Stroke Center Certification: Ready – Set – Go!

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The Joint Commission
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Presenter Disclosure Information

MJ Hampel
Stroke Center Certification:
Ready – Set – Go!

Financial Disclosure:
No relevant financial relationship exists
What You Need to Know

- Certification raises the bar
- Certification is attainable
- Certification is a shared and continuous process
Stroke Performance Measures are Improved at Certified Primary Stroke Centers Compared to Other Accredited Hospitals

MJ Alberts1, J Range2, MJ Hampel3, D Morton4, A Watt2, V Cantwell2, J Troy2, JM Loeb2
1Department of Neurology and Neurotherapeutics, UTSW Medical Center, Dallas TX; 2The Joint Commission, Oakbrook Terrace, IL

METHODS

RESULTS

CONCLUSIONS

ABSTRACT

Background: Primary Stroke Centers (PSCs) certified by The Joint Commission (TJC) have been recognized since 2003, yet doubt still exists about to what extent they improve patient care compared to hospitals that are not PSCs. We compared various performance measures between such hospitals to address this issue.

Methods: Patient data from 111 accredited hospitals that were not PSCs were compared to data from 111 accredited hospitals that were TJC certified PSCs in 2009-2011. The 111 non-PSCs had voluntarily agreed to participate in the stroke performance measures. Data were obtained from the ORYX database. At the measure level, a random effects model for each year was used to identify differences between measure rates for certified PSCs and non-certified hospitals collecting data on the Stroke Core Measures.

Results: Data were available from 146,587 patients (15,580 at non-PSCs and 131,007 at certified PSCs). The measures analyzed were VTE prophylaxis (STK1), discharge on antithrombotics (STK2), anticoagulation for Afib (STK3), use of IV TPA (STK4), use of transfer to comprehensive centers (STK5), and consideration of rehabilitation (STK6). For all measures combined, the rate of compliance ranged from 74% vs 91% (non-PSC vs PSC, 2009 vs 85% vs 95% in 2011). All composite measures had higher compliance rates at PSCs vs non-PSCs (p < 0.0001). Each individual measure differed significantly (p < 0.0001) for each, with STK1 having the largest difference (94% vs 85%, non-PSC vs PSC) and STK2 having the smallest (95% vs 99%). Other measures showing large differences included STK3 (78% vs 91%), STK4 (79% vs 82%), STK6 (75% vs 82%), STK7 (68% vs 71%), and STK8 (66% vs 69%).

Conclusions: Hospitals certified as PSCs met each stroke performance measure at a higher rate compared to non-PSC hospitals that chose to collect performance measure data. These differences narrowed somewhat over time but remained significant in 2011. This might have implications in terms of care quality and risk of recurrent stroke.

METHODS

RESULTS

CONCLUSIONS

BACKGROUND

- Primary Stroke Centers (PSCs) have been certified by The Joint Commission (TJC) since 2003
- Prior studies have shown that PSCs improve outcomes such as mortality and the use of IV-TPA
- Uncertainty exists about whether other aspects of patient care are improved at a PSC vs other hospitals
- Studies comparing care at a PSC to other hospitals have included a variety of comparison facilities

OBJECTIVE

We did this study to examine patient care at certified PSCs compared to accredited hospitals that have not been certified as a PSC

RESULTS

Stroke Core Measures Analyzed

<table>
<thead>
<tr>
<th>Measure Designation</th>
<th>Measure Name</th>
<th>Non-PSC (%)</th>
<th>PSC (%)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>STK 1</td>
<td>VTE prophylaxis</td>
<td>78.0%</td>
<td>92.8%</td>
<td>14.8%</td>
</tr>
<tr>
<td>STK 2</td>
<td>Discharge on antithrombotics</td>
<td>94.6%</td>
<td>99.0%</td>
<td>4.4%</td>
</tr>
<tr>
<td>STK 3</td>
<td>Anticoagulation for Afib</td>
<td>89.1%</td>
<td>95.3%</td>
<td>6.2%</td>
</tr>
<tr>
<td>STK 4</td>
<td>IV TPA consideration</td>
<td>24.1%</td>
<td>71.7%</td>
<td>47.6%</td>
</tr>
<tr>
<td>STK 5</td>
<td>Antithrombotics for day 2</td>
<td>93.2%</td>
<td>96.0%</td>
<td>2.8%</td>
</tr>
<tr>
<td>STK 6</td>
<td>Discharge on statins</td>
<td>82.9%</td>
<td>83.6%</td>
<td>0.7%</td>
</tr>
<tr>
<td>STK 7</td>
<td>Stroke education provided</td>
<td>70.6%</td>
<td>89.1%</td>
<td>18.5%</td>
</tr>
<tr>
<td>STK 10</td>
<td>Rehabilitation considered</td>
<td>92.5%</td>
<td>98.1%</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

P < 0.0001 for all measures, non-PSC vs PSC

Data from 2011 shown

Overall Compliance on Composite Core Measures

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-PSC (%)</th>
<th>PSC (%)</th>
<th>Absolute Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>74.0%</td>
<td>91.2%</td>
<td>17.2%</td>
</tr>
<tr>
<td>2010</td>
<td>80.4%</td>
<td>93.4%</td>
<td>13.0%</td>
</tr>
<tr>
<td>2011</td>
<td>84.9%</td>
<td>95.2%</td>
<td>10.3%</td>
</tr>
</tbody>
</table>

CONCLUSIONS

1. Hospitals certified by TJC as PSCs had significantly higher compliance rates for all Stroke Core Measures compared to accredited facilities that were not certified PSCs
2. These differences persisted but narrowed over a 3 year time frame
3. Further examination of other care processes at certified PSCs may provide other opportunities for improved patient care

Potential Limitations

- Relatively small number of hospitals
- Administrative databases limit analyses and causative insights
- Only examined Stroke Core Measures; other care elements and hospital factors might be important
- Limited data on case mix, physician expertise, socioeconomic factors, staffing, etc.
Primary Stroke Centers Reduce Mortality Rates

NYDOH data, 2005-2006, n=30,947 patients

Admission to a designated PSC associated with a 2.5% absolute reduction in 30-day all-cause mortality (p< .001)

Xian, et al, JAMA, January 26, 2011
A Comparison of Stroke Core Measure Performance Between Certified Comprehensive Stroke Centers and Primary Stroke Centers

Mark J. Alberts*, Jean Range^, Karen Kolbusz^, Ann Watt^, Dave Morton^, Frank Zibrat^

*UTSW Medical Center, Dallas, TX; ^ The Joint Commission, Oakbrook Terrace, IL

ABSTRACT

Objectives: Performance on the eight Stroke Core Measures (SCMs) is a major benchmark used to determine how organizations deliver stroke care. We now compare performance on these SCMs between certified Primary Stroke Centers (PSCs) and Comprehensive Stroke Centers (CSCs). Our hypothesis was that CSCs would achieve higher levels of SCM performance compared to PSCs.

INTRODUCTION

• Performance on the eight Stroke Core Measures (SCMs) are major benchmarks used to assess how well organizations deliver stroke care
• We have compared performance on these SCMs between certified CSCs and certified PSCs
• Our hypothesis was that CSCs would achieve higher levels of SCM performance compared to PSCs

METHODS

• We analyzed performance data on the eight SCMs between the 1046 Joint Commission (JC) certified PSCs and 74 JC certified CSCs using data available in 2013. Data were reported by the hospital via a third-party vendor to the Joint Commission. Comparisons were performed using Chi-square analyses.

RESULTS

• We analyzed performance data for the 8 SCMs
• Data were obtained from 1046 PSCs and 74 CSCs certified by The Joint Commission
• Self-reported data from 2013 were analyzed
• Comparisons were performed using Chi-square analysis

CONCLUSIONS

• Overall both types of stroke centers achieved high rates of performance for most of the SCMs (> 93%)
• Use of thrombolytic therapy was 10% higher at CSCs vs PSCs
• The one exception was use of antithrombotic therapy by day 2, which was slightly higher at PSCs
• Although several differences were statistically significant, the absolute differences were usually only 1-2%

DISCLOSURES

Mark J. Alberts - is a speaker and consultant for Genentech
K. Kolbusz, A. Watt, D. Morton, and F. Zibrat are employees of The Joint Commission
J. Range is a former employee of The Joint Commission
ABSTRACT

Objective: To determine performance measures rates for the pilot-tested draft Comprehensive Stroke (CSTK) measures at Joint Commission (JC) certified CSCs compared to non-certified CSCs.

Methods: Data from 66 pilot sites in 27 states that collected data on 7 potential CSC stroke measures were submitted to The Joint Commission. Data were compared between JC certified CSCs and non-JC certified CSCs, as of July 2014. We compared performance measures rates between certified and non-certified CSCs using Chi-square analysis.

Results: Data from 9720 patients were analyzed. Aggregate measure rates ranged from 10.2% for CSTK-05 to 71.6% for CSTK-01. Rates between CSCs certified by JC and non-certified CSCs showed statistically significant differences for CSTK-01, TICI reperfusion grade, IST-5, hematoma volume, ICH, and SAH severity. CSTK-02, Modified Rankin Score at 90 days, and NIHSS score had lower rates among non-certified CSCs.

Conclusions: This was a retrospective analysis of pilot test data. Data are based on a small number of hospitals, therefore the results may have changed since July 2014. These data do not reflect results from CSCs certified by other organizations or state health departments.

INTRODUCTION

The Joint Commission developed a new set of standardized performance measures for use in its Comprehensive Stroke Center (CSC) certification program. The goals of the CSTK measure pilot test were to:

- Assess the data elements
- Assess measure reliability and validity
- Analyze the data collection and implementation effort
- Identify the need for potential measure modifications

Our hypothesis was that certified CSCs performed better than non-certified CSCs for these measures.

METHODS - 1

- Data from 66 pilot sites in 27 states was collected over 6 months
- CSTK measure data were submitted to The Joint Commission
- Data were available from 9720 total patients
- Of the 66 sites, 20 became JC certified CSCs, and 46 did not as of July 2014
- Comparisons for 7 pilot test measures were made using Chi-square analysis.

RESULTS - 1

Overall Rates for CSTK Measures

<table>
<thead>
<tr>
<th>CSTK Measure</th>
<th>Overall Measurement Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSTK01</td>
<td>71.6%</td>
</tr>
<tr>
<td>CSTK02</td>
<td>27.0%</td>
</tr>
<tr>
<td>CSTK03</td>
<td>19.6%</td>
</tr>
<tr>
<td>CSTK04</td>
<td>52.6%</td>
</tr>
<tr>
<td>CSTK05</td>
<td>10.2%</td>
</tr>
<tr>
<td>CSTK06</td>
<td>70.6%</td>
</tr>
<tr>
<td>CSTK07a</td>
<td>32.7%</td>
</tr>
</tbody>
</table>

RESULTS - 2

Measurement Rates for Certified vs Non-Certified CSCs

<table>
<thead>
<tr>
<th>Measure</th>
<th>Non-certified CSC N=46</th>
<th>Certified CSC N=20</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSTK01</td>
<td>69.2%</td>
<td>77.1%</td>
<td>0.0001</td>
</tr>
<tr>
<td>CSTK02</td>
<td>18.7%</td>
<td>37.2%</td>
<td>0.0001</td>
</tr>
<tr>
<td>CSTK03</td>
<td>14.8%</td>
<td>28.2%</td>
<td>0.0001</td>
</tr>
<tr>
<td>CSTK04</td>
<td>51.8%</td>
<td>53.0%</td>
<td>0.874</td>
</tr>
<tr>
<td>CSTK05</td>
<td>13.0%</td>
<td>10.5%</td>
<td>0.876</td>
</tr>
<tr>
<td>CSTK06</td>
<td>68.3%</td>
<td>75.5%</td>
<td>0.359</td>
</tr>
<tr>
<td>CSTK07a</td>
<td>33.4%</td>
<td>52.1%</td>
<td>0.72</td>
</tr>
</tbody>
</table>

RESULTS - 3

- Measurement rates were very low for several of the measures, especially mRS at 90 days and severity scores for SAH and ICH patients
- Measurement rates for hemorrhagic complications after ITPA and endovascular therapy were similar to rates reported in the literature
- CSTK02 and CSTK03 showed the largest differences between certified and non-certified CSCs
- For most measures, certified CSCs performed better than non-certified CSCs

LIMITATIONS

- This was a retrospective analysis of pilot test data
- Data are based on a small number of hospitals, therefore the results may have changed since July 2014
- These data do not reflect results from CSCs certified by other organizations or state health departments

CONCLUSIONS

In this pilot test, CSCs certified by The Joint Commission performed somewhat better than non-certified CSCs for all measures with the exception of CSTK05 and CSTK07a.

Substantial room for improvement exists for many of the measures, especially using rating scales for SAH and ICH, assessment of 90 day outcomes, and decreasing hemorrhagic complications.
Models of Stroke Care

- **Academic medical center, tertiary care facility**
  - CSC
  - 75 – 200
  - 2012

- **Wide range of hospitals; standard stroke care; stroke unit; uses tPA**
  - Primary Stroke Center
  - 1000 – 1200
  - 2003

- **Rural hospitals; basic care; drip and ship; use tele-technologies**
  - Acute Stroke Ready Hospitals
  - 1200 - 1800
  - July 2015
Certification by the Numbers

<table>
<thead>
<tr>
<th></th>
<th>PSC</th>
<th>CSC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>1064</td>
<td>90</td>
<td>1154</td>
</tr>
<tr>
<td>Missouri</td>
<td>25</td>
<td>3</td>
<td>28</td>
</tr>
</tbody>
</table>
Advanced Certification Model

Structure
Standards + program specific requirements

Quality & Safety of Care for Patients

Process
Clinical Practice Guidelines

Outcome
Standardized Performance Measures

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Structure:

Disease-Specific Care Standards

- Program Management
  7 standards

- Delivering or Facilitating Clinical Care
  6 standards

- Supporting Self-Management
  3 standards

- Clinical Information Management
  5 standards

- Performance Improvement and Measurement
  6 standards
Brain Attack Coalition Articles


PSC Standards

- Hospital and Administrative Support
- Core Stroke Team
- Written Care Protocols
- Emergency Department
- Stroke Unit
- Neurosurgical Services
- Neuroimaging
- Laboratory Services
- Outcomes/Quality Improvement
- Educational Programs
PSC Revisions Effective 7/1/14

- IV Thrombolytic Therapy: Diagnostic tests and time frame
- Endovascular procedures
- Assessment in the ED
- Rehabilitation
- Transitions of Care
- Data collection, analysis and performance improvement
- Plus more!
Measuring Performance with tPA

- Monitor IV-tPA administration within 60 minutes of arrival
  - Effective March 1, 2015, IV-tPA must be administered to eligible patients within 60 minutes at least 50% of the time

- Monitor IV-tPA complications, including symptomatic intracerebral hemorrhage and serious life-threatening systemic bleeding
Performance Improvement Process Enhanced

- Use of data registry required
- Stroke measures analyzed by stroke team and hospital quality department
- PSC expected to:
  - select two relevant patient care data elements to monitor each year
  - Analyze IV-tPA data
  - Document performance improvement interventions and evaluation period
CSC Standards

Include all Primary Stroke Center requirements

Plus specific requirements on

- Personnel and clinical expertise
- Diagnostic imaging: techniques and personnel
- Neurosurgery and vascular surgery
- Infrastructure (such as peer review, participation in a stroke registry, and dedicated neuro-ICU beds)
CSC Annual Case Volumes

- 20 or more subarachnoid hemorrhages caused by aneurysm
- 15 or more endovascular coiling or surgical clipping procedures for aneurysm
- IV-tPA administered to at least 25 patients per year
## Comparison Grid: On Arrival

<table>
<thead>
<tr>
<th>Topic</th>
<th>ASRH</th>
<th>PSC</th>
<th>CSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial assessment personnel</td>
<td>ED physician, nurse practitioner, or physician assistant</td>
<td>ED physician</td>
<td>ED physician</td>
</tr>
<tr>
<td>Diagnostic testing capability</td>
<td>CT or MRI, labs available 24/7</td>
<td>CT, MRI, labs, CTA, MRA, cardiac imaging available 24/7</td>
<td>CT, MRI, labs, CTA, MRA, cardiac imaging, other cranial and carotid duplex ultrasound, TEE, TTE, catheter angiography 24/7</td>
</tr>
</tbody>
</table>
## Comparison Grid: Treatment

<table>
<thead>
<tr>
<th>Topic</th>
<th>ASRH</th>
<th>PSC</th>
<th>CSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment capabilities</td>
<td>IV thrombolytics. Anticipate transfer to PSC or CSC</td>
<td>IV thrombolytics. May also offer endovascular therapies</td>
<td>IV thrombolytics. Coiling and clipping of aneurysms; stenting of extracranial carotid arteries; carotid endarterectomy; endovascular therapies</td>
</tr>
<tr>
<td>Neurosurgical Services</td>
<td>Available within 3 hours thru transfer</td>
<td>Either thru transfer or onsite within 2 hours</td>
<td>Available 24/7: neuro-interventionalist, neuro-radiologist, neurologist, neurosurgeon</td>
</tr>
</tbody>
</table>
## Comparison Grid: Misc.

<table>
<thead>
<tr>
<th>Topic</th>
<th>ASRH</th>
<th>PSC</th>
<th>CSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke unit</td>
<td>No designated beds for acute stroke patients</td>
<td>Stroke unit or designated beds for acute stroke patients</td>
<td>Dedicated neuro intensive care beds available 24/7</td>
</tr>
<tr>
<td>Staff Education</td>
<td>• Core stroke team: 4 hours/year</td>
<td>• Core stroke team: 8 hours/year</td>
<td>• Core stroke team: 8 hours/year</td>
</tr>
<tr>
<td></td>
<td>• ED Staff: twice a year</td>
<td>• ED Staff: twice a year</td>
<td>• ED Staff: 2 hours/year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Stroke nurses: 8 hours per year</td>
</tr>
</tbody>
</table>
Process:

Clinical Practice Guidelines

- Current evidence-based guidelines are embedded in the standing orders.
- Evaluated thru patient tracer activity
- Most frequently-cited requirement for improvement: 31% of reviews in 2014 cited for not delivering care through the use of CPGs

On-line resources:

- American Stroke Assn at [www.heart.org](http://www.heart.org)
### Outcome: Performance Measures

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
</table>
| **ASRH**   | - Non-standardized measures  
- Program identifies 4 performance measures, at least two must be clinical and related to clinical practice guidelines   |
| **PSC**    | - Standardized measure set  
- PSC collects, analyzes, and reports data on 8 core stroke measures                                           |
| **CSC**    | - Standardized measure set  
- CSC collects, analyzes, and reports data on 16 measures: 8 core stroke measures and 8 comprehensive stroke measures |
ASRH: Performance Measurement Criteria

- Four process or outcome measures to monitor on an ongoing basis
  - Select from the universe of measures; or
  - Create your own measures

- Two of the measures must be clinical

- Other two measures can be clinical, administrative, utilization, or satisfaction
ASRH Performance Measurement

Potential choices include

- Door to needle time
- Turn around time for head CT/laboratory tests
- Practitioner response time to code stroke
- Patient complications
- Time to telemedicine link initiation

Resource for measures: http://www.qualitymeasures.ahrq.gov/
<table>
<thead>
<tr>
<th>STK -01</th>
<th>VTE Prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>STK-02</td>
<td>Discharged on Antithrombotic Therapy</td>
</tr>
<tr>
<td>STK-03</td>
<td>Anticoagulation Therapy for Atrial Fibrillation/Flutter</td>
</tr>
<tr>
<td>STK-04</td>
<td>Thrombolytic Therapy</td>
</tr>
<tr>
<td>STK-05</td>
<td>Antithrombotic Therapy by End of Hospital Day 2</td>
</tr>
<tr>
<td>STK-06</td>
<td>Discharged on Statin Medication</td>
</tr>
<tr>
<td>STK-08</td>
<td>Stroke Education</td>
</tr>
<tr>
<td>STK-10</td>
<td>Assessed for Rehabilitation</td>
</tr>
</tbody>
</table>
CSC Performance Measures

<table>
<thead>
<tr>
<th>Measure Code</th>
<th>Measure Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSTK-01</td>
<td>NIHSS Score Performed for Ischemic Stroke Patients</td>
</tr>
<tr>
<td>CSTK-02</td>
<td>Modified Rankin Score (mRS) at 90 Days</td>
</tr>
<tr>
<td>CSTK-03</td>
<td>Severity Measurement Performed for SAH and ICH Patients (Overall Rate)</td>
</tr>
<tr>
<td>CSTK-04</td>
<td>Procoagulant Reversal Agent Initiation</td>
</tr>
<tr>
<td>CSTK-05</td>
<td>Hemorrhagic Transformation (Overall Rate)</td>
</tr>
<tr>
<td>CSTK-06</td>
<td>Nimodipine Treatment Administered</td>
</tr>
<tr>
<td>CSTK-07</td>
<td>Median Time to Revascularization</td>
</tr>
<tr>
<td>CSTK-08</td>
<td>Thrombolysis in Cerebral Infarction (TICI) Post-Treatment Reperfusion Grade</td>
</tr>
</tbody>
</table>
Certification Logistics

- **Pre**
  - Gap analysis to standards and guidelines; resolution of any gaps
  - Apply 4-6 months before desired review date
  - Data Collection

- **Visit**
  - 30 days advance notification of date
  - ASRH and PSC: One reviewer x one day
  - CSC: Two reviewers x two days

- **Post**
  - Data collection and submission
  - Intracycle conference call 12 months after visit
  - Apply for recertification

- **Visit**
  - Recertification visit occurs 2 years after initial visit
  - To be scheduled within 90 day window around anniversary date
  - 7 days advance notice of date
Preparation Tips

Get the Requirements
- *Comprehensive Certification Manual for Disease-Specific Care* – 2015
- Contact JCR at 877-223-6866 or [www.jcrinc.com](http://www.jcrinc.com)

Perform a Gap Analysis
- Identify opportunities to enhance compliance with requirements
- Implement an action plan
Preparation Tips (2 of 2)

- Review Treatment Protocols
  - Must be based on current Clinical Practice Guidelines
- Collect Data on Measures
- Submit Application
- Maintain Compliance Until Review and Beyond!
Resources

- Standards Interpretation Group
  www.jointcommission.org/standards_information
  630-792-5900

- Performance Measure Online Q&A Forum:
  www.manual.jointcommission.org

- Webinar Library
  www.jointcommission.org/certification/disespecific_care.aspx
  - Includes Quick Start to Certification, STK-4 Thrombolytic Therapy measure, and 2 webinars on CSTK measures
Benefits of Certification

- Builds the structure required for a systematic approach to clinical care
- Reduces variability and improves the quality of patient care
- Pushes you to look at yourself more closely
- Creates a loyal, cohesive clinical team
- Provides an objective assessment of clinical excellence
- Differentiates clinical care in the marketplace
- Promotes achievement to referral sources
Contact Information

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