**Implementing a workflow for the use of personal continuous glucose monitors to improve diabetes control**

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**Background:** The use of personal continuous glucose monitors (CGMs) in patients with diabetes has increased significantly and is expected to continue to increase as CGMs become more affordable and insurance plans improve coverage. The utilization of CGMs has shown to improve diabetes control and minimize hypoglycemic events. CGMs provide substantial benefit to patients with transient blood glucose control, hypoglycemia, or those learning how foods, exercise, and other factors are affecting their blood glucose control. In recent literature, the utilization of CGMs has shown to improve glycated hemoglobin A1c (A1c) in patients with Type I and Type II diabetes. Patients who use CGMs are more likely to improve their time in target blood glucose range, while also minimizing their time below the target range.The available data signifies that use of CGMs improves diabetes control and minimizes the risk for hypoglycemic events. Despite their increased use, follow up with patients who utilize personal CGMs is a challenge in primary care settings. The lack of personnel to download and interpret results combined with the lack of time to review results creates challenges to maximize the benefits of CGM therapy and implement indicated medication changes.

**Objective:** The primary objective of this project was to create and implement a sustainable workflow for enhanced CGM use within the primary care clinic to improve diabetes control and outcomes. This workflow will include scheduling patient’s follow up, obtaining and reviewing CGM data with the pharmacist and implementing any indicated therapy changes.

**Methods:** This was a prospective, IRB approved, investigator-initiated, pilot quality improvement project conducted in an internal medicine clinic in Huntersville, North Carolina. A list of patients currently utilizing personal CGMs was generated by the pharmacist of the practice. Patients were included if they had a diagnosis of diabetes, utilized a personal CGM. Patients were excluded if they transferred care, did not maintain at least one follow up appointment, enrolled after March 1, 2022. Patients were excluded from analysis if they were unable to obtain final labs. Enrolled patients were to maintain routine follow up for CGM download appointments. The patient’s electronic medical records via Canopy-Powerchart were utilized to gather pertinent information. Data from six months prior to study start was collected, and all patients meeting the inclusion criteria were included within the study. Patients were followed for six months of project implementation. Data was collected and stored on a secure server with de-identified information for analysis. Data was analyzed through REDcap database. Background information collected included, age, personal CGM utilized, diabetes medication regimen, diabetes related hospitalizations, and A1c prior to implementation of new workflow.Encounters were conducted via in person or via telephone by PharmD or PharmD resident. At each encounter, patient’s CGM data was downloaded and interpreted. Medication changes were made under the existing Clinical Pharmacist Practitioner (CPP) agreement between the pharmacist and the provider. To create a sustainable process, billing for interpretation and teaching of CGMs was implemented into the CGM workflow. The primary outcome was the change in mean A1c. Student paired T-test was used to determine statistical significance of the primary outcome. Secondary outcomes included change in diabetes related hospitalization rate, medication changes implemented, number of billed 95251 charges, amount billed by clinic, provider relative value units (RVUs) generated, time spent by PharmD and PharmD resident, and number of follow up visits.

**Results:** From October 14, 2021 to April 26, 2022, 42 patients enrolled into the program. Of these, 12 were excluded from the results. Five patients were lost to follow, three patients transferred care, and four patients enrolled after March 1, 2022. During the 28 weeks of workflow implementation, there were 145 CGM encounters between the 30 enrollees. Patient’s averaged 19.9 weeks of enrollment and had an average of 5 visits during this time. During the 28 weeks, 100 medications changes were implemented under the existing Clinical Pharmacist Practitioner (CPP) agreement between the pharmacist and the provider. The pharmacist led CGM workflow led to a statistically significant reduction in A1c from baseline by an average of 1.2%. (95% CI, -0.6 – -1.8; P = 0.0006). 73%of all patients saw an improvement in A1c. During this time, 58 CPT 95251 codes were billed yielding $7,052.00 in billed services for the clinic. This generated 40.6 provider RVUs. The implementation of the CGM workflow led to 1 less diabetes related hospitalization. Overall, 4077 minutes were spent by the PharmD or PharmD resident on CGM encounters resulting in 28.1 minutes per patient encounter.

**Conclusion:** The implementation of a pharmacist led CGM workflow resulted in improved diabetes control as marked by the reduction A1c. This study demonstrated a successful and financially stable model through appropriate and maximized billing of CGM CPT codes.