ALBERTA INNOVATES

Enabling Better Health through Artificial Intelligence (AI – Better Health)

Identifying Stroke Patients Eligible for Urgent Specialist Review Using Automated Image Analysis

PROJECT FAST FACTS

RECIPIENT: University of Calgary, Aravind Ganesh
PROJECT DURATION: 36 months
AWARD: $800,000
AWARD DATE: March 15, 2024

THE PROBLEM

Acute ischemic stroke is a medical emergency caused by a disruption of blood circulation in the brain, leading to neurological damage. Current treatments depend on swift patient intervention. Accurate, CT-imaging is a key tool in determining which patients are eligible for these treatments. However, it's easy for frontline physicians and radiologists to miss significant signals, further delaying treatment and worsening patient outcomes. Expanding treatment options for stroke present two major challenges:

1. Clinical triage: Quickly identifying patients requiring urgent care is difficult, especially in regions like Alberta with dispersed populations.
2. Quality monitoring/auditing: Assessing effective treatments in the healthcare system is difficult with current methods, which are too time-consuming and labor-intensive to be practical.

THE SOLUTION

StrokeSENS, an automated imaging analysis tool from Circle CVI, quickly finds patients needing urgent treatment while processing thousands of scans to find eligible candidates. An additional language processing tool developed by Dr. Ganesh's lab extracts and compares data from radiologist reports and AI interpretations to help simplify quality monitoring. This project will implement StrokeSENS in the Calgary Stroke Program to evaluate suspected stroke scans over one year and analyze Alberta scans over a two-year period to identify treatment-eligible cases and help further validate the tools. The project will link with stroke registries to assess the number of eligible patients receiving treatment. These efforts will help guide discussions with healthcare leadership and patients on integrating these tools into routine care and quality monitoring. This project aims to quantify gaps in stroke treatment and demonstrate the potential of AI solutions to improve stroke care for Albertans.

PROJECT OBJECTIVES

This project is working to achieve the following goals:

- **Quickly Identify Stroke Patients Who Need Treatment. Use StrokeSENS to identify stroke patients who need urgent care, especially in areas with few stroke specialists.**
- **Screen and Analyze Scans Quickly. Use StrokeSENS to review thousands of brain scans, helping health leaders understand how many patients need specific treatments and plan resources better.**
- **Test and Improve with Feedback. Implement StrokeSENS in real healthcare settings to test its effectiveness and gather feedback from doctors and patients to make it better.**

UNIVERSITY OF CALGARY

circle CARDIOVASCULAR IMAGING

CALGARY STROKE PROGRAM

Contact Aravind Ganesh

ABOUT THE ENABLING BETTER HEALTH THROUGH ARTIFICIAL INTELLIGENCE (AI-BETTER HEALTH) PROGRAM

AI-Better Health bridges the gap between the promise and the reality of better health for Albertans. If you'd like to learn more, please check out the Alberta Innovates website.

Learn how

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