



INSTITUTE FOR  
HEALTHCARE  
IMPROVEMENT

# 10 Leadership Lessons on Transforming Care *ATP*

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**Maureen Bisognano  
Executive Vice President and COO  
Institute for Healthcare Improvement**



# IHI Mission

**The Institute for Healthcare Improvement is a not-for-profit organization driving the improvement of health by advancing the quality and value of health care.**



# IHI Vision

**The Institute for Healthcare Improvement is a premier integrative force, an agent for profound change, dedicated to improving health care for all. Our measures of success include improved safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity.**



# What would a transformed organization look like?

- **A place with no needless...**
  - **Deaths**
  - **Pain**
  - **Delays**
  - **Helplessness**
  - **Waste**



# What would a transformed organization look like?

- **A place where collaboration thrives; where physicians, nurses and all staff cooperate**
- **A place where the patient's voice is heard and drives design**
- **A place where staff experience reward and joy in their work**
- **A place with adequate resources and stable finances**



# Lesson #1 (Will)

Aims suggested by  
Noriaki Kano:

1. **Eliminate quality problems as experienced by the customer (patient).**
2. **Reduce cost significantly while maintaining or improving quality.**
3. **Expand customer (patient) expectations by providing products and services (care) that customers perceive as unusually high in value.**



# Will-building at the senior level

- **Colones' rounds**
- **Walk of shame**
- **O'Brien's breakfast meeting**
- **Your ideas?**



## Lesson #2 (Ideas)

**Build the capacity for  
innovation (and energy!)**

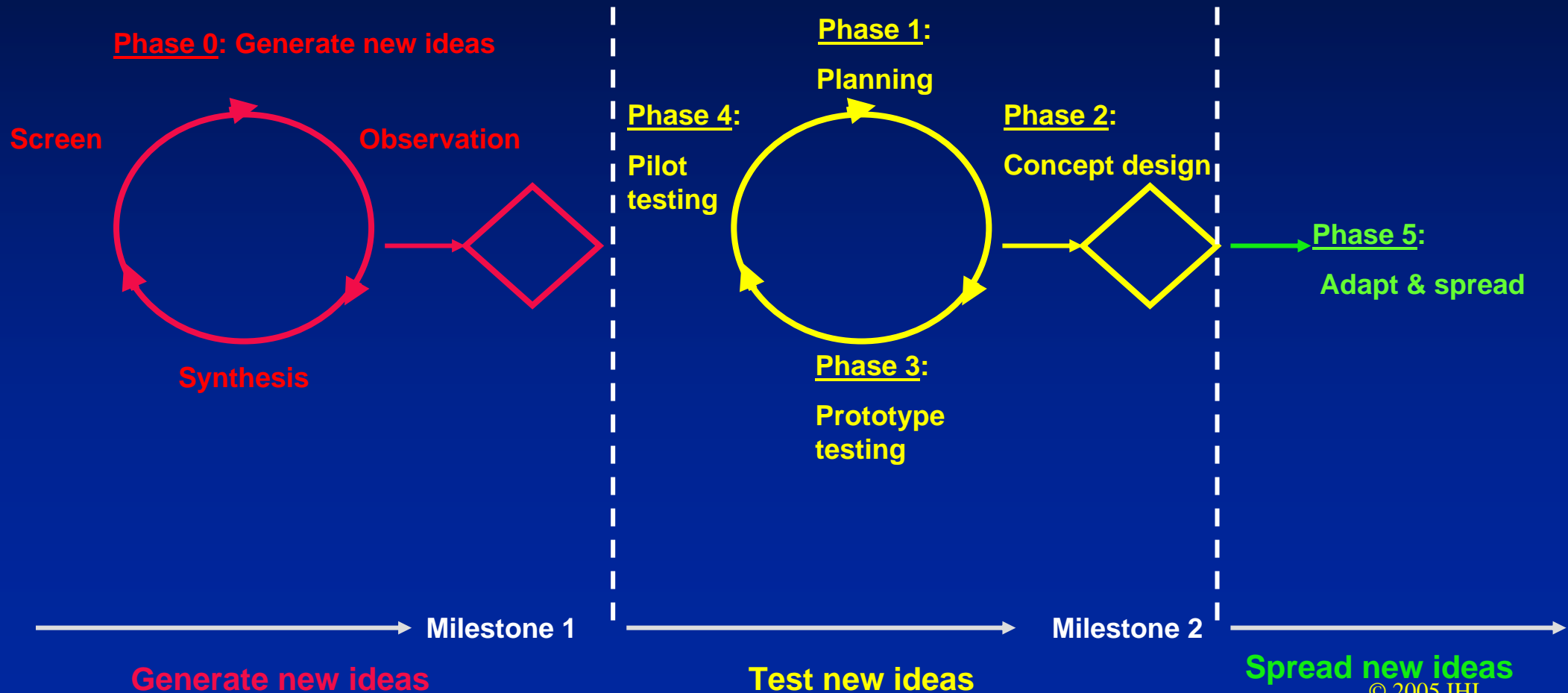


# Build the capacity for innovation

- **Design a system to scan the research literature and to get the latest information into action in real time**
- **Build an R+D (innovation) engine to reach to other countries and industries for better answers**



# Idealized Design Process





# Innovative ideas that are making a difference

- **Bundles**

- **Rapid Response Teams**



# Using bundles to improve reliability

- Bundles are helpful in improving the reliable performance of key care processes.
- A Bundle is a grouping of evidence-based processes with proximate time and space characteristics that when performed collectively can have an enhanced effect on an outcome.
- Small in number



# Using bundles to improve reliability

## Example: Ventilator Bundle

- Head of bed elevation
- Sedation vacation
- Deep Vein Thrombosis prophylaxis
- Peptic Ulcer Disease prophylaxis
- Daily assessment of readiness to wean



# Using bundles to improve reliability

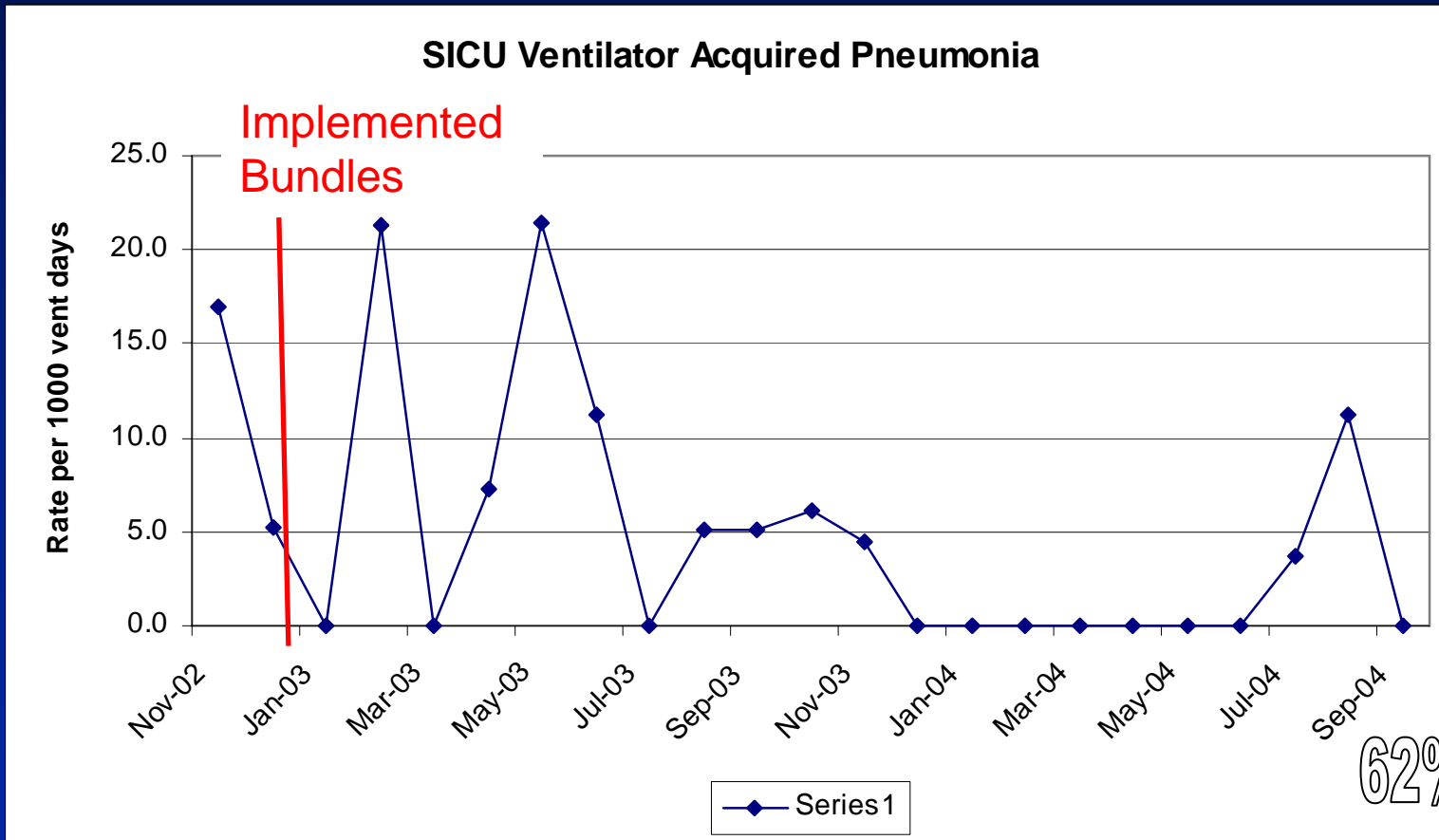
## Learning From the Vent Bundle

- Bundles demand “all or none” thinking and measurement.
- Bundles facilitate identifying failures.
- Failures are actively used to redesign the process.
- Teamwork and communication typically improve.



# Using bundles to improve reliability

## Results you can expect: OSF SFMC





# Using bundles to improve reliability

- **Other Bundles You Can Implement:**
  - **Surgical Site Infection Bundle**
  - **Central Line Bundle**



# Rapid Response Teams

- **Research shows that virtually all critical inpatient events are preceded by warning signs for an average of 6.5 hours. Rapid Response Teams (RRTs) rescue patients in trouble and intervene with patients before critical or lethal problems develop.**



# Rapid Response Teams

- **A RRT is a small but powerful team experienced at assessing patient symptoms and conditions; the team is continuously and readily available to respond to any provider wanting a second opinion about a patient showing signs of decline.**



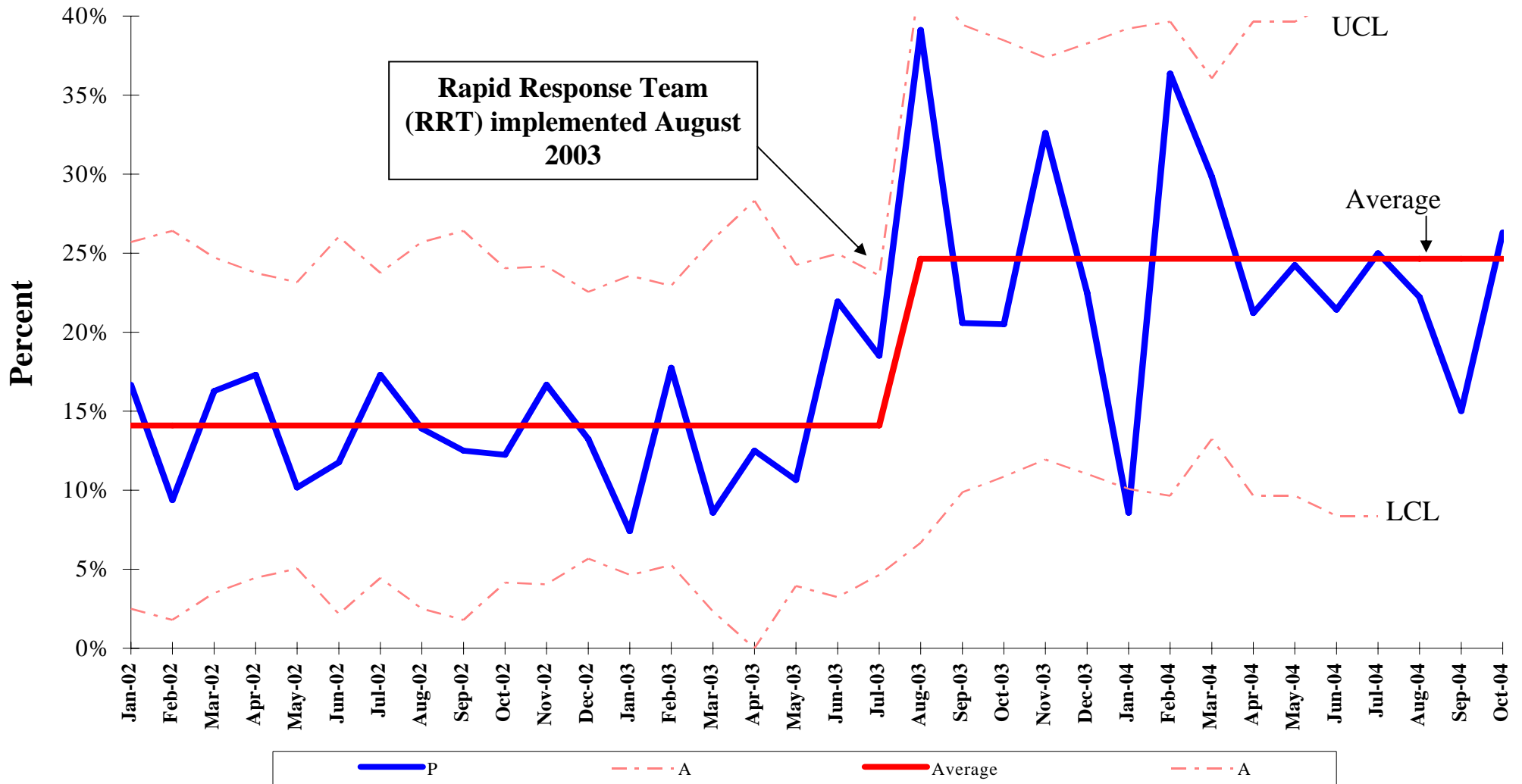
# Rapid Response Teams

- **Baptist Memorial Hospital – Memphis**
  - Any staff member can initiate a consult
  - RRTs get an average of 21 calls per week
  - Trigger lists developed as a guide:
    - Staff member is worried about a patient
    - Acute change in heart rate
    - Acute change in systolic blood pressure
    - Acute change in respiratory rate
    - Acute change in oxygen saturation
    - Acute change in level of consciousness



# Baptist Memorial

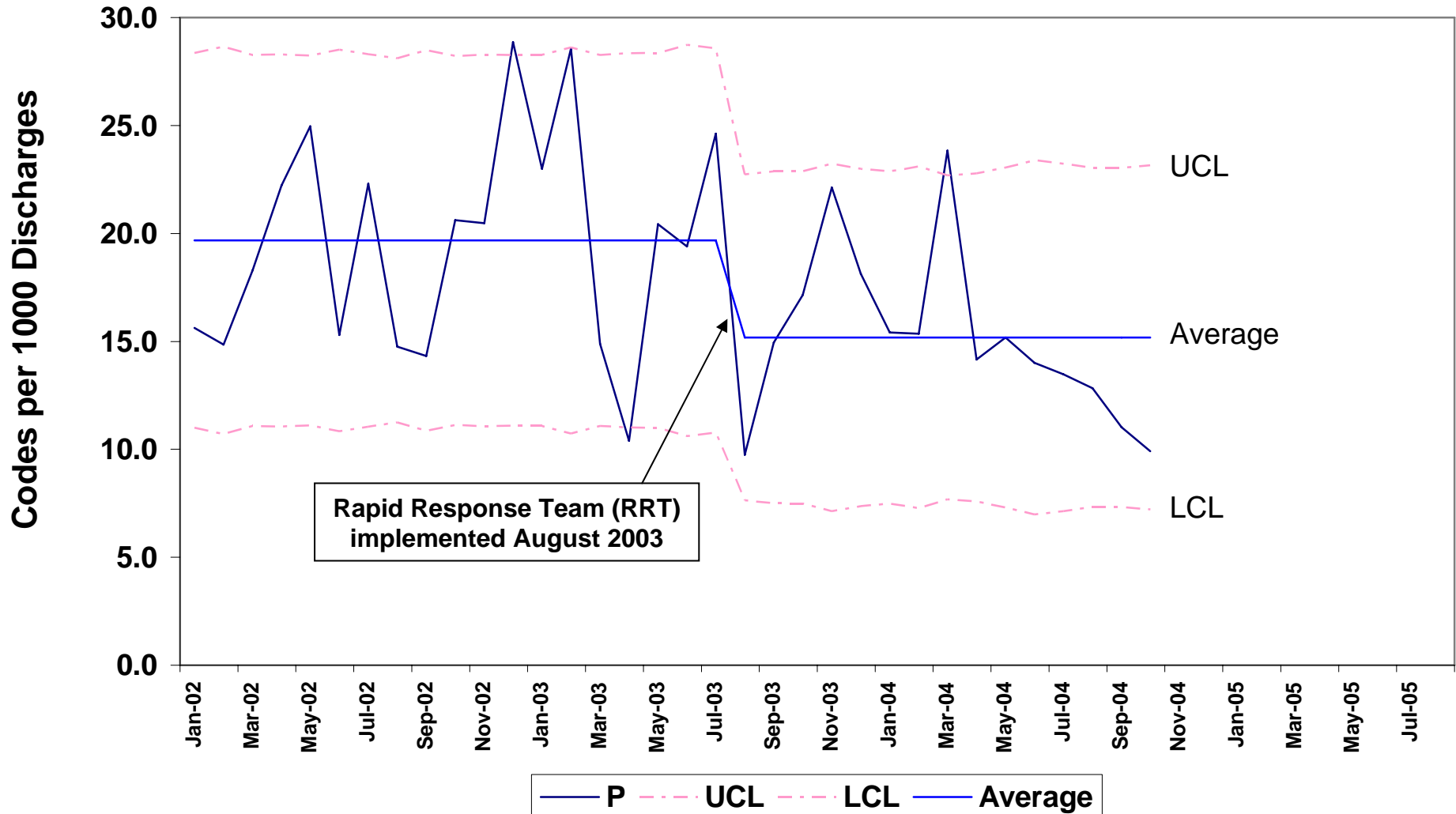
## Percent of Coded Patients Surviving at Discharge (p-chart)





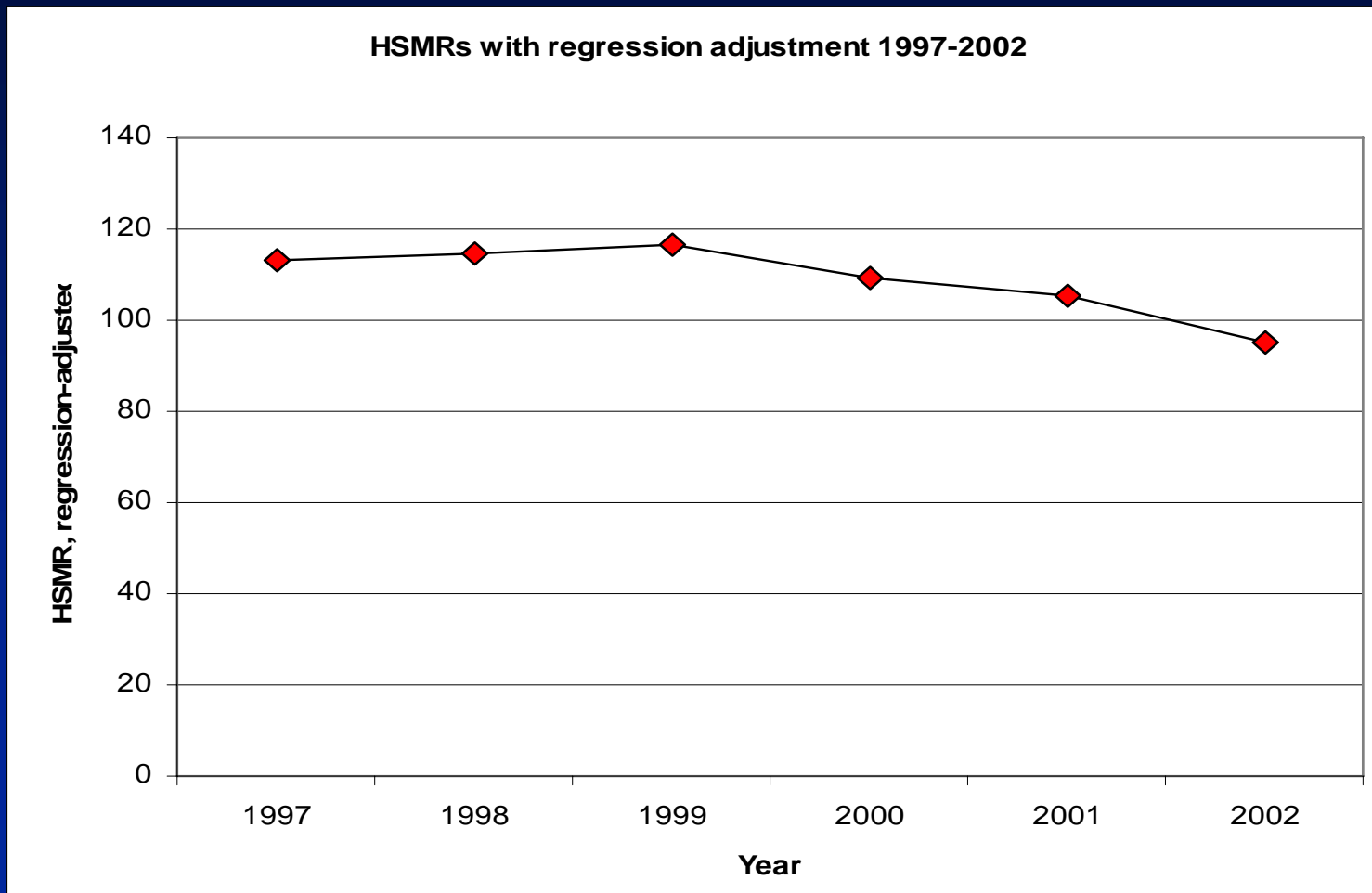
# Baptist Memorial

## Hospital Codes per 1000 Discharges (u-chart)





# Baptist Memorial – Hospital Standard Mortality Reduction



**15%  
Reduction**



**ThedaCare**

# Goals

*How we measure progress toward our vision*

## Quality

*95<sup>th</sup> percentile performance on selected performance measures*



## Customer Satisfaction

NRC's "Consumers' Choice Award"

## Financial Performance

- 7% revenue growth (net of rate increases)
- \$10 million in cost savings

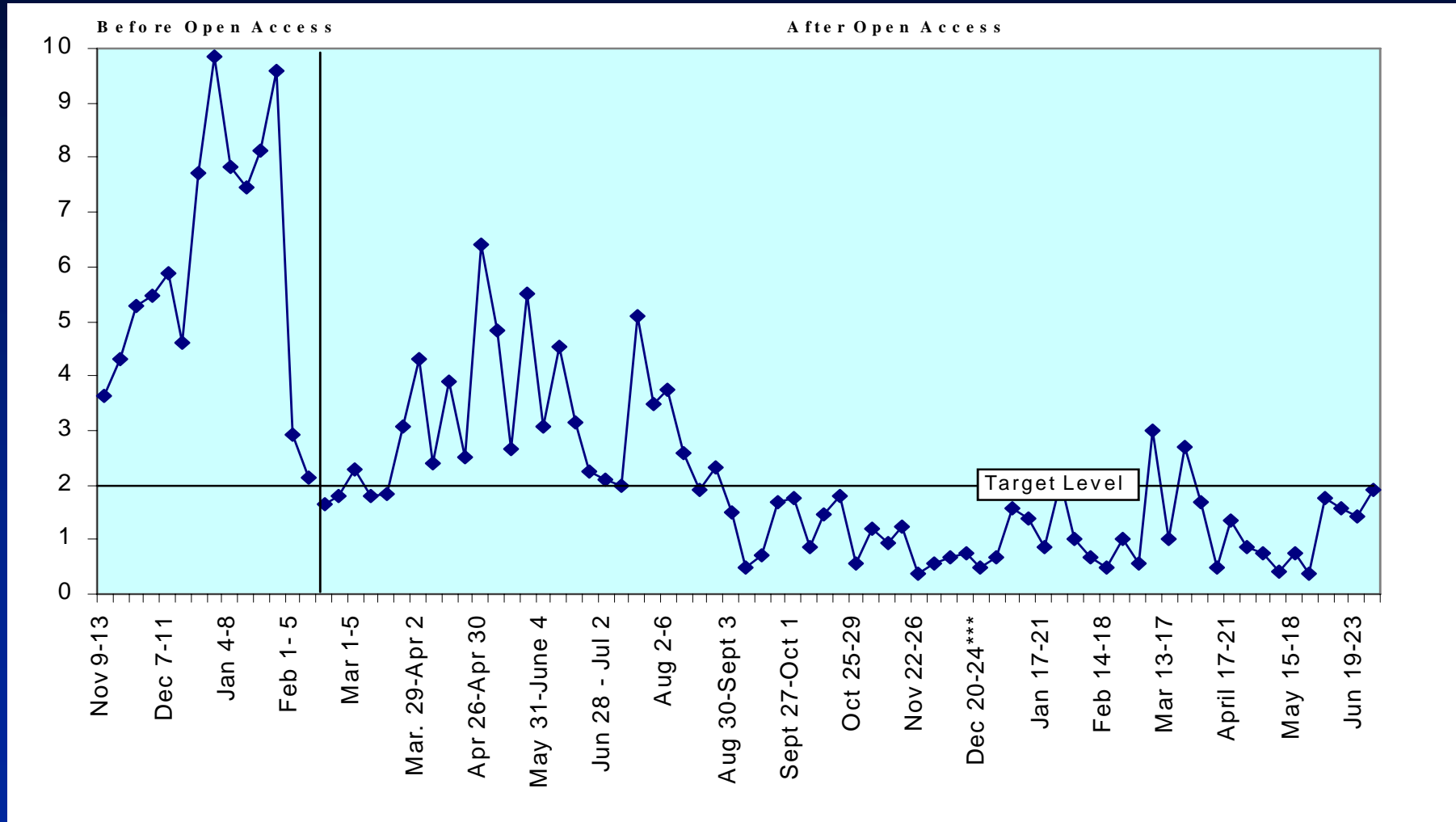
## Workplace of Choice

Fortune 100 list of employers



# ThedaCare / Kimberly

## Access: Days to 3rd Next Available Appointment



# ThedaCare Interaction Outcomes

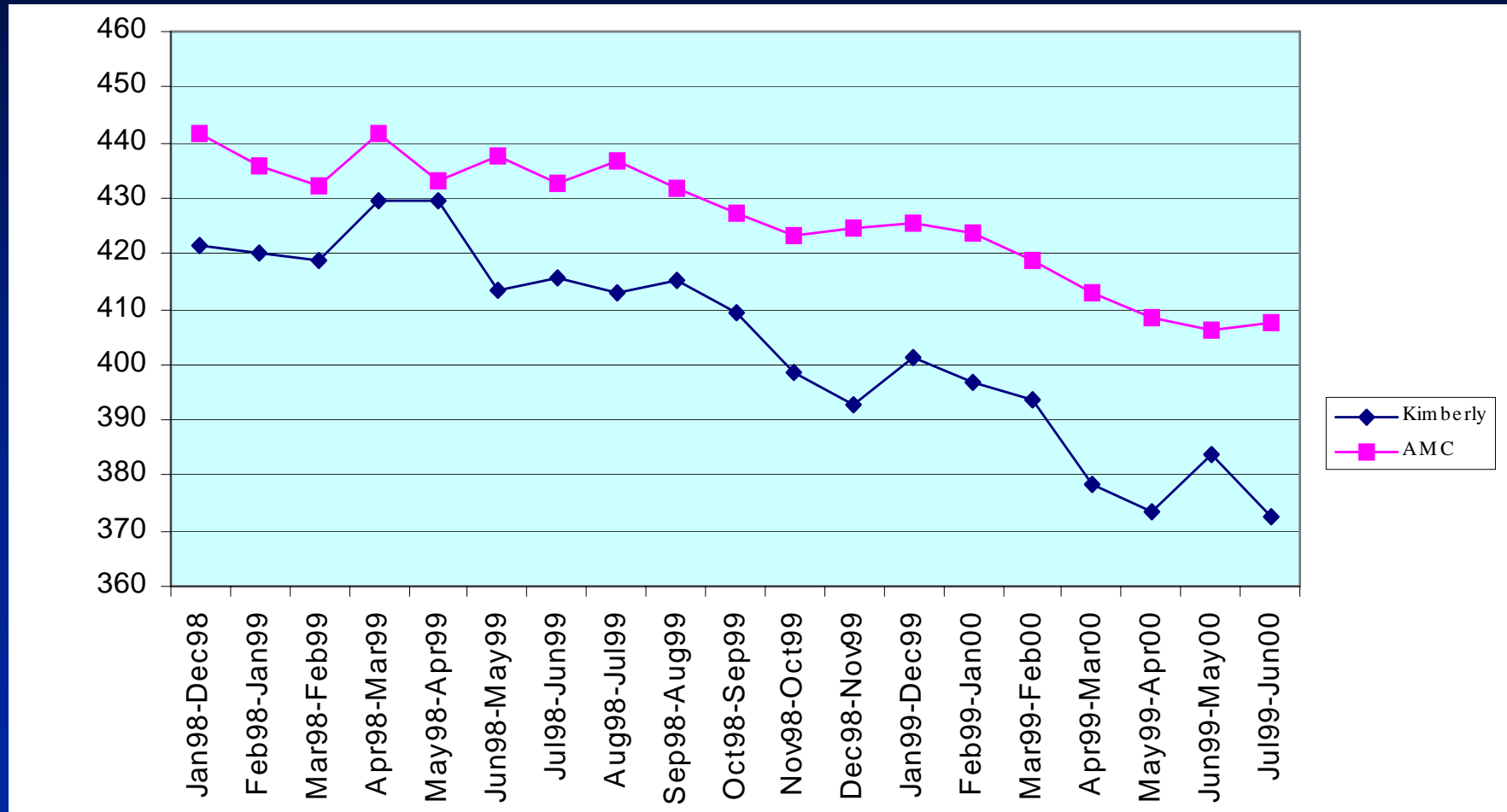
## ➤ Group Visits - Diabetics

■ <u>Measure</u>	<u>Non-Group Patients</u>	<u>Group Patients</u>
■ HbA1c - two tests/year	71%	84%
■ HbA1c < 8.0	57%	72%
■ LDL - one test/year	38%	83%
■ LDL < 130	32%	50%

- 15% increase in the overall satisfaction with the quality of care
- Office utilization decreased from 4.8 visits/year to 1.3 visits (excluding group visits)

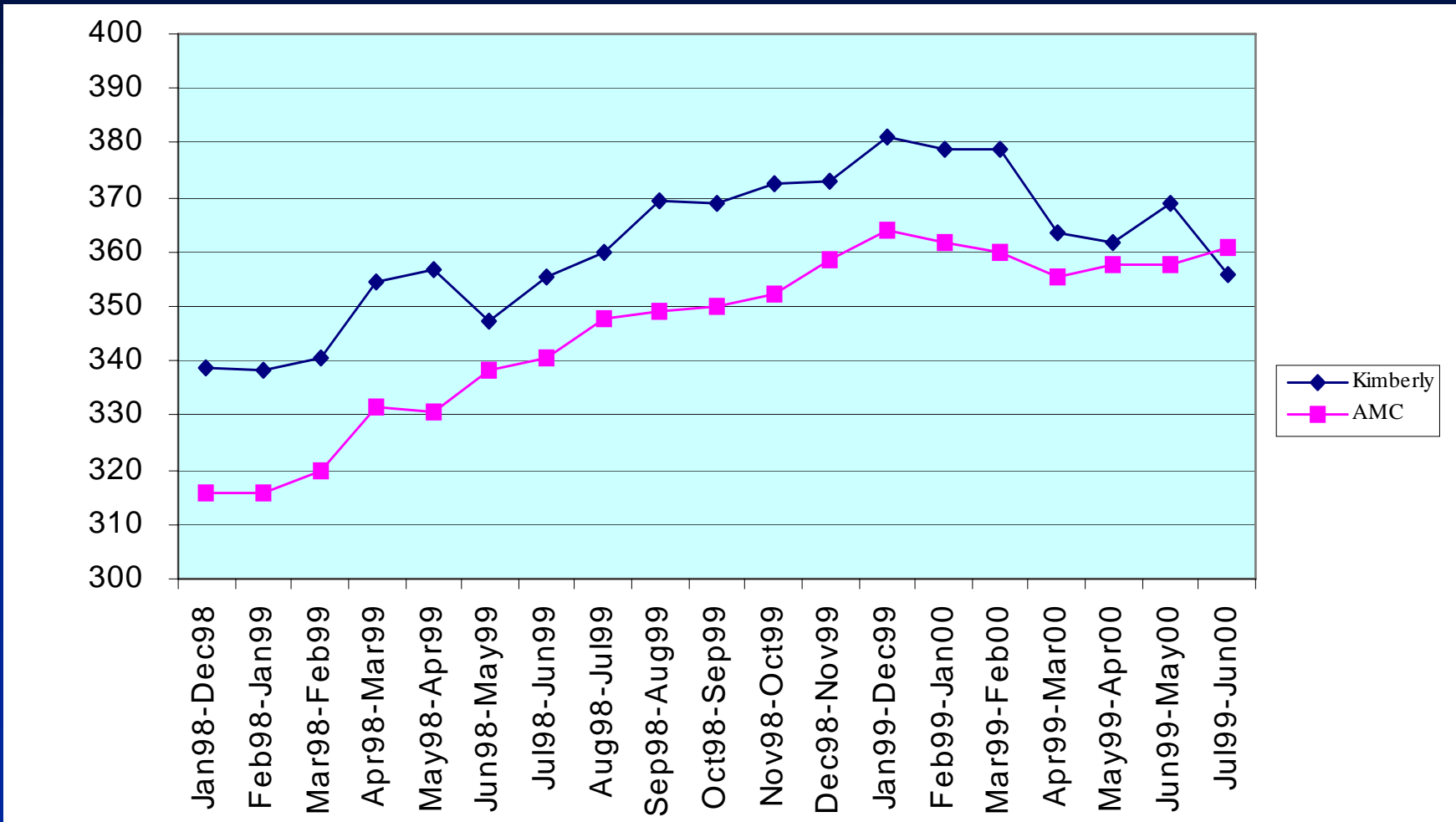
# ThedaCare

## Vitality: Average # of Visits per MD, per month

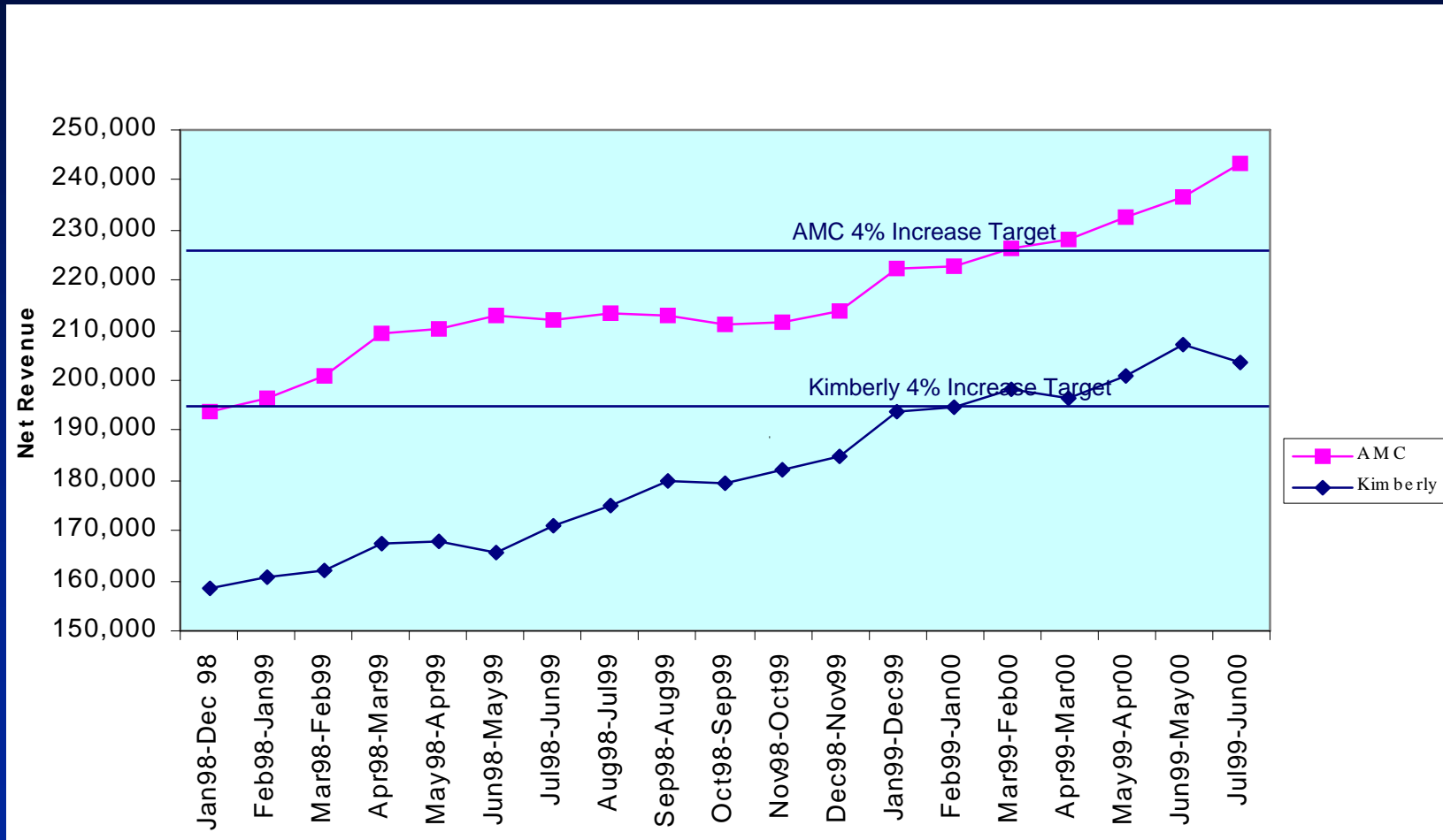


# ThedaCare

## Vitality: Average # of RVUs per MD, per month



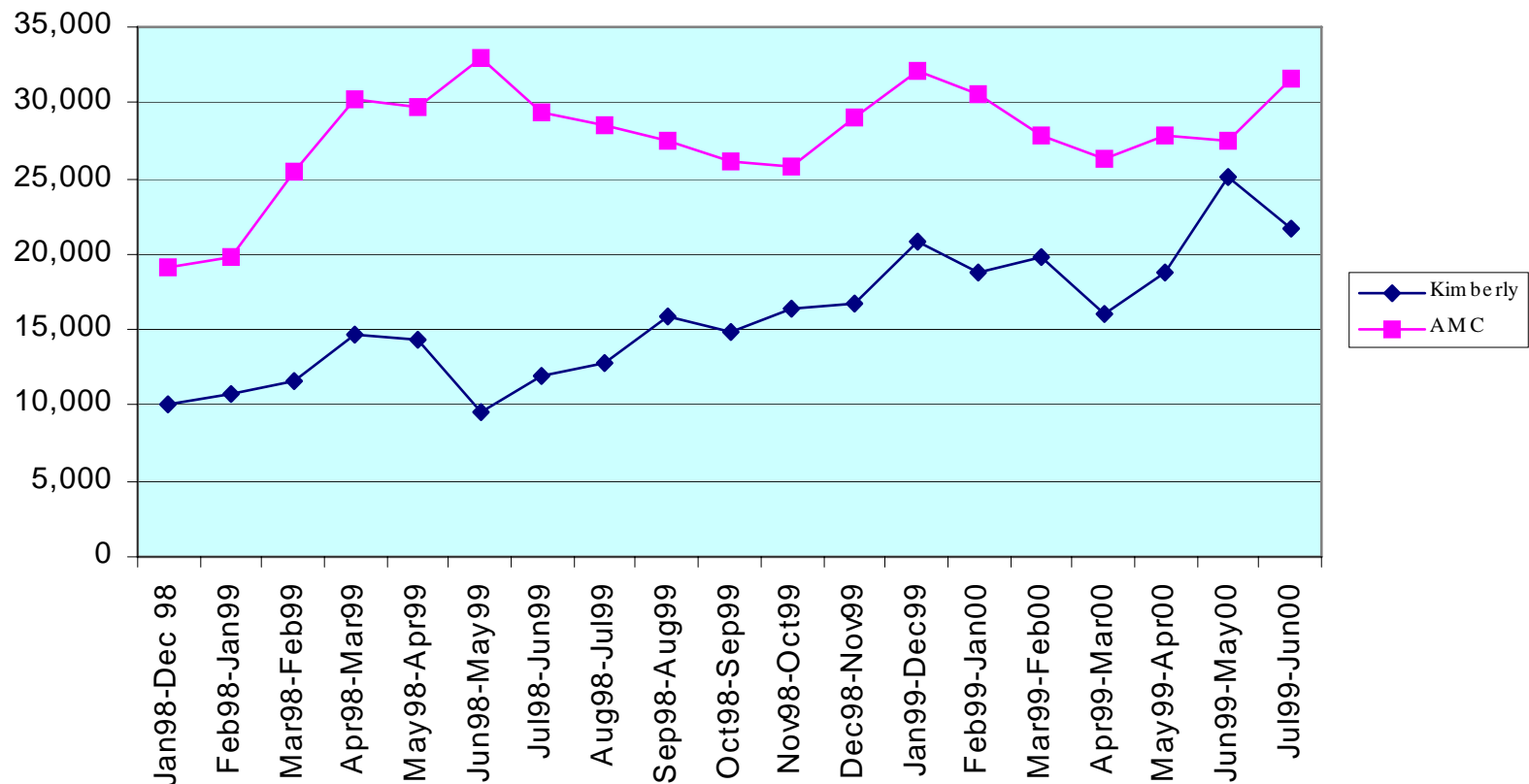
# ThedaCare Vitality: Revenue by Month



The goal is to reach the target level by December 2000.

# ThedaCare

## Vitality: Net Income by Month



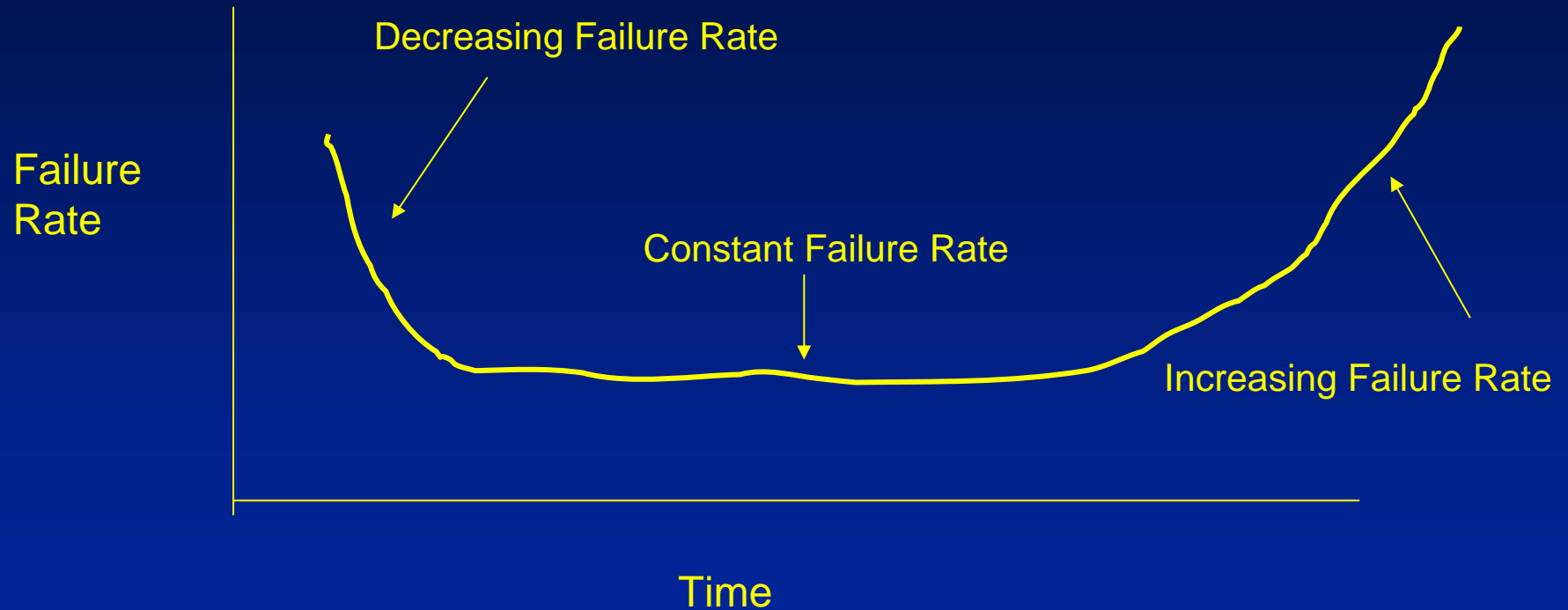


## Ideas with potential

- **Augmentation and induction bundles**
- **E-ICUs**
- **Early warning systems**
- **Falls-prevention strategies**
- **Bathtub curves to assess care failures**



# Including the Time Dimension: The “Bathtub” Curve





## Lesson #3 (Execution)

Establish, oversee and communicate measured system-level aims for improvement

### Project-level e.g.

- % AMI patients getting evidence-based care
- % Pneumonia patients getting evidence-based care
- Time to answer call light on 5 West

### System-level e.g.

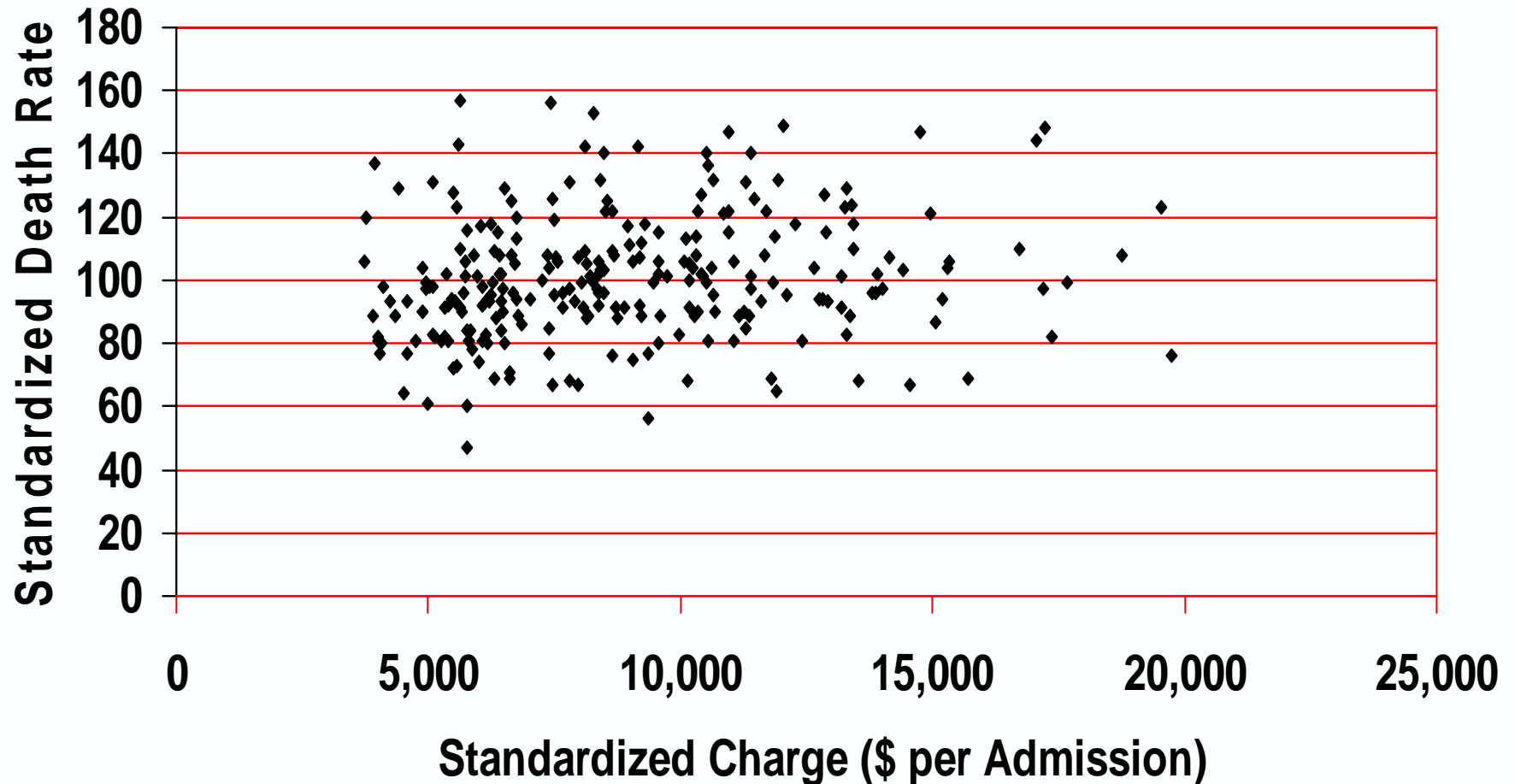
- Hospital mortality rate
- Cost per admission
- Adverse drug events per 1000 doses
- Patient satisfaction scores

# Hospital Death Rate

(Standardized for Age, Sex, Race, Payer, Admission Source & Type)

## vs Charge per Admission

(Standardized for Age and Diagnosis) -- AHRQ 1997 Data





# Stages of facing reality: “To live divided no more”

- “The data are wrong”
- “The data are right, but it’s not a problem”
- “The data are right; it is a problem; but it is not my problem.”
- “I accept the burden of improvement”



# 2x2 Matrix for Review of Last 50 Deaths

		In ICU	Not in ICU
Comfort Care only	Yes		
	No		

Results can be sent to [MoveTheDot@IHI.org](mailto:MoveTheDot@IHI.org)  
Aggregated results of all hospitals will be sent back



# 2x2 Matrix for Review of Last 50 Deaths Results for First 25 Hospitals

		In ICU	Not in ICU
Comfort Care only	Yes	4% (0-14%)	21% (0-36%)
	No	38% (16-60%)	37% (18-62%)

Results can be sent to [MoveTheDot@IHI.org](mailto:MoveTheDot@IHI.org)  
Current aggregated results of all hospitals will be sent back

## POINTING THE FINGER

Both doctors at the scene and those in supervisory roles told federal investigators that other individuals or departments were responsible for managing the patient's treatment during the seizure. The patient did receive anti-seizure drugs, but not in high enough dosages.

### Neurosurgeon

Said epilepsy staff or medical intensive care unit (MICU) staff are responsible for post-operative care.

### Neurosurgery resident

Assumed the seizure was being managed by the MICU fellow and the epilepsy fellow on the phone.

### MICU director

Said MICU staff don't assume responsibility for surgical patients; the responsibility belongs to the surgical staff.

### MICU attending

Said neurological staff was responsible for managing care during the seizure.

### MICU fellow

Thought the seizure was being managed by neurosurgical resident at bedside and epilepsy fellow on the telephone.

### Epilepsy specialist #1

Said MICU staff or neurosurgical team were responsible for managing care during the seizure.

*On call that night*

### Epilepsy specialist #2

Said MICU staff was responsible for care.

*Patient's primary doctor, but not on call that night*

### Epilepsy fellow

Said she was only a consultant. She was not at the hospital and assumed bedside doctors would manage care.

*On phone*

### Two MICU nurses

Could not recall who was managing the patient's seizure.

### MICU charge nurse

Said surgical teams are responsible for surgical patients.

*At bedside during seizure*

*PATIENT*



# Big Dots

\* 3<sup>rd</sup> Available Appointment

- cost per admission
- cost per capita

\* Voluntary staff Turnover

\* Mortality Rate

\* Adverse Drug Events

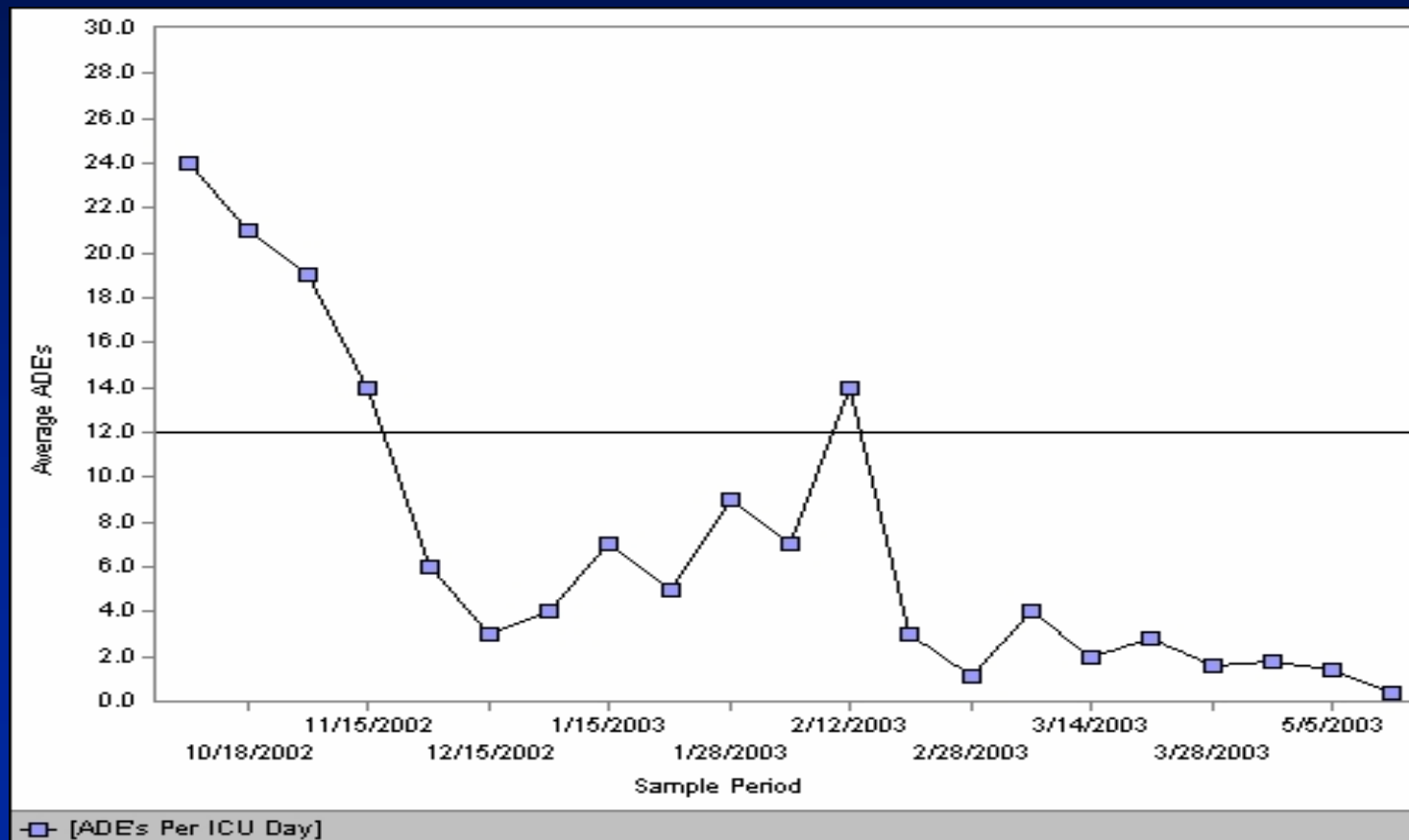
\* Functional Outcomes

\* Patient Satisfaction



# Baptist Memorial Desoto: Critical Care Projects

## ■ Adverse Drug Events per ICU Day





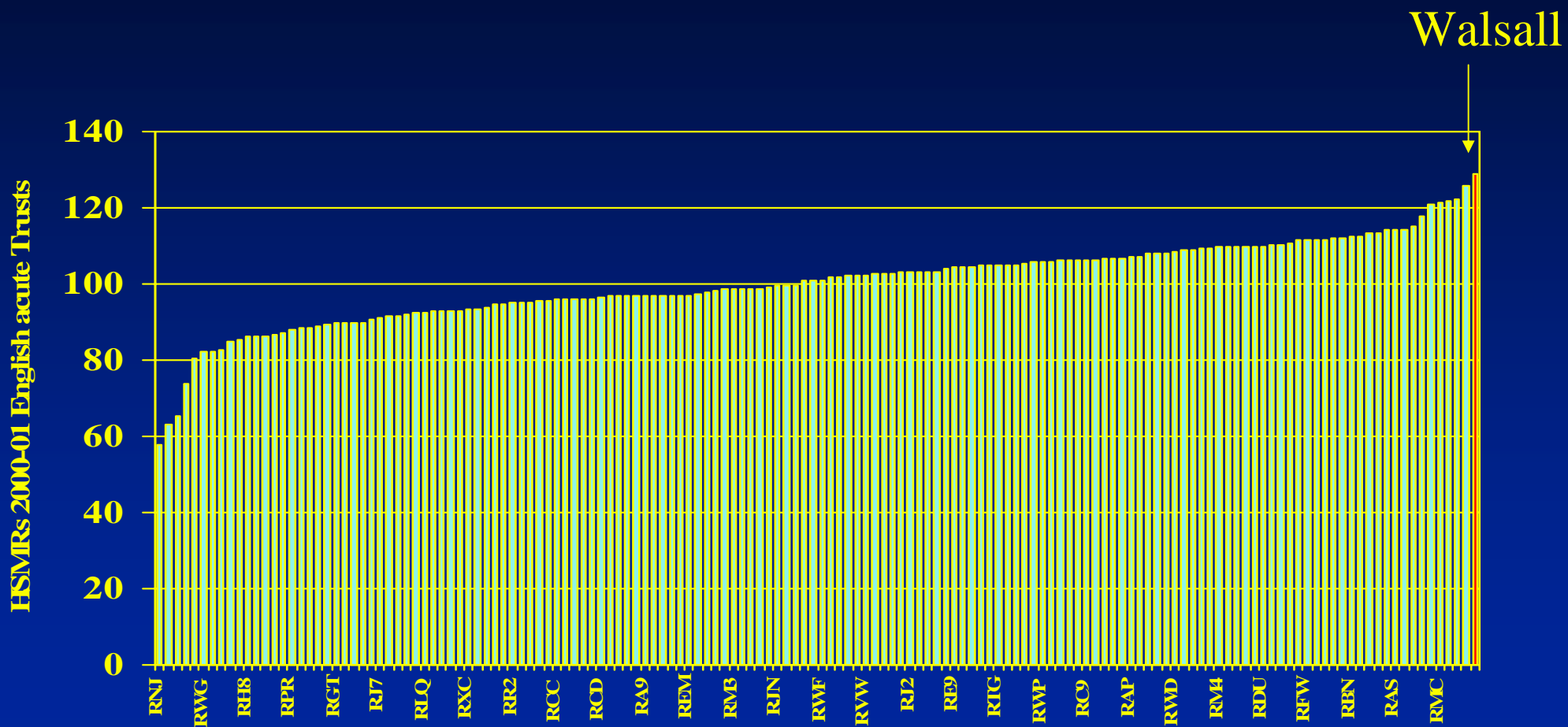
## Lesson #4

**Align system measures, strategy and projects in a leadership learning system**

- **Work from the Big Dots in**
- **Unify Quality, Strategic, Financial plans**
- **Develop a coherent “Theory of the Strategy” for how to achieve your aim**
- **Implement, monitor, and revise the strategy as needed, if the Dots aren’t moving!**



# Walsall HSMR 2000-01





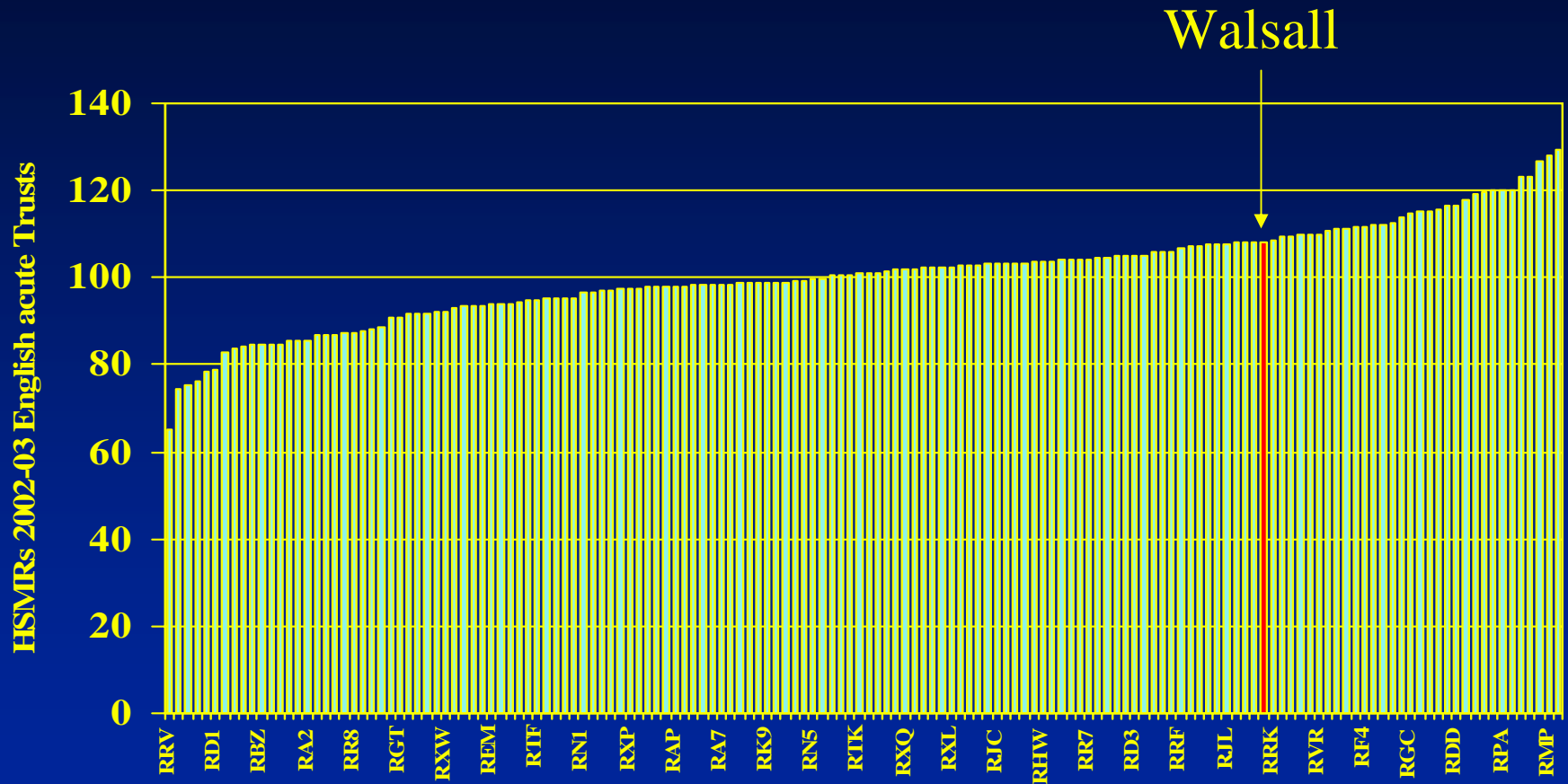
**Mike Brown, medical director at Walsall Hospitals NHS Trust**

**“After the first [HSMR data were published] we spent a lot of time setting up what I think is a first class clinical governance framework. We focussed on mortality and looked at all the outlying areas [ie the groups of patients with high mortality ratios].”**

**“We set up seven groups. Each group was given outliers to look at and identify where things could be done. Each group had a senior director on it to give it clout. There was no simple way to change things – no single cause. It was one long slog across the board”**



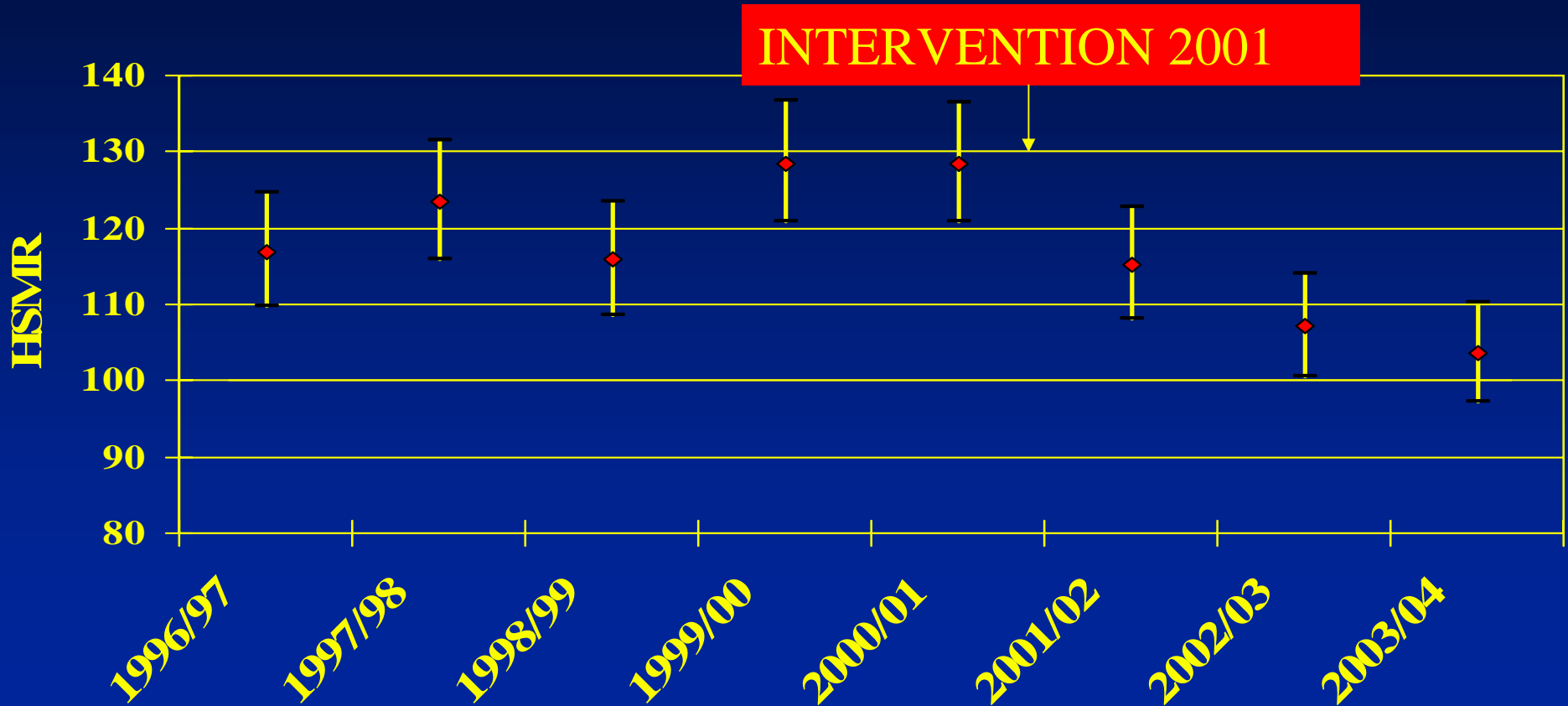
# Walsall 2003-04





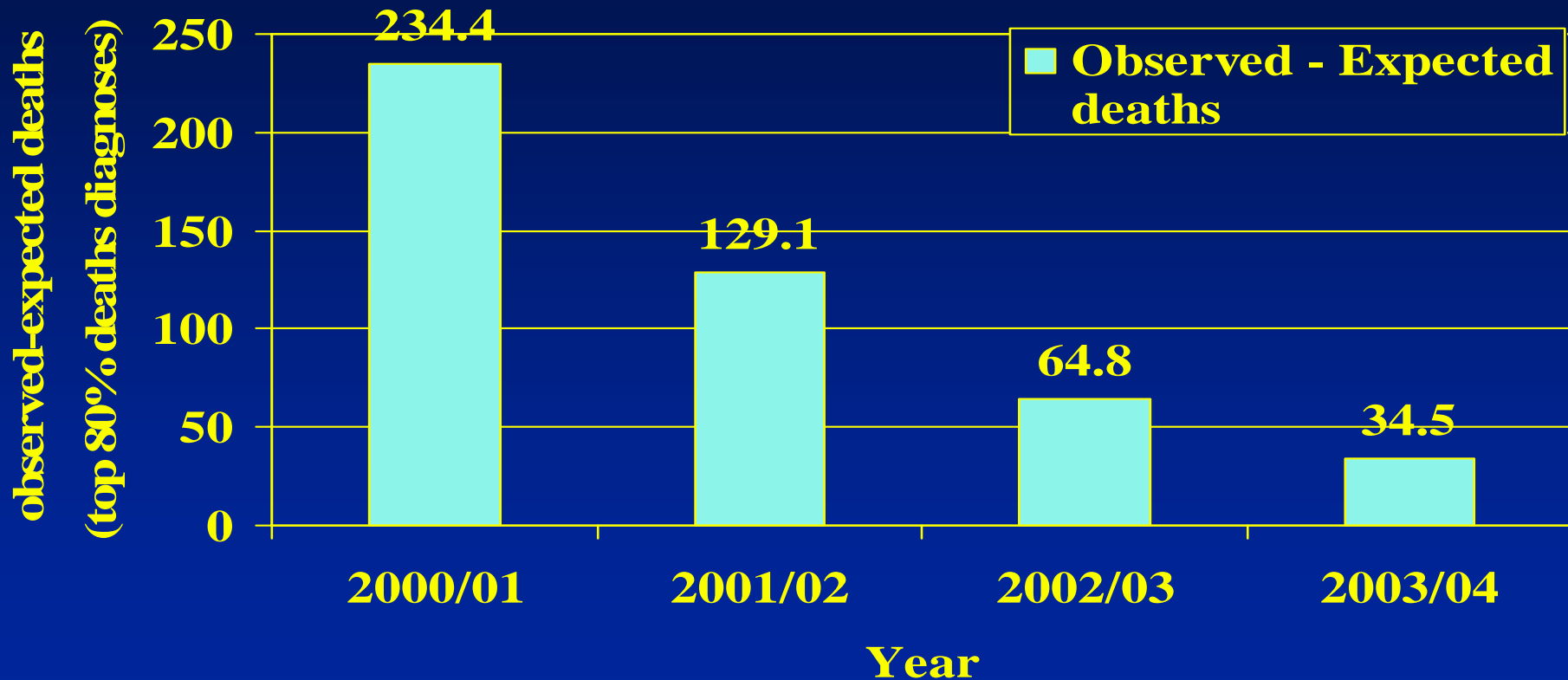
# Walsall change of HSMR

Observed – expected deaths (top 80% deaths) = 234 in 2000/1, 8 in 2003/4  
– reduction = 226 (283 100% deaths)





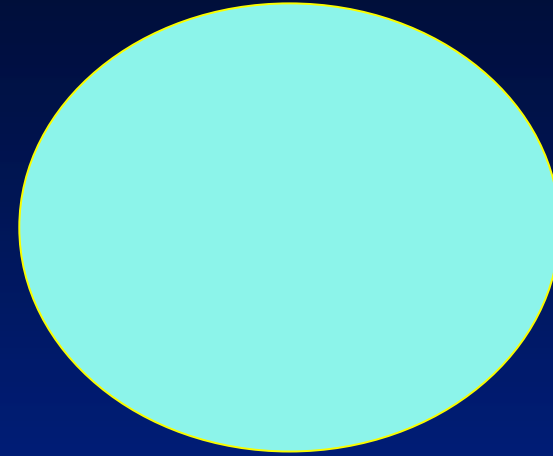
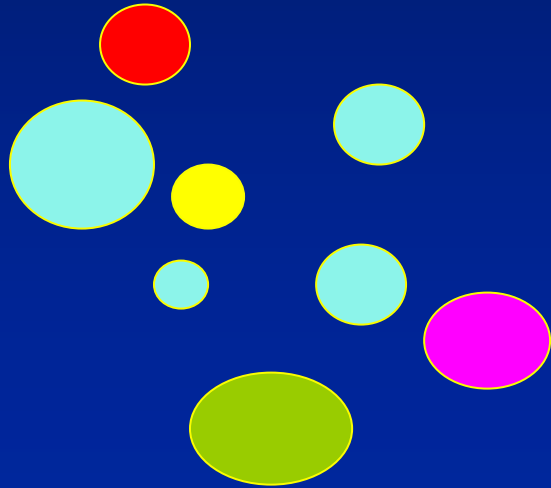
## Walsall Hospital: observed – expected deaths (diagnoses leading to 80% all deaths)





Strategically important system-level performance measure

Q Projects in a unit, office, or department...



Will these projects, in aggregate, move that Big Dot?



## Lesson #5

### Channeling Leadership Attention: Examples and Ideas

- **George Kerwin, CEO Bellin, and the monthly HSMR meeting**
- **Angela Pedder, CEO Royal Devon and Exeter, and the daily bed meeting**
- **Bill Rupp, CEO LM Mayo, and the “drop-in” team reviews**
- **Implement a revised promotion policy**
- **McLeod: Starting every day with patient rounds for all executives**
- **Start every Board meeting with a story of a needless death**



# Channeling attention & establishing patient safety as a strategic priority

**Review agendas of the last four meetings of the senior leadership team for the following:**

- 1. Were patient and/or staff safety issues on the agenda?**
- 2. Where was the placement of these issues on the agenda- first, middle, last?**
- 3. Is data from patient and staff safety indicators routinely reviewed and discussed?**
- 4. Are safety agenda items followed by action plans with an assigned senior leader accountable for follow-up?**
- 5. Check the percentage of time that the team spends on discussion of patient care issues, including safety, and other operational matters.**

**Repeat this exercise with the Board minutes and other high level operational meetings.**



# Channeling leadership attention: examples and ideas

1. **Prominent placement of safety issues on senior staff and board meeting agendas**
2. **Spend time visiting with staff and asking about safety**
3. **Assign executives to safety issues and ask for updates**
4. **Request brief presentations from staff working on key projects relating to safety and ask how the senior staff could be helpful in supporting this work**
5. **When successful safety projects are presented, discuss the development of a plan for spread of this work throughout the organization**
6. **Routinely monitor the spread of important safety changes through the use of an organized spread time table and work plan**
7. **Connect executive performance and compensation to improvements in patient safety**
8. **Re-focus hiring and promotional practices to reflect patient safety as a priority**



# Channel leadership attention to the aim

- **Change your calendar**
- **Do executive reviews of key projects**
- **Connect executive performance feedback, compensation to the aim**
- **Re-focus hiring and promotional practices...**

*Body language, personal and organizational, formal and informal, must all be consistent with the aim*



## Lesson #6

# Get the right team on the bus

- You might have had the right team for the old job, but does that team
  - Understand the new job?
  - Want to do it?
  - Have the skills to do it?



## Executive Team: Characteristics for transformation

- **Shared values and ability to raise dissonant issues**
- **Commitment (measured by actions not words) to improved safety**
- **Enthusiastic participants in a shared learning agenda and to develop content understanding at senior level**
- **Have ways to hear the voice of the patient in design of health care**



# GE Values

- **Have a passion for excellence and hate bureaucracy**
- **Are open to ideas from everywhere...and committed to workout**
- **Live quality...and drive cost and speed for competitive advantage**
- **Have the self-confidence to involve everyone and behave in a boundaryless fashion**



# GE Values

- **Create a clear, simple, reality-based vision...and communicate it to all**
- **Have enormous energy and the ability to energize others**
- **Stretch...set aggressive goals...reward progress...yet understand accountability and commitment**
- **See change as opportunity...not threat**
- **Have global brains...and build diverse and global teams**



# IHI Values

- **Cooperation and Openness**
- **Patient and Health Care Focus**
- **Customer Focus**
- **Valuing Volunteers**
- **Honesty and Transparency**
- **Practice What We Preach**
- **Celebration and Thankfulness**



# Lesson #7

## Link quality and finances



## Sub-aims suggested by Noriaki Kano:

1. **Eliminate quality problems as experienced by the customer (patient).**
2. **Reduce cost significantly while maintaining or improving quality.**
3. **Expand customer (patient) expectations by providing products and services (care) that customers perceive as unusually high in value.**

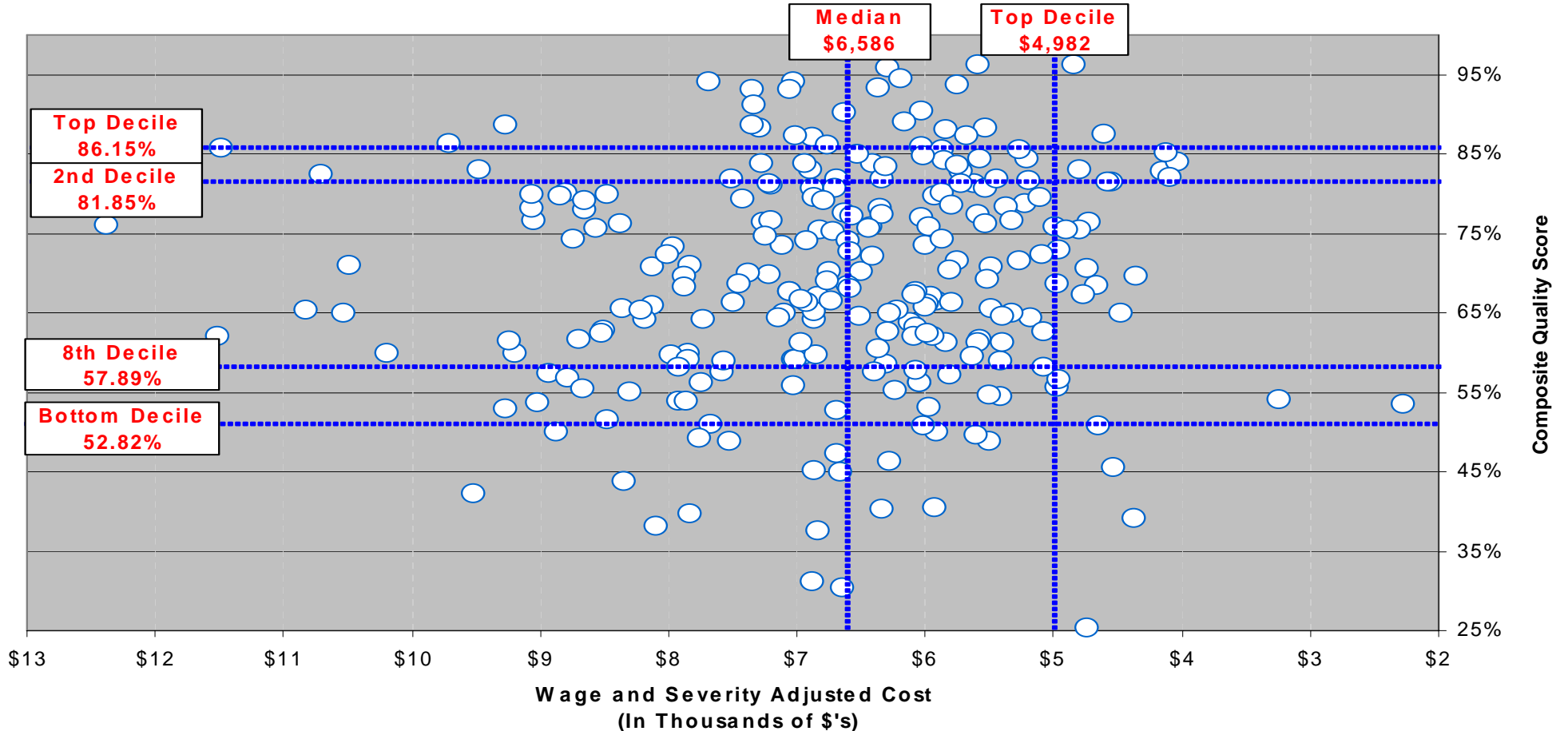
# Premier Composite Data: Heart Failure

Heart Failure: Cost Vs Composite Quality Score Comparison  
CMS/Premier Hospital Quality Demonstration Project Participants

October 1, 2003 - September 30, 2004

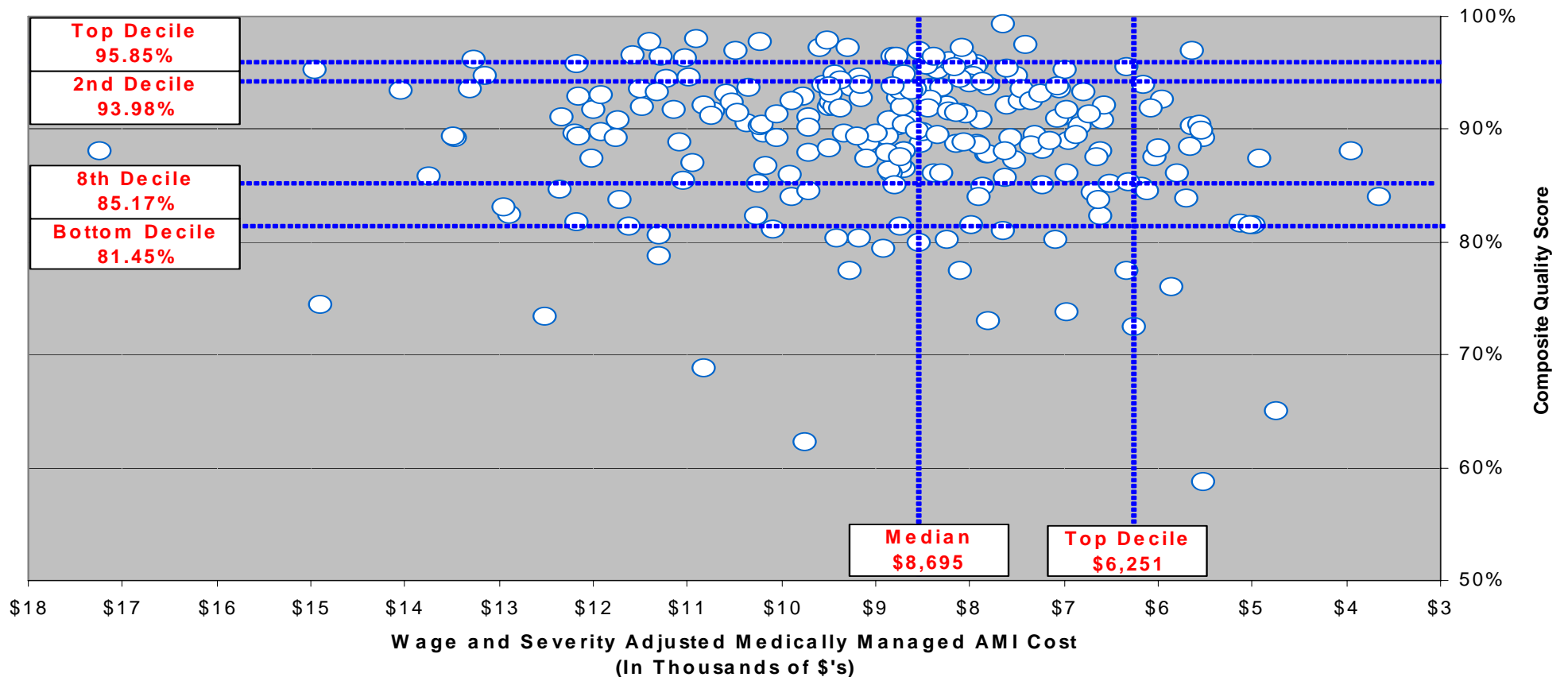
Preliminary Results

N of Hospitals = 257



# Premier Composite Data: Acute Myocaridal Infarction

Acute Myocardial Infarction: Cost Vs Composite Quality Score Comparison  
CMS/Premier Hospital Quality Demonstration Project Participants  
October 1, 2003 - September 30, 2004  
Preliminary Results  
N of Hospitals = 241



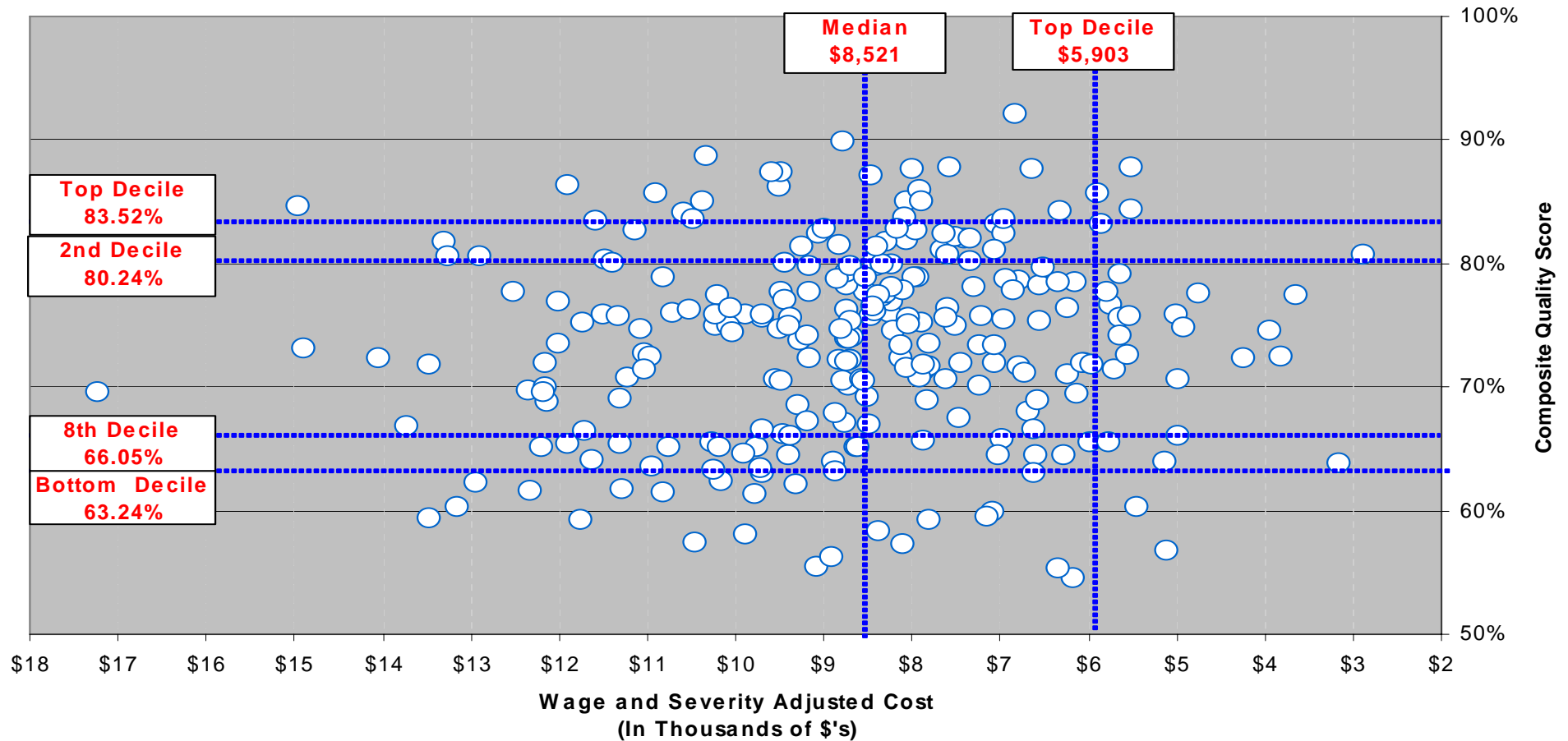
# Premier Composite Data: Community Acquired Pneumonia

Community Acquired Pneumonia: Cost Vs Composite Quality Score Comparison  
CMS/Premier Hospital Quality Demonstration Project Participants

October 1, 2003 - September 30, 2004

Preliminary Results

N of Hospitals = 259



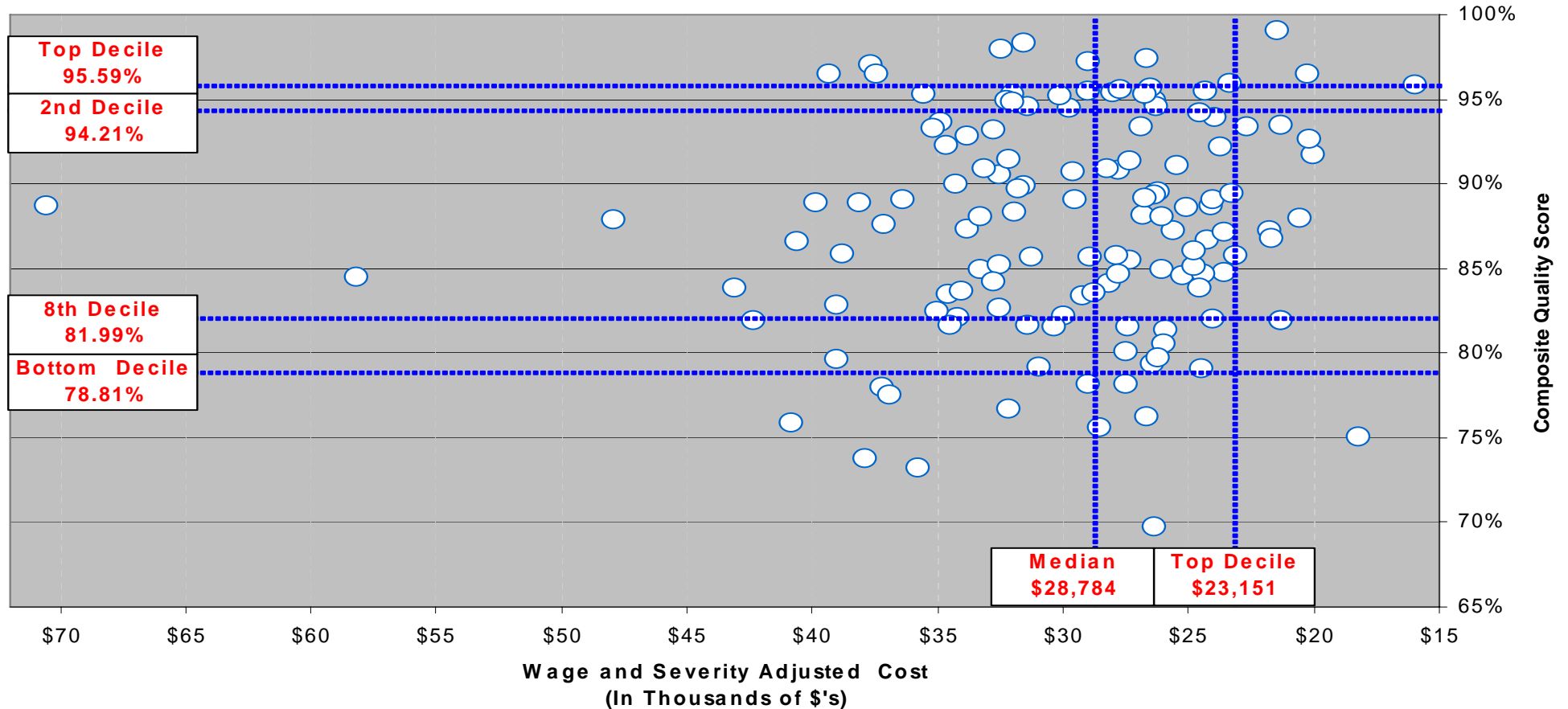
# Premier Composite Data: Coronary Artery Bypass Graft

Coronary Artery Bypass Graft: Cost Vs Composite Quality Score Comparison  
CMS/Premier Hospital Quality Demonstration Project Participants

October 1, 2003 - September 30, 2004

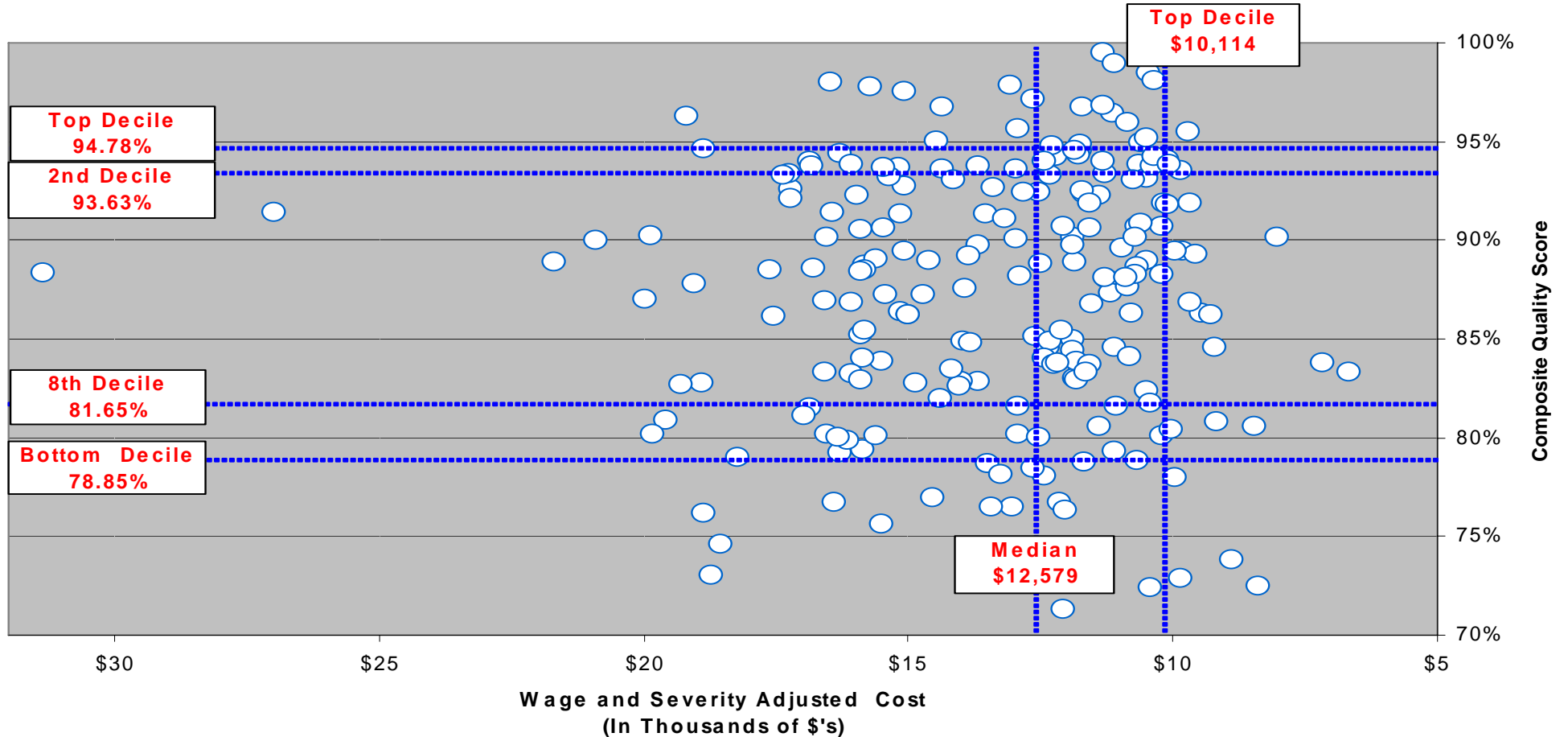
Preliminary Results

N of Hospitals = 133



# Premier Composite Data: Hip and Knee

Hip and Knee: Cost Vs Composite Quality Score Comparison  
CMS/Premier Hospital Quality Demonstration Project Participants  
October 1, 2003 - September 30, 2004  
Preliminary Results  
N of Hospitals = 212





# Quality as a Business Strategy

- **Two general levels of discussion:**
  - **Social system discussion about payment equity, misaligned incentives, incentives for poor quality, etc.**
  - **Organizational discussion about simultaneous improving the patient experience and improving organizational financial return**



# Concepts

- **Light green potential**
  - *Improvements in the care system that also have the potential to lower cost or increase revenue*
- **Dark green money**
  - *Realized cost savings or revenue increases*
- **“muda”**
  - *Non-quality (defects)*
  - *Unnecessary work, and inappropriate care*
  - *Rework waste (fraction of rework to total work)*
  - *Complexity waste (value added time as percent of total cycle time)*



# Two Parallel Tasks

- **Redesign the system**
- **Tend to the finances**



# Redesign the System to Increase Value

- 1. Reduce defects that the patient and others experience**
- 2. Eliminate cost while maintaining or improving quality**
- 3. Create and meet a new need or meet an old need at an unprecedented level**



# To Increase Value: Skills are needed at all levels

## ■ Micro-system

- Improvement and measurement skills
- Financial measurement

## ■ Mid-level and senior leaders

- Prediction
- Aggregation
- Rebudgeting
- Throughput, flow and capacity management



# To Increase Value: Skills are needed at three levels

## ■ Strategic

- Strategic positioning (1% aim?)
- Market strengthening and negotiation
- Capitalization strategies
  - Capital avoidance and maximization (ROI, SIB)
- “Innovation dial”
- Supply chain management
- Workforce mapping and development
- Reinvestment strategies



# A Balanced Strategy for Senior Leaders

## Kano Aim #2

**Aim: Reduce Operating expense budget by 1% per year, year after year**

**•Start with the dark green dollars and design portfolio**

- 
- 
- 

## Kano Aims #1 & #3

**Aim: Raise the bar on...**

clinical care

service & systems

work environment

-

-

-

-

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Business Case Management Systems

Reinvestment strategy

clinical care

service & systems

great work environment

IT / HR

bottom line



# Quality as Business Strategy

- **The following data comes from Rick Shannon at Allegheny General Hospital**

## What Does *5.1 infections/ 1000 line days* Really Mean??

- 37 patients
- 49 infections
- 193 lines were employed (5.2 lines / patient)
- 1753 admissions
- 1063 patients had central access for more than 12 hours
- 1 out of 28 patients with a central line became infected.

## Comparative Results

	<b>FY 2003 Traditional Approach</b>	<b>FY 2004 PPC Approach</b>
<b>ICU Admissions (n)</b>	<b>1753</b>	<b>1798</b>
<b>Patients with CLABs (n)</b>	<b>37</b>	<b>6</b>
<b>Age (years)</b>	<b>62 (24-80)</b>	<b>62 (50-74)</b>
<b>Gender (male/female)</b>	<b>12/15</b>	<b>3/3</b>
<b>Total CLABS</b>	<b>49</b>	<b>6</b>
<b>Line days</b>	<b>4683</b>	<b>5052</b>
<b>Overall rates (infections /1000 line days)</b>	<b>10.5</b>	<b>1.2</b>
<b>Rates reported to NNIS (infections /1000 line days)</b>	<b>5.1</b>	<b>1.2</b>
<b>Deaths in patients with CLABs</b>	<b>19 (51%)</b>	<b>1 (16%)</b>

# The Human and Economic Costs of Nosocomial Infections

	CLABs* (n=72)	VAP* (n=33)	MRSA** (n=188)
( per patient)			
Revenue (\$)	68,183	95,272	26,112
Expenses	82,183	112,459	69,343
Gross Margin	-14,572	-17,187	-43,231
LOS	35	51	19
Mortality	25%	30%	16%

\* Defined by Infection Control

\*\* no routine surveillance

# AGH Losses Associated with Nosocomial Infections FY 04

Gross Margins (FY 04)	Actual	Projected Based Upon Underreporting	Saving (90% Reduction)
CLAB (n=72)	<i>(-\$1,049,184)</i>	<i>(-\$1,748,640)</i>	<i>[\$944,265]</i>
VAP (n=33)	<i>(-\$567,171)</i>	<i>(-\$1,134,342)</i>	<i>[\$510,453]</i>
MRSA (n=188)	<i>(-\$8,127,428)</i>	<i>(-\$12,130,489)</i>	<i>[\$7,314,685]</i>
Loss associated with nosocomial infections	<i>(-\$9,743,783)</i>	<i>(-15,013,471)</i>	<i>[\$8,769,403]</i>



## Lesson #8

**Develop collaborative cultures and redesign professional and education to teach teamwork and improvement skills.**



# IHI's Health Professions Collaborative

- **Sixteen academic medical centers have joined forces with nursing schools and pharmacy programs to build collaborative work into the cultures and to teach improvement skills to developing health care professionals.**



# IHI's Health Professions Collaborative

- **The HPC is “reframing” the paradigms for developing new professionals and equipping medical, nursing, and pharmacy students with the drive, tools, and methods to improve care every day.**



# Lesson #9

**Build improvement capability**

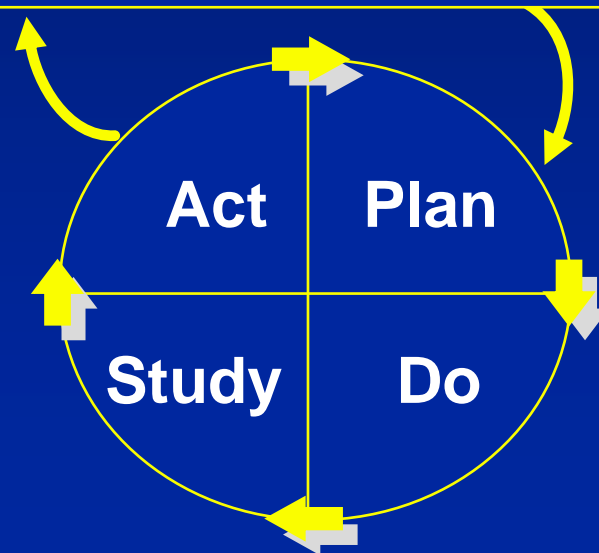


# The Project Method: The Model for Improvement (Nolan, *et al.*)

**What are we trying to accomplish?**

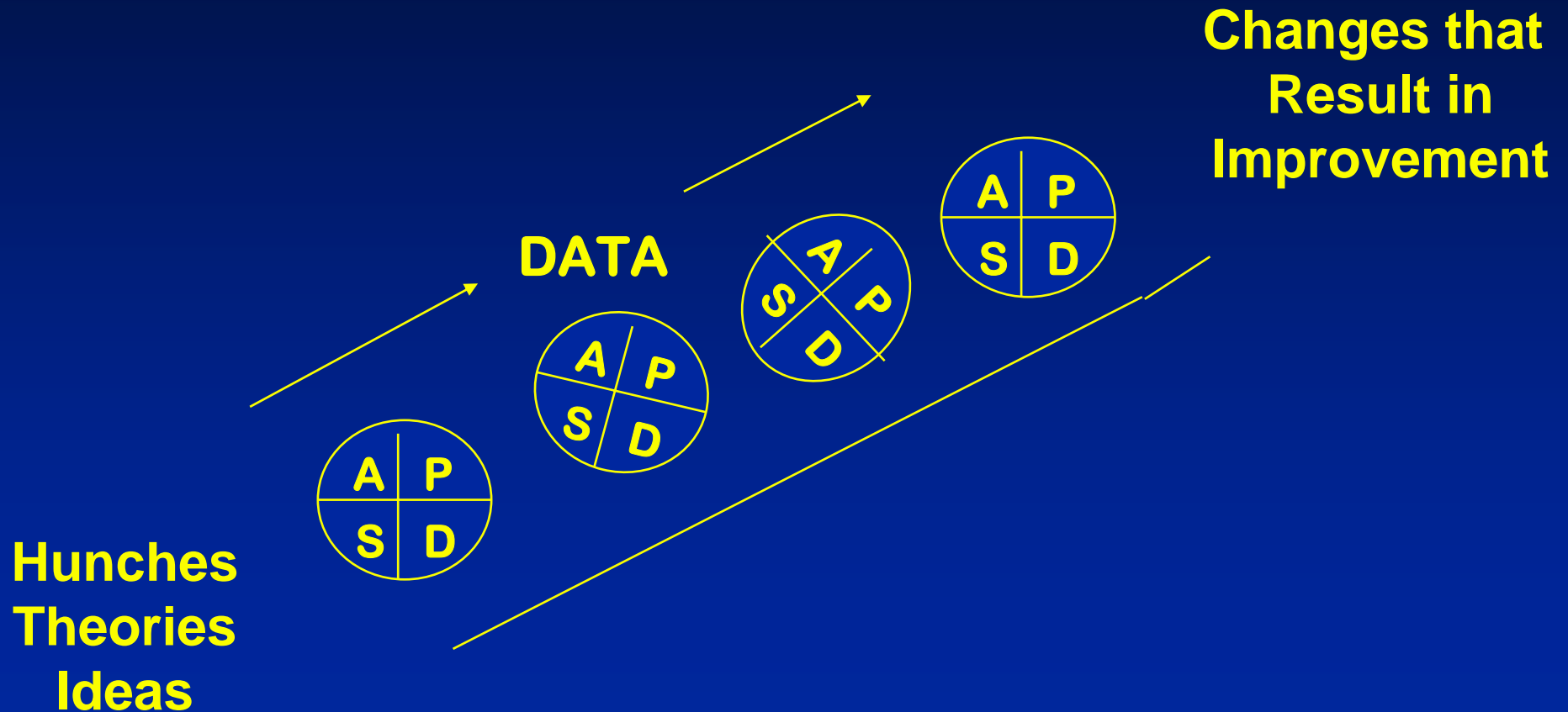
**How will we know that a change is an improvement?**

**What changes can we make that will result in an improvement?**





# Repeated Use of the Cycles





# A Senior Leader Perspective on Projects

## Changing the Organization:

- HR
- IT
- Finance
- Leadership Processes
- Business Strategy
- Environmental Strategy

Spreading and Sustaining These Design Concepts: “A Place Where...”

Spreading and Sustaining This Improvement

**The Project:**  
e.g., Ventilator-Acquired Pneumonia

# Projects Connected to Big Dots



- \* Condition-specific, clinical process indicators
- \* Preventive care measures
- \* Office visit cycle time

- \* Surgical Site Infection Rate
- \* Percent of unreconciled medications
- \* Staff reporting positive safety climate

- \* Mortality Rate
- \* Cost per Admission
- \* Adverse Drug Events
- \* Functional Outcomes
- \* Patient Satisfaction
- \* 3<sup>rd</sup> Available Appointment
- \* Voluntary Turnover

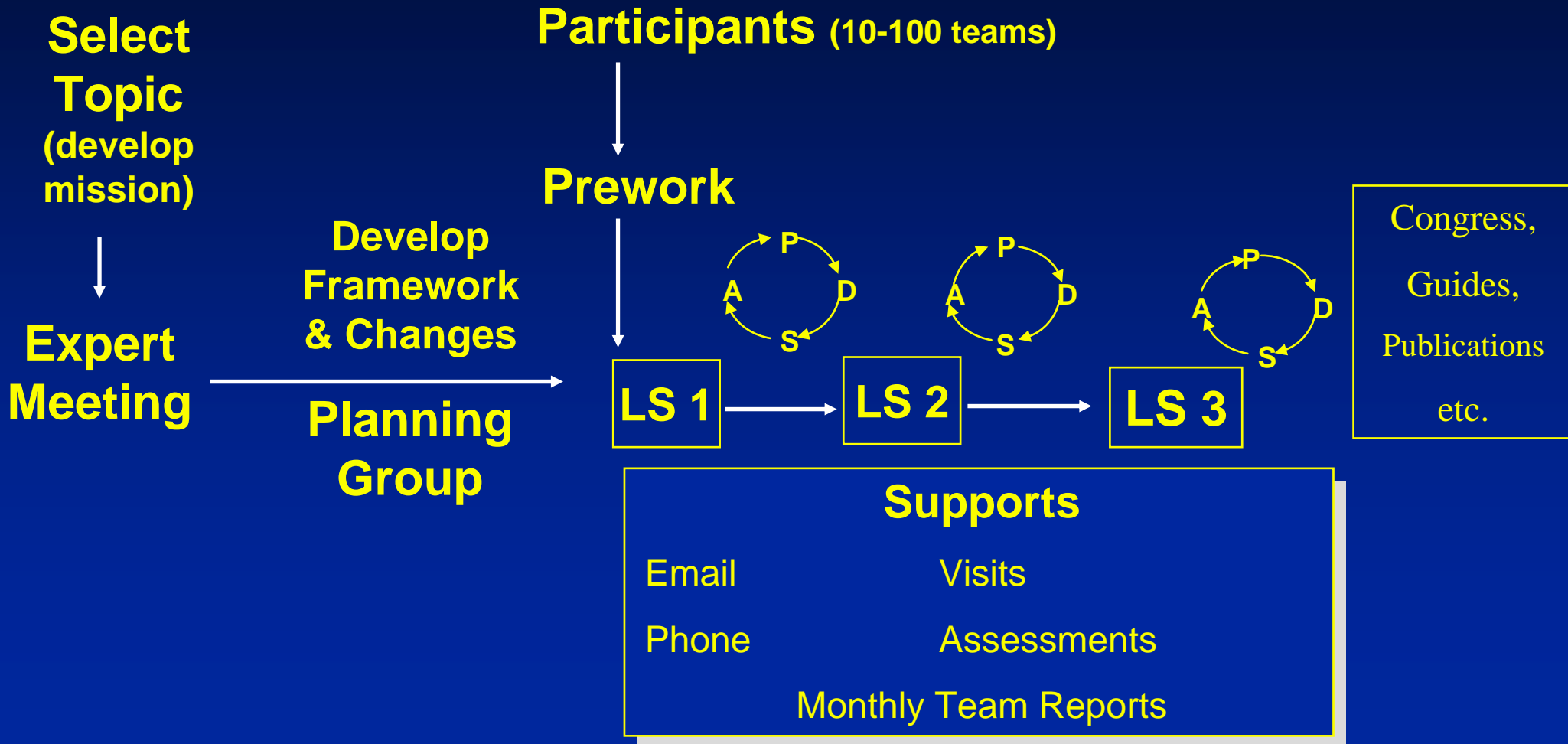
- \* Percent of turnover in first year
- \* Employee loyalty

- \* ER to bed placement time
- \* PACU to bed placement time
- \* ICU to bed placement time
- \* Bed to LTC placement time

- \* ICU mortality
- \* Catheter related BSI
- \* Average ventilator days per patient
- \* Adverse events/ICU day



# IHI Breakthrough Series (6 to 13 months time frame)





# Floating a Balloon....

**How about a “campaign”?**

**What if we try to get “quality” elected?**



# A 500 Bed Hospital....

- Average LOS = 4 days
- Average Occupancy 90%
- Raw Mortality per Admission = 3%
- Approximately  $(365 \div 4) \times 500 \times 0.9 = 43,000$  admissions per year
- Approximately  $0.03 \times 43,000 = 1300$  deaths per year



# “No Needless Deaths...”

<b>Intervention</b>	<b>Effect on Death Rates</b>	<b>Preventable (Delayable) Deaths</b>
<b>Medical Emergency Teams</b>	<b>26% decline hospital-wide (assume 30% of this effect achieved)</b>	<b><math>0.26 \times 0.3 \times 1300 = 100</math> deaths</b>
<b>Surgical Site Infections</b>	<b>5% rate; 80% reduction; 3% lethal; 15,000 cases per year</b>	<b><math>0.05 \times 15,000 \times 0.03 \times 0.8 = 18</math> deaths</b>
<b>AMI Reliability</b>	<b>5% of admissions; 10% mortality; 50% reduction</b>	<b><math>0.05 \times 43,000 \times 0.1 \times 0.5 = 108</math> deaths</b>





35 AMECHE

CAMP RANDALL STADIUM

33 DAYNE

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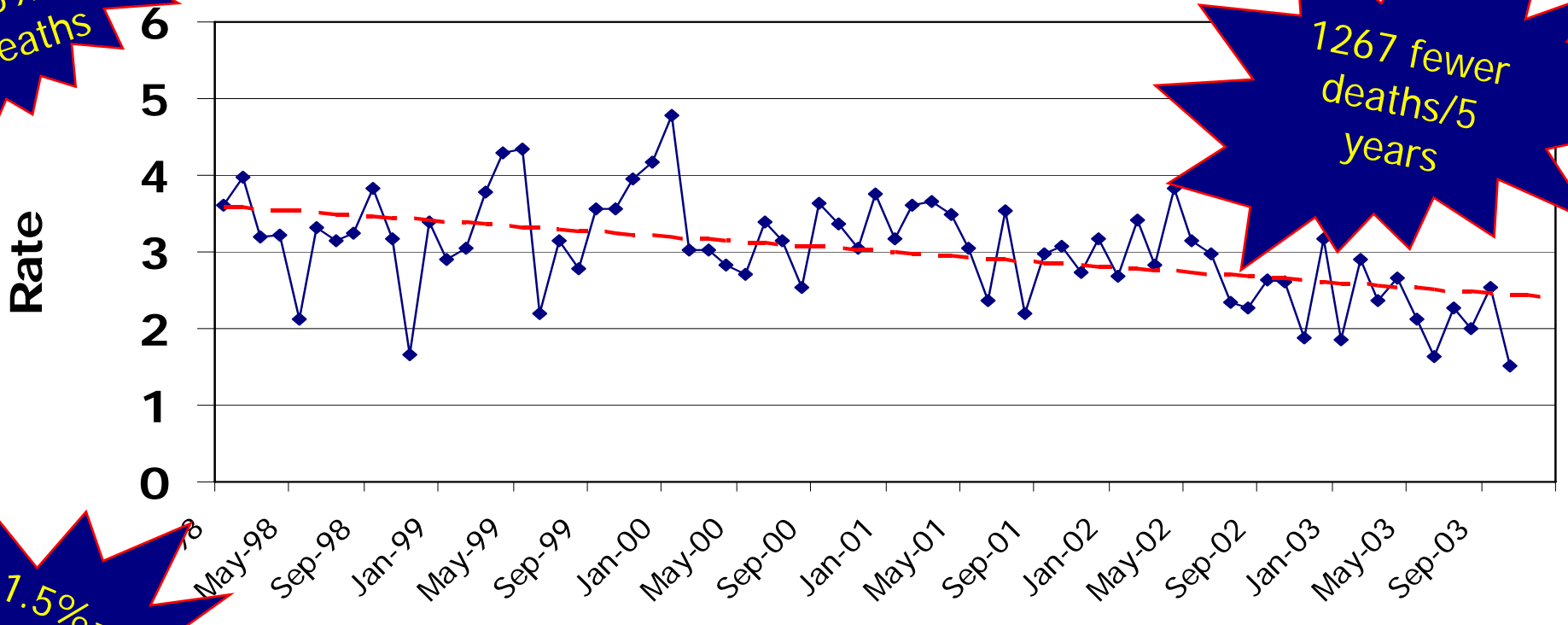
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# Overall Hospital Mortality (CMI=1.97)

## St. Joseph HealthCare Overall Inpatient Mortality Rate



4% = 592 deaths

1267 fewer deaths/5 years

1.5% = 229 deaths

363 fewer deaths per year



## Lesson #10

**Learning from “outside” has  
been the most powerful driver of  
change.**



# Changes from outside of health care

- **Flow and queuing theory**
- **Segmentation**
- **Reliability theory**
- **Safety and human factors design**



# Changes from outside of the United States

- **Jönköping has been a source for ideas adopted in the U.S.**
  - “Esther”
  - “Raise the Bar aim” of improving population health and driving costs down
  - Created a vision of an integrated system that improves care and cuts costs and shows that it is possible.
  - “Raise the Bar” performance in childhood asthma, influenza vaccines, and other community health projects.



# Changes from outside of the United States

## ■ Ideas from Jönköping cont.

- **Showed in a unique way how to place the patient in the middle**
- **Demonstrated that dramatic improvement can cross organizational boundaries**
- **Demonstrated a serious commitment to efficient use of resources that showed more courage than any other place we have seen.**
- **Demonstrated how sustained leadership and guidance created results everywhere.**