



MACRO/POLICY CLUSTER

Multi-Criteria Evidence-Based Healthcare Delivery

PROJECT 10-05161.GIT

Value Proposition:

- Develop a decision support tool comparing treatment options and predicting outcome
- Construct a process map describing process/clinic/decision flow for prostate cancer and CKD patients
- Identify previously unobserved factors affecting optimal treatment

Description:

Evidence-based optimization of healthcare delivery is a concept centered around treatment design for patients. For many diseases, the optimal treatment varies significantly based on the patient's specific clinical situation. In addition, it is especially important to consider not just what treatment is optimal, but how and when it is delivered. In certain cases, it may be preferable not to treat the condition at all and adopt an active surveillance regimen. The decision process is further complicated by the fact that there are multiple stakeholders, each with their own objectives (e.g. patients vs. providers). Using machine learning techniques, electronic medical record (EMR) data, and systems process observations, a patient disease/clinical workflow and outcome prediction model will be developed. This will help clinicians evaluate the potential efficacy of various treatment options and decide on the best treatment course for each individual patient.

How this is different than related research:

To date, the majority of machine learning research has focused on diagnosis and prognosis rather than treatment. Evidence in this study will be drawn from the wide range of EMR data. This data contains not just common clinical factors associated with diseases but also factors such as procedures performed, timing of treatment, and comorbid conditions. Observing patient-provider interactions offers an additional perspective on the decision process and the patient experience. By combining these two approaches, treatment modalities can be assessed through a comprehensive comparison of both the patients' medical conditions and their experiences with their healthcare providers.



Care Coordination
Institute



Northside
Anesthesiologists