Impacts of Multidisciplinary Rounding in the Acute Hospital

Intermountain Stroke Conference 2016

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Medical Director
Neuro Specialty Rehab Unit
Dixie Regional Medical Center
About Dixie Regional Medical Center:

- Dixie Regional is a 132 bed regional hospital in St. George, Utah
  - St. George population 76,817
  - Washington county 147,800
- Part of Intermountain Healthcare
- Services Southern Utah, Northern Arizona, and parts of Southeast Nevada
In the Beginning

- In 2013 the idea of Neuro Sciences Program was introduced
  - Spine Program → Neurosurgery → Neuroscience Institute
  - Initially Spine/pain, NSG, Ortho Spine, Neurology (outpatient only), PM&R
  - Meeting structure and frequency
    - Leadership challenges/structure
    - Lack of neurology presence
      - Including loss of what we had
    - Personalities
    - Development of inpatient/outpatient development teams
Inpatient Team

- Initial concerns included care of hospitalized Stroke and General Neuro patients
  - Stroke feeling that inpatient Neurology was a priority
  - Perception that without it we could not effectively coordinate neuro care
  - Idea of multidisciplinary rounding surfaced in 2013
The Road to Inpatient Neurology

- Outpatient Neurology consisted of 3 practices including a total of 6 providers
- Inpatient needs were covered by a rotating call schedule
  - Consults could take 3-4 days
  - Very difficult to have an on-site presence
  - Initial recommendations but day-to-day management was a dilemma
  - On the ground this looked like we were not serving many neurologic patients
Prioritizing our inpatient work

- **Stroke**: High Volume with significant exposure
  - Working towards corporate-level standardization (CV Clinical Program)
  - Mostly ED driven care
  - No protocol in place
    - Variation in practice
- **Neurosurgery**: No previous Crani work in our hospital
  - Equipment, nursing, training etc.. New providers
- **General Neuro**: No real resource
- **Continuity of Care??**
Recruitment/Resourcing

- Efforts to recruit Neuro Hospitalists
- Discussions with outpatient Neurology
- Locum Tenens (April 2015)

- Development of Director Role over Neurosciences and advancing Inpatient Neurosciences
UDSMR Vegas User Group 2014

- Hospital in a competitive IRF environment
  - Losing CVA patients to competitive IRFs due to longstanding referral patterns
- Consideration of the cost of lost opportunity
The Neuro Specialty Rehab Unit

- 16 Bed Hospital Based facility
- CARF accredited for General Rehab and Stroke
- 2 miles from main hospital campus
- Full-time physiatrist
  - Medical Director
  - Covering Physician
Local Healthcare Environment

- Single Hospital
- One Inpatient Rehabilitation Facility
- Four and a half Skilled Nursing Facilities
  - Branding/messaging issues
Guidelines for Adult Stroke Rehabilitation and Recovery: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association


on behalf of the American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Quality of Care and Outcomes Research

Stroke. 2016;47:e98-e169; originally published online May 4, 2016;
doi: 10.1161/STR.0000000000000098

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Potential Solutions

• Make a case for inpatient Physiatry Consults
  – Without burning out our current resource
• Implement an Interdisciplinary Rounding Team for Stroke
  with the intent to expand to all Neuro Patients
Physiatry Consult Justification

1. UPMC TBI Study: American Journal of Physical Medicine & Rehabilitation (Earlier PM&R consult – shorter LOS and improved functional outcomes)
   - Issue: Volume 82(7), July 2003, pp 526-536
   - Copyright: (C) 2003 Lippincott Williams & Wilkins, Inc.
   - Publication Type: Research Articles: TBI
   - ISSN: 0894-9115
   - Accession: 00002060-200307000-00006

2. Innovative Models of Care Delivery (AAPM&R website)
   - Physiatrists in Practice: Unique Models of Care for the Future
   - Benton Giap, MD
   - Summary of his Kaiser Permanente experience
   - Rounding on Neuro ICU and Neuro floors 3X per week
   - Reduced Hospital Days by 1.25 days (rate of savings was estimated at $7-9k/day)

3. Level II Trauma Advancement

4. Provided CVA, neuro, trauma and Neurosurgery volume projections to pitch this as a money saver, NOT A MONEY MAKER
The Timing of Launching Stroke Rounds

- Neuroscience Director in place
- Physiatrist as inpatient Neuroscience physician lead
- Changeover of Stroke coordinator
- Locums neuro hospitalists scheduled to begin late April 2014
Initial Rollout

- Started the process BEFORE locums arrived
- Identified team:
  - Stroke coordinator
  - Bedside Nurse
  - Therapy team
  - IRF admissions coordinator
  - Physiatrist
  - Neurologist
  - Charge or Nurse manager of Neuro Unit
  - Social work/case management
- Provided education and asked critical questions in a safe manner
- Facilitated shared decision making
How is it done?

- Team meets on Neuro Unit 3x/week
- Rotate to outside patient room for convenience of nurse
- Cover stroke core measures *Gold Plus Award
- Review medical and functional picture
  - Including home support and set-up
- Come to a consensus on ongoing work-up needs and disposition planning
Results?
Surface Benefits

- Social work/Case Management no longer unilaterally deciding disposition for CVA patients
- Nursing comfort and competency discussing and caring for stroke increased
- Comradery among members of the treatment team
- Palpable feeling of relief for hospitalist service
Onset days for Stroke for 2014

Comparison of Onset by CMG for RIC - 01 Stroke (Stroke)

<table>
<thead>
<tr>
<th>CMG</th>
<th>Facility # Cases</th>
<th>Facility Mean Onset</th>
<th>Region # Cases</th>
<th>Region Mean Onset</th>
<th>Nation # Cases</th>
<th>Nation Mean Onset</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3,434</td>
<td>10.2</td>
<td>100,069</td>
<td>9.8</td>
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2009-2014 Average

- 7.63 days

Sort By: Facility # Cases Direction: Descending RIC/CMG: 01 Stroke (Stroke)

Comparison of Onset by RIC

<table>
<thead>
<tr>
<th>RIC Group / CMG</th>
<th>Facility # Cases</th>
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<th>Region Adjusted Mean Onset</th>
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<th>Nation Adjusted Mean Onset</th>
<th>Confidence Interval based on Nation</th>
<th>CMG Graph</th>
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<tbody>
<tr>
<td>All</td>
<td>25</td>
<td>6.2</td>
<td>10.2</td>
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<td>10.1</td>
<td>9.4</td>
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<td>6.2</td>
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<td>9.7</td>
<td>10.1</td>
<td>9.4</td>
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<th>CMG Graph</th>
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<tbody>
<tr>
<td>All</td>
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<td>6.6</td>
<td>10.3</td>
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<td>10.0</td>
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<tr>
<td>01 Stroke (Stroke)</td>
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<td>6.6</td>
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Sort By: Facility # Cases Direction: Descending RIC/CMG: 01 Stroke (Stroke)

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<th>Confidence Interval based on Nation</th>
<th>CMG Graph</th>
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<td>All</td>
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<td>8.2</td>
<td>9.1</td>
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<td>9.9</td>
<td>9.4</td>
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<tr>
<td>01 Stroke (Stroke)</td>
<td>42</td>
<td>8.2</td>
<td>9.1</td>
<td>8.8</td>
<td>9.9</td>
<td>9.4</td>
<td>7.8 - 11.3</td>
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</table>

Key:
- Different from expected (FIM® Rating)
- Positive (Performance exceeds expectation)
- Negative (Potential Area of Concern)
Comparison of Onset by RIC

RIC Group / CMG

<table>
<thead>
<tr>
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<th>Nation Mean Onset</th>
<th>Nation Adjusted Mean Onset</th>
<th>Confidence Interval based on Nation</th>
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<td>4.3</td>
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<td>4.3</td>
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<td>0.8</td>
<td>0.8</td>
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</tbody>
</table>

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- Different from expected (FIM® Rating)
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Onset days for Stroke for 2015

Sort by: Facility # Cases Direction: Descending RIC/CMG: 01 Stroke (Stroke)

Comparison of Onset by CMG for RIC - 01 Stroke (Stroke)

<table>
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<tr>
<th></th>
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<th>Region Mean Onset</th>
<th>Nation # Cases</th>
<th>Nation Mean Onset</th>
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<td></td>
<td>Avg LOS</td>
<td>Cases</td>
<td>Avg LOS</td>
<td>Cases</td>
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<tr>
<td>HOME</td>
<td>78.29</td>
<td>104</td>
<td>70.16</td>
<td>98</td>
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<tr>
<td>TRANSFER TO SNF - NON IHC</td>
<td>148.20</td>
<td>55</td>
<td>132.98</td>
<td>50</td>
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<tr>
<td>TRANSFER TO REHAB - IHC</td>
<td>132.25</td>
<td>55</td>
<td>111.70</td>
<td>71</td>
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<td>EXPIRED</td>
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<td>31</td>
<td>62.36</td>
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<td>HOME HEALTH - NON-IHC</td>
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<td>59.88</td>
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<td>5</td>
<td>99.36</td>
<td>11</td>
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<tr>
<td>OTHER</td>
<td>167.08</td>
<td>13</td>
<td>167.09</td>
<td>11</td>
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<tr>
<td><strong>All Stroke Discharges</strong></td>
<td><strong>109.46</strong></td>
<td><strong>313</strong></td>
<td><strong>93.30</strong></td>
<td><strong>320</strong></td>
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</table>
2015 Acute Hospital Stroke LOS (in hours) By Quarter:

- **Q1**: 109.67 hours (2014 year: 109.46)
- **Q2**: 104.67 hours
- **Q3**: 87.71 hours
- **Q4 (through Nov.)**: 87.6 hours
2014-2016 Final (Acute Hospital LOS)

- 2014 LOS all CVA: 4.40 days
- 2015 LOS all CVA: 3.32 days
- 2016 (1st quarter) LOS all CVA: 3.29
% of CVA patients admitted to IRF vs. SNF

- 2014:
  - SNF 12.8%
  - IRF 15.4%
- 2015:
  - SNF 10.9%
  - IRF 18.1%
Rehab LOS By Quarter 2015

- LOS Q1 and Q2: 16.89 days
- LOS Q3 and Q4: 16.41 days
LOS YTD 2015

Comparison of LOS by RIC

<table>
<thead>
<tr>
<th>RIC Group / CMG</th>
<th>Facility # Cases</th>
<th>Facility Mean LOS</th>
<th>Region Mean LOS</th>
<th>Region Adjusted Mean LOS</th>
<th>Nation Mean LOS</th>
<th>Nation Adjusted Mean LOS</th>
<th>Confidence Interval based on Nation</th>
<th>CMG Graph</th>
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</thead>
<tbody>
<tr>
<td>All</td>
<td>111</td>
<td>16.6</td>
<td>16.4</td>
<td>16.1</td>
<td>15.6</td>
<td>14.6</td>
<td>13.1 - 16</td>
<td></td>
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<tr>
<td>01 01 Stroke (Stroke)</td>
<td>111</td>
<td>16.6</td>
<td>16.4</td>
<td>16.1</td>
<td>15.6</td>
<td>14.6</td>
<td>13.1 - 16</td>
<td>Graph</td>
</tr>
</tbody>
</table>

Key:
- **Different from expected (FIM® Rating)**
- **Positive (Performance exceeds expectation)**
- **Negative (Potential Area of Concern)**

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CMI by Quarter 2015

- Q1-2: 1.45
- Q3-4: 1.40
Total FIM Gain By Quarter 2015

- $Q_{1-2}$: 37.16
- $Q_{3-4}$: 39.84
Patients Discharged Home in 2014

Sort By: Discharge Setting Direction: Ascending RIC/CMG: 01 Stroke (Stroke)

Effectiveness

Percent of Cases

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Facility</th>
<th>Facility %</th>
<th>Region Adjusted</th>
<th>Region Adjusted %</th>
<th>Nation Adjusted</th>
<th>Nation Adjusted %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Patients</td>
<td></td>
<td></td>
<td>N</td>
<td>100.0%</td>
<td></td>
<td>100.0%</td>
</tr>
<tr>
<td>Effectiveness</td>
<td></td>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge to Community %</td>
<td>90</td>
<td>100.0%</td>
<td>100.0%</td>
<td>75.8%</td>
<td>76.4%</td>
<td></td>
</tr>
</tbody>
</table>

Intermountain Healthcare

Healing for Life
Patients discharged Home in 1st Quarter 2015

Sort By: Discharge Setting Direction: Ascending RIC/CMG: 01 Stroke (Stroke)

**Effectiveness**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Facility</th>
<th>Region Adjusted</th>
<th>Nation Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
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<tr>
<td>Total Patients</td>
<td>25</td>
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<tr>
<td>Discharge to Community %</td>
<td>17</td>
<td>66.0%</td>
<td>72.8%</td>
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Intermountain Healthcare
*Healing for Life*
Patients discharged Home in 2nd Quarter 2015

Sort By: Discharge Setting Direction: Ascending RIC/CMG: 01 Stroke (Stroke)

<table>
<thead>
<tr>
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<th>Facility</th>
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<th>Nation Adjusted</th>
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<tbody>
<tr>
<td>Total Patients</td>
<td>20</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Effectiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ Discharge to Community %</td>
<td>13</td>
<td>65.0%</td>
<td></td>
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<td></td>
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<td></td>
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</table>
Patients Discharged Home in 3rd Quarter 2015

Sort By: Discharge Setting Direction: Ascending RIC/CMG: 01 Stroke (Stroke)

**Effectiveness**

<table>
<thead>
<tr>
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<th>Facility</th>
<th>Region Adjusted</th>
<th>Nation Adjusted</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Total Patients</td>
<td>42</td>
<td>100.0%</td>
<td>106.0%</td>
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<tr>
<td>Effectiveness</td>
<td>34</td>
<td>81.0%</td>
<td>77.0%</td>
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Discharge to Community %
Patients Discharged Home 4th Quarter 2015

Sort By: Discharge Setting Direction: Ascending RIC/CMG: 01 Stroke (Stroke)

Effectiveness

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Facility</th>
<th>Region Adjusted</th>
<th>Nation Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Total Patients</td>
<td>24</td>
<td>100.0%</td>
<td>100.0%</td>
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<tr>
<td>Effectiveness</td>
<td>21</td>
<td>87.5%</td>
<td>76.5%</td>
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Patients Discharged to Home 2015

Sort by: Discharge Setting Direction: Ascending RIC/CMO: 01 Stroke (Stroke)

Effectiveness

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<thead>
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<th>Nation Adjusted</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
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</tr>
<tr>
<td>Total Patients</td>
<td>111</td>
<td>100.0%</td>
<td>100.0%</td>
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<tr>
<td>Effectiveness</td>
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<tr>
<td>Discharge to Community %</td>
<td>85</td>
<td>76.6%</td>
<td>74.5%</td>
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Intermountain Healthcare
Healing for Life
<table>
<thead>
<tr>
<th>Discharge Disposition</th>
<th>2014</th>
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<th>2015</th>
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<td></td>
<td>Readmit</td>
<td>Cases</td>
<td>Rate</td>
<td>Readmit</td>
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<tr>
<td>HOME</td>
<td>13</td>
<td>104</td>
<td>12.3%</td>
<td>5</td>
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<tr>
<td>TRANSFER TO SNF - NON IHC</td>
<td>4</td>
<td>33</td>
<td>7.3%</td>
<td>9</td>
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<tr>
<td>TRANSFER TO REHAB - IHC</td>
<td>6</td>
<td>33</td>
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<td>6</td>
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<tr>
<td>EXPIRED</td>
<td>NA</td>
<td>21</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>HOME HEALTH - NON-IHC</td>
<td>3</td>
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<td>3</td>
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<td>3</td>
<td>40.0%</td>
<td>2</td>
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<td>13</td>
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<td>0</td>
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<tr>
<td><strong>All Stroke Discharges</strong></td>
<td>32</td>
<td>232</td>
<td>11.8%</td>
<td>28</td>
</tr>
</tbody>
</table>

*Excludes Expired Cases*
Summary

• Length of stay for all strokes improved over 2014 (with a bump in improvement in the 3rd and 4th quarters)
• Onset days for rehab patients significantly improved
• Higher percentage of eligible stroke patients are admitted to NSR
• Higher percentage of NSR stroke patients are discharged to a home setting (in line with regional and national expectations)
• The acuity of stroke patients accepted at NSR is increased over 2014 (while outcomes improved)
Complicating Variables:

• No hemorrhages prior to 2014
• Discrepancies in the data
• Addition of services:
  – Neuro hospitalists
  – Tele-stroke services
  – Intravascular interventions
  – Nursing education
  – Development of pre-hospital and ED protocols to facilitate early intervention
Current/Future Directions:

- Expansion of CVA rounds to General Neuro and Crani
- Increased frequency of rounding
- Including patient/family in discussion
- Stroke Trained Medical Director
- Currently:
  - Physiatry consults available to acute hospital 5 days per week
  - ICU rounds 3-5 days per week
    - Mainly Trauma and Crani at present
Clinical Program Projects

- Care Process Modules
  - Acute management of Ischemic Stroke
  - Hospital and Rehabilitation care for Stroke
    - Stroke Discharge Algorithm
    - Interdisciplinary coordination of stroke care and rehab
Questions?