

# Achieving Glycemic Control in the Cardiac Surgery Intensive Care Unit Utilizing an Electronic Glucose Management System

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*Presented by*

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## Our Paper Protocol Challenges

- Linear approach to patient management resulting in:
  - High doses of insulin to achieve BG goal range
  - Prolonged time to glucose control
  - Roller coaster BG control
- Ineffective in hyperglycemia management
- Ineffective in preventing hypoglycemia
- No incremental dosing

## Paper vs Endotool

### **Paper Protocol**

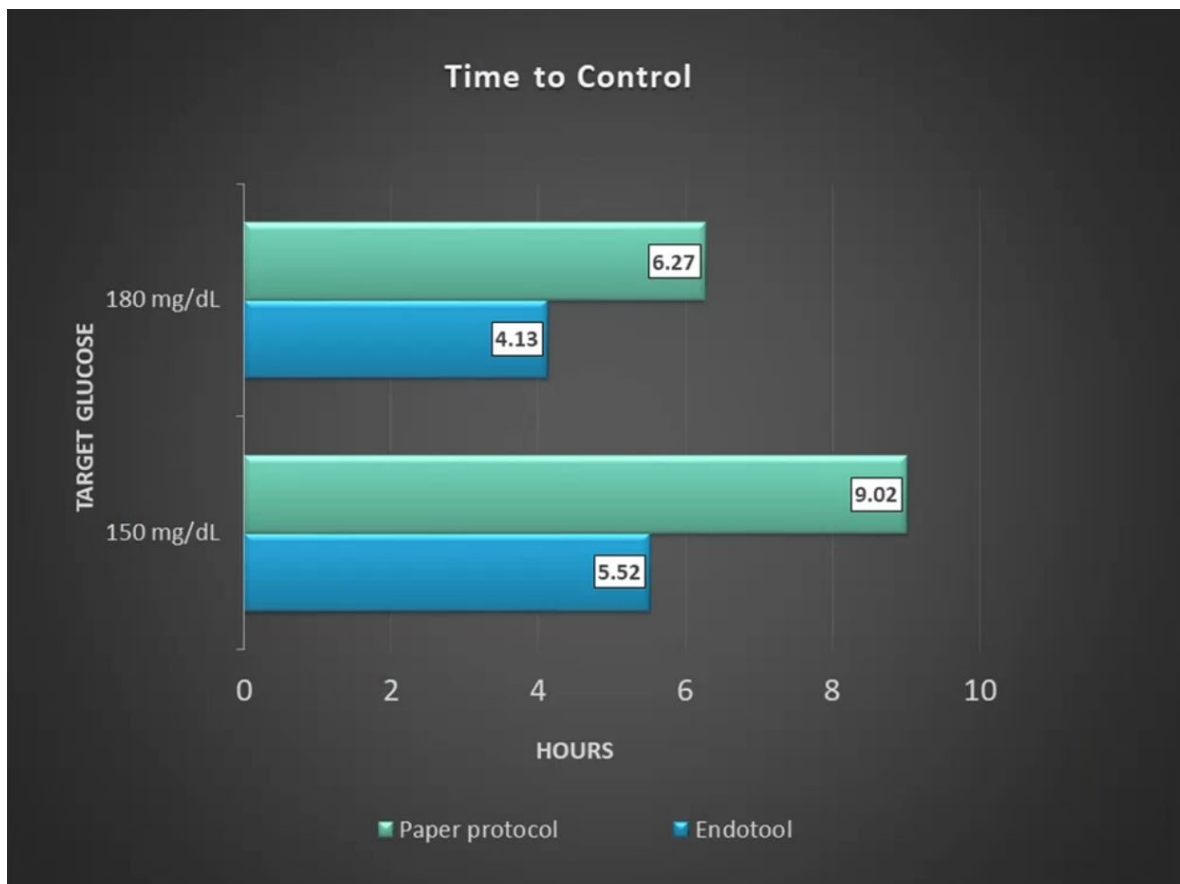
- Data Analysis Time Frame: **1/1/2011-9/29/2013**
  - **33** months
  - **698** patient visits
  - **110,174** readings

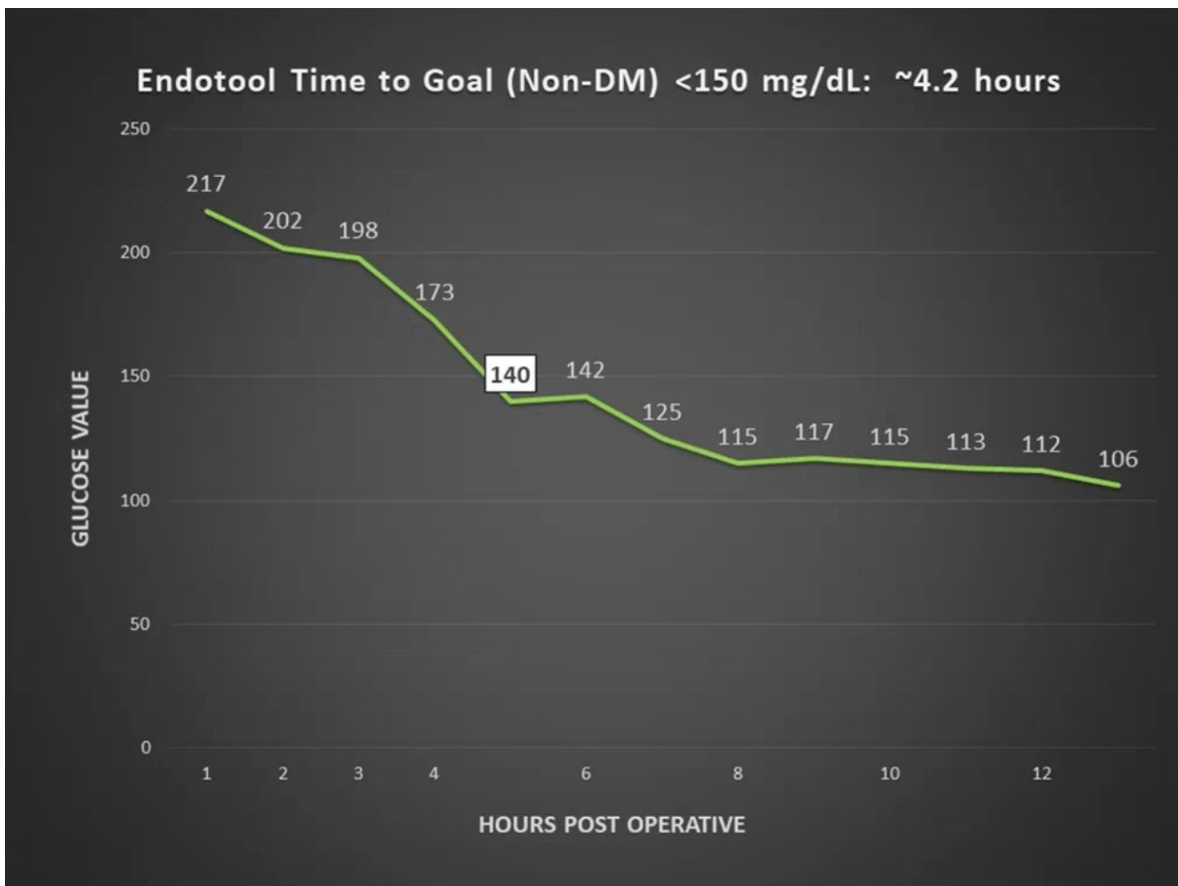
### **Endotool**

- Data Analysis Time Frame: **9/30/2013-12/9/2016**
  - **38** months
  - **2,169** patient visits
  - **72,451** readings

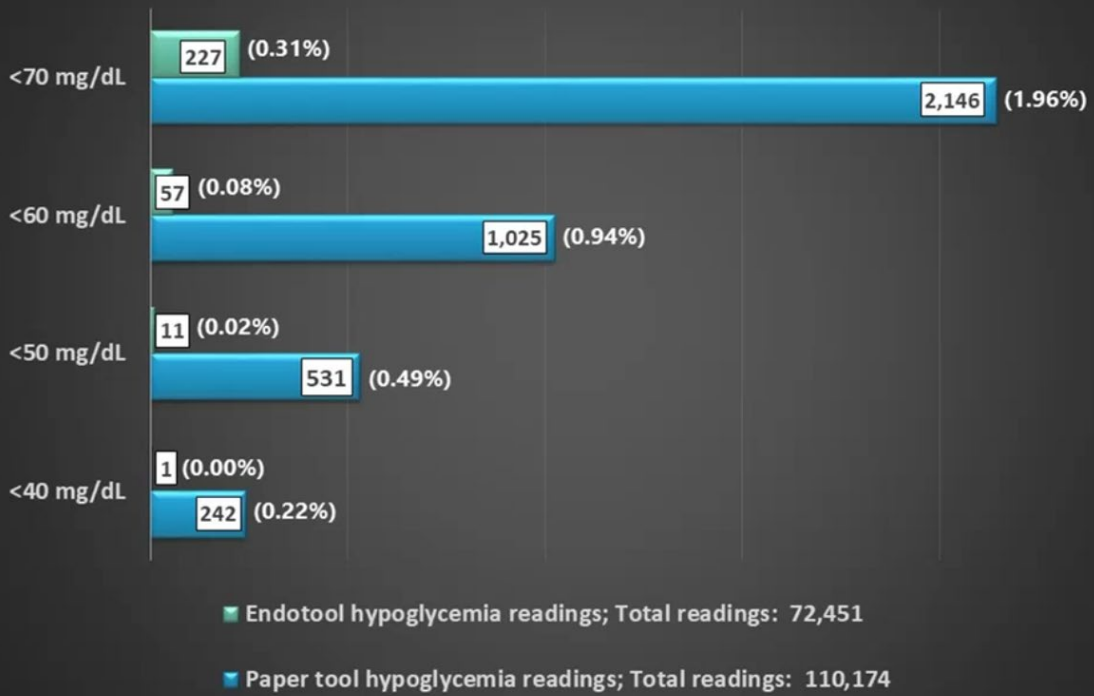
## Implementing an EGMS at the unit level

- Location: CSICU
- Number of patient beds: 14
- Number of staff: ~65
- Which patients:
  - All patients on Insulin infusion:
    1. Post op cardiac surgery patients (initiated in OR or pre-operatively) x 48 hours minimum post op.
    2. All thoracic, vascular, ECMO (non-surgical) and Esophagectomy patients with 2 consecutive BG > 180 mg/dL.

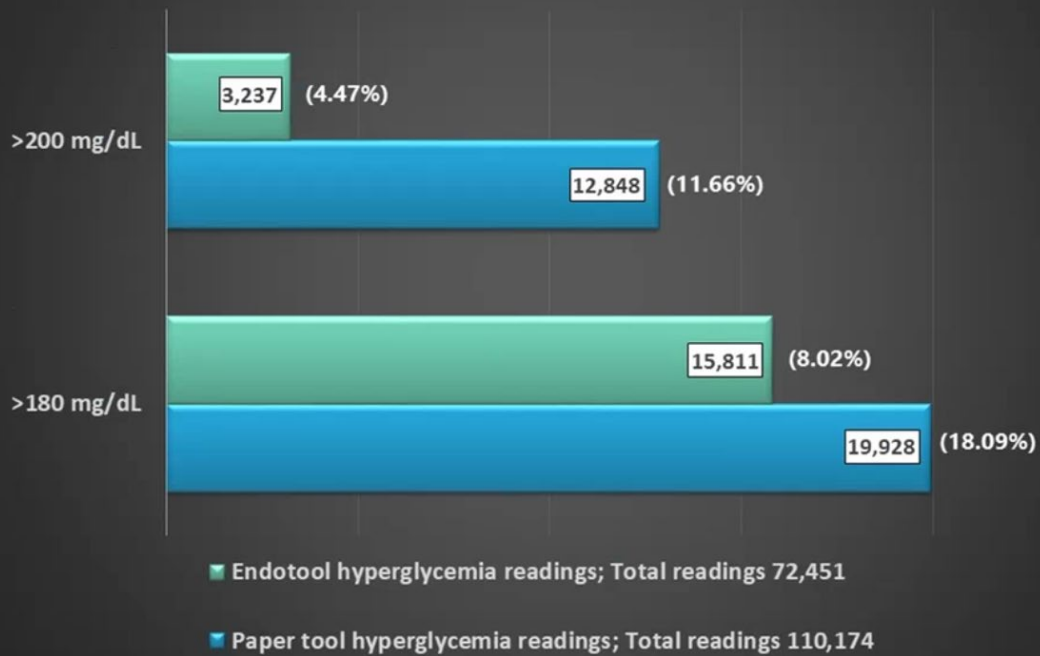




### Hypoglycemia: Paper vs Endotool



### Hyperglycemia: Paper vs Endotool



### Average Glucose with Variability

