


The Economics of Becoming and Maintaining a CSC

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Disclosure

- Speakers Bureau – Genentech, Inc


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THE REAL TRUTH!!!

- **IT IS HARD TO DEMONSTRATE IN \$\$\$ THE FINANCIAL GAINS FOR AN INSTITUTION – THAT RESULT FROM BECOMING A CSC!!!!**
- **Secondary gains are more evident:**
 - Complex neuroscience patient care referrals
 - Utilization of advanced diagnostic testing/interpretation
 - Referral patterns for all neuroscience patients

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Review of Literature

Rymer et al – Analysis of the costs and payments of a coord stroke center and regional stroke network- *Stroke* 2013.

- Retrospectively looked at hospital costs and payments from all payors - 2005, 2007, 2010
- Included 1570 patients
 - Median cost men \$18,190 and women \$15,902 in SLNI study
 - Slightly lower than national data (Brinjikji 2012)
 - Costs lower for pts discharged to home or with home health care
 - Costs highest for pts discharged to SNF or Rehab
 - Secondary ICH – resulted in higher costs
 - IA therapy – median payments – \$20,705

Rymer MM, Armstrong EP, Meredith NR, Pham SV, Thorpe K, Kruzikas DT. Analysis of costs and payments of coordinated stroke center and regional stroke network. *Stroke*. 2013;44:2254-2259

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Rymer et al contd.

- Negative profit margin – seen in patients who received acute treatments – median \$3220/patient
 - IV tpa
 - IA tpa or embolectomy
- Variables that were associated with higher costs
 - Higher NIHSS – 15 or greater
 - Longer hospital stays
 - IA tpa or embolectomy
- Lower reimbursement for patients aged 65 or greater
 - Medicare pays lower rates for stroke than private insurances

Rymer MM, Armstrong EP, Meredith NR, Pham SV, Thorpe K, Kruzikas DT. Analysis of costs and payments of coordinated stroke center and regional stroke network. *Stroke*. 2013;44:2254-2259

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Albright et al Changing demographics at a CSC – with rise in PSC, *Stroke* 2013

- In Houston area, examined admission volumes and type at UT from 2005-2011
- Used Texas hospital inpatient discharge public use data file to compare discharges from PCS's in area by DRG – 2008-2011.
- Findings
 - Increased admissions each year at UT – due to increase in number of transfers from OSH
 - 2005 – 24.6% transfers - 2011 – **45.5%** transfers
 - Change in stroke subtype
 - More ICH transfers (28.8% - **46.3%**)
 - Ischemic stroke subtype changes
 - LAO fell (32.9% – 16.4%)
 - Minor strokes (NIHSS 0-5) increased (37.4% - 48.6%)
 - IV tpa – drip and ship remained constant
 - Decrease in patients arriving within 3 hours of onset

Albright KC, Boehme AK, Mullen MT, Seals S, Grotta JC, Savitz SI. Changing Demographics at a comprehensive stroke center amidst the rise in primary stroke centers. *Stroke*. 2013;44:1117-1123.

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Albright et al - cont.

- Number of PSC's increased from #2 - #11
 - Number of stroke discharges increased at PSC's
- Clinical trial enrollment decreased (28% in 2005 to **8-13%** since 2008)
- Discussion based on findings
 - Need for partnership between CSC and PSC's
 - Telemedicine, commando teams to cover PSC, hub and spoke complexes with shared research and IT
 - Need for improved scoring systems for EMS to identify LAO patients and triage to CSC.

Albright KC, Boehme AK, Mullen MT, Seals S, Grotta JC, Savitz SI. Changing Demographics at a comprehensive stroke center amidst the rise in primary stroke centers. *Stroke*. 2013;44:1117-1123.

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Review of literature

- ISC 2013 - Poster by Santos et al from Texas Stroke Institute, Irving TX
- Results
 - Increase in admission volumes for all stroke diagnosis (430-438) by **88%** at CSC in 2 year period after advanced stroke care was introduced
 - Indications of operational profitability (EBITDA) per stroke case rose from negative value to positive value at CSC
 - EBITDA - in laymen's terms - how much profit is made with assets and it operations on the product it produces and sells.

Santos P, Roper D, Guthmann A, Coulson J, Whitley M, Janardhan V. Abstract TP375: Delivering comprehensive stroke services can be financially beneficial to a community hospital. ISC 2013. Outcomes, quality, and health services research posters II.

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Resources needed

- Personnel
 - Physicians with advanced training – Neurovascular, Critical care, Neurosurgeons, Interventionalists
 - RN's – ED, ICU, step down/Floor, IR suite with on call structure
 - IR Tech with on call structure
 - Radiology techs for 24/7 CT and MRI coverage – in house
 - Midlevel providers – NICU to ensure 24/7 care, inpatient care units
 - Stroke program oversight – advanced practice nurse and Physician
 - Data managers – abstractors, data entry/maintenance, report generation/analysis
 - Clinical research coordinators – for clinical trial coordination
 - Marketing expenses -

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Equipment

- Bi-plane interventional angiography suites – plus one single plane to meet requirement to provide care for more than 1 complex stroke patient simultaneously
- OR suites for complex neurosurgery cases (scanners in room – microsurgical equipment)
- MRI and CT scanners with advanced/updated software (angio/perfusion)
- Base Catheters/mechanical embolectomy devices/stent-retriever devices/detachable coils/angioplasty balloons and stents (extracranial and intracranial)

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Investments

- Salary justification and support – all levels
 - MD
 - RN
 - CRC
- Cost of certification – 56K every 2 years
- Cost of GWTG database or other databases
- IRB costs - submission

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Measuring Return on Investment

- Patient volumes and trends
- Procedures/surgeries performed
- Rehab admissions – for facilities that have an acute rehab unit on site
- Outpatient f/u volume
- What we need to demonstrate to payors is:
 - How advanced stroke care centers impact outcome

Reduction in stroke burden/resource utilization – disability for young stroke survivors

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Payment issued for services

- Very variable between insurances
 - Medicare – lower payment for IV tpa pts (Brinjikji et al)
 - Medicaid – variable by state
 - Private insurance payors – negotiated with institutions in advance

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Most helpful publications

- Rymer MM, Armstrong EP, Meredith NR, Pham SV, Thorpe K, Kruzikas DT. Analysis of costs and payments of coordinated stroke center and regional stroke network. *Stroke*. 2013;44:2254-2259.
- Rymer MM, Armstrong EP, Walker G, Pham S, Kruzikas D. Analysis of a coordinated stroke center and regional stroke network on access to acute therapy and clinical trials. *Stroke*. 2013;44:132-137.
- Grigoryan M, Chaudhry SA, Hassan AE, Suri FK, Qureshi AI. Neurointerventional procedural volume per hospital in United States: Implications for comprehensive stroke center designation. *Stroke*. 2012;43:1309-1314.

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Most helpful publications – contd.

- Albright KC, Boehme AK, Mullen MT, Seals S, Grotta JC, Savitz SI. Changing Demographics at a comprehensive stroke center amidst the rise in primary stroke centers. *Stroke*. 2013;44:1117-1123.
- Santos P, Roper D, Guthmann A, Coulson J, Whitley M, Janardhan V. Abstract TP375: Delivering comprehensive stroke services can be financially beneficial to a community hospital. *ISC 2013*. Outcomes, quality, and health services research posters II.
- Brinjikji W, Rabinstein AA, Cloft HJ. Hospitalization costs for acute ischemic stroke patients treated with intravenous thrombolysis in the US are substantially higher than Medicare Payments. *Stroke*. 2102;43:131-1133.

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Questions??

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