

# Impact of the COVID-19 Pandemic on Care for Patients with Type 2 Diabetes in 21 U.S. Health Care Organizations

Cori Rattelman, MS, Nikita Stempniewicz, ScM, and Elizabeth L. Ciemins, PhD, MPH, MA, AMGA (American Medical Group Association), Alexandria, VA

## RESEARCH OBJECTIVE

The COVID-19 pandemic has put unprecedented strain on the U.S. health system, but the impact on patients with type 2 diabetes is unknown. The objectives of this study was to describe changes in routine clinical care for patients with type 2 diabetes (T2DM) during the COVID-19 pandemic overall, and differences across health care organizations (HCO) and by patient characteristics.

## METHODOLOGY

**Data Source:** EHR and outbound billing claims

**Inclusion Criteria:**

- age 18–99 (as of December 2019);
- ≥1 diagnosis for T2DM (in calendar year 2019);
- ≥1 outpatient visit with a PCP, endocrinologist, cardiologist, or nephrologist (2019); and
- no evidence of pregnancy, polycystic ovary syndrome, gestational or steroid-induced diabetes, palliative care, hospice, or death (2019 or 2020).

**Outcomes (January – September 2020):** visits (in-person and telehealth), laboratory measurements (HbA1c, urine albumin to creatinine ratio, lipid panel), and clinical measurements (blood pressure (BP), body mass index (BMI))

- Visits: Monthly count of visits
- Lab and clinical measurements: Percent of patients with ≥1 measurement in the month
- Telehealth utilization was described as the percent of all visits in the month conducted via telehealth
- All other outcomes were described as the percent change from January 2020, e.g., in April 2020 there were 40% fewer visits compared to January
- Adjusted for the number of non-holiday weekdays in the month

A pre-COVID comparison population was used, comprises patients with T2DM in 2018 and visits from January – September 2019.

## POPULATION CHARACTERISTICS

Patients from 21 HCOs (n=422,000)

Age (mean)	Race/Ethnicity	Last HbA1c (2019)
65.1	White 77%	<7.0 49%
	Black 12%	7.–7.9 22%
	Hispanic 5%	8.0–9.0 10%
	Asian 2%	>9.0 9%
	Other 4%	No HbA1c 10%

## RESULTS

**Figure 1: Changes in Visit Volume**

- Visit volumes started decreasing in mid-March 2020 and by April volumes were 40% below January (range across HCOs, -32 to -52%).
- Visit volumes recovered through June to -13% below January (range, -23 to +2%), and were stable through September at -12% (range, -29 to -3%).

**Figure 2: Telehealth Visits**

- In Jan./Feb. 2020 fewer than 1% of visits were conducted via telehealth (range, 0–3%), increasing to 64% by April (range, 13%–90%), then decreasing to 10% by September (range, 2–28%).

**Figure 3: Timing of First Visit**

- While monthly rates fluctuated, by September 2020, the proportion of patients with ≥1 visit was similar in 2020 (87% of patients) and 2019 (89% of patients).

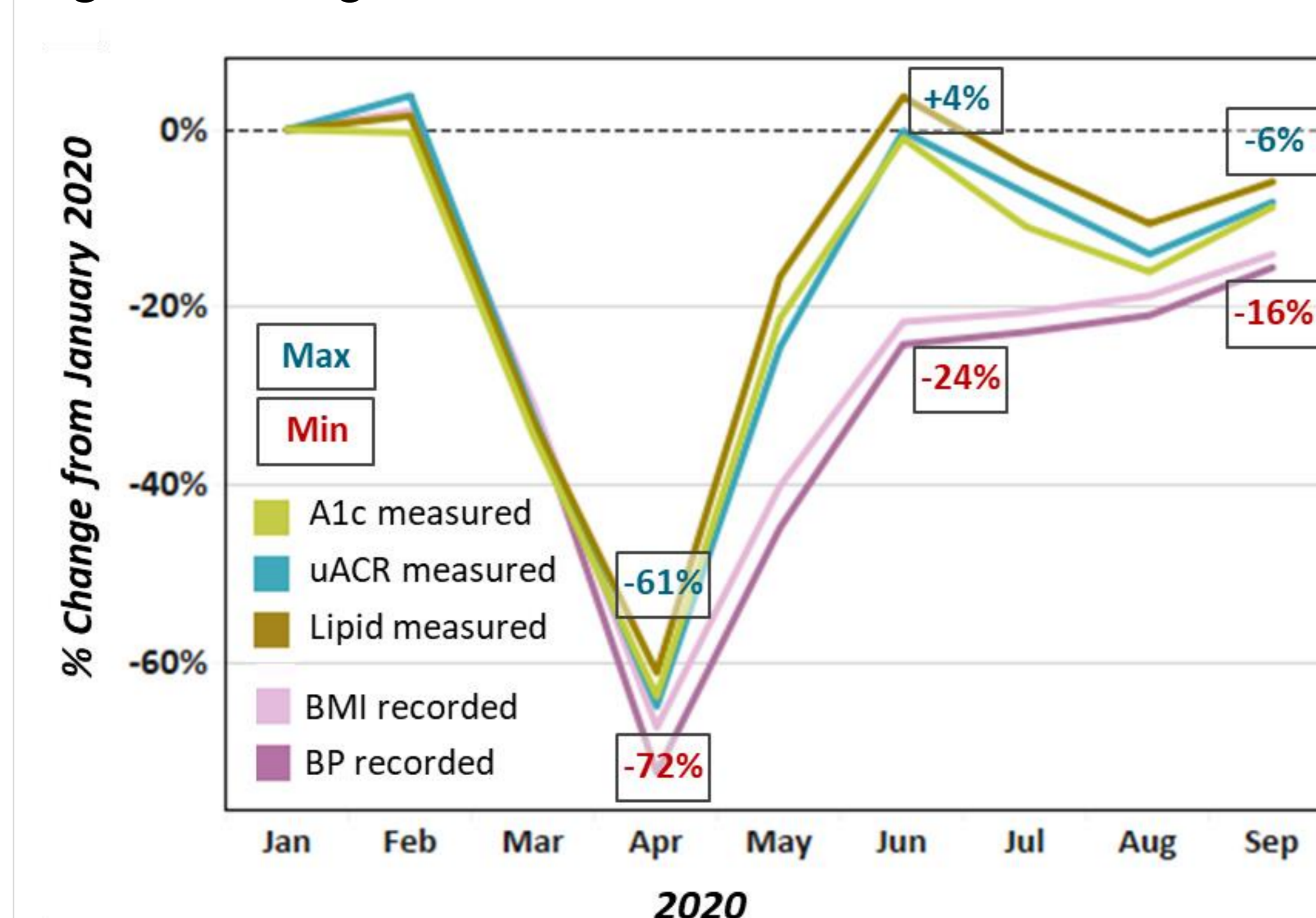
**Figure 4: Changes in labs and clinical measurements**

- On average, laboratory (HbA1c, uACR, lipids) compared to clinical measurements (BP, BMI) had a smaller decline (in April) and larger recovery (in June and September).

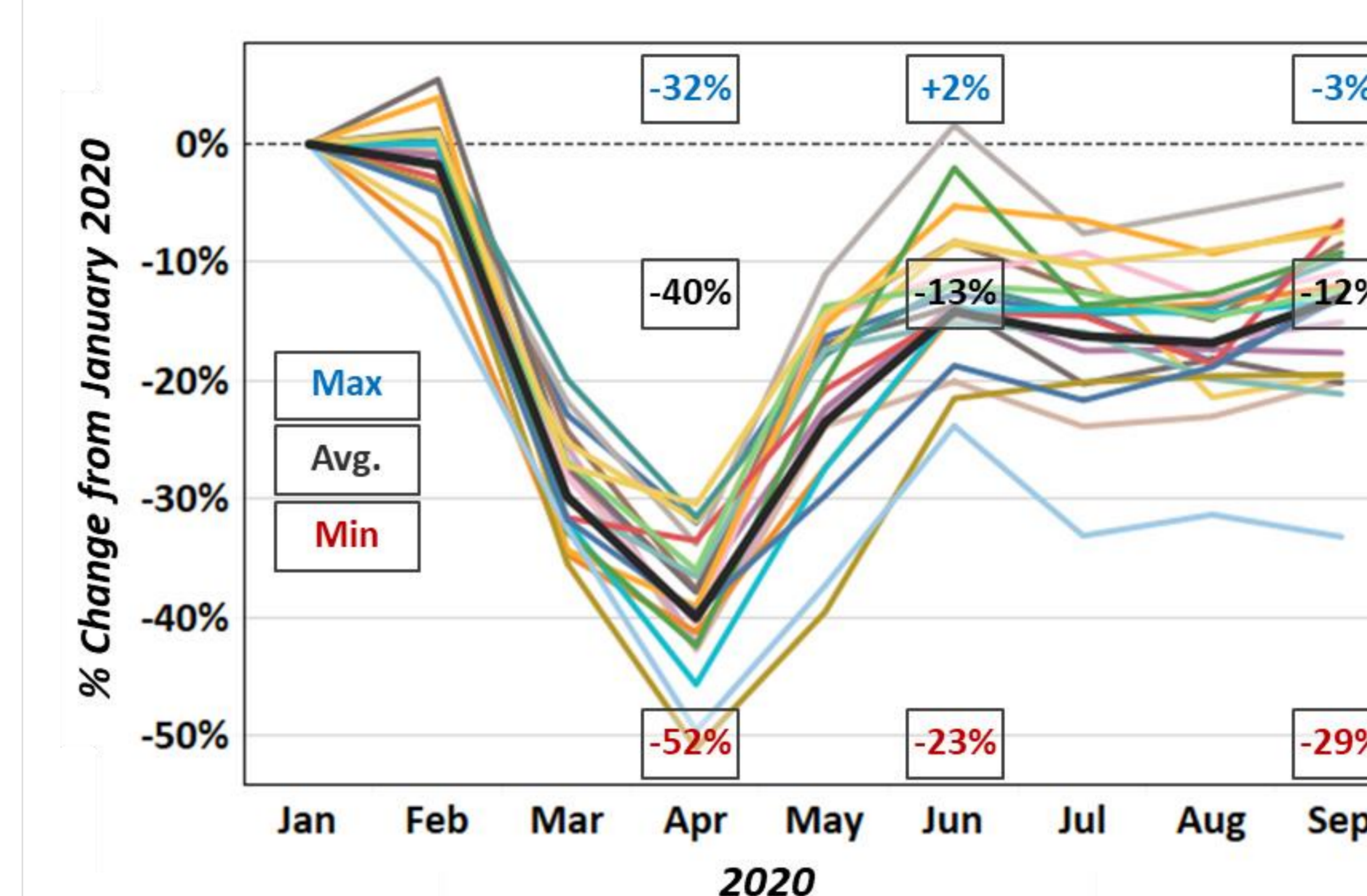
**Other Findings Not Presented in Figures:**

- Patients with an HbA1c >9.0 had a larger decrease in visits in June and September compared to patients with lower HbA1c values.
- In April 2020, Black patients had the smallest declines in visits and the greatest use of telehealth. Asian patients had the largest declines in visits.
- Comparable to visits, changes in lab testing, BMI, and BP, varied across HCOs and by patient characteristics.

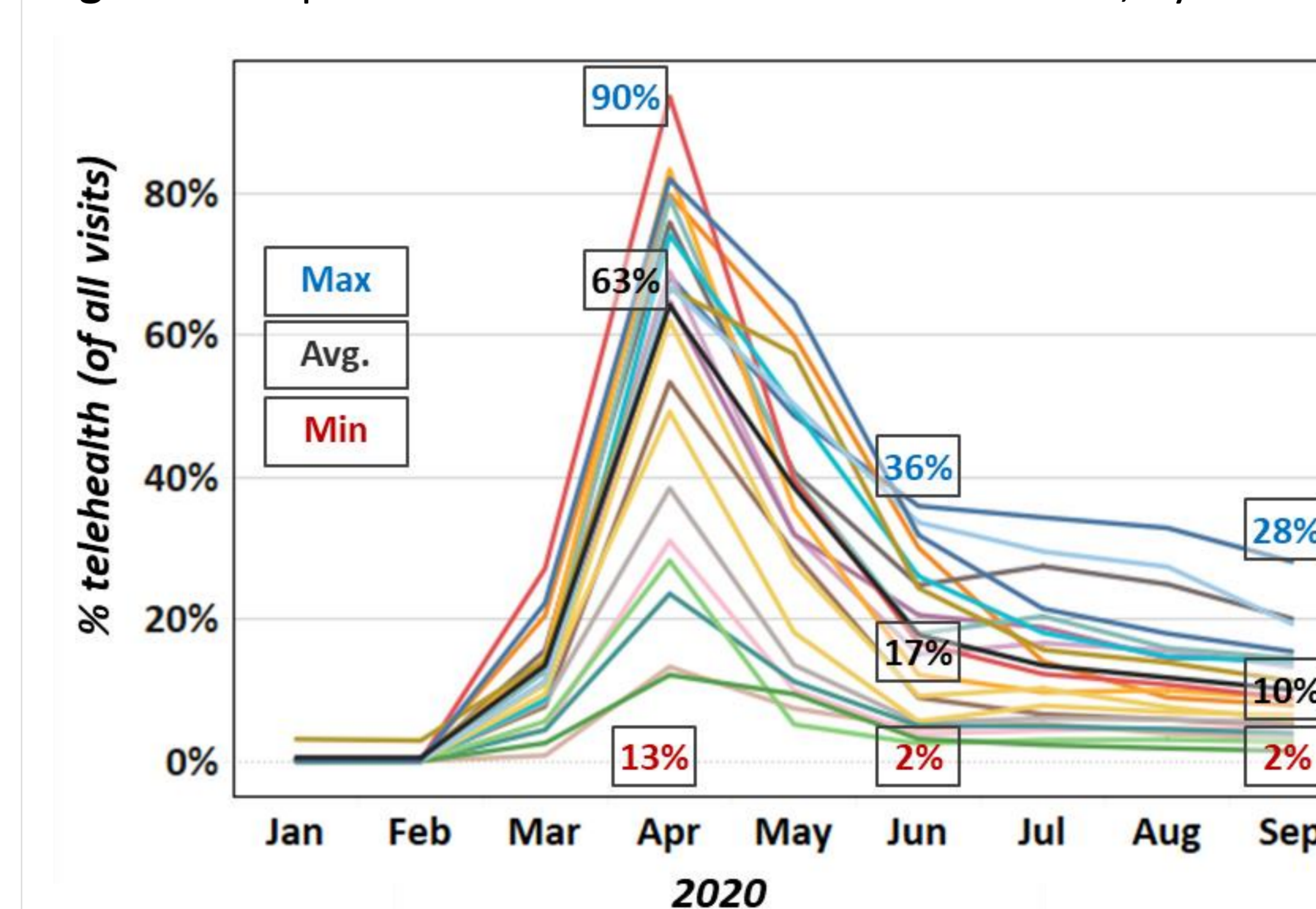
**Figure 4: Changes in lab and clinical measurements**



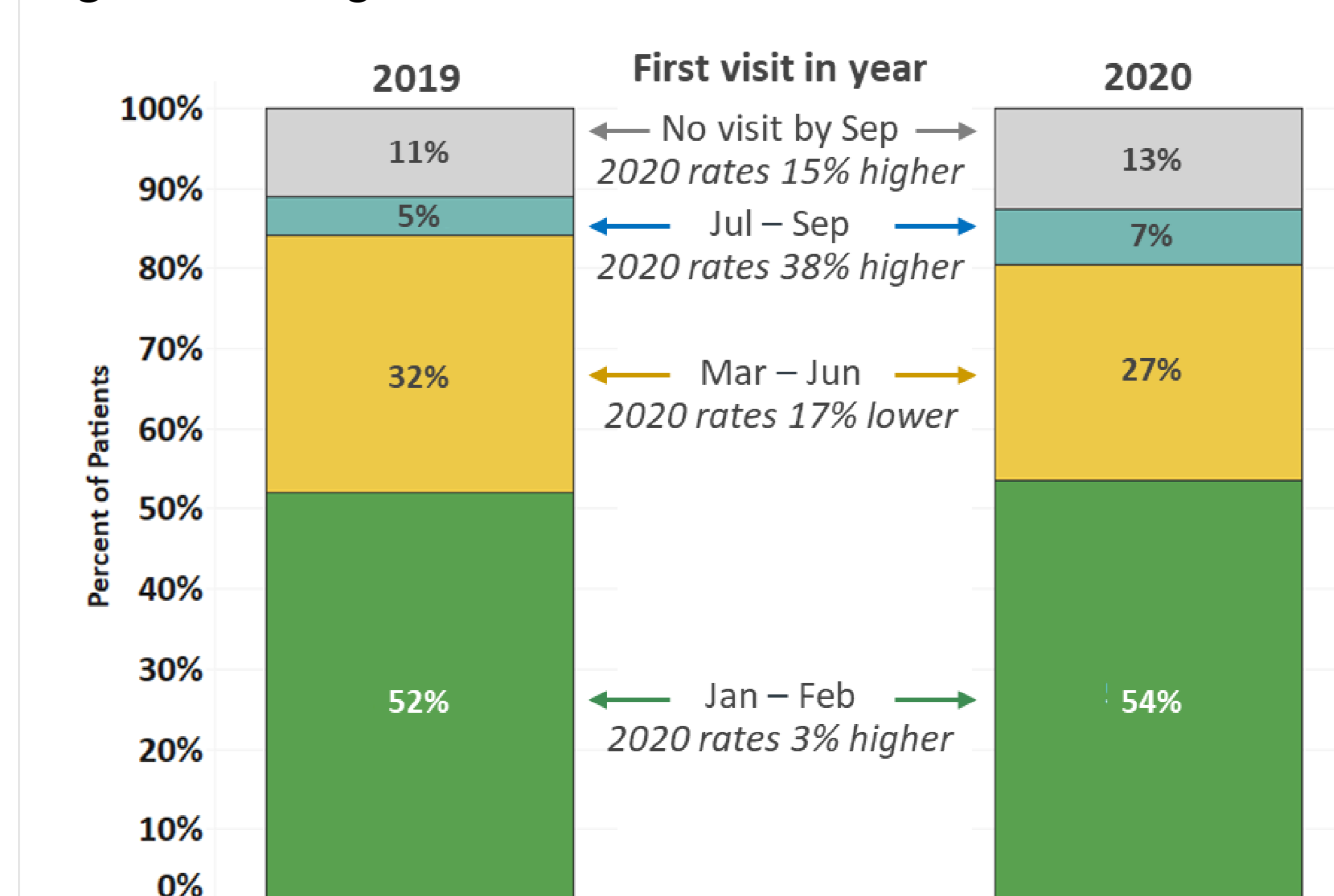
**Figure 1: Changes in visit volume, by HCO**



**Figure 2: Proportion of visits conducted via telehealth, by HCO**



**Figure 3: Timing of first visit 2019 vs. 2020**



## POLICY AND PRACTICE IMPLICATIONS

- Variation in changes in routine clinical care across HCOs and patient characteristics highlight a potential opportunity for improved care.
- HCOs should use their EHR data to identify patient populations most impacted from COVID-19 in clinical care, and target outreach accordingly
- Organizations can learn innovative approaches from each other in addressing specific aspects of the pandemic impact, e.g., drive-thru lab testing.
- In preparation for similar disruptions to healthcare in the future, further research is needed to understand and establish best practices used by HCOs to mitigate the impact of COVID on diabetes care or similar chronic conditions.

## CONCLUSION

- The COVID-19 pandemic impacted visits, testing, and clinical measurements among patients with T2DM, with wide variation across HCOs and patient demographics.
- By June 2020, some HCOs had recovered to pre-COVID rates, remaining stable through September 2020.
- By September 2020, most patients with T2DM had at least 1 visit (similar to pre COVID-19 pandemic rates).
- Some organizations appeared better equipped to ensure patients received HbA1c testing, and documented BP and BMI measurement for telehealth visits, potentially through use of independent labs, home testing and monitoring, or drive-through testing sites.

## CONTACT

Nikita Stempniewicz  
nstempniewicz@amga.org

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