Impact of Pharmacist-Led Insulin Pump Service in Primary Care

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Abstract

Background: The 2025 American Diabetes Association Standards of Care states that automated insulin delivery with a pump is the preferred method for people with type 1 diabetes and should be offered to those with type 2 diabetes performing multiple daily insulin injections[1]. However, a shortage of endocrinologists in non-urban areas, along with socioeconomic and racial disparities, limits access to diabetes technology. To address these barriers, primary care practitioners collaborated with a Diabetes Care and Education Specialist pharmacist to initiate and follow-up on insulin pump therapy in adults at a Federally Qualified Health Center. This study assesses glycemic management before and after starting insulin pump treatment.

Methods: The research protocol has received exempt status from the Investigational Review Board. Adult patients, aged 18-89 years, using insulin pump therapy managed by a primary care pharmacist were identified through chart review. Data collected included demographics, category of diabetes, insulin pump and continuous glucose monitoring use, A1C levels, time-in-range glucose values, and diabetes-related hospitalizations. De-identified patient data was then analyzed in aggregate to assess outcomes using descriptive statistics to assess baseline characteristics and paired t-tests to compare glycemic outcomes.

Results: Mean A1c percentage decreased from initiation to the most recent A1c measurement (9.1% vs. 8.1%, p=0.02). Patients also experienced a decrease in A1c % from initiation to three months post-initiation (9.1% vs. 8.3%, p=0.015). No significant change was noted from baseline to six months post-initiation (9.2% vs. 8.5%, p=0.13) or from three to six months (8.3% vs. 8.5%, p=0.58). Mean blood glucose decreased from initiation to now (230 mg/dL vs. 190 mg/dL, p=0.03. Additionally, average insulin use decreased from 83.8 units per day to 60.7 units per day after insulin pump initiation (p=0.008).

Conclusion: Patients experience a positive change in glycemic outcome measures, such as A1c reduction, and require less insulin after initiation of insulin pump therapy by a Diabetes Education Specialist pharmacist. Pharmacists involved in primary care for underserved individuals can expand

patient access to diabetes technology and education, leading to the improvement of patient outcomes.