

Trends in Insulin and CGM Use for Type 2 Diabetes in a Michigan Quality Improvement Collaborative

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Background

- The Michigan Collaborative for Type 2 Diabetes (MCT2D) is a statewide collaborative quality initiative aimed at improving care delivery for type 2 diabetes (T2D) in the state of Michigan with a focus on increasing guideline-directed medical therapies (GDMT), such as incretin mimetics and sodium-glucose transport protein 2 inhibitors (SGLT2i), and continuous glucose monitoring (CGM).
- MCT2D consists of primary care (350 practices), endocrinology (24 practices), and nephrology (14) practices throughout the state (see Figure 1).
- Prior work by MCT2D demonstrated increased prescriptions for GDMT between 2018-2023. Insulin use over the same time period is unknown though microsimulation studies in other populations suggest that increased use of GDMT can lower daily insulin requirements in T2D. CGM devices are increasingly recommended and used in type 2 diabetes, especially for patients using insulin. However, CGM use in MCT2D has not been previously reported.
- **We hypothesize that insulin use will be higher in Medicare versus commercial populations due to potentially lower out-of-pocket costs for insulin compared to GDMT. We also hypothesize that CGM use will be lower in Medicare versus commercial populations due to CGM coverage being restricted to patients using insulin.**

Objectives

1. To examine trends in prescription claims for insulin in patients with T2D for practices enrolled in MCT2D between 2020-2024.
2. To examine trends in prescription and/or durable medical equipment (DME) claims for CGM in patients with T2D for practices enrolled in MCT2D between 2020-2024.

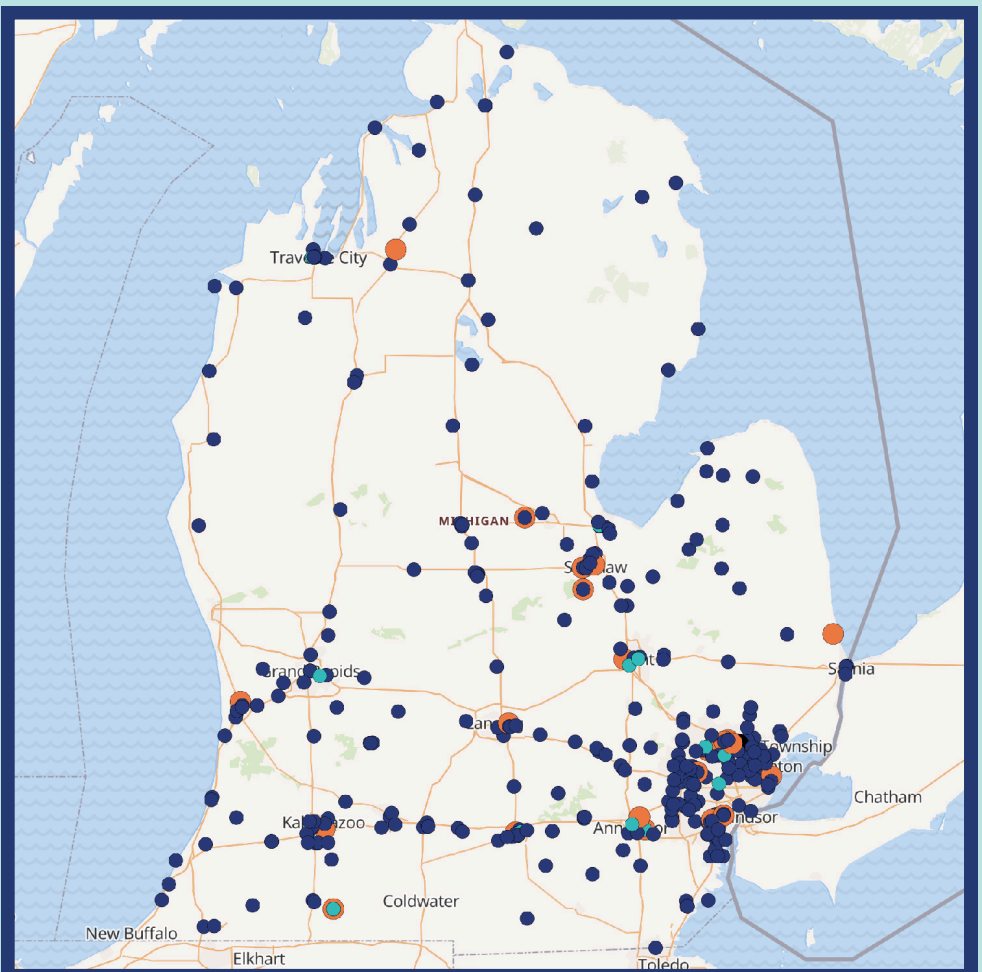


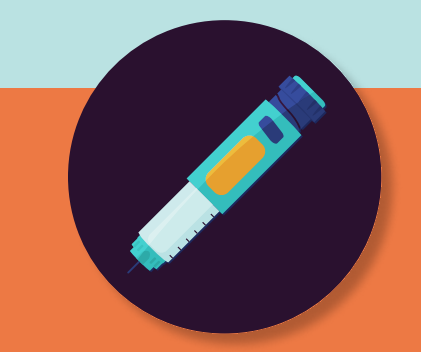
Figure 1. MCT2D's 388 participating practices including primary care (blue), nephrology (teal), and endocrinology (orange) across the state.

Methods

- Patients with pharmacy coverage through BCBSM/BCN commercial or Medicare Advantage attributed to MCT2D participating providers on or after July 1, 2019 through December 31, 2024. (N=107,476)
 - Medication utilization based on pharmacy claims.
 - CGM utilization based on pharmacy and DME claims.
- A medication class was considered active if patients were prescribed that medication class in the past 6 months.
- Patients' hemoglobin A1c (A1c) range was determined by their most recent A1c lab value (when available) in the past 6 months.
- Patients' insurance status was determined by age calculated at each 6 month time point.
- Proportions were stratified by A1c range and insurance category.
- Change was computed comparing the first 6 months of 2020 and the last 6 months of 2024.

Summary & Conclusions

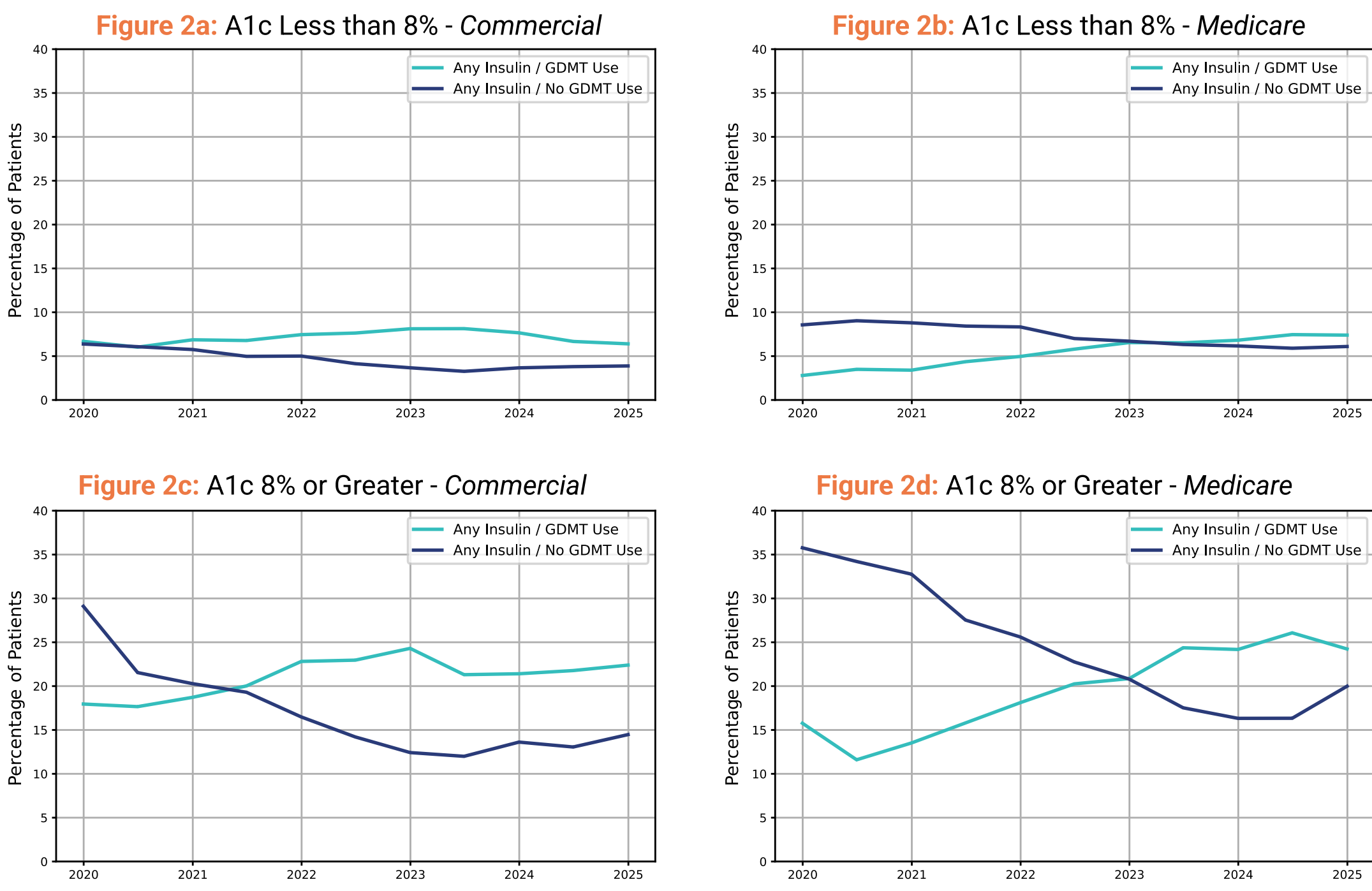
- This study demonstrates that insulin use without concurrent GDMT is decreasing over time in MCT2D practices.
- However, in populations on GDMT, insulin use is stable or increasing, especially among Medicare recipients.
- CGM use has increased regardless of A1c or insurance type among patients on insulin.
- CGM use for non-insulin T2D Medicare populations has remained relatively stable.
- This study suggests that, within MCT2D-participating practices, initiatives to reduce insulin use without concurrent GDMT are working. However, longer-term trends are needed to confirm.
- This study also suggests gaps in CGM use for non-insulin T2D populations covered by Medicare, potentially due to policy exclusions. Future studies should focus on exploring this gap and expanding coverage for CGM.



Results: Trends in Prescription Claims for Insulin

- Insulin use has remained relatively steady in T2D populations with A1c values <8% regardless of insurance type (see Figures 2a, 2b).
- Insulin use without concurrent GDMT has decreased in T2D populations with A1c values ≥8%, especially among Medicare recipients (see Figures 2c, 2d).
- Insulin use with concurrent GDMT has increased in T2D populations with A1c values ≥8%, especially among Medicare recipients (see Figures 2c, 2d).

Figure 2. Trends in prescription claims for insulin from 2020-2024



Insulin use without concurrent GDMT is going down. CGM use in T2D is going up.

COMMERCIAL

7% decrease in any insulin use
without concurrent GDMT
for patients with A1c ≥8%

MEDICARE

14% decrease in any insulin use
without concurrent GDMT
for patients with A1c ≥8%

COMMERCIAL

16% increase in CGM use
for patients on insulin
with A1c ≥8%

MEDICARE

15% increase in CGM use
for patients on insulin
with A1c ≥8%



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Results: Trends in Prescription or Durable Medical Equipment (DME) Claims for CGM

- CGM use increased slightly for T2D populations with A1c values <8% regardless of insurance type (see Figures 3a, 3b).
- CGM use increased robustly for patients with T2D on insulin with A1c values ≥8% regardless of insurance type (see Figures 3c, 3d).
- Smaller increases in CGM use were seen for non-insulin T2D populations with A1c values ≥8%, especially in Medicare recipients (Figures 3c, 3d).

Figure 3. Trends in prescription or DME claims for CGM from 2020-2024

