

Preliminary Outcomes of an Inpatient Pediatric Continuous Glucose Monitor Pilot Program

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BACKGROUND

This project reviews preliminary outcomes after initiation of an inpatient pediatric CGM pilot program at Children's Specialized Hospital (CSH) in New Jersey, as a follow-up from the 2022 abstract: *Technology Utilized in Data Collection of Blood Glucose, Physical Activity, Sleep Hygiene, and Post-Discharge Compliance.*

Management of diabetes in pediatrics, adolescents, and young adults is often complex, warranting frequent monitoring and review of health data. CGMs are a wearable, FDA-approved diabetes technology that monitors interstitial glucose concentration. CGM data is transmitted continuously and remotely, with the goal of informing treatment decisions and medical interventions in real time. Robust literature exists demonstrating the clinical value of diabetes management with the use of a personal CGM, including improved confidence managing diabetes, reduced risks associated with hypoglycemia and hyperglycemia, reduced glycemic variability, and improved quality of life.

While CGM use has become a standard of care, not all pediatric patients with diabetes are afforded access to diabetes technology, and therefore are unable to experience the well-documented benefits of utilizing CGM.

OBJECTIVE

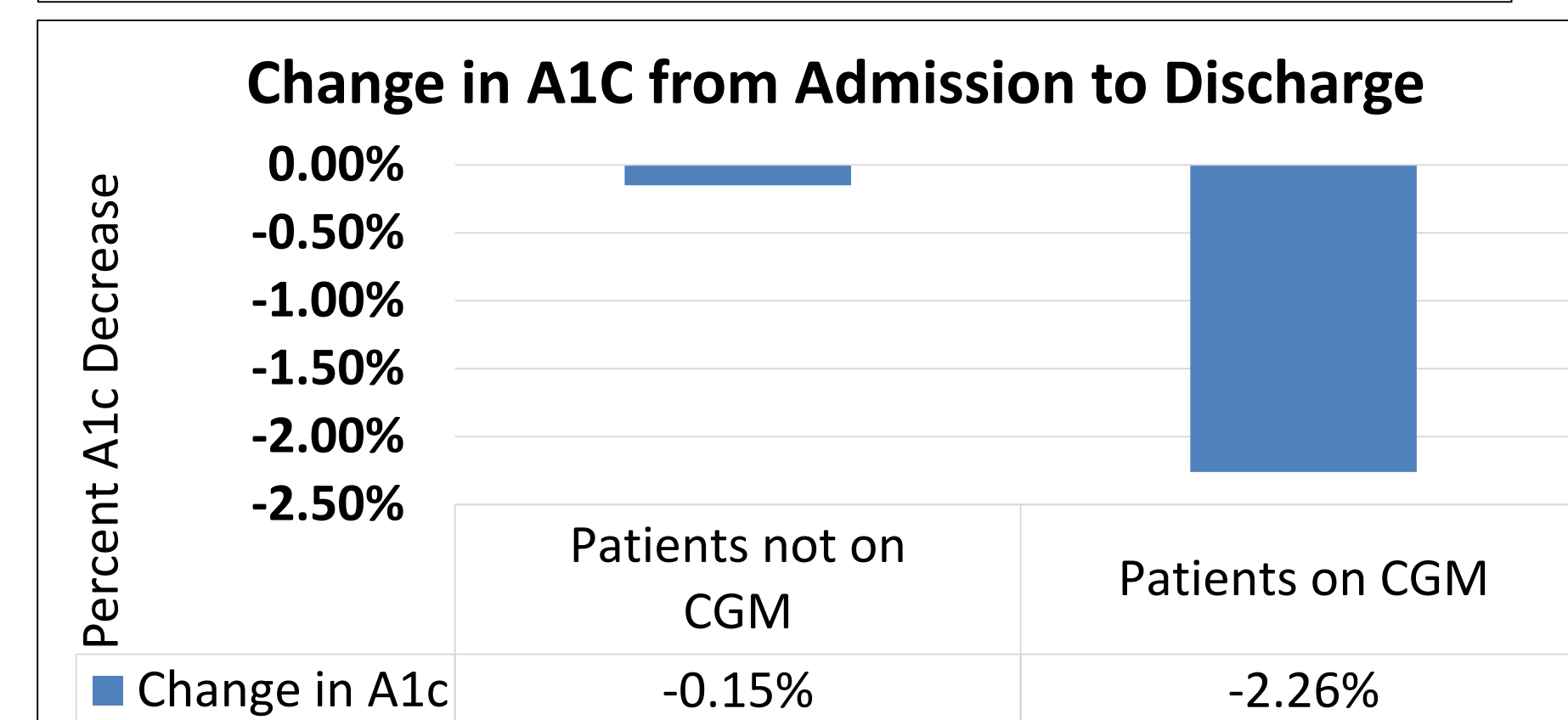
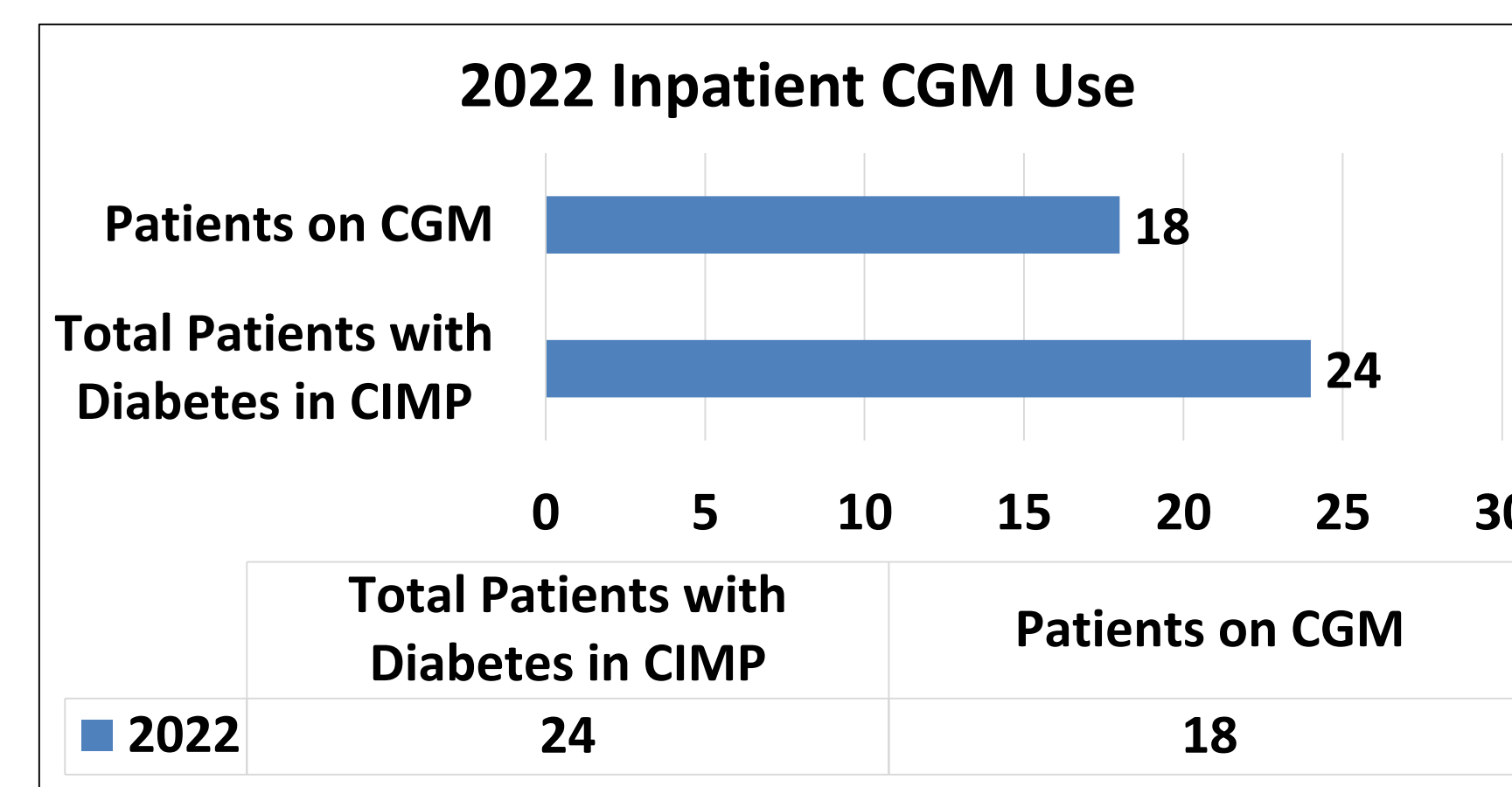
This project aims to review preliminary outcomes after initiation of an inpatient pediatric CGM pilot program for children with diabetes admitted to the Chronic Illness Management Program (CIMP) at Children's Specialized Hospital (CSH) between January and December of 2022.

METHODOLOGY

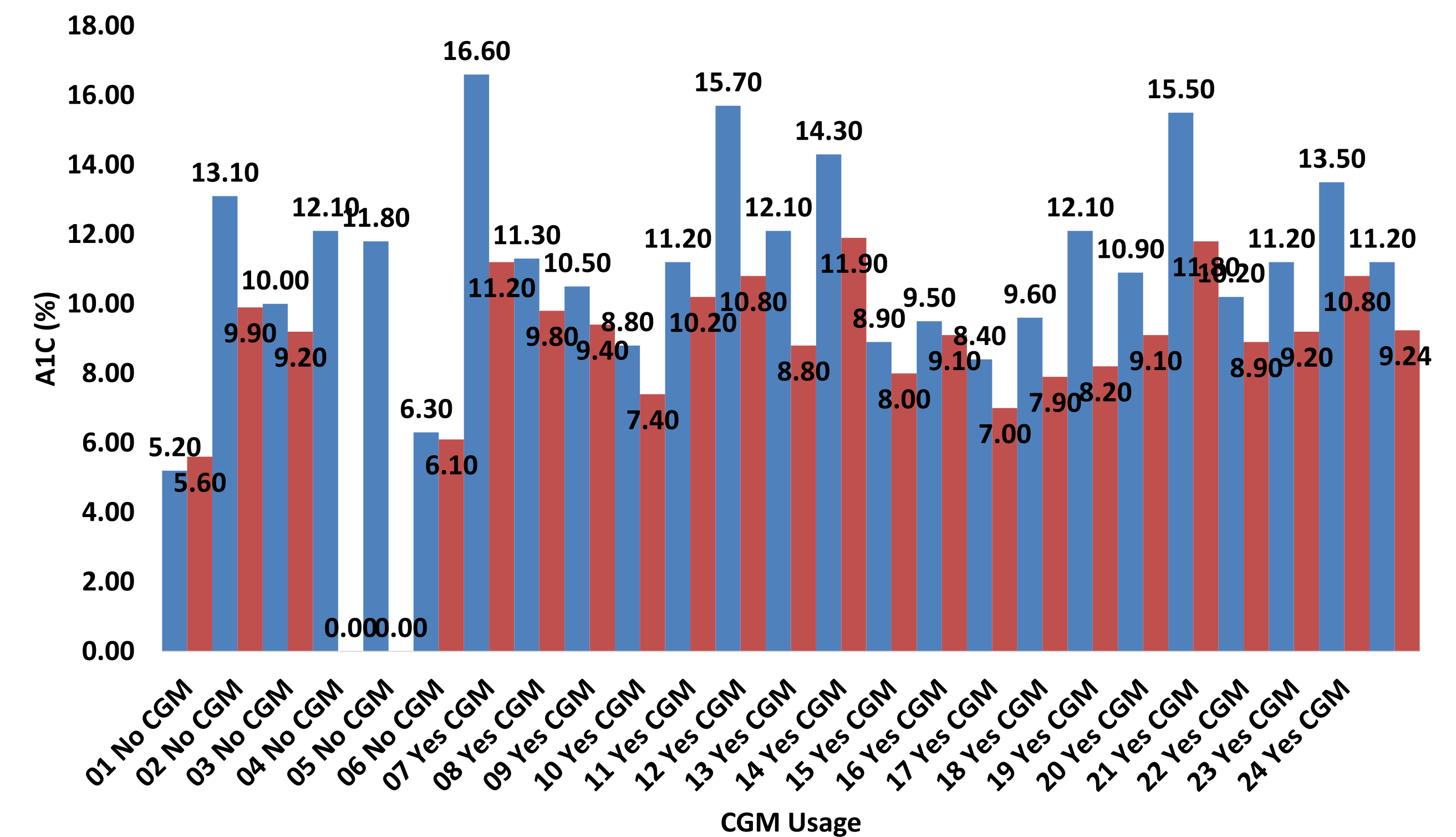
Personal CGM devices were procured through the inpatient pharmacy and/or external CGM vendors using grant funding. Children appropriate for CGM use were identified and offered personal CGM devices to be worn while inpatient. Education was provided to children and their families regarding CGM use, including how to place, interpret, and share data, and how to obtain products for home use after discharge. Data from CGM devices during 2022 inpatient admissions is actively being analyzed to determine the full impact of the CGM pilot program on diabetes management.

RESULTS

Initial analysis of the pilot program data revealed that out of 24 children admitted to the CIMP in 2022 with diabetes, 18 (75%) were able to utilize CGM during inpatient admission. The 6 children (25%) not utilizing CGM devices were not deemed appropriate or were not interested in using a CGM. Of the children utilizing CGM, more than half (56%) gained access to CGM through the pilot program; the others used personal CGM devices previously obtained through insurance. Notably, children who used CGM demonstrated a greater reduction in A1C from admission to discharge, versus children who did not use CGM (-2.26% change versus -0.15% change, respectively). Further analysis will include assessment of individual glycemic measures such as % time in range (TIR), % Low, % Very Low, % High, and % Very High; % children able to obtain CGM via insurance for home use post-discharge; assessment of social determinants of health impacting CGM use, and analysis of sustained medical and quality-of-life measures post-discharge, in relation to CGM use.



Change in A1C from admission to discharge in patients using CGM



CONCLUSION

This preliminary analysis demonstrates that the CGM pilot program led to improved access to diabetes technology and improved medical management of diabetes in the inpatient setting.

Challenges faced by the pilot program include maintaining funding to procure CGMs, supporting insurance approval of CGMs before discharge home, and consistently aggregating and tracking data remotely once children are discharged.

Further analysis is warranted to explore barriers preventing CGM access, consider strategies to improve access to life-changing diabetes technologies on a larger scale, and utilize outcomes to support continued funding for this project.

