

# ACUTE STROKE

# Burden of Stroke

- 700,000 in USA per year
- 3<sup>rd</sup> leading cause of mortality
- 1<sup>st</sup> leading cause of disability
- Age related incidence

# Evidence Based Treatment for Stroke

## ■ 1970's → →

- Anti hypertension Rx
- ASA

## ■ 2008

- New antiplat. Meds
- Coumadin
- Statins
- New HTN meds.
- Thrombolitics- TPA
- Surgical- Rx (CEA)
- Stroke Centers

Nihilism

→→→

\* Optimism

# Rational for Stroke Centers

- Brain Attack Coalition (JAMA, 2000)
- Improved performance of all aspects of stroke care at Stroke Centers
- Increased utilization of evidence based treatments
- Trauma center model of success
- Primary and secondary stroke centers
- State and JCAHO certification
- Class 1 level of evidence B

# Primary Stroke Center

- ED services
- Acute stroke team
- Written protocols
- Stroke unit in hospital (with telemetry)
- Neurosurgical services
- Stroke center director and coordinator
- Neuroimaging
- Ability to administer thrombolytics (TPA)
- Outcome quality improvement program
- Continuing education program for patients community and stroke team members

# Performance of Stroke Care (JCAHO, BAC)

- Neuro-imaging studies
- Anticoagulation treatment
  - TPA
  - Antiplatelets
  - coumadin
- Complication rate
  - Aspiration
  - DVT
- Secondary stroke prevention
  - Statin
  - HTN Control
  - Smoking prevention
  - Stroke education
- Rehabilitation treatment protocols

# Additional Stroke Care Performance (2008)

- Stroke unit telemetry
- Protocols to document and treat neurological deterioration
- 15 minute response time by members of stroke team
- MRI with Diffusion studies
- Imaging of Cerebral vessels (MRA, CTA)
- Cardiac imaging (TTE, TEE)
- Establish physical therapy and dysphagia treatment plans
- TPA utilization monitoring
- Avoid "self certification"

# Disease Performance Measures (JCAHO)

- DVT Prophylaxis
- Discharge on antithrombotics
- Afib – Coumadin
- TPA considered
- Start antithrombotic within 48 hours
- Lipid treatment
- Screen dysphagia
- Stroke education
- Smoking education
- Rehab plan

# Stroke Centers Effect on Outcome

- Decreased mortality (>10%)
- Decreased length of stay (7 days to 4.5)
- Class I Level B evidence

# New York Designation Project

- Study of efficacy of Primary Stroke Center
- 1,600 patients, 32 hospitals
- Outcome
  - Treatment time shortened
  - Improved access to thrombolitics
  - Improved time to neuroradiology
  - Decrease length of stay
- Practical importance to Connecticut hospitals-patient routing

# Comprehensive Stroke Centers

- Vascular neurologist
- Vascular neurosurgeon
- Interventional neuro-radiology
- Endovascular radiology
- Neurointensive care unit
- Neurointensivist
- Advanced neuroimaging studies
- Ability to accept referrals from PSC's
- telemedicine

# Acute Onset of Stroke

