

# Maximizing Value: Care-Based Cost Management



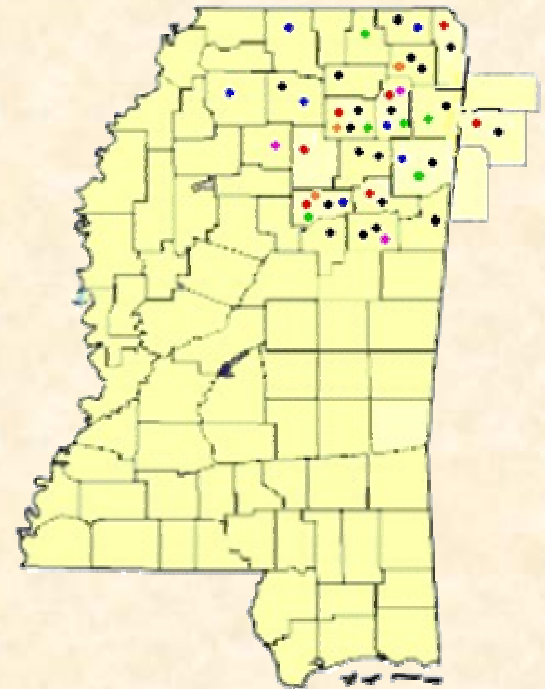
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**11/28/06**

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# North Mississippi Health Services

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- ▶ 6 hospitals – 856 acute care beds
  - ❖ North Mississippi Medical Center (NMMC) – 650 beds
- ▶ 38 primary care clinics
- ▶ 7 Wellness Centers
- ▶ 4 Nursing Homes – 307 beds
- ▶ 6000 Employees
- ▶ Third largest rural health system in country
- ▶ Market share – 42% or 275,000 people
  - ❖ 10% of Miss. Population



# Health Institution Survival

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## Competitive Advantage

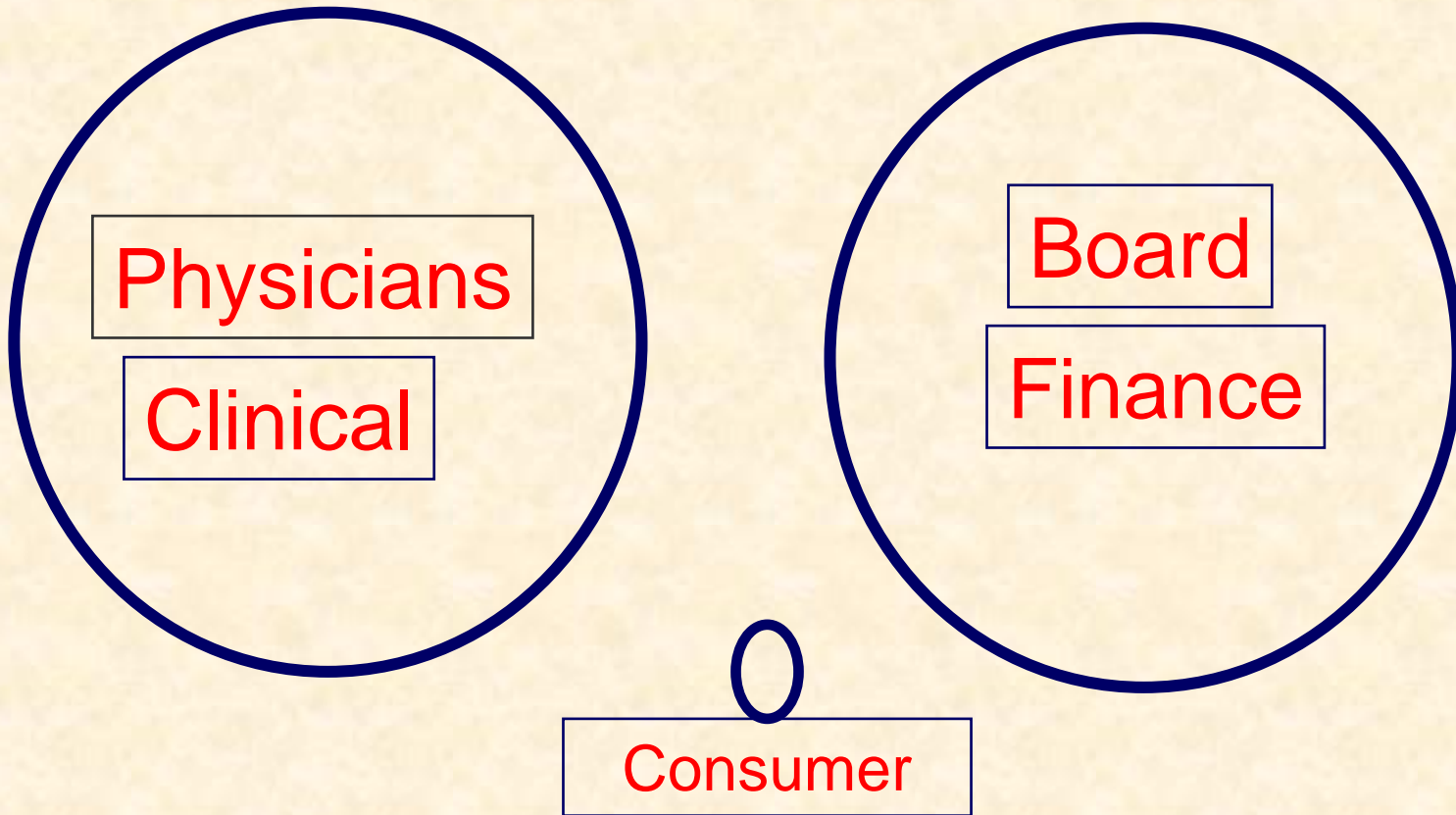
- ✓ Provide safe, high quality care that exceeds the customer's expectation
- ✓ Cost Reduction – Value (Quality/Cost)
- ✓ Transparency-driven, customer inclusive process improvement - > market share enhancement



# Organization Culture Change

## *Old Culture*

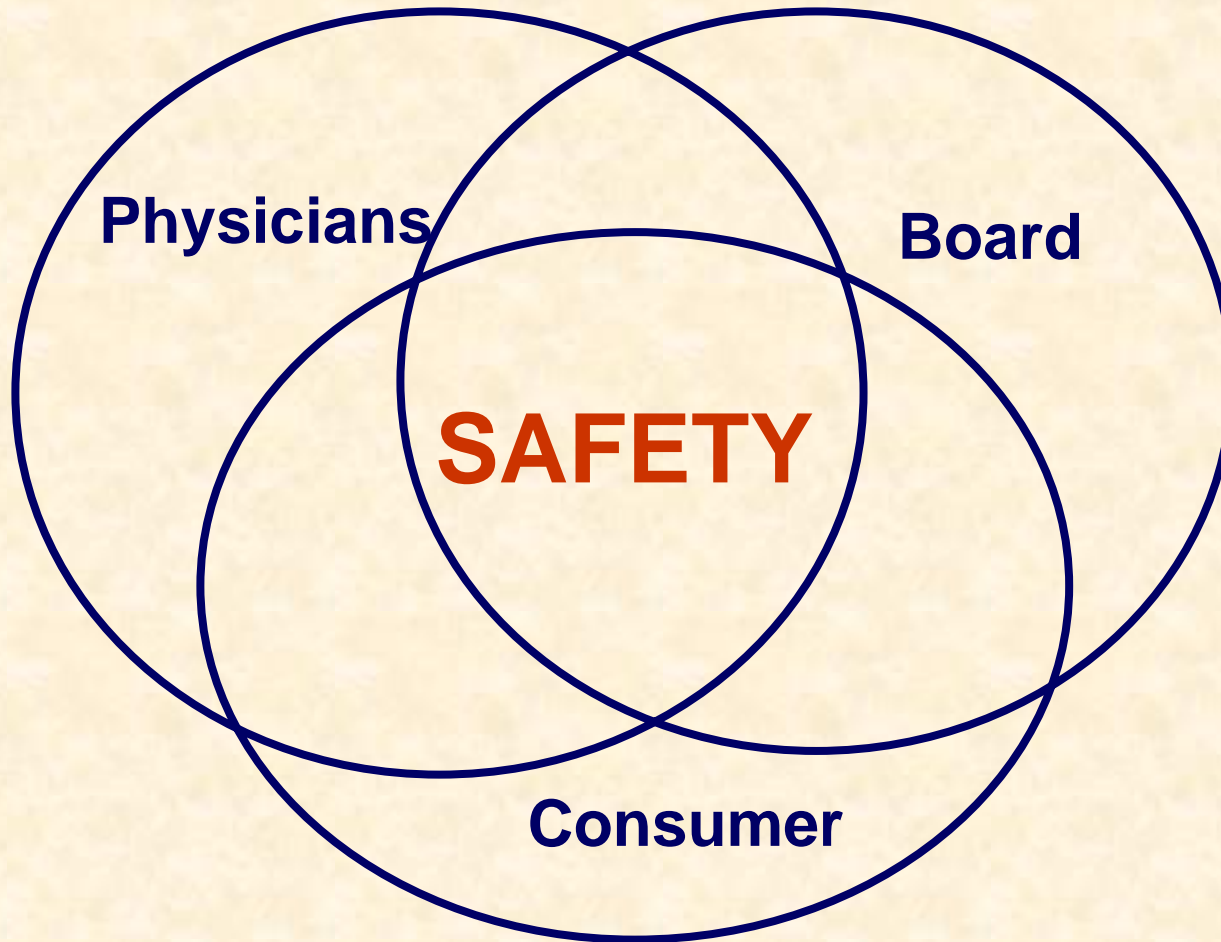
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# Organization Culture Change

## *New Culture*

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# Elements of Safety

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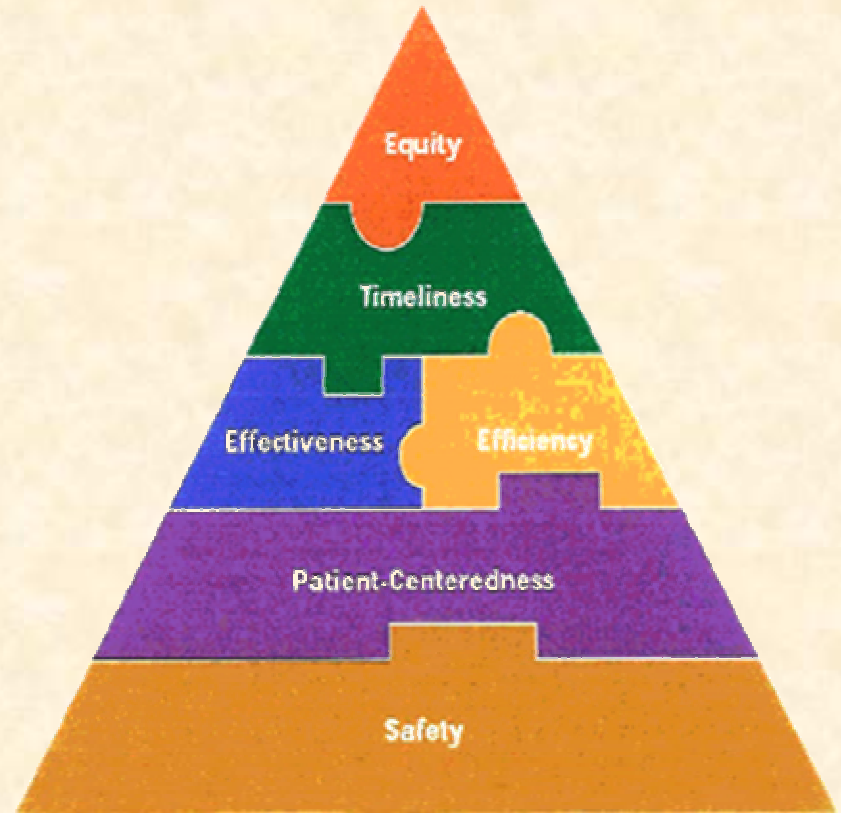
- ★ Environment
- ★ Errors
- ★ Appropriate Care



# Institute of Medicine Quality Aims

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- Safety
- Patient-Centeredness
- Effectiveness
- Efficiency
- Timeliness
- Equity



# Organization Structure Change

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- ☑ Quality Standards Committee
  - ★ (½ community, ½ physician board members)
- ☑ System Physician Executive Medical Staff
- ☑ Physician Leadership Training Committee
  - ★ 41 physicians attended 55 leadership courses in 2001-2004
  - ★ Servant Leader training
- ☑ Nursing Outcomes College
- ☑ Development of Clinical Service Lines with Physician Champions
  - ★ Clinician responsibility and accountability
- ☑ Community Task Forces
  - ★ Strategy Development and Service Enhancement

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# Organizational Template

## *Malcolm Baldrige Model*

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How Do You Run  
Your Business and  
What Results Do You Achieve?

- ✘ MS Baldrige Award
  - ✓ Excellence Award 1997
  - ✓ Governors Award 2000
- ✘ National Baldrige Award
  - ✓ Consensus in 2003, 2004
  - ✓ Site visits in 2005, 2006
  - ✓ **Winner - 2006**

# Leadership Model

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## ★ Servant Leadership

### ★ Training

- Robert K. Greenleaf
- Steven R. Covey
- James C. Hunter



### ★ Modeling

- All managers and physician leaders completing servant leader training and assessment

# **NMHS – Care/Cost Improvement Strategy**

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**Quality/Cost (value enhancement)**

**Care-Based Cost Management  
(CBCM)**

# From Focus on Traditional Cost Drivers

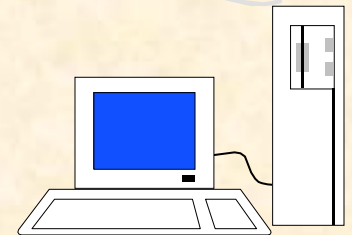
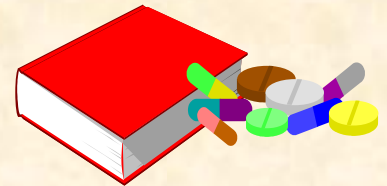
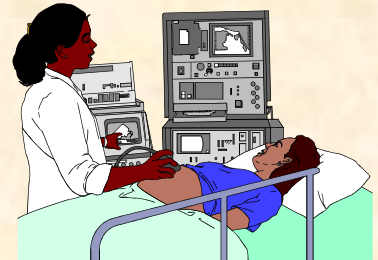
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☑ People

☑ Equipment / Supplies

☑ Facilities

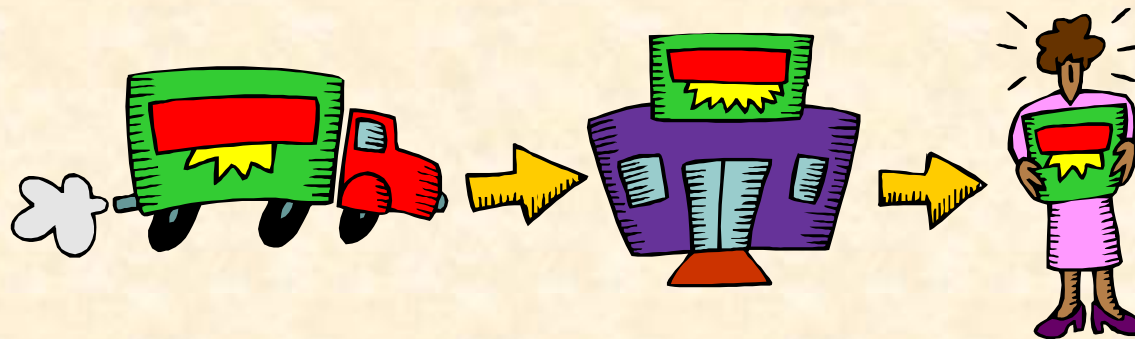
☑ Information Systems



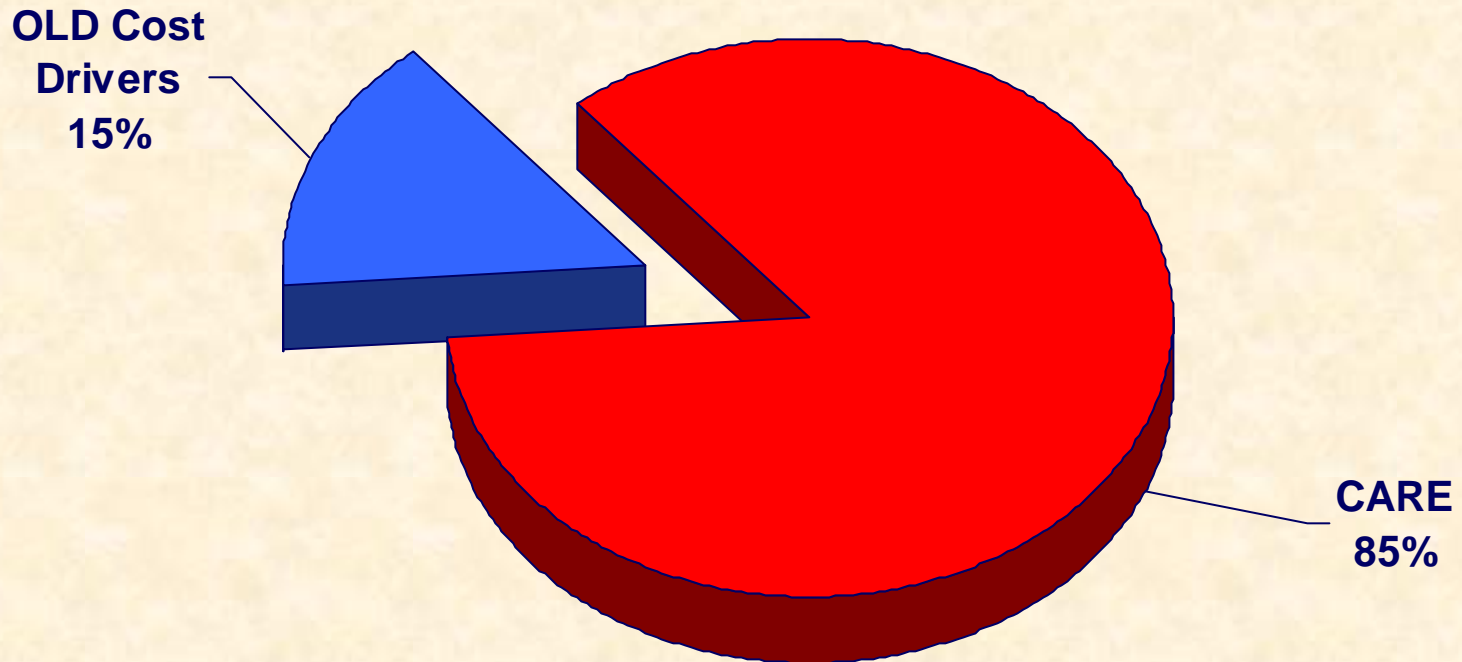
# To Focus On Clinical Cost Drivers

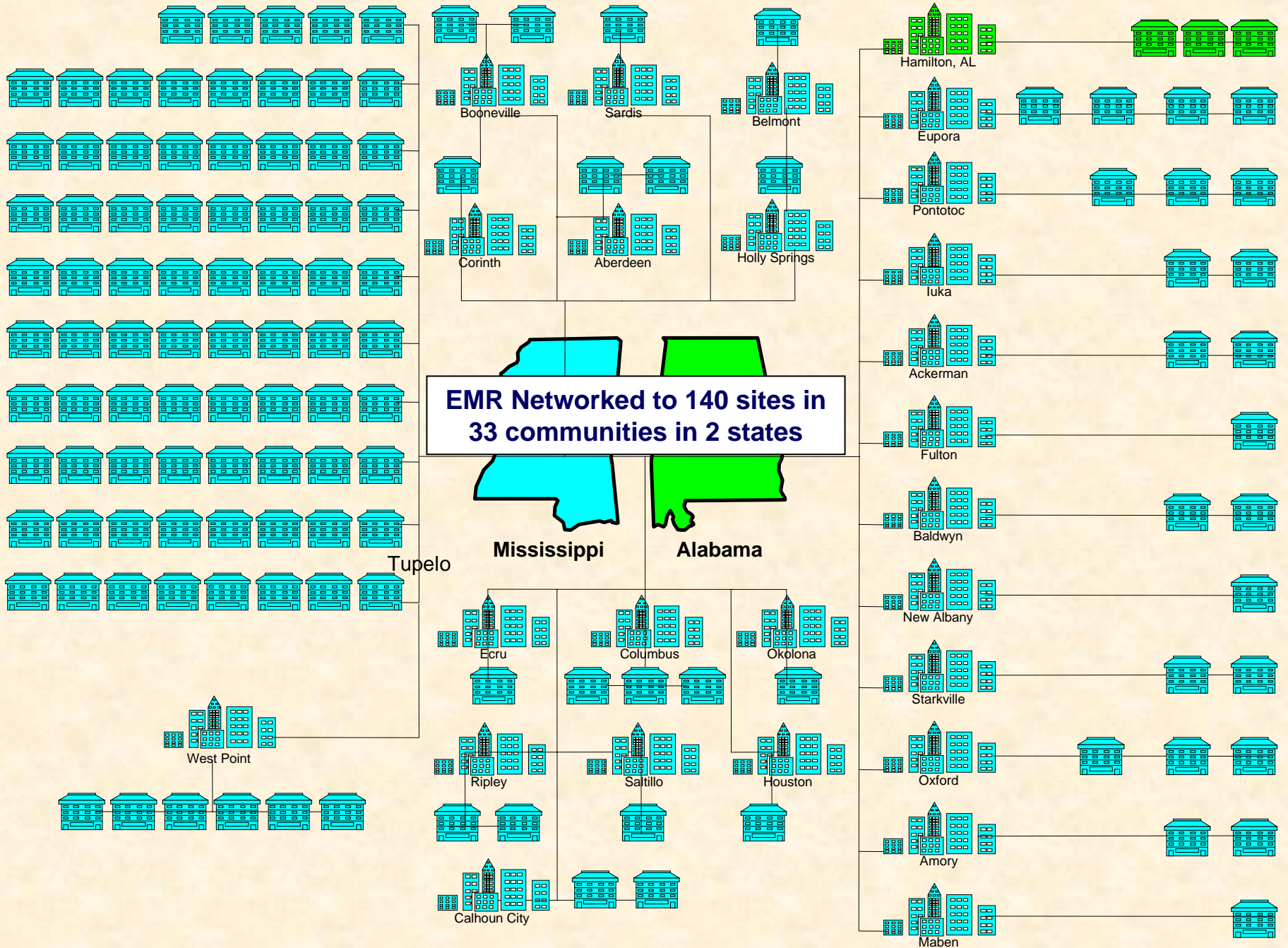
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- ✓ Process of care
- ✓ Complications and errors
- ✓ Social issues

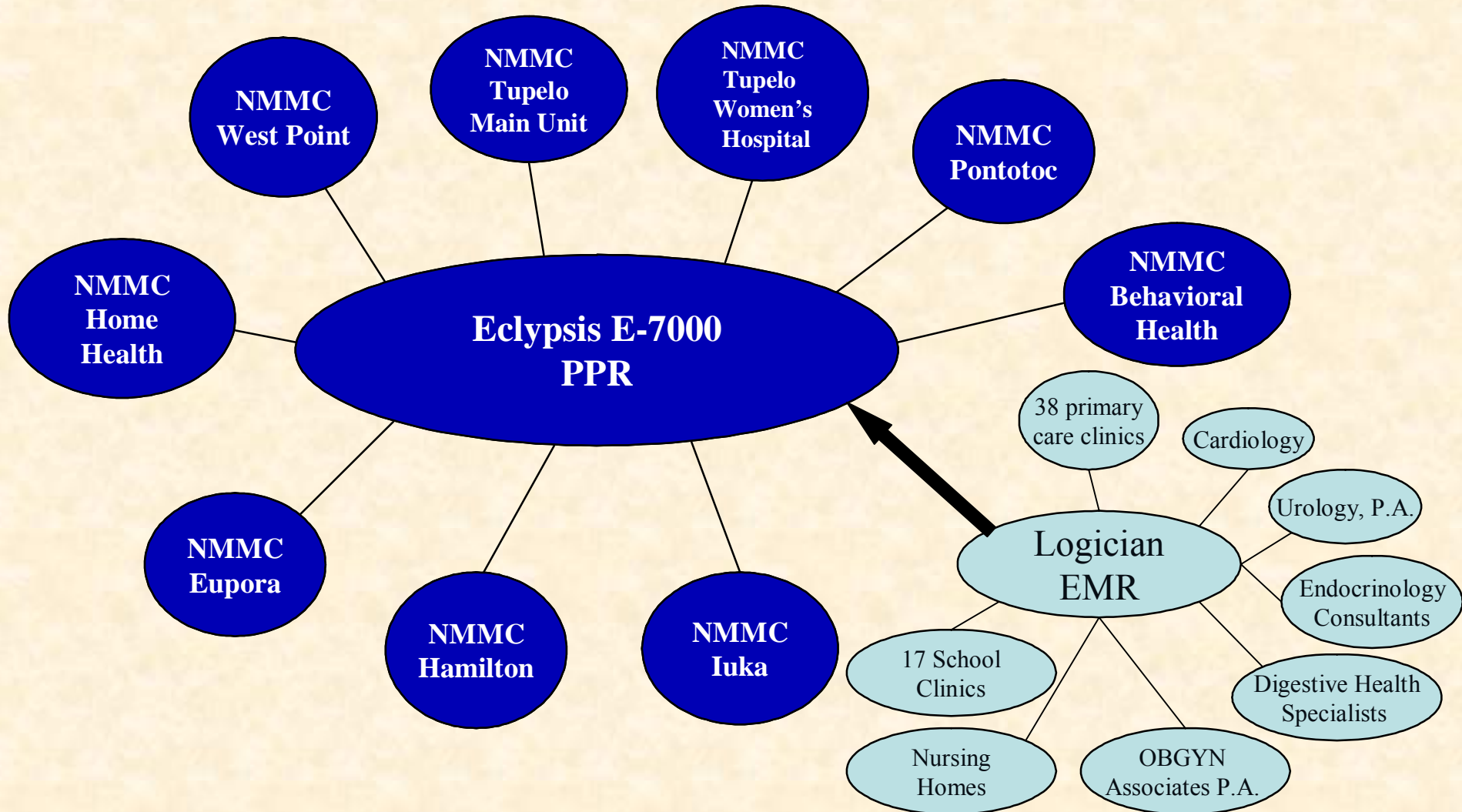


# Opportunities for Cost Reduction & Quality/Safety Enhancement





# NMHS Enterprise



# NMMC-Tupelo

## *Care Management Processes*

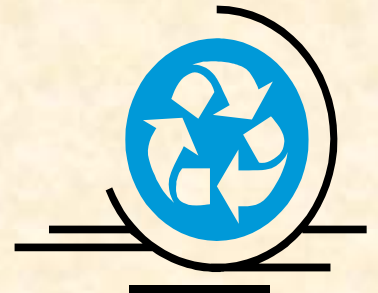
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### ★ Defining Quality/Safety Focus

#### ★ Internal Focus

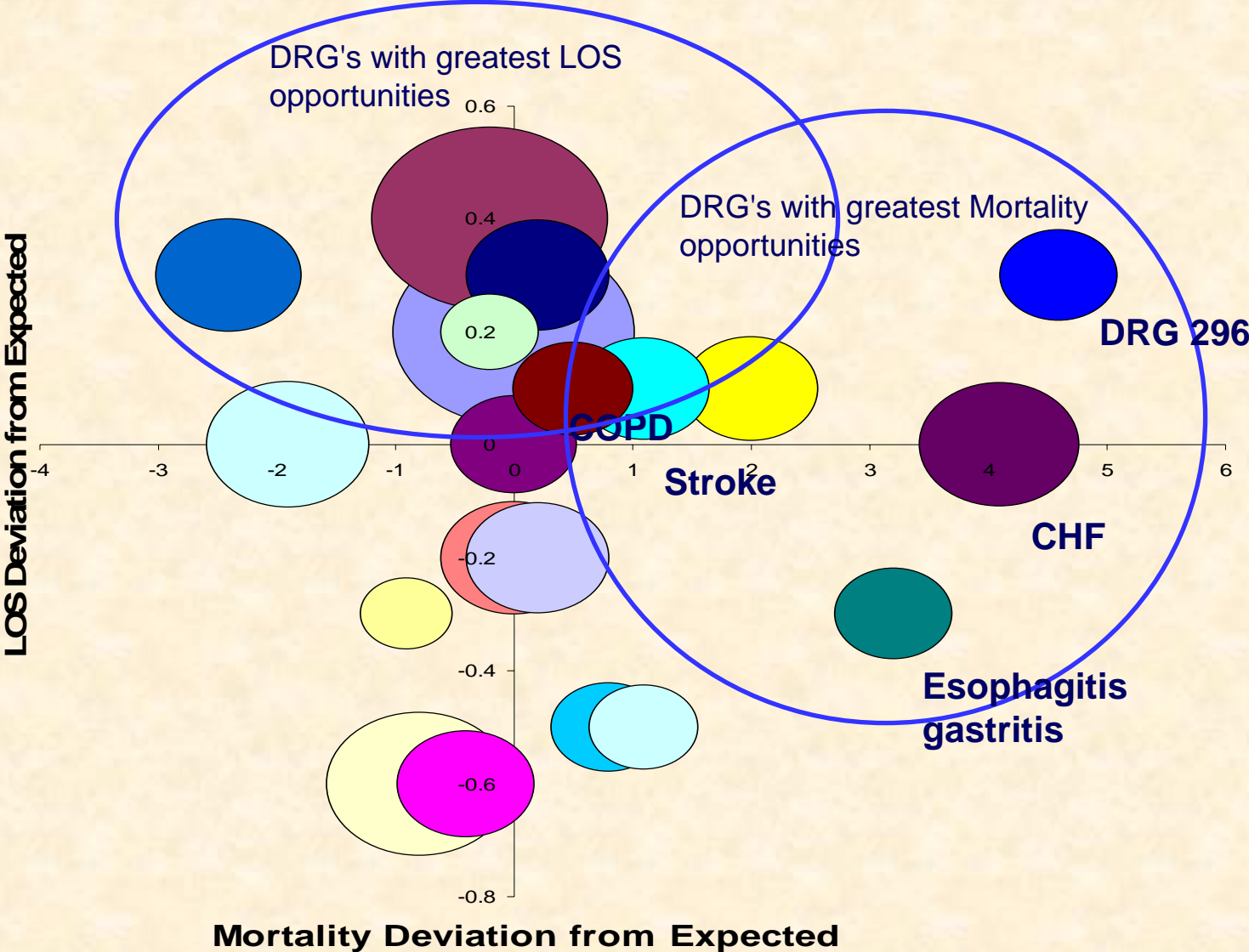
#### ✓ External Focus

- ✓ Evidence-Based Clinical Protocols
- ✓ Reporting/Communication – Transparency
- ✓ Outcomes
- ✓ Summary



# NMMC-Tupelo Top 20 DRGs

## Volume - Select Practice



# DRG Analysis

## FY05 to FY06

DRG	Ranking		Variance per Case		Overall Variance	
	FY05	FY06	FY05	FY06	FY05	FY06
515 Cardiac defibrillator implant w/o cardiac cath	1 <sup>st</sup>	1 <sup>st</sup>	\$ (10,390)	\$ (9,798)	\$ (1,766,249)	\$ (1,205,124)
127 Heart failure & shock	2 <sup>nd</sup>	3 <sup>rd</sup>	\$ (2,894)	\$ (1,917)	\$ (1,389,078)	\$ (590,396)
209 Major joint & limb reattachment procedure of lower extremity	3 <sup>rd</sup>	—	\$ (2,559)	—	\$ (1,102,878)	—
544 Major joint replacement or reattachment of lower extremity	—	16 <sup>th</sup>	—	\$ (838)	—	\$ (252,314)
545 Revision of hip or knee replacement	—	140 <sup>th</sup>	—	\$ (904)	—	\$ (12,653)
014 Intracranial hemorrhage & stroke with infarct	4 <sup>th</sup>	5 <sup>th</sup>	\$ (2,575)	\$ (1,808)	\$ (962,958)	\$ (480,957)
416 Septicemia age > 17	5 <sup>th</sup>	2 <sup>nd</sup>	\$ (3,787)	\$ (3,399)	\$ (920,220)	\$ (649,261)
316 Renal failure	6 <sup>th</sup>	8 <sup>th</sup>	\$ (5,025)	\$ (2,292)	\$ (889,392)	\$ (323,149)
087 Pulmonary edema & respiratory failure	7 <sup>th</sup>	4 <sup>th</sup>	\$ (3,243)	\$ (2,478)	\$ (814,096)	\$ (589,747)
104 Cardiac valve procedure & other major cardiothoracic procedure w cardiac cath	8 <sup>th</sup>	21 <sup>st</sup>	\$ (9,983)	\$ (3,634)	\$ (738,770)	\$ (196,256)
089 Simple pneumonia & pleurisy age > 17 w cc	9 <sup>th</sup>	7 <sup>th</sup>	\$ (2,063)	\$ (1,330)	\$ (720,051)	\$ (341,717)
296 Nutritional & miscellaneous metabolic disorders age > 17 w cc	10 <sup>th</sup>	14 <sup>th</sup>	\$ (2,939)	\$ (1,584)	\$ (696,595)	\$ (259,822)
174 GI hemorrhage w cc	11 <sup>th</sup>	6 <sup>th</sup>	\$ (1,978)	\$ (2,504)	\$ (532,014)	\$ (425,704)
107 Coronary bypass w cardiac cath	12 <sup>th</sup>	—	\$ (2,027)	—	\$ (510,890)	—
547 Coronary bypass w cardiac cath w major CV dx	—	366 <sup>th</sup>	—	\$ 3,985	—	\$ 390,483
548 Coronary bypass w cardiac cath w/o major CV dx	—	362 <sup>nd</sup>	—	\$ 2,194	—	\$ 182,130
526 Percutaneous cardiovascular procedure w drug-eluting stent w AMI	13 <sup>th</sup>	—	\$ (2,346)	—	\$ (478,624)	—
557 Percutaneous CV proc w drug-eluting stent w major CV dx	—	363 <sup>rd</sup>	—	\$ 872	—	\$ 183,186
558 Percutaneous CV proc w drug-eluting stent w/o major CV dx	—	353 <sup>rd</sup>	—	\$ 246	—	\$ 69,099
121 Circulatory disorders w AMI & major complications discharged alive	14 <sup>th</sup>	53 <sup>rd</sup>	\$ (2,839)	\$ (830)	\$ (476,964)	\$ (79,688)
088 COPD	15 <sup>th</sup>	28 <sup>th</sup>	\$ (1,937)	\$ (1,051)	\$ (466,894)	\$ (167,102)

# Aggregate Inpatients Complication - UTI

North Mississippi Health Services CaduCIS Manager Outcome Profile Report		
Population Segment Type: Complications	Date Ra	
Facility: NORTH MISSISSIPPI MEDICAL CENTER (1H)		
Aggregate Diseases		
Path: Infection, urinary tract NOS (5990)		
<b><u>Patient Characteristics</u></b>		
<b>Total Cases:</b>	451	
<b>Mean Patient Age (years):</b>	70.1	
<b><u>Comorbidities:</u></b>	4.6	
<b><u>Complications</u></b>		
<b><u>Clinical Outcomes</u></b>		
Outcome	Raw	Standardized
<b>Mortality</b>	10.4%	10.5%
<b>Morbidity</b>	13.9%	13.1%
<b>Complications</b>	76.4%	46.2%
<b>LOS (days)</b>	10.2	7.1
<b>Total Charges</b>	\$21,952	\$14,243
<b>Total Cost</b>	N/A	N/A

\$9,546

x 451

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**\$4,305,246**

# NMMC-Tupelo

## *Care Management Processes*

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### ★ Defining Quality/Safety Focus

✓ Internal Focus

#### ★ External Focus

- ✓ Evidence-Based Clinical Protocols
- ✓ Reporting/Communication – Transparency
- ✓ Outcomes
- ✓ Summary



# External Quality Measures

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- ✓ Hospital Public Reporting
  - JCAHO/CMS Core Measures
- ✓ Leapfrog Measures
- ✓ AHRQ PSI Pilot Participant
- ✓ National Quality Forum Member
- ✓ National Patient Safety Foundation Member
- ✓ External data companies
  - CareScience
  - Solucient
  - Healthgrades
  - STS, ACC



# NMMC-Tupelo

## *Care Management Processes*

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- ☑ Defining Quality/Safety Focus
- ★ **Evidence-Based Clinical Protocols**
- ☑ Reporting/Communication – Transparency
- ☑ Outcomes
- ☑ Summary



# Physician Guided Automatic Clinical Protocols

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## *ICU*

- Activity
- Sedation
- Ventilator weaning
- Nutrition
- Ventilator associated pneumonia
- IV Insulin
- Anticoagulation
- Discharge readiness state



# Physician Guided Automatic Clinical Protocols

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## *Hospital Wide*

- IV Antibiotic dosing
- IV to po medication conversion
- DVT-PE scoring and protocol
- Coumadin/Heparin pharmacy dosing
- Pharmacy Pain Service
- Oxygen weaning
- Nebulizer to inhaler conversion
- Foley catheter management
- Bladder scanning
- TPN/NG Feedings
- Discharge planning, Trauma team, Stroke Team, Trach Team, CHF Team
- Pneumovax, influenza vaccinations
- Coding queries



# Physician Order Sets

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- Pneumonia
- Stroke
- Sepsis
- AMI
- Electrophysiology procedures
- CHF
- Total joint replacement
- CABG, Valve replacement
- Cardiology Admission Order Set
- PCI Order Set
- Others ...



# NMMC-Tupelo

## *Care Management Processes*

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- ☑ Defining Quality/Safety Focus
- ☑ Evidence-Based Clinical Protocols
- ★ **Reporting/Communication – Transparency**
- ☑ Outcomes
- ☑ Summary



# External Transparency

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- ✓ Open letters in newspaper to community
- ✓ Press Ganey Patient Satisfaction Surveys
- ✓ *NurseLink* telephone triage
- ✓ Community liaison reporting and resolution
- ✓ Care Line reporting and resolution
- ✓ Use of patient and family feedback to improve care



# External Transparency

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- ☑ Patients/Families on Strategy/PI Teams
- ☑ Example: Women's Health Task Force
  - ➔ Breast Care Center
  - ➔ Newborn Follow-up Center
  - ➔ Lactation/Breastfeeding Program
  - ➔ Domestic Violence Program
  - ➔ Teen Health Program
  - ➔ Healthy Start Prenatal Clinic



# External Transparency

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- ★ “60 Second House Call”
  - Health/Safety Education
  - Hospital Clinical Outcomes
- ✗ On NBC affiliate weekday news program daily at noon and 10:00 p.m.
- ✗ Over 140,000 households
- ✗ Over 1300 produced

# NMMC-Tupelo

## *Care Management Processes*

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- ☑ Defining Quality/Safety Focus
- ☑ Evidence-Based Clinical Protocols
- ☑ Reporting/Communication – Transparency

### ★ Outcomes

#### ★ Internal opportunities

- ★ Tracheostomy

- ★ Bowel Surgery

#### ★ External opportunities

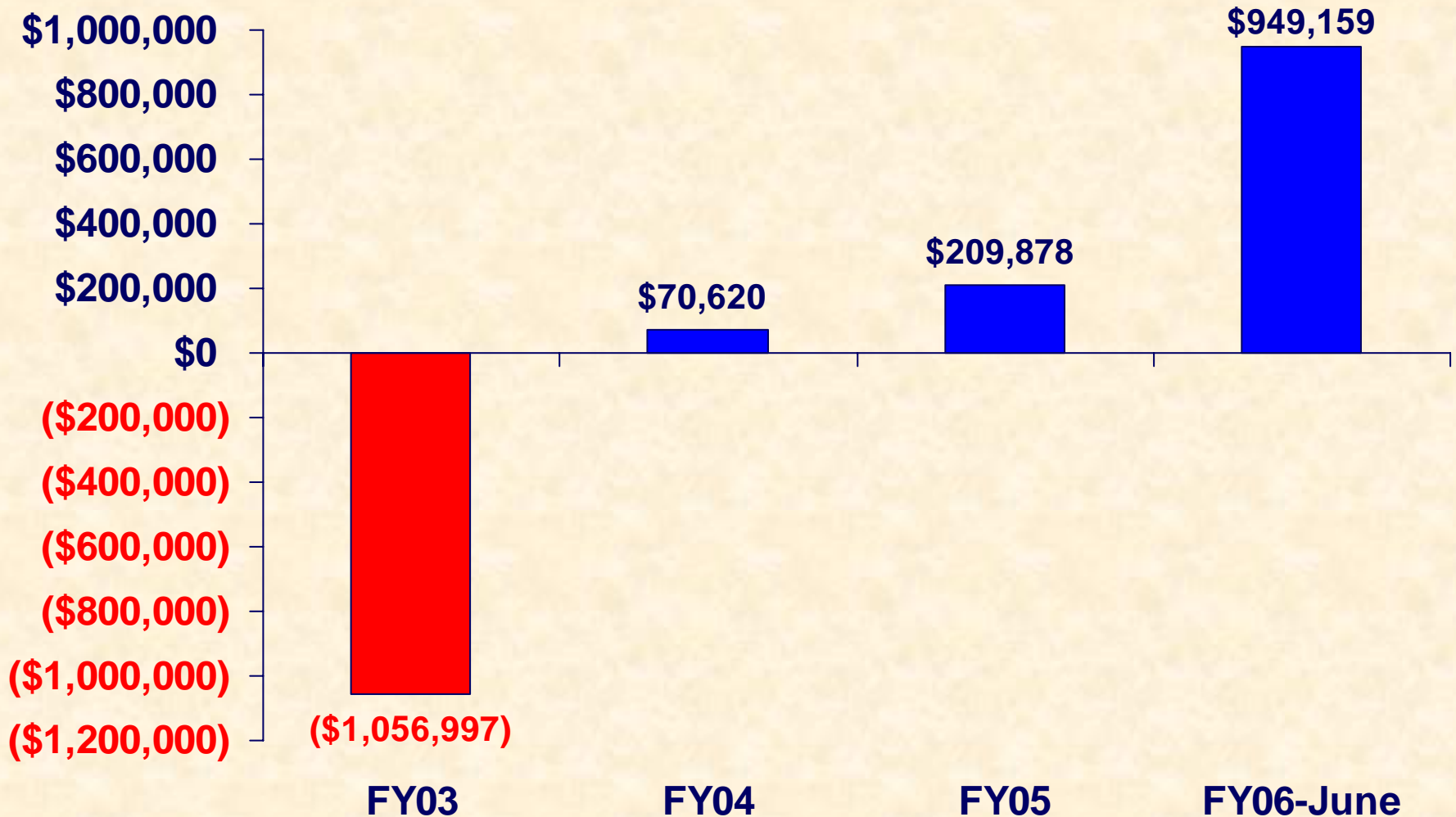
- ★ DVT

- ☑ Summary



# *Tracheostomy with Chronic Ventilation Medicare Variance*

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# DRG 148 “Top Loser”

## *Medicare Variance FY 2003*

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DRG Description	Volume	LOS	Medicare Reimbursement	Loss per Patient	Total Loss
Major Bowel Surgery	149	14.4	\$14,107	\$2,156	<b>\$321,244</b>

Medicare variance = (average cost - Medicare reimbursement) x # patients

# Outcome Variation by Surgeon

Facility: NORTH MISSISSIPPI MEDICAL CENTER (1H)  
 Final DRG: Major Small & Large Bowel Procedures W Cc (148)

Risk C

Principal Procedure Surgeon	Clin Serv	Cases	Outcome Deviations			
			Mortality	Morbidity	Complications	Length of Stay
DRA	GS	31	-6.2%*	+4.1%	+13.0%**	+1.7*
DR B	GS	31	+2.8%	+10.0%**	+0.8%	+2.3**
DR C	AS	25	+6.2%**	+1.8%	+5.2%	+1.0
DR D	AS	24	-3.7%	+7.9%*	-8.8%*	+1.1
DR E	GS	20	-4.0%	-6.5%	-16.3%**	+0.9
DR F	GS	19	+6.4%*	+12.2%**	-0.8%	+2.3*
DR G	GS	17	-4.9%	-3.5%	-15.2%**	+2.0*
DR H	GS	14	-5.4%	-4.5%	+12.5%*	+1.5
		<b>181</b>	<b>-0.9%</b>	<b>+3.6%**</b>	<b>-0.4%</b>	<b>+1.6**</b>

# Detailed Information: Outlier Cases Analysis

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- ☑ 17 patients; 18 admissions
  - 6 partial resection small intestine
  - 5 sigmoidectomy
  - 2 hemicolectomy
  - 2 partial resection large intestine
  - 1 colostomy
  - 1 small to lg. intestine anastomosis
- ☑ 9 cancer - known or suspected
- ☑ LOS range 28-99 days
- ☑ 5 expired
- ☑ 8 pts spent > half stay in ICU; 5 non-ICU
- ☑ Activity ordered
  - 0-5 days: 4 pts
  - 5-9 days: 2 pts
  - > = 10 days: 11pts (four were bedridden for > 20 days)
- ☑ Nutritional status
  - Most of these patients had an albumin of <1.7 or pre-albumin of <7.0 when TPN ordered

# Patient Safety Indicators

## *Surgery: Failure to Rescue Analysis*

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- ❖ 11 patients, 2 excluded -> 9 died from FTR
- ❖ Clinical Issues
  - Post-op stroke after stopping anticoagulation
  - Post-op MI
  - Poorly controlled glucoses
  - Advanced diet without swallow assessment
  - Poor wound assessment and intervention
  - Central line sepsis

# DRG 148 Results

## *Medicare Variance FY 2004*

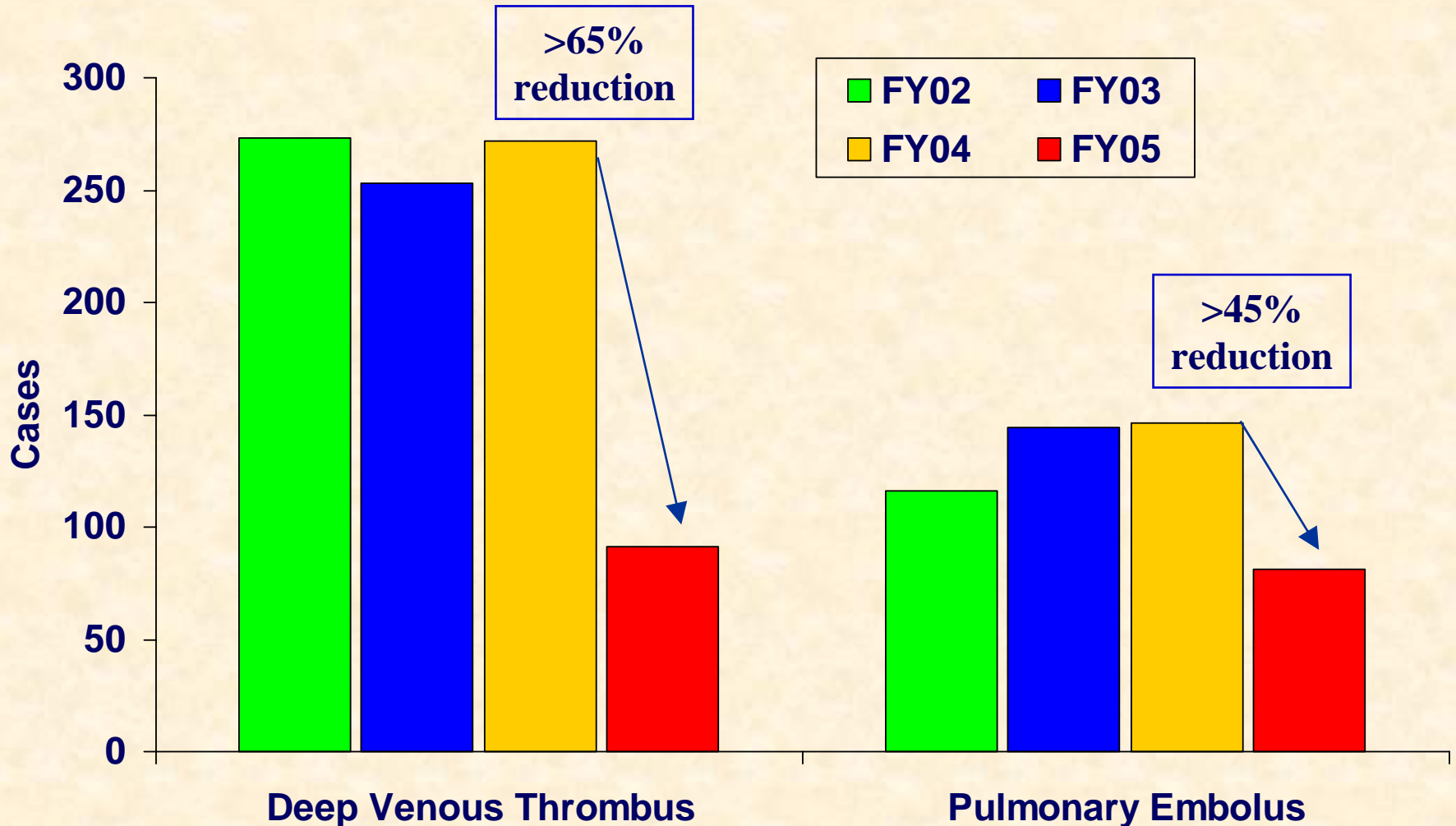
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DRG Description	Volume	LOS	Medicare Reimbursement	Per Patient	Total Gain
Major Bowel Surgery	123	11.6	\$14,854	+\$1,788	\$219,985

**Change: \$ 541,229**

Medicare variance = (average cost - Medicare reimbursement) x # patients

# System-Wide Venous Thrombosis Protocol



# Potential Savings

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☑ At 20% mortality rate for pulmonary embolus

• 13 lives saved in 2005

☑ Care-Based Cost Management

• Estimated annual savings 2005

☑ **\$763,000**



# Summary

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## ★ Success:

- ☑ Culture Change
- ☑ Structural change
- ☑ Electronic Information: System-wide EMR
- ☑ Proactive utilization of internal and external quality measures
- ☑ Empowerment of staff, patients, community
- ☑ Environment of continuous improvement
- ☑ An organizational **passion** for Quality/Safety

