Burden of Stroke & Thrombolytics

- A stroke occurs every 40 seconds in the U.S.
- Every 3.3 minutes someone dies from a stroke.
- Among Survivors 15-30% will be permanently disabled.
- The cost of stroke care is estimated to reach over $2T by 2050.
- Intravenous tissue plasminogen activator (tPA) was approved by the FDA in 1996 for use within 3 hours of symptoms onset.
- In 2008 new data supported the use of tPA up to 4.5 hours in specific patients
- Despite wider time window only 2-3% of ischemic stroke patients are receiving tPA.

Challenges

- Fear of complications
- Delay in hospital presentation
- Delay in transport in rural areas
- Lack of stroke protocols in some institutions
- Shortage of stroke experts
  - In U.S., 4 neurologists per 100,000 persons
  - Responsible for ~800,000 acute stroke cases per year
  - Many have discontinued their hospital privileges & not available for call coverage
- Stroke experts concentrated in metropolitan areas
- Geographic Limitations

Schwamm LH. Stroke.2009;40:2635-60
Bradley WG. Neurology. 2000;54(4):787
Telestroke Collaborative
Ohio State’s Wexner Medical Center

- Initiated by an Ohio Department of Health grant funded by the Centers for Disease Control and Prevention
- Goals:
  - Increase access to advanced stroke care in underserved regions of Ohio
  - Improve EMS response and recognition of stroke signs and symptoms
  - Enhance quality and efficiency within the health care system – including meeting established targets for onset to treatment time
- Live May 2011

What is telestroke?
Hub & Spoke Model

3 Spokes Live May 2011
18 Spokes Live by Fall 2012

Source: REACH Health Program
Improving Health & Quality Outcomes

- Creation of Stroke Alerts – new process for 88% of spokes
- Assisted in Establishing Interdepartmental Workflows
- Shared & aligned protocols based on evidence based practice guidelines
- At least 80% of spoke ED nurses trained in NIHSS prior to go live.
- At least 75% of the spokes were not in the practice of giving tPA to stroke patients. Since go live 92% have given tPA at least once.

Innovation & Funding Partners
Ohio State’s Wexner Medical Center

- Wexner Medical Center is 1st academic institution in Ohio to establish telestroke network
- Expands past those hospitals owned & operated; and, funded by initial grant
- Provides immediate, real-time consultation to board certified vascular neurologists
- Started by grant funding with ODH & CDC; OSUWMC continued investment and furthered funding commitment

Increasing Health Care Access
Ohio State’s Wexner Medical Center

- 83% participants agreed there was an increase in their community’s access to advanced stroke care
- 83% of participants agreed their community’s EMS response time & recognition of signs & symptoms improved
- 100% of participants agreed telestroke improved their hospital’s ability to meet established targets for stroke onset to treatment time
Quality & Efficiency

- 100% of telestroke patients were evaluated by a vascular neurologist
- 18% of telestroke patients received tPA vs national rate of 2-3%
- 47% of telestroke patients remained at local hospital
- 53% of telestroke patients transferred

- Keep costs local and within each spoke’s community.
- Less money spent towards ground/flight transport.
- Prevent unnecessary transfers.

Policy Implications

- Telemedicine is/can be efficient & effective care for certain services.
- Payment for telemedicine has not kept pace with technology – including practice and scope.
- Consider who is an ‘eligible’ provider to render services via telemedicine.
- Telemedicine can allow providers to be good stewards of health care resources
- What is valuable to providers related to reimbursement? Flexibility