InTouch Telehealth
Webinar Series
James J. Conners, MD, MS
Joshua Bock, BS
Rush University Medical Center
James J. Conners, MD, MS
Associate Professor, Department of Neurological Sciences
Section Head, Cerebrovascular Disease
Medical Director, Comprehensive Stroke Center, TeleStroke and Mobile Stroke Program
Rush University Medical Center

Joshua Bock, BS
Director, Neuroemergency Response Programs
Rush University Medical Center
The Rush TeleStroke Network: Education, Feedback, and Reinforcing Value for Your Network Sites

James J. Conners, MD, MS
Associate Professor, Department of Neurological Sciences
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Rush University Medical Center

Joshua Bock, BS
Director, Neuroemergency Programs
Rush University Medical Center

there are no actual or potential conflict of interest in regards to this presentation
Need for TeleStroke?

• Acute ischemic stroke is common and costly
• Treatments are time dependent
• Access to stroke specialists is limited leading to decreased acute treatment
Public Health Burden

• 1 stroke every 40 seconds in the US
  – 780,000 strokes annually, of which 250,000 are recurrent strokes
  – 150,000 TIA per year
• 1 of 6 Americans will be affected in a lifetime
• Every 3 minutes someone dies of a stroke
  – 167,000 per year
  – 5th leading cause of death
• Leading cause of major disability in adults
• About 4.8 million stroke survivors
• Economic burden: $73 billion/year in US
Per minute of ischemia, the following are destroyed:

1.9 million neurons

14 billion synapses

In an average stroke after 10 hours:

A 50 y/o man ages 30 years cognitively

Established Stroke Therapies

- **Tissue Plasminogen Activator (IV tPA)**
  - “clot busting” infusion, needs to be administered within 3-4.5 hours from symptom onset to be effective
  - Treatment results in 60-70% increased odds of favorable 3-month outcomes compared with placebo (NINDS 1995)

- **Endovascular Thrombectomy**
  - For select patients with large vessel occlusion within 6 hours from onset
  - IV tPA monotherapy recanalizes up to 40% but combined with ET recanalization rates up to 80% which leads to improved outcomes
  - 3-6% risk of symptomatic hemorrhage
    - Need to be sure of the diagnosis and optimal treatment options
Stroke Specialists

• 40% of Emergency physicians reluctant to use tPA (want a Neurologist)

• Only 4.0 neurologists per 100,000 persons in the US, caring for more than 700,000 strokes each year

• In 2006 only 32 Fellows in approved Vascular Neurology Fellowships in U.S., 107 in 2014 but numbers still low...
  – Compare to 2300 cardiology fellows
• Only approximately 25% of stroke patients arrive within 3-hr window
  – Public knowledge of stroke symptoms, risk factors, and available treatments is poor (Pancioli AM 1998)
  – Less than 50% use EMS (Reeves M 2006)
• Only 25% of eligible patients receive tPA (Barber P 2001)
  – Physician biases, inexperience, and hospital delays
• Lack of necessary infrastructure to treat acute stroke is widespread (Goldstein LB 2000)
  – No stroke protocols, no rapid identification of acute stroke patients
• Estimated that 50% of stroke patients would receive IV tPA, if
  – 1. everyone with a stroke called 911 at the onset of symptoms...
  – 2. and they were taken to a hospital prepared to treat them...

• Currently only about 5% of ischemic stroke patients are treated with IV tPA (Reeves M 2006; Kleindorfer D 2008)
• Disease state that is common and costly with high rates of morbidity and mortality
• Effective treatments available if done emergently
• Access to stroke specialists and facilities ready to treat stroke patients is limited leading to decreased utilization of tPA and other acute treatments
AHA/ASA 2009 policy statement recommended the establishment of telemedicine within stroke systems of care to address current barriers to improved stroke care delivery in the US.
• Telestroke should be employed when 24/7 coverage is not locally available or where access to stroke expertise cannot occur in a timely manner

• Telestroke should be employed within the context of a stroke system of care framework

• Should be conducted using equipment that simulates an on-site consult

• Ensure adequate visualization of the patient, environment, provide an interactive consult with patient, remote care providers, family, and consultant, similar to on-site consult
Recommendations

- Technology should adhere to industry standards
- **Telestroke providers should have an appropriate level of expertise in stroke care** and experience with telemedicine technology
- Organizations requesting telestroke consultations should be **able to provide the elements of emergency stroke care as defined by primary stroke center recommendations**
- Providers and recipients of telestroke services should follow accepted guidelines in providing acute stroke care
Status of Telestroke in US

- 56 programs in 27 states
- Clinical needs met by telestroke were ED consultation (100%), patient triage (83%) and inpatient teleconsultation (46%).
- Mean number of spoke sites per hub increased from 2007 to 2009 (3.78 versus 7.6)
- >80% spoke sites rural or small hospitals

Silva et al. Stroke 2012;43:2078-2085
Rush Telestroke Network
TeleStroke Development

Rush is a not-for-profit health care, education and research enterprise comprising Rush University Medical Center, Rush University, Rush Oak Park Hospital and Rush Health.
11 Hospitals and RUMC (Comprehensive Stroke Center)
   - Hub and spoke model
   - 8 Primary Stroke Centers
3200+ consultations since March 2011
   - Average 65 consults/month
32% of stroke patients receive tPA
86% of patients remain in community
   - 60% of IV tPA cases, patient remains at originating site
5 Vascular Neurologists
Patient presents to the Network Hospital ER, stroke suspected. Stroke alert protocols are initiated.

Rush Vascular Neurologist provides a TeleStroke consultation as indicated within stroke protocols
- tPA recommended and administered if appropriate

Patient is treated at the most appropriate location based on clinical needs:
- Admitted
- Transferred to RUMC, or other facility
- Interventional Care
- Discharged home
Rush has been part of the Chicago landscape for more than 170 years

Rush includes:

- Rush University Medical Center – 679 staffed bed academic medical center
- Rush University Medical Group – 491 employed physicians
- Rush University – Health sciences university with over 2,450 students and $129 million in annual research expenditures
- Rush Oak Park Hospital – 128 staffed bed community hospital
- Rush-Copley Medical Center – 210 staffed bed community hospital
Rush is a not-for-profit health care, education and research enterprise comprising Rush University Medical Center, Rush University, Rush Oak Park Hospital and Rush Health...
Ensuring Success

- Dedicated team of stroke trained providers and admin support at hub
- Rapid assessments and treatment with support from spoke providers
- Mechanism for feedback - both ways
- Structure in place for quality assurance and improvement
  - Regular meetings between hub and spokes, shared best practices within the system
- Creation of a true system of care...
Regular Reports

- Monthly Data
  - Consults
  - Transfers
  - tPA
  - Spoke requests
- Stroke Committee Meetings
- Quarterly Letters
- Semi-annual Executive Summary
Transfer Feedback

08/08/2016

Example Medical Center
535 Aramore
Chicago, IL 60612

Dear Dr. Doctor:

Thank you for choosing the Rush Neurology Emergency Response Program. The Rush team is committed to improving patient care through relationships with referring physicians and hospitals. Immediate, direct access to a Rush Neurology physician ensures rapid patient assessment and, if necessary, coordinated transfer to Rush University Medical Center where advanced treatments are made easily available to your patients.

Please contact the 5-BRAIN Program, 312-942-BRAIN (2732), for 24/7 assistance.

Example transferred 7 (Example A: 2 & B: 5) patients to Rush University Medical Center.

May, 2016 Transfers

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic Stroke</td>
<td>3</td>
</tr>
<tr>
<td>Intracerebral Hemorrhage</td>
<td>1</td>
</tr>
<tr>
<td>Subdural Hemorrhage</td>
<td>1</td>
</tr>
<tr>
<td>Other (AVM, Trauma Mass)</td>
<td>2</td>
</tr>
<tr>
<td>Average ED Transfer Time</td>
<td>1:50/150</td>
</tr>
</tbody>
</table>

An aggregate summary report is endorsed for University Medical Center.

Thank you again for your referral and the highest level of care to all patients. Please refer information.

Sincerely,

Elida Reda RN, BSN, CRN RN
Rush University Medical Center

Rush Medical Transfer Coordinator
tel 312-942-8511
Elida.C.Reda@rush.edu

<table>
<thead>
<tr>
<th>Admit Date</th>
<th>Discharge Date</th>
<th>LOS</th>
<th>Diagnosis</th>
<th>Age</th>
<th>Gender</th>
<th>Treatment</th>
<th>Discharge Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/1/2016</td>
<td>5/12/2016</td>
<td>10</td>
<td>Brain Tumor</td>
<td>66</td>
<td>M</td>
<td>1/2 Craniotomy resection of brain tumor</td>
<td>Discharged to Home Health</td>
</tr>
<tr>
<td>5/9/2016</td>
<td>5/9/2016</td>
<td>2</td>
<td>Subdural Hemorrhage</td>
<td>50</td>
<td>F</td>
<td>Medical Management</td>
<td>Discharged to Home Health</td>
</tr>
<tr>
<td>5/16/2016</td>
<td>5/22/2016</td>
<td>6</td>
<td>Ischemic Stroke</td>
<td>91</td>
<td>F</td>
<td>IV-PA was administered at Example Admission NHSS: 15 Discharged NHSS: 10</td>
<td>Discharged to Acute rehab facility</td>
</tr>
<tr>
<td>5/17/2016</td>
<td>5/20/2016</td>
<td>5</td>
<td>Ischemic Stroke</td>
<td>74</td>
<td>M</td>
<td>IV-PA was administered at Example Admission NHSS: 19 Discharged NHSS: 5</td>
<td>Discharged to Home Health</td>
</tr>
<tr>
<td>5/25/2016</td>
<td>6/5/2016</td>
<td>9</td>
<td>Ischemic Stroke</td>
<td>67</td>
<td>M</td>
<td>IV-PA was administered at Example Admission NHSS: 19 Discharged NHSS: 5</td>
<td>Discharged to Home Health</td>
</tr>
<tr>
<td>5/30/2016</td>
<td>6/8/2016</td>
<td>5</td>
<td>Intracerebral Hemorrhage</td>
<td>70</td>
<td>F</td>
<td>Medical Management</td>
<td>Discharged to Skilled Nursing facility</td>
</tr>
</tbody>
</table>

**Looking to improve**

- Monthly
- All neuroscience transfers
  - Diagnosis summary
  - Treatment
  - Discharge disposition
- Clinical Leaders
  - ED Director, Stroke Coor
- Cleared by RUMC Risk/Compliance
November 10, 2016

Example Medical Center
123 Anywhere
Chicago, IL 60612

Dear Example Medical Staff,

Thank you for being a member of the Rush TeleStroke Network. I am pleased to announce that the Network has provided 3,021 telestroke consultations since inception in March 2011. In that time 32% of stroke patients have received tPA. To put this in perspective, the overall national tPA administration rate is 3.1-3.2% (Recombinant Tissue-Type Plasminogen Activator Use for Ischemic Stroke in the United States, Adusumilli et al, Stroke, July 2011).

Below is the Example utilization data for July 1, 2016—September 30, 2016 and the TeleStroke Network utilization data over the same time period.

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Example</th>
<th>Rush TeleStroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16-9/15</td>
<td>7/16-9/15</td>
<td></td>
</tr>
<tr>
<td>TeleStroke Consults</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>Average Consult Time</td>
<td>0:10:09</td>
<td>0:09:41</td>
</tr>
<tr>
<td>Average Age</td>
<td>61</td>
<td>64</td>
</tr>
<tr>
<td>NIHSS Avg</td>
<td>7.0</td>
<td>7.4</td>
</tr>
<tr>
<td>tPA Rate</td>
<td>21%</td>
<td>30%</td>
</tr>
<tr>
<td>tPA Given</td>
<td>4</td>
<td>49</td>
</tr>
<tr>
<td>tPA Advised</td>
<td>4</td>
<td>55</td>
</tr>
<tr>
<td>Advised vs. Given tPA Rate</td>
<td>100%</td>
<td>87%</td>
</tr>
<tr>
<td>Average tPA Advised - Given Time (min)</td>
<td>0:34:40</td>
<td>0:25:06</td>
</tr>
<tr>
<td>Post-tPA Transfer</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Post-tPA Transfer Rate</td>
<td>50%</td>
<td>48%</td>
</tr>
<tr>
<td>Transfer Rate</td>
<td>11%</td>
<td>17%</td>
</tr>
<tr>
<td>Stroke Rate</td>
<td>19</td>
<td>161</td>
</tr>
<tr>
<td>Non Stroke Consults</td>
<td>8</td>
<td>55</td>
</tr>
<tr>
<td>% Consults - Stroke Diagnosis</td>
<td>70%</td>
<td>71%</td>
</tr>
</tbody>
</table>

Thank you again for participating in the Rush TeleStroke Network. Rush is excited to be partnering with you to provide the highest level of patient care. Please do not hesitate to contact me if I may provide further information.

James J. Conners MD, MS
Assistant Professor, Department of Neurological Sciences
Head, Cerebrovascular Disease
Medical Director, Stroke Program
Rush University Medical Center
Chicago, IL 60612

James J. Conners, MD, MS
Section Head, Cerebrovascular Disease
Medical Director, Rush Comprehensive Stroke Program & Rush TeleStroke Network

RUSH

Quarterly

Clinical Leaders
   - ED Director, ED Manager, Stroke Coor, Stroke Director

Primary Admin Contact
   - Service Line Dir, CQO

Data comparison with network
   - Consult volume
   - tPA rate
   - Transfers
Quarterly Letter

Rush TeleStroke Network
Rush University Medical Center
Professional Building
1720 W. Harrison St.
Suite 1121
Chicago, IL 60612

Tel: 312-642-2360
Fax: 312-603-2238
www.rush.edu/telestroke

James J. Connors, MD, MS
Section Head, Carbohydrate Metabolism
Medical Director,
Rush Comprehensive Stroke Program J. Rush
TeleStroke Network

• Diagnosis Summary

• Announcements
  – Certifications
  – Upcoming events/meetings

• Clinical Trials
  – Neuroscience

The graph below details the primary consult diagnosis for the 27 TeleStroke patients.

Example Diagnosis Summary

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic Stroke</td>
<td>2</td>
</tr>
<tr>
<td>Unmacking</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td>TIA</td>
<td>17</td>
</tr>
<tr>
<td>Encephalopathy/Confusion</td>
<td>1</td>
</tr>
</tbody>
</table>

Rush TeleStroke Network Announcements

Earning the “Gold Seal of Approval”, the Rush Stroke Program has been certified as a Comprehensive Stroke Center by The Joint Commission and the American Heart Association/American Stroke Association. This certification recognizes the significant differences in resources, staff, and training that are necessary for the treatment of complex stroke cases.

Below is a list of Neuroscience clinical studies currently enrolling patients at Rush University Medical Center.

DAWN – Dr. Michael Chen (PI)
(Treatment and Medical Management Versus Medical Management Alone in Wake Up and Late Presenting Strokes)

POINT – Dr. James Connors
(Platelet Oriented Inhibition in New TIA and Minor Ischemic Stroke Trial)

PRISMS – Dr. Sarah Song
(Efficacy/safety of aspirin in patients with mild stroke, rapidly improving symptoms & minor neurological deficits)

MYRIAD – Dr. Sarah Song
(Mechanisms of Early Recurrence in Intracerebral Atherosclerotic Disease)

RESPECT ESUS – Dr. James Connors
(Doxycycline secondary stroke prevention for recent Embolic Stroke of Unknown Source)

DWIICH – Dr. Rajeev Garg
(Magnetic Resonance Imaging in ICH patients)

MISTIE III – Dr. George Lopez
(Minimally Invasive Surgery plus rt-PA for ICH Evacuation)

Perfusion Study – Dr. Rajeev Garg
(Assessment of Cerebral Blood Flow by Quantitative Perfusion MRI)

IDEF – Dr. George Lopez
(Intracerebral Hemorrhage Deferoxamine Trial)

Prospective ICH Outcomes – Dr. Rajeev Garg
(Outcomes based research on ICH patients)

NEWTON II – Dr. George Lopez
(EVD administered nimodipine in patients with aneurysmal subarachnoid hemorrhage)
Executive Letter

September 21, 2016

President & CEO
Example Medical Center
123 Anywhere
Chicago, IL 60612

Dear CEO,

Thank you for being a member of the Rush TeleStroke Network. As the neuroscience center of choice within Chicago and a Comprehensive Stroke Center, Rush University Medical Center is committed to providing the highest standard of stroke care. With the commitment and collaboration of each participating institution, including our system hospitals, we have been able to develop the premier telestroke network in the region with demonstrated metrics that surpass industry benchmarks.

The Rush TeleStroke Network is serviced by board certified vascular neurologists from the Rush Stroke Program who maintain medical staff privileges at your medical center.

James J. Connors, MD, MS
Laurel Cherian, MD
Sarah Song, MD, MPH
Nicholas Osteras, MD
Rima Dafer, MD

I am pleased to announce that the network has provided over 2,950 telestroke consultations since inception in March 2011. In that time 32% of stroke patients have received tPA. To put this in perspective, the overall national tPA administration rate is 3.4-5.2% (Recombinant Tissue-Type Plasminogen Activator Use for Ischemic Stroke in the United States, Adeyeye et al, Stroke, July 2011).

On page 2 please find a comparative analysis of Example's telestroke utilization for January 1, 2016 – June 30, 2016. We are committed to continuous improvement throughout the network and look forward to your feedback.

Thank you again for participating in the Rush TeleStroke Network. Rush is very pleased to be partnering with Example to provide this level of excellence in stroke patient care. Please do not hesitate to contact me if you require further information.

Sincerely,

James J. Connors, MD, MS
Assistant Professor, Department of Neurological Sciences
Section Head, Cerebrovascular Disease
Medical Director, Stroke Program

Rush Tele Stroke Network
Rush University Medical Center
Professional Building
1725 W. Harrison St.
Suite 1121
Chicago, IL 60612

Tel: 312-942-2300
Fax: 312-903-2200
www.rush.edu/telestroke

Semi-annual

Senior Leaders
– C-suite, RUMC CEO, RUMC
Chair

Clinical Leaders
Executive Letter

Highlights

- Clinical go-live for Example was April 2012. Since go-live 318 consultations have been performed.
- Example has been able to retain 90% of patients consulted through the Rush TeleStroke service.
- Since go-live 30% of stroke patients have received tPA, compared with national averages of 3-5.2%.
- Rush University Medical Center is certified as a Comprehensive Stroke Center by The Joint Commission and the American Heart Association/American Stroke Association.

The comparative data presented is based on Example’s utilization for the six month period covering January 1, 2016 – June 30, 2016, including blinded data from three other Rush TeleStroke hospitals.

Rush TeleStroke Network
Example Data Comparatives

<table>
<thead>
<tr>
<th></th>
<th>Example</th>
<th>Hospital A</th>
<th>Hospital B</th>
<th>Hospital C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Range</td>
<td>1/16-6/16</td>
<td>1/16-6/16</td>
<td>1/16-6/16</td>
<td>1/16-6/16</td>
</tr>
<tr>
<td>Hospital Demographics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual ED Visits (est)</td>
<td>60-65k</td>
<td>55-60k</td>
<td>45-50k</td>
<td>45-50k</td>
</tr>
<tr>
<td>Primary Stroke Center</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Key Metrics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TeleStroke Consults</td>
<td>60</td>
<td>48</td>
<td>38</td>
<td>71</td>
</tr>
<tr>
<td>tPA Rate</td>
<td>31%</td>
<td>25%</td>
<td>35%</td>
<td>23%</td>
</tr>
<tr>
<td>Avg Time Advised to Given (mins)</td>
<td>0:22:25</td>
<td>0:21:30</td>
<td>0:19:44</td>
<td>0:15:00</td>
</tr>
<tr>
<td>Transfer Rate</td>
<td>8%</td>
<td>19%</td>
<td>21%</td>
<td>10%</td>
</tr>
<tr>
<td>Detailed Stroke Metrics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Consult Time</td>
<td>0:10:12</td>
<td>0:10:09</td>
<td>0:10:09</td>
<td>0:09:42</td>
</tr>
<tr>
<td>Average Age</td>
<td>68.03</td>
<td>63.12</td>
<td>64.94</td>
<td>64.69</td>
</tr>
<tr>
<td>NIHSS Avg</td>
<td>6.32</td>
<td>6.38</td>
<td>8.58</td>
<td>5.83</td>
</tr>
<tr>
<td>tPA Given</td>
<td>12</td>
<td>6</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>tPA Advised</td>
<td>12</td>
<td>6</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Advised vs. Given tPA Rate</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>91%</td>
</tr>
<tr>
<td>Post-tPA Transfer</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Post-tPA Transfer Rate</td>
<td>21%</td>
<td>50%</td>
<td>45%</td>
<td>30%</td>
</tr>
<tr>
<td>Stroke Consults</td>
<td>39</td>
<td>24</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Non Stroke Consults</td>
<td>11</td>
<td>19</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>% of Patients - Stroke Diagnosis</td>
<td>63%</td>
<td>56%</td>
<td>82%</td>
<td>61%</td>
</tr>
</tbody>
</table>

*Based on 2013 IDPH Hospital Survey Data

Program History
- Total Consults
- % of patients retained
- tPA Benchmark

Comparative Data
- Blinded vs Network Hospitals
- Similar Demographics

Reinforce Program Value

Drive Improvement
On-site Interaction

- Site Visits
  - ED RN meeting
- In-service
  - Annual stroke education
  - New staff
  - Skill development (NIHSS)
  - Coordinate with industry if applicable
- Grand Rounds / CME
- M & M Presentation
  - Emergency Medicine meeting
  - Stroke Committee meeting

Rush is a not-for-profit health care, education and research enterprise comprising Rush University Medical Center, Rush University, Rush Oak Park Hospital and Rush Health
• Coordinate with Transfer Center / Strategic Programs
• Emergency Medicine meeting
  – Busy agenda
  – Know what they want
  – Case / topic requests
  – Recent history (successes, issues, declinations...)
• Data – 6 to 12 months
## Clinical go-live – October 2011

<table>
<thead>
<tr>
<th>Hospital A</th>
<th>Hospital B</th>
</tr>
</thead>
<tbody>
<tr>
<td>216 consults</td>
<td>349 consults</td>
</tr>
<tr>
<td>34% tPA Rate</td>
<td>34% tPA Rate</td>
</tr>
<tr>
<td>73% of patients remain at CH</td>
<td>79% of patients remain at OF</td>
</tr>
</tbody>
</table>

### 1/2016 - 12/2016

<table>
<thead>
<tr>
<th>Hospital A</th>
<th>Hospital B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultations: 41</td>
<td>Consultations: 76</td>
</tr>
<tr>
<td>Average NIHSS: 8.5</td>
<td>Average NIHSS: 5.9</td>
</tr>
<tr>
<td>Stroke Diagnosis: 78%</td>
<td>Stroke Diagnosis: 70%</td>
</tr>
<tr>
<td>tPA Rate: 31%</td>
<td>tPA Rate: 38%</td>
</tr>
<tr>
<td>Advised-to-Needle: 31 min**</td>
<td>Advised-to-Needle: 21 min</td>
</tr>
<tr>
<td>Transfers: 13 (8 post-tPA)</td>
<td>Transfers: 12 (11 post-tPA)</td>
</tr>
</tbody>
</table>

Rush is a not-for-profit health care, education and research enterprise comprising Rush University Medical Center, Rush University, Rush Oak Park Hospital and Rush Health
M & M – Discharge Disposition

Hospital A TeleStroke Outcome
- Home: 5
- Acute Rehab: 4
- Skilled Nursing Facility: 1
- Long Term Acute Care: 1
- Inpatient Hospice: 2

Hospital B TeleStroke Outcome
- Home: 9
- Acute Rehab: 2
- Skilled Nursing Facility: 1
- Short Term Acute Hospital: 1
66 y/o man with hx of HTN, HL presented with sudden onset R HP and aphasia. Went to PCP office that day and was ok. Left at 2pm and then wife found him at 2:45pm unable to talk or move R side. Taken to ER where stroke was suspected.
3:48pm - TeleStroke initiated, NIHSS 24
3:55pm - IV tPA advised, given at 4:11pm
5:45pm - Arrived to RUMC, met by team, NIHSS 25, direct to MRI

**Diffusion mismatch and absent flow L carotid/MCA**
Neuroemergency Symposium

1st Annual Emergency Neurovascular Symposium

SATURDAY, SEPTEMBER 6, 2014, 7:30 a.m. to 3:30 p.m.

Maggiano’s Oakbrook
240 Oakbrook Center, Oakbrook, Illinois 60523

Joshua Goldstein, MD, PhD, Keynote Speaker
Department of Emergency Medicine and the Division of Neurocritical Care and Emergency Neurology, Massachusetts General Hospital
Associate Professor of Surgery, Harvard Medical School

Rush is a not-for-profit health care, education and research enterprise comprising Rush University Medical Center, Rush University, Rush Oak Park Hospital and Rush Health
• 8-hour CME event
• Off-site
• Nationally recognized keynote speaker
• Rush clinical speakers
  – Stroke
  – Neurocritical Care
  – Neurosurgery
  – Pharmacy
• 100+ attendees
  – Emergency Medicine, Neurology
• 4-hour event

• On-site at Rush
  – Current & Potential Sites
  – ED Directors, Stroke Coordinators, ED Managers

• Network Data Overview

• Clinical Updates
  – Information from ISC
  – Research & Trials

• NIHSS Exam
  – Visual field testing

• Network Member Presenters
  – Door-to-needle leaders
Network Data Collection

- Database of spoke outcomes
  - 86% of patients
- Door-to-needle times
- Final diagnosis
- Discharge Disposition
  - NIHSS tracking
Patient Feedback

- Calls to referring institution within 48 hours
  - All neuroscience transfers (procedure focused)

- IA Report Cards
  - Pre/Post procedure imaging
  - Times
  - Outcome

- Transfer Dashboard
  - Quarterly
  - Diagnosis summary
  - Discharge disposition

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Education Modules

• Training Videos
  – TeleStroke for new staff
  – Workflow
  – Exam needs (visual field assessment)

• Required Stroke Education
  – Leverage Rush resources
What’s Next?

• DTN improvements can only go so far...
• What is happening before the patient gets to the “door”
• Can we improve onset to treatment times?
  – Community education / awareness
  – EMS education
  – Mobile Stroke Units
Mobile Stroke Unit

• Ambulance outfitted w/ CT-Scanner
  – Dispatched after 911 call with stroke symptoms

• TeleStroke consultation on the Unit
  – Ability to diagnose and treat patient on scene
  – Administer tPA in pre-hospital setting
  – Identify potential LVO patients requiring comprehensive care
• Utilizing telemedicine to improve outcomes
  – rapid stroke assessment & treatment with tPA before arrival to ED
  – Avoid hospital to hospital transfer delays for patients that need CSC

• Determine opportunities outside Ischemic Stroke
QUESTION & ANSWER SESSION

Please enter your questions in the “Q&A” module on your ON24 console
THANK YOU

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feedback@intouchhealth.com

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