

# **Business of Stroke Care**

*Drivers of Financial Performance*

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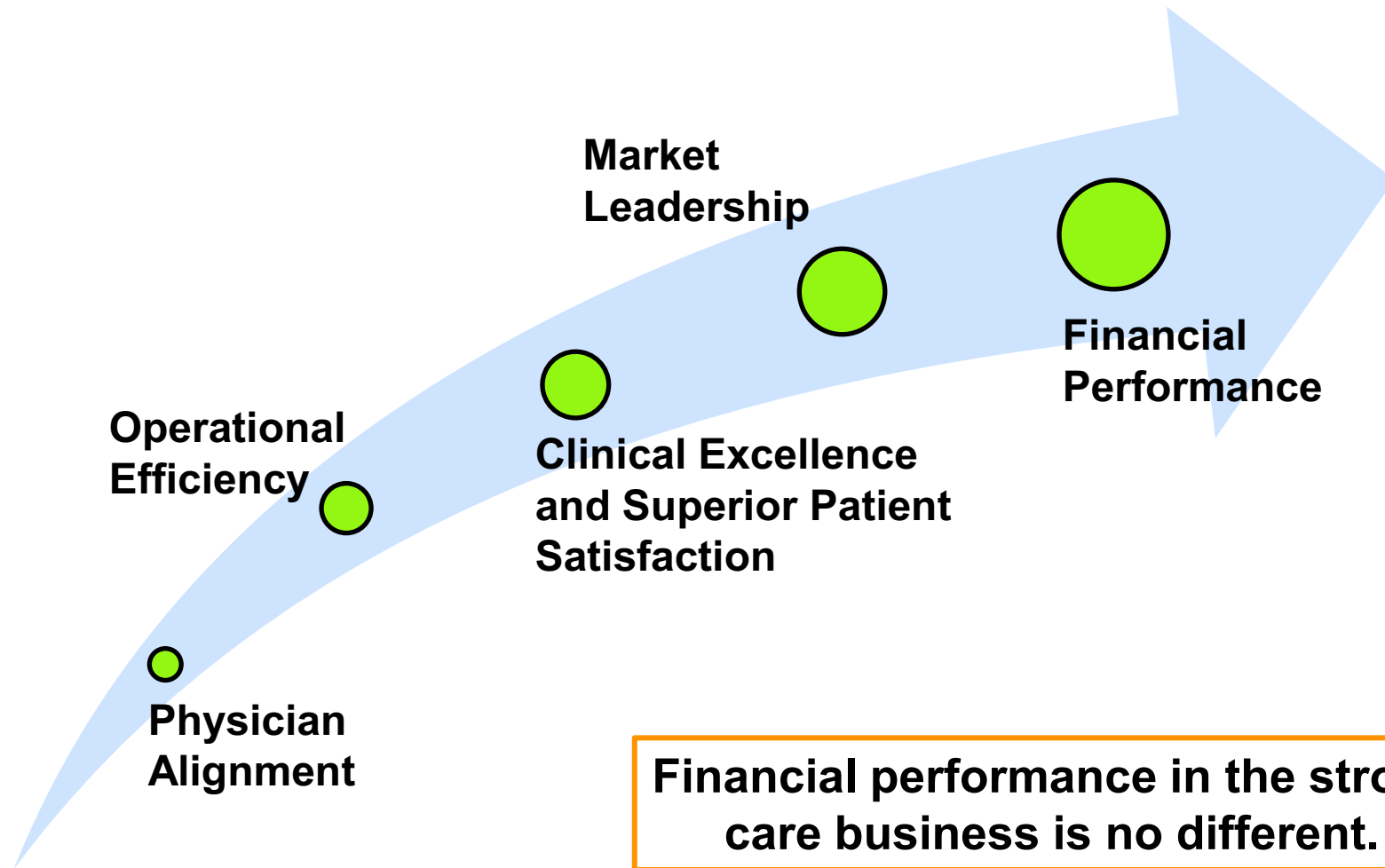


**Jayme L M Zage, PhD**  
Vice President, Sg2

**December 3, 2008**

# Financial Performance Grows out of Clinical and Operational Excellence

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# Drivers of Successful Stroke Business

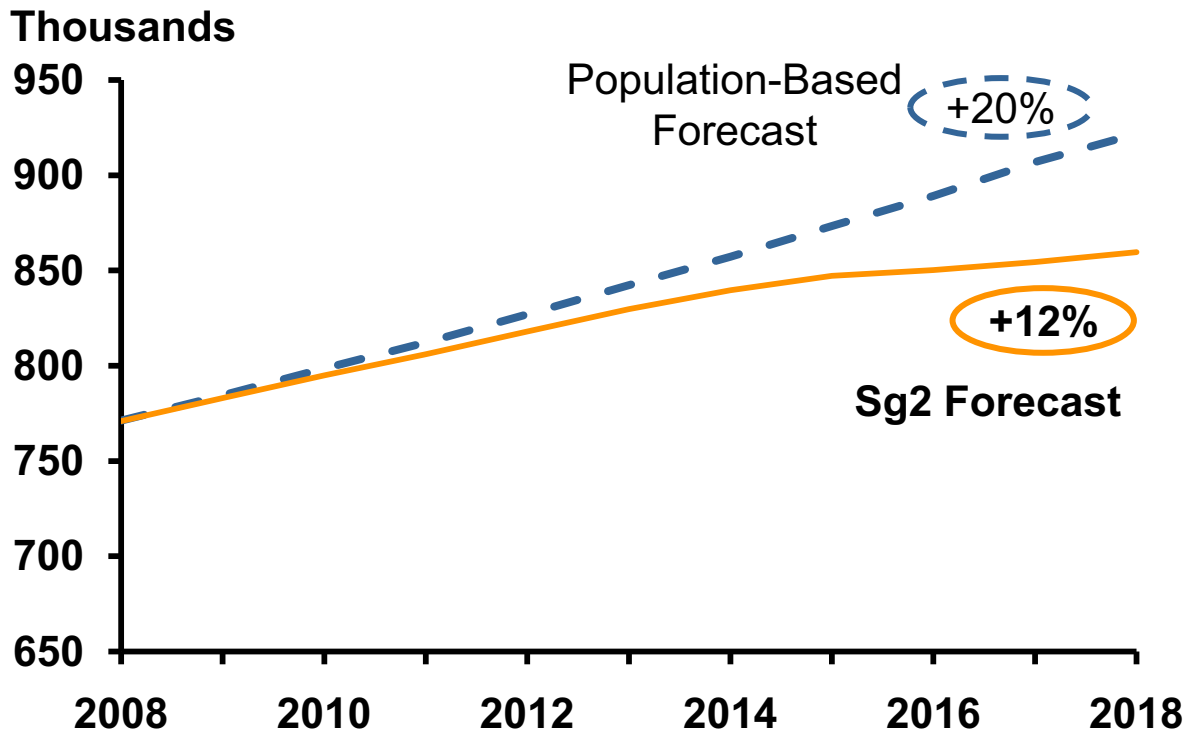
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- Physician Alignment
  - Physician leadership and clinical team engagement in the design and delivery of stroke care
- Operational Efficiency
  - Seamless patient flow throughout the stroke prevention and treatment continuum
- Clinical Excellence
  - Stroke prevention and long-term outcome improvements driven by use of evidence-based medicine
- Market Leadership
  - Recognized patient partner in the prevention and treatment of stroke
- Financial Performance
  - Positive contribution to the neurosciences service line and the organization's bottom line

# Stroke and Neurovascular Services Growth Is Slowing



## Neurovascular, Stroke and TIA Forecast US Market, 2008–2018

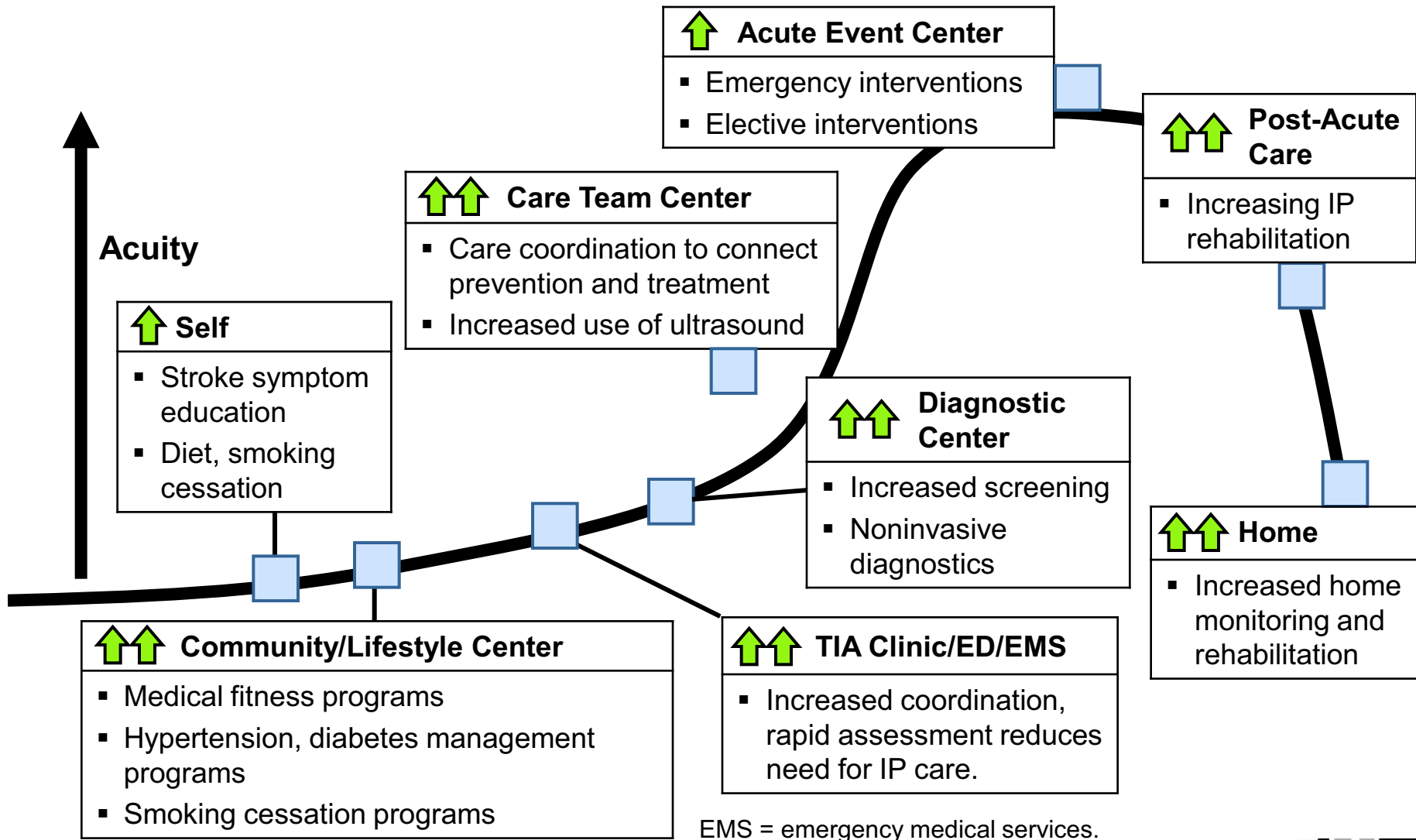


In some markets, current volumes are flat and short-term gains will be limited to shifting market share.

TIA = transient ischemic attack.

Sources: Impact of Change® v6.0; Pharmedics; HCUP; CMS; CDC; Sg2 Analysis, 2007.

# Integrating Stroke Care Continuum Offers Additional Growth Opportunities



## Myth #1 – Stroke Care is Not Profitable

# Caring for Acute Stroke Is Profitable

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## Stroke Care Profitability—Hospital Sample Set, 2008

Therapy	DSG	ALOS	Revenue	Direct Cost	Contribution Margin
All Strokes	5,806	5.3	\$8,387.78	\$5,349.93	\$3,037.85
Ischemic Strokes	4,803	4.8	\$7,073.43	\$4,656.56	\$2,416.88
Hemorrhagic Strokes	1,003	6.3	\$14,066.24	\$7,790.64	\$6,275.60

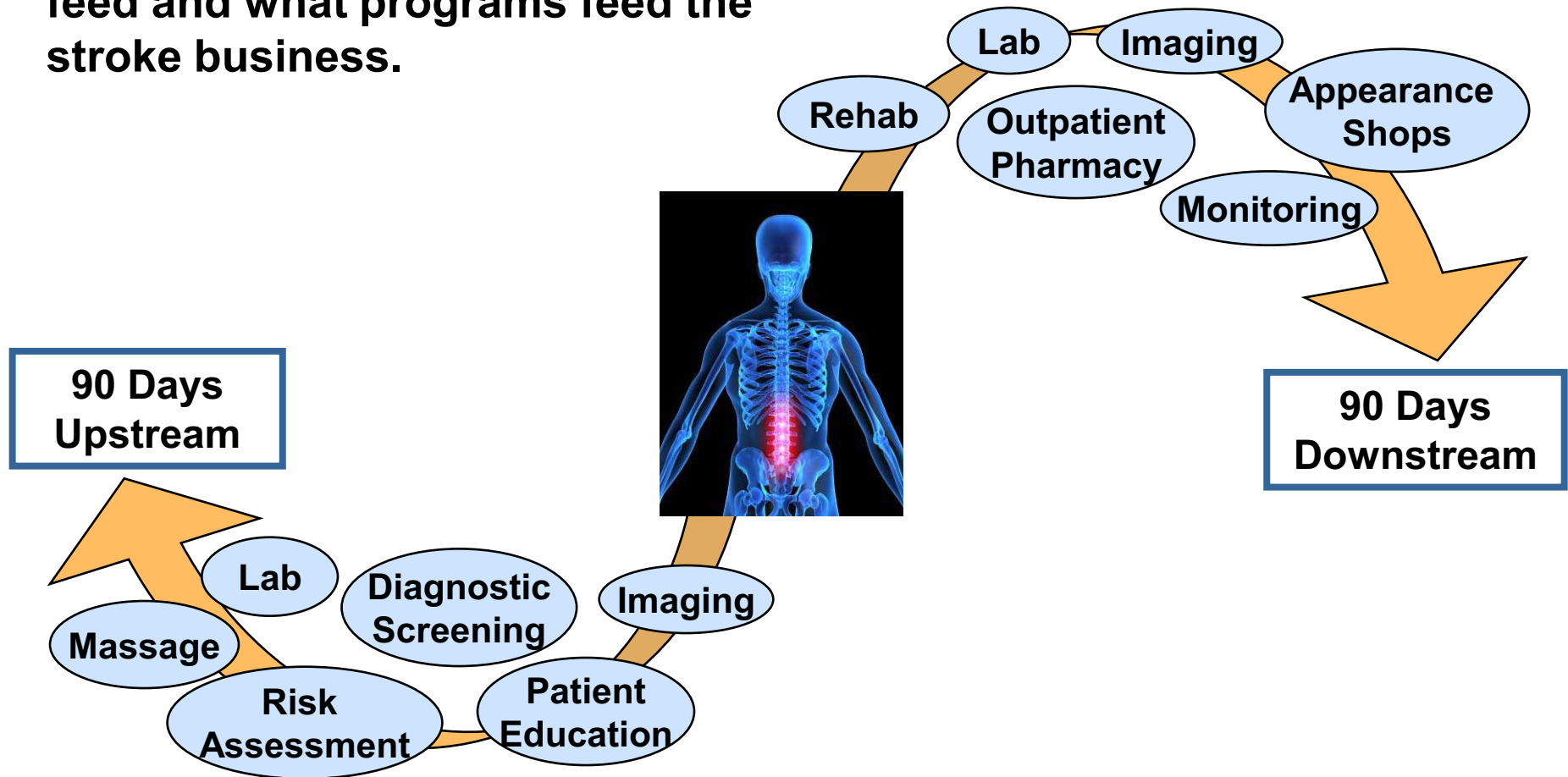
## 24-Hospital Analysis

- Midwest urban and rural hospitals
- Sizes ranging from 20 to 417 beds
  - Seven hospitals are smaller than 100 beds.
- Formal stroke programs documented at 4 hospitals
- Thrombolytics provided at 14 hospitals

Source: Sg2 Analysis, sample of 24 hospitals, 2008.

# Profitability Analysis Should Include Downstream Impact

Know what programs stroke patients feed and what programs feed the stroke business.



# Clinical and Financial Performance Increasingly Will Be Linked

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## Pay-4-Performance Initiatives Impact Reimbursement

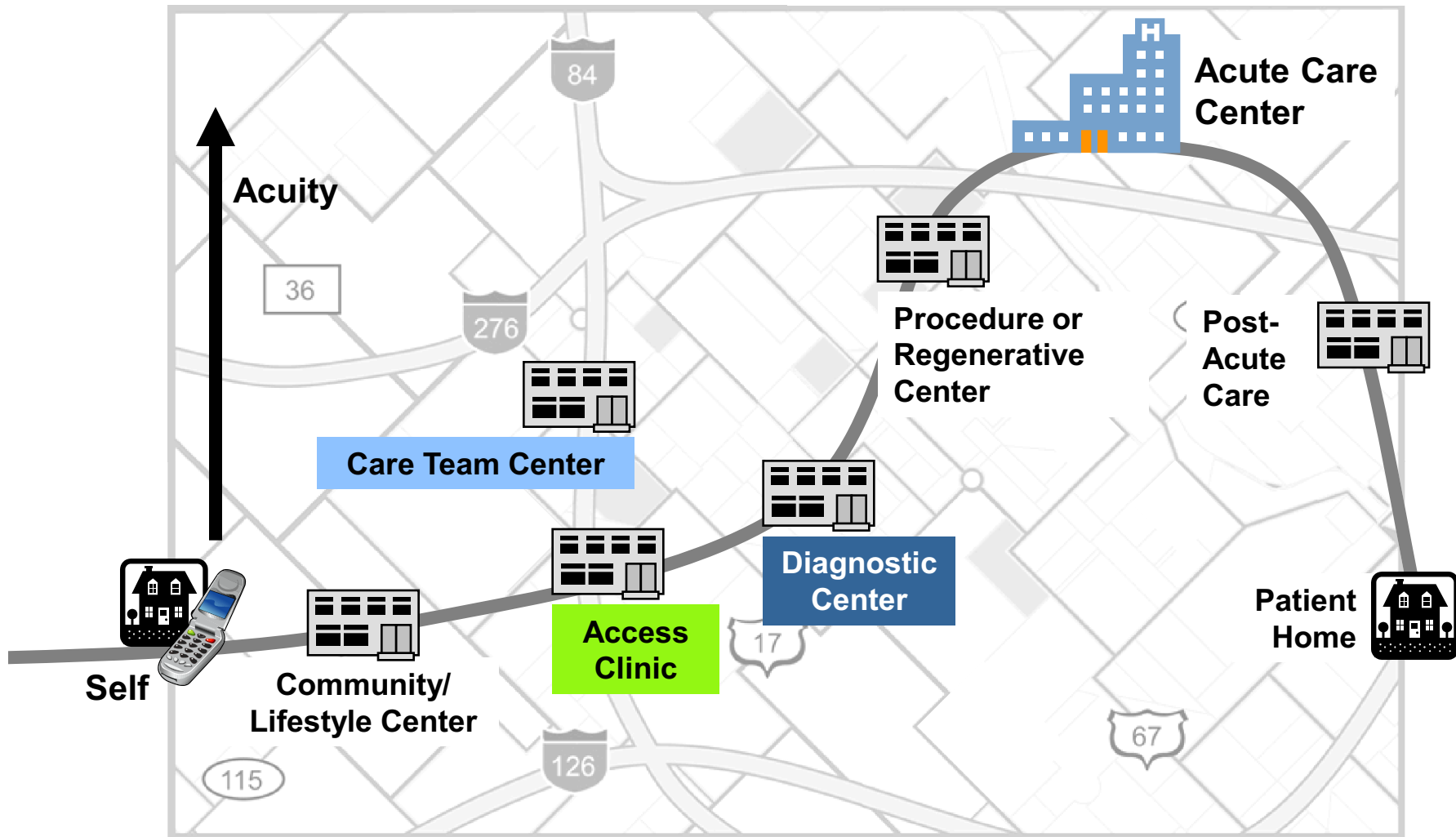
Hospitals will increasingly be held responsible for clinical outcomes, clinical processes and customer service and satisfaction. Organizations must be able to measure and demonstrate their outcomes in order to justify payment.

### CMS Stroke Measures

- DVT prophylaxis
- Discharges on antithrombotic therapy
- Patients with atrial fibrillation receiving anticoagulation therapy
- Antithrombotic medication given by end of hospital day 2
- Dysphasia screening

Source: Center's for Medicare & Medicaid Services. Accessed at: [cms.hhs.gov](http://cms.hhs.gov) on Nov 17, 2008.

# Improving Clinical Stroke Outcomes Requires an Integrated Approach



## Myth #2 – Only Patients Receiving Procedures are Profitable

# Stroke Severity and Treatment Complexity Increase Profitability

### Stroke Type and Treatment per Patient Statistics

	Therapy	DSG	ALOS	Revenue	Direct Cost	Contribution Margin
All Strokes	All	5,806	5.3	\$8,387.78	\$5,349.93	\$3,037.85
	Medical	3,231	4.2	\$6,196.40	\$3,538.80	\$2,657.60
	Surg/Interventional	2,575	6.7	\$1,137.43	\$7,622.45	<b>\$3,514.98</b>
Ischemic	All	4,803	4.8	\$7,073.43	\$4,656.56	\$2,416.88
	Medical	2,817	4.2	\$6,152.72	\$3,545.16	\$2,607.55
	tPA	70	6.8	\$12,431.07	\$9,773.12	<b>\$2,657.96</b>
	Surg/Interventional	1,986	6.4	\$8,690.24	\$6,677.20	\$2,013.03
Hemorrhagic	All	1,003	6.3	\$14,066.24	\$7,790.64	\$6,275.60
	Medical	414	4.4	\$6,493.67	\$3,495.52	\$2,998.15
	Surg/Interventional	589	7.7	\$19,388.90	\$10,809.63	<b>\$8,579.27</b>

Source: Sg2 Analysis, sample of 24 hospitals, 2008.

### Myth #3 – Use of Thrombolytics Reduces Profitability

# Thrombolytics Do Not Reduce Profitability

## Stroke Care Profitability, Use of Thrombolytics Hospitals Sample Set, 2008

	Therapy	DSG	ALOS	Revenue	Direct Cost	Contribution Margin
Ischemic	All	4,803	4.8	\$7,073.43	\$4,656.56	\$2,416.88
	Medical	2,817	4.2	\$6,152.72	\$3,545.16	\$2,607.55
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	Surg/Interventional	1,986	6.4	\$8,690.24	\$6,677.20	\$2,013.03

Source: Sg2 Analysis, sample of 24 hospitals, 2008.

# Stroke Teams Improve Efficiency and Efficacy

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- No more 1 man shows
- Team of clinicians and nurses
- Preset orders for testing
- Clearly defined decision trees
- Critical decisions made ahead of time for certain situations

**Stroke patients who are assessed and treated efficiently have fewer complications and have accelerated recoveries. The result is reduced length of stay and costs.**

# Protocols Increase Attention to Detail, Reducing Complications

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## Tools Allow Nurse-Driven Dysphagia Screening

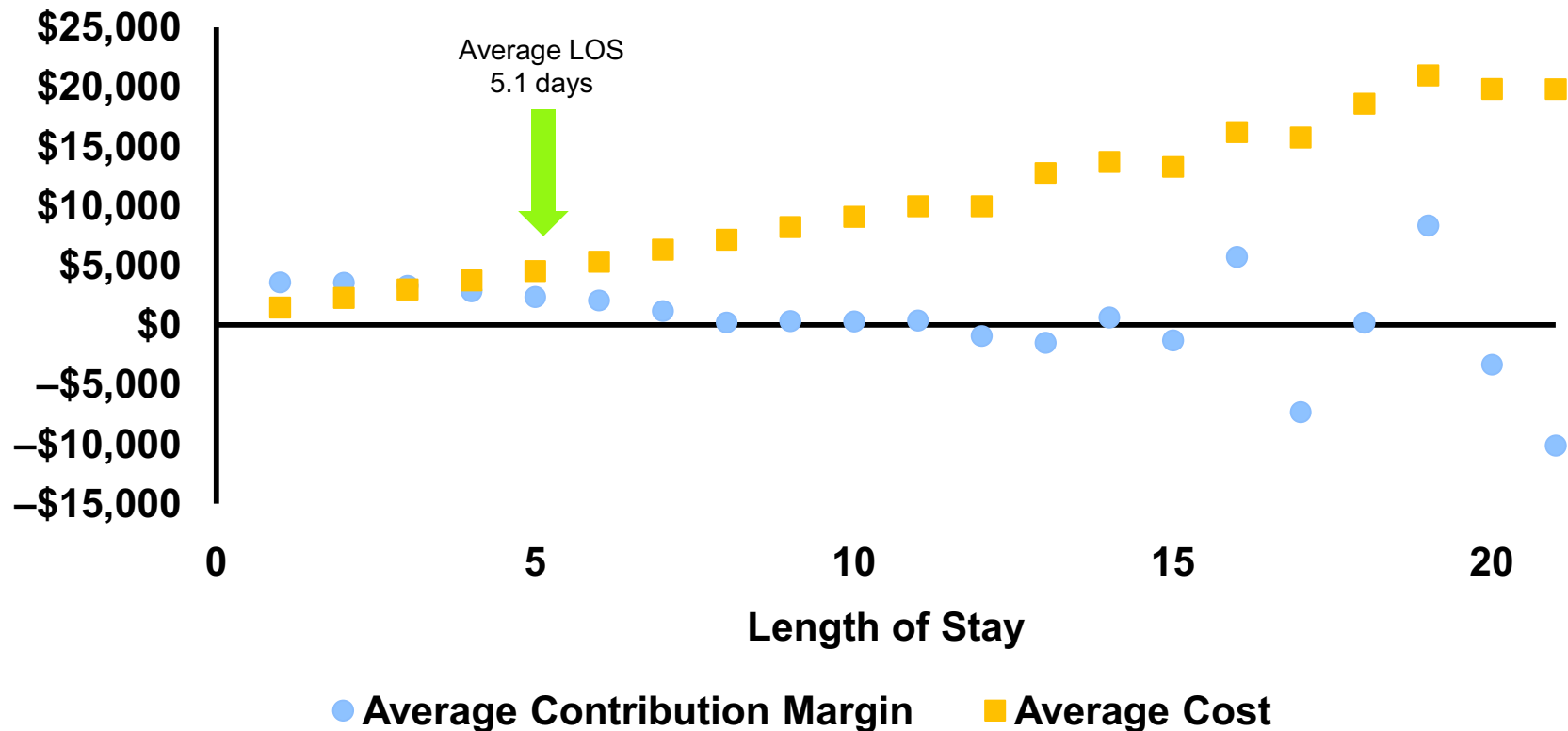
- Key Stroke Initiatives
  - Early ID of dysphagia and aspirational pneumonia risk
- Challenges
  - Speech-language pathologist availability
  - Time to assessment
  - Lack of validated simple screening tools
- Solution
  - Validated nurse-administered screening tools
  - Admission-to-screen time: 0.31 days
  - High sensitivity (82%–91%) and NPV (85%–98%)



Sources: Papers presented at: 2008 International Stroke Conference, February 19–20 and 22, 2008, New Orleans, LA: Edmiaston J. Validation of a simple dysphagia screening tool for nursing in the acute stroke population; Beckstrom L. Comparison of nursing swallow screen and speech swallow evaluations on an acute stroke unit; Goldsmith T. Validation of a swallow screening tool in acute neuroscience patients.

# Costs Rise and Profitability Declines as Length of Stroke Stay Rises

## Stroke Care Profitability, Relationship of LOS and CM Hospital Sample Set\*, 2008



\*Includes ~4800 patients. 69% of patients have an ALOS of 5 days or less; patients with ALOS of 15 or greater account for only 3% of the patient population analyzed.

Source: Sg2 Analysis, sample of 24 hospitals, 2008.

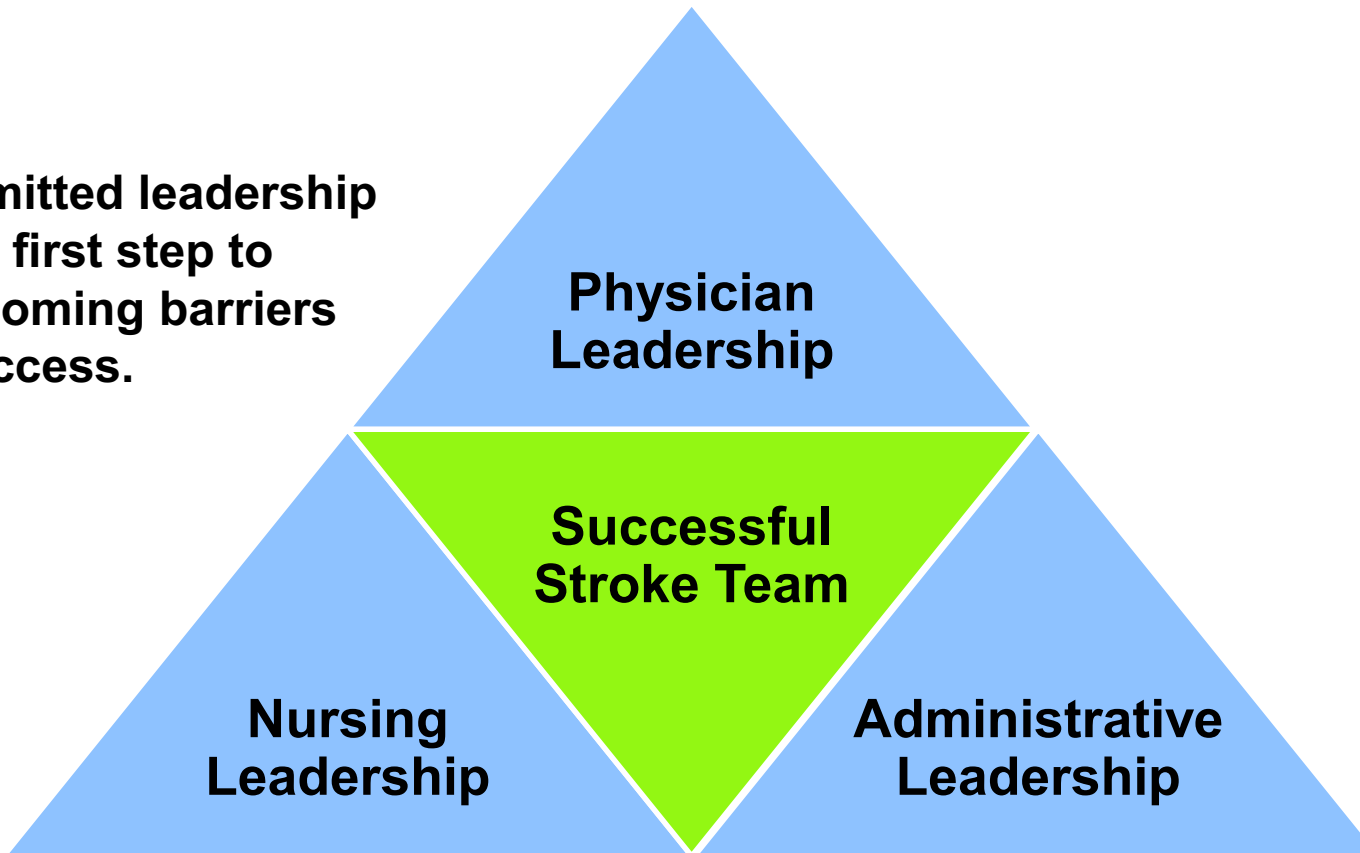
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# Successful Stroke Team Requires Leadership

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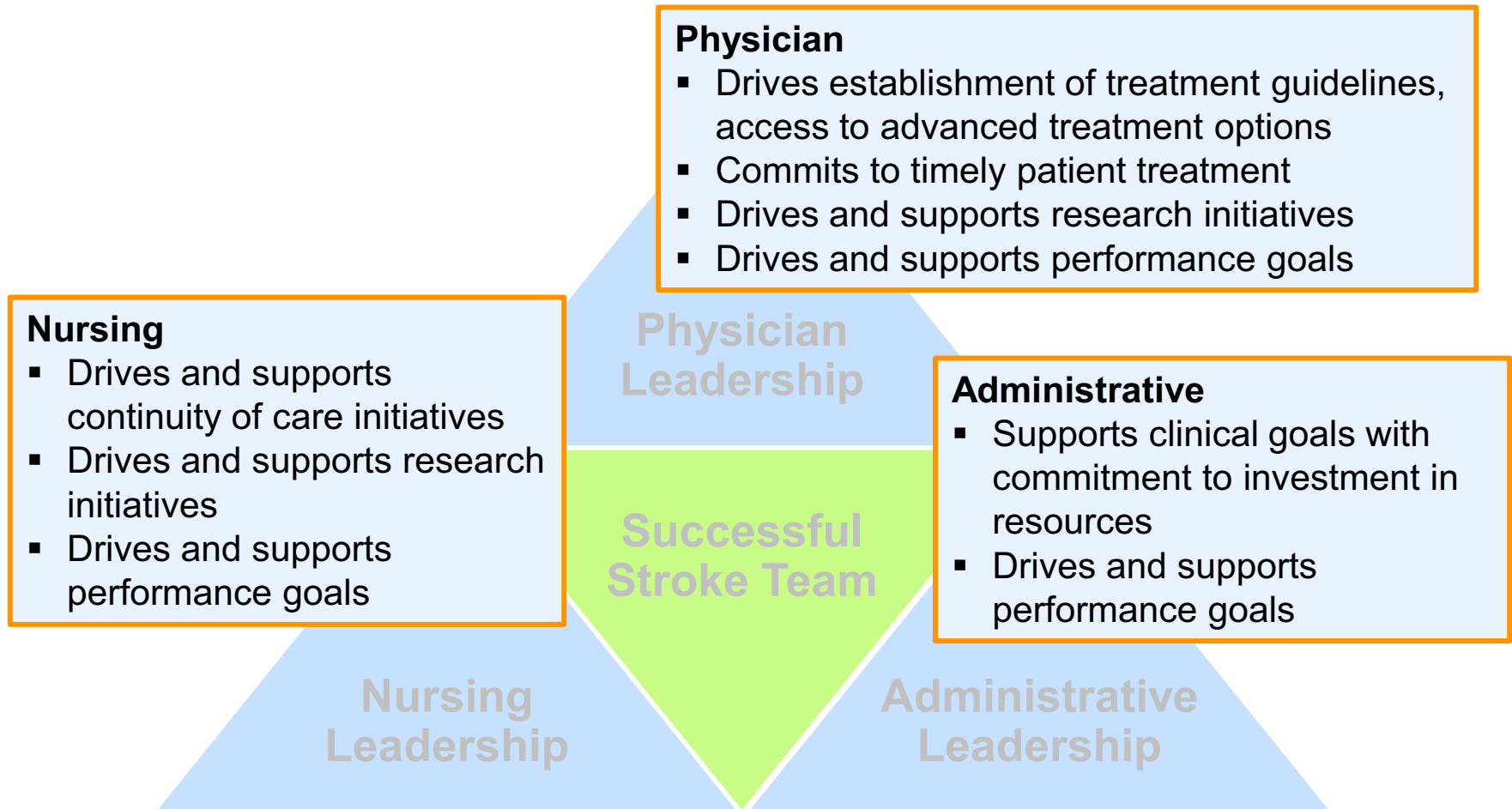
## Stroke Care Structure for Success

**Committed leadership is the first step to overcoming barriers to success.**



# Commitment to Common Goals are Key Components of Leadership

## Stroke Care Structure for Success



# We All Need a Physician Champion...but How Do We Choose One?

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**Open-  
minded**

**Considers  
hospital and self**

**Proven  
outcomes**

**Respected by  
peers**

**Seen as leader**



**Visionary**

**Business  
savvy**

**Persistent**

**Willing to be  
the “fall guy”**

**Ready to jump the  
chain when necessary**

**Keeps everyone  
honest**


# Myth #4 – Successful Stroke Programs Require Significant Capital Limited Leadership and Education Investments Are Required

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## Neurologists Are Increasingly Seeking Compensation for Administrative Roles

### Expected Average Cost of Stroke Business Implementation

Acute Stroke Team*	\$5,000–\$20,000
Radiology Technologist	\$0–\$50,000
Physician Champion	<b>\$0–\$25,000</b>
Staff Education Support†	\$1,000–\$5,000
Public Education	\$2,000–\$10,000
Marketing	\$0–\$20,000



**Expected  
Cost Range:  
\$8,000–  
\$130,000**

**The cost of the physician champion can be covered in as few as 10 stroke patients.**

\*Based on the assumption that a stroke team will be formed through added incentives without hiring new staff.

†Average reported costs; can get higher if every clinical team member receives the recommended stroke education of 4 hours per year.

Sources: Alberts et al. *JAMA* 2000; Kidwell et al. *Neurology* 2003; Sg2 Analysis, 2004.

# Gainsharing Engages Physicians in Quality Improvement, Reduces Costs

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## Benefits:

- Aligns economic interests and fosters better communication and coordination
- Drives quality improvement through specific standardized procedures and protocols
- Incentivizes physicians to redesign patient care processes to decrease costs while maintaining high-quality care

### Case Example: Pinnacle Health System (Harrisburg, PA)

- Gainsharing program started in 2005 with Harrisburg Hospital and 3 cardiology group practices.
- Pinnacle saved approximately \$2.5M by using more cost-effective cardiac devices.
- Cardiac cath lab complication rates have decreased incrementally since the program's inception.
- Each cardiology group decides how the shared annual savings will be distributed among the physicians based on their level of involvement in gainsharing activities.
- Pinnacle's CEO cites the gainsharing program as the impetus for collaborative hospital-physician dialogue that resulted in 2 clinical quality improvement initiatives.

Sources: *Sacramento Business Journal* 2005; *Physician's News Digest* 2007.

# Committing to Excellence in Stroke Care Improves Financial Performance

## Case Example: St Vincent Stroke Center, Indianapolis, IN Streamlined Care Drives Success

### Formalized stroke services:

- Trained ED nurses and physicians, EMS
- Designed stroke protocols to streamline care process
- Created 24/7 access to CT imaging by moving CT from basement to ED
- Established IStat in ED for basic lab tests
- Designated an in-house rapid stroke response team
- Established a community screening program

### ALOS and Margin Improved Throughout Implementation of Stroke Center\*

	ALOS	Average Margin
Year 0	4.83	(\$1,200)
Year 1	4.31	\$180
Year 2	3.31	\$1,200

**Commitment to stroke center development came from clinical and administrative leadership.**

\*Time period for case example predates availability of increased payment with use of thrombolytics.

# Stroke Is Indiscriminate of Geography

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**Providers in ALL communities must be prepared.**



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