

BACKGROUND

- The WHO declared the COVID-19 pandemic in March 2020. During “Wave 1” of the pandemic in Poland, severe restrictions related to COVID-19 were enacted, in which all activities were prohibited except those deemed necessary.
- From late May to July 2020, these restrictions were gradually lifted.
- October 2020 saw the arrival of “Wave 2” of the COVID-19 pandemic, in which some of the previous restrictions were re-implemented, but were expected to have a lower impact on daily life.

OBJECTIVES

- This study analyzes the impact of different phases of the COVID-19 pandemic on glycemic control in Polish patients with diabetes using FGM.

METHODS

- De-identified longitudinal continuous glucose monitoring (CGM) data was collected from 469 adult users (ages 18-64) of LibreView in Poland over a period of 21 months.
- Users’ data were aggregated within the 45-day periods at the start of each quarter in 2020, for a total of 4 timepoints: Q1 (1 Jan 2020 – 15 Feb 2020), Q2 (1 Apr 2020 – 15 May 2020), Q3 (1 Jul 2020 – 15 Aug 2020), and Q4 (1 Oct 2020 – 15 Nov 2020).
- In this study, Q1 therefore represents the first pre-pandemic quarter of 2020, Q2 corresponds to the severe lockdown of Wave 1, Q3 to the period during which the lockdown restrictions were lifted, and Q4 to the more liberal lockdown of Wave 2.
- Mean average glucose, glucose coefficient of variation (CV), time-in-range 70-180 mg/dL (TIR), time-above-range 180 mg/dL (TA180), and time-above-range 250 mg/dL (TA250), as well as median time-below-range 70 mg/dL (TB70) and time-below-range 54 mg/dL (TB54) were measured at each timepoint, and users’ mean change in these metrics were evaluated from Q1 to Q2 2020 and from Q3 to Q4 2020

RESULTS

Table 1. Overall Change in Glucose Control, Q1 – Q2 2020

	Q1 2020	Q2 2020	Mean Change
Average Glucose (mg/dL)	155.6 ± 35.3	153.2 ± 33.6	-2.4*
Glucose CV (%)	35.2 ± 8.2	34.1 ± 8.1	-1.1*
TB54 (%)	0.57	0.11	-0.74*
TB70 (%)	3.5	2.4	-0.7*
TIR (%)	65.6 ± 19.2	68.2 ± 19.0	+2.5*
TA180 (%)	29.4 ± 20.0	27.6 ± 19.6	-1.8*
TA250 (%)	9.5 ± 12.3	8.4 ± 11.5	-1.1*

Table 2. Overall Change in Glucose Control, Q3 – Q4 2020

	Q3 2020	Q4 2020	Mean Change
Average Glucose (mg/dL)	154.4 ± 33.4	155.6 ± 33.3	+1.2
Glucose CV (%)	34.9 ± 8.2	33.8 ± 7.8	-1.0*
TB54 (%)	0.18	0.13	-0.18*
TB70 (%)	2.9	2.7	-0.5*
TIR (%)	67.0 ± 18.7	66.9 ± 18.8	-0.2
TA180 (%)	28.4 ± 19.4	29.1 ± 19.7	+0.7
TA250 (%)	8.9 ± 11.6	8.7 ± 11.9	-0.2

•Q1, Q2, Q3, and Q4 TB54 and TB70 are shown as medians due to the skew in their distributions. All other data are shown as mean +/- SD
 •Statistically significant differences are marked by *. P < 0.05 was considered significant.

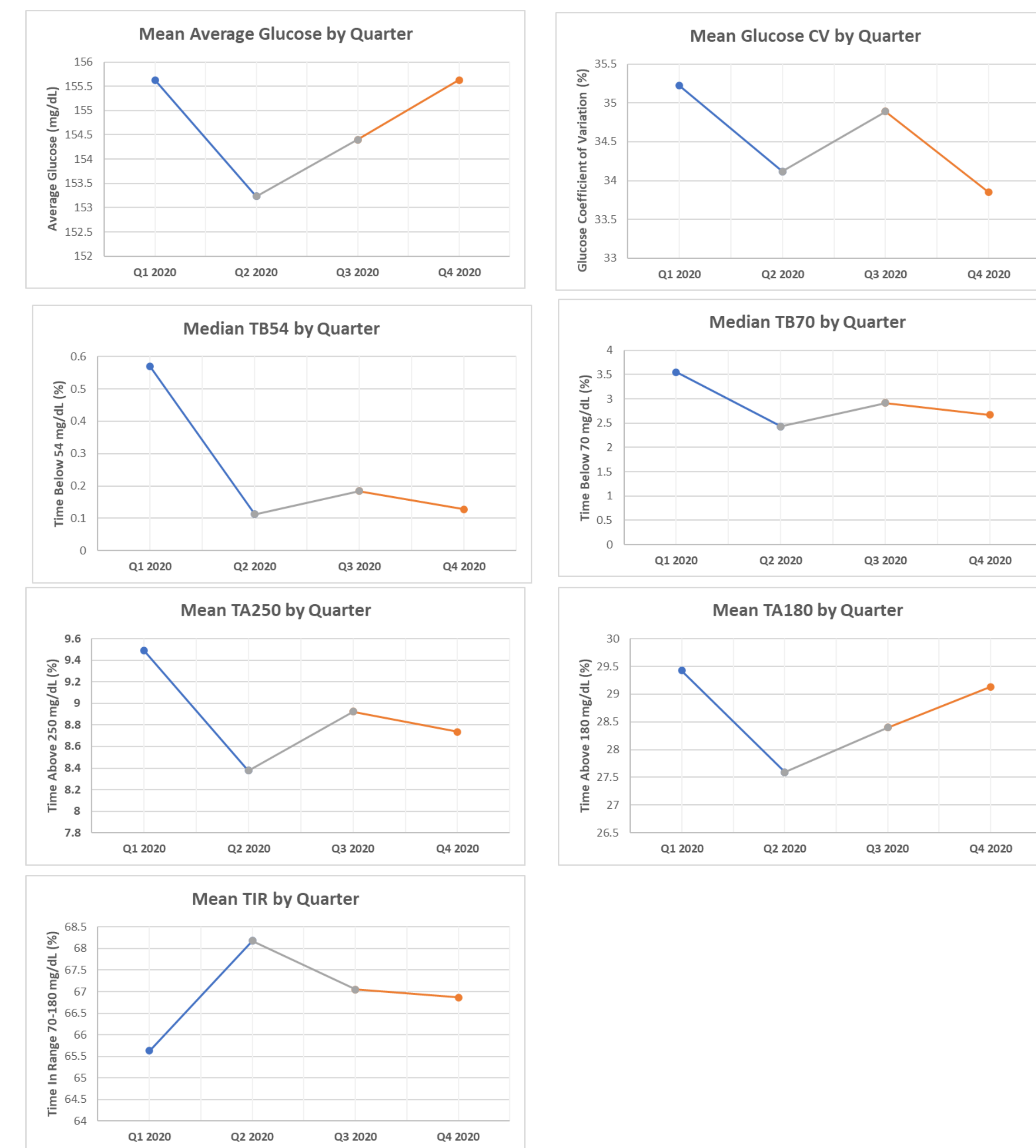
•Wave 1 and Wave 2 of the COVID-19 pandemic in Poland had a different impact on glycemic control in patients with diabetes. Both lockdowns yielded reduced time-below-range and glucose variability, but the severe lockdown of the first wave additionally resulted in reduced time-above-range and increased time-in-range.

•The reduction in both TAR and TBR from Q1 to Q2 suggests that patients were dosing their insulin more accurately, and that perhaps the lockdown also gave users greater opportunity to understand their glucose profile in a more controlled environment.

•It is interesting that the overall reduction of hyperglycemia was not maintained during the 2nd lockdown (Q3 to Q4), and differences between the lockdowns and patient diabetes management in Poland should be examined for factors related to this apparent change in hyperglycemia management.

• The COVID-19 lockdowns in Poland resulted in lack of in-person care and potential stress¹; however these results do not reflect the loss of glucose control that would therefore be expected. This suggests that increased difficulty of diabetes management might have been mitigated with some combination of self-monitoring via CGM and remote data sharing with an HCP via LibreView, as users likely switched from in-person to telemedicine diabetes care.

Figure 1. Aggregate Glucose Control by Quarter in 2020



CONCLUSIONS

- The reduced frequency of in-person diabetes care during the COVID-19 lockdowns in Poland may have been mitigated for LibreView users by a combination of self-monitoring of glucose, and remote data sharing with their HCP.
- These results may be evidence of the benefits of telemedicine. Clinicians can continue encouraging patients to share their CGM data remotely to encourage better communication and care.

References:

- Kania M, Sudul P, Mazur K, et al. Type 1 diabetes outpatient care and treatment effectiveness during COVID-19: A single-center cohort study. J Diabetes Complications. 2023;37(1):108379. doi:10.1016/j.jdiacomp.2022.108379