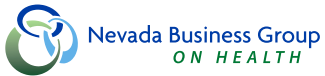


2019



# NEVADA TYPE 2 DIABETES REPORT™

WITH A FOCUS ON DIABETES-RELATED AND COEXISTING CONDITIONS  
Benchmarked Against Los Angeles and Salt Lake City



12th Edition

## INTRODUCTION

Sanofi U.S. (Sanofi), in partnership with the Nevada Business Group on Health (NVBGH), Comagine Health, and iDo, is pleased to present the 12th edition of the **Nevada Type 2 Diabetes Report™** for 2019, an overview of key demographic, utilization, charge, and pharmacotherapy measures for Type 2 diabetes patients in key local markets in Nevada. The report also provides comparisons to Los Angeles, Salt Lake City, state of Nevada, and national benchmarks, which 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®**.

Most of the data in this report (current as of calendar year 2018) 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.

This 12th edition features a number of examples of the kinds of disease-specific data on Type 2 diabetes that can be provided by the **Managed Care Digest Series®**. The sponsoring organizations 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 report, as the disease affects a sizable portion of the Nevada population.

This report also includes measures on cardiovascular diseases and other conditions that often occur as complications and comorbidities of Type 2 diabetes. The data provided explore the impact of these conditions on the patient’s treatment—including lab results, therapy persistency, and charges generated in their care—and by doing so reinforce the importance of earlier prevention and treatment for Nevada patients with Type 2 diabetes to delay or avoid these conditions.

### OUR MISSION...

***A partnership between public and private sectors formed to provide quality and cost-effective health care for the mutual benefit of employers, employees and families.***

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Nevada Business Group on Health (NVBGH)  
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## CONTENTS

Patient Demographics .....	3	Coexisting Condition: CV Disease .....	8-9
Complications/Comorbidities .....	4	Coexisting Condition: Stroke.....	10-11
Use of Services.....	5	Coexisting Condition: Hypoglycemia.....	12-13
Pharmacotherapy .....	6	Coexisting Condition: Depression .....	14-15
Persistency/Readmissions.....	7	Methodology/ADA Guidelines Excerpt.....	16

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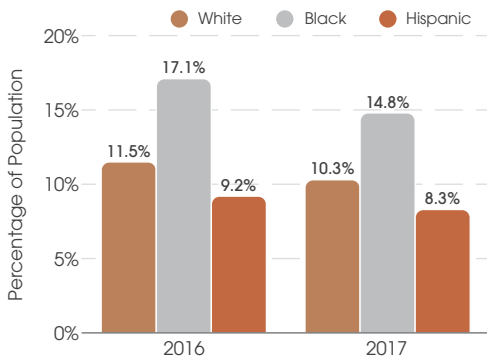
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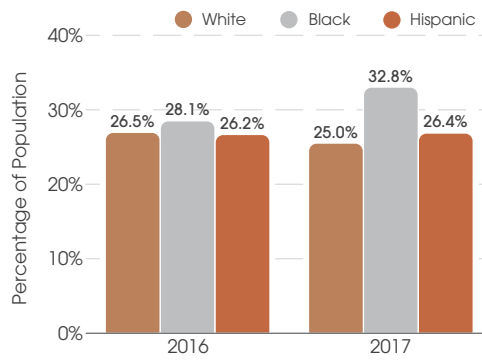
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Data provided by: IQVIA, Durham, NC

## PERCENTAGE OF NEVADA POPULATION WITH DIABETES, BY RACE/ETHNICITY, 2016-2017



## PERCENTAGE OF NEVADA POPULATION WITH OBESITY, BY RACE/ETHNICITY, 2016-2017



## RATES OF CV DXs ARE HIGH AMONG NEVADA TYPE 2 DIABETES PATIENTS

In 2018, Type 2 diabetes patients in Las Vegas and across Nevada were more apt than such patients nationally to have ASCVD, cardiovascular (CV) disease, MI, or PAD. Nevada Type 2 diabetes patients with CV disease generated higher professional charges compared with the overall average, regardless of profiled setting.

Data source: Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System © 2019

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY AGE, GENDER, AND PAYER, 2017-2018

	Las Vegas		Reno		Los Angeles		Salt Lake City		Nevada		NATION	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
<b>AGE</b>												
0-17	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
18-35	2.3	2.4	2.0	2.0	2.3	2.5	2.2	2.4	2.3	2.3	2.2	2.3
36-64	41.5	40.0	41.6	40.2	43.5	42.6	45.0	43.4	41.8	40.1	43.3	42.6
65-79	42.9	44.1	43.5	44.0	38.7	39.3	39.8	41.0	42.8	44.0	39.7	40.3
80+	12.8	13.1	12.5	13.5	15.2	15.3	12.6	12.7	12.8	13.2	14.4	14.5
<b>GENDER</b>												
Male	51.6%	51.8%	52.8%	52.6%	48.6%	48.5%	52.2%	52.3%	51.9%	52.1%	49.4%	49.6%
Female	48.4	48.2	47.3	47.4	51.4	51.6	47.8	47.7	48.1	47.9	50.6	50.4
<b>PAYER</b>												
Commercial Insurance <sup>1</sup>	54.2%	55.5%	43.5%	43.6%	50.0%	47.9%	52.6%	54.0%	52.2%	52.8%	42.0%	42.5%
Medicare	33.6	32.0	46.8	46.9	33.7	34.3	36.1	35.5	36.0	35.1	43.4	43.0
Medicaid Overall <sup>2</sup>	12.1	12.5	9.7	9.5	16.3	17.8	11.3	10.6	11.8	12.1	14.6	14.5
Medicaid Fee-for-Service	4.3	4.6	4.8	4.0	1.8	1.6	3.1	2.9	4.7	4.9	4.1	4.0
Medicaid Managed Care	8.7	8.7	5.7	6.1	15.2	16.7	9.7	9.1	7.9	7.9	11.5	11.6

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY DIAGNOSING SPECIALIST, 2017-2018

MARKET	Primary Care <sup>3</sup>		Internal Medicine		Cardiology		Endocrinology	
	2017	2018	2017	2018	2017	2018	2017	2018
Las Vegas	24.9%	24.8%	26.1%	26.4%	3.3%	3.4%	2.8%	2.8%
Reno	35.0	33.5	14.7	14.5	4.8	4.5	3.1	3.0
Los Angeles	25.9	25.7	20.9	20.6	3.7	3.5	2.9	2.8
Salt Lake City	36.9	37.6	18.8	18.0	2.8	2.7	3.5	3.4
<b>Nevada</b>	26.5	26.5	24.5	24.3	3.6	3.6	2.8	2.8
<b>NATION</b>	28.4%	28.1%	22.5%	21.9%	4.1%	4.0%	3.6%	3.6%

Data source: IQVIA © 2019

<sup>1</sup> Includes HMOs, PPOs, point-of-service plans, and exclusive provider organizations.

<sup>2</sup> Medicaid includes fee-for-service and managed care.

<sup>3</sup> "Primary care" consists of both general and family practitioners.

NOTE: Throughout this report, the Las Vegas market includes Henderson and Paradise; the Los Angeles market includes Long Beach and Anaheim. An n/a indicates that data were not available. Behavioral Risk Factor Surveillance System (BRFSS) data on diabetes are based on responses to the survey question, "Have you ever been told by a doctor that you have diabetes?" BRFSS data on obesity are based on a body mass index (BMI) of ≥30 calculated from responses to one or more survey questions. Medicaid fee-for-service and Medicaid managed care percentages may sum to a higher percentage than Medicaid overall, as some patients have both over the course of a year.

# DIABETES-RELATED COMPLICATIONS AND COEXISTING COMORBIDITIES

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMPLICATIONS, 2017-2018<sup>1</sup>

MARKET	0		1		2		>2	
	2017	2018	2017	2018	2017	2018	2017	2018
Las Vegas	31.4%	28.8%	23.2%	22.8%	14.6%	14.9%	30.7%	33.5%
Reno	39.1	37.8	27.3	27.7	14.7	14.3	18.9	20.3
Los Angeles	32.8	32.3	25.0	24.8	14.9	14.9	27.4	27.9
Salt Lake City	37.5	37.2	29.4	29.9	15.6	15.2	17.5	17.7
<b>Nevada</b>	<b>32.8</b>	<b>30.7</b>	<b>23.8</b>	<b>23.7</b>	<b>14.6</b>	<b>14.7</b>	<b>28.8</b>	<b>30.9</b>
<b>NATION</b>	<b>34.6%</b>	<b>33.9%</b>	<b>24.8%</b>	<b>24.9%</b>	<b>14.9%</b>	<b>14.9%</b>	<b>25.7%</b>	<b>26.3%</b>

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY ACTUAL COMPLICATION, 2018<sup>1</sup>

MARKET	ASCVD	CV Disease	Congestive Heart Failure	Hypo-glycemia	MI	Nephropathy	Neuropathy	PAD	Retinopathy
Las Vegas	47.3%	42.0%	14.3%	3.1%	3.6%	43.2%	41.4%	25.7%	15.7%
Reno	32.9	33.9	10.7	2.7	3.2	35.1	34.1	11.4	17.7
Los Angeles	39.9	37.3	13.6	2.8	3.1	39.3	37.4	20.9	21.6
Salt Lake City	26.6	29.5	10.8	2.5	2.0	32.1	43.1	9.6	13.8
<b>Nevada</b>	<b>44.8</b>	<b>40.5</b>	<b>13.7</b>	<b>3.1</b>	<b>3.6</b>	<b>41.8</b>	<b>40.5</b>	<b>23.3</b>	<b>15.8</b>
<b>NATION</b>	<b>40.8%</b>	<b>39.7%</b>	<b>14.2%</b>	<b>3.3%</b>	<b>3.0%</b>	<b>35.7%</b>	<b>37.0%</b>	<b>17.1%</b>	<b>17.0%</b>

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY NUMBER OF COMORBIDITIES, 2017-2018<sup>2</sup>

MARKET	0		1		2		>2	
	2017	2018	2017	2018	2017	2018	2017	2018
Las Vegas	15.4%	14.3%	25.9%	24.8%	38.9%	39.3%	19.8%	21.6%
Reno	24.3	24.6	26.3	26.1	34.3	33.5	15.1	15.8
Los Angeles	16.0	16.0	25.9	25.5	37.0	36.7	21.2	21.9
Salt Lake City	22.7	24.2	28.0	28.0	34.4	32.7	14.9	15.1
<b>Nevada</b>	<b>16.8</b>	<b>16.1</b>	<b>26.0</b>	<b>25.2</b>	<b>38.1</b>	<b>38.3</b>	<b>19.1</b>	<b>20.4</b>
<b>NATION</b>	<b>17.8%</b>	<b>18.0%</b>	<b>25.0%</b>	<b>24.7%</b>	<b>37.0%</b>	<b>36.3%</b>	<b>20.3%</b>	<b>21.1%</b>

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY ACTUAL COMORBIDITY AND PAYER, 2018<sup>2</sup>

MARKET	Depression			Hyperlipidemia			Hypertension			Obesity		
	Comm. Ins. <sup>3</sup>	Medicare	Medicaid <sup>4</sup>	Comm. Ins. <sup>3</sup>	Medicare	Medicaid <sup>4</sup>	Comm. Ins. <sup>3</sup>	Medicare	Medicaid <sup>4</sup>	Comm. Ins. <sup>3</sup>	Medicare	Medicaid <sup>4</sup>
Las Vegas	10.8%	10.8%	17.0%	72.9%	61.5%	56.2%	83.3%	89.2%	81.9%	23.9%	18.5%	28.2%
Reno	9.4	9.9	19.1	61.3	59.2	43.0	78.5	84.6	76.9	26.8	20.6	31.3
Los Angeles	11.6	12.2	14.1	67.9	66.9	61.0	78.8	85.3	80.5	30.4	22.1	31.1
Salt Lake City	13.8	15.0	29.0	62.5	58.1	43.1	73.3	80.7	70.1	23.5	21.1	34.3
<b>Nevada</b>	<b>10.7</b>	<b>10.6</b>	<b>17.2</b>	<b>71.3</b>	<b>61.1</b>	<b>54.1</b>	<b>82.5</b>	<b>88.1</b>	<b>80.9</b>	<b>24.2</b>	<b>18.7</b>	<b>29.0</b>
<b>NATION</b>	<b>11.3%</b>	<b>12.2%</b>	<b>17.6%</b>	<b>67.7%</b>	<b>64.4%</b>	<b>59.6%</b>	<b>80.8%</b>	<b>87.1%</b>	<b>81.5%</b>	<b>28.5%</b>	<b>22.8%</b>	<b>30.9%</b>

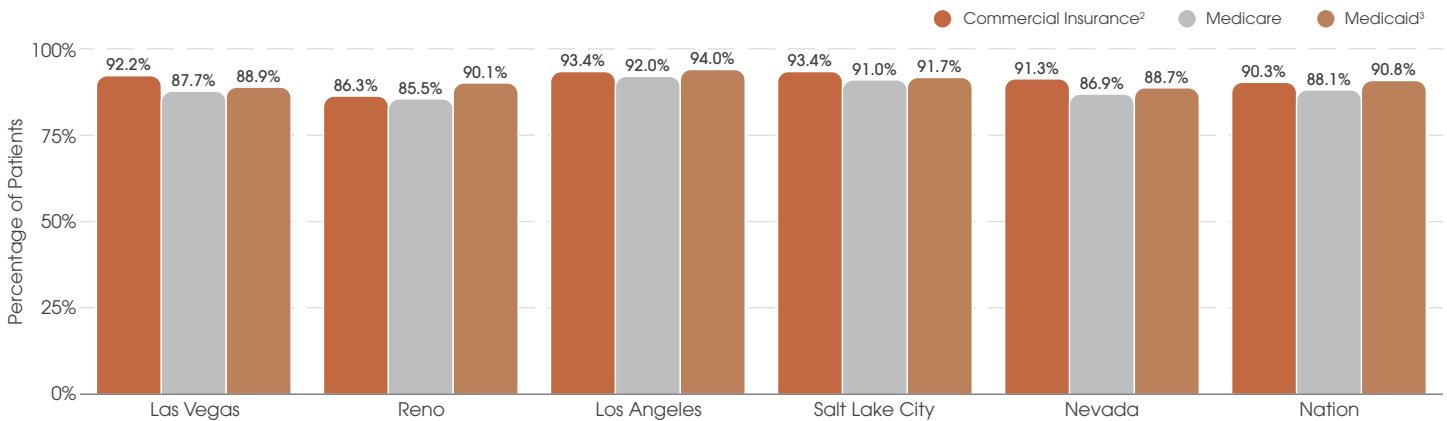
Data source: IQVIA © 2019

<sup>1</sup> A complication is defined as a patient condition caused by diabetes. Complications of diabetes include, but are not limited to, atherosclerotic cardiovascular disease (ASCVD), cardiovascular (CV) disease, congestive heart failure, hypoglycemia, myocardial infarction (MI), nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, and stroke. ASCVD includes patients with ACS, MI, stroke, and other cardiovascular diseases.  
<sup>2</sup> A comorbidity is a condition a patient with diabetes may also have, which may not be directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with diabetes. Comorbidities of diabetes include, but are not limited to, depression, hyperlipidemia, hypertension, knee osteoarthritis, obesity, pneumonia, and rheumatoid arthritis.  
<sup>3</sup> Includes HMOs, PPOs, point-of-service plans, and exclusive provider organizations.  
<sup>4</sup> Medicaid includes fee-for-service and managed care.

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS, BY SERVICE, 2017-2018

MARKET	A1c Test <sup>1</sup>		Blood Glucose Test		Ophthalmologic Exam		Serum Cholesterol Test		Urine Microalbumin Test	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Las Vegas	93.2%	90.2%	95.1%	93.0%	43.5%	43.5%	84.8%	79.4%	60.3%	52.8%
Reno	85.9	86.4	88.9	88.5	49.3	50.0	70.4	69.5	40.9	41.3
Los Angeles	92.2	92.5	94.6	94.7	49.6	50.1	83.0	83.0	57.7	58.0
Salt Lake City	92.2	92.4	93.0	92.9	39.5	39.1	79.6	78.1	52.9	51.8
<b>Nevada</b>	<b>91.8</b>	<b>89.3</b>	<b>93.9</b>	<b>92.0</b>	<b>43.8</b>	<b>44.3</b>	<b>82.1</b>	<b>77.4</b>	<b>56.7</b>	<b>50.4</b>
<b>NATION</b>	<b>88.7%</b>	<b>89.3%</b>	<b>91.8%</b>	<b>92.1%</b>	<b>45.2%</b>	<b>44.1%</b>	<b>79.3%</b>	<b>79.2%</b>	<b>49.2%</b>	<b>49.1%</b>

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING AN A1c TEST, BY PAYER, 2018<sup>1</sup>



## DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, BY A1c LEVEL RANGE AND PAYER, 2018<sup>1</sup>

MARKET	≤7.0%			7.1-7.9%			8.0-9.0%			>9.0%		
	Comm. Ins. <sup>2</sup>	Medicare	Medicaid <sup>3</sup>	Comm. Ins. <sup>2</sup>	Medicare	Medicaid <sup>3</sup>	Comm. Ins. <sup>2</sup>	Medicare	Medicaid <sup>3</sup>	Comm. Ins. <sup>2</sup>	Medicare	Medicaid <sup>3</sup>
Las Vegas	51.4%	62.1%	43.7%	20.0%	18.8%	17.3%	12.1%	10.4%	11.7%	16.6%	8.7%	27.3%
Reno	52.5	60.0	50.7	19.6	20.0	17.9	12.6	10.8	9.2	15.3	9.2	22.2
Los Angeles	56.6	59.6	52.0	18.6	19.2	17.8	11.1	10.5	12.1	13.7	10.6	18.1
Salt Lake City	53.2	54.5	52.1	21.1	22.4	12.7	11.8	13.9	14.3	13.9	9.2	21.0
<b>Nevada</b>	<b>50.7</b>	<b>60.0</b>	<b>42.6</b>	<b>20.3</b>	<b>19.6</b>	<b>17.6</b>	<b>12.6</b>	<b>10.7</b>	<b>12.2</b>	<b>16.5</b>	<b>9.7</b>	<b>27.6</b>
<b>NATION</b>	<b>54.6%</b>	<b>59.2%</b>	<b>50.0%</b>	<b>19.2%</b>	<b>19.3%</b>	<b>17.0%</b>	<b>11.9%</b>	<b>11.1%</b>	<b>12.3%</b>	<b>14.4%</b>	<b>10.4%</b>	<b>20.6%</b>

## DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, BY PAYER AND LDL-C LEVEL (mg/dL), 2018

MARKET	Commercial Insurance <sup>2</sup>				Medicare				Medicaid <sup>3</sup>			
	<100	100-129	130-189	≥190	<100	100-129	130-189	≥190	<100	100-129	130-189	≥190
Las Vegas	66.1%	21.4%	11.6%	1.0%	76.6%	15.4%	7.0%	1.0%	61.7%	22.3%	14.7%	n/a
Reno	69.6	20.0	9.6	0.7	77.0	14.9	7.5	0.6	70.0	19.0	11.0	n/a
Los Angeles	68.3	20.3	10.6	0.9	72.5	17.8	9.0	0.8	65.0	21.6	12.4	1.1%
Salt Lake City	72.2	18.2	9.1	0.6	78.4	14.0	6.9	0.7	69.6	19.7	9.7	n/a
<b>Nevada</b>	<b>66.7</b>	<b>21.2</b>	<b>11.2</b>	<b>1.0</b>	<b>76.5</b>	<b>15.3</b>	<b>7.4</b>	<b>0.8</b>	<b>62.9</b>	<b>22.7</b>	<b>13.6</b>	<b>n/a</b>
<b>NATION</b>	<b>67.8%</b>	<b>20.5%</b>	<b>10.8%</b>	<b>0.9%</b>	<b>73.8%</b>	<b>16.9%</b>	<b>8.6%</b>	<b>0.8%</b>	<b>64.2%</b>	<b>22.0%</b>	<b>12.6%</b>	<b>1.3%</b>

Data source: IQVIA © 2019

<sup>1</sup> The A1c test measures how much glucose has been in the blood during the past 2-3 months. Figures reflect the percentage of diabetes patients who have had at least one A1c test in a given year.

<sup>2</sup> Includes HMOs, PPOs, point-of-service plans, and exclusive provider organizations.

<sup>3</sup> Medicaid includes fee-for-service and managed care.

NOTE: LDL-C is low-density lipoprotein cholesterol.

PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS INSULIN AND COMBINATION THERAPIES, 2018<sup>1</sup>

MARKET	Any Insulin Product	Long-Acting Insulin	Rapid-Acting Insulin	Mixed Insulin	Intermediate-Acting Insulin	Fixed Ratio (Long-Acting Insulin/GLP-1 RA)	Free Ratio (Variable Long-Acting Insulin + GLP-1 RA)
Las Vegas	29.8%	24.7%	12.6%	2.7%	1.6%	0.8%	4.7%
Reno	27.3	23.1	10.1	2.3	1.0	0.4	4.7
Los Angeles	23.9	19.3	8.7	3.0	1.6	0.4	2.9
Salt Lake City	31.9	27.8	14.6	2.0	0.9	0.9	6.1
<b>Nevada</b>	<b>29.7</b>	<b>24.9</b>	<b>12.3</b>	<b>2.6</b>	<b>1.5</b>	<b>0.7</b>	<b>4.7</b>
<b>NATION</b>	<b>30.4%</b>	<b>25.0%</b>	<b>12.9%</b>	<b>3.3%</b>	<b>1.3%</b>	<b>0.5%</b>	<b>4.4%</b>

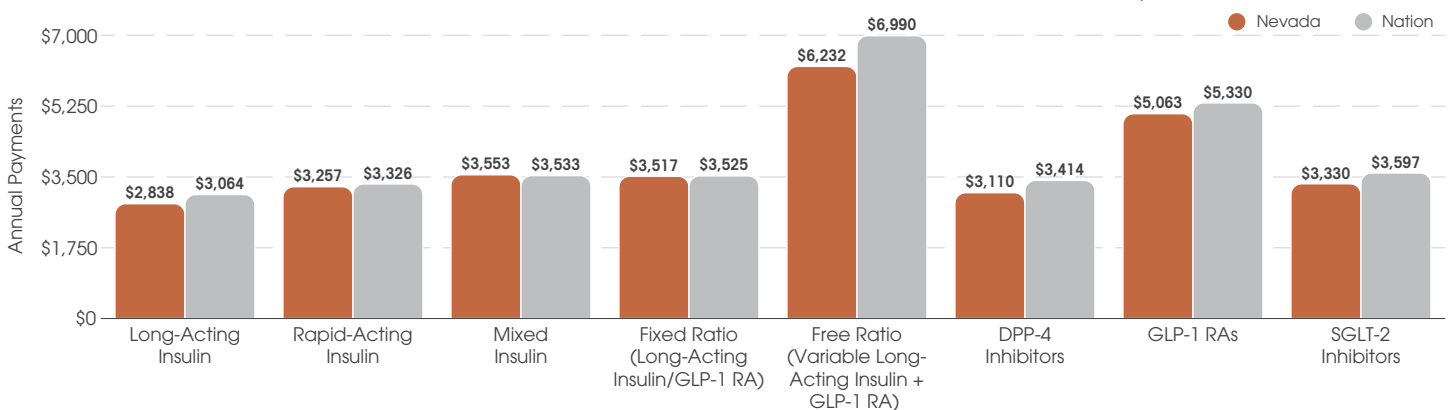
PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS NON-INSULIN ANTIDIABETIC THERAPIES, 2018<sup>1</sup>

MARKET	Any Non-Insulin Antidiabetic Product	Biguanides	DPP-4 Inhibitors	GLP-1 RAs	Insulin Sensitizing Agents	SGLT-2 Inhibitors	Sulfonylureas
Las Vegas	90.9%	69.2%	10.8%	11.5%	8.4%	12.6%	31.5%
Reno	92.3	71.6	12.2	12.0	8.4	10.9	28.2
Los Angeles	94.1	74.4	18.3	7.1	10.3	10.1	33.0
Salt Lake City	90.3	72.8	10.4	14.2	9.6	10.0	25.8
<b>Nevada</b>	<b>90.8</b>	<b>69.6</b>	<b>11.0</b>	<b>11.6</b>	<b>8.2</b>	<b>12.1</b>	<b>30.8</b>
<b>NATION</b>	<b>90.6%</b>	<b>68.8%</b>	<b>13.5%</b>	<b>10.8%</b>	<b>6.8%</b>	<b>9.6%</b>	<b>32.6%</b>

PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING ANY INSULIN OR ANY NON-INSULIN ANTIDIABETIC PRODUCTS, BY A1c LEVEL RANGE, 2018<sup>1,2</sup>

MARKET	≤7.0%		7.1–7.9%		8.0–9.0%		>9.0%	
	Any Insulin	Any Non-Insulin	Any Insulin	Any Non-Insulin	Any Insulin	Any Non-Insulin	Any Insulin	Any Non-Insulin
Las Vegas	17.7%	94.9%	35.4%	90.6%	46.9%	91.1%	56.6%	86.0%
Reno	11.2	96.6	22.0	95.5	40.7	91.4	51.8	89.0
Los Angeles	10.6	97.1	24.0	94.7	38.1	92.0	46.9	91.5
Salt Lake City	13.7	96.8	30.9	90.4	45.3	88.0	59.7	82.9
<b>Nevada</b>	<b>15.5</b>	<b>95.3</b>	<b>28.9</b>	<b>92.9</b>	<b>44.0</b>	<b>90.2</b>	<b>55.4</b>	<b>86.5</b>
<b>NATION</b>	<b>14.7%</b>	<b>95.2%</b>	<b>30.0%</b>	<b>91.8%</b>	<b>44.7%</b>	<b>88.5%</b>	<b>58.0%</b>	<b>85.9%</b>

ANNUAL PAYMENTS PER TYPE 2 DIABETES PATIENT FOR VARIOUS THERAPIES, 2018<sup>3</sup>



Data source: IQVIA © 2019

**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 (RAs):** 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. "Fixed ratio (long-acting insulin/GLP-1 RA)" refers to the two therapies combined in a single product. "Free ratio (variable long-acting insulin + GLP-1 RA)" 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.

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

**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.

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

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

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

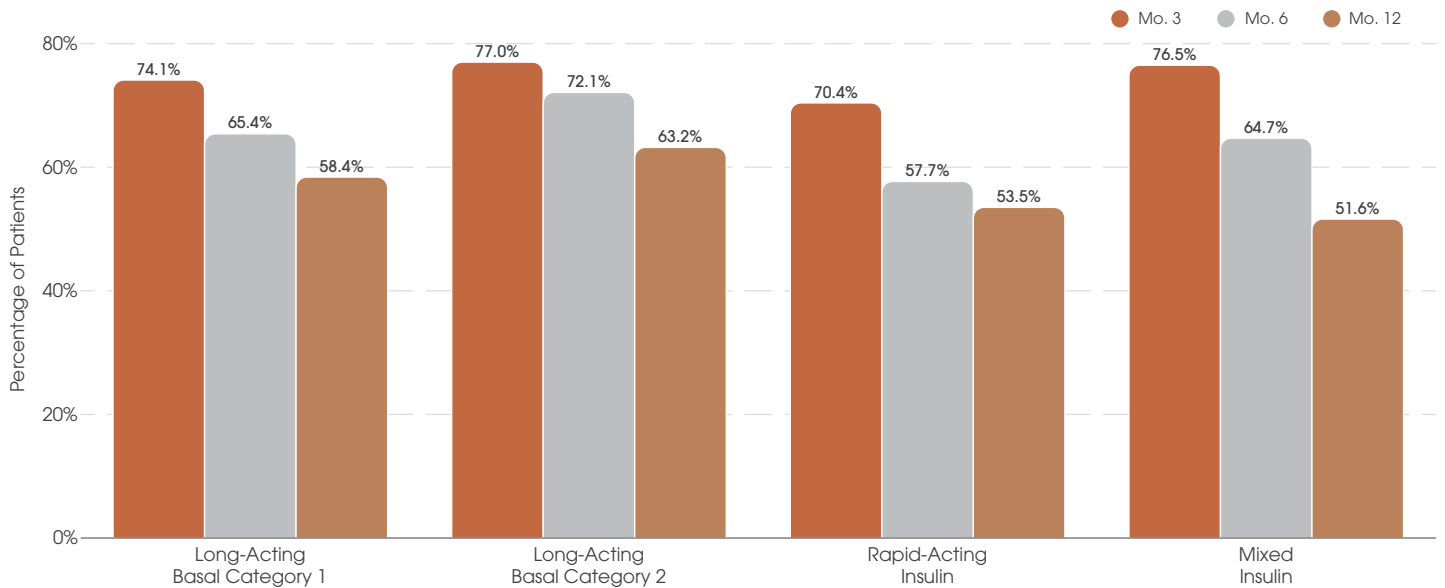
**Sulfonylureas:** Stimulate the release of insulin in the pancreas.

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

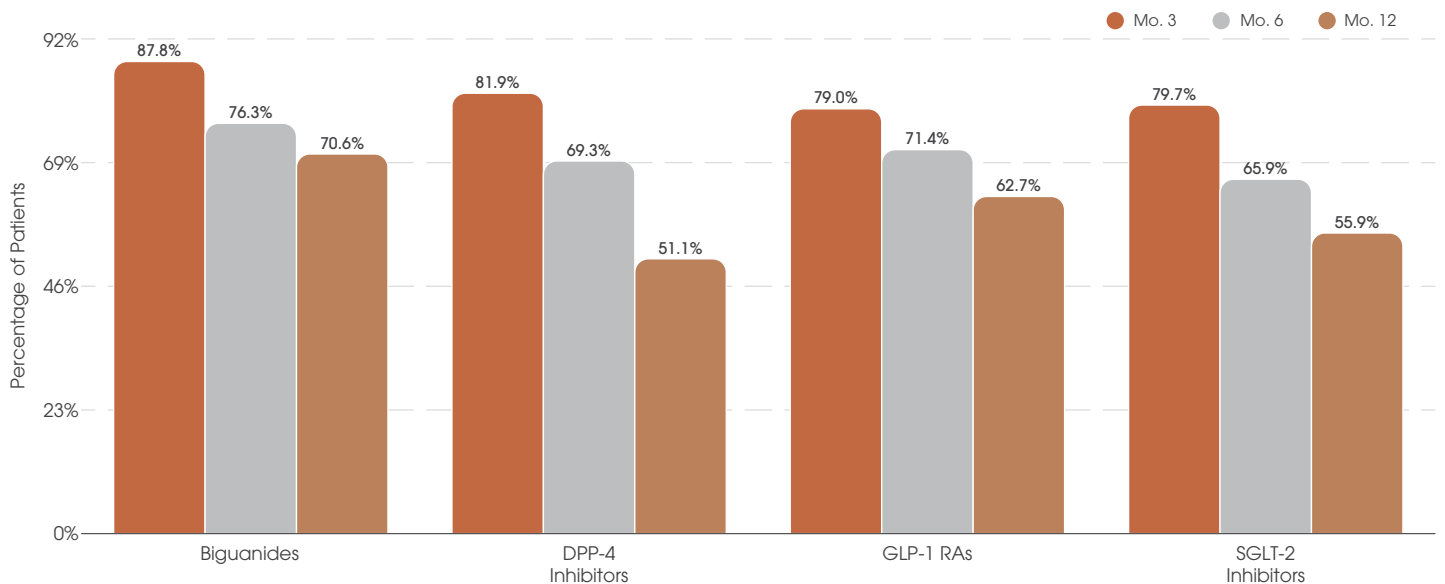
<sup>2</sup> The A1c test measures how much glucose has been in the blood during the past 2-3 months. Figures reflect the percentage of diabetes patients who have had at least one A1c test in a given year.

<sup>3</sup> Figures reflect the per-patient yearly payments for 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.

PERSISTENCY: TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS INSULIN THERAPIES, NEVADA, 2018



PERSISTENCY: TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS NON-INSULIN ANTIDIABETIC THERAPIES, NEVADA, 2018



READMISSION RATES FOR ALL-PAYER PATIENTS DIAGNOSED WITH TYPE 2 DIABETES, BY TYPE OF THERAPY, 2016-2018<sup>1</sup>

	Three-Day Readmissions			30-Day Readmissions		
	Long-Acting Basal Category 1	Long-Acting Basal Category 2	Three Non-Insulin Antidiabetic Products	Long-Acting Basal Category 1	Long-Acting Basal Category 2	Three Non-Insulin Antidiabetic Products
<b>MARKET</b>						
<b>NATION</b>	6.9%	5.5%	13.6%	19.0%	17.3%	29.3%

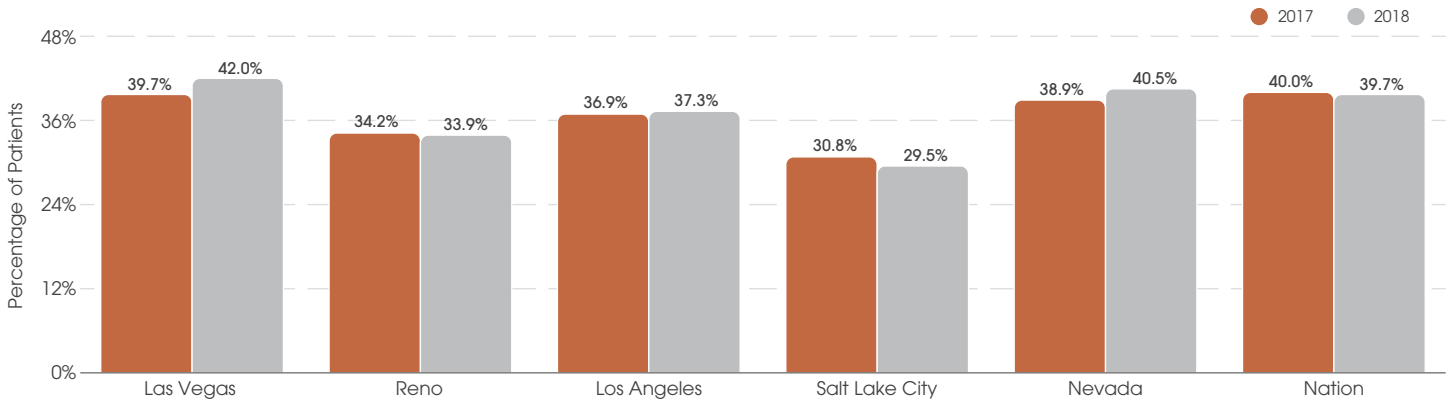
Data source: IQVIA © 2019

<sup>1</sup> Figures reflect the percentages of Type 2 diabetes patients who were readmitted to an inpatient facility in the three-year period between 2016 and 2018. These percentages include patients who filled multiple prescriptions. Readmissions are not necessarily due to Type 2 diabetes. Readmissions data are available down to the national level only.

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). "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.

# DIABETES-RELATED AND COEXISTING CONDITION: CV DISEASE

PERCENTAGE OF TYPE 2 DIABETES PATIENTS WITH CV DISEASE, 2017-2018<sup>1</sup>



DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH CV DISEASE, BY A1c LEVEL RANGE, 2018<sup>1,2</sup>

MARKET	≤7.0%		7.1-7.9%		8.0-9.0%		>9.0%	
	Overall	w/ CV Disease	Overall	w/ CV Disease	Overall	w/ CV Disease	Overall	w/ CV Disease
Las Vegas	54.8%	58.1%	19.4%	20.0%	11.4%	11.2%	14.5%	10.7%
Reno	55.9%	57.0%	19.9%	20.2%	11.5%	10.9%	12.7%	12.0%
Los Angeles	57.1%	60.6%	18.7%	18.4%	10.9%	10.2%	13.3%	10.8%
Salt Lake City	53.2%	54.1%	20.7%	22.0%	12.9%	12.4%	13.2%	11.5%
<b>Nevada</b>	<b>53.6%</b>	<b>57.0%</b>	<b>20.0%</b>	<b>20.3%</b>	<b>11.8%</b>	<b>11.2%</b>	<b>14.7%</b>	<b>11.5%</b>
<b>NATION</b>	<b>55.5%</b>	<b>57.4%</b>	<b>19.1%</b>	<b>19.0%</b>	<b>11.7%</b>	<b>11.6%</b>	<b>13.8%</b>	<b>12.0%</b>

PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS THERAPIES, OVERALL VS. WITH CV DISEASE, 2018<sup>1</sup>

MARKET	Long-Acting Basal Category 1		Long-Acting Basal Category 2		Rapid-Acting Insulin		Biguanides		GLP-1 RAs	
	Overall	w/ CV Disease	Overall	w/ CV Disease	Overall	w/ CV Disease	Overall	w/ CV Disease	Overall	w/ CV Disease
Las Vegas	20.1%	23.9%	5.7%	6.2%	12.6%	15.0%	69.2%	62.5%	11.5%	10.2%
Reno	18.2%	22.1%	6.2%	6.7%	10.1%	12.1%	71.6%	65.8%	12.0%	10.4%
Los Angeles	16.8%	20.8%	3.3%	4.2%	8.7%	11.8%	74.4%	66.6%	7.1%	7.8%
Salt Lake City	21.3%	25.3%	8.3%	7.8%	14.6%	16.9%	72.8%	69.0%	14.2%	11.9%
<b>Nevada</b>	<b>20.2%</b>	<b>23.8%</b>	<b>5.9%</b>	<b>6.6%</b>	<b>12.3%</b>	<b>14.7%</b>	<b>69.6%</b>	<b>63.0%</b>	<b>11.6%</b>	<b>10.3%</b>
<b>NATION</b>	<b>20.6%</b>	<b>25.1%</b>	<b>5.5%</b>	<b>6.1%</b>	<b>12.9%</b>	<b>16.1%</b>	<b>68.8%</b>	<b>62.4%</b>	<b>10.8%</b>	<b>9.5%</b>

Data source: IQVIA © 2019

**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 (RAs):** 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. "Fixed ratio (long-acting insulin/GLP-1 RA)" refers to the two therapies combined in a single product. "Free ratio (variable long-acting insulin + GLP-1 RA)" refers to the two therapies taken separately and concurrently.

**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.

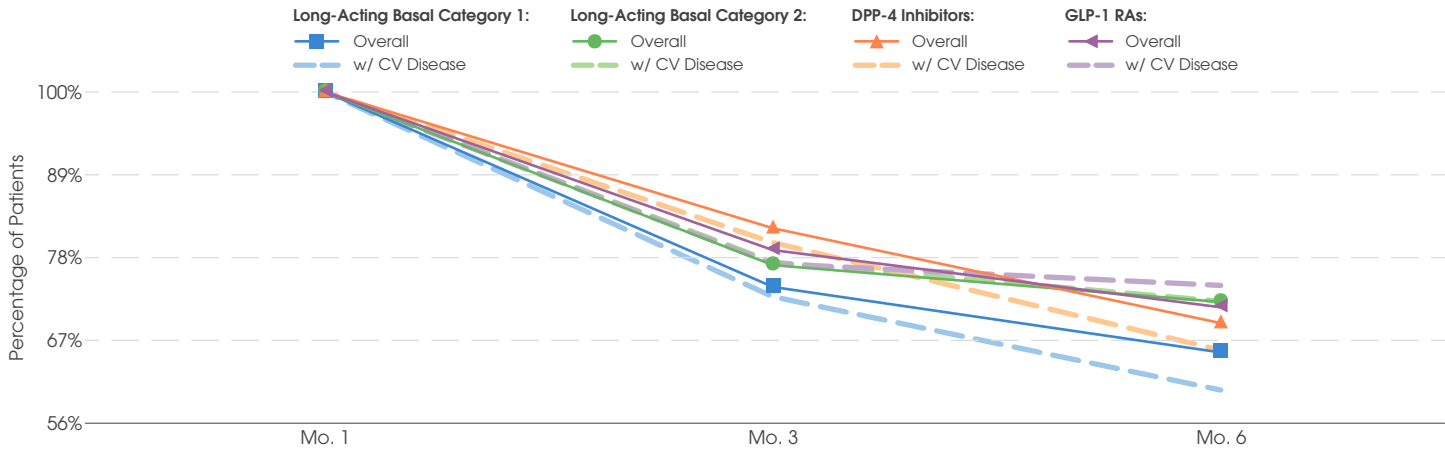
<sup>1</sup> A complication is defined as a patient condition caused by diabetes. Complications of diabetes include, but are not limited to, atherosclerotic cardiovascular disease (ASCVD), cardiovascular (CV) disease, congestive heart failure, hypoglycemia, myocardial infarction (MI), nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, and stroke. ASCVD includes patients with ACS, MI, stroke, and other cardiovascular diseases.

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



# DIABETES-RELATED AND COEXISTING CONDITION: CV DISEASE

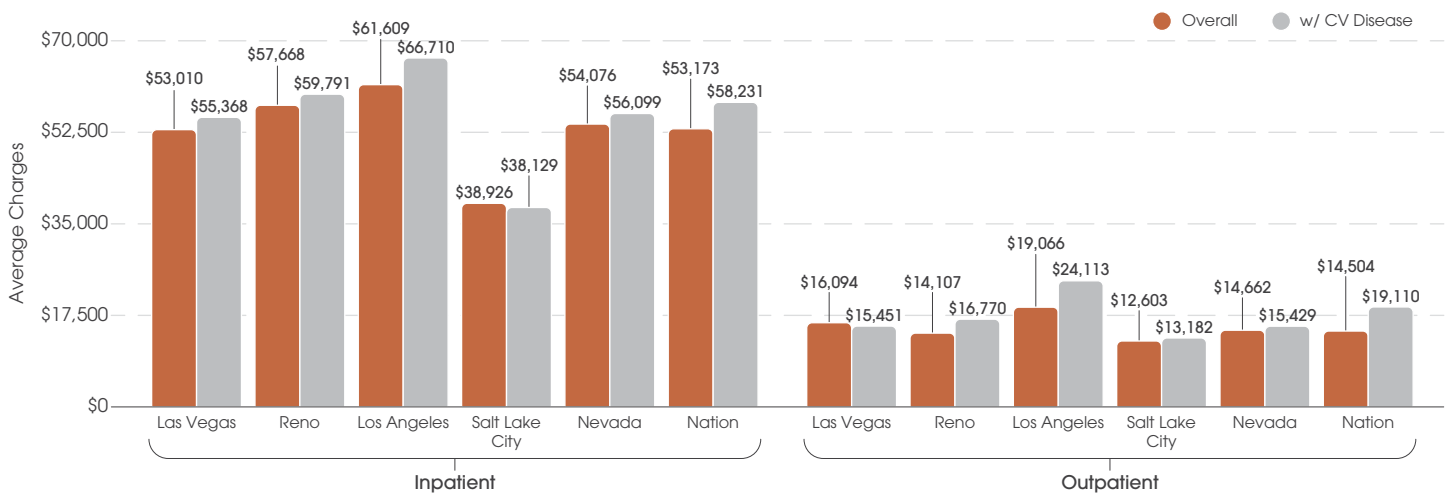
## PERSISTENCY: TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH CV DISEASE, VARIOUS THERAPIES, NEVADA, 2018<sup>1</sup>



## PROFESSIONAL CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH CV DISEASE, BY SETTING, 2018<sup>1,2</sup>

MARKET	Emergency Department		Inpatient		Outpatient		Office/ Clinic	
	Overall	w/ CV Disease	Overall	w/ CV Disease	Overall	w/ CV Disease	Overall	w/ CV Disease
Las Vegas	\$3,317	\$4,025	\$5,560	\$7,230	\$2,035	\$2,066	\$3,830	\$5,546
Reno	2,775	3,591	4,474	5,461	1,784	1,868	2,928	4,309
Los Angeles	2,134	2,651	6,749	8,516	2,141	2,453	3,472	5,125
Salt Lake City	2,192	2,563	4,118	4,844	2,066	2,182	2,392	3,255
<b>Nevada</b>	<b>3,184</b>	<b>3,935</b>	<b>5,340</b>	<b>6,929</b>	<b>1,901</b>	<b>1,987</b>	<b>3,594</b>	<b>5,309</b>
<b>NATION</b>	<b>\$2,129</b>	<b>\$2,589</b>	<b>\$5,024</b>	<b>\$6,227</b>	<b>\$1,822</b>	<b>\$2,149</b>	<b>\$2,812</b>	<b>\$3,997</b>

## FACILITY CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH CV DISEASE, BY SETTING, 2018<sup>1,3</sup>



Data source: IQVIA © 2019

<sup>1</sup> A complication is defined as a patient condition caused by diabetes. Complications of diabetes include, but are not limited to, atherosclerotic cardiovascular disease (ASCVD), cardiovascular (CV) disease, congestive heart failure, hypoglycemia, myocardial infarction (MI), nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, and stroke. ASCVD includes patients with ACS, MI, stroke, and other cardiovascular diseases.

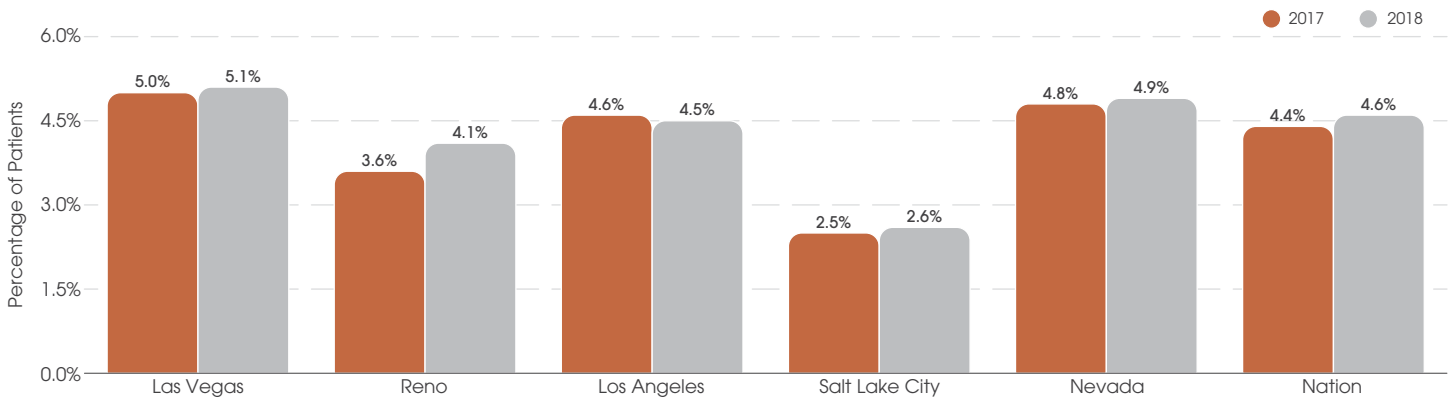
<sup>2</sup> Professional charges are those generated by the providers delivering care to patients with diabetes in various settings.

<sup>3</sup> Data reflect the charges generated for diabetes patients by the facilities that delivered care. The data also reflect the average amounts charged, not the amounts paid.

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). "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.

# DIABETES-RELATED AND COEXISTING CONDITION: STROKE

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS WITH STROKE, 2017-2018<sup>1</sup>



## DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH STROKE, BY A1c LEVEL RANGE, 2018<sup>1,2</sup>

MARKET	≤7.0%		7.1-7.9%		8.0-9.0%		>9.0%	
	Overall	w/ Stroke	Overall	w/ Stroke	Overall	w/ Stroke	Overall	w/ Stroke
Las Vegas	54.8%	57.4%	19.4%	16.5%	11.4%	13.1%	14.5%	13.1%
Reno	55.9%	55.3%	19.9%	18.4%	11.5%	13.2%	12.7%	13.2%
Los Angeles	57.1%	58.7%	18.7%	17.6%	10.9%	10.9%	13.3%	12.9%
<b>Nevada</b>	<b>53.6%</b>	<b>54.9%</b>	<b>20.0%</b>	<b>17.3%</b>	<b>11.8%</b>	<b>13.0%</b>	<b>14.7%</b>	<b>14.8%</b>
<b>NATION</b>	<b>55.5%</b>	<b>55.0%</b>	<b>19.1%</b>	<b>18.0%</b>	<b>11.7%</b>	<b>12.2%</b>	<b>13.8%</b>	<b>14.7%</b>

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS THERAPIES, OVERALL VS. WITH STROKE, 2018<sup>1</sup>

MARKET	Long-Acting Basal Category 1		Long-Acting Basal Category 2		Rapid-Acting Insulin		Biguanides		GLP-1 RAs	
	Overall	w/ Stroke	Overall	w/ Stroke	Overall	w/ Stroke	Overall	w/ Stroke	Overall	w/ Stroke
Las Vegas	20.1%	32.2%	5.7%	5.7%	12.6%	20.0%	69.2%	57.1%	11.5%	8.3%
Reno	18.2%	21.0%	6.2%	7.6%	10.1%	14.7%	71.6%	63.1%	12.0%	10.2%
Los Angeles	16.8%	27.6%	3.3%	4.7%	8.7%	15.8%	74.4%	65.1%	7.1%	5.7%
Salt Lake City	21.3%	28.9%	8.3%	7.4%	14.6%	21.5%	72.8%	65.8%	14.2%	10.1%
<b>Nevada</b>	<b>20.2%</b>	<b>30.3%</b>	<b>5.9%</b>	<b>6.2%</b>	<b>12.3%</b>	<b>19.0%</b>	<b>69.6%</b>	<b>58.2%</b>	<b>11.6%</b>	<b>8.3%</b>
<b>NATION</b>	<b>20.6%</b>	<b>31.9%</b>	<b>5.5%</b>	<b>6.1%</b>	<b>12.9%</b>	<b>20.6%</b>	<b>68.8%</b>	<b>58.9%</b>	<b>10.8%</b>	<b>7.4%</b>

Data source: IQVIA © 2019

**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 (RAs):** 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. "Fixed ratio (long-acting insulin/GLP-1 RA)" refers to the two therapies combined in a single product. "Free ratio (variable long-acting insulin + GLP-1 RA)" refers to the two therapies taken separately and concurrently.

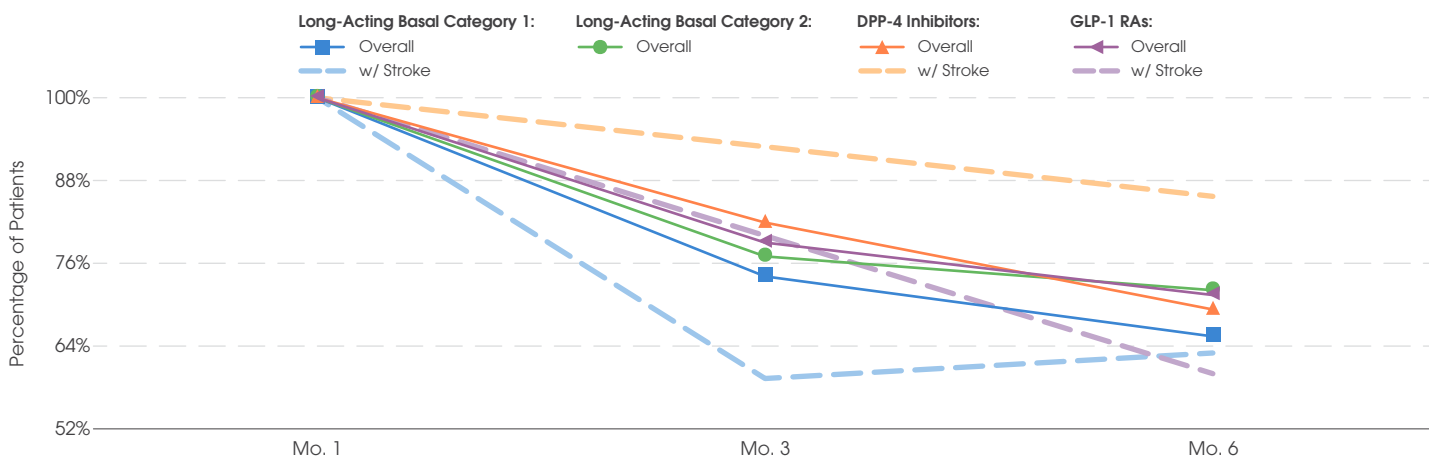
<sup>1</sup> A complication is defined as a patient condition caused by diabetes. Complications of diabetes include, but are not limited to, atherosclerotic cardiovascular disease (ASCVD), cardiovascular (CV) disease, congestive heart failure, hypoglycemia, myocardial infarction (MI), nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, and stroke. ASCVD includes patients with ACS, MI, stroke, and other cardiovascular diseases.

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

NOTE: Some data were unavailable for Salt Lake City.

# DIABETES-RELATED AND COEXISTING CONDITION: STROKE

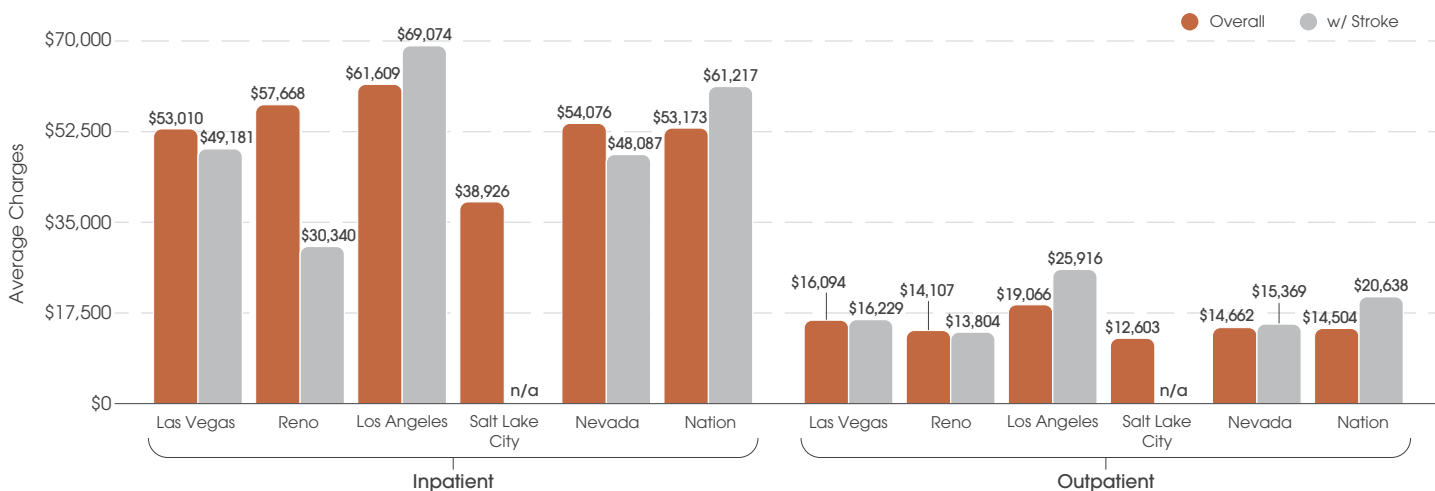
## PERSISTENCY: TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH STROKE, VARIOUS THERAPIES, NEVADA, 2018<sup>1</sup>



## PROFESSIONAL CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH STROKE, BY SETTING, 2018<sup>1,2</sup>

MARKET	Emergency Department		Inpatient		Outpatient		Office/Clinic	
	Overall	w/ Stroke	Overall	w/ Stroke	Overall	w/ Stroke	Overall	w/ Stroke
Las Vegas	\$3,317	\$5,343	\$5,560	\$10,261	\$2,035	\$1,823	\$3,830	\$5,366
Reno	2,775	4,436	4,474	5,586	1,784	1,811	2,928	3,557
Los Angeles	2,134	3,297	6,749	10,820	2,141	2,290	3,472	4,925
Salt Lake City	2,192	2,725	4,118	4,514	2,066	2,241	2,392	3,178
<b>Nevada</b>	<b>3,184</b>	<b>5,182</b>	<b>5,340</b>	<b>9,657</b>	<b>1,901</b>	<b>1,781</b>	<b>3,594</b>	<b>5,069</b>
<b>NATION</b>	<b>\$2,129</b>	<b>\$3,136</b>	<b>\$5,024</b>	<b>\$7,309</b>	<b>\$1,822</b>	<b>\$2,090</b>	<b>\$2,812</b>	<b>\$3,862</b>

## FACILITY CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH STROKE, BY SETTING, 2018<sup>1,3</sup>



Data source: IQVIA © 2019

<sup>1</sup> A complication is defined as a patient condition caused by diabetes. Complications of diabetes include, but are not limited to, atherosclerotic cardiovascular disease (ASCVD), cardiovascular (CV) disease, congestive heart failure, hypoglycemia, myocardial infarction (MI), nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, and stroke. ASCVD includes patients with ACS, MI, stroke, and other cardiovascular diseases.

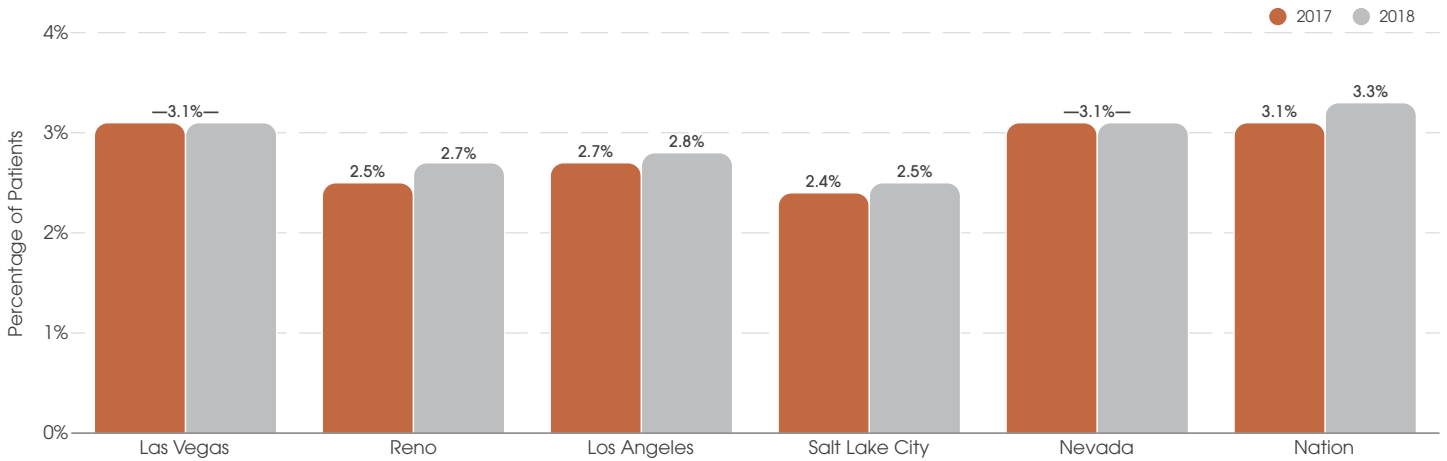
<sup>2</sup> Professional charges are those generated by the providers delivering care to patients with diabetes in various settings.

<sup>3</sup> Data reflect the charges generated for diabetes patients by the facilities that delivered care. The data also reflect the average amounts charged, not the amounts paid.

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). "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. Some data were unavailable for Nevada.

# DIABETES-RELATED AND COEXISTING CONDITION: HYPOGLYCEMIA

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS WITH HYPOGLYCEMIA, 2017-2018<sup>1</sup>



## DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH HYPOGLYCEMIA, BY A1c LEVEL RANGE, 2018<sup>1,2</sup>

MARKET	≤7.0%		7.1-7.9%		8.0-9.0%		>9.0%	
	Overall	w/ Hypo-glycemia	Overall	w/ Hypo-glycemia	Overall	w/ Hypo-glycemia	Overall	w/ Hypo-glycemia
Las Vegas	54.8%	43.6%	19.4%	19.2%	11.4%	13.5%	14.5%	23.7%
Los Angeles	57.1	48.1	18.7	21.4	10.9	14.4	13.3	16.1
<b>Nevada</b>	<b>53.6</b>	<b>44.4</b>	<b>20.0</b>	<b>18.0</b>	<b>11.8</b>	<b>14.5</b>	<b>14.7</b>	<b>23.1</b>
<b>NATION</b>	<b>55.5%</b>	<b>44.4%</b>	<b>19.1%</b>	<b>20.6%</b>	<b>11.7%</b>	<b>15.9%</b>	<b>13.8%</b>	<b>19.1%</b>

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS THERAPIES, OVERALL VS. WITH HYPOGLYCEMIA, 2018<sup>1</sup>

MARKET	Long-Acting Basal Category 1		Long-Acting Basal Category 2		Rapid-Acting Insulin		Biguanides		GLP-1 RAs	
	Overall	w/ Hypo-glycemia	Overall	w/ Hypo-glycemia	Overall	w/ Hypo-glycemia	Overall	w/ Hypo-glycemia	Overall	w/Hypo-glycemia
Las Vegas	20.1%	42.1%	5.7%	10.7%	12.6%	36.3%	69.2%	44.8%	11.5%	12.6%
Reno	18.2	44.8	6.2	n/a	10.1	32.3	71.6	44.8	12.0	n/a
Los Angeles	16.8	37.7	3.3	8.7	8.7	28.2	74.4	52.9	7.1	9.5
Salt Lake City	21.3	41.2	8.3	15.5	14.6	37.8	72.8	49.3	14.2	n/a
<b>Nevada</b>	<b>20.2</b>	<b>43.0</b>	<b>5.9</b>	<b>10.6</b>	<b>12.3</b>	<b>36.2</b>	<b>69.6</b>	<b>43.7</b>	<b>11.6</b>	<b>11.9</b>
<b>NATION</b>	<b>20.6%</b>	<b>45.3%</b>	<b>5.5%</b>	<b>11.1%</b>	<b>12.9%</b>	<b>38.9%</b>	<b>68.8%</b>	<b>44.2%</b>	<b>10.8%</b>	<b>10.0%</b>

Data source: IQVIA © 2019

**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 (RAs):** 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. "Fixed ratio (long-acting insulin/GLP-1 RA)" refers to the two therapies combined in a single product. "Free ratio (variable long-acting insulin + GLP-1 RA)" refers to the two therapies taken separately and concurrently.

**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.

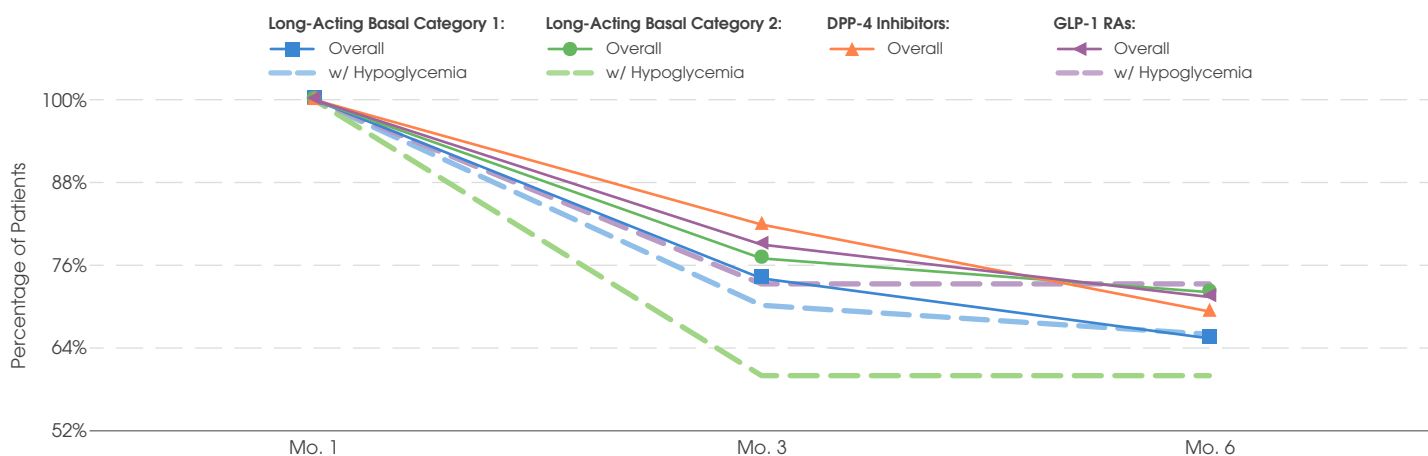
<sup>1</sup> A complication is defined as a patient condition caused by diabetes. Complications of diabetes include, but are not limited to, atherosclerotic cardiovascular disease (ASCVD), cardiovascular (CV) disease, congestive heart failure, hypoglycemia, myocardial infarction (MI), nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, and stroke. ASCVD includes patients with ACS, MI, stroke, and other cardiovascular diseases.

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

NOTE: Some data were unavailable for Reno and Salt Lake City.

# DIABETES-RELATED AND COEXISTING CONDITION: HYPOGLYCEMIA

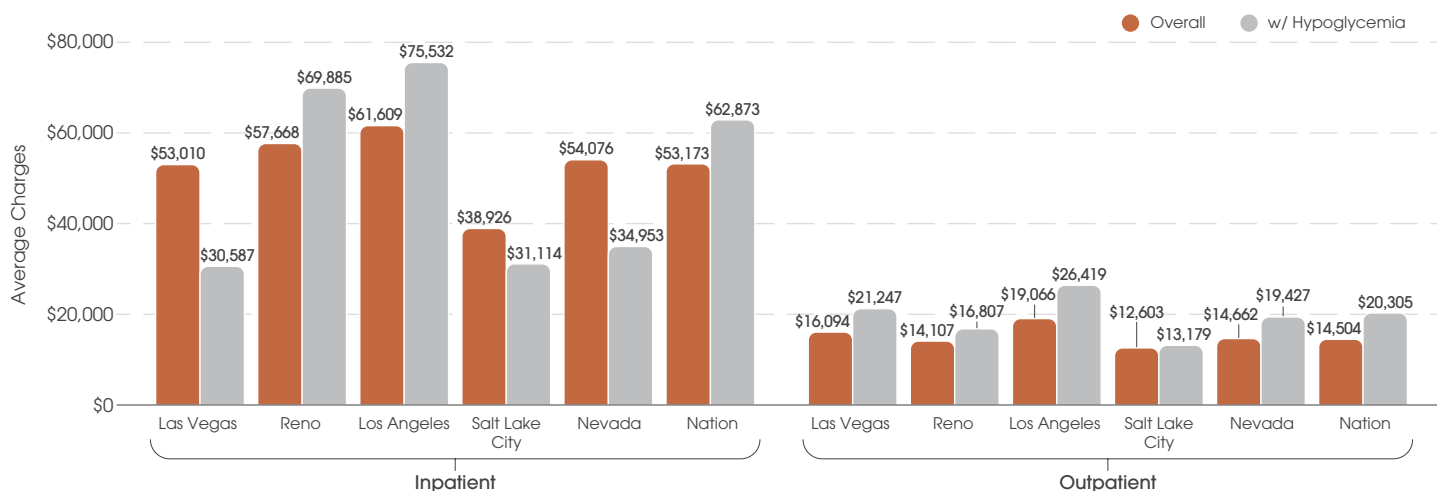
## PERSISTENCY: TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH HYPOGLYCEMIA, VARIOUS THERAPIES, NEVADA, 2018<sup>1</sup>



## PROFESSIONAL CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH HYPOGLYCEMIA, BY SETTING, 2018<sup>1,2</sup>

MARKET	Emergency Department		Inpatient		Outpatient		Office/ Clinic	
	Overall	w/ Hypoglycemia	Overall	w/ Hypoglycemia	Overall	w/ Hypoglycemia	Overall	w/ Hypoglycemia
Las Vegas	\$3,317	\$5,425	\$5,560	\$8,991	\$2,035	\$2,127	\$3,830	\$5,279
Reno	2,775	4,629	4,474	5,626	1,784	2,100	2,928	3,611
Los Angeles	2,134	3,468	6,749	10,832	2,141	2,595	3,472	4,849
Salt Lake City	2,192	3,453	4,118	4,143	2,066	n/a	2,392	3,017
<b>Nevada</b>	<b>3,184</b>	<b>5,239</b>	<b>5,340</b>	<b>8,378</b>	<b>1,901</b>	<b>2,036</b>	<b>3,594</b>	<b>4,944</b>
<b>NATION</b>	<b>\$2,129</b>	<b>\$3,542</b>	<b>\$5,024</b>	<b>\$7,776</b>	<b>\$1,822</b>	<b>\$2,275</b>	<b>\$2,812</b>	<b>\$3,753</b>

## FACILITY CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH HYPOGLYCEMIA, BY SETTING, 2018<sup>1,3</sup>



Data source: IQVIA © 2019

<sup>1</sup> A complication is defined as a patient condition caused by diabetes. Complications of diabetes include, but are not limited to, atherosclerotic cardiovascular disease (ASCVD), cardiovascular (CV) disease, congestive heart failure, hypoglycemia, myocardial infarction (MI), nephropathy, neuropathy, peripheral artery disease (PAD), retinopathy, and stroke. ASCVD includes patients with ACS, MI, stroke, and other cardiovascular diseases.

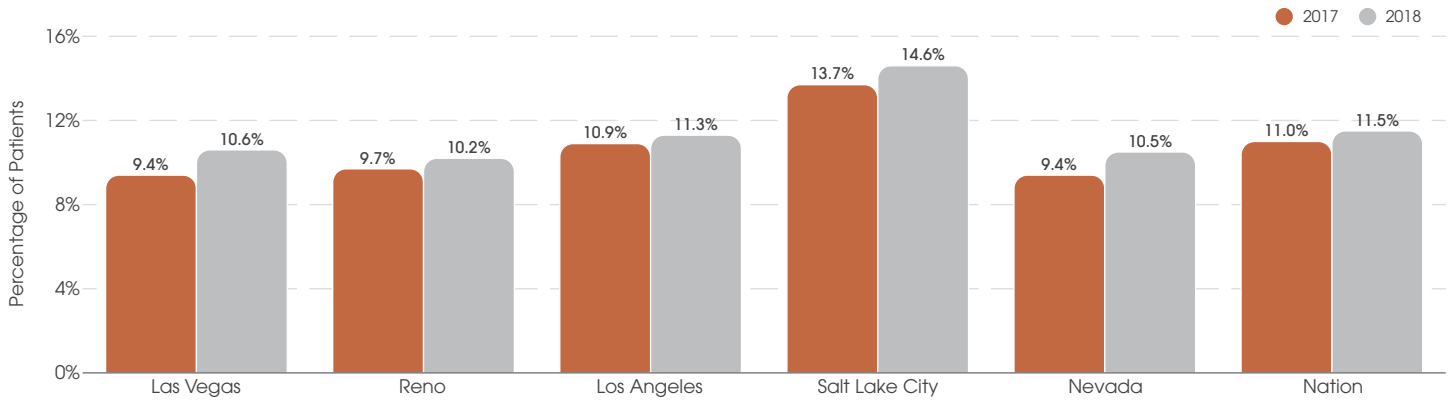
<sup>2</sup> Professional charges are those generated by the providers delivering care to patients with diabetes in various settings.

<sup>3</sup> Data reflect the charges generated for diabetes patients by the facilities that delivered care. The data also reflect the average amounts charged, not the amounts paid.

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). "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. Some data were unavailable for Nevada.

# DIABETES-RELATED AND COEXISTING CONDITION: DEPRESSION

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS WITH DEPRESSION, 2017-2018<sup>1</sup>



## DISTRIBUTION OF TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH DEPRESSION, BY A1c LEVEL RANGE, 2018<sup>1,2</sup>

MARKET	≤7.0%		7.1-7.9%		8.0-9.0%		>9.0%	
	Overall	w/ Depression	Overall	w/ Depression	Overall	w/ Depression	Overall	w/ Depression
Las Vegas	54.8%	59.0%	19.4%	17.0%	11.4%	7.0%	14.5%	17.0%
Reno	55.9%	58.9%	19.9%	15.6%	11.5%	14.8%	12.7%	10.7%
Los Angeles	57.1%	61.1%	18.7%	16.3%	10.9%	10.1%	13.3%	12.5%
Salt Lake City	53.2%	61.5%	20.7%	19.1%	12.9%	10.0%	13.2%	9.4%
<b>Nevada</b>	<b>53.6%</b>	<b>57.6%</b>	<b>20.0%</b>	<b>16.8%</b>	<b>11.8%</b>	<b>9.9%</b>	<b>14.7%</b>	<b>15.8%</b>
<b>NATION</b>	<b>55.5%</b>	<b>58.2%</b>	<b>19.1%</b>	<b>16.5%</b>	<b>11.7%</b>	<b>11.0%</b>	<b>13.8%</b>	<b>14.3%</b>

## PERCENTAGE OF TYPE 2 DIABETES PATIENTS RECEIVING VARIOUS THERAPIES, OVERALL VS. WITH DEPRESSION, 2018<sup>1</sup>

MARKET	Long-Acting Basal Category 1		Long-Acting Basal Category 2		Rapid-Acting Insulin		Biguanides		GLP-1 RAs	
	Overall	w/ Depression	Overall	w/ Depression	Overall	w/ Depression	Overall	w/ Depression	Overall	w/ Depression
Las Vegas	20.1%	24.7%	5.7%	6.2%	12.6%	15.3%	69.2%	68.9%	11.5%	13.0%
Reno	18.2%	23.9%	6.2%	7.1%	10.1%	15.1%	71.6%	70.1%	12.0%	14.6%
Los Angeles	16.8%	19.9%	3.3%	3.7%	8.7%	11.2%	74.4%	72.6%	7.1%	8.4%
Salt Lake City	21.3%	21.4%	8.3%	8.7%	14.6%	14.8%	72.8%	72.6%	14.2%	17.4%
<b>Nevada</b>	<b>20.2%</b>	<b>24.7%</b>	<b>5.9%</b>	<b>6.5%</b>	<b>12.3%</b>	<b>15.5%</b>	<b>69.6%</b>	<b>68.5%</b>	<b>11.6%</b>	<b>13.0%</b>
<b>NATION</b>	<b>20.6%</b>	<b>25.3%</b>	<b>5.5%</b>	<b>6.2%</b>	<b>12.9%</b>	<b>16.6%</b>	<b>68.8%</b>	<b>68.2%</b>	<b>10.8%</b>	<b>12.7%</b>

Data source: IQVIA © 2019

**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 (RAs):** 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. "Fixed ratio (long-acting insulin/GLP-1 RA)" refers to the two therapies combined in a single product. "Free ratio (variable long-acting insulin + GLP-1 RA)" refers to the two therapies taken separately and concurrently.

**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.

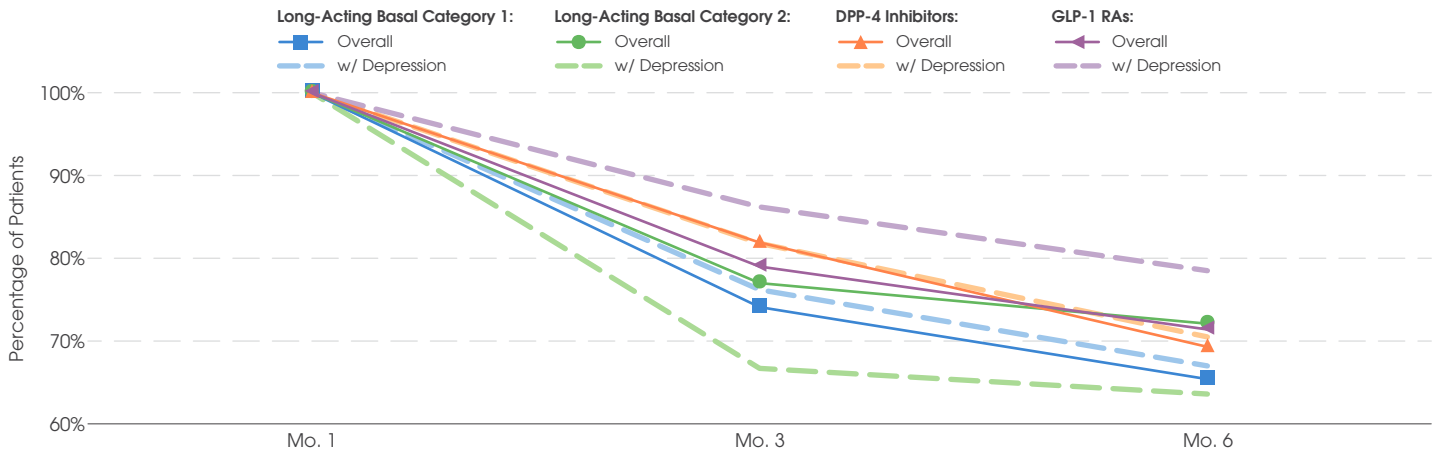
**Rapid-Acting Insulin:** Insulin replacement product with a rapid onset and shorter duration of action than short-acting insulin.

<sup>1</sup> A comorbidity is a condition a patient with diabetes may also have, which may not be directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with diabetes. Comorbidities of diabetes include, but are not limited to, depression, hyperlipidemia, hypertension, knee osteoarthritis, obesity, pneumonia, and rheumatoid arthritis.

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

# DIABETES-RELATED AND COEXISTING CONDITION: DEPRESSION

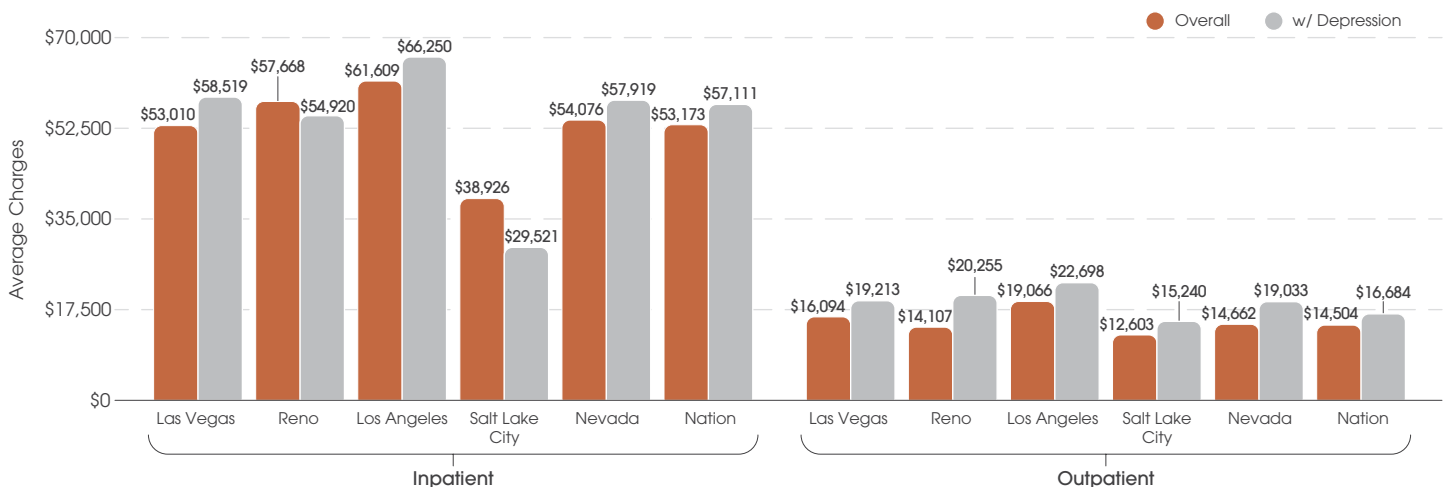
## PERSISTENCY: TYPE 2 DIABETES PATIENTS, OVERALL VS. WITH DEPRESSION, VARIOUS THERAPIES, NEVADA, 2018<sup>1</sup>



## PROFESSIONAL CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH DEPRESSION, BY SETTING, 2018<sup>1,2</sup>

MARKET	Emergency Department		Inpatient		Outpatient		Office/Clinic	
	Overall	w/ Depression	Overall	w/ Depression	Overall	w/ Depression	Overall	w/ Depression
Las Vegas	\$3,317	\$4,958	\$5,560	\$6,529	\$2,035	\$2,108	\$3,830	\$5,676
Reno	2,775	4,256	4,474	4,818	1,784	2,315	2,928	4,336
Los Angeles	2,134	2,886	6,749	8,198	2,141	2,272	3,472	4,908
Salt Lake City	2,192	2,586	4,118	4,419	2,066	2,222	2,392	3,157
<b>Nevada</b>	<b>3,184</b>	<b>4,765</b>	<b>5,340</b>	<b>6,216</b>	<b>1,901</b>	<b>2,087</b>	<b>3,594</b>	<b>5,379</b>
<b>NATION</b>	<b>\$2,129</b>	<b>\$2,806</b>	<b>\$5,024</b>	<b>\$6,269</b>	<b>\$1,822</b>	<b>\$2,154</b>	<b>\$2,812</b>	<b>\$3,802</b>

## FACILITY CHARGES PER TYPE 2 DIABETES PATIENT PER YEAR, OVERALL VS. WITH DEPRESSION, BY SETTING, 2018<sup>1,3</sup>



Data source: IQVIA © 2019

<sup>1</sup> A comorbidity is a condition a patient with diabetes may also have, which may not be directly related to the diabetes. Comorbidities were narrowed down to a subset of conditions which are typically present in patients with diabetes. Comorbidities of diabetes include, but are not limited to, depression, hyperlipidemia, hypertension, knee osteoarthritis, obesity, pneumonia, and rheumatoid arthritis.  
<sup>2</sup> Professional charges are those generated by the providers delivering care to patients with diabetes in various settings.  
<sup>3</sup> Data reflect the charges generated for diabetes patients by the facilities that delivered care. The data also reflect the average amounts charged, not the amounts paid.  
 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). "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.

## METHODOLOGY

IQVIA generated data for this report out of health care professional (837p) and institutional (837i) insurance claims, representing roughly 12 million unique patients nationally in 2018 with a diagnosis of Type 2 diabetes (E08, E09, E11, and E13). Data from physicians of all specialties are included. Substate markets represent core-based statistical areas (CBSAs).

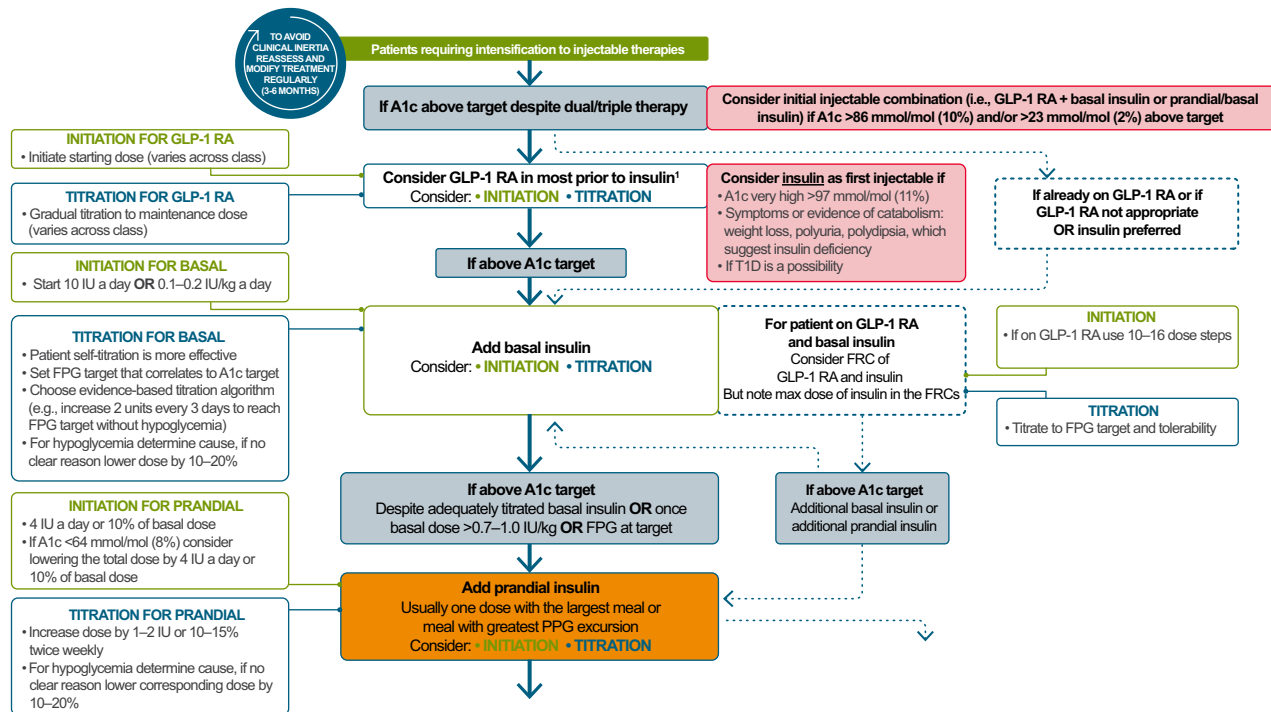
IQVIA also gathers data on prescription activity from the National Council for Prescription Drug Programs (NCPDP). These data account for some 2 billion prescription claims annually, or more than 86% of the prescription universe. These prescription data represent the sampling of prescription activity 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-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.

## Pharmacologic Approaches to Type 2 Diabetes Treatment: Intensifying to Injectable Therapies



<sup>1</sup>When selecting GLP-1 RA, consider: patient preference, A1c lowering, weight-lowering effect, or frequency of injection. If CVD, consider GLP-1 RA with proven CVD benefit.  
NOTE: CVD: cardiovascular disease; FPG: fasting plasma glucose; FRC: fixed-ratio combination; GLP-1 RA: glucagon-like peptide-1 receptor agonist; PPG: postprandial glucose; T1D: Type 1 diabetes.  
Source: American Diabetes Association. *Diabetes Care* 2019;42(Suppl 1):S90–S102. (Adapted from the ADA-EASD Consensus Report: Davies M.J., et al. *Diabetologia* 2018;61(12):2461–2498.)