



OHIO

TYPE 2 DIABETES REPORT

2008

Featuring Demographic, Utilization, Charges
and Pharmacotherapy Data

Business Health Coalitions of Ohio



Presented by

sanofi aventis

in conjunction with the
Business Health Coalitions of Ohio



CONTENTS

Patient Demographics	3–4
Hospital Charges	5
Professional Charges	6–7
Use of Services	8
Pharmacotherapy	9–11
Persistence	12

Business Health Coalitions of Ohio

Barbara Belovich, *Executive Director*
Health Action Council Ohio
216-518-9377
6133 Rockside Rd.
Rockside Square II, Suite 210
Independence, OH 44131

Sharon DiMario, *President & Exec. Director*
Employer Health Care Alliance
515-458-6730
3805 Edwards Rd., Suite 546
Cincinnati, OH 45209

Christopher V. Goff, *JD, MA, CEO & General Counsel*
330-305-6565
4143 Fulton Dr.
Canton, OH 44718

Michael S. Stull, *MBA, Regional Vice President*
Employers Health Coalition of Ohio, Inc.
614-336-2883
5400 Frantz Rd., Suite 180
Dublin, OH 43016

Sue Szymanski, *CEO*
FrontPath Health Coalition
419-891-5206
12875 Eckel Junction Rd., Suite B
Perrysburg, OH 43551

Managed Care Digest Series® 2008

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
Verispan LLC
Yardley, PA

www.managedcaredigest.com

CONTACTS

Rod Sprang <i>Regional Account Manager</i> sanofi-aventis U.S. LLC	330-239-2046
Cleatus Price <i>Regional Account Manager</i> sanofi-aventis U.S. LLC	614-855-8010
Charles Hyde <i>Employer National Account Manager</i> sanofi-aventis U.S. LLC	616-847-8643

Cover photos courtesy of the Ohio Division of Travel and Tourism.

Introduction

The Business Health Coalitions of Ohio (BHCO) are pleased to present the third edition of the **Ohio Type 2 Diabetes Report** for 2008, an overview of demographic, financial, utilization and pharmacotherapy measures for Type 2 diabetes patients in key local markets in the state of Ohio. The report also provides national benchmarks that can help providers and employers identify better opportunities to serve the needs of their patients. All data are drawn from the sanofi-aventis **Managed Care Digest Series®**.

This report features a number of examples of the kinds of patient-level, disease-specific data on Type 2 diabetes that can be provided by the **Managed Care Digest Series®**. BHCO chose Type 2 diabetes (high blood glucose levels caused by either a lack of insulin or the body's inability to use insulin efficiently) as the focus of this resource, 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 2006 and 2007) were gathered by Verispan LLC, Yardley, Pa., a leading health care information company. The data provide health care providers with independent, third-party information they can use to benchmark their own data on patient demographics, professional (provider) and facility (hospital) charges, service utilization and pharmacotherapy.

Methodology

Verispan generated data for this **Managed Care Digest Series®** database using health care professional (837p) and institutional (837i) insurance claims, representing more than 5.5 million unique patients nationally in 2007 with a range of Type 2 diabetes diagnoses

(250.00–250.92). Data from physicians of all specialties and from all hospital types are included.

Verispan also gathers data on prescription activity from the National Council for Prescription Drug Programs (NCPDP). These data 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

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

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

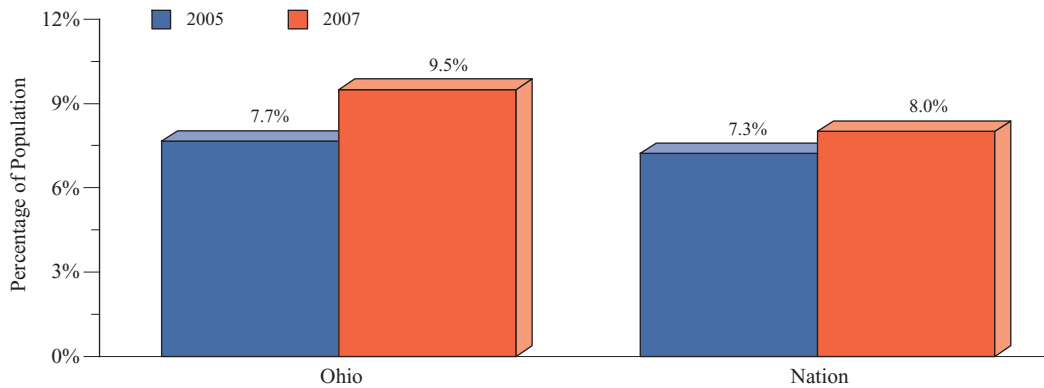
Through its patient encryption methods, Verispan creates a unique, random numerical identifier for every patient, and then strips away all patient-specific health information that is protected under the Health Insurance Portability and Accountability Act (HIPAA). The identifier allows Verispan to track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

Data are collected and copyrighted by Verispan LLC.
The role of BHCO is to help make these data more widely available to interested parties.

PATIENT DEMOGRAPHICS



PERCENTAGE OF POPULATION WITH DIABETES, 2005–2007*



Data source: Center for Disease Control and Prevention's Behavioral Risk Factors Surveillance System (BRFSS), 2008

PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY AGE**

MARKET	0–17		18–35		36–64		65–79		80+	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Akron	0.4%	0.4%	4.7%	4.3%	51.3%	50.6%	31.5%	31.5%	12.0%	13.2%
Canton	0.3	0.4	3.7	3.2	48.5	55.8	33.1	29.7	14.4	10.9
Cincinnati	0.5	0.5	4.8	4.6	56.7	56.6	29.1	29.1	9.0	9.2
Cleveland	0.4	0.3	3.6	3.4	52.4	53.0	32.1	31.5	11.4	11.8
Columbus	0.4	0.4	4.6	4.5	58.4	58.7	28.0	27.9	8.7	8.6
Dayton	0.3	0.3	3.3	3.0	53.1	50.7	33.1	35.0	10.3	11.1
Toledo	0.6	0.6	5.3	4.9	56.3	55.8	28.6	29.2	9.2	9.5
Youngstown	0.3	0.3	3.3	2.5	55.9	53.6	30.6	32.1	10.0	11.5
Ohio	0.4	0.4	4.2	3.9	53.8	53.6	31.2	31.3	10.5	10.8
NATION	0.4%	0.4%	3.6%	3.4%	50.6%	49.5%	33.3%	34.1%	12.1%	12.7%

PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY GENDER**

MARKET	Male		Female	
	2006	2007	2006	2007
Akron	37.8%	39.2%	62.2%	60.8%
Canton	40.9	42.1	59.2	57.9
Cincinnati	41.0	41.3	59.0	58.7
Cleveland	39.2	39.6	60.8	60.4
Columbus	39.5	40.3	60.5	59.7
Dayton	41.3	43.1	58.7	56.9
Toledo	41.4	41.6	58.7	58.4
Youngstown	37.3	38.9	62.7	61.1
Ohio	41.0	41.6	59.0	58.4
NATION	45.1%	44.9%	54.9%	55.1%

Data source: Verispan LLC © 2008

NOTE: Throughout this summary, the Canton Metropolitan Statistical Area (MSA) includes Massillon; Cleveland includes Lorain and Elyria; Dayton includes Springfield; and Youngstown includes Warren.

SHARE OF WORKING AGE PATIENTS IS HIGH IN COLUMBUS MSA

The share of patients in the Columbus metropolitan statistical area (MSA) diagnosed with Type 2 diabetes who were between the ages of 18 and 64 was 63.2% in 2007, up fractionally from 63.0% in 2006, and the highest mark of the nine Ohio markets profiled. By comparison, just 53.7% of Type 2 diabetes patients in the Dayton MSA were in this age category, down modestly from 56.4% the year before, the lowest share among the local markets.

YOUNGSTOWN WOMEN ARE MOST LIKELY TO BE DIAGNOSED

In 2007, 61.1% of patients diagnosed with Type 2 diabetes in the Youngstown MSA were women (just 38.9% were men), down slightly from 62.7% in 2006, but still the highest share of the Ohio markets profiled. At 58.4%, the ratio of women to men patients across the state of Ohio was likewise high, by comparison with that of the nation: Just 55.1% of patients diagnosed with Type 2 diabetes nationally were women, up fractionally from 54.9% the previous year.

* Percentages do not include those patients with pregnancy-related or pre- or borderline diabetes.

** 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.



PATIENT DEMOGRAPHICS

COMPLICATION-FREE PATIENT SHARES ARE LOW ACROSS OHIO

In 2007, the percentages of patients diagnosed with Type 2 diabetes and no complications from the disease were lower than the national average (62.5%) in every Ohio market listed. At 59.5%, the share of patients in the Canton MSA with Type 2 diabetes and no complications was the highest by Ohio market, yet still trailed the national mark by three percentage points.

SHARE OF PATIENTS IN OHIO WITH 2+ COMORBIDITIES DIPS

The share of Type 2 diabetes patients in the state of Ohio with two or more diagnosed comorbidities dropped in 2007, to 40.8% from 42.4% in 2006. In spite of this decline, this share lagged 11 percentage points behind the national average for this measure (29.8%) in 2007.

¹ 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.

² 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.

³ Includes Blue Cross/Blue Shield, HMOs, PPOs, point-of-service plans and exclusive provider organizations.

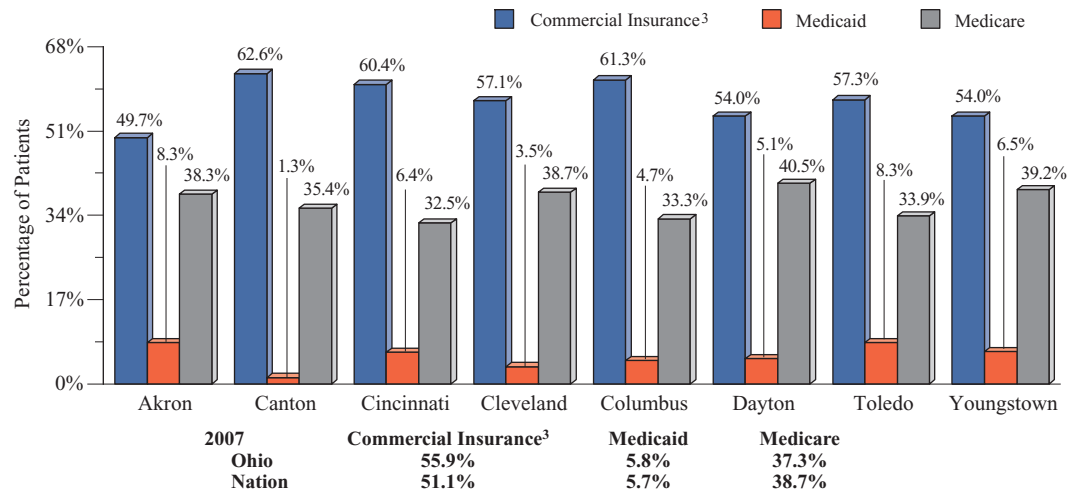
PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMPLICATIONS¹

MARKET	0		1		2		>2	
	2006	2007	2006	2007	2006	2007	2006	2007
Akron	53.6%	53.9%	31.9%	31.2%	10.9%	11.2%	3.5%	3.6%
Canton	55.1	59.5	30.7	29.1	10.6	8.2	3.6	3.1
Cincinnati	53.6	51.4	31.6	32.1	11.1	12.4	3.8	4.2
Cleveland	54.8	51.8	31.4	32.7	10.3	11.7	3.5	3.9
Columbus	55.4	54.1	30.5	30.9	10.6	11.3	3.5	3.6
Dayton	52.4	50.5	32.5	33.6	11.3	12.0	3.8	3.9
Toledo	52.8	50.5	31.9	32.9	11.4	12.4	3.9	4.3
Youngstown	52.2	51.1	32.9	33.5	11.4	11.8	3.5	3.5
Ohio	55.3	53.7	31.1	31.6	10.3	11.1	3.3	3.6
NATION	64.2%	62.5%	27.5%	28.2%	6.7%	7.3%	1.7%	2.0%

PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMORBIDITIES²

MARKET	0		1		2		>2	
	2006	2007	2006	2007	2006	2007	2006	2007
Akron	37.4%	41.9%	22.9%	21.7%	28.3%	26.3%	11.4%	10.2%
Canton	34.8	29.2	26.7	27.6	29.4	34.2	9.1	9.0
Cincinnati	33.2	36.1	23.4	23.1	32.9	30.6	10.5	10.2
Cleveland	35.5	36.7	23.1	23.3	31.2	29.9	10.2	10.1
Columbus	25.5	25.6	24.8	25.2	38.0	38.1	11.7	11.2
Dayton	32.6	34.3	23.4	25.1	32.9	30.2	11.2	10.4
Toledo	28.8	29.3	26.1	27.1	34.0	33.1	11.2	10.6
Youngstown	32.4	37.1	27.0	25.8	30.4	27.5	10.3	9.6
Ohio	33.5	35.1	24.2	24.2	32.4	31.1	10.0	9.7
NATION	45.4%	46.7%	24.0%	23.4%	25.0%	24.3%	5.6%	5.5%

PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY PAYER TYPE, 2007



Data source: Verispan LLC © 2008

HOSPITAL CHARGES



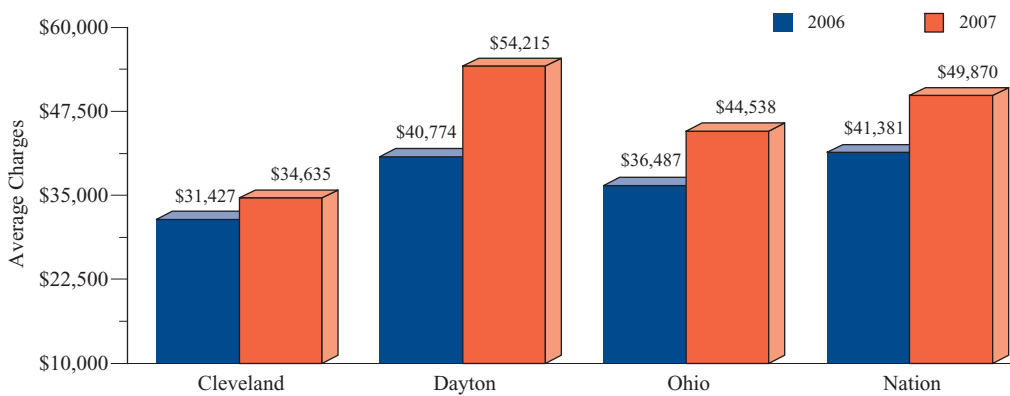
HOSPITAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*

MARKET	Emergency Room		Hospital Inpatient		Hospital Outpatient	
	2006	2007	2006	2007	2006	2007
	Cleveland	\$1,546	\$1,764	31,427	\$34,635	\$3,194
Dayton	1,405	2,298	40,774	54,215	4,237	5,408
Ohio	1,200	1,857	36,487	44,538	3,692	4,574
NATION	\$1,299	\$1,651	\$41,381	\$49,870	\$3,901	\$4,673

OHIO HOSPITAL INPATIENT CHARGES TRAIL THE NATION

Average annual hospital inpatient charges for Type 2 diabetes patients in the state of Ohio were \$44,538 in 2007, moderately less than the \$49,870 average for such patients nationally. Type 2 diabetes patients in the Dayton MSA, however, reported annual hospital inpatient charges of \$54,215 in 2007, higher than both the state and national averages.

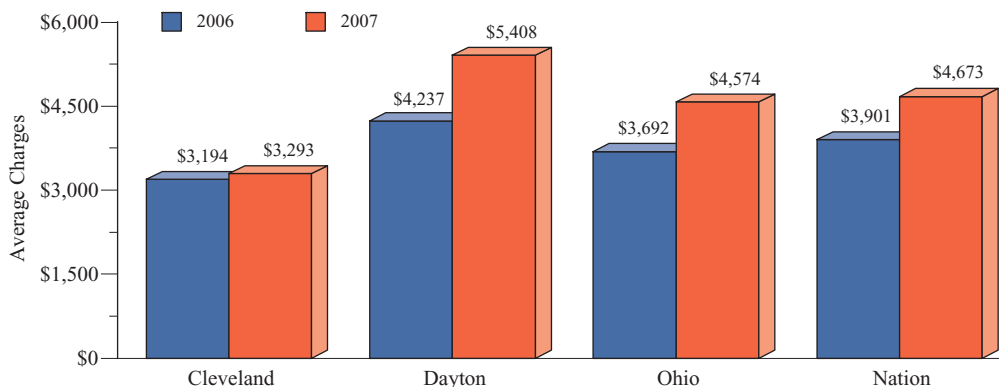
HOSPITAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*



HOSPITAL OUTPATIENT CHARGES INCREASE SHARPLY IN OHIO

Between 2006 (\$3,692) and 2007 (\$4,574), average annual hospital outpatient charges rose notably for Type 2 diabetes patients in the state of Ohio. Yet such charges were still slightly lower than the national average (to \$4,673 from \$3,901 the year before). Type 2 diabetes patients in the Cleveland MSA reported average hospital outpatient charges of \$3,293 in 2007, up from \$3,194 in 2006, well below both the state and national marks.

HOSPITAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*



Data source: Verispan LLC © 2008

NOTE: Hospital charge data for the Akron, Canton, Cincinnati, Columbus, Toledo and Youngstown MSAs were unavailable.

* 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.



PROFESSIONAL CHARGES

PROFESSIONAL INPATIENT CHARGES DROP IN COLUMBUS

Average professional inpatient charges for Type 2 diabetes patients in the Columbus MSA declined in 2007, to \$3,535 from \$3,699 in 2006. Of the nine Ohio markets profiled, such charges were lower only for Type 2 diabetes patients in Youngstown, at \$3,181, up fractionally from \$3,145 the previous year. Statewide, average professional inpatient charges increased moderately, to \$5,017 in 2007 from \$4,627 in 2006.

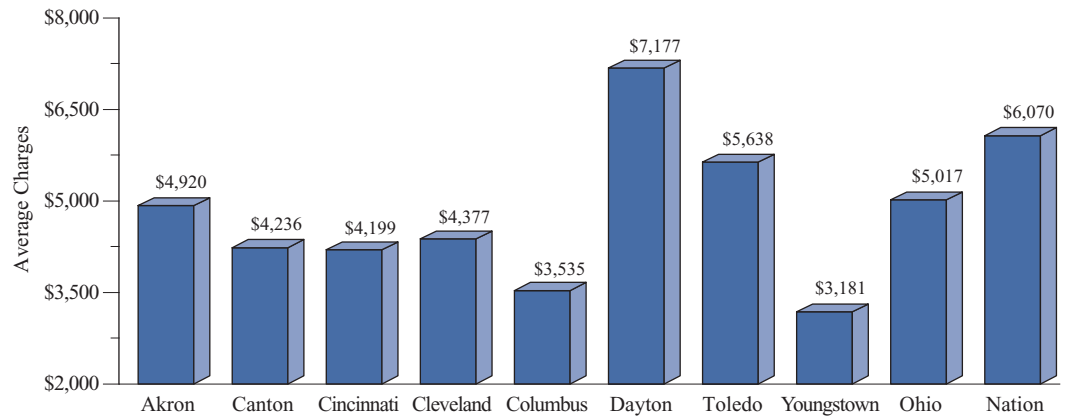
HOSPITAL OUTPATIENT PROVIDER CHARGES ARE LOW IN OHIO

In 2007, average hospital outpatient professional charges per year for Type 2 diabetes patients were substantially lower in Ohio than for such patients across the nation (\$1,919), regardless of the Ohio market profiled. In Dayton, for example, hospital outpatient professional charges rose slightly, to \$1,726 from \$1,623 the year before, the highest by Ohio market, but still moderately lower than the national average.

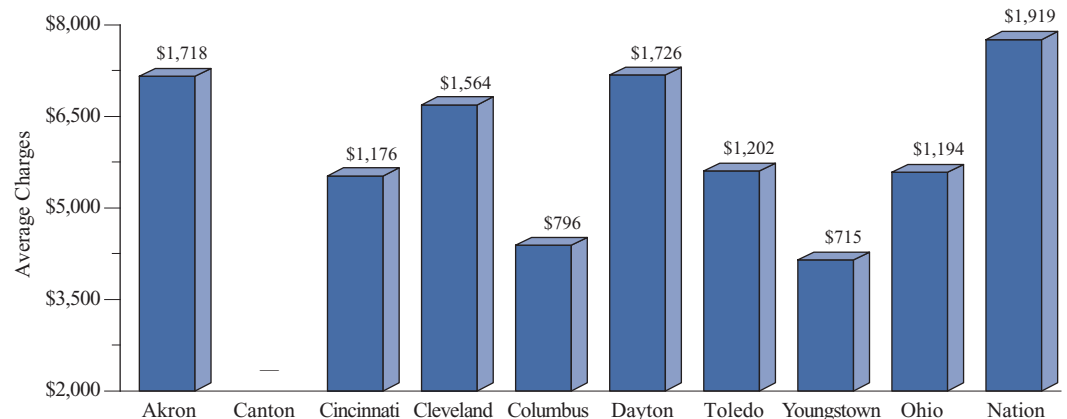
PROFESSIONAL CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS*

MARKET	ASC**		Emergency Room		Hospital Inpatient		Hospital Outpatient		Office	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
	Akron	\$2,715	\$2,604	\$695	\$774	\$4,000	\$4,920	\$1,764	\$1,718	\$868
Canton	—	—	636	—	3,958	4,236	1,448	—	648	466
Cincinnati	2,021	2,253	531	555	4,434	4,199	1,182	1,176	1,327	1,428
Cleveland	1,932	1,881	194	387	3,566	4,377	1,678	1,564	897	983
Columbus	1,271	2,001	503	465	3,699	3,535	936	796	834	936
Dayton	1,784	1,545	85	92	6,590	7,177	1,623	1,726	797	799
Toledo	3,643	3,055	151	169	4,993	5,638	1,045	1,202	1,032	1,141
Youngstown	1,024	1,204	287	276	3,145	3,181	786	715	721	697
Ohio	1,929	2,142	556	614	4,627	5,017	1,209	1,194	1,086	1,166
NATION	\$2,791	\$3,055	\$575	\$647	\$5,653	\$6,070	\$1,813	\$1,919	\$2,629	\$2,818

PROFESSIONAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, 2007*



PROFESSIONAL OUTPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, 2007*



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

** Ambulatory surgery center.

Data source: Verispan LLC © 2008



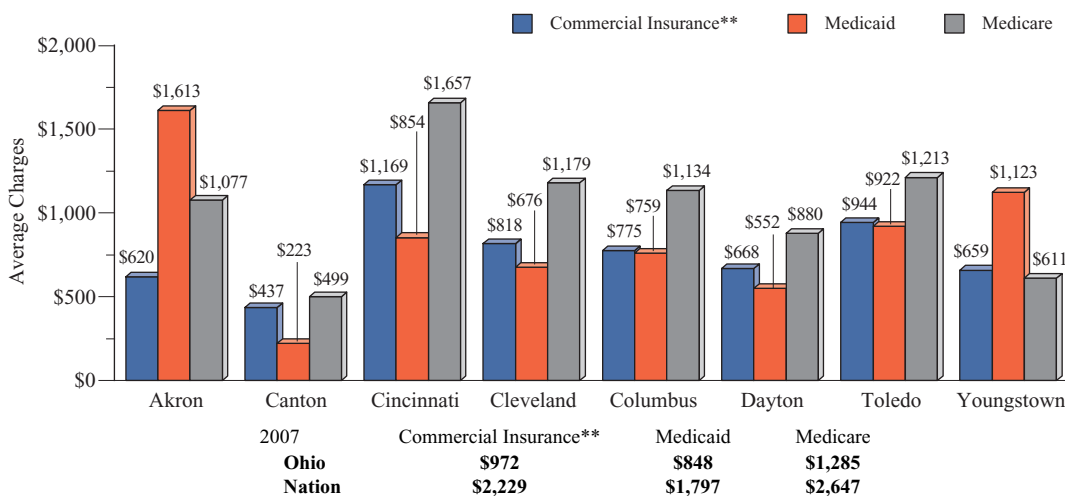
PROFESSIONAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE*

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2006	2007	2006	2007	2006	2007
Akron	\$3,043	\$4,437	\$3,942	\$3,213	\$4,280	\$5,224
Canton	4,362	3,909	1,482	—	3,750	4,266
Cincinnati	3,707	3,561	4,784	4,343	4,319	4,048
Cleveland	2,900	3,416	2,952	3,990	3,821	4,780
Columbus	3,266	3,117	4,518	6,546	3,618	3,292
Dayton	5,280	5,384	6,071	7,117	6,915	7,653
Toledo	3,619	3,766	4,607	5,892	5,174	5,800
Youngstown	1,826	2,727	2,948	3,393	3,654	3,194
Ohio	3,706	3,871	4,521	5,690	4,749	5,147
NATION	\$4,767	\$4,916	\$4,553	\$4,963	\$5,380	\$5,823

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

MARKET	Commercial Insurance**		Medicaid		Medicare	
	2006	2007	2006	2007	2006	2007
Akron	\$1,505	\$1,363	\$1,808	\$1,193	\$1,879	\$2,229
Canton	1,334	—	2,251	—	1,475	—
Cincinnati	1,136	1,096	1,089	953	1,151	1,170
Cleveland	1,705	1,401	1,478	1,372	1,606	1,729
Columbus	918	738	1,167	1,190	903	866
Dayton	1,832	1,829	—	1,876	1,657	1,415
Toledo	936	1,033	988	890	1,007	1,175
Youngstown	636	609	1,357	1,386	1,265	1,166
Ohio	1,127	1,041	1,078	1,051	1,228	1,281
NATION	\$1,769	\$1,797	\$1,297	\$1,388	\$1,541	\$1,676

PROFESSIONAL OFFICE/CLINIC CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER TYPE, 2007*



OHIO COMMERCIAL INPATIENT PROVIDER CHARGES ARE LOW

In 2007, average professional hospital inpatient charges for Type 2 diabetes patients with commercial insurance were less than those of the nation (\$4,916) in eight of nine Ohio markets profiled (Dayton, at \$5,384, being the exception). Such provider charges were lowest, by Ohio market, for commercially insured patients with Type 2 diabetes in the Youngstown MSA, to \$2,727 from \$1,826 the previous year.

OP CHARGE AVERAGE RISES FOR MEDICARE PATIENTS IN AKRON

Professional outpatient charges for care delivered to Type 2 diabetes patients in Akron with Medicare coverage increased notably in 2007, to \$2,229 from \$1,879 in 2006, highest of the nine Ohio markets listed by a wide margin. By comparison, Type 2 diabetes patients in the Columbus MSA with Medicare coverage saw such charges decline over this period, to \$866 from \$903 the year before, lowest of the nine Ohio markets.

* 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: Verispan LLC © 2008



USE OF SERVICES

HIGH PERCENTAGE OF COLUMBUS PATIENTS RECEIVES A1C TESTS

The percentage of Type 2 diabetes patients in the Columbus MSA receiving an A1c test grew slightly in 2007, to 79.4% from 78.0% in 2006, the highest share of the 10 markets profiled by a considerable margin. By comparison, Type 2 diabetes patients in the Dayton MSA were least likely to receive an A1c test, at 69.0%. Meanwhile, the share of Type 2 diabetes patients nationally who received an A1c test was 73.8%, down fractionally from 73.9% the year before.

SHARE OF TOLEDO PATIENTS WITH LOW A1C LEVELS RISES

Of patients who were diagnosed with Type 2 diabetes in the Toledo MSA in 2007, 68.5% had A1c test results in the 7.0% or less range, up notably from 64.2% in 2006. The percentage of Type 2 diabetes patients across the state of Ohio with A1c test results in this lowest range was a more modest 65.3% in 2007, up from 62.3% in 2006.

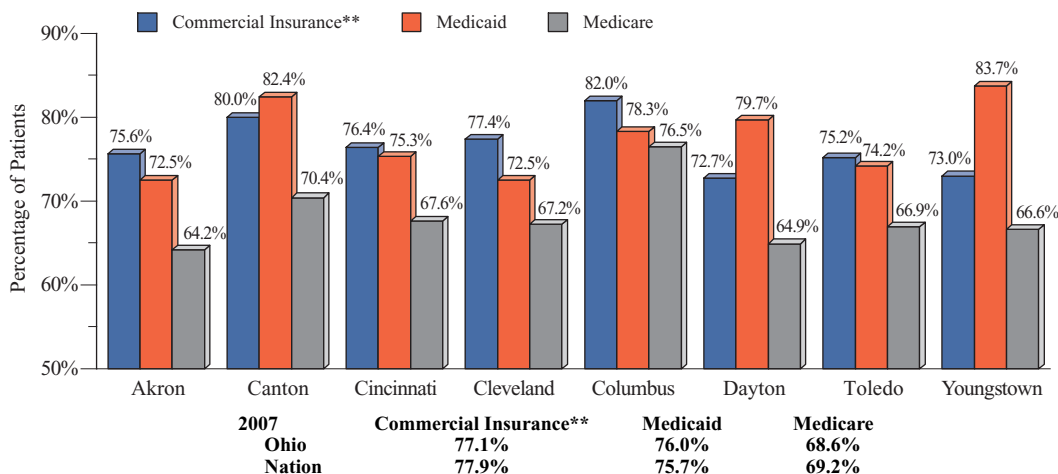
* The A1c test measures the amount of glucose present in the blood during the past 3-4 months. Figures reflect the percentage of Type 2 diabetes patients who have had at least one A1c test in a given year.

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

PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE

MARKET	A1c Test*		Blood Glucose Test		Serum Cholesterol Test		Ophthalmologic Exam		Urine Microalbumin Test	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Akron	72.3%	70.1%	83.9%	82.7%	80.7%	80.8%	68.6%	68.2%	72.7%	72.3%
Canton	72.8	75.7	83.5	83.4	81.5	81.9	69.0	65.6	73.3	74.5
Cincinnati	72.3	72.3	84.5	84.0	82.1	82.4	72.2	72.0	75.0	74.4
Cleveland	72.5	72.4	84.6	84.1	83.0	82.4	73.3	73.1	73.5	73.4
Columbus	78.0	79.4	88.2	89.7	85.6	87.0	65.9	66.6	76.5	77.5
Dayton	69.0	69.0	83.3	83.2	82.0	81.7	66.2	67.9	71.9	72.8
Toledo	71.7	71.4	83.3	83.1	81.4	81.7	68.1	67.2	73.1	72.8
Youngstown	72.0	70.5	85.1	84.5	81.6	81.8	69.7	71.8	74.8	72.5
Ohio	72.8	73.0	84.7	84.7	82.6	82.8	70.1	70.0	74.2	74.1
NATION	73.9%	73.8%	86.5%	86.6%	83.7%	83.8%	68.8%	69.2%	70.8%	71.1%

PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING A1C TESTS, BY PAYER TYPE, 2007



PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY A1C LEVEL RANGE

MARKET	≤7.0%		7.1-7.9%		8.0-9.0%		>9.0%	
	2006	2007	2006	2007	2006	2007	2006	2007
Akron	60.8%	65.5%	17.8%	16.2%	9.9%	7.9%	11.5%	10.4%
Canton	62.6	64.4	18.9	17.3	8.9	8.7	9.7	9.6
Cincinnati	63.2	65.7	16.1	14.9	9.5	8.6	11.2	10.8
Cleveland	63.4	65.4	16.7	15.5	9.6	8.7	10.2	10.4
Columbus	60.3	63.3	17.7	15.8	10.3	9.4	11.7	11.6
Dayton	62.3	65.5	16.7	15.6	9.9	9.0	11.0	9.9
Toledo	64.2	68.5	16.0	12.8	8.4	8.0	11.5	10.7
Youngstown	62.2	63.2	16.8	16.4	10.2	8.7	10.8	11.8
Ohio	62.3	65.3	16.9	15.4	9.7	8.7	11.1	10.6
NATION	58.3%	61.1%	18.6%	17.4%	10.9%	9.8%	12.2%	11.7%

Data source: Verispan LLC © 2008



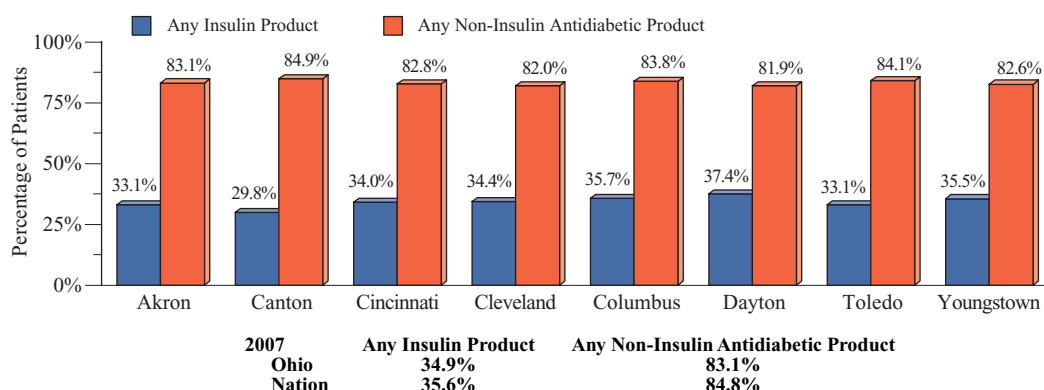
PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING INSULIN THERAPIES

MARKET	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
	Akron	33.4%	33.1%	6.0%	4.8%	16.1%	17.5%	15.1%	15.5%	8.4%
Canton	33.7	29.8	7.7	6.2	13.6	12.8	15.7	13.8	8.8	7.0
Cincinnati	33.1	34.0	5.1	3.9	17.2	19.7	14.2	14.6	7.2	6.5
Cleveland	34.6	34.4	6.5	5.5	14.8	16.4	14.1	14.2	10.2	9.1
Columbus	36.8	35.7	4.5	3.4	16.7	18.5	13.5	13.8	8.2	7.4
Dayton	35.1	37.4	4.2	3.3	20.6	23.2	14.8	16.8	7.3	6.1
Toledo	32.7	33.1	3.7	3.0	15.3	16.2	11.4	11.1	10.2	9.2
Youngstown	35.7	35.5	4.5	3.9	16.4	17.4	13.3	13.2	10.6	10.3
Ohio	34.9	34.9	5.3	4.2	16.3	18.1	14.0	14.3	9.0	8.0
NATION	34.8%	35.6%	5.7%	4.7%	17.1%	19.1%	14.6%	15.2%	9.6%	8.9%

PERCENTAGE OF TYPE 2 DIABETES PATIENTS USING NON-INSULIN THERAPIES

MARKET	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	2006	2007	2006	2007	2006	2007	2006	2007
	Akron	81.9%	83.1%	46.5%	48.9%	39.2%	38.0%	30.0%
Canton	80.9	84.9	46.7	52.0	35.5	35.8	27.9	23.7
Cincinnati	82.2	82.8	47.4	50.5	36.4	35.1	27.1	23.0
Cleveland	81.4	82.0	46.0	49.6	41.6	40.0	24.8	19.8
Columbus	81.9	83.8	46.7	50.0	39.7	37.3	27.5	23.5
Dayton	82.4	81.9	46.1	46.6	40.1	37.9	27.3	21.8
Toledo	83.8	84.1	50.3	51.0	37.8	36.7	23.9	19.4
Youngstown	81.2	82.6	43.5	45.3	38.5	38.9	27.3	19.7
Ohio	82.0	83.1	46.8	49.4	39.5	37.9	26.6	21.9
NATION	84.7%	84.8%	51.7%	52.5%	40.8%	39.5%	31.1%	26.0%

PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY TYPE OF THERAPY, 2007



Data source: Verispan LLC © 2008

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

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.

ANY INSULIN PRODUCT USE FALLS SHARPLY IN CANTON MSA

In 2007, 29.8% of Type 2 diabetes patients in the Canton MSA used any insulin product, down notably from 33.7% in 2006, and the lowest such mark among the Ohio markets listed. Conversely, the share of Type 2 diabetes patients in the Dayton MSA using any insulin product rose during this period, to 37.4% from 35.1% the year before, highest of the profiled Ohio markets. Nationally, 35.6% of Type 2 diabetes patients used any insulin product, up slightly from 34.8% in 2006.

NON-INSULIN USE IN OHIO TRAILS THE NATIONAL AVERAGE

The shares of Type 2 diabetes patients who used any non-insulin antidiabetic product in 2007 were lower in eight of nine (Canton, at 84.9%, the exception) Ohio markets profiled than they were nationally (84.8%). In Dayton (81.9%), for example, the share trailed the national average by nearly three percentage points. Meanwhile, 83.1% of Type 2 diabetes across the state of Ohio used any non-insulin antidiabetic product in 2007, up from 82.0% the previous year.



PHARMACOTHERAPY

PER-PATIENT INSULIN COSTS ARE MODEST IN OHIO MARKETS

In 2007, any insulin product payments per patient diagnosed with Type 2 diabetes per year were lower in all nine Ohio markets than they were nationally (\$1,004) by a significant margin. In Youngstown (\$817), for example, such payments were 18.6% less than the national average. Similarly, the average payment per year for any non-insulin antidiabetic product per Type 2 diabetes patient was also notably less in every Ohio market profiled than the national average (\$567).

BIGUANIDE COSTS DECLINE SHARPLY FOR OHIO PATIENTS

Average costs per Type 2 diabetes patient per year for biguanides fell notably in the state of Ohio in 2007, to \$79 from \$104 in 2006. During the same period, average payments also dropped for Ohio Type 2 diabetes patients using sulfonylureas, to \$88 from \$104 the year before. In contrast, average costs per Type 2 diabetes patient per year for insulin sensitizing agents increased in Ohio, to \$884 from \$826 in 2006.

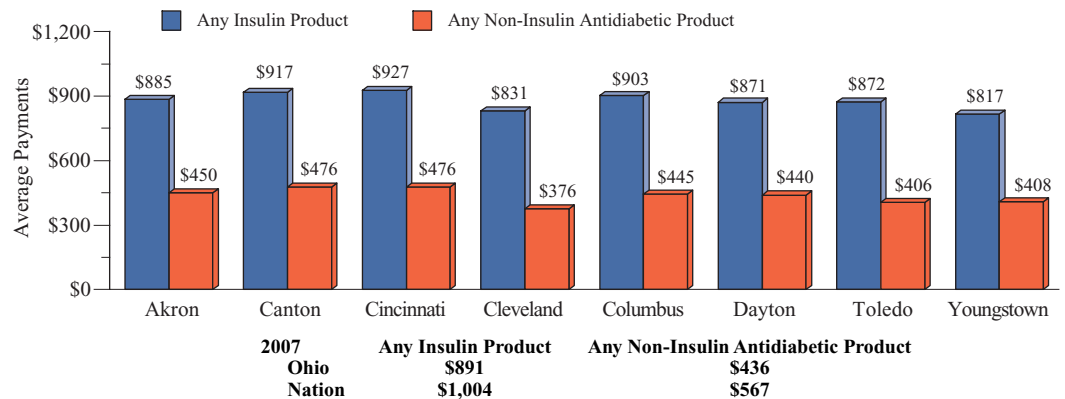
AVERAGE PAYMENTS PER TYPE 2 DIABETES PATIENT USING INSULIN THERAPIES*

MARKET	Any Insulin Product		Intermediate-Acting Insulin		Long-Acting Insulin		Short-Acting Insulin		Mixed Insulin	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
	Akron	\$766	\$885	\$278	\$357	\$487	\$566	\$507	\$569	\$629
Canton	784	917	353	383	517	590	529	616	674	801
Cincinnati	742	927	320	378	511	631	524	658	593	711
Cleveland	711	831	293	314	488	569	483	556	610	674
Columbus	730	903	264	317	497	592	496	592	555	666
Dayton	735	871	273	356	510	616	458	527	610	706
Toledo	808	872	329	350	590	624	439	508	724	727
Youngstown	722	817	297	270	513	579	441	501	569	613
Ohio	752	891	299	346	516	601	489	572	631	710
NATION	\$843	\$1,004	\$323	\$364	\$546	\$646	\$565	\$654	\$656	\$761

AVERAGE PAYMENTS PER TYPE 2 DIABETES PATIENT USING NON-INSULIN THERAPIES*

MARKET	Any Non-Insulin Antidiabetic Product		Biguanides		Sulfonylureas		Insulin Sensitizing Agents	
	2006	2007	2006	2007	2006	2007	2006	2007
	Akron	\$480	\$450	\$102	\$65	\$107	\$88	\$827
Canton	463	476	110	85	111	92	828	906
Cincinnati	455	476	103	87	103	95	853	955
Cleveland	403	376	101	70	99	81	819	839
Columbus	425	445	101	70	96	83	784	834
Dayton	443	440	100	82	107	90	816	857
Toledo	418	406	108	85	112	92	848	876
Youngstown	449	408	104	74	109	89	803	868
Ohio	437	436	104	79	104	88	826	884
NATION	\$552	\$567	\$128	\$110	\$112	\$100	\$925	\$985

AVERAGE PAYMENTS PER TYPE 2 DIABETES PATIENT, BY TYPE OF THERAPY, 2007*



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

Data source: Verispan LLC © 2008

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

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.

PERSISTENCY



PERSISTENCY: LONG-ACTING INSULIN, 2007

MARKET	Mth1	Mth2	Mth3	Mth4	Mth5	Mth6	Mth7	Mth8	Mth9	Mth10	Mth11	Mth12
Akron	100.0%	64.6%	62.5%	60.4%	58.3%	58.3%	54.2%	52.1%	58.3%	50.0%	50.0%	50.0%
Cincinnati	100.0	66.2	73.5	72.8	66.9	61.0	59.6	57.4	57.4	52.9	50.7	48.5
Cleveland	100.0	70.8	67.9	64.2	61.3	63.2	57.5	55.7	50.9	54.7	55.7	55.7
Columbus	100.0	61.9	60.0	58.1	61.0	60.0	61.9	54.3	56.2	55.2	55.2	55.2
Dayton	100.0	64.5	66.1	62.8	63.6	61.2	61.2	57.0	56.2	53.7	56.2	50.4
Toledo	100.0	67.0	64.8	60.2	54.5	54.5	55.7	54.5	52.3	51.1	48.9	47.7
Youngstown	100.0	63.8	66.0	66.0	66.0	63.8	66.0	59.6	59.6	53.2	51.1	57.4
Ohio	100.0	66.5	66.5	63.1	61.2	59.3	58.5	55.6	55.2	53.5	53.3	52.4
NATION	100.0%	66.3%	66.9%	63.8%	62.3%	60.7%	58.4%	57.0%	55.6%	54.4%	53.1%	51.7%

MORE THAN 50% OF OHIO PATIENTS ARE PERSISTENT AT MO. 12

In the twelfth month of treatment, 52.4% of Type 2 diabetes patients in Ohio who were prescribed long-acting insulin remained persistent. Similarly, 51.7% of Type 2 diabetes patients nationally who were receiving long-acting insulin continued and/or restarted by their twelfth month of treatment.

PERSISTENCY: INSULIN SENSITIZING AGENTS, 2007

MARKET	Mth1	Mth2	Mth3	Mth4	Mth5	Mth6	Mth7	Mth8	Mth9	Mth10	Mth11	Mth12
Akron	100.0%	80.4%	77.6%	70.1%	69.2%	63.6%	57.9%	47.7%	43.9%	35.5%	36.4%	30.8%
Canton	100.0	67.5	62.5	65.0	62.5	55.0	52.5	47.5	52.5	42.5	45.0	40.0
Cincinnati	100.0	73.6	74.8	71.1	66.7	66.0	63.5	57.9	53.5	49.7	47.2	49.1
Cleveland	100.0	70.0	66.3	63.2	56.3	56.3	52.6	46.8	44.2	42.1	40.5	35.8
Columbus	100.0	77.3	76.7	66.5	61.4	58.0	57.4	53.4	49.4	46.6	43.8	40.3
Dayton	100.0	67.4	69.5	60.0	56.8	54.7	54.7	51.6	48.4	44.2	40.0	36.8
Toledo	100.0	73.0	68.3	58.7	54.0	51.6	48.4	46.0	40.5	41.3	41.3	37.3
Youngstown	100.0	72.3	69.1	57.4	53.2	51.1	53.2	53.2	53.2	46.8	42.6	38.3
Ohio	100.0	74.3	72.5	65.7	60.6	57.7	55.4	51.4	47.8	44.2	42.6	39.1
NATION	100.0%	76.5%	74.9%	68.0%	65.1%	62.4%	58.9%	55.2%	51.6%	48.1%	44.9%	42.0%

CINCINNATI INSULIN SENSITIZING AGENT PERSISTENCY IS HIGH

From the sixth month through the twelfth month of treatment, Type 2 diabetes patients in Cincinnati were most likely to be persistent using insulin sensitizing agents. For example, 63.5% of these patients continued and/or restarted their insuling sensitizing agents by the seventh month of treatment, the greatest share, by market, by more than four percentage points.

PERSISTENCY: NON-INSULIN ANTIDIABETIC COMBINATIONS, 2007

MARKET	Mth1	Mth2	Mth3	Mth4	Mth5	Mth6	Mth7	Mth8	Mth9	Mth10	Mth11	Mth12
Akron	100.0%	64.9%	56.8%	51.4%	54.1%	59.5%	59.5%	51.4%	54.1%	51.4%	54.1%	40.5%
Cincinnati	100.0	78.3	76.4	75.5	72.6	69.8	66.0	64.2	63.2	63.2	61.3	55.7
Cleveland	100.0	66.7	65.5	64.4	57.5	54.0	46.0	47.1	41.4	39.1	37.9	36.8
Columbus	100.0	71.1	69.9	63.9	60.2	50.6	51.8	51.8	43.4	37.3	42.2	41.0
Dayton	100.0	65.7	65.7	67.2	61.2	55.2	52.2	49.3	50.7	50.7	50.7	49.3
Toledo	100.0	73.2	74.4	72.0	68.3	62.2	57.3	57.3	53.7	50.0	47.6	46.3
Youngstown	100.0	65.9	68.3	65.9	56.1	51.2	48.8	43.9	36.6	36.6	31.7	29.3
Ohio	100.0	70.6	68.7	65.2	60.2	56.3	53.8	49.6	46.5	44.2	43.4	42.0
NATION	100.0%	76.3%	75.8%	70.6%	67.8%	65.3%	61.7%	58.0%	55.5%	52.8%	50.4%	48.4%

NON-INSULIN PERSISTENCY IS LOW IN YOUNGSTOWN

Just 65.9% of Type 2 diabetes patients who were prescribed non-insulin antidiabetic combinations in Youngstown remained persistent by the second month of treatment. By the eleventh month, less than one-third (31.7%) of these patients continued and/or restarted their non-insulin antidiabetic treatments.

Data source: Verispan LLC © 2008

NOTE: Some persistency data for the Canton MSA were unavailable.

Business Health Coalitions of Ohio

4143 Fulton Drive NW

Canton, OH 44718

OHIO TYPE 2 DIABETES REPORT 2008

The Business Health Coalitions of Ohio, in conjunction with sanofi-aventis U.S. LLC, are pleased to bring you this third edition of the **Ohio Type 2 Diabetes Report**.

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

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

We look forward to providing you with another **Ohio Type 2 Diabetes Report** in 2009.

