**An Evidence Based Approach to Diagnosing Infections in Critically Injured Patients: Using Modern Medical Informatics to Change the Current "Fever Workup" Paradigm**


## Abstract

Surgical infections are responsible for the majority of morbidity and mortality in critically injured patients. The current practice of diagnosing infections in traumatically injured patients is difficult, and based on the presence of fever and leukocytosis. However, our hypothesis is that the most common infectious complications, such as urinary tract infections (UTIs) and blood stream infections (BSIs), are not associated with fever and leukocytosis during the first two weeks post-traumatic injury. To address these problems, we first plan to evaluate our current practice of diagnosing UTIs and BSIs in critically injured patients. Over the next two years, we plan to implement a prospective database, the Surgical Intensive Care – Infections Registry (SIC-IR), to evaluate and track all infectious complications in the surgical and trauma intensive care unit (STICU). SIC-IR will be a resource utilized to assist with both daily patient care and with research related to infectious complications. After SIC-IR is implemented and the validation trial is complete, we will use data from SIC-IR to improve the efficiency and the validity of the "fever workup". The goal is to minimize unnecessary testing and preserve or improve patient outcomes by applying a highly discriminative strategy to predict infectious complications after traumatic injury.