

# Use of Continuous Glucose Monitoring and Healthcare Resource Utilization in Patients with Type 2 Diabetes Treated with Sulfonylureas/Meglitinides

Rodolfo J. Galindo<sup>1</sup>, Bhavya Sree Burugapalli<sup>2</sup>, Laura Brandner<sup>2</sup>, Anila Bindal<sup>2</sup>

<sup>1</sup> University of Miami, Miami, FL, USA, <sup>2</sup> Abbott Diabetes Care, Alameda, CA, USA

## Background

- As the prevalence of type 2 diabetes continues to increase, we have seen a progressive increase in its associated healthcare resource utilization (HCRU).<sup>1</sup>
- Prior studies have shown that continuous glucose monitoring (CGM) has been associated with reduced HCRU in type 2 diabetes (T2D) populations<sup>2-4</sup>.
- However, the impact of CGM on HCRU in non-insulin treated populations on sulfonylurea (SU) or meglitinide therapy has not been widely studied.
- Consequently, we investigated the effect of CGM use on HCRU in a nationwide-representative sample of people with T2D treated with SU or meglitinide therapy.

## Study objective:

To assess the impact of FreeStyle Libre (FSL) use on HCRU including acute diabetes-related events (ADE), all-cause hospitalizations (ACH), and emergency department (ED) visits among people living with T2D and treated with SU or meglitinide therapy in the United States.

## Methods

### Study design:

In this retrospective, real-world study, we analyzed Inovalon® Insights claims data.

### Study population:

#### Inclusion criteria:

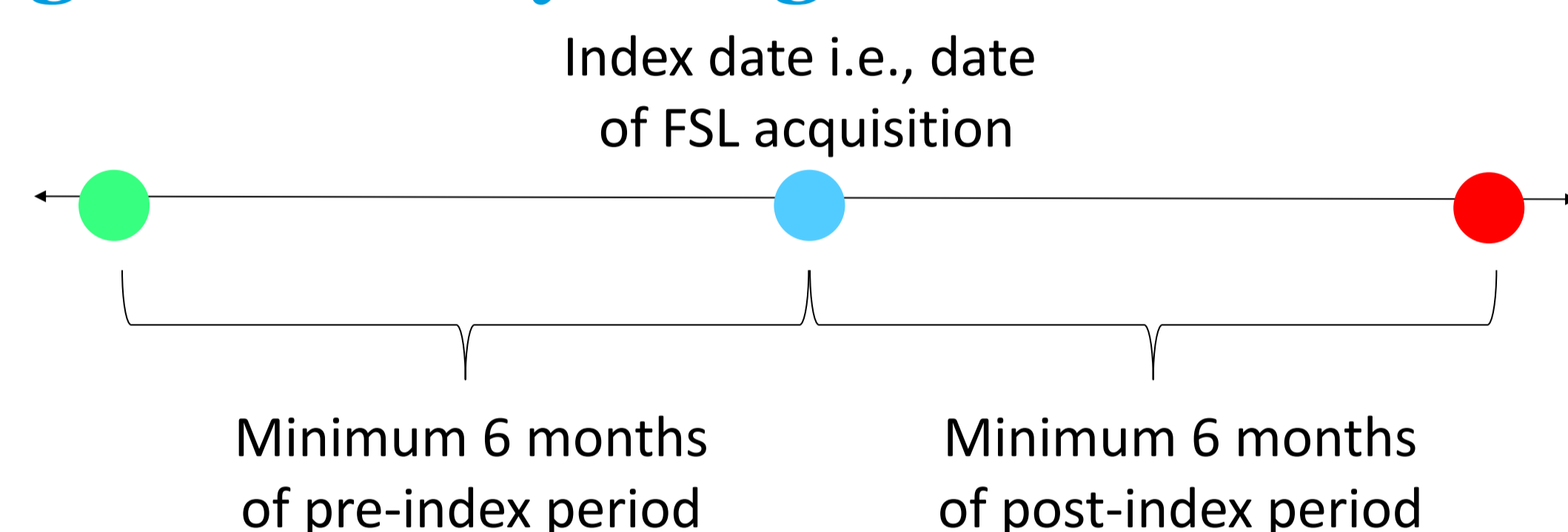
- T2D diagnosis
- FSL acquisition

- Had claim(s) of SU/meglitinide during pre- and post-index period
- Had continuous enrollment in health plan during pre- and post-index period

#### Exclusion criteria:

- Had claim(s) of basal or bolus or premixed insulin or GLP-1 receptor agonist (GLP1 RA)

### Figure 1. Study design



### Analysis:

- Outcomes included ADE, acute hyperglycemic events (HYPER), acute hypoglycemic events (HYPO), ACH, and ED visits.
- We compared events and HCRU during the first 6 months after acquiring the FSL compared with events during the 6 months prior.
- ICD-10 codes were used to identify ADE and T2D.
- NDC codes were used to identify claim(s) of FSL, SU, meglitinide, basal, bolus or premixed insulin, and GLP1 RA.
- CPT, HCPCS and revenue codes were used to identify ACH and ED visits.
- Beneficiary-level enrollment indicator was used to determine longitudinal patient follow-up.
- Differences in mean HCRU were assessed by Wilcoxon signed rank tests.

## Results

A total of 4,871 individuals were included in the analysis. Demographics are presented in table 1.

### Table 1. Demographics

	< 65 years old	≥ 65 years old
<b>N</b>	2,976	1,895
<b>Age (mean ± SD)</b>	53.6 ± 8.7	72.9 ± 5.7
<b>Gender (%)</b>		
Female	40.6	42.9
Male	59.4	57.1

Significant reductions in ADE, acute hyperglycemic events, ACH and ED visits were seen during post-index period, compared to pre-index period in both groups [<65 age group (table 2) and ≥ 65 age group (table 3)].

### Table 2. Changes in HCRU in <65 age group

	Pre-index		Post-index		Percent Reduction	p-value
	# events	Event rate	# events	Event rate		
<b>ADE</b>	222	0.07	113	0.04	49.1	< 0.05
Hyper	201	0.07	99	0.03	50.8	< 0.05
Hypo	23	0.01	17	0.01	26.1	0.42
<b>ACH</b>	467	0.16	368	0.12	21.2	< 0.05
<b>ED</b>	1,163	0.39	857	0.29	26.3	< 0.05

### Table 3. Changes in HCRU in ≥65 age group

	Pre-index		Post-index		Percent reduction	p-value
	# events	Event rate	# events	Event rate		
<b>ADE</b>	151	0.08	90	0.05	40.4	< 0.05
Hyper	124	0.07	74	0.04	40.3	< 0.05
Hypo	32	0.02	22	0.01	31.3	0.18
<b>ACH</b>	608	0.32	550	0.29	9.5	< 0.05
<b>ED</b>	722	0.38	647	0.34	10.4	< 0.05

## Conclusions

- Use of FSL was associated with significant reductions in ADE, hyperglycemic events, ACH and ED visits among people with T2D treated with SU or meglitinide therapy.
- Lack of significance in hypoglycemic events may reflect the relatively low event rate in both periods.
- Further research may assess the financial impact and quality of life impact on reduction in HCRU.

## References

- Parker ED, Lin J, Mahoney T, et al. Economic Costs of Diabetes in the U.S. in 2022. *Diabetes Care*. 2023 Nov 1;doi:10.2337/dci23-0085. doi: 10.2337/dci23-0085.
- Hirsch IB, Kerr MSD, Roberts GJ, et al. Utilization of Continuous Glucose Monitors is Associated with Reduction in Inpatient and Outpatient Emergency Acute Diabetes Events Regardless of Prior Blood Test Strip Usage. *Diabetes* 2020;69(Supplement 1):875-P.
- Bergental RM, Kerr MSD, Roberts GJ, Souto D, Nabutovsk Y, Hirsch IB. Flash CGM Is Associated With Reduced Diabetes Events and Hospitalizations in Insulin-Treated Type 2 Diabetes. *J Endocr Soc* 2021;5(4):bvab013. doi: 10.1210/endo/bvab013. Accessed March 30, 2021.
- Miller D, Kerr MSD, Roberts GJ, et al. Flash CGM Associated With Event Reduction in Nonintensive Diabetes Therapy. *Am J Manag Care* 2021;27(11):e372-e377. <https://doi.org/10.37765/ajmc.2021.88780>.

## Acknowledgements

This study was funded by Abbott.