

Quality Improvement Initiative to Increase Glucagon Prescribing Rates in Adults with Type 1 Diabetes Through a Clinical Workflow Intervention

Authors: Jaspreet Batth, Filip Jovanovic, Angela Frankosky, Douglas Zech, Lynn Burmeister, Tasma Harindhanavudhi, Jacob Kohlenberg

Background: Hypoglycemia in individuals with type 1 diabetes (T1D) is a major cause of morbidity and mortality, particularly in those with impaired hypoglycemia awareness. Approximately 4% of individuals with T1D are hospitalized annually due to severe hypoglycemia. Fortunately, glucagon, a life-saving medication that counteracts severe hypoglycemia, is available for at-home administration by individuals with T1D and their families. The American Diabetes Association Standards of Care state that glucagon should be prescribed for all individuals treated with insulin (Grade A Recommendation). However, within the entire M Health Fairview system, only 44% of adults (2,369 of 5,372 people) with T1D were prescribed glucagon between September 1, 2022, and August 31, 2023. Objective: To increase the percentage of adults with T1D with an active glucagon prescription at the M Health Fairview Maple Grove Diabetes and Endocrinology Clinic from a baseline of 65% to 80%. Methods: As part of a Plan-Do-Study-Act (PDSA) cycle, a fourweek intervention (October 7, 2024 to November 3, 2024) was implemented. During outpatient adult Endocrinology appointments at the M Health Fairview Maple Grove Diabetes and Endocrinology Clinic, medical assistants flagged the absence of a glucagon prescription during the medication reconciliation process. This served as a prompt for providers to discuss and offer a glucagon prescription during the patient visit. We manually reviewed the electronic health record to assess glucagon prescription rates four weeks before and after the intervention. P- values for group comparisons were derived using a two-proportion z-test. Results: The proportion of visits resulting in an active glucagon prescription increased from 65% (22 of 32 visits) pre-intervention to 85% (54 of 64 visits) post-intervention ($p = 0.03$). Conclusion: Our clinical workflow intervention significantly increased glucagon prescribing rates in adults with T1D at the M Health Fairview Maple Grove Diabetes and Endocrinology Clinic. As a next step, we are developing an electronic health record-based clinical decision support tool that will prompt Primary Care Providers and Endocrinologists to prescribe glucagon to adults with T1D who do not have an active prescription.