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Providence Pharmacy PGY1 Program at Providence Portland and Providence St. Vincent Medical Centers 2022

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2022


The impact of a Medicare Public Health Emergency policy change for continuous glucose monitors on utilization and total cost of care for diabetes

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Background

- U.S. Food and Drug Administration (FDA) approved the first professional continuous glucose monitor (CGM) in 1999
- According to Ruedy and colleagues, use of CGMs was associated with improvements in hemoglobin A1c as well as reduction in glycemic variability
- Data is currently lacking regarding the impact of CGM on total cost of care related to diabetes, including hospitalization/emergency department (ED) visits
- Coverage of CGMs for Medicare beneficiaries is determined by criteria outlined in the Local Coverage Determination (LCD) L33822:
 - Using multiple daily insulin injections or on continuous subcutaneous insulin infusion pump
 - Testing blood sugar at least four times per day with traditional finger stick tests
- On March 30th, 2020, Centers for Medicare and Medicaid services (CMS) issued a memo in response to the COVID-19 Public Health Emergency (PHE) to relax requirements on coverage of CGMs
 - Providence Health Assurance (PHA) lifted prior authorization (PA) requirements on the preferred therapeutic CGM (Dexcom®)

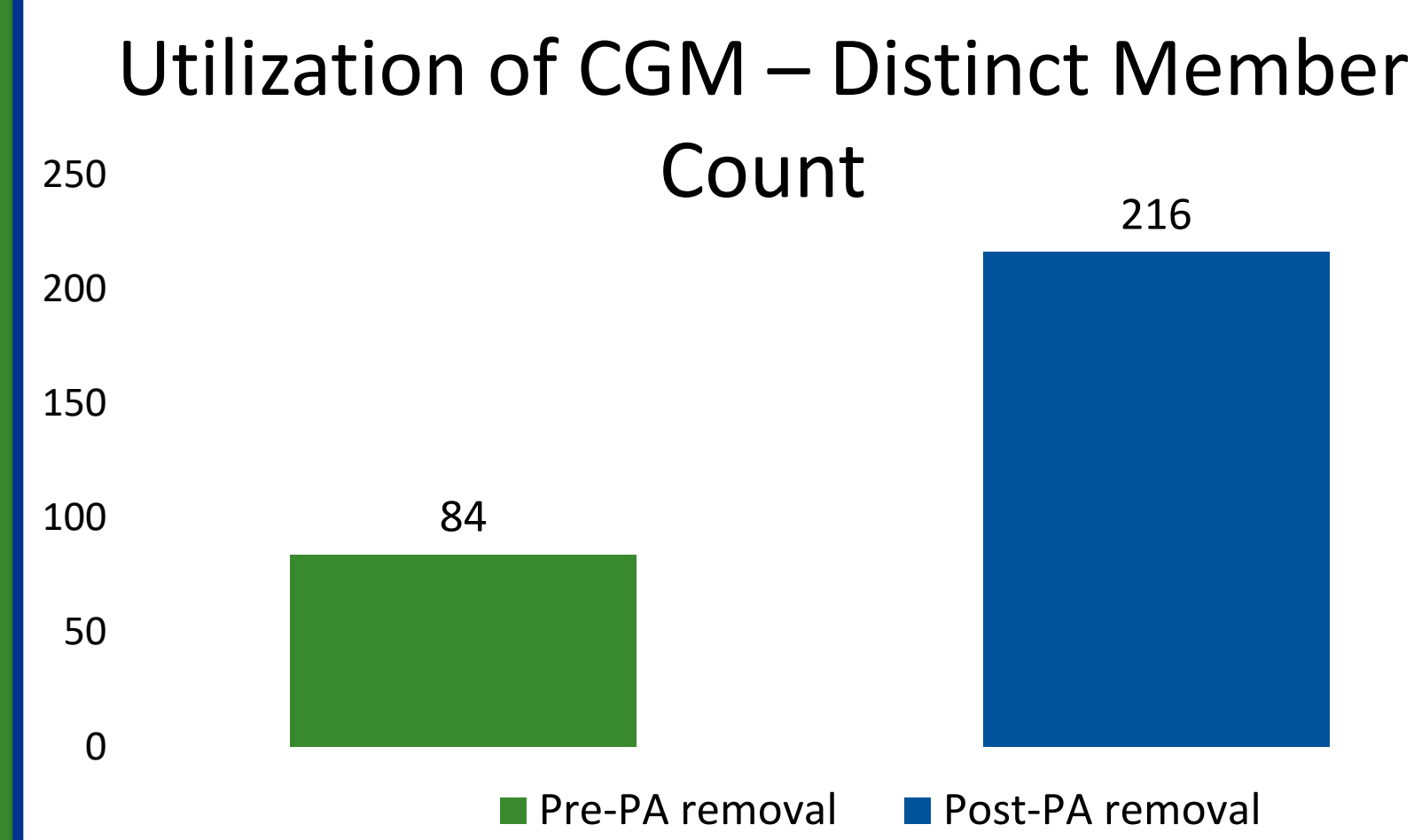
Objectives

- Evaluate the impact of the PHE removal of PA on utilization of CGMs
- Assess impact of CGMs on management of diabetes and total cost of care related to diabetes, including hospitalization and ED visits

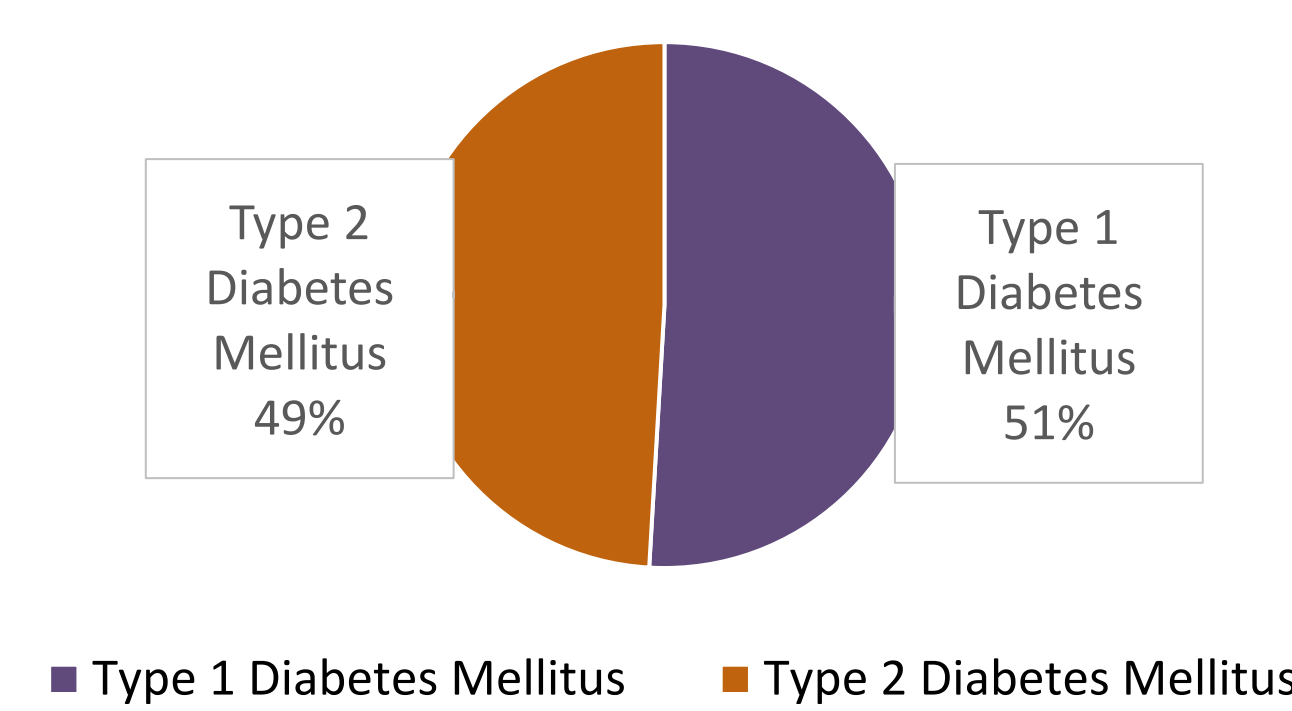
Methods

- Institutional Review Board (IRB) – approved
- Retrospective data review
- Study periods:
 - Pre-removal of PA: April 2019 – March 2020
 - Post-removal of PA: April 2020 – March 2021
- Programs utilized: EPIC®, PAHub®, SQL®, Facets®
- Primary endpoints: change in utilization of CGM and total cost of care related to diabetes to the health plan and members
- Secondary endpoints: change in member's hemoglobin A1c and number of hospitalization/ED visits
- Inclusion criteria:
 - PHA Medicare members
 - Diagnosis of diabetes, identified by the following ICD 10 codes: type 1 diabetes (E10), type 2 diabetes (E11), other (E08, E09, E13)
 - Initiation of a CGM post-PA removal identified as having a claim for a CGM in SQL® or Facets®
 - Continuous enrollment from April 2019 – March 2021
- Exclusion criteria:
 - Members in hospice
 - Members on dialysis
- Medications utilized by members were identified through SQL® and Facets® using Specific Therapeutic Class code and Standard Therapeutic Class code
- Hospitalization and ED visits were identified through Facets and included if the admitting diagnosis include an ICD-10 code for diabetes
- Cost of care was calculated through claims of diabetes medications, CGMs, hospitalization, and ED visits identified through SQL® and Facets®

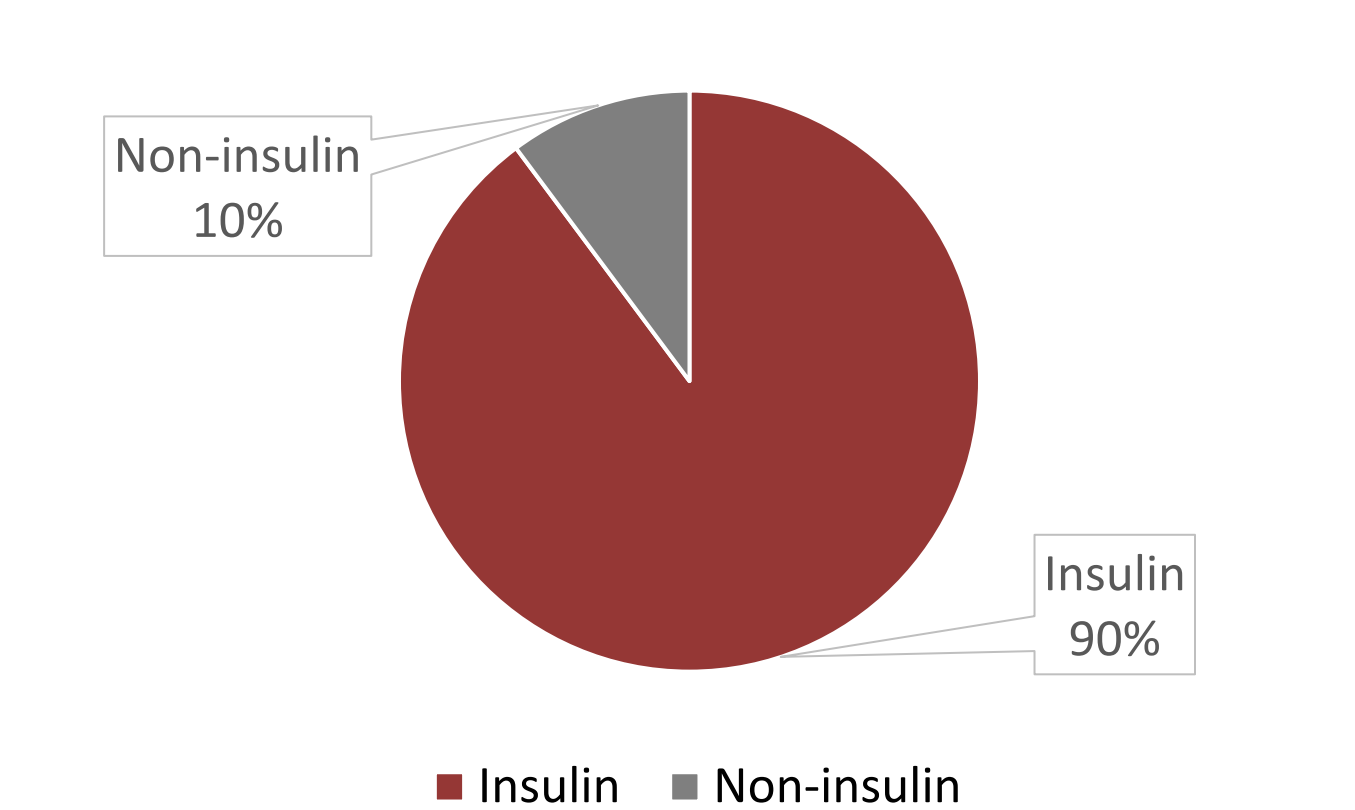
CGM Utilization



Utilization of CGM by Diagnosis

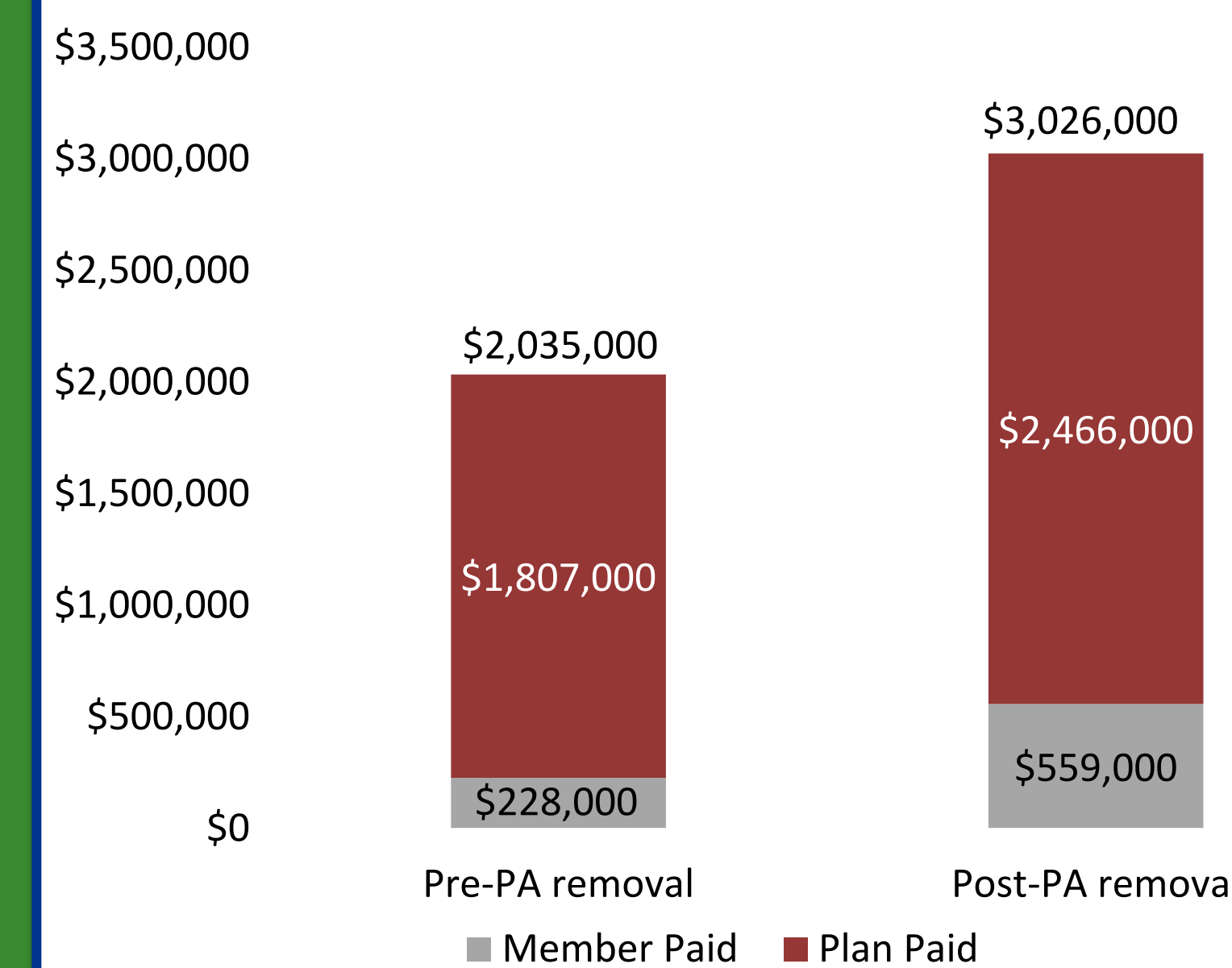


Utilization of CGM by Medication

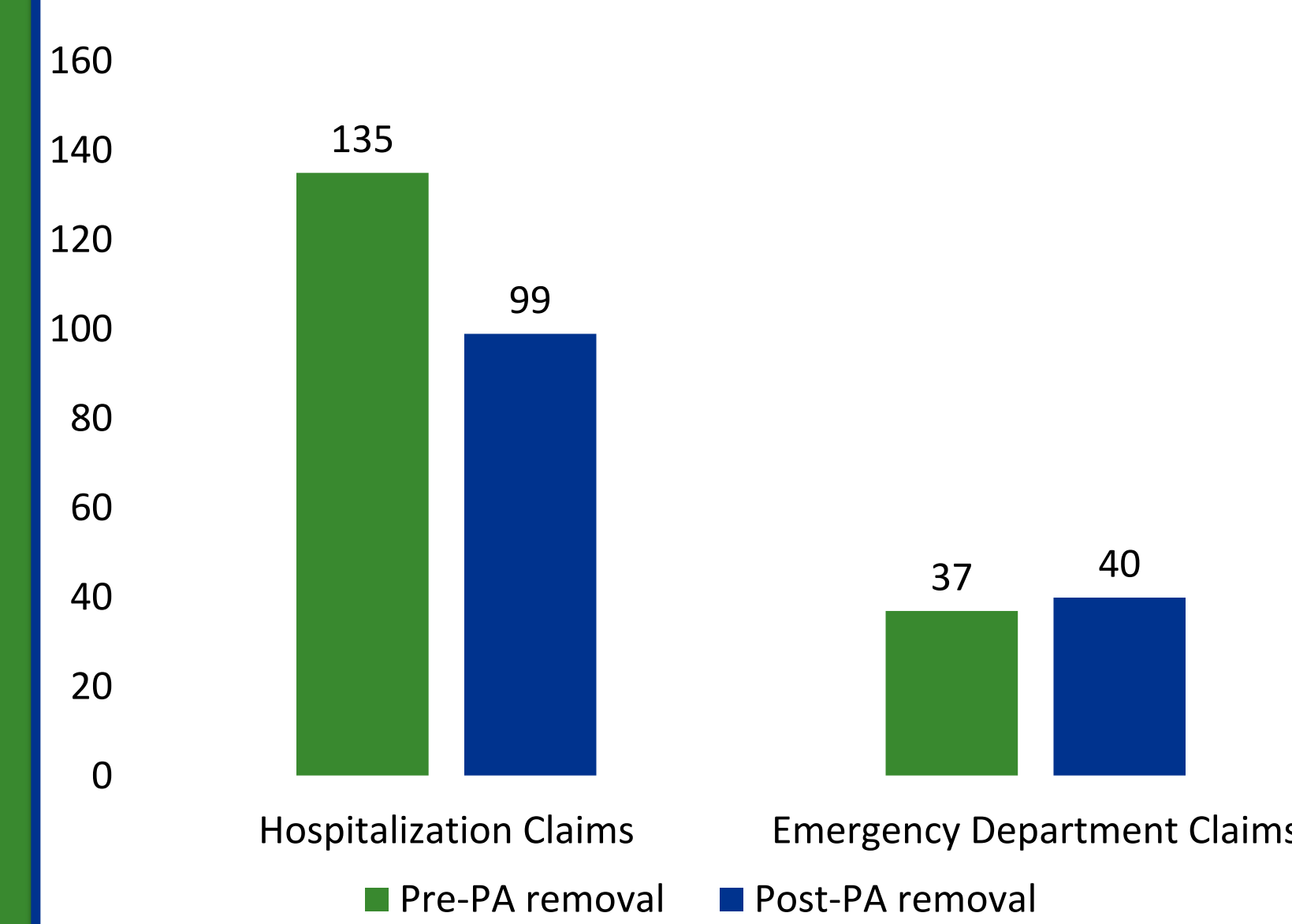


Cost of Care & Hospitalization/ED Visits

Total Cost of Care

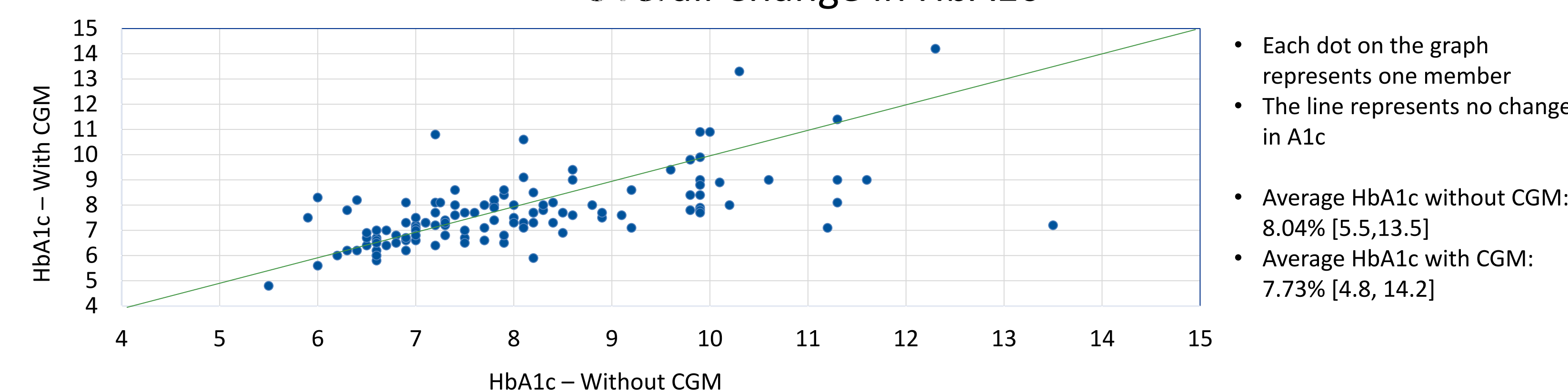


Hospitalization and Emergency Department Claims

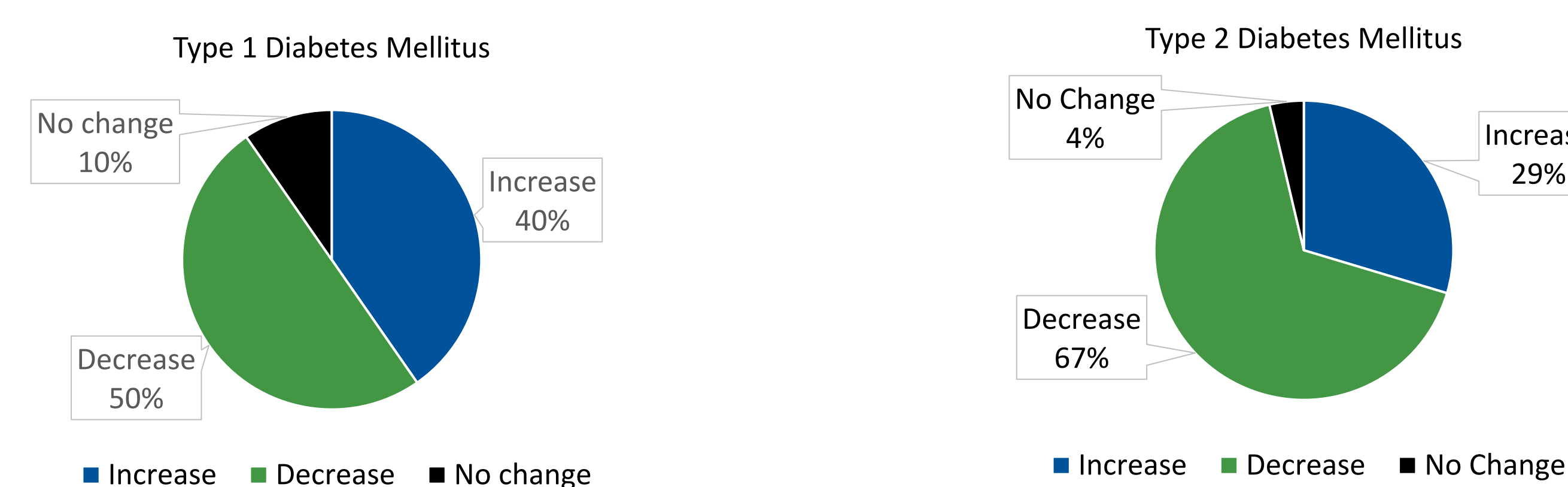


Change in Hemoglobin A1c

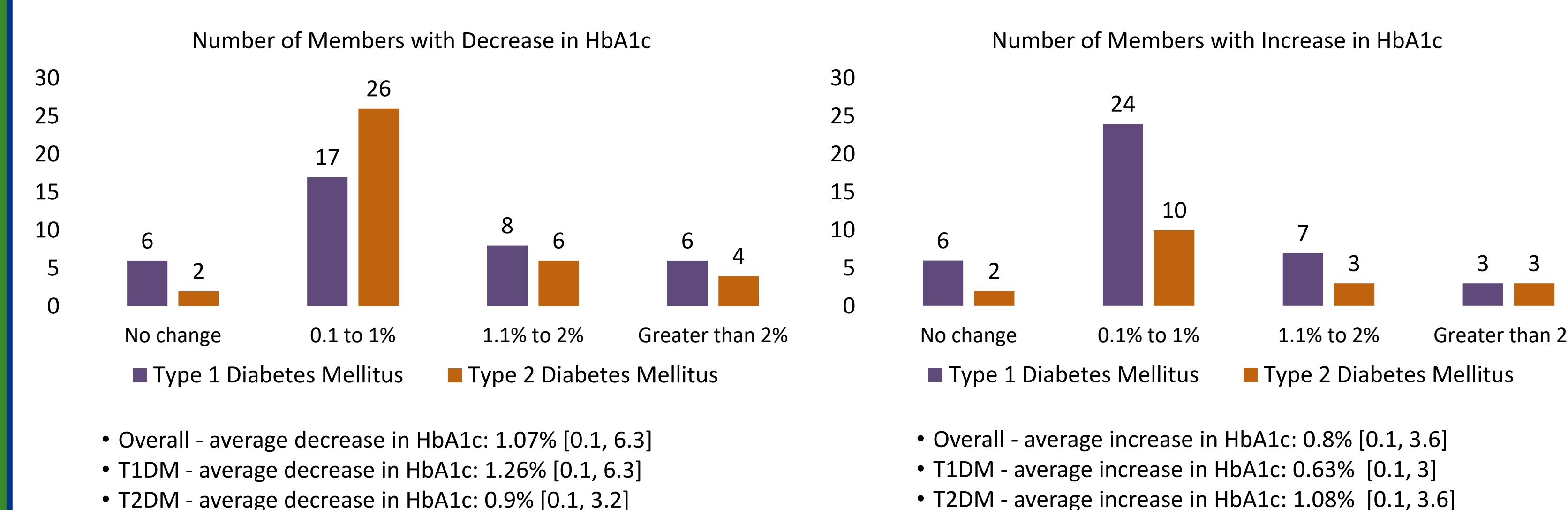
Overall Change in HbA1c



Change in HbA1c by Type of Diabetes



Change in HbA1c by Percentage and Type of Diabetes



Discussion

Results

- Utilization of CGM increased in the time period after the PA was lifted
 - Utilization of CGM by diagnosis was similar between type 1 and type 2 diabetes
 - Majority of members who utilized a CGM were considered insulin users
- When comparing pre-PA removal data to post-PA removal data:
 - The total cost of care related to diabetes, including member paid and plan paid, increased
 - Number of hospitalizations decreased
 - Similar number of ED visits
 - Overall average HbA1c decreased
 - Members with higher pre-CGM HbA1c had more variability in the change in HbA1c compared to those with lower pre-CGM HbA1c
 - More members with type 2 diabetes saw a decrease in A1c compared to members with type 1 diabetes
 - Almost half of the members experienced no change or an increase in HbA1c
 - Majority of patients with any change in HbA1c had less than 1% change

Study Limitations

- Retrospective study design
- Possible coding errors in program utilized
- No statistical calculations
- Confounding variable: unknown impact of the COVID-19 PHE on diabetes management and cost of care

Going Forward

- Further data collection and analysis in a larger cohort is needed to determine if the use of CGMs truly increase total cost of care while decreasing member's hemoglobin A1c
- Expand data collection to population outside of Medicare members
- Expand to further evaluate use of CGMs in type 1 versus type 2 diabetes

References

- Hirsch IB. Introduction: History of Glucose Monitoring. In: *Role of Continuous Glucose Monitoring in Diabetes Treatment*. Arlington (VA): American Diabetes Association; August 2018.1.
- Ruedy KJ, Parkin CG, Riddlesworth TD, Graham C; DIAMOND Study Group. Continuous Glucose Monitoring in Older Adults With Type 1 and Type 2 Diabetes Using Multiple Daily Injections of Insulin: Results From the DIAMOND Trial. *J Diabetes Sci Technol*. 2017;11(6):1138-1146. doi:10.1177/1932296817704445
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