Significant Reduction in Hypoglycemia Rates

ASSESSING THE IMPACT OF ENDOTOOL IV ON WORKFLOW AND PATIENT OUTCOMES AT UPMC CENTRAL PENNSYLVANIA

Case Study

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THE CUSTOMER

UPMC Central Pennsylvania, a prominent healthcare institution, includes seven acute care hospitals, providing a total of 1,160 licensed beds.

In addition, UPMC operates over 160 outpatient clinics and ancillary facilities. With a team of more than 2,900 physicians and allied health professionals, as well as approximately 11,000 dedicated employees, UPMC serves as a vital healthcare hub in central Pennsylvania.



Challenge

UPMC Central Pennsylvania prioritized improving the care of hospitalized patients with diabetes for several years. The increasing complexity of care, along with workforce challenges, was further compounded by the COVID pandemic.

To address these issues, UPMC Central Pennsylvania, which is part of the larger UPMC system, implemented EndoTool IV insulin dosing software in July 2022.

Solution

UPMC Central Pennsylvania performed a three-month comparison before and after the implementation of EndoTool IV at one hospital.

The analysis focused on patients treated for hyperglycemia and Diabetic Ketoacidosis, excluding COVID patients due to their smaller representation in the patient population after EndoTool IV implementation.

Outcomes

Significant Findings

1. **Significant Reduction in Hypoglycemia Rates**
   Hypoglycemia rate (<70 mg/dl) decreased from 1.9% to 0.53% (72% decline) after EndoTool IV implementation.
2. **Reduced Time to Therapeutic Target**
   Time to reach desired glucose goal range decreased from 14.5 hours to 4.7 hours.
3. **Decreased Frequency of Blood Glucose Measurements**
   22% decrease in blood glucose measurementswhile on an insulin infusion.

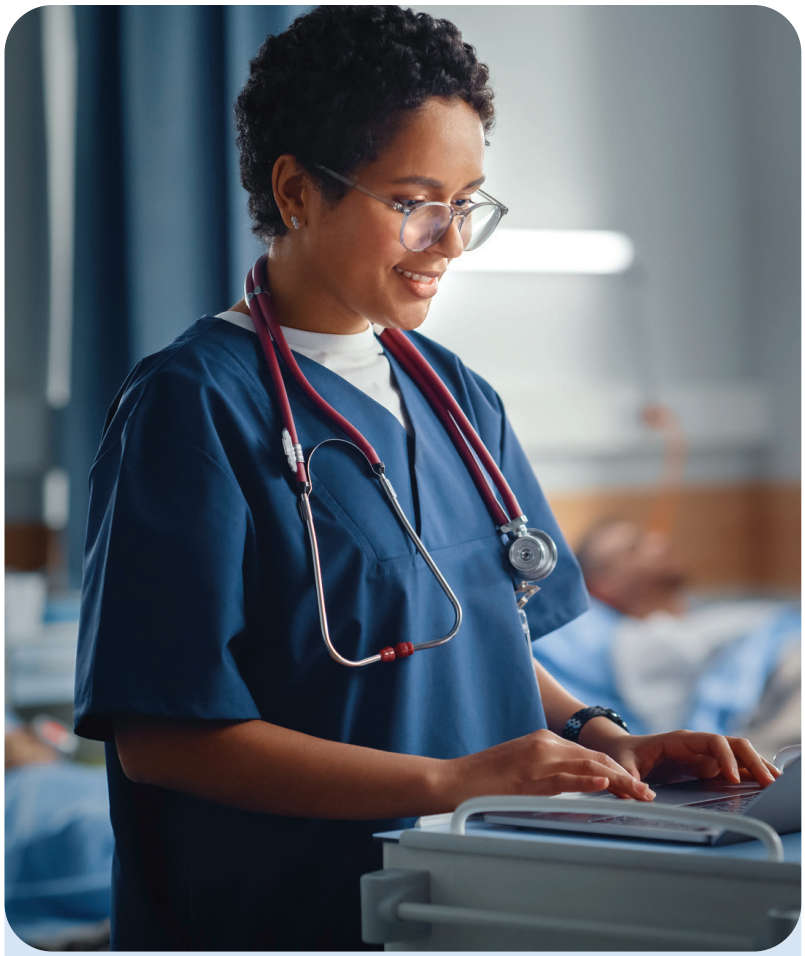
For Patients with Diabetic Ketoacidosis (DKA)

- Time on insulin infusion was reduced by 25%.
- Hypoglycemia rate (<70 mg/dl) decreased from 4.67% to 0.35% (92% reduction).
- No episodes of severe hypoglycemia (<40 mg/dl) after EndoTool IV implementation (previously 0.40%).
- Length of stay in hospital reduced from 7.3 days to 4.5 days.
- No episodes of severe hypoglycemia and only 14 instances of blood glucose <70 mg/dl.

Overall Implementation Results

- 2,862 patients were treated and 74,000 blood glucose readings were obtained.
- Hypoglycemia rate remained low at 0.45%.
- Severe hypoglycemia rate was negligible at 0.008% (only six episodes).

One of the new electronic quality care measures that hospitals can report to CMS is the rate of hypoglycemia less than 40. There is little doubt that these results will have a positive impact on this publicly reported quality measure.



Summary

The findings at UPMC, regarding workflow improvements and patient outcomes, are consistent with those observed in other hospitals using EndoTool IV. Unlike some hospitals, UPMC had an extensive pre-implementation database, enabling a comprehensive analysis of improved outcomes with EndoTool IV.

In summary, this study adds to the existing evidence that EndoTool IV provides safe and effective glucose control for patients with hyperglycemia and DKA.

It suggests some advantages, including:

- quicker achievement of target glucose levels,
- reduced insulin infusion time, and
- fewer blood glucose measurements.

The study further demonstrates that EndoTool IV is reliable in supporting hospitals in improving their rates of hypoglycemia.

Experience the future of care with EndoTool's patient-specific insulin dosing.



Transforming diabetes across the full continuum of care

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ABOUT GLOOKO

Glooko is a global portfolio of companies advancing intelligent connected diabetes and glycemic care across the care continuum. Through its offerings, Glooko is the only organization delivering integrated support from hospital to home. Together, these capabilities empower patients, healthcare providers, and health systems with data-driven tools that improve outcomes, simplify workflows, and scale care across inpatient and outpatient care settings.

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EndoTool is developed and marketed by Monarch Medical Technologies, a Glooko Company. EndoTool is an FDA-cleared Class II medical device indicated for inpatient use as described in its Instructions for Use. Glooko's diabetes management platform and EndoTool are currently independent solutions. Patient-specific refers to EndoTool's ability to use available patient information within the hospital's electronic medical record to provide individualized insulin dosing recommendations. Recommendations are intended to assist, not replace, clinical judgment. All treatment decisions remain the responsibility of the licensed healthcare provider.

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