

# SEPSIS WATCH: USING AI TO COMBAT SEPSIS

A Case Study from the Duke Institute for Health Innovation  
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## THE PROBLEM



- **1 in 3** patients who die in a hospital have Sepsis
- **\$27B** in hospital costs each year are attributable to Sepsis Care
- The median length of stay is **10 days**
- The average cost per case for hospital-associated Sepsis is **\$70K**

## THE SOLUTION: SEPSIS WATCH

### The Steps Taken:



- Define Adult Sepsis
- Create machine learning model to predict Sepsis quickly and accurately
- Design web application to show real-time model results and track treatment

## BEST PRACTICES

### Recommended Actions:



- Create a Rapid Response Team Workflow
- Create an Implementation Timeline
- Create a Data Pipeline
- Create a Model Fact Sheet

## THE RESULTS

### Sepsis Watch Features:



- Sepsis is identified every five minutes and Sepsis risk is computed every hour
- The system normalizes data, groups clinically related concepts into meaningful features, and ensures valid inputs to deep learning model