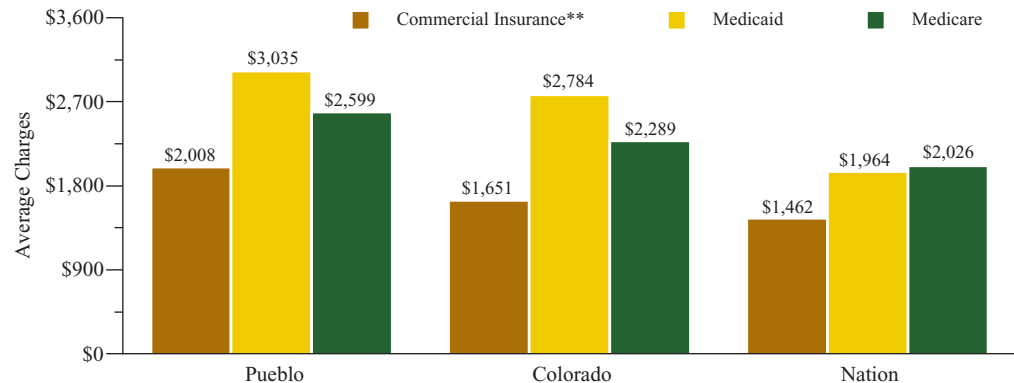
F2: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2007	2008	2007	2008	2007	2008
Fort Collins	\$35,305	—	\$50,058	—	\$41,852	—
Pueblo	42,046	\$44,533	45,057	\$61,960	—	\$64,470
Colorado	35,141	40,237	43,745	54,583	22,780	38,041
NATION	\$43,606	\$45,185	\$47,039	\$49,015	\$48,839	\$50,420

F3: HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2007	2008	2007	2008	2007	2008
Fort Collins	\$1,427	—	\$2,132	—	\$1,568	—
Pueblo	4,038	\$4,331	4,618	\$6,372	—	\$5,713
Colorado	2,981	3,178	4,181	5,619	2,752	5,015
NATION	\$4,030	\$4,440	\$4,317	\$4,711	\$5,103	\$5,804

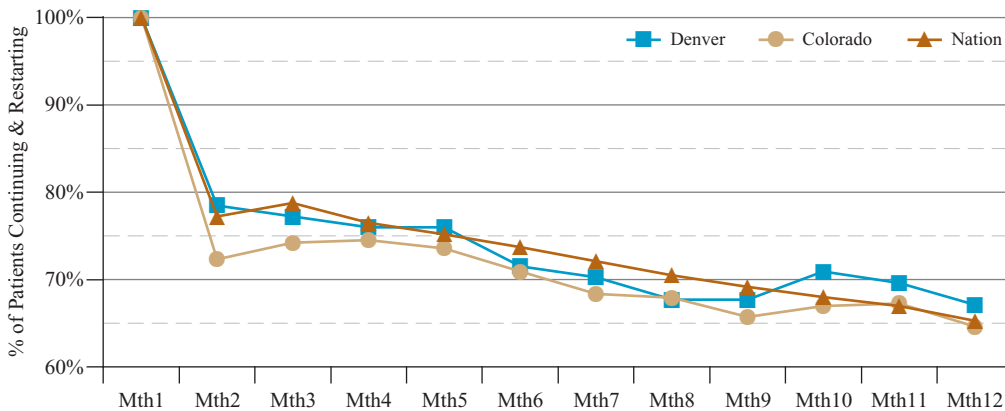
F4: HOSPITAL EMERGENCY ROOM CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE, 2008*



NOTE: Facility charge data were unavailable for the Colorado Springs, Denver, Grand Junction and Greeley MSAs.

Data source: SDI © 2009

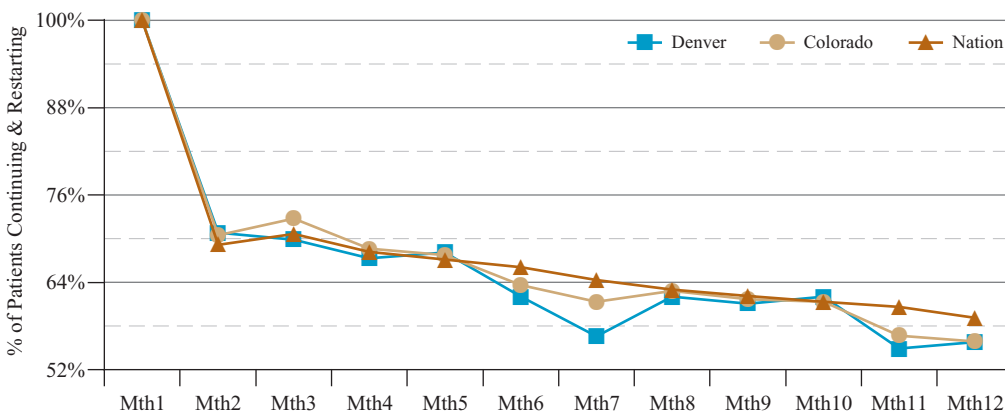
PERSISTENCY: LONG-ACTING INSULIN, 2008



LONG-ACTING INSULIN PERSISTENCY IS HIGH IN DENVER

Patients diagnosed with Type 2 diabetes in Denver were most likely, of the three markets profiled, to have maintained their prescribed therapy, at month 12, for long-acting insulin (67.1%) in 2008. However, Type 2 diabetes patients in Denver were least likely, by market, to have either continued or restarted their short-acting insulin prescription at month 12, at just 55.8%.

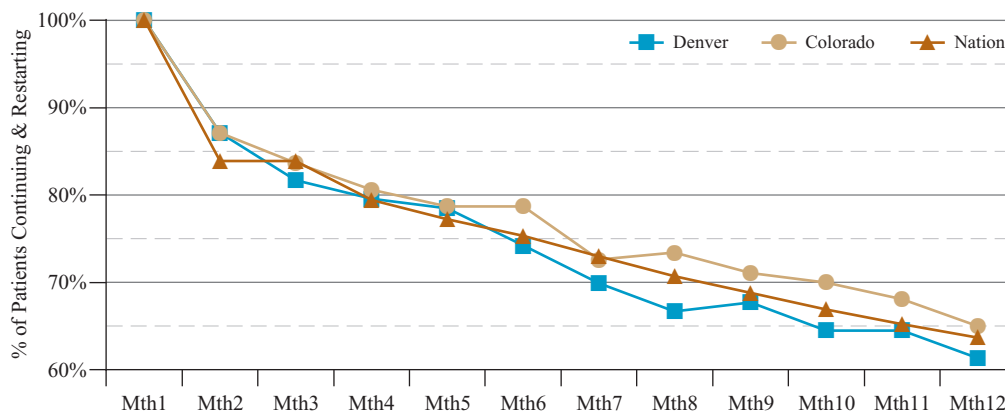
PERSISTENCY: SHORT-ACTING INSULIN, 2008



COLORADO PATIENTS ON NON-INSULINS ARE MORE PERSISTENT

At month 6, a notable 78.7% of Colorado Type 2 diabetes patients who were prescribed non-insulin antidiabetic combinations maintained their therapy. By comparison, 75.3% of Type 2 diabetes patients nationally either continued or restarted their prescribed non-insulin antidiabetic combinations at month 6.

PERSISTENCY: NON-INSULIN ANTIDIABETIC COMBINATIONS, 2008



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.

Data source: SDI © 2009

NOTE: Persistency data were unavailable for the Colorado Springs, Fort Collins, Grand Junction, Greeley and Pueblo MSAs.

COLORADO ER CHARGES EXCEED NATIONAL AVERAGE

Average annual hospital charges for care delivered to Type 2 diabetes patients in an emergency room (ER) setting were \$2,160 in Colorado in 2008, up notably from \$1,698 the year before, and marginally higher than the national average of \$1,854 (see table G1). By comparison, such charges were highest per Type 2 diabetes patient per year in Seattle (\$2,798) and lowest in Dallas (\$1,581).

HOSPITAL INPATIENT CHARGES ARE LOW ACROSS COLORADO

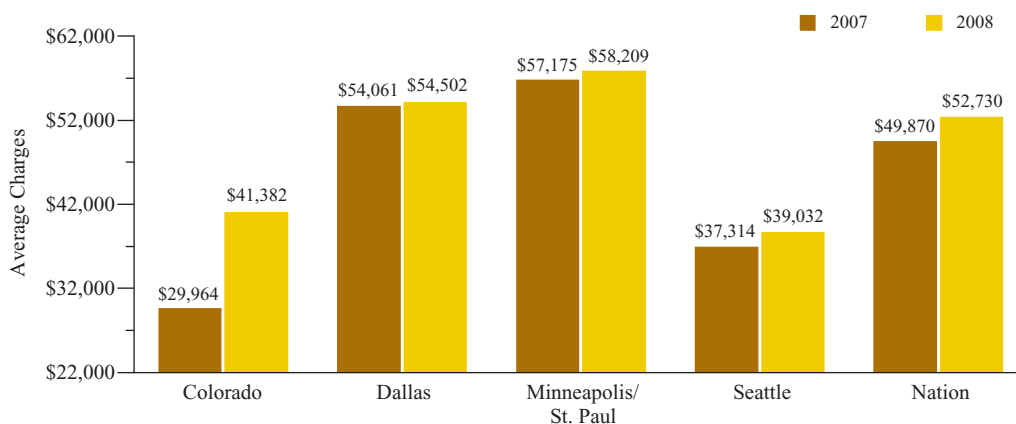
In 2008, average annual hospital inpatient charges per Type 2 diabetes patient in the state of Colorado were \$41,382, up sharply from \$29,964 in 2007 (see table G1). In spite of this significant growth, such charges were second lowest of the five markets listed. Type 2 diabetes patients in the Seattle MSA had the lowest average hospital inpatient charges in 2008, at \$39,032, up slightly from \$37,314 the year before.

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

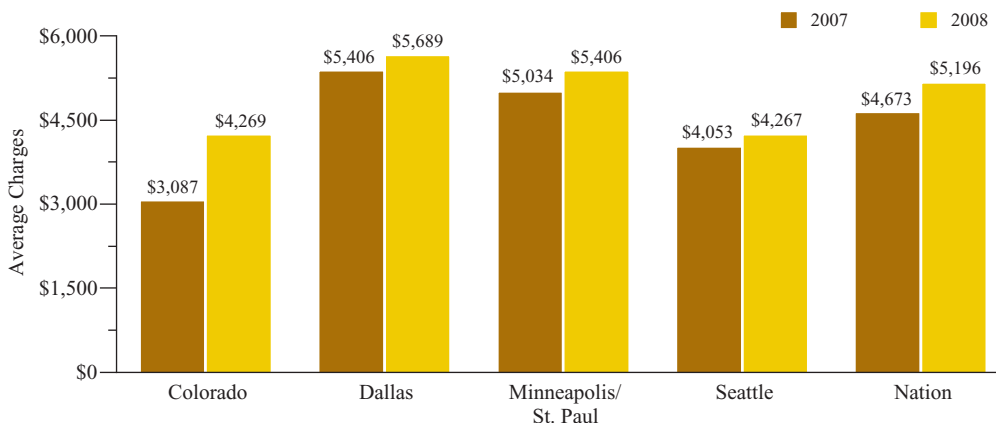
G1: HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*

MARKET	Emergency Room		Hospital Inpatient		Hospital Outpatient	
	2007	2008	2007	2008	2007	2008
Colorado	\$1,698	\$2,160	\$29,964	\$41,382	\$3,087	\$4,269
Dallas	1,448	1,581	54,061	54,502	5,406	5,689
Minneapolis/ St. Paul	1,958	2,120	57,175	58,209	5,034	5,406
Seattle	2,398	2,798	37,314	39,032	4,053	4,267
NATION	\$1,651	\$1,854	\$49,870	\$52,730	\$4,673	\$5,196

G2: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*



G3: HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*



NOTE: Facility charge data were reported for the state of Colorado because such data were unavailable for the Denver MSA.

Data source: SDI © 2009

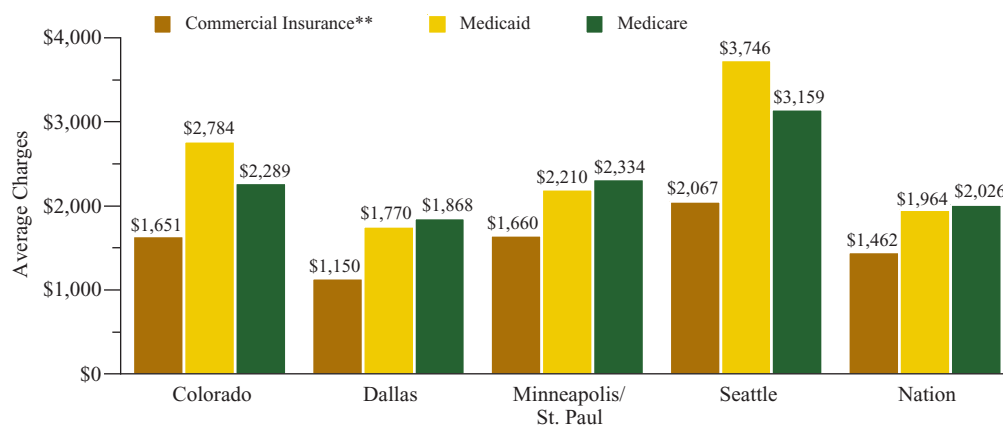
G4: HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2007	2008	2007	2008	2007	2008
Colorado	\$35,141	\$40,237	\$43,745	\$54,583	\$22,780	\$38,041
Dallas	42,746	46,356	55,165	50,829	58,997	56,559
Minneapolis/ St. Paul	48,666	46,420	60,267	56,366	58,665	58,050
Seattle	32,530	32,759	42,124	39,709	37,292	38,193
NATION	\$43,606	\$45,185	\$47,039	\$49,015	\$48,839	\$50,420

G5: HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2007	2008	2007	2008	2007	2008
Colorado	\$2,981	\$3,178	\$4,181	\$5,619	\$2,752	\$5,015
Dallas	4,162	4,369	4,449	5,470	7,169	7,472
Minneapolis/ St. Paul	4,590	4,888	3,894	3,823	5,270	5,750
Seattle	3,305	3,609	4,911	4,897	5,004	5,002
NATION	\$4,030	\$4,440	\$4,317	\$4,711	\$5,103	\$5,804

G6: HOSPITAL EMERGENCY ROOM CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE, 2008*



Data source: SDI © 2009

NOTE: Facility charge data were reported for the state of Colorado because such data were unavailable for the Denver MSA.

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

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

COLORADO HAS LOWEST MEDICARE INPATIENT CHARGES

Although average annual hospital inpatient charges for Type 2 diabetes patients in Colorado with Medicare coverage increased notably in 2008, to \$38,041 from \$22,780, such charges remained lowest of the five markets profiled (see table G4). By comparison, such charges were highest for Type 2 diabetes patients in Minneapolis/St. Paul, at \$58,050. Nationwide, Type 2 diabetes patients with Medicare coverage incurred average hospital inpatient charges of \$50,420 in 2008, up from \$48,839 in 2007.

COLORADO OP MEDICAID CHARGES TOP NATIONAL MARK

Between 2007 and 2008, average hospital outpatient charges per year for Type 2 diabetes patients in the state of Colorado with Medicaid coverage grew sharply, to \$5,619 from \$4,181, highest of the five markets listed. Such charges also rose notably for Type 2 diabetes patients nationally over this period, to \$4,711 from \$4,317 the prior year.

EMERGENCY ROOM CHARGES FALL FOR DENVER PATIENTS

Average professional emergency room (ER) charges for care provided to Type 2 diabetes patients in Denver were \$347 in 2008, down notably from \$470 in 2007 (see table H1). Such charges were only slightly higher than the statewide average (\$329) but were less than half the national average (\$722) in 2008.

OP PROFESSIONAL CHARGES DECLINE IN PUEBLO MSA

Professional hospital outpatient charges for Type 2 diabetes patients in the Pueblo MSA fell in 2008, to \$545 from \$606 the previous year (see table H1), lowest of the eight markets profiled by a considerable margin. Such charges likewise dropped for Type 2 diabetes patients in Colorado Springs (to \$844 from \$980 in 2007) and Denver (to \$1,455 from \$1,792) over this period. Meanwhile, professional hospital outpatient charges for Type 2 diabetes patients in Greeley rose notably, to \$762 from \$629 in 2007.

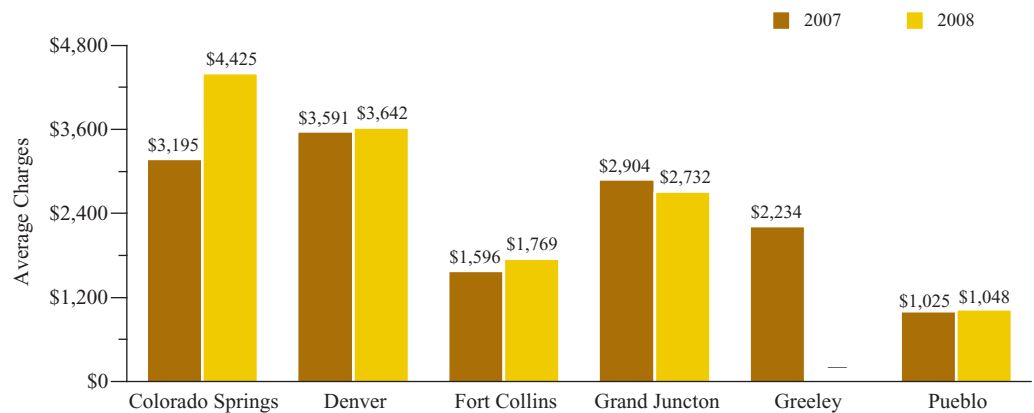
* Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

** Ambulatory surgery center.

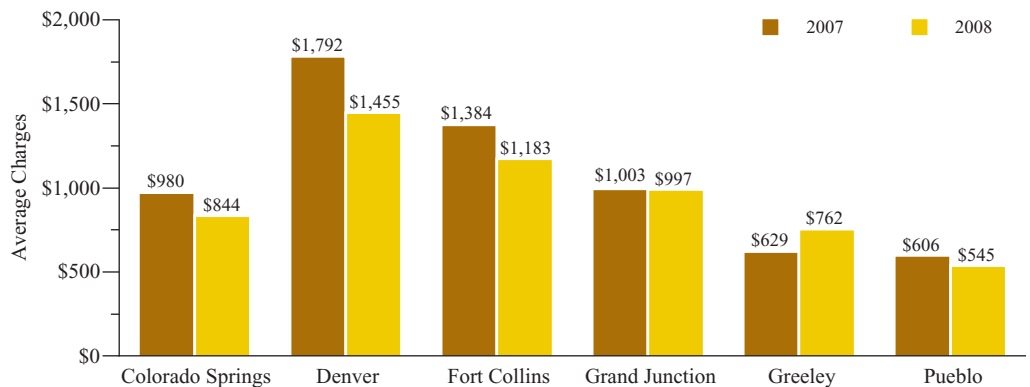
H1: PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*

MARKET	ASC**		Emergency Room		Hospital Inpatient		Hospital Outpatient		Office	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	\$1,453	\$1,831	\$648	\$229	\$3,195	\$4,425	\$980	\$844	\$626	\$788
Denver	1,682	2,229	470	347	3,591	3,642	1,792	1,455	1,169	1,456
Fort Collins	1,462	—	232	403	1,596	1,769	1,384	1,183	563	709
Gr. Junction	—	—	—	—	2,904	2,732	1,003	997	915	1,056
Greeley	1,603	1,089	623	—	2,234	—	629	762	451	533
Pueblo	875	889	268	290	1,025	1,048	606	545	628	501
Colorado	1,690	2,284	369	329	3,797	3,619	1,223	1,140	992	1,190
NATION	\$3,055	\$3,077	\$647	\$722	\$6,070	\$6,570	\$1,919	\$2,042	\$2,818	\$3,399

H2: PROFESSIONAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*



H3: PROFESSIONAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*



Data source: SDI © 2009

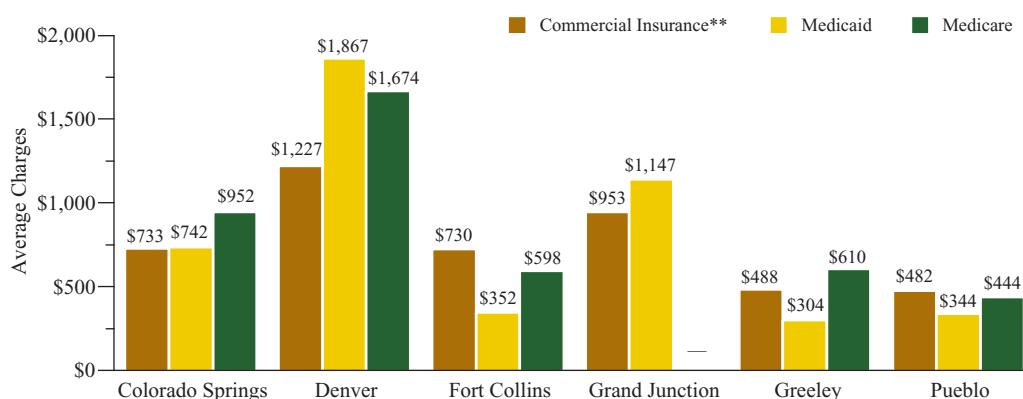
H4: PROFESSIONAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2007	2008	2007	2008	2007	2008
Colo. Springs	\$2,695	\$3,328	\$4,343	\$5,875	\$3,200	\$5,337
Denver	3,009	3,015	2,717	3,520	4,094	3,769
Fort Collins	1,762	1,898	1,279	—	1,418	1,470
Grand Junction	2,806	2,792	2,366	2,521	2,872	—
Greeley	3,130	3,409	1,859	—	1,307	—
Pueblo	1,341	1,108	1,156	948	737	986
Colorado	3,776	3,266	2,264	2,908	3,702	3,632
NATION	\$4,916	\$5,211	\$4,963	\$5,224	\$5,823	\$6,326

H5: PROFESSIONAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2007	2008	2007	2008	2007	2008
Colo. Springs	\$952	\$849	\$267	—	—	—
Denver	1,666	1,306	1,575	\$1,683	\$1,946	\$1,599
Fort Collins	1,597	1,051	1,378	—	921	1,328
Grand Junction	939	1,083	895	815	1,070	—
Greeley	885	1,074	381	—	253	453
Pueblo	325	365	281	321	377	322
Colorado	1,211	1,118	652	873	996	930
NATION	\$1,797	\$1,934	\$1,388	\$1,421	\$1,676	\$1,720

H6: PROFESSIONAL OFFICE/CLINIC CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE, 2008*



2008	Commercial Insurance**	Medicaid	Medicare
Colorado	\$1,023	\$1,456	\$1,354
Nation	\$2,740	\$2,006	\$3,092

COMM. INSURANCE CHARGES REMAIN LOW IN COLORADO

Average professional inpatient charges for services provided to Type 2 diabetes patients with commercial insurance coverage were lower than the national average (\$5,211) in all seven Colorado markets profiled (see table H4). For example, such charges were \$3,015 for Type 2 diabetes patients in the Denver MSA in 2008, substantially lower than the national mark.

OP MEDICARE CHARGES FALL FOR DENVER PATIENTS

Professional outpatient charges generated by providers delivering care to Type 2 diabetes patients in Denver with Medicare coverage fell notably, to \$1,599 in 2008 from \$1,946 the year before (see table H5). Although Type 2 diabetes patients in Denver with Medicare coverage generated the highest professional outpatient charges among the Colorado markets listed, such charges were still noticeably lower than the national average (\$1,720).

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

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

Data source: SDI © 2009

LONG-ACTING INSULIN USE IS HIGH IN PUEBLO MSA

The percentage of Type 2 diabetes patients in the Pueblo MSA using long-acting insulin products grew in 2008, to 26.4% from 24.4% in 2007, the highest share of the eight markets profiled (see table I1). The share of Type 2 diabetes patients using long-acting insulin in Pueblo was notably higher than both the statewide (20.3%) and nationwide (21.2%) averages. By comparison, just 17.6% of Type 2 diabetes patients in Greeley used long-acting insulin products, down from 19.2% the prior year.

AVERAGE INSULIN PAYMENTS ARE HIGH IN GRAND JUNCTION

Average payments per Type 2 diabetes patient per year in the Grand Junction MSA for any insulin product were \$1,342 in 2008 (see graph I3), highest of the eight markets listed, and more than \$100 greater than the national average (\$1,240). By comparison, average annual payments per Type 2 diabetes patient in Grand Junction for any non-insulin antidiabetic product were \$348 in 2008, well below the national average of \$585.

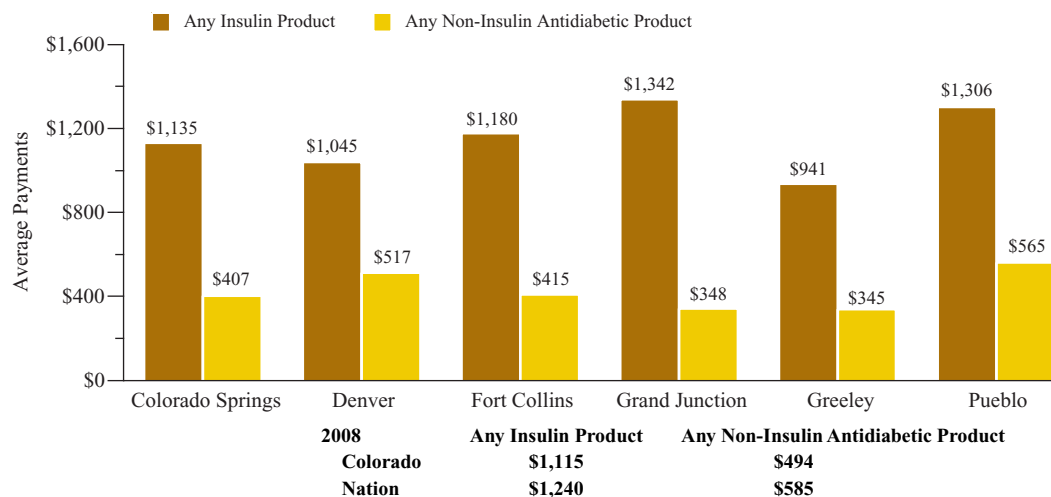
I1: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

MARKET	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	31.2%	31.3%	4.4%	3.0%	17.9%	20.2%	17.0%	15.3%	2.8%	2.8%
Denver	32.6	32.1	5.2	4.4	17.4	18.6	15.2	14.5	4.3	4.1
Fort Collins	35.6	35.6	4.2	3.7	23.5	24.2	18.7	19.3	4.0	3.5
Gr. Junction	36.0	34.8	3.9	3.7	24.5	23.6	18.6	17.2	3.1	2.1
Greeley	33.8	33.9	2.7	4.5	19.2	17.6	14.9	13.7	8.3	8.6
Pueblo	39.5	39.3	4.2	3.6	24.4	26.4	16.5	17.2	9.5	7.9
Colorado	33.5	33.4	4.7	4.0	19.1	20.3	15.8	15.4	4.9	4.7
NATION	35.6%	36.4%	4.7%	4.0%	19.1%	21.2%	15.2%	16.1%	8.9%	8.5%

I2: PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING NON-INSULIN ANTIDIABETIC THERAPIES

MARKET	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	2007	2008	2007	2008	2007	2008	2007	2008
Colo. Springs	82.2%	81.5%	56.6%	58.6%	28.6%	28.1%	20.4%	15.1%
Denver	83.0	83.5	55.8	57.6	32.0	31.4	25.6	19.2
Fort Collins	80.2	80.7	52.4	53.5	33.8	31.1	24.7	15.2
Gr. Junction	82.0	82.6	55.0	57.8	37.8	33.3	15.7	13.3
Greeley	80.5	83.5	53.6	58.7	28.8	28.8	23.3	13.5
Pueblo	81.7	82.2	50.9	52.3	33.2	32.8	28.4	19.8
Colorado	82.7	83.0	55.3	57.1	32.0	30.9	25.1	18.2
NATION	84.8%	84.5%	52.5%	54.2%	39.5%	39.0%	26.0%	19.4%

I3: AVERAGE PAYMENTS PER TYPE 2 DIABETES PATIENT, BY TYPE OF THERAPY, 2008*



Data source: SDI © 2009

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.

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.

Sulfonylureas

Stimulate the release of insulin in the pancreas.

* Figures reflect the per-patient yearly payments for Type 2 diabetes patients receiving a particular type of therapy.

Data Methodology

SDI generated data for this **Managed Care Digest Series®** database using health care professional and institutional insurance claims, representing more than 6.5 million unique patients nationally in 2008 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.

SDI also gathers data on prescription activity from the National Council for Prescription Drug Programs (NCPDP). These data represent some 5 billion prescription claims annually, or more than 50% of the prescription universe. These 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

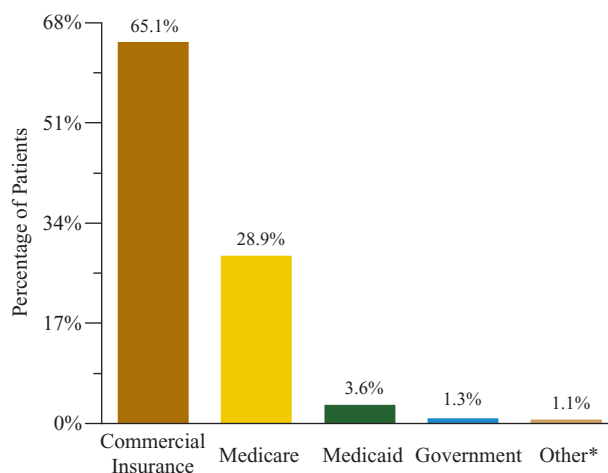
Data arriving into SDI are put through a rigorous process to ensure that data elements match to valid references, such as product codes, ICD-9 (diagnosis) and CPT-4 (procedure) codes, and provider and facility data.

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 each patient, 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.

J1: COLORADO TYPE 2 DIABETES PATIENTS, BY PAYER TYPE, 2008



* Other includes self-pay and workers' compensation.

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2009 ADA/EASD RECOMMENDATIONS FOR TIMELY INSULIN USE

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.

COLORADO TYPE 2 DIABETES REPORT 2009

The Colorado Business Group on Health (CBGH), in conjunction with sanofi-aventis U.S. LLC, is pleased to bring you the fifth edition of the **Colorado Type 2 Diabetes Report**.

The report features key national, state and local-level, Type 2 diabetes data from the sanofi-aventis **Managed Care Digest Series**®.

- Demographics
- Hospital and Professional Charges
- Use of Services
- Pharmacotherapy

We look forward to providing you with another **Colorado Type 2 Diabetes Report** in 2010.

