



Improved Mortality, Length of Stay, and Cost of Care in DKA With the Use of a Computerized Insulin Dosing Algorithm

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INTRODUCTION

Global health data has shown a **55% increase in hospitalizations** for DKA and HHS over the past decade. At Corewell Health West, MI there has been a **20% increase in admissions** related to DKA and HHS in recent years.

AIM

This study evaluates whether a **computerized insulin dosing application** (EndoTool™) can **positively impact** patient outcomes.

METHOD

This retrospective analysis evaluated outcomes for patients treated for DKA at **Corewell Health West** between **January 1, 2023, and June 30, 2024**. The study focused on a cohort in which all patients were managed using **EndoTool IV insulin dosing software**. Outcomes measured included:

- Length of stay (LOS),
- In-hospital mortality
- Readmission rates, and
- Direct cost of care

These results were compared against risk-adjusted expected outcomes from the Vizient Clinical Data Base, which aggregates data from 115 academic medical centers nationwide. This comparison allowed for benchmarking Corewell's outcomes against national peers.

RESULTS

Outcome	Corewell (Actual)	Expected (Comparison)	Index / Impact
Length of Stay	5.15 days	5.82 days	514 days saved
Mortality	2.3 %	3.2 %	6 fewer deaths
Direct cost	\$8,125	\$9,329	\$912,298 saved
Severe Hypoglycemia	0.006 %	Not measured	Extremely low risk
ICU Utilization	85 %	49 %	Higher acuity, better outcomes
Readmission Rate	14.43 %	15.04 %	On par with national average

CONCLUSIONS

The use of **EndoTool** insulin dosing software at Corewell Health West:

- ☐ **Reduced Length of Stay, Mortality, and Cost of Care**
- ☐ Maintained **high safety standards** with extremely low hypoglycemia rates
- ☐ Proved effective **even with higher ICU utilization**, showing its robustness in critical care

ACKNOWLEDGEMENTS

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