
BENJAMIN KUMMER

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Required Skills:

Proficiency with healthcare data and machine learning approaches, NLP preferred but not required.

Preferred Team Communications:

TBD

Data Sources:

Intensive care and non-intensive care patient-level data (including clinical (physician and nursing) notes, medications administered, labs, vital signs, and radiology reports).

Other Items:

Project has timezone flexibility. Mentors and students will determine a good time for virtual meeting

PREDICTING DISPOSITION DESTINATION IN HOSPITALIZED STROKE PATIENTS

Patients hospitalized with acute stroke frequently require referrals to rehabilitation, some of which require few social work referrals and arrangements, whereas some require many that can significantly increase hospital length of stay. From the hospital's and stroke neurologist's perspective, there is therefore a need to identify which patients need which types of rehabilitation early on in their hospital course so as to remove bottlenecks to patient throughput.

PROJECT OBJECTIVES

In the first 24 hours of a stroke patient's admission (including time spent in the emergency department), accurately predict the likelihood of discharge to specific disposition destinations.

SUCCESSFUL PROJECT

Predictive model developed using machine learning from a number of healthcare data inputs in a population of patients with acute stroke.

Additional features:

- Predicts likelihood of discharge to the following categories:
 - home
 - home with outpatient therapy referral
 - home with home-health aide
 - acute inpatient rehabilitation
 - subacute rehabilitation (SAR)
 - Long-term acute care facility (LTAC)
 - acute-care hospital
 - long-term placement in skilled nursing facility (SNF)
 - against medical advice (AMA)
 - expired
 - Automatically incorporates EHR data as it becomes available
 - Assigns a graded score according to the likelihood of outcome.
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Intellectual Property: Students will own the IP from this project.