TeleNeurology:
Connecting Patients and Neurologists Virtually Anywhere
I am awakened by the slap of my right hand striking my right cheek. I cannot control or feel the action. The entire right side of my body is weak and numb. My head aches acutely and there is severe pain in my right eye. My vision is blurred. My low lip feels (and is) swollen on the right. I attempt to stand and am immediately dizzy and uncoordinated. I alert my partner and realize it is difficult to speak. I slur out my issues and call 9-1-1 for help. I am ambulance-driven to York Hospital quickly, where I am evaluated and stabilized thoroughly by the Emergency Room Team. I am told that the hospital has communicated my details via its TeleNeurology Network with MGH and recommends that for further treatment I be transferred there (I accept and arrive at MGH within 2.5 hours of the onset of stroke symptoms). Four intensive treatment inpatient days, then transfer to the Spaulding Rehabilitation Hospital—the MGH adjunct facility—for 3.5 weeks and outpatient therapy results in complete recovery; an amazing and gratifying result. I “do gym” frequently and volunteer my time both at York Hospital and an elder service agency in Maine. None of such activities, or my recovery would have been possible without the TeleNeurology initiative."

Alan C. Nichols [Stroke Survivor]
Our attending staff members are all board-certified neurocritical, vascular, or general neurologists and provide the highest quality 24/7/365 TeleNeurology coverage available.

- 150* Independently-funded research grants
- 1,000* Peer-Reviewed Publications
- 1060* Invited Presentations

**2014 Metrics of Success**

**6.5 MILLION NEW ENGLAND RESIDENTS** now with immediate access to our team of neurologists.

**A TOTAL OF 1,202 CASES**

- 542 Video consults
- 660 Telephone consults

**OUT OF THE 1,202 TOTAL CASES 65% REMAINED AT THEIR COMMUNITY HOSPITALS**

785 patients out of the 1,202 total cases

- 207 OUT OF 532 STROKE CONSULTS over video received IV-tPA compared to four percent national rate, allowing more patients a chance to avoid stroke permanent disability, assisted living, or death.
2014 Metrics of Success

107 CASES
identified as candidates for Intra Arterial Therapy (IAT)

748 STROKE CASES
remained in community hospitals.

14 PERCENT OF IV-TPA CASES
remained in community hospitals.

$6,000,000+ of potential reimbursement

Beyond Clinical Care

Foster Education
Community hospitals are granted full access to our online clinical learning management system, hosted at www.phscpd.org/MGHTelestroke.

This is a series of CME/CEU lectures (Partners continuing professional development and the New Hampshire Nursing Association, respectively) that can be accessed from anywhere and streamed on demand through a tablet, laptop or desktop computer. Our speakers are world-renowned MGH physicians and nurses. Many are Harvard Medical® School faculty members. Certified Stroke Centers can meet the educational requirements of their certification through this component of our program.

Build a Relationship
Community hospitals may leverage their relationship with MGH or BWH, top performing academic medical centers, to strengthen their brand and their position in the national healthcare system, obtain certifications and quality distinctions from certifying bodies. Our relationship oriented efforts include annual surveys, periodic check-ins and development efforts around our community of emergency and neurology care providers. The program also provides an ubiquitously accessible, robust analytics tool, that tracks, real time, all of your program’s relevant metrics of success. Our tool will offer valuable insight to your efforts to provide top quality neurology care to your community, empowering to make the right decisions to achieve your goals.

CONSULT REQUEST
When a patient with stroke/neurology symptoms is in need of emergent care, your team pushes the patient’s imaging studies and pages the on-call TeleNeurology specialist for a consultation.

CASE REVIEW
The TeleNeurology specialist immediately begins the assessment of the images and returns the page by phone to review the case; the consultation may transition to a videoconference call, if appropriate. Using the video connection, the specialist will review the patient’s presentation with your emergency department physician and, aided by your local staff, will perform a neurological assessment and discuss the findings with you. Together you decide on the plan of care.

ONLINE ASSESSMENT
The TeleNeurology specialist documents the information within the TeleNeurology Web Portal. You can access the portal to retrieve your local EMR or have it sent via fax.

COLLABORATIVE DECISION MAKING
Upon completion of the examination, the findings will be discussed with your team. Together you decide on a plan of care.
MGH TeleNeurology offers two new service lines to our community hospital partners. First, we provide same-day video consultation to providers caring for inpatients. These consultations typically fall under the category of non-acute general neurology, including such symptoms or conditions as headache, vertigo, weakness, cognitive changes, subacute stroke and seizure. The second service offers similar consultations to referring providers in ambulatory settings. Here, requests typically occur when the referring provider learns of an established patient with a new neurologic problem, such as new or intractable headache. The consultation is then coordinated between the referring provider, patient, and TeleNeurology consultant.

How does it work?

Inpatient Example

- 30 year-old man with dizziness
- Concern for acute brain process like stroke
- Hospitalist pages MGH TeleNeurology
- TeleNeurology specialist returns call; PCP requests video consultation during patient visit
- Video consultation between hospitalist, patient, and MGH TeleNeurologist:
  - History suggestive of [benign] inner ear and acute brain process
  - Exam also suggestive of benign process; normal eye movements, coordination and gait
  - MRI/brain MRA reviewed (both normal)
  - Epley maneuver performed to correct inner ear disturbance
- Transfer to MGH avoided

Outpatient Example

- 40 year-old man h/o migrate w/ severe headache episode last week
- Patient schedules same-day PCP appointment
- PCP pages MGH TeleNeurology
- TeleNeurology specialist returns call; PCP requests video consultation during patient visit
- Video consultation between hospitalist, patient, and MGH TeleNeurologist:
  - History suggestive of prolonged migraine, but a more ominous process like brain hemorrhage is also of concern
  - Remote neurologic exam normal, including basic mental status, visual field, eye movement, speech, strength, and gait
  - Head CT recommended; if negative, then spinal tap
  - Patient and PCP receive neurologist earlier than per routine
  - ER visit and outpatient neurology referral visit avoided
  - CT and spinal tap normal; headaches resolved over the week

Inpatient and Outpatient TeleNeurology
Bringing coordinated care to the next level

Our hospital’s TeleNeurology Program began in 2007. As a small community hospital, our relationship with the MGH TeleNeurology Program has been invaluable to providing our community with world-class neurology care. We strive to provide our patients with exceptional quality care delivered with compassion and kindness. The knowledge and reliability of the MGH TeleNeurology initiative fits right in with our mission – compassionate, high quality medical care experiences.

Not only has TeleNeurology been able to provide us with the capability to handle acute stroke cases, they have also offered us important guidance in helping us to achieve our goal of Gold Status as part of the Get With The Guidelines through the American Stroke Association®. By achieving this status we are now aligned with the latest scientific guidance and have seen measurable results in patient outcomes and family satisfaction.

The immediate around the clock access to the TeleNeurology team ensures that we can diagnose and treat our patients with a high level of clinical expertise.

John Alexander, MD
Former Emergency Room Leader, Integrated Medicine, York Hospital
Interested? Join!

To request more information or to become a member of our TeleNeurology network, please contact us using the methods below:

- **Call us** at 617-724-3999
- **Email us** at mghteleneurology@partners.org
- **Visit us on the Web** at www.massgeneral.org/teleneurology

**Partners National Telestroke Network Expanding our Reach**

We have successfully replicated our model throughout multiple regions, in partnership with other top performing academic medical centers and healthcare networks. For more information, please visit us at www.massgeneral.org/teleneurology