



TYPE 2 DIABETES REPORT™

LEHIGH VALLEY BUSINESS COALITION ON HEALTHCARE

6th Edition

With a Focus on How Cardiovascular Conditions Can Impact Diabetes Care

INTRODUCTION

Sanofi U.S. (Sanofi), in conjunction with the Lehigh Valley Business Coalition on Healthcare (LVBCH), is pleased to present the sixth edition of the **LVBCH Type 2 Diabetes Report™** for 2018, an overview of key demographic, utilization, pharmacotherapy, and charge measures for Type 2 diabetes patients, as well as a focus on how cardiovascular conditions can impact diabetes care. The report also provides national benchmarks that can help providers and employers identify opportunities to better serve the needs of their patients. All data are drawn from the Sanofi **Managed Care Digest Series®**.

The data in this report (current as of calendar year 2017) were gathered by IQVIA, Durham, NC, a leading provider of innovative health care data products and analytic services. A review process takes place, before and during production of this report, between IQVIA and Forte Information Resources, LLC.

Sanofi, as sponsor of this report, maintains an arm’s-length relationship with the organizations that prepare the report and carry out the research for its contents. The desire of Sanofi is that the information in this report be completely independent and objective.

LVBCH Employer Members work together to bring value and innovation in the health care marketplace. For a list of organizations, please visit www.lvbch.com. The role of LVBCH is to help make these data more widely available to interested parties.

CONTENTS

Patient Demographics	3-4	Diabetes and Cardiovascular Disease.....	9-10
Use of Services.....	5	ACS/Stroke	11
Pharmacotherapy	6-7	Additional Information.....	12-15
Persistency	8	Methodology/ADA Guidelines.....	16

CONTACTS

Carl J. Seitz, Jr.

President
LVBCH

60 West Broad Street, Suite 306
Bethlehem, PA 18018
P. 610-317-0130 | F. 610-317-0142

Email: For general questions or inquiries, please send an email to: lvbch@lvbch.com

Amanda Marie Greene

RN, BSN, MCHES
Director of Operations
LVBCH

60 West Broad Street, Suite 306
Bethlehem, PA 18018
P. 610-317-0130 | F. 610-317-0142

Jeff Miller

Regional Account Executive
Sanofi

P. 302-547-6898
E. Jeff.Miller@sanofi.com

DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, BY AGE, 2015-2017

MARKET	0-17			18-35			36-64			65-79			80+		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Allentown	0.3%	0.4%	0.4%	2.2%	2.2%	2.5%	34.8%	38.8%	40.1%	40.9%	39.7%	39.7%	21.8%	19.0%	17.3%
Harrisburg	0.2	0.3	0.3	1.9	1.8	1.9	31.3	34.2	35.4	44.1	43.3	43.9	22.5	20.4	18.5
Reading	0.1	0.1	0.1	1.3	1.5	1.7	32.9	35.2	36.8	42.8	42.5	42.9	23.0	20.8	18.6
Scranton	0.2	0.2	0.2	1.7	1.5	1.6	29.8	31.3	32.9	44.3	44.5	44.3	24.0	22.5	21.0
Pennsylvania	0.6	0.5	0.5	2.7	2.6	2.6	34.6	37.2	38.9	41.0	40.8	40.9	21.1	18.9	17.2
NATION	0.3%	0.4%	0.4%	2.2%	2.4%	2.6%	36.9%	39.4%	41.3%	42.0%	41.3%	40.9%	18.7%	16.5%	14.9%

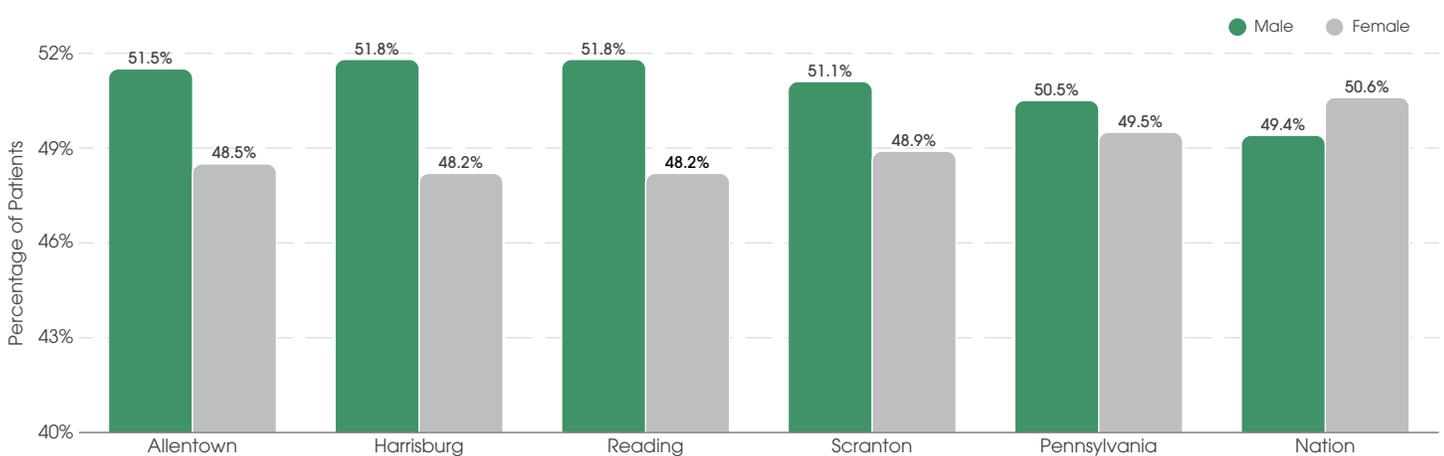
PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY DIAGNOSING SPECIALIST, 2016-2017

MARKET	Primary Care ¹		Internal Medicine		Endocrinology		Cardiology	
	2016	2017	2016	2017	2016	2017	2016	2017
Allentown	21.1%	21.4%	19.0%	19.3%	2.6%	2.5%	3.5%	3.6%
Harrisburg	33.6	32.7	15.6	15.5	2.6	2.5	2.6	2.2
Reading	36.8	36.8	24.1	23.2	2.0	2.0	3.4	3.3
Scranton	23.9	23.6	20.0	20.4	3.6	3.3	2.4	2.3
Pennsylvania	29.6	29.5	20.6	20.6	4.5	4.4	4.7	4.5
NATION	28.1%	28.0%	23.1%	22.5%	3.8%	3.7%	4.3%	4.2%

COMMERCIAL TYPE 2 DIABETES PTS. IN PA HAVE ABOVE-AVG. COMPLICATION RATES

Commercial Type 2 diabetes patients across Pennsylvania were more likely than their national counterparts in 2017 to be diagnosed with five of eight profiled complications, including cardiovascular disease (37.8% vs. 36.9%), peripheral artery disease (17.2% vs. 15.4%), and stroke (4.5% vs. 4.0%).

DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, BY GENDER, 2017



Data source: IQVIA © 2018

¹ "Primary care" consists of both general and family practitioners.

NOTE: Throughout this report, the Allentown market includes Bethlehem and Easton, and parts of New Jersey; the Harrisburg market includes Carlisle; the Scranton market includes Wilkes-Barre and Hazleton.

PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY PAYER, 2016-2017

MARKET	Commercial Insurance ¹		Medicare		Medicaid	
	2016	2017	2016	2017	2016	2017
Allentown	48.9%	47.1%	37.6%	37.0%	13.4%	15.5%
Harrisburg	52.5	53.2	36.5	35.8	10.9	10.8
Reading	47.1	47.6	41.8	41.5	11.0	10.6
Scranton	47.2	47.4	43.0	42.8	9.8	9.8
Pennsylvania	50.4	49.7	34.2	34.4	14.8	15.3
NATION	50.0%	48.9%	35.7%	35.5%	14.2%	15.4%

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS, BY ACTUAL COMPLICATION, 2017²

MARKET	Cardio-vascular Disease	MI	Nephropathy	Neuropathy	PAD	Retinopathy	Severe Hypo-glycemia	Stroke
Allentown	35.0%	2.9%	26.1%	36.4%	17.4%	22.5%	4.1%	4.6%
Harrisburg	31.2	2.8	28.6	35.0	15.4	22.6	3.5	3.7
Reading	44.2	2.7	26.2	31.1	13.1	24.3	2.9	4.8
Scranton	42.6	2.6	25.4	40.0	20.9	22.4	2.7	3.6
Pennsylvania	37.8	2.8	30.5	36.0	17.2	19.1	3.6	4.5
NATION	36.9%	2.5%	32.9%	36.2%	15.4%	17.7%	3.7%	4.0%

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS WITH VARIOUS COMPLICATIONS, LONG-ACTING BASAL CATEGORY 1 VS. CATEGORY 2, 2017²

MARKET	Cardiovascular Disease		MI		Nephropathy		PAD		Stroke	
	Cat. 1	Cat. 2	Cat. 1	Cat. 2	Cat. 1	Cat. 2	Cat. 1	Cat. 2	Cat. 1	Cat. 2
Allentown	29.6%	36.3%	2.7%	n/a	29.4%	24.0%	14.7%	11.6%	6.1%	n/a
Harrisburg	n/a	n/a	n/a	n/a	23.9	18.9	n/a	n/a	4.4	n/a
Reading	42.2	31.0	4.3	n/a	30.0	28.6	11.6	11.9	n/a	n/a
Scranton	37.2	34.8	n/a	n/a	27.3	22.9	13.8	11.9	4.9	n/a
Pennsylvania	30.1	28.5	3.2	2.3%	30.3	28.7	13.3	11.8	4.6	3.0%
NATION	30.9%	27.9%	3.0%	2.0%	33.8%	30.2%	11.1%	9.4%	4.0%	2.6%

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS, BY ACTUAL COMORBIDITY, 2017³

MARKET	Depression	Hyperlipidemia	Hypertension	Obesity
Allentown	12.1%	64.9%	79.3%	28.4%
Harrisburg	10.2	61.8	80.5	33.3
Reading	11.7	71.8	83.1	26.4
Scranton	10.3	60.8	80.3	35.3
Pennsylvania	10.7	64.5	79.0	32.6
NATION	10.2%	65.8%	80.7%	25.5%

Data source: IQVIA © 2018

¹ Throughout this report, commercial includes HMOs, PPOs, point-of-service plans, and exclusive provider organizations.

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, atherosclerotic cardiovascular disease (ASCVD; includes patients with ACS, MI, stroke, and other cardiovascular conditions), cardiovascular (CV) disease, nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, severe hypoglycemia, and stroke.

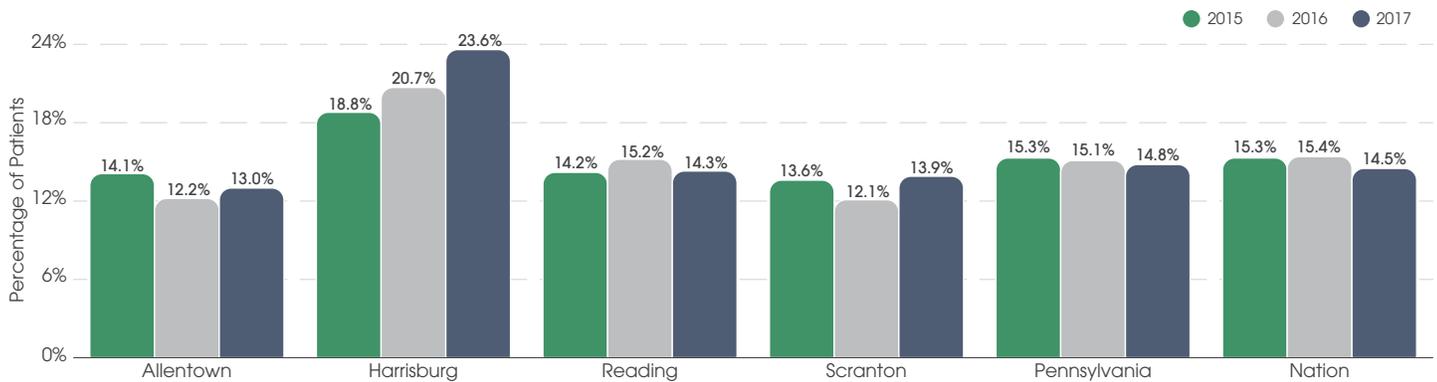
³ A comorbidity is a condition a Type 2 diabetes patient may also have, which is not directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with Type 2 diabetes. Comorbidities of Type 2 diabetes include, but are not limited to, depression, hyperlipidemia, hypertension, obesity, and pneumonia. An n/a indicates that data were not available.

NOTE: PAD is peripheral artery disease. "Category 1" refers to long-acting basal insulins approved through 2014 and follow-on long-acting insulins approved after 2014. "Category 2" refers to non-follow-on long-acting basal insulins approved in or after 2015. An n/a indicates that data were not available.

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS SERVICES, 2015-2017

MARKET	A1c Test ¹			Blood Glucose Test			Ophthalmologic Exam			Serum Cholesterol Test			Urine Glucose Test		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Allentown	77.1%	79.3%	75.3%	87.5%	88.8%	86.6%	77.8%	76.8%	76.5%	79.4%	81.6%	77.7%	87.1%	86.7%	86.0%
Harrisburg	77.5	77.4	79.4	88.5	88.6	88.5	77.7	77.5	79.7	79.6	79.7	80.1	86.5	87.1	86.7
Reading	79.7	84.2	84.3	86.6	86.4	86.8	84.2	87.5	89.1	77.2	77.4	77.4	86.5	85.9	85.7
Scranton	76.5	75.6	76.0	88.4	87.2	86.9	79.2	80.4	80.3	79.1	78.2	77.8	86.8	86.5	87.2
Pennsylvania	78.0	78.5	78.6	88.2	88.3	88.1	75.8	75.9	75.7	79.2	79.4	79.4	86.9	86.7	86.6
NATION	74.0%	74.1%	74.1%	87.5%	87.5%	87.3%	72.8%	72.7%	72.4%	78.4%	78.2%	77.9%	84.6%	84.5%	84.1%

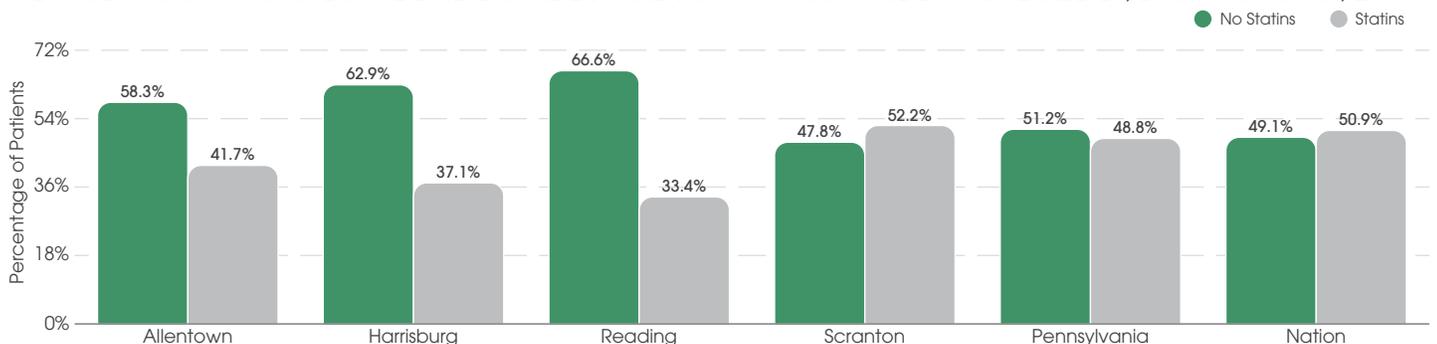
PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS WITH AN A1c LEVEL >9.0%, 2015-2017¹



PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS RECEIVING LONG-ACTING BASAL CATEGORY 1 VS. CATEGORY 2 WITH AN A1c LEVEL ≤7.0% OR >9.0%, 2015 AND 2017¹

MARKET	≤7.0% ²						>9.0% ³					
	Category 1			Category 2			Category 1			Category 2		
	2015	2017	% Point Change	2015	2017	% Point Change	2015	2017	% Point Change	2015	2017	% Point Change
Pennsylvania	18.7%	21.9%	3.2	14.5%	19.5%	5.1	38.0%	37.8%	-0.2	48.2%	39.8%	-8.4
NATION	19.9%	22.4%	2.5	12.2%	19.3%	7.2	37.3%	36.2%	-1.1	44.5%	37.0%	-7.5

DISTRIBUTION OF COMMERCIAL LIPID DISORDER PATIENTS WITH A COMORBIDITY OF DIABETES, BY STATIN COUNT, 2017⁴



Data source: IQVIA © 2018

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 Positive percent change in this group indicates an improvement, from 2015 to 2017, in the percentage of patients with A1c levels at or below 7.0%. Percentage-point changes are calculated from data with additional decimal places and may differ slightly from calculations using the rounded figures shown.
³ Negative percent change in this group indicates an improvement or reduction, from 2015 to 2017, in the percentage of patients with A1c levels above 9.0%.
⁴ A comorbidity is a condition a lipid disorder patient may also have. Comorbidities were narrowed down to a subset of conditions (including, but not limited to, atherosclerotic cardiovascular disease, diabetes, and hypertension) that are typically present in patients with lipid disorders.

NOTE: "Category 1" refers to long-acting basal insulins approved through 2014 and follow-on long-acting insulins approved after 2014. "Category 2" refers to non-follow-on long-acting basal insulins approved in or after 2015.

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS INSULIN AND COMBINATION THERAPIES, 2016-2017¹

MARKET	Any Insulin Products		Long-Acting Basal Category 1		Long-Acting Basal Category 2		GLP-1 + Long-Acting Insulin (Fixed Ratio)		GLP-1 + Long-Acting Insulin (Free Ratio)		Rapid-Acting Insulin	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Allentown	34.1%	34.7%	20.5%	20.0%	3.9%	6.4%	n/a	0.5%	3.0%	3.3%	18.3%	18.7%
Harrisburg	35.8	39.2	22.9	22.7	3.2	6.6	n/a	n/a	2.5	3.5	17.5	21.1
Reading	31.3	34.0	19.5	20.1	3.9	5.4	n/a	n/a	2.0	2.6	17.0	19.8
Scranton	34.0	33.5	18.6	16.6	5.7	6.5	n/a	0.7	2.1	2.6	19.7	19.2
Pennsylvania	36.2	37.1	22.6	21.5	3.9	6.7	n/a	0.3	2.7	3.5	19.8	20.5
NATION	33.9%	34.4%	21.6%	20.4%	4.1%	5.8%	n/a	0.4%	2.9%	3.6%	17.2%	17.4%

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS WITH AN A1c >9.0% RECEIVING VARIOUS INSULIN AND COMBINATION THERAPIES, 2016-2017^{1,2}

MARKET	Any Insulin Products		Long-Acting Basal Category 1		Long-Acting Basal Category 2		GLP-1 + Long-Acting Insulin (Fixed Ratio)		GLP-1 + Long-Acting Insulin (Free Ratio)		Rapid-Acting Insulin	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Allentown	56.7%	47.9%	37.8%	28.2%	9.5%	15.5%	n/a	n/a	n/a	n/a	30.7%	22.5%
Scranton	63.4	65.9	34.2	29.6	n/a	n/a	n/a	n/a	n/a	n/a	29.3	n/a
Pennsylvania	58.2	58.1	37.8	35.4	7.3	11.1	n/a	0.7%	4.1%	5.3%	28.9	29.0
NATION	55.1%	55.7%	36.4%	34.7%	8.5%	11.0%	n/a	1.1%	5.1%	6.0%	25.6%	25.7%

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS NON-INSULIN ANTIDIABETIC THERAPIES, 2016-2017^{1,2}

MARKET	Any Non-Insulin Antidiabetic Product		Biguanides		DPP-4 Inhibitors		GLP-1 Receptor Agonists		Insulin Sensitizing Agents		SGLT-2 Inhibitors	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Allentown	83.0%	84.3%	53.9%	55.1%	12.7%	11.5%	9.3%	10.3%	2.7%	3.1%	15.2%	14.9%
Harrisburg	84.1	83.2	54.5	56.1	10.1	11.8	8.2	10.2	4.2	4.3	11.0	11.4
Reading	85.6	84.4	56.7	57.1	12.2	11.8	6.5	7.9	2.1	2.2	14.5	14.1
Scranton	83.4	84.6	54.4	55.4	12.6	13.5	7.0	8.2	4.0	5.0	15.3	15.8
Pennsylvania	83.3	83.5	57.0	57.7	12.0	12.0	8.8	10.7	3.3	3.2	11.7	12.5
NATION	85.5%	85.5%	60.5%	60.6%	10.8%	11.0%	9.6%	11.2%	4.9%	5.1%	11.4%	12.2%

Data source: IQVIA © 2018

¹ Patients who filled prescriptions for any insulin products may have also filled prescriptions for products in the non-insulin category, and vice versa.

² 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: Some data were unavailable for Harrisburg and Reading. An n/a indicates that data were not available.

Biguanides: Decrease the production of glucose by the liver, decrease intestinal absorption of glucose, and increase the 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.

GLP-1 Receptor Agonists: Increase glucose-dependent insulin secretion and pancreatic beta-cell sensitivity, reduce glucagon production, slow rate of absorption of glucose in the digestive tract by slowing gastric emptying, and suppress appetite. "GLP-1 + long-acting insulin (fixed ratio)" refers to the two therapies combined in a single product. "GLP-1 + long-acting insulin (free ratio)" refers to the two therapies taken separately and concurrently.

Insulin Sensitizing Agents: Increase insulin sensitivity by improving 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.

Long-Acting Basal Category 1/Category 2: Insulin replacement product with a long duration of action. "Category 1" refers to long-acting basal insulins approved through 2014 and follow-on long-acting insulins approved after 2014. "Category 2" refers to non-follow-on long-acting basal insulins approved in or after 2015.

Rapid-Acting Insulin: Insulin replacement product with a rapid onset and shorter duration of action than short-acting insulin.

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

Sodium/Glucose Cotransporter 2 (SGLT-2) Inhibitors: Lower blood glucose concentration so that glucose is excreted instead of reabsorbed.

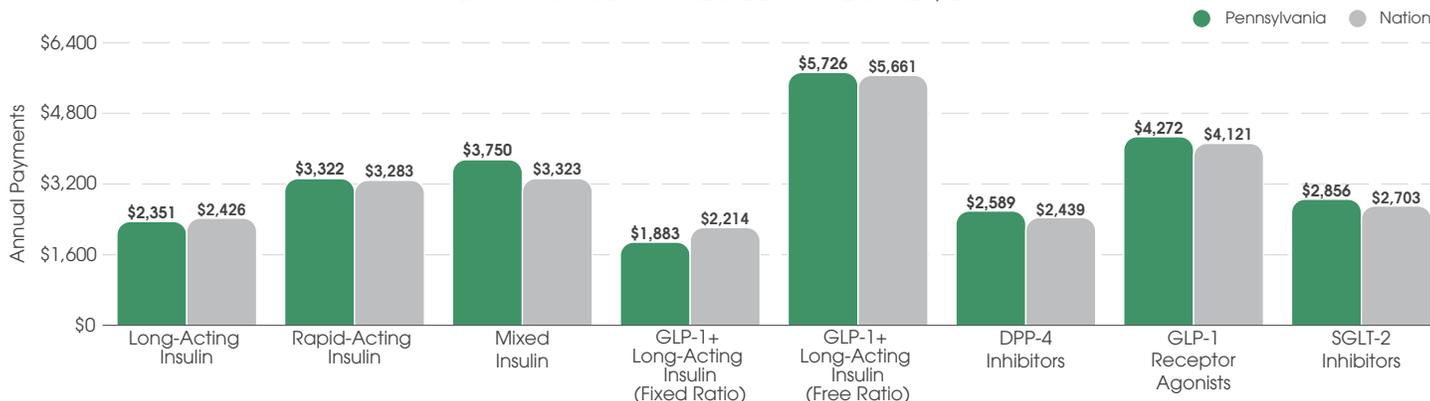
PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS COMBINATION THERAPIES, 2016-2017

MARKET	Use of 1 Product		Use of 2 Products						Use of 3 Products					
	Use of 1 Non-Insulin Product		Use of 2 Non-Insulin Products		Use of 2 Products: 1 Insulin, 1 Non-Insulin		Use of 2 Insulin Products		Use of 3 Non-Insulin Products		Use of 3 Products: 1 Insulin, 2 Non-Insulin		Use of 3 Products: 2 Insulin, 1 Non-Insulin	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Allentown	36.9%	38.4%	19.7%	18.6%	5.3%	5.5%	7.4%	7.9%	9.0%	7.9%	5.5%	6.4%	5.3%	6.6%
Harrisburg	38.7	35.4	18.7	18.2	6.1	6.7	6.8	8.4	6.4	6.9	5.6	5.5	7.4	9.1
Reading	40.9	39.5	19.6	18.2	4.7	5.9	6.9	8.4	8.0	7.9	5.0	4.5	6.5	7.2
Scranton	34.0	34.3	20.6	20.1	4.6	4.7	8.1	7.9	11.3	11.9	5.3	5.9	6.8	6.7
Pennsylvania	36.2	35.6	19.0	18.8	5.7	5.9	8.7	8.9	8.2	8.1	5.8	5.9	7.2	7.7
NATION	38.3%	37.8%	19.6%	19.3%	5.9%	6.0%	7.1%	7.1%	7.9%	8.1%	6.1%	6.3%	6.5%	6.6%

ANNUAL PAYMENTS PER COMMERCIAL TYPE 2 DIABETES PATIENT RECEIVING VARIOUS COMBINATION THERAPIES, 2016-2017¹

MARKET	Use of 1 Product		Use of 2 Products						Use of 3 Products					
	Use of 1 Non-Insulin Product		Use of 2 Non-Insulin Products		Use of 2 Products: 1 Insulin, 1 Non-Insulin		Use of 2 Insulin Products		Use of 3 Non-Insulin Products		Use of 3 Products: 1 Insulin, 2 Non-Insulin		Use of 3 Products: 2 Insulin, 1 Non-Insulin	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Allentown	\$689	\$782	\$1,960	\$2,081	\$3,177	\$3,656	\$4,434	\$5,225	\$3,431	\$4,334	\$5,403	\$5,941	\$6,939	\$7,495
Harrisburg	610	679	1,365	1,603	3,495	4,316	4,168	4,908	2,658	3,441	3,747	4,231	6,123	7,938
Reading	710	715	1,692	2,203	3,005	3,847	4,242	4,903	3,125	3,935	5,193	5,850	6,835	6,702
Scranton	551	685	1,661	1,986	3,378	3,554	5,349	5,922	3,459	4,543	4,981	5,575	6,897	7,478
Pennsylvania	587	688	1,605	1,917	3,470	4,087	4,958	5,465	3,438	4,086	4,731	5,242	6,657	7,466
NATION	\$558	\$656	\$1,520	\$1,827	\$3,614	\$4,115	\$4,921	\$5,361	\$3,263	\$3,794	\$4,806	\$5,454	\$6,732	\$7,517

ANNUAL PAYMENTS PER COMMERCIAL TYPE 2 DIABETES PATIENT FOR VARIOUS INSULIN AND NON-INSULIN ANTIDIABETIC THERAPIES, 2017^{1,2}



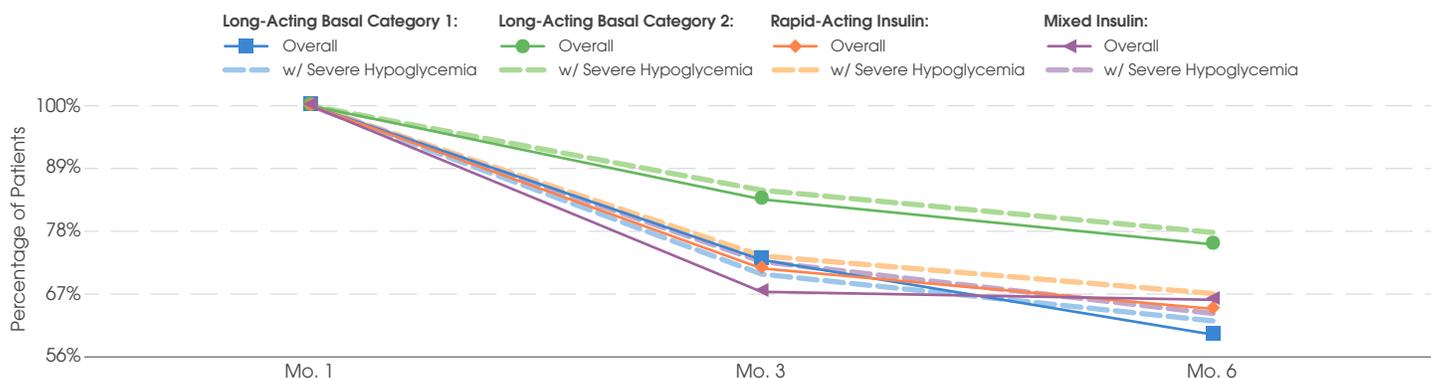
Data source: IQVIA © 2018

¹ Figures reflect the per-patient yearly payments for Type 2 diabetes patients receiving a particular type of therapy. These are the actual amounts paid by the insurer and patient for such prescriptions. Costs mainly include copayments, but can also include tax, deductibles, and cost differentials where applicable.

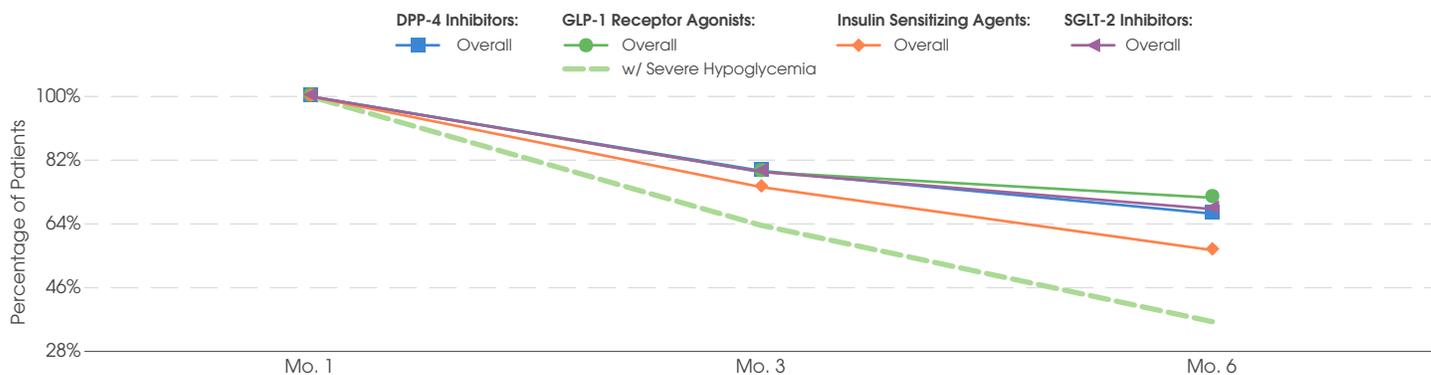
² Patients who filled prescriptions for any insulin products may have also filled prescriptions for products in the non-insulin category, and vice versa.

NOTE: An n/a indicates that data were not available.

PERSISTENCY: COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH A COMPLICATION OF SEVERE HYPOGLYCEMIA, VARIOUS INSULIN THERAPIES, PENNSYLVANIA, 2017¹



PERSISTENCY: COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH A COMPLICATION OF SEVERE HYPOGLYCEMIA, VARIOUS NON-INSULIN ANTIDIABETIC THERAPIES, PENNSYLVANIA, 2017¹



PROFESSIONAL EMERGENCY DEPARTMENT (ED) CHARGES FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH A COMPLICATION OF STROKE, 2017^{1,2}

MARKET	Overall	w/ Stroke
Allentown	\$1,211	\$1,776
Harrisburg	1,516	1,821
Reading	1,141	1,640
Scranton	1,290	1,593
Pennsylvania	1,171	1,532
NATION	\$1,646	\$2,350

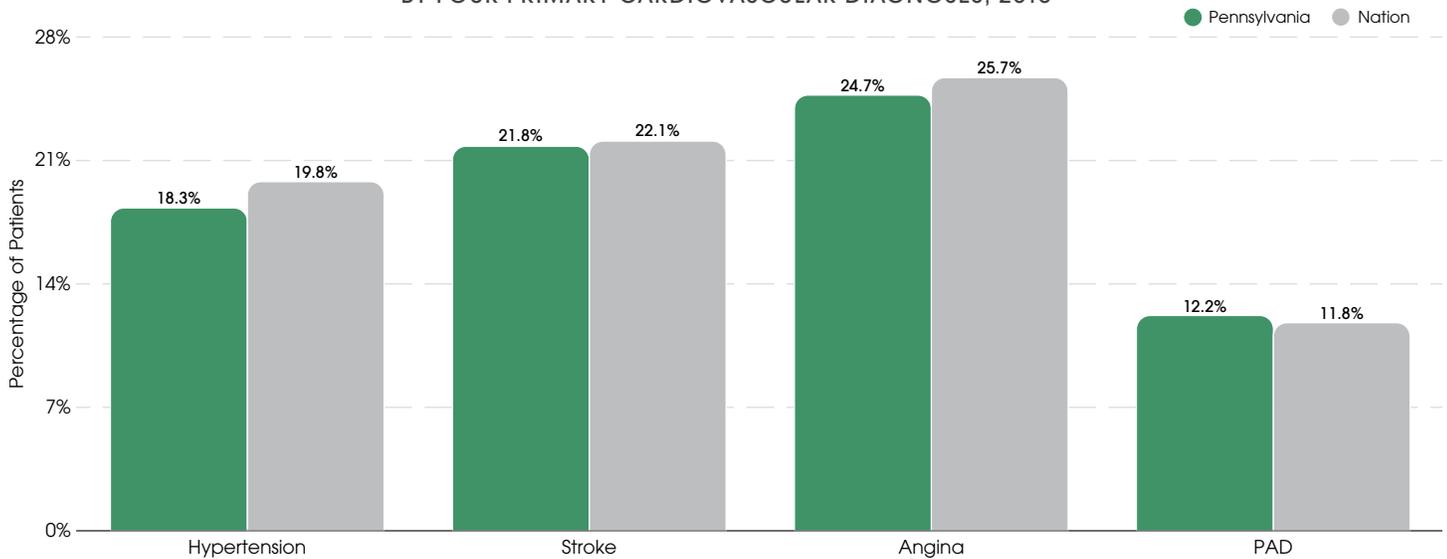
Data source: IQVIA © 2018

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, atherosclerotic cardiovascular disease (ASCVD; includes patients with ACS, MI, stroke, and other cardiovascular conditions), cardiovascular (CV) disease, nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, severe hypoglycemia, and stroke.

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

NOTE: "Persistence" measures whether patients maintain their prescribed therapy. It is calculated by identifying patients who filled a prescription for the reported drug class in the six 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 patients fill 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. Persistence is tracked for patients who are new to therapy (those who have not filled the therapy in question in the six months prior to their first fill of the study period). Some data were unavailable for Pennsylvania.

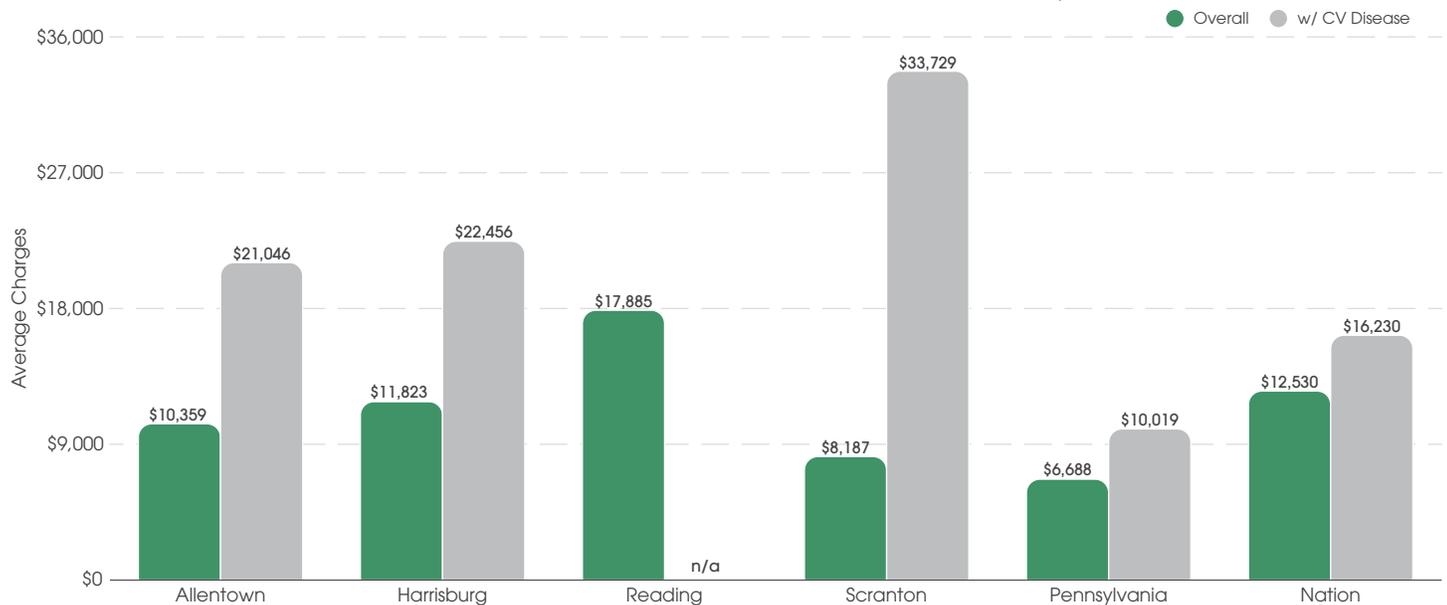
PERCENTAGE OF INPATIENTS WITH A SECONDARY DIAGNOSIS OF DIABETES MELLITUS, BY FOUR PRIMARY CARDIOVASCULAR DIAGNOSES, 2016



INPATIENT FACILITY CHARGES PER YEAR FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH A COMPLICATION OF CARDIOVASCULAR DISEASE, 2017^{1,2}

MARKET	Overall	w/ Cardiovascular Disease
Allentown	\$33,064	\$31,779
Harrisburg	42,033	40,133
Reading	31,884	n/a
Scranton	59,149	n/a
Pennsylvania	35,041	41,492
NATION	\$44,951	\$49,033

OUTPATIENT FACILITY CHARGES PER YEAR FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL WITH A COMPLICATION OF CARDIOVASCULAR DISEASE, 2017^{1,2}



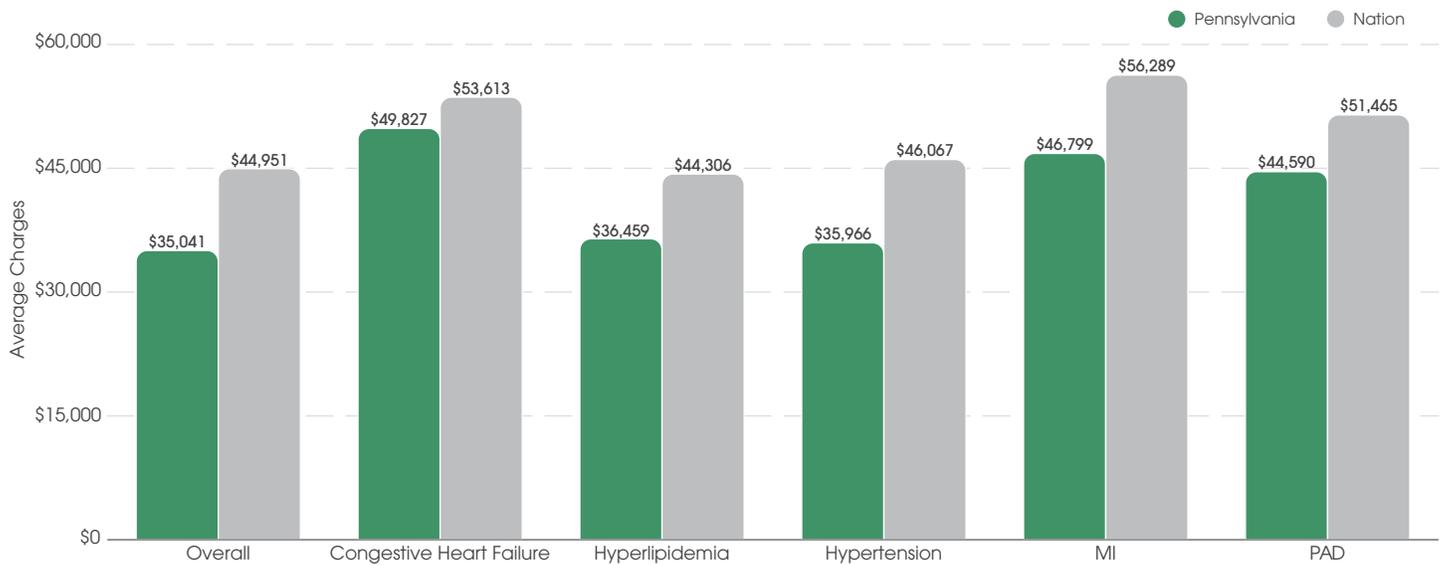
Data source: IQVIA © 2018

¹ Figures reflect the charges generated by the facilities that delivered care. The data also reflect the amounts charged, not the amounts paid.

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, atherosclerotic cardiovascular disease (ASCVD; includes patients with ACS, MI, stroke, and other cardiovascular conditions), cardiovascular (CV) disease, nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, severe hypoglycemia, and stroke.

NOTE: Secondary diagnoses data come from IQVIA's Hospital Procedure & Diagnosis (HPD) database. Hospital data are based on all short-term, acute-care hospitals and are effective as of 2016. Psychiatric, rehabilitation, armed forces, and long-term acute-care hospitals are excluded. An n/a indicates that data were not available.

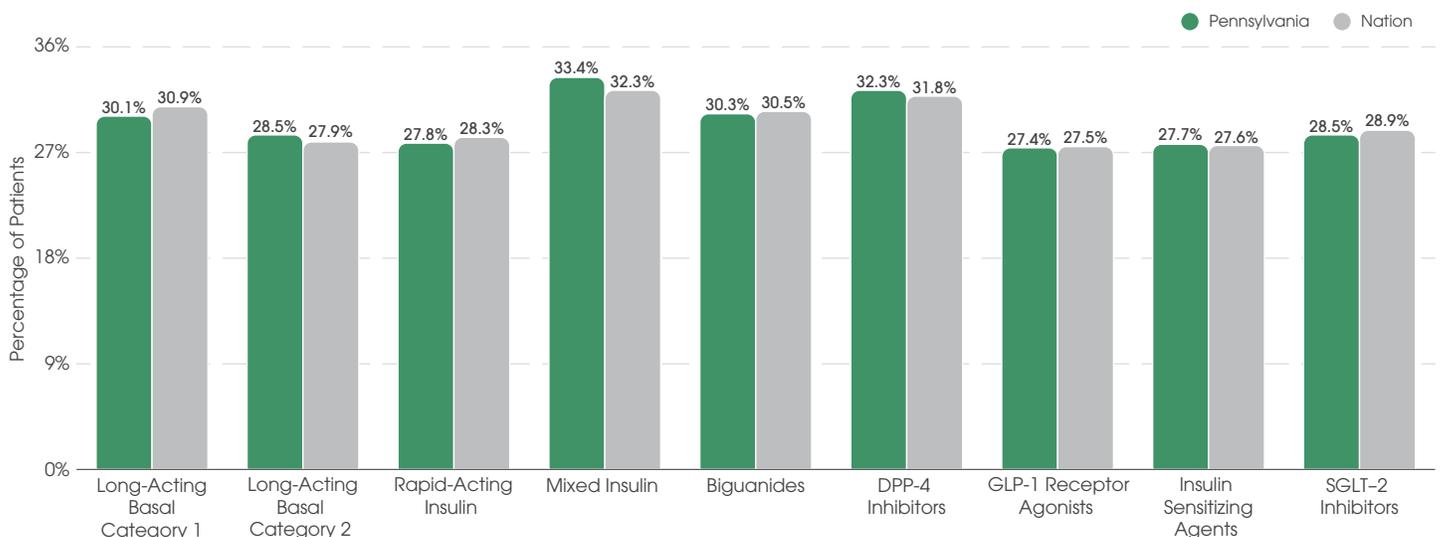
INPATIENT FACILITY CHARGES PER YEAR FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL AND WITH COMMON CO-OCCURRING CONDITIONS, 2017^{1,2}



OUTPATIENT FACILITY CHARGES PER YEAR FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL AND WITH COMMON CO-OCCURRING CONDITIONS, 2017^{1,2}

MARKET	Overall	Congestive Heart Failure	Hyperlipidemia	Hypertension	MI	PAD
Pennsylvania	\$6,688	\$10,487	\$6,729	\$7,406	\$12,001	\$10,029
NATION	\$12,530	\$17,074	\$12,200	\$13,324	\$17,921	\$16,593

PERCENTAGE OF COMMERCIAL TYPE 2 DIABETES PATIENTS WITH A COMPLICATION OF CARDIOVASCULAR DISEASE, BY THERAPY, 2017³



Data source: IQVIA © 2018

¹ Figures reflect the charges generated by the facilities that delivered care. The data also reflect the amounts charged, not the amounts paid.

² A co-occurring condition is a condition a Type 2 diabetes patient may also have, which may or may not be directly related to Type 2 diabetes. Co-occurring conditions were narrowed down to a subset of conditions, including, but not limited to, atherosclerotic cardiovascular disease (ASCVD; includes patients with ACS, MI, stroke, and other cardiovascular conditions), cardiovascular (CV) disease, congestive heart failure, depression, hyperlipidemia, hypertension, nephropathy, neuropathy, obesity, peripheral artery disease (PAD), retinopathy, severe hypoglycemia, and stroke.

³ 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, atherosclerotic cardiovascular disease (ASCVD; includes patients with ACS, MI, stroke, and other cardiovascular conditions), cardiovascular (CV) disease, nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, severe hypoglycemia, and stroke.

AVERAGE LENGTH OF STAY (DAYS) AND CHARGES PER PRIMARY INPATIENT ACUTE CORONARY SYNDROMES CASE, 2016¹

MARKET	Average Length of Stay	Average Charges ²
Allentown	2.8	\$89,694
Harrisburg	4.0	67,077
Reading	3.4	73,189
Scranton	3.3	68,941
Pennsylvania	3.1	65,497
NATION	2.9	\$57,665

CHARGES PER PRIMARY INPATIENT ACUTE CORONARY SYNDROMES CASE, 2016^{1,2}



AVERAGE LENGTH OF STAY (DAYS) AND CHARGES PER PRIMARY INPATIENT STROKE CASE, 2016¹

MARKET	Average Length of Stay	Average Charges ²
Allentown	3.7	\$74,723
Harrisburg	4.1	42,385
Reading	3.8	44,678
Scranton	3.5	52,911
Pennsylvania	3.5	41,699
NATION	3.8	\$34,554

CHARGES PER PRIMARY INPATIENT STROKE CASE, 2016^{1,2}



Data source: IQVIA © 2018

¹ Data in 2016 vary from previous years due to (a) the mandatory implementation of ICD-10 coding beginning October 1, 2015, which resulted in additional diagnoses being captured in the 2016 data for some of the disease states shown; and (b) beginning in 2016, outpatient measures also include treatment delivered in locations that are not contiguous with a hospital or located on a hospital campus. Unless otherwise specified, data include cases for primary and secondary diagnoses.

² Charge data are per-case averages for inpatients with a particular diagnosis of interest. Charges may be for treatment related to other diagnoses. Data reflect the total charges billed by the hospital for the entire episode of care, and may include accommodation, pharmacy, laboratory, radiology, and other charges not billed by the physician. Data do not necessarily indicate final amounts paid.

NOTE: Average length of stay (ALOS) and hospital inpatient charge data come from IQVIA's Hospital Procedure & Diagnosis (HPD) database. Hospital data are based on all short-term, acute-care hospitals and are effective as of 2016. Psychiatric, rehabilitation, armed forces, and long-term acute-care hospitals are excluded.

NUMBERS OF INPATIENT AND OUTPATIENT DIABETES MELLITUS CASES PER HOSPITAL, 2015–2016¹

MARKET	Inpatient Cases		Outpatient Cases	
	2015	2016	2015	2016
Allentown	1,779.1	2,074.7	12,555.6	11,250.9
Harrisburg	2,689.4	3,691.5	32,029.3	28,884.5
Reading	2,515.3	2,564.0	17,989.0	21,499.7
Scranton	2,019.7	2,157.0	16,772.0	18,902.7
Pennsylvania	1,671.3	1,681.1	10,700.0	12,142.4
NATION	1,272.8	1,358.2	6,865.5	9,259.8

NUMBERS OF INPATIENT AND OUTPATIENT DIABETES MELLITUS CASES PER HOSPITAL, BY PAYER, 2016¹

MARKET	Inpatient Cases			Outpatient Cases	
	Commercial ²	Medicare	Medicaid	Medicare	Non-Medicare ³
Allentown	745.8	1,295.2	12.6	4,968.9	6,282.0
Harrisburg	1,691.0	1,880.8	36.1	9,492.0	19,392.5
Reading	969.1	1,482.5	77.7	8,441.3	13,058.3
Scranton	701.0	1,373.9	19.2	8,275.1	10,627.6
Pennsylvania	677.9	926.5	22.3	4,547.2	7,595.2
NATION	538.6	769.0	31.5	3,590.6	5,669.2

AVERAGE LENGTH OF STAY (DAYS) AND CHARGES PER PRIMARY INPATIENT DIABETES MELLITUS CASE, 2015–2016¹

MARKET	Average Length of Stay (Days)		Average Charges ⁴	
	2015	2016	2015	2016
Allentown	4.1	4.5	\$64,700	\$57,554
Harrisburg	4.5	4.3	27,793	42,016
Reading	5.2	6.0	36,528	44,455
Scranton	5.1	4.4	48,333	44,396
Pennsylvania	4.4	4.3	46,721	38,213
NATION	4.0	4.3	\$38,984	\$30,778

DISTRIBUTION OF OUTPATIENT DIABETES MELLITUS CASES, BY SETTING, 2016¹



Data source: IQVIA © 2018

¹ Data in 2016 vary from previous years due to (a) the mandatory implementation of ICD-10 coding beginning October 1, 2015, which resulted in additional diagnoses being captured in the 2016 data for some of the disease states shown; and (b) beginning in 2016, outpatient measures also include treatment delivered in locations that are not contiguous with a hospital or located on a hospital campus. Unless otherwise specified, data include cases for primary and secondary diagnoses.
² Includes HMOs, PPOs, point-of-service plans, and exclusive provider organizations.
³ Non-Medicare includes commercial, Medicaid, and other non-Medicare payers. In 2016, non-Medicare also includes some commercial Medicare Advantage plans.
⁴ Charge data are per-case averages for inpatients with a particular diagnosis of interest. Charges may be for treatment related to other diagnoses. Data reflect the total charges billed by the hospital for the entire episode of care, and may include accommodation, pharmacy, laboratory, radiology, and other charges not billed by the physician. Data do not necessarily indicate final amounts paid.
⁵ *All Other Outpatient Cases* includes cases treated in units that provide outpatient medical care by appointment, such as general, obstetric, pediatric, substance abuse, or psychiatric clinics.

NOTE: Average length of stay (ALOS) and hospital inpatient and outpatient data come from IQVIA's Hospital Procedure & Diagnosis (HPD) database. Hospital data are based on all short-term, acute-care hospitals and are effective as of 2016. Psychiatric, rehabilitation, armed forces, and long-term acute-care hospitals are excluded.

PROFESSIONAL INPATIENT CHARGES PER YEAR FOR TYPE 2 DIABETES PATIENTS, BY PAYER, 2016–2017¹

MARKET	Commercial Insurance ²		Medicare		Medicaid	
	2016	2017	2016	2017	2016	2017
Allentown	\$3,567	\$3,715	\$2,231	\$2,499	\$3,440	\$3,151
Harrisburg	3,446	3,356	3,115	2,414	3,591	3,584
Reading	4,235	4,408	4,702	5,372	4,388	4,973
Scranton	3,437	3,422	2,266	2,242	3,309	3,012
Pennsylvania	3,213	3,188	3,111	3,218	4,121	4,262
NATION	\$3,512	\$3,549	\$3,112	\$3,219	\$3,830	\$3,837

PROFESSIONAL CHARGES PER YEAR FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, BY SETTING, 2016–2017¹

MARKET	Ambulatory Surgery		Emergency Department		Hospital Inpatient		Hospital Outpatient		Office/Clinic	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Allentown	\$2,206	\$2,324	\$1,249	\$1,211	\$3,567	\$3,715	\$1,485	\$1,362	\$1,586	\$1,662
Harrisburg	1,875	2,008	1,195	1,516	3,446	3,356	1,560	1,589	1,542	1,498
Reading	2,103	2,176	916	1,141	4,235	4,408	1,082	1,098	2,007	1,957
Scranton	2,776	2,625	1,154	1,290	3,437	3,422	1,077	1,172	1,599	1,625
Pennsylvania	2,205	2,222	1,056	1,171	3,213	3,188	1,174	1,181	1,620	1,611
NATION	\$2,599	\$2,658	\$1,549	\$1,646	\$3,512	\$3,549	\$1,420	\$1,456	\$2,100	\$2,084

PROFESSIONAL INPATIENT CHARGES PER YEAR FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH A COMPLICATION OF SEVERE HYPOGLYCEMIA, 2017^{1,3}

MARKET	Overall	w/ Severe Hypoglycemia
Allentown	\$3,715	\$6,878
Harrisburg	3,356	4,492
Reading	4,408	6,950
Scranton	3,422	4,552
Pennsylvania	3,188	4,994
NATION	\$3,549	\$5,502

PROFESSIONAL INPATIENT CHARGES PER YEAR FOR COMMERCIAL TYPE 2 DIABETES PATIENTS, BY ACTUAL COMPLICATION, 2017^{1,3}

MARKET	Cardiovascular Disease	Nephropathy	Neuropathy	PAD	Retinopathy
Allentown	\$4,823	\$5,295	\$4,466	\$4,989	\$3,502
Harrisburg	4,428	4,576	4,179	3,965	3,612
Reading	5,335	5,822	5,244	5,860	4,575
Scranton	4,255	4,744	4,341	5,087	2,715
Pennsylvania	4,028	4,315	3,865	4,339	3,332
NATION	\$4,444	\$4,744	\$4,435	\$4,992	\$3,977

Data source: IQVIA © 2018

¹ Professional charges are those generated by the providers delivering care to Type 2 diabetes patients in various settings.

² Includes HMOs, PPOs, point-of-service plans, and exclusive provider organizations.

³ 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, atherosclerotic cardiovascular disease (ASCVD; includes patients with ACS, MI, stroke, and other cardiovascular conditions), cardiovascular (CV) disease, nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, severe hypoglycemia, and stroke.

AVERAGE ANNUAL PAYMENTS PER TYPE 2 DIABETES PATIENT RECEIVING VARIOUS INSULIN AND COMBINATION THERAPIES, BY PAYER, 2017^{1,2}

MARKET	Long-Acting Basal Category 1			Long-Acting Basal Category 2			GLP-1 + Long-Acting Insulin (Fixed Ratio)			GLP-1 + Long-Acting Insulin (Free Ratio)			Rapid-Acting Insulin		
	Comm. Ins. ³	Medicare	Medicaid	Comm. Ins. ³	Medicare	Medicaid	Comm. Ins. ³	Medicare	Medicaid	Comm. Ins. ³	Medicare	Medicaid	Comm. Ins. ³	Medicare	Medicaid
Allentown	\$1,897	\$2,376	\$1,980	\$2,441	\$2,442	\$2,627	\$2,065	\$2,025	n/a	\$5,585	\$5,985	\$3,936	\$3,245	\$2,977	\$3,337
Harrisburg	2,028	2,724	1,976	2,399	3,085	2,306	2,606	1,928	\$612	4,832	6,317	4,758	3,287	3,438	2,959
Reading	1,799	2,195	1,616	2,627	2,617	2,241	1,555	4,472	n/a	5,393	4,835	5,503	2,840	2,923	3,355
Scranton	2,396	2,096	2,188	3,056	2,116	2,804	1,829	1,434	1,849	5,982	5,951	6,022	3,189	3,616	3,608
Pennsylvania	2,092	2,400	2,025	2,586	2,717	2,219	1,883	1,974	1,614	5,726	5,970	5,085	3,322	2,931	3,177
NATION	\$2,430	\$2,122	\$2,210	\$2,624	\$2,488	\$2,703	\$1,792	\$1,598	\$2,214	\$5,661	\$5,990	\$4,804	\$3,283	\$2,754	\$2,937

AVERAGE ANNUAL PAYMENTS PER COMMERCIAL TYPE 2 DIABETES PATIENT RECEIVING VARIOUS INSULIN AND COMBINATION THERAPIES, 2017^{1,2}

MARKET	Long-Acting Basal Category 1	Long-Acting Basal Category 2	GLP-1 + Long-Acting Insulin (Fixed Ratio)	GLP-1 + Long-Acting Insulin (Free Ratio)	Rapid-Acting Insulin
Allentown	\$1,897	\$2,441	\$2,065	\$5,585	\$3,245
Harrisburg	2,028	2,399	2,606	4,832	3,287
Reading	1,799	2,627	1,555	5,503	3,355
Scranton	2,188	2,804	1,849	6,022	3,608
Pennsylvania	2,092	2,586	1,883	5,726	3,322
NATION	\$2,210	\$2,703	\$2,214	\$5,661	\$3,283

AVERAGE ANNUAL PAYMENTS PER COMMERCIAL TYPE 2 DIABETES PATIENT RECEIVING VARIOUS NON-INSULIN ANTIDIABETIC THERAPIES, 2017^{1,2}

MARKET	Any Non-Insulin Antidiabetic Product	DPP-4 Inhibitors	GLP-1 Receptor Agonists	Insulin Sensitizing Agents	SGLT-2 Inhibitors
Allentown	\$2,575	\$2,545	\$3,922	\$202	\$2,707
Harrisburg	2,555	2,430	3,786	150	2,722
Reading	2,429	2,717	4,001	92	3,017
Scranton	2,682	2,837	4,411	170	3,156
Pennsylvania	2,623	2,589	4,272	132	2,856
NATION	\$2,467	\$2,439	\$4,121	\$86	\$2,703

Data source: IQVIA © 2018

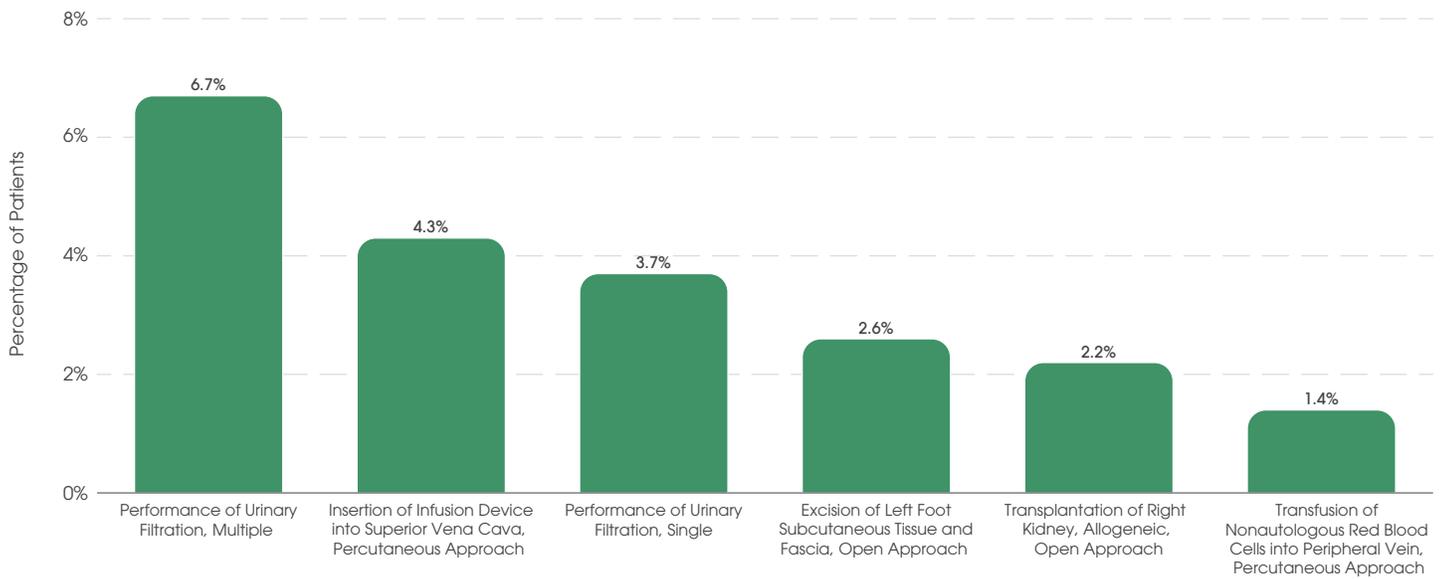
¹ Figures reflect the per-patient yearly payments for Type 2 diabetes patients receiving a particular type of therapy. These are the actual amounts paid by the insurer and patient for such prescriptions. Costs mainly include copayments, but can also include tax, deductibles, and cost differentials where applicable.

² Patients who filled prescriptions for any insulin products may have also filled prescriptions for products in the non-insulin category, and vice versa.

³ Includes HMOs, PPOs, point-of-service plans, and exclusive provider organizations.

NOTE: "Category 1" refers to long-acting basal insulins approved through 2014 and follow-on long-acting insulins approved after 2014. "Category 2" refers to non-follow-on long-acting basal insulins approved in or after 2015. "GLP-1 + long-acting insulin (fixed ratio)" refers to the two therapies combined in a single product. "GLP-1 + long-acting insulin (free ratio)" refers to the two therapies taken separately and concurrently. An n/a indicates that data were not available.

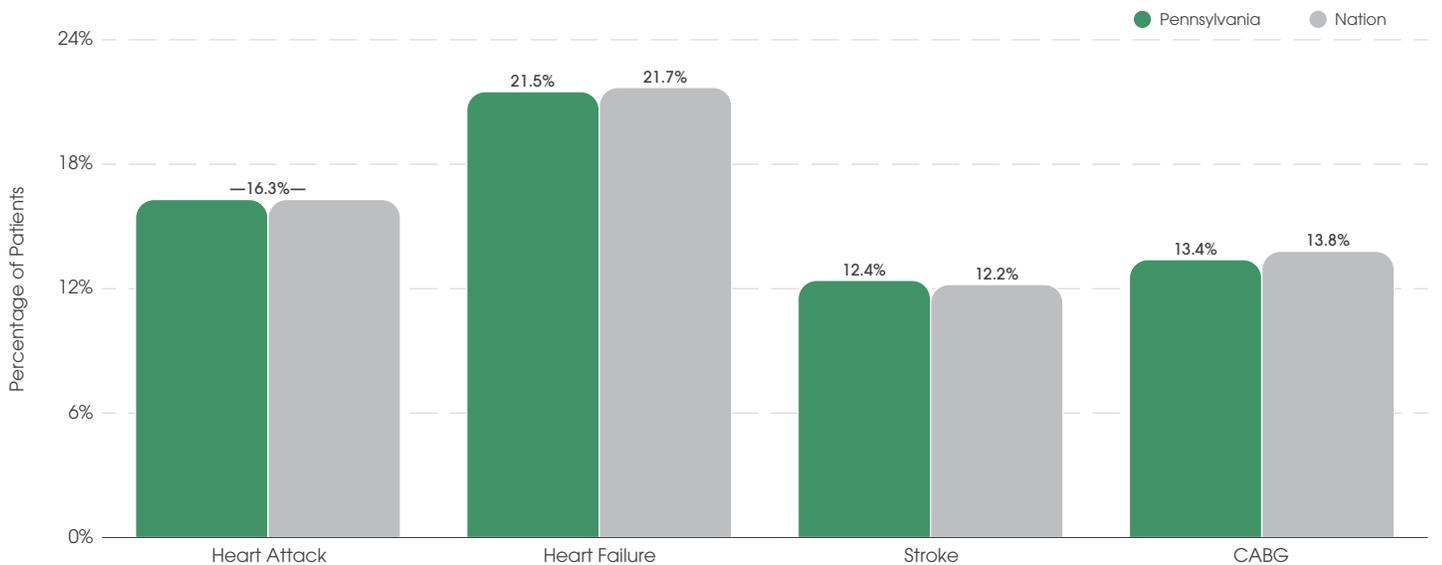
COMMON PROCEDURES FOR PATIENTS WITH A PRIMARY DIAGNOSIS OF DIABETES MELLITUS, PENNSYLVANIA, 2016



READMISSION RATES FOR PATIENTS DIAGNOSED WITH TYPE 2 DIABETES, BY TYPE OF THERAPY, 2015-2017^{1,2}

MARKET	Three-Day Readmissions				30-Day Readmissions			
	Any Insulin Products	Long-Acting Basal Category 1	Long-Acting Basal Category 2	Three Non-Insulin Antidiabetic Products	Any Insulin Products	Long-Acting Basal Category 1	Long-Acting Basal Category 2	Three Non-Insulin Antidiabetic Products
NATION	11.1%	13.4%	12.6%	16.2%	24.3%	29.4%	27.7%	30.3%

30-DAY READMISSION RATES FOR PATIENTS WITH SELECT CARDIOVASCULAR CONDITIONS, 2016



Data source: IQVIA © 2018

¹ Figures reflect the percentages of Type 2 diabetes patients who were readmitted to an inpatient facility in the three-year period between 2015 and 2017. These percentages include patients who filled multiple prescriptions. Readmissions are not necessarily due to Type 2 diabetes.

² Patients who filled prescriptions for any insulin products may have also filled prescriptions for products in the non-insulin category, and vice versa.

NOTE: Procedure data come from IQVIA's Hospital Procedure & Diagnosis (HPD) database. Hospital data are based on all short-term, acute-care hospitals and are effective as of 2016. Psychiatric, rehabilitation, armed forces, and long-term acute-care hospitals are excluded. CABG is coronary artery bypass graft.

METHODOLOGY

IQVIA generated most of the data for this report out of health care professional (837p) and institutional (837i) insurance claims, representing nearly 11.7 million unique patients nationally in 2017 with a diagnosis of Type 2 diabetes (E08, E09, E11, E13; data in 2015 include ICD-9 codes 249.00-250.92, and ICD-10 codes E08, E09, E11, E13). Data from physicians of all specialties and from all hospital types are included. Substate markets represent core-based statistical areas (CBSAs).

IQVIA also gathers data on prescription activity from the National Council for Prescription Drug Programs (NCPDP). These data account for some 2 billion prescription claims annually, or more than 86% 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. Cash, Medicaid, and third-party transactions are tracked. Data arriving into IQVIA are put through a rigorous process to ensure that data elements match to valid references, such as product codes, ICD-9/10 (diagnosis) and CPT-4 (procedure) codes, and provider and facility data.

Proprietary lab data derive from one of the largest independent commercial lab companies in the U.S. Patient information is de-identified, matched, and linked with other patient data assets (e.g., medical claims data). The most common attributes used are the de-identified patient ID, observation date, diagnosis, test name, test code, and test result.

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, IQVIA 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 IQVIA 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.

Case count, per-case average length of stay, inpatient charge, and discharge destination data come from IQVIA's *Hospital Procedure & Diagnosis* (HPD) database. This database features an extensive set of inpatient and outpatient discharge records (including diagnoses and procedures data) validated against hospital claims data. For data year 2016, the HPD data set comprises nearly 88,000 ICD-10 procedure codes and more than 69,000 diagnosis codes (compared with just under 4,000 procedure codes and roughly 14,000 diagnosis codes under the ICD-9 classification system used in previous years). The inpatient and outpatient data provided in this report include analyses of 351 ICD-10 diagnosis codes (compared with 93 ICD-9 codes in prior years) aggregated into 13 common disease states. In 2016, the HPD data set also incorporates about 85% of all hospital claims nationwide (including 100% of Medicare-reimbursed inpatient and outpatient discharges), representing more than 1.9 million unique health care providers and 1.5 billion medical claims per year. To account for non-Medicare hospital discharge information, HPD uses either Medicare procedure counts paired with additional hospital-level information or non-Medicare medical claims data linked to individual facilities via physician affiliations. Beginning in 2016, outpatient measures also include treatment delivered in locations that are not contiguous with a hospital or located on a hospital campus.

2018 ADA Guidelines for Adults With Type 2 Diabetes

⇒ At diagnosis, initiate lifestyle management, set A1c target, and initiate pharmacologic therapy based on A1c:

- A1c is less than 9%, consider Monotherapy.
- A1c is greater than or equal to 9%, consider Dual Therapy.
- A1c is greater than or equal to 10%, blood glucose is greater than or equal to 300 mg/dL, or patient is markedly symptomatic, consider Combination Injectable Therapy.

MONOTHERAPY

Initiate metformin therapy if no contraindications

Lifestyle Management + Metformin

A1c at target after 3 months of Monotherapy?

Yes: Monitor A1c every 3–6 months

No: Assess medication-taking behavior, consider Dual Therapy

DUAL THERAPY

Atherosclerotic cardiovascular disease (ASCVD)?

Yes: Add agent proven to reduce major adverse cardiovascular events and/or cardiovascular mortality*

No: Add second agent after consideration of drug-specific effects and patient factors

Lifestyle Management + Metformin + Additional Agent

A1c at target after 3 months of Dual Therapy?

Yes: Monitor A1c every 3–6 months

No: Assess medication-taking behavior, consider Triple Therapy

TRIPLE THERAPY

Add third agent based on drug-specific effects and patient factors[†]

Lifestyle Management + Metformin + Two Additional Agents

A1c at target after 3 months of Triple Therapy?

Yes: Monitor A1c every 3–6 months

No: Assess medication-taking behavior, consider Combination Injectable Therapy

COMBINATION INJECTABLE THERAPY

* If patient does not tolerate or has contraindications to metformin, consider agents from another class.

[†] Glucagon-like peptide-1 (GLP-1) receptor agonists and dipeptidyl peptidase 4 (DPP-4) inhibitors should not be prescribed in combination. If a patient with ASCVD is not yet on an agent with evidence of cardiovascular risk reduction, consider adding.

NOTE: A1c is glycated hemoglobin.

Source: American Diabetes Association Standards of Care 2018;41:S73–S85