Improving Access to Stroke Care through Telemedicine

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What is a Stroke?

Ischemic Stroke
Occurs when oxygen-rich blood flow to the brain is restricted by a blood clot or other blockage

Blood clot in the middle cerebral artery

Blockage in the internal carotid artery
What does stroke do?
What is the societal impact?

- 800,000 strokes/year in U.S.
- 15,000 in Wisconsin
- #4 cause of death
- Leading cause of disability
- Huge monetary and non-monetary costs
How is stroke treated?

First-Line:
- Tissue plasminogen activator (tPA)

Second-Line:
- Endovascular procedures
Population Density

tPA Use

- Never use tPA: 64%
- Average tPA use: 2.4%

The Prevailing Model:
The New Model:
UW Telestroke Program Volume
Clinical Evidence

• **Telestroke systems are valid for:**
  
  – Neurological assessment
  
  – Neuroimaging interpretation

Clinical Evidence

• Telestroke systems are superior to telephone consultation for tPA decision-making:
  – Correct decision via telephone: 82%
  – Correct decision via video: 98%

Clinical Evidence

• Acute stroke treatment via telestroke results in clinical outcomes that are:
  
  – Similar to treatment at tertiary care centers
  
  – Better than treatment at non-telestroke community hospitals

Cost-Effectiveness
Societal Perspective

• 90 day horizon: $108,363 / QALY

• Lifetime horizon: $2,449 / QALY

WI Policy Question

• Mandate that EMS route stroke patients to stroke-capable hospitals?

http://www.cdc.gov/dhdsp/pubs/docs/Primary_Stroke_Center_Report.pdf
Followup

• My email: sattin@neurology.wisc.edu

• PDF of selected slides: https://uwmadison.box.com/telestroke