

# Continuous Glucose Monitoring Attrition Among Youth with Type 1 Diabetes

S. Meighan<sup>1</sup> MSN, CPNP-PC, MPH, B. Marks<sup>1</sup>, MD, MSHPEd, B. VanGraafeiland<sup>2</sup> DNP, CRNP, CNE, FAANP

<sup>1</sup>Children's Hospital of Philadelphia <sup>2</sup>Johns Hopkins School of Nursing



JOHNS HOPKINS  
SCHOOL of NURSING

## Background

Use of continuous glucose monitors (CGM) is associated with improved glycemic control in children with Type 1 diabetes (T1D), yet there are patients who discontinue use of these devices. Despite widespread acceptance among professional organizations and increased insurance coverage, technology use among children with T1D is lower in some racial and ethnic groups.

## Aims

The aims of this project are (1) to identify when patients discontinue use of CGM by reviewing data from diabetes visits after CGM initiation, and (2) to identify and report the four most common reasons why patients with T1D discontinue use of CGM.

## Methods

A retrospective chart review was conducted utilizing electronic medical record data at the Children's Hospital of Philadelphia. Patients with T1D who had at least one office visit between November 1, 2021 and November 1, 2022 were included for review. Information regarding CGM wear time was gathered using start date from chart review and data from cloud-based software. Reasons for discontinuation were gathered from documentation in the chart.

## Results

- 315 CGM non-wearers had a mean age of 15.1 (4.0) years, 59.3% were male, and 29% were Black. Non-wearers were predominantly privately insured (67%).
- Most patients who discontinued did so within the first 45 days of wear (52 patients)

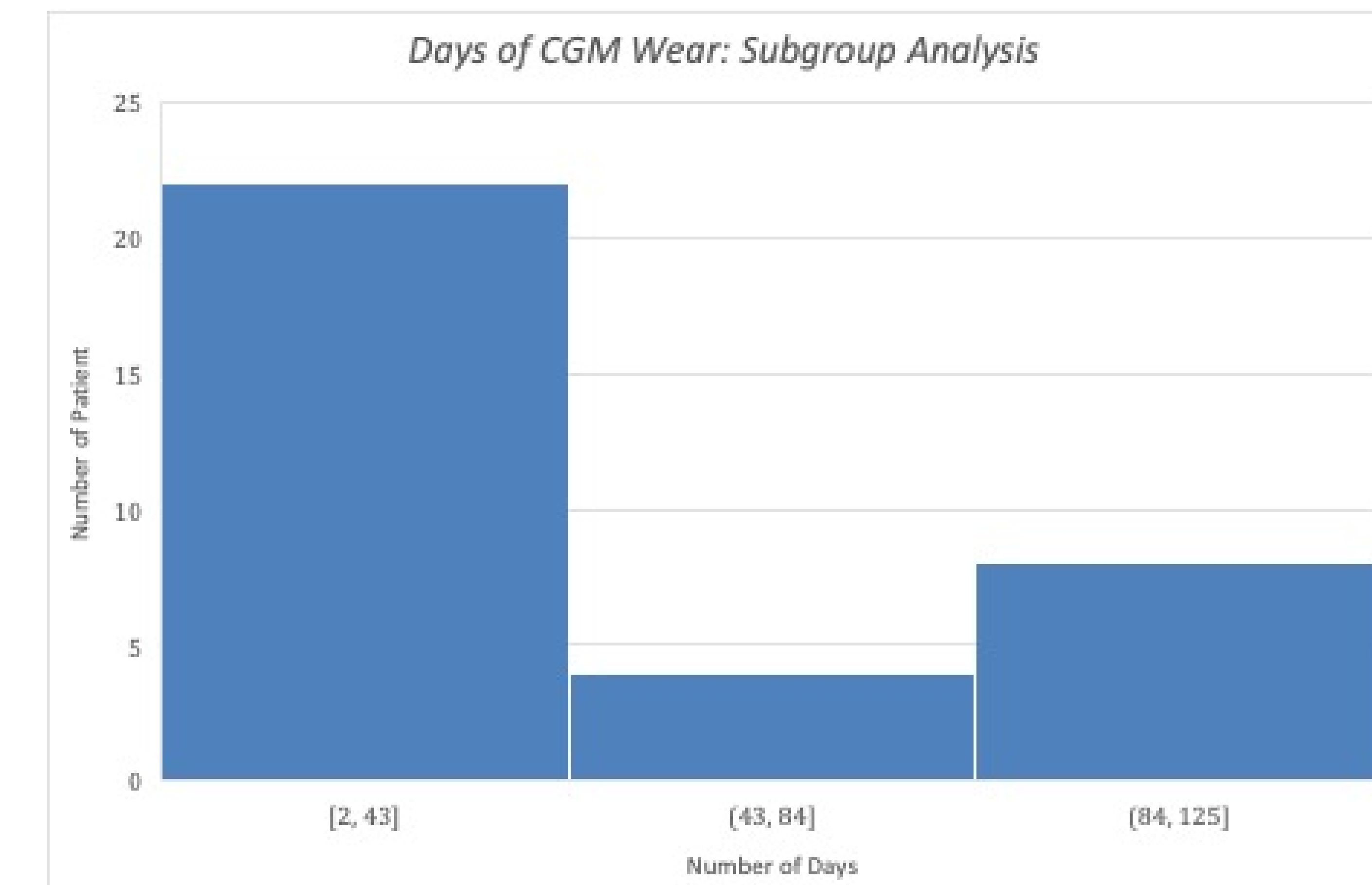
Age in years, mean (SD)	15.1 (4.0)
Sex, n (%)	
Male	192 (59.3)
Female	123 (38.0)
Race, n (%)	
Black/African American	94 (29.0)
White	157 (48.5)
Asian	4 (1.2)
Alaska Native/American Indian	0 (0)
Other	7 (2.2)
Refused	53 (16.4)
Ethnicity, n (%)	
Non-Hispanic	312 (96.3)
Hispanic	3 (0.9)
Insurance Type, n (%)	
Private	217 (67.0)
Public	97 (29.9)
Uninsured	1 (0.3)
Insulin Regimen, n (%)	
Basal Bolus	253 (78.1)
Basal Only	2 (0.6)
Insulin Pump	50 (15.4)
Pre-Mixed	10 (3.1)
Duration of T1D in years, mean (SD)	6.3 (4.5)
Most recent Hb A1c, mean (SD)	8.8 (2.3)

Note. SD=standard deviation, T1D=Type 1 Diabetes

Four most common reasons for CGM discontinuation were

- Problems with device sticking to body
- Dislike on body
- Insurance problems
- Inaccurate readings

Among 94 Non-Hispanic Black patients in the study, insurance problems were cited as one of the top two most common reasons for discontinuation.



## Conclusions

To prevent CGM attrition, intervention and support should happen within 45 days of starting. Initial educational programs on CGM should address most common reasons for discontinuation and ensure path to obtaining consistent supplies. Future studies should incorporate findings into educational programming.

Acknowledgements: My advisory group, for their steady and wise counsel. My family, for their unwavering support in our last two years of adventures.



Content here

**Headline**

Content here