



# Spotlight On: Diabetes and Bariatric Surgery

State of Arkansas  
Bureau of Legislative Research

# | Agenda

**Bariatric Surgical Analysis**

**Pre-diabetes and Diabetes Analysis**

**Recommendations**

**Questions**

# Obesity Prevalence

- Obesity

- AR's obesity rate is 20% higher than national average (37.1% vs 30.9%)<sup>1</sup>
- AR's obesity rate among 18-24 year olds is 45% higher than national average (26.2% vs 18.1%) and 34% higher among 25-34 year olds (39.6% vs 29.5%)<sup>2</sup>
- Among 45-54 year olds, nearly half (45.7%) of AR's adults are obese<sup>3</sup>
- AR has the 3<sup>rd</sup> highest obesity rate in the nation (only Mississippi and West Virginia are higher)<sup>4</sup>

**Diabetes, cardiovascular disease, and associated risk factors can be managed through lifestyle modifications or medication therapy. Undiagnosed or poorly managed CVD can lead to long term complications including heart attack or stroke, coronary artery bypass (open heart surgery), stent placement, long term care needs, irreversible neurological deficits, and premature death**



<sup>1</sup> Centers for Disease Control and Prevention. National Average. Accessed at <https://chronicdata.cdc.gov/>

<sup>2</sup> Centers for Disease Control and Prevention. Risk Factors. Accessed at <https://chronicdata.cdc.gov>

<sup>3</sup> Centers for Disease Control and Prevention. Cost. Accessed at <https://chronicdata.cdc.gov/>

<sup>4</sup> Centers for Disease Control and Prevention. Prevalence. Accessed at: <https://www.cdc.gov/obesity/data/prevalence-maps.html>

# Key Observations

## *Obesity and Associated Conditions by the Numbers – National Norms*

Heart disease is the **leading cause of death** for men, women, and people of most racial and ethnic groups in the United States<sup>1</sup>

About **655,000 Americans** die from heart disease each year— that's **1 in every 4 deaths**<sup>1</sup>

**Coronary heart disease** is the most **common** type of heart disease<sup>1</sup>

**Half of all Americans** (47%) have at least 1 of 3 key risk factors for heart disease: **hypertension, high cholesterol, and smoking**<sup>2</sup>

People with other risk factors such as **obesity and diabetes** are **2 to 4x** more likely to develop **heart disease** as those without diabetes<sup>3</sup>

**One** in every **six** U.S. healthcare dollars is spent on cardiovascular disease.<sup>4</sup>

- The rate of bariatric surgery use has increased in the past decade to more than 170,000 surgical procedures per year in the United States.<sup>5</sup>
  - The initial investment for bariatric surgery is approximately \$26,000 for open surgery and \$17,000 for laparoscopic surgery<sup>5</sup>
  - After taking into account age, sex, and comorbidities, the initial investment is returned within 4 years for patients who undergo open surgery and within 2 years for patients who undergo laparoscopic surgery<sup>5</sup>
  - Even ignoring potential quality-of-life and length-of-life benefits, as well as disability and work loss, third-party payers can rely on bariatric surgery paying for itself through decreased comorbidities within 2 to 4 years<sup>5</sup>

<sup>1</sup> Centers for Disease Control and Prevention. Heart Disease. Accessed at <https://www.cdc.gov/heartdisease/facts.htm>

<sup>2</sup> Centers for Disease Control and Prevention. Risk Factors. Accessed at [https://www.cdc.gov/heartdisease/risk\\_factors.htm](https://www.cdc.gov/heartdisease/risk_factors.htm)

<sup>3</sup> American Heart Association. "Diabetes and heart failure are linked; treatment should be too". June 6, 2019. Accessed at <https://www.heart.org/en/news/2019/06/06/diabetes-and-heart-failure-are-linked-treatment-should-be-too>

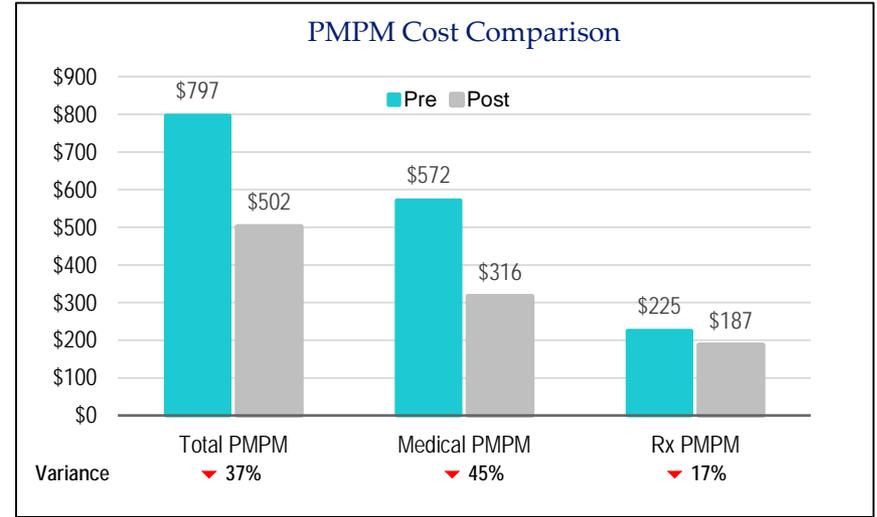
<sup>4</sup> Centers for Disease Control and Prevention. Cost. Accessed at <https://www.cdcfoundation.org/pr/2015/heart-disease-and-stroke-cost-america-nearly-1-billion-day-medical-costs-lost-productivity>

<sup>5</sup> The American Journal of Managed Care. Return on Investment for Bariatric Surgery. Accessed at: <https://www.ajmc.com/view/sep08-3578p561-562>

# Spotlight On: Bariatric Surgery (Overview)

## All Members

Data Metrics (n=244)	12mo Prior to Surgery ("Pre") <sup>1</sup>	12mo Post Surgery ("Post") <sup>2</sup>	Variance (Post vs Pre)
<b>Claims Experience (PMPM)</b>			
Medical	\$572	\$316	-45%
Rx	\$225	\$187	-17%
<b>Total</b>	<b>\$797</b>	<b>\$502</b>	<b>-37%</b>
<b>Key Utilization (Services per 1,000)</b>			
Inpatient Admissions	57	74	29%
ER Visits	258	160	-38%
Urgent Care Visits	12	20	67%
Rx Scripts	33,291	25,926	-22%



### Observations

- The charts above identify bariatric surgeries performed in calendar year ("CY") 2019 and then compares the financial, and key utilization, variances of those members 12-months prior to their surgery and 12-months post-surgery.
- In CY 2019, 265 members had bariatric surgeries with an average cost per surgery of about \$12k. Of those 265 members, 244 had 12-months of claims experience pre and post surgeries.
- The cost impact, on a PMPM basis, is very favorable for members post-surgery. Total PMPM cost decreased 37% for those members largely driven by a reduction of 45% in medical PMPM cost.
- Key utilization metrics look also favorable with ER visits and Rx scripts down 38% and 22% respectively.
- We note that the increase in hospital inpatient admissions could be due to co-morbid condition of the affected members.

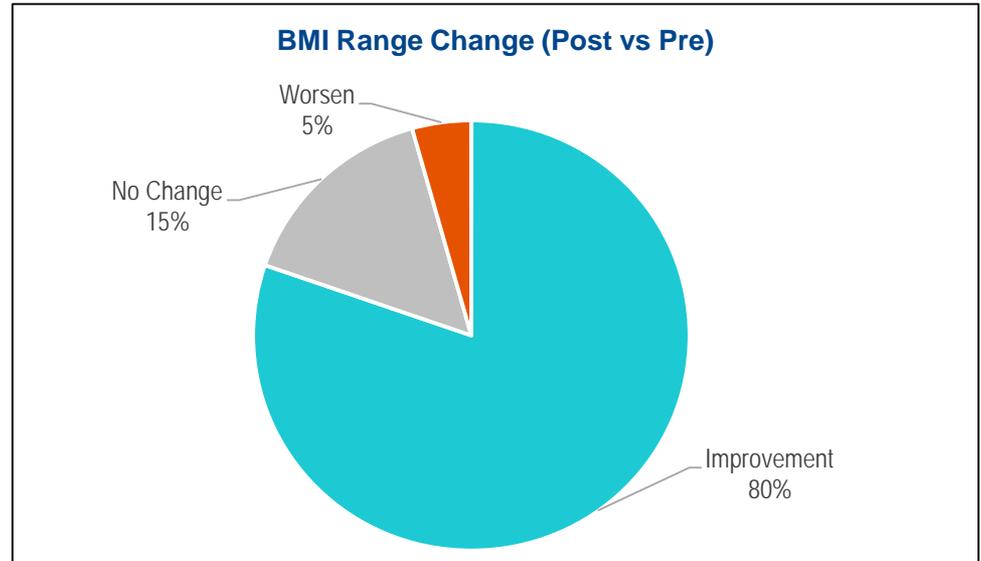
<sup>1</sup> Pre: Reflects 12 months of claims experience preceding the member's surgery date.

<sup>2</sup> Post: Reflects 12 months of claims experience subsequent to the member's surgery date.

# Spotlight On: Bariatric Surgery (BMI Change)

All Members

BMI Range Change <sup>1</sup>	Number of Members
No Data	107
Improvement	110
No Change	21
Worsen	6
<b>Total</b>	<b>244</b>



## Observations

- Of the 244 members with bariatric surgeries, 137 had BMI ranges recorded through diagnosis codes.
- Of the 137 identified members, 80% saw improvement in BMI range post-surgery, 15% saw no change, and 5% had their BMI range worsen.

<sup>1</sup> BMI range is based on diagnosis codes. Change is reflective of BMI range change rather than change in discrete BMI value.

# | Pre-Diabetes and Diabetes

# Key Observations

## *Diabetes by the Numbers – National Norms*

Approximately  
**1 in 10** Americans  
have **diabetes**<sup>1</sup>

**9 in 10**  
of those with diabetes are  
**type 2** diabetics<sup>1</sup>

More than **1 out of 3** adults have  
**pre-diabetes**<sup>2</sup>

More than  
**20% of all health spending**  
is from people diagnosed with diabetes<sup>3</sup>

**Per capita spend**  
for people with diabetes is **over \$10,000**  
**higher** than for those without diabetes<sup>4</sup>

**Young adults** with diabetes had  
**4x** more **behavioral health related**  
**hospital admissions** than did young adults  
without diabetes<sup>4</sup>

People with diabetes are  
**2x** more likely to have **heart disease** or  
**stroke** as those without diabetes<sup>5</sup>

People with diabetes are  
**2 to 4x** more likely to develop **heart**  
**failure** as those without diabetes<sup>6</sup>

For every **\$1** spent on diabetic  
medication adherence, **\$6.70**  
can be saved on medical spend<sup>7</sup>

- The CDC's 2020 National Diabetes Statistics Report indicates prevalence of diabetes nationally is 10.5% and trends higher with age peaking at 26.8% for Medicare-eligible individuals <sup>(2)</sup>
  - AR has the 5<sup>th</sup> highest prevalence of diabetes in the nation (13.6%)<sup>2</sup>
  - Among 35-64 year olds in AR, 16.5% have been diagnosed with diabetes<sup>1</sup>
  - An additional 5.4% of AR adults have been diagnosed with pre-diabetes<sup>1</sup>

<sup>1</sup> Centers for Disease Control and Prevention. Type 2 Diabetes. Accessed at: <https://www.cdc.gov/diabetes/basics/type2.html>

<sup>2</sup> American Diabetes Association. Statistics About Diabetes. National Diabetes Statistics Report, 2020. August 28, 2020. Accessed at: [https://www.cdc.gov/diabetes/data/statistics-report/index.html?CDC\\_AA\\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fdiabetes%2Fdata%2Fstatistics%2Fstatistics-report.html](https://www.cdc.gov/diabetes/data/statistics-report/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fdiabetes%2Fdata%2Fstatistics%2Fstatistics-report.html)

<sup>3</sup> American Diabetes Association. Statistics About Diabetes. Economic Costs of Diabetes in the U.S. in 2017. March 22, 2018. Accessed at: <https://care.diabetesjournals.org/content/early/2018/03/20/dci18-0007>

<sup>4</sup> Health Care Cost Institute Inc. "2014 Diabetes Health Care Cost and Utilization Report". Accessed at: <https://healthcostinstitute.org/hcci-research/2014-diabetes-health-care-cost-and-utilization-report>

<sup>5</sup> Centers for Disease Control and Prevention. Diabetes – Prevent Complications. Accessed at: <https://www.cdc.gov/diabetes/managing/problems.html>

<sup>6</sup> American Heart Association. "Diabetes and heart failure are linked; treatment should be too". June 6, 2019. Accessed at: <https://www.heart.org/en/news/2019/06/06/diabetes-and-heart-failure-are-linked-treatment-should-be-too>

<sup>7</sup> Health Affairs. "Medication Adherence Leads To Lower Health Care Use And Costs Despite Increased Drug Spending". Accessed at: <https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2009.1087>

# Spotlight On: Diabetes (Prevalence and Cost)

## All Members

Chronic Condition	January 2020 – December 2020							% Change	
	Members	% of all Members	Norm <sup>1</sup>	Medical & Rx Cost	% of Total Cost	Medical & Rx PMPM	PMPM Relative Cost <sup>2</sup>	Members	PMPM
Diabetes	16,239	9.1%	6.5%	\$182,405,414	23.4%	\$949	2.6x	2.3%	35%

Type of Diabetes	Diabetes Breakdown						% Change	
	Diabetics	% of all Diabetics	Medical & Rx Cost	% of Total Diabetics Cost	Medical & Rx PMPM	PMPM Relative Cost <sup>3</sup>	Diabetics	PMPM
Type I	1,592	10%	\$32,231,241	18%	\$1,704	1.8x	7.1%	24%
Type II	13,164	81%	\$136,874,370	75%	\$876	0.9x	19.8%	28%
Unspecified	1,483	9%	\$13,299,803	7%	\$780	0.8x	-56.4%	71%

### Observations

- 16,239 members are diagnosed with diabetes, which is higher than the norm of 6.5%.
- Diabetics make up 23.4% of the total plan spend, with PMPM cost that is 2.6 times costlier than the PMPM cost of the total population
- While members with diabetes increased 2.3% when compared to last year, the PMPM cost increased 35% year-over-year (“YoY”). The large increase in PMPM is mainly driven by six new high cost claimants having more than \$500K, each, in medical costs.
- 81% of diabetics are type II with a \$876 PMPM cost, while 10% are type I with a \$1,704 PMPM cost.

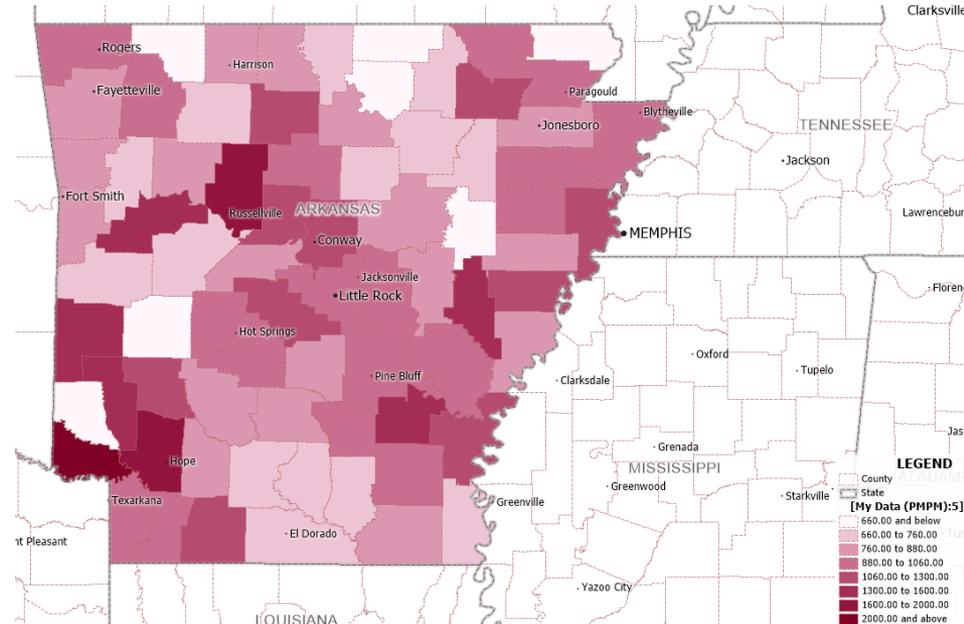
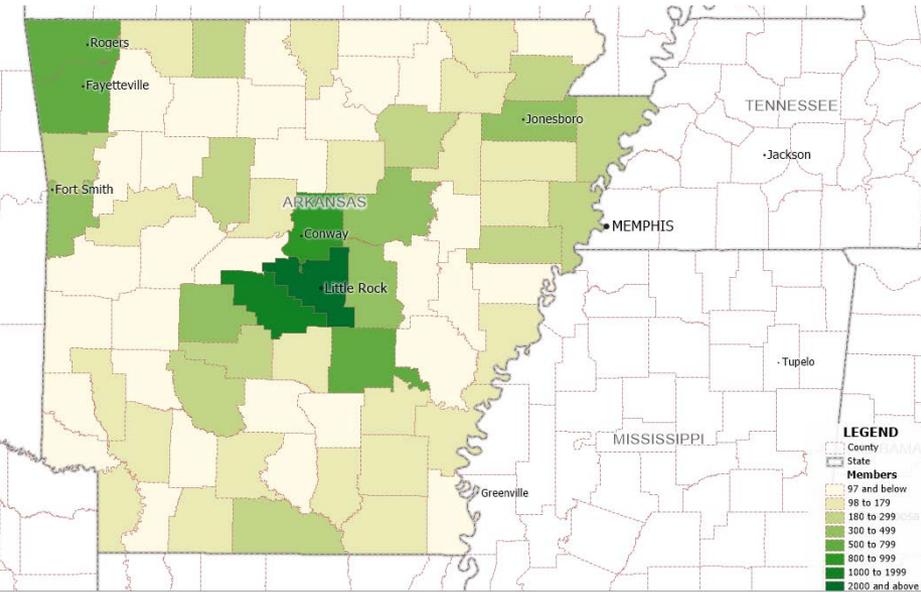
<sup>1</sup> Verscend BOB norms.

<sup>2</sup> Reflects the ratio of PMPM costs of members with diabetes to the PMPM of the total enrolled population.

<sup>3</sup> Reflects the ratio of PMPM costs of members with the specific type of diabetes to the PMPM of all diabetics.

# Spotlight On: Diabetes (Geo-Mapping)

## All Members



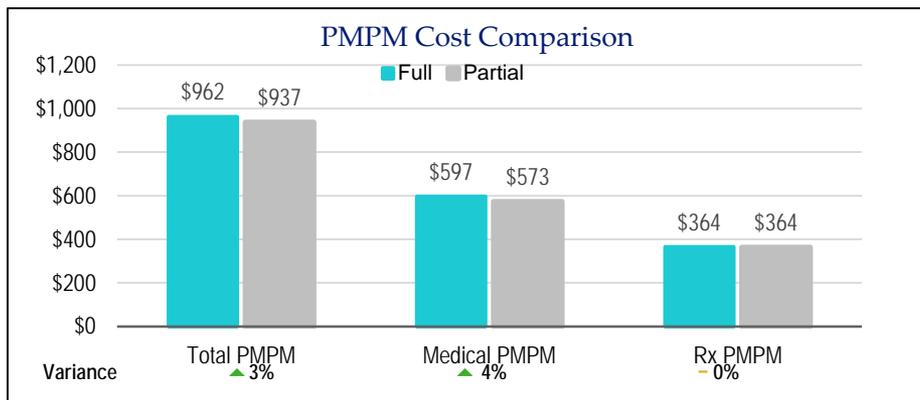
### Observations

- The top left map illustrates the distribution of diabetics by county. The darker green indicating denser population
- The top right map reflects the average cost (PMPM) of diabetics by county. The darker red indication higher cost

# Spotlight On: Diabetes (Medically Underserved Areas [MUA])

## All Members

	January 2020 – December 2020		
	Fully Underserved <sup>1</sup> ("Full")	Partially Underserved <sup>1</sup> ("Partial")	Variance (Full vs Partial)
Diabetics	7,612	8,627	
% of Total	47%	53%	-6pp
Medical PMPM	\$597	\$573	4%
Rx PMPM	\$364	\$364	0%
<b>Total PMPM</b>	<b>\$962</b>	<b>\$937</b>	<b>3%</b>



County (Designator)	January 2020 – December 2020				% Change	
	Diabetics	% of Total	Total PMPM	Relative Cost	Diabetics	PMPM
Pulaski (Partial)	2,714	17%	\$916	0.97x	1.1%	35.3%
Saline (Partial)	1,040	6%	\$1,109	1.17x	4.3%	29.3%
Faulkner (Full)	801	5%	\$1,087	1.15x	4.4%	53.8%
Jefferson (Partial)	693	4%	\$912	0.96x	4.1%	30.7%
Benton (Partial)	589	4%	\$992	1.05x	5.6%	25.4%
Washington (Partial)	668	4%	\$813	0.86x	3.4%	12.1%
Pope (Partial)	295	2%	\$1,661	1.75x	-0.7%	216.0%
Lonoke (Full)	456	3%	\$951	1.00x	6.5%	20.4%
Garland (Partial)	458	3%	\$920	0.97x	0.9%	46.4%
Craighead (Partial)	446	3%	\$839	0.88x	-0.7%	10.7%
All Other Counties	8,079	50%	\$918	0.97x	1.9%	33.7%
<b>Total</b>	<b>16,239</b>		<b>\$949</b>		<b>2.3%</b>	<b>35.0%</b>

### Observations

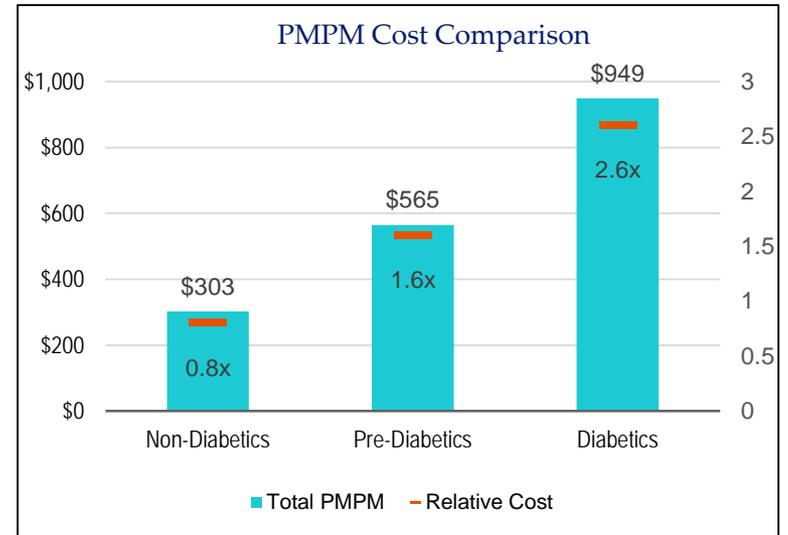
- The percentage of diabetics residing in fully underserved counties and partially underserved counties is 47% and 54% respectively.
- Diabetics residing in fully underserved counties have a total PMPM that is 3% higher than diabetics residing in partially underserved counties. This variance is all driven by medical PMPM
- The bottom table reflects the top 10 counties, and their respective MUAs.

<sup>1</sup> As identified by Arkansas Department of Health. Data Source: Health Resources & Services Administration (HRSA). Counties are tagged as fully Underserved or partially underserved. For the purposes of this analysis, Grant county— an untagged county by HRSA - was designated as partially underserved.

# Spotlight On: Diabetes (pre-Diabetes)

## All Members

	Non-Diabetics <sup>1</sup>	Pre-Diabetics	Diabetics
Members	174,368	1,676	16,239
% of All Members	91%	1%	8%
Medical PMPM	\$226	\$429	\$584
Rx PMPM	\$77	\$136	\$364
<b>Total PMPM</b>	<b>\$303</b>	<b>\$565</b>	<b>\$949</b>
<b>PMPM Relative Cost<sup>2</sup></b>	<b>0.8x</b>	<b>1.6x</b>	<b>2.6x</b>
ER Visits Per 1,000	129	249	256
Inpatient Admissions Per 1,000	58	151	166



### Observations

- Pre-diabetes is a serious health condition affecting approximately one third of American adults, and increases the risk of developing type 2 diabetes, heart disease, and stroke (CDC).
- Diabetics with co-morbidities can have lengthier, more expensive hospital stays. One of the biggest causes of diabetes-related hospitalizations as well as diabetes-related ER visits is lack of adherence to anti-diabetic medications.
- Total PMPM cost for pre-diabetics for the Plan is 1.6 times the PMPM of those without the condition, while total PMPM cost for diabetics is 2.6 times the PMPM cost for non-diabetics.
- Emergency room utilization is similarly much higher for pre-diabetics and diabetics than the non-diabetic population.
- Inpatient admissions are also much higher for pre-diabetics and diabetics than the non-afflicted.

<sup>1</sup> Non-Diabetics reflects members that are neither pre-diabetics nor diabetics.

<sup>2</sup> Reflects the ratio of PMPM costs to the total enrolled population.

# | Recommendations

# Key Takeaways From Health Plan Review

1. Continue to promote and fund the current bariatric program
2. Expand nutrition benefit coverage to conditions that are of higher risk for long term complications
3. Diabetes management strategies should include prevention and a focus on reducing dependence on high cost injectable insulin
  - a. Consider adding a pre-diabetes program connected to the biometric incentive
  - b. Partner with a digital vendor for diabetes management and remission with a focus on your highest cost members
4. Focus a pilot on the highest risk/highest cost counties through incentives and food subsidies
5. Collaborate and communicate health plan programs that utilize a social determinants of health screening tool or index and connect community services directly to the needs of your members

