PROJECT TITLE: Risk & Predictive Modeling for Improving and Advancing Quality of Care Delivery

PROPOSAL NUMBER: 12-06191.UAB

PIs: Borkowski, Lee

RESEARCH THEME: Analytics & Innovative Technologies

BUDGET: $50,000

UNIVERSITIES: GIT, UAB

PROJECT YEAR: 1

PROJECT DESCRIPTION:
Risk and predictive modeling can assist in early detection, assess and monitor disease progression, assess risk of patients in different disease settings and populations among participatory IAB organizations. Such models can help early diagnosis and intervention, cost-effective and timely treatment, and critical intervention to prevent avoidable death. It will facilitate better clinical decision and care delivery. This study will build upon foundations previously addressed in projects by the CHOT university sites.

HOW THIS IS DIFFERENT THAN RELATED RESEARCH:
Many attempts have been carried out to analyze risks. Not much has been performed by a diverse team with different expertise mining over a diverse set of data from multiple sites and multiple diseases. Lack of understanding on how different models behave under different data source. Lack of return on investment analysis to support actual implementation. Opportunity for cross-disciplinary fertilization.

COLLABORATIVE PLAN:
Working with IAB members, each university will focus on specific types of diseases (some examples include chronic diseases, hospital acquired conditions and sepsis, and Parkinson’s). Respective data will be collected. Predictive analytic modeling will be designed to uncover risk factors that can predict disease/health conditions to facilitate clinical decision making. Comparisons will be performed against existing clinical practice to gauze potential gain and implementation viability.

EXPECTED MILESTONES:
Understand the current state-of-the-art practice. Design of analytic models best-suited for risk predictive for specific diseases and conditions. Understand implementation potential and return on investment.

BENEFITS TO INDUSTRY:
(1) Facilitate early diagnosis and intervention
(2) Deliver cost-effective and timely treatment
(3) Perform critical and timely intervention to prevent avoidable death
(4) Facilitate better clinical decision and care delivery

EXPECTED COLLABORATIVE DELIVERABLES:
(1) Current state-of-the-art practice document
(2) Analytic models designed for risk predictive for specific types of diseases
(3) Implementation potential and return on investment analysis