



Indiana Rural Health
Association and Indiana
University Health Partnership
for Telestroke

IU Health – IRHA Telestroke Partnership

Project Initiation

- Medicare Rural Health Flexibility Program (FLEX - Federal grant program for CAH) – rollover and extra funding from Indiana SORH
- Quality Improvement category of which Telehealth is an initiative



IU Health – IRHA Telestroke Partnership

Where do the FLEX initiatives come from?

- FLEX survey administered to all 35 Indiana CAHs
 - Areas of focus determined by CAHs within FLEX parameters
- IRHA Rural Health Network (InSRHN) survey based on funding availability
- Telehealth – telestroke ranked highest
- Application to SORH submitted on behalf of InSRHN

IU Health – IRHA Telestroke Partnership

- Project approved by SORH and FLEX program
- IRHA – Solicitation for proposals
- IUH Selected by InSRHN committee made up of CEO and Clinical leadership in CAH
 - Willing to provide services outside system
 - Known for high quality stroke care
 - Willingness to share resources and expertise for benefit of all patients regardless of location

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2 phase project

- Assessment of clinical processes and technology in proposed telestroke sites
- Implementation of telestroke network



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- 7 CAH's connected in project
 - 14k equipment cost, FLEX funded 12k with 2k match from hospital
- Some initial participants had to drop out at implementation phase due to insurance/referral barriers, system pushback/political issues and other associated issues.
 - Quote from hospital that had to leave program: “Despite the fact that our facility could not participate in the final implementation of the stroke network, the evaluation process and adoption of Indiana University Health’s stroke protocols has improved the services we provide to our patients in regards to stroke care.”

IU Health – IRHA Telestroke Partnership

- IU Health, home to four of Indiana's Joint Commission-certified Primary Stroke Centers, treats nearly 1,000 stroke patients annually at its downtown Indianapolis facilities and has committed more than a dozen neurologists to support the new service.
- In time-critical situations such as stroke, live and interactive telemedicine consultations like these may help to ensure faster, more effective care for stroke patients-potentially increasing their chances of an excellent recovery.
- By reducing or eliminating the hours of time-delay caused by transfers, more patients will be eligible to receive time-critical treatments for stroke.

IU Health – IRHA Telestroke Partnership

- "With a stroke, time lost is brain lost; but if a patient's stroke symptoms are recognized and treated fast enough, there's a good chance our clinical teams can help improve their outcome," said James D. Fleck, M.D., medical director for IU Health Neuroscience's stroke services at IU Health Methodist Hospital and a neurologist with IU Health Physicians Neurology.



IU Health – IRHA Telestroke Partnership

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IU Health Participation

- Commitment to Critical Access Health Stroke program
- Reduce Morbidity and Mortality for Stroke Patients



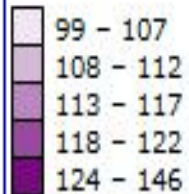
Incidence/Impact

- 790,000 new stroke events a year
 - 80% of these are ischemic events
 - Majority of these are recurrent events
 - Nationally 2-5% of patients receive IV tPA
- Leading cause of adult disability
- Lack of stroke specialists to support treatment/care of these patients

Indiana — Stroke Death Rates

Total Population, Ages 35+, 2000 – 2006

Age-adjusted Average
(Annual) Deaths per
100,000

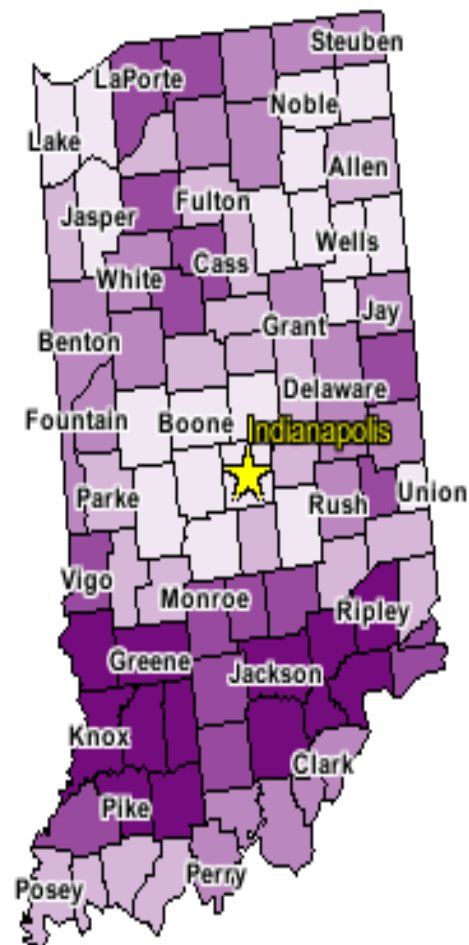


Find a county:

Choose County

County Labels

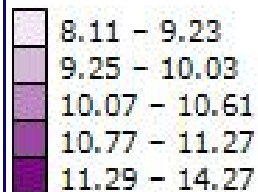
State Rate: **112** | National Rate: **98**



Indiana — Ischemic Stroke Hospitalization Rates

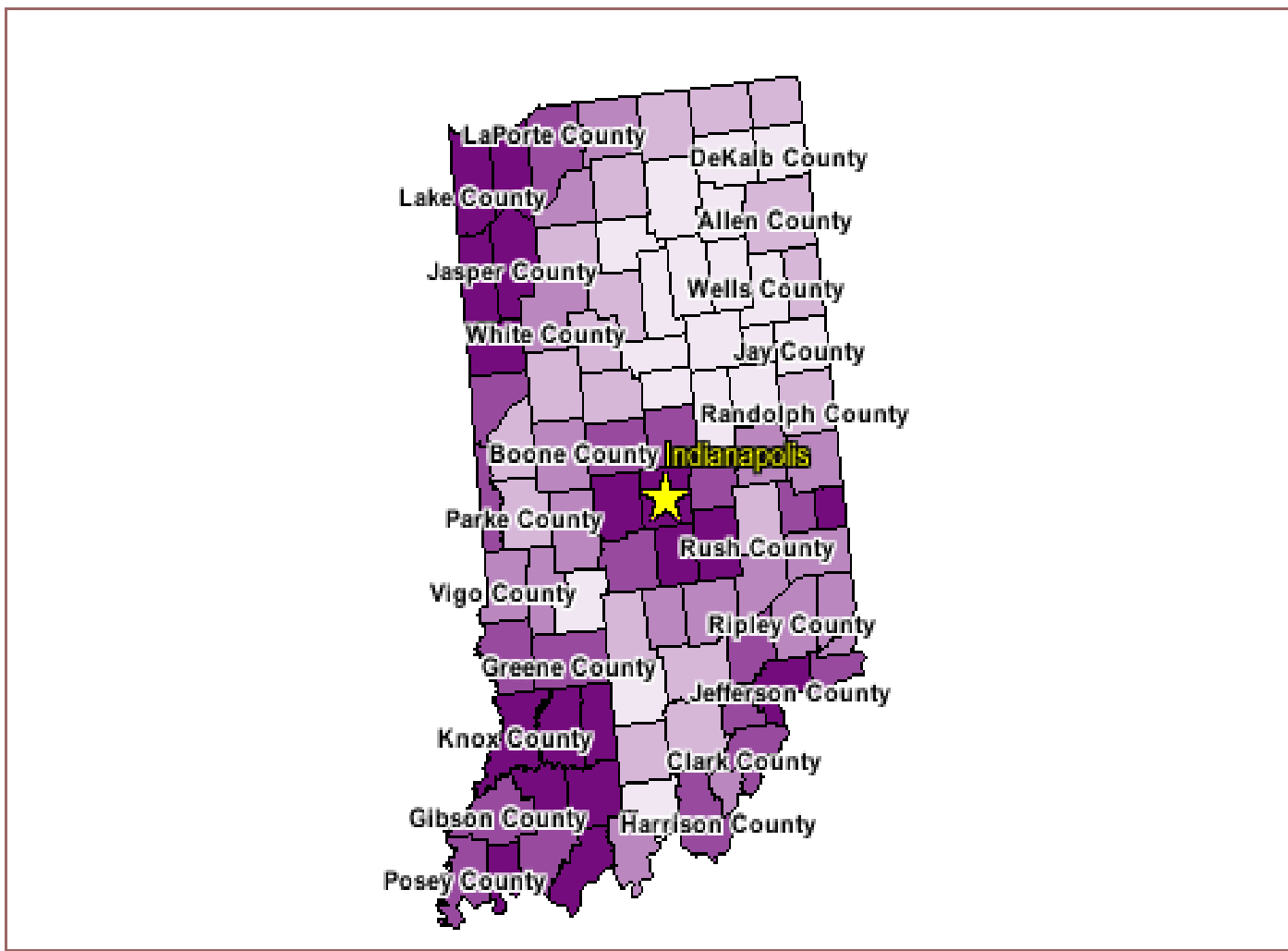
Total Population, Ages 65+, Medicare Beneficiaries, 2000 – 2006

Age-adjusted rate per 1,000



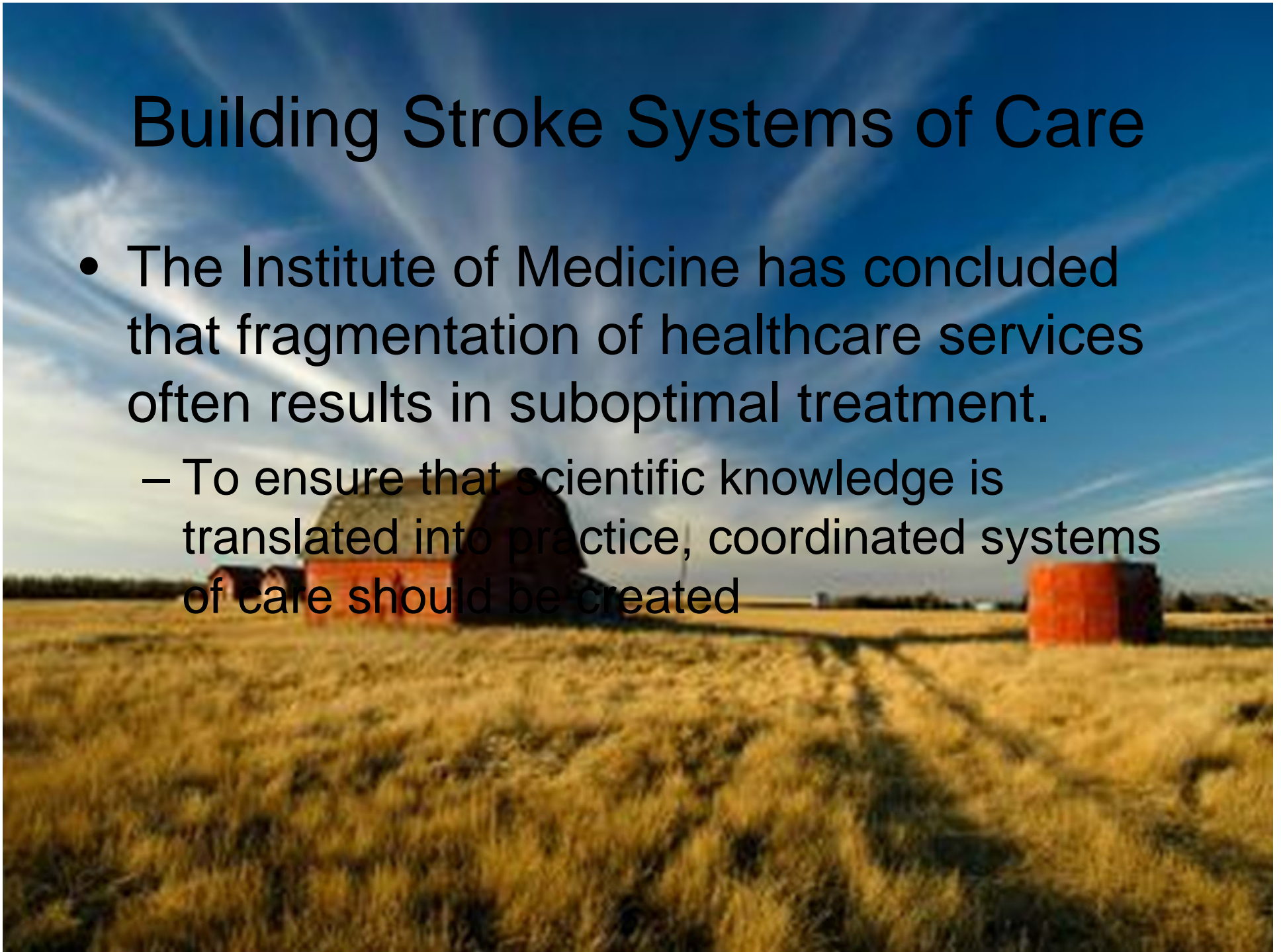
Find a county:

County Labels



Building Stroke Systems of Care

- The Institute of Medicine has concluded that fragmentation of healthcare services often results in suboptimal treatment.
 - To ensure that scientific knowledge is translated into practice, coordinated systems of care should be created



What the Telestroke program looks like today

- 7 Live sites
 - Critical Access Hospitals
 - 4 different PACs systems supported
 - 6 wireless, 2 hardwired network connection
 - Across Indiana statewide



Preparation for Telestroke Project

- On site assessment (each possible site)
 - Clinical
 - Currently where they are
 - Infrastructure
 - Connectivity
 - PACs system (yes, no what manufacturer)
 - Wireless (yes, no coverage)
 - Political
 - Willingness for Leadership from other systems
 - The hospitals approach to TPA
 - Physical
 - Secure cart location
 - Access to electric, network
 - Emergency Dept
 - Access to electric, network



First the Challenges

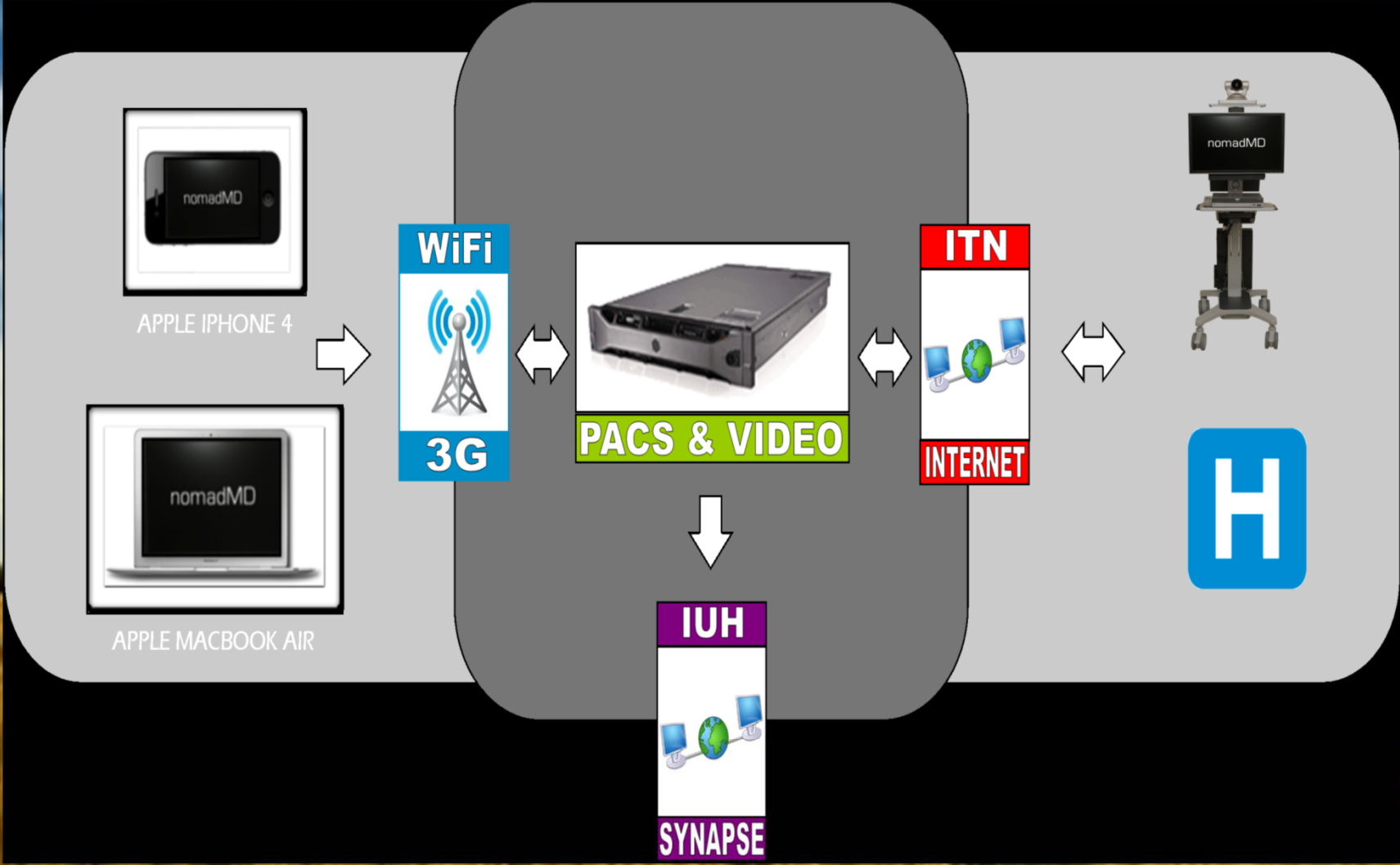
- **Sharing information across networks** (playing well with others)
- **Mobility for Neurologists** (who wants to drive anywhere @ 2am)
- **Internet access high speed** (we have dial up)
- **Ability to see to review PACS images** (you wanna see what from where?)
- **Training at the Critical Access Hospital** (another piece of equipment really?)
- **3 shifts and lots of PRN staff** (there is a lot of people to train without any real training staff here)
- **Quality of video and Audio** (Is this any better than my TV at home?)

Responding to the Challenges

- **Sharing well** — We did use completely separate network and site to house images that were not stored long term. Hospital do not send or receive any Telestroke information. We used neutral location for temp storage.
- **Mobility for Tele-Neurologists** — Everyone carries a phone so we made the CT images available from the Neutral site for the Tele- Neurologist to pull to the phone (no images stored on phone after viewing)
- **High speed requirement** — Use public internet encrypted or Cellular Hot Spot (remember that everyone carries a phone) WiFi when available. Introducing speed testing for Tele-Neurologists soon so they know what they have available and how to respond.
- **PACs Image remove viewing** — The Tele-Neurologist access the neutral site to view the images to review CTs etc, they can also use the PC to have full DICOM capability to view images anywhere at anytime.
- **Training 3 shifts on new technology** — easy we spend 2 days covering all shifts each day and the only requirements were to roll unplug the cart, roll in to the ED room, turn on the monitor and equipment. The Telestroke cart allows Tele-Neurologist to remotely control camera, is wireless, has a battery backup and is load balanced for easy handling to be able to turn on the monitor and camera and move it to the
- **Quality of experience** — Once they saw the pupils of the eyes of someone 10' across the room they were convinced this was much better than the telephone.

The Telestroke Solution Workflow

- Patient presents in ED
- Id that the patient possible stroke patient
- Pt is taken to radiology for CT
- ED contacts IU Health transfer center
- Transfer center contacts Telestroke Neurologist
- Telestroke Neurologist reviews CT via mobile device
- Tele-Neurologist uses PC to further examine CT if needed
- Tele-Neurologist uses PC to video conference into ED Pt room and consult with Ed Physician, Nurse, patient and family



CQI

- National Quality Forum adopted 8 Stroke Measures in 2008
- CMS is considering these for future reporting
 - FY 2011 rule: hospitals must report if publishing data in stroke database
- ARRA has outlined incentives for meaningful use of EHR which include the 8 stroke measures
- Get With the Guidelines-Stroke will meet data management and comparison needs
 - Currently 4 hospitals are members
 - Incentive for enrolling system

8 Endorsed Stroke Measures

- DVT prophylaxis by end of day 2
- Discharged on Antithrombotics
- Patients with Atrial Fibrillation/flutter receiving anticoagulant therapy
- Thrombolytic Therapy administered
- Antithrombotic therapy by end of day 2
- Discharged on Statin medication
- Stroke education provided
- Assessed for rehabilitation

Clinical Assessment

- Review Protocols
- Review Order Sets
- Review Current Practice



Implementation Team

- Identified Key Stakeholders
- Established Time Table
- Education Planning
- Go-Live



Clinical Education

- Appropriate Staff
- Identified Stroke Needs
- IV tPA



Go-Live

- Most uneventful date anyone has ever scheduled!!!



Follow-Up

- Stroke Telemedicine Call
- Physician f/u
- Site f/u
- Patient f/u
- Outcomes



Questions

