

# **Assessing Continuous Glucose Monitor Alarm Use by Families of Children with Diabetes Seen at Riley Children's Hospital**

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## **Background/Objective:**

A useful feature of continuous glucose monitors (CGM) is customizable alarms which alert persons with diabetes and their caregivers of current or pending blood sugar changes. However, there has been little work studying real-world CGM alarm settings and use in large clinical populations. We seek to understand CGM alarm use through analyses of CGM reports and user interviews.

## **Methods:**

We analyzed data from two-week CGM reports obtained clinically to determine common alert/alarm settings and compared those to target blood sugar guidelines. We also studied families who are currently using or have never used CGM for diabetes management of their children aged 2-18 years through standardized surveys about diabetes technology and qualitative interviews investigating benefits and burdens associated with CGM use. Data were tabulated, and qualitative analyses were performed.

## **Results:**

CGM download data from 140 children using the Dexcom® G6 was analyzed. The Low alarm was used by 122 participants (87%) with a median blood glucose of 74 mg/dL (range: 60-100) used as a threshold for alert. The High alarm was used by 101 participants (72%) with a median blood glucose of 274 mg/dL (range: 120-400) used as a threshold for alert. Low Repeat and High Repeat alarms were used by 48 (34%) and 35 (25%) participants, respectively. The most common themes revealed during interviews include the alarms were helpful during sleep, a low sugar is the most important information to be alerted about, and high sugar alarms can be disruptive to patients and caregivers.

## **Conclusions and Potential Impact:**

We anticipate that identifying barriers to using CGM alarms will assist providers in efforts to instate customizable alerts and alarms. Setting CGM alarm best practices will help ensure children with diabetes and their caregivers are getting needed health data to optimize care and minimize feeling overwhelmed by constant alarms.