Multimodal Platform for Continuous Monitoring and Decision Support for Postoperative Cardiac Patients

AWARD AMOUNT: $1.4M

THE TEAM

PRINCIPAL INVESTIGATORS
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Computational Medicine and Bioinformatics
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THE PROBLEM

Caregivers in surgical/trauma ICUs are inundated with data from patient monitors—approximately 10,000 data points per second—making it challenging to predict recovery trends and potential complications in both clinical and combat settings.

Current monitoring mechanisms don’t provide actionable information fast enough for early intervention

Sensory overload can lead to poor decision-making

Post-surgical complications are very common in ICU

Clinical decision-making tool for post-operative patients with cardiovascular injuries and illnesses

This real-time clinical decision support platform analyzes patient data to predict the trajectory of patient recovery after major surgeries involving the cardiovascular system.

- Provides specific treatment recommendations to avoid/alleviate serious complications
- Supports personalized/precision medicine
- Application in multiple types of surgery/injury

THE SOLUTION

The team will train, test, and validate novel computational algorithms that analyze patient data collected from MCIRCC’s Big Data Platform (ECG, blood pressure, and pulse oximetry), as well as other electronic medical record data (medications, demographics, etc.).

THE TECHNOLOGY