The Journey to High Reliability Healthcare

South Carolina Hospital Association
October 18th, 2013
Douglas Monroe MD MBA
System Director of Quality and Patient Safety
Not-So-New Demands for Quality and Patient Safety


Findings:

- 44,000-98,000 accidental deaths/yr in US hospitals
- Many due to drug errors
- Most errors were preventable
“If healthcare was an airline…”

“If healthcare was an airline, only dedicated risk takers, thrill seekers and those tired of living would fly on it.”

*Patient Safety* (2005) by Charles Vincent
What if These Kinds of Risks Weren’t an Option?
High Reliability Organizations

Commercial Aviation

Nuclear Aircraft Carriers

Air Traffic Control
High Reliability Organizations

USS Nautilus (SSN-571)
First atomic powered submarine
Launched January 15, 1954
High Reliability Organizations

US Nuclear Submarine Fleet 1954-2011

3,200 Years of Service

Reactor Accidents = 0

USS Nautilus (SSN-571)
First atomic powered submarine
Launched January 15, 1954
High Reliability Organizations?

Soviet November Class Nuclear Submarine
High Reliability Organizations?

K-8 (1960) - Loss of coolant
K-19 (1961) - 2 loss of coolant accidents (27 killed)
K-11 (1965) - 2 refueling criticalities
K-159 (1965) - Radioactive discharge
K-140 (1968) - Power excursion
K-8 (1970) - Loss of coolant, fire, sank (52 killed)
K-320 (1970) - Uncontrolled startup
K-116 (1979) - Reactor accident
K-222 (1980) - Uncontrolled startup
K-123 (1982) - Loss of coolant
K-431 (1985) - Refueling criticality (10 killed)
K-192 (1989) - Loss of coolant

Soviet November Class Nuclear Submarine Reactor Accidents
Naval Aviation Mishaps

1950-1997

776 aircraft destroyed in 1954

1950-1997

39 aircraft destroyed in 1996

Flight Incident Rate 1 in 175,000 Flight Ops

Angled decks
Aviation Safety Center
Naval Aviation Maintenance Program established in 1959 (NAMP)
RAG concept initiated
NATOPS Program initiated 1961
Squadron Safety program
System Safety Designated Aircraft
ACT

Year
The best thing a leader can do for a Great Group is to allow its members to discover their greatness.

- Warren Bennis and Patricia Ward Biederman

Organizing Genius
Memorial Hermann Healthcare System

Fiscal Year Ended June 30, 2012

Total Hospitals: 12 (9 Acute, 2 Rehab, 1 Children’s)
Ambulatory Surgery Centers: 18
Heart & Vascular Institutes: 3
Imaging Centers: 21
Breast Care Centers: 9
Sports Medicine & Rehab Centers: 32
Diagnostic Laboratories: 21
Retirement/Nursing Center: 1
Home Health Branches: 3
Cancer Centers: 7

Adjusted Admissions: 256,175
Annual Emergency Visits: 450,010
Annual Deliveries: 23,111
Employees: 20,241
Beds (acute licensed): 3,147
Medical Staff Members: 5,790
Physicians in Training: 1,694
Annual Labor Cost: $1.191 billion
Journey to Cultural Transformation

A Call to Action on Patient Safety
Transfusion Errors
Serious Safety Events
August 2006

2004
NQF National Quality Healthcare Award

2007
National Patient Safety Leadership Award

“...Memorial Hermann stood out as true leader in its commitment to quality in healthcare.”
--Janet Corrigan, NQF President & CEO
Journey to Cultural Transformation

The Story Starts in 2004 with a Brand Promise

Vision
Best of the best

Brand Promise
We create the best possible clinical outcomes with exceptional patient care experiences
Building Blocks to Achieving High Reliability

- All people always experience the safest, highest quality, best value health care across all settings
- Robust Process Improvement
- Safety Culture
- Leadership Commitment

- Widespread Adoption of RPI
- Process Improvement Training
- Process Improvement Methods
- Identifying Unsafe Conditions
- Strengthening Systems
- Trust
- Accountability
- Assessment
- Quality & Safety Strategy
- Quality & Safety Measures
- Governing Body Commitment
- CEO/Senior Leadership Commitment
- Physician Leadership
- Information Technology

Compliance with Joint Commission Standards & National Patient Safety Goals
Excellent Accountability Measure Performance
Role of the Board

• Provide leadership for high reliability, safety & quality initiatives
• Ensure the Board receives quality & safety results information it needs
• Provide guidance for the System Quality Committee
• Provide support for safety & quality initiatives, including financial support
Role of the Board (cont)

- Support for board education at programs like IHI, “From the Top” & Board retreats
- Personal support by participating in local, regional and national award recognition programs
- Ensuring senior management and incentives are aligned with the high reliability, safety & quality initiative
Red Arm Band Task Force

- Red Arm Band task force with representation from all hospitals and divisions

- Developed
  - Policies and Procedures
    • System
    • Local
  - Implementation Plan
    • Communication Plans
    • Education Plans
    • Monitoring Plans
    • Role out schedules

- Go Live - September 5th, 2006
Burning Platform
MHHS Safety Culture Training

Hospital Training Complete

>20,000 Employees Trained

>2,000 Physicians Trained

>540 Safety Coaches Trained

>$18M Expense
Journey to Cultural Transformation


1. Attention to Detail
   - Self-Check with STAR
   - Step: Pause for one to two seconds
   - Think: Focus on the act
   - Act: Perform the act
   - Review: Check for desired results

2. Communicate Clearly
   - Three-way Repeat Back - the "Three-post":
     - Sender initiates communication
     - Receiver repeats back
     - Sender acknowledges accuracy by saying, "That's correct!" or "That's not correct!"
   - Ask Questions:
     - Ask one or two clarifying questions when in high-risk situations or when information is incomplete and/or ambiguous
   - Phonetic & Numeric Clarifications
     - Say the letters and say the numbers
   - SBAR (Quick, To the Point)
     - Situation: What is the problem, patient, or project?
     - Background: What is important to know?
     - Assessment: What is your thought?
     - Request: What action do you need?

3. Questioning Attitude
   - Quality: Is the source reliable?
   - Validate: Consistent with my knowledge?
     - 1. What is typical or expected?
     - 2. What is outside of the norm?
     - 3. How do I know this is correct?
   - Verify: Check with a reliable source

4. Best Practice
   - Intelligent Compliance
     - Know and comply with policy, procedures, and protocols
     - Use checklists and flow sheets
   - ACT/Rapid Response

5. Support Each Other
   - Be a Safety Partner
     - Look out for each other
     - Positively reinforce safe and productive behaviors (SA)
     - Correct unsafe behaviors in a helpful manner
   - Speak Up: ARRC and CSS Words
     - Ask a question
     - Request a change
     - Confirm, state your concern
     - Use the safe word
     - Chain of command
   - CUSS Words
     - Care: I am concerned
     - Unity: I am uncomfortable
     - Safety: This is for safety
     - Stand: Stand up and stand together

Leader Toolkit

Build Accountability

200% Accountability
I am 100% accountable for the behavior and results of my unit(s).
My unit is also 100% accountable for its behavior and results.

Rounding for Outcomes
- Be with your people
- Recognize and reward
- Ask for problems, fix causes
- On your unit and others’ units

Reward and Recognition to build accountability
- Positive, immediate and certain
- Over negative, future and uncertain
- 5 positive for every 1 negative
- Consistent and frequent
- Fact-based
- High volume

Culpability Management
No punishment for an honest mistake.

Fix Causes

Control Loops
- Goals
- Comparison of actual to expected
  - Cause: Ask why 5 times
    - Monitoring & Trending
      - Fix: Define actions and assign ownership
    - Actual Performance
      - Execution: Implement the fix

Staff fix problems, leaders fix causes.

Ask Why 5 Times

Skill-Rule-Knowledge
Hospital Acquired Conditions “Never Events”

Hemolytic Transfusion Reactions

Transfusion Events Jan 2007 – Dec 2012

1,425,000 Adjusted Admissions

7,762,000 Adjusted Pt Days

763,000 Transfusions
Hospital Acquired Conditions
“Never Events”

Hemolytic Transfusion Reactions

Transfusion Events Jan 2007 – Dec 2012

1,425,000 Adjusted Admissions
7,762,000 Adjusted Pt Days
763,000 Transfusions

Zero
Journey to Cultural Transformation

2004
NQF National Quality Healthcare Award

“…Memorial Hermann stood out as true leader in its commitment to quality in healthcare.”
--Janet Corrigan, NQF President & CEO

2006
A Call to Action on Patient Safety

Transfusion Errors
Serious Safety Events

August 2006

2007
National Patient Safety Leadership Award

2008
BIPS

2009
NQF National Quality Healthcare Award

Take Action.
Make Patient Safety Your Priority.

Leader Toolkit
BIPS

Fix Causes

2008 National Health System
Patient Safety Leadership Award Ceremony
Recognizing Extraordinary Health S

Staff fix problems, leaders fix causes.
Moving the Memorial Hermann Healthcare System from Safety as a priority to Safety is our Core Value

Leadership behavioral expectations change when safety is the core value
**System-Wide Strategies**

<table>
<thead>
<tr>
<th>Quality &amp; Safety</th>
<th>Lead healthcare to superior patient outcomes through creation of a <strong>high reliability culture with evidence-based quality and patient safety as our core value.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>Create strong customer loyalty by providing exceptional experiences for all patients.</td>
</tr>
<tr>
<td>Physicians</td>
<td>Build sustainable, trusting &amp; collaborative relationships to advance our respective quality and economic objectives.</td>
</tr>
<tr>
<td>People</td>
<td><strong>Recruit, develop, &amp; retain top performing employees.</strong></td>
</tr>
<tr>
<td>Operational Excellence</td>
<td>Achieve targeted financial operating performance. Optimize the efficiency and value of services provided and focus on operational improvement opportunities in preparation for a new business model.</td>
</tr>
<tr>
<td>Growth</td>
<td>Strategically grow services to capture current revenue opportunities. Simultaneously, begin implementation of an accountable and integrated care delivery system in partnership with our physicians.</td>
</tr>
</tbody>
</table>
TJC Hand Hygiene Compliance Center for Transforming Healthcare

Baseline Compliance 44%
Adult ICU Central Line Associated Blood Stream Infections (CLABSI)

Central Line Associated Blood Stream Infections

CLABSI Rate per 1K Line Days

System Adult ICU CLABSI
Do No Harm
Central Line Associated Blood Stream Infections

Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1
2006 2007 2008 2009 2010 2011 2012

LCL = 0.29
LCL = 0.38
LCL = 1.64
LCL = 2.97

UCL = 9.42
UCL = 5.79
UCL = 5.13
UCL = 3.86
UCL = 2.55

UCL = 0.38
UCL = 0.29
UCL = 1.64
UCL = 2.97
UCL = 2.55

February CLABSI rates not available due to ISD technical difficulties

Source file date: 3/23/2012
Generated: 4/2/2012 7:45:37 AM
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NICU Central Line Associated Blood Stream Infections (CLABSI)

Memorial Hermann Healthcare System
NICU Central Line Associated Blood Stream Infections

CLABSI Rate per 1K Line Days

Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 1
2006 2007 2008 2009 2010 2011 2012

UCL = 19.19
Mean = 11.96
UCL = 19.19

UCL = 8.62
Mean = 3.45
Mean = 3.45
Mean = 3.45

LCL = 4.74
UCL = 4.44

LCL = 4.74
Acute Myocardial Infarction - Core Measure AMI-8a
Door-to-Percutaneous Coronary Intervention
Central Line Associated Bloodstream Infections
Ventilator Associated Pneumonias
Surgical Site Infections
Retained Foreign Bodies
Iatrogenic Pneumothorax
Accidental Punctures and Lacerations
Pressure Ulcers Stages III & IV
Hospital Associated Injuries
Deep Vein Thrombosis and/or Pulmonary Embolism
Deaths Among Surgical Inpatients with Serious Treatable Complications
Birth Traumas
Serious Safety Events
Central Line Associated Bloodstream Infections
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Birth Traumas
Serious Safety Events
Hospital Acquired Infections, Conditions and Patient Safety Indicators

Central Line Associated Bloodstream Infections
Ventilator Associated Pneumonias
Surgical Site Infections
Retained Foreign Bodies
Iatrogenic Pneumothorax
Accidental Punctures and Lacerations
Pressure Ulcers Stages III & IV
Hospital Associated Injuries
Deep Vein Thrombosis and/or Pulmonary Embolism
Deaths Among Surgical Inpatients with Serious Treatable Complications
Birth Traumas
Serious Safety Events
2010 Change in Focus: Journey to High Reliability

- We’ve come a long way since 2006
- We’ve got a long way to go
- *We have to do something different to get a different result*
- Enlightened leadership is the key
- The staff is primed to follow your lead
Patient Safety Indicator

Iatrogenic Pneumothorax

Central Line Associated Iatrogenic Pneumothorax
Patient Safety Indicator

Iatrogenic Pneumothorax

Central Line Associated
Iatrogenic Pneumothorax

Bedside Real Time
Ultrasound Guidance
MH Southeast Hospital

Real Time Ultrasound Guidance

Southeast Ultrasound Usage Rate
Rate of Ultrasound usage for Femoral, Internal Jugular, and Subclavian lines

Created: 10/26/2012 3:36:21 PM
Source file date: 10/19/2012
Iatrogenic Pneumothorax

MH Southeast Hospital

Rate/1000 Discharges for Secondary Diagnosis

Southeast Adult Iatrogenic Pneumothorax
Do No Harm

Reporting Months

Offset: 75

Produced by System Quality and Patient Safety

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Source file date: 9/13/2011
MH Southeast Hospital

Iatrogenic Pneumothorax

Southeast Adult Iatrogenic Pneumothorax
Do No Harm
Rate/1000 Discharges for Secondary Diagnosis

Mean = 0.55

Mean = 3.46

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Source file date: 9/13/2011
MH Southeast Hospital
Iatrogenic Pneumothorax

MH Southeast Hospital
Southeast Adult Iatrogenic Pneumothorax
Do No Harm
Rate/1000 Discharges for Secondary Diagnosis

22 Months
Zero Iatrogenic Pneumothorax
MH Southeast Hospital

**Iatrogenic Pneumothorax**

Driver Graph:
Real-Time Ultrasound Guidance for Central Line Insertion

**Southeast Ultrasound Usage Rate**
Rate of Ultrasound usage for Femoral, Internal Jugular, and Subclavian lines

**Results Graph:**
Zero Iatrogenic Pneumothorax

NEW AWARD
High Reliability
Certified Zero Award

1. Zero Events

2. 12 Consecutive Months

3. Certified Zero Category
High Reliability Certified Zero Award
To: Memorial Hermann Southeast Hospital
Zero iatrogenic Pneumothorax for 12 Months
February 1, 2010 to January 31, 2011

Dan Wolterman
President & Chief Executive Officer

M. Michael Shabot, M.D.
System Chief Medical Officer

Robert G. Croyle
Chair, Health System Board
2010

MEMORIAL HERMANN

High Reliability Certified Zero Award

To: TeamHealth
Zero iatrogenic Pneumothorax in Memorial Hermann’s Emergency Departments for 12 months

Dan Wolterman
President & Chief Executive Officer

M. Michael Shabot, M.D.
System Chief Medical Officer

Robert G. Croyle
Chair, Health System Board

Breakthroughs in Patient Safety

Zero Harm

Best of the Best
MH Northeast Hospital Zero Iatrogenic Pneumothorax

Northeast Adult Iatrogenic Pneumothorax
Do No Harm
Rate/1000 Discharges for Secondary Diagnosis

2011
High Reliability Certified Zero Award
To: Memorial Hermann Northeast Hospital
Zero Iatrogenic Pneumothorax for 12 months
December 2010 to November 2011

15 Months
Zero Iatrogenic Pneumothorax
Katy: Zero Pressure Ulcers Stages 3 & 4

To: Memorial Hermann Katy Hospital

Zero Pressure Ulcers Stages 3 & 4
January 1, 2008 to December 31, 2010

Zero Pressure Ulcers x 36 Months

Katy Adult PU Pressure Ulcers
Rate/1000 Discharges for Secondary Diagnosis

Mean = 0.00

2011
High Reliability
Certified Zero Award
To: Memorial Hermann Katy Hospital
Zero Pressure Ulcers for 36 Months
January 1, 2008 to December 31, 2010

Generated: 9/15/2011 11:54:41 AM
Source file date: 9/13/2011

produced by System Quality and Patient Safety
Northwest: Zero Retained Foreign Bodies

Northwest Adult FB
Foreign Body Left During Procedure
Rate/1000 Discharges for Secondary Diagnosis

Zero Retained Foreign Bodies x 24 Months

High Reliability Certified Zero Award
To: Memorial Hermann Northwest Hospital
Zero Retained Foreign Bodies for 24 Months
January 1, 2010 to December 31, 2010

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Source file date: 9/13/2011
produced by System Quality and Patient Safety
Sugar Land: Zero ICU Central Line Blood Stream Infections

Sugar Land Adult ICU CLABSI
Do No Harm
Central Line Associated Blood Stream Infections

Zero ICU CLABSI x 36 Months

Mean = 0.00

To: Memorial Hermann Sugar Land Hospital
February 1, 2008 to January 31, 2011
Zero Central Line Associated Blood Stream Infections for 36 Months

High Reliability Certified Zero Award
To: Memorial Hermann Sugar Land Hospital
Zero Central Line Associated Blood Stream Infections for 36 Months
February 1, 2008 to January 31, 2011
MH Katy: Zero Central Line Blood Stream Infections Hospital-Wide

Katy Adult Hospital CLABSI
Do No Harm
Central Line Associated Blood Stream Infections

Zero CLABSI's Hospital-Wide x 17 Months
Woodlands: Zero Hospital Acquired Injuries

Memorial Hermann The Woodlands Hospital
Hospital Acquired Injuries - Per 1000 Inpatients

Zero Hospital Injuries x 21 Months
TIRR: Zero Serious Safety Events

TIRR SSE Monthly Rate
Serious Safety Events Monthly Rate per 10,000 Adjusted Patient Days

UCL = 2.40
Mean = 0.62

Zero Serious Safety Events x 12 Months

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Source file date: 9/15/2011

produced by System Quality and Patient Safety
System Zero Adult Retained Foreign Bodies

Each Month:
12,000+ Admissions
60,000+ Days of Care

Lower is Better
System Zero Adult Iatrogenic Pneumothorax

Each Month:
12,000+ Admissions
60,000+ Days of Care

Rate/1000 Discharges for Secondary Diagnosis

System Adult Iatrogenic Pneumothorax
Do No Harm
Rate/1000 Discharges for Secondary Diagnosis

Lower is Better
System Zero Ventilator Associated Pneumonia

Each Month:
12,000+ Admissions
60,000+ Days of Care

Lower is Better
System Pedi APL
Accidental Puncture or Laceration
Rate/1000 Discharges for Secondary Diagnosis

Each Month:
12,000+ Admissions
60,000+ Days of Care

Mean = 0.63
UCL = 1.97
System Zero Adult Death in Low Mortality DRGs

Each Month:
12,000+ Admissions
60,000+ Days of Care

System Adult DLM DRGs
Death in Low Mortality DRGs
Rate/1000 Discharges for Secondary Diagnosis

Mean = 0.16
UCL = 0.97

Lower is Better
System Zero Pediatric Pressure Ulcer

Each Month:
12,000+ Admissions
60,000+ Days of Care

Rate/1000 Discharges for Secondary Diagnosis

Mean = 0.00

UCL = 30.76

Lower is Better
High Reliability 1/11-3/13
Certified Zero Awards

ICU Central Line Associated Bloodstream Infections (9)
Hospital-Wide Central Line Associated Bloodstream Infections (1)
Ventilator Associated Pneumonias (21)
Surgical Site Infections
  Retained Foreign Bodies (19)
  Iatrogenic Pneumothorax (12)
Accidental Punctures and Lacerations (2)
Pressure Ulcers Stages III & IV (16)
Hospital Associated Injuries (3)
Deep Vein Thrombosis and/or Pulmonary Embolism
Deaths Among Surgical Inpatients with Serious Treatable Complications
  Birth Traumas (8)
  Serious Safety Events (1)
Does All This Make A Difference at Memorial Hermann?
Healthcare as a High Reliability Organization

Commercial Aviation

Nuclear Aircraft Carriers

Air Traffic Control
MHHS as a High Reliability Organization

Memorial Hermann Healthcare System

Nuclear Aircraft Carriers

Air Traffic Control

Commercial Aviation
The most successful people are those who are good at plan B.

- James Yorke, Mathematician
  
  (on chaos theory in the New Scientist)
Building Blocks to Achieving High Reliability

All people always experience the safest, highest quality, best value health care across all settings

Robust Process Improvement

RPI Roadmap

Safe Highly Reliable Care

Widespread Adoption of RPI

Process Improvement Training

Process Improvement Methods

Safety Culture

Identifying Unsafe Conditions

Strengthening Systems

Trust

Accountability

Assessment

Leadership Commitment

Quality & Safety Strategy

Quality & Safety Measures

Governing Body Commitment

CEO/Senior Leadership Commitment

Physician Leadership

Information Technology

Compliance with Joint Commission Standards & National Patient Safety Goals

Excellent Accountability Measure Performance

The Joint Commission
### Cost of Waste

**EXHIBIT 1**

**Estimates of Waste in US Health Care Spending in 2011, by Category**

<table>
<thead>
<tr>
<th></th>
<th>Cost to Medicare and Medicaid</th>
<th>Total cost to US health care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Midpoint</td>
</tr>
<tr>
<td>Failures of care delivery</td>
<td>$26</td>
<td>$36</td>
</tr>
<tr>
<td>Failures of care coordination</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Overtreatment</td>
<td>67</td>
<td>77</td>
</tr>
<tr>
<td>Administrative complexity</td>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>Pricing failures</td>
<td>36</td>
<td>56</td>
</tr>
<tr>
<td><strong>Subtotal (excluding fraud and abuse)</strong></td>
<td>166</td>
<td>235</td>
</tr>
<tr>
<td><strong>Percentage of total health care spending</strong></td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Total (including fraud and abuse)</strong></td>
<td>197</td>
<td>300</td>
</tr>
<tr>
<td><strong>Percentage of total health care spending</strong></td>
<td>21%</td>
<td>34%</td>
</tr>
</tbody>
</table>


**Notes:** Dollars in billions. Totals may not match the sum of components due to rounding. *Includes state portion of Medicaid. †Total US health care spending estimated at $2.687 trillion.
# Areas of Waste Targeted by QPSIC

<table>
<thead>
<tr>
<th>Care Delivery Failure</th>
<th>Care Coordination Failure</th>
<th>Overtreatment</th>
<th>Administrative Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failures</td>
<td>Failures</td>
<td>Failures</td>
<td>Failures</td>
</tr>
<tr>
<td>• Poor execution</td>
<td>• Fragmented and disjointed care</td>
<td>• Outmoded care ignores scientific findings</td>
<td>• Inefficient or flawed rules and overly bureaucratic procedures</td>
</tr>
<tr>
<td>• Lack of widespread adoption of best practices (patient safety, preventive care)</td>
<td>• Poorly managed care transitions</td>
<td>• Driver may be provider preference</td>
<td>• Lack of standardized forms and procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alternative motivation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Over-diagnosis</td>
<td></td>
</tr>
<tr>
<td>Cost Sequelae</td>
<td>Cost Sequelae</td>
<td>Cost Sequelae</td>
<td>Cost Sequelae</td>
</tr>
<tr>
<td>• Preventable injuries</td>
<td>• Avoidable readmissions</td>
<td>• Defensive medicine</td>
<td>• Needlessly complex and time consuming billing or documentation work</td>
</tr>
<tr>
<td>• Worse outcomes</td>
<td>• Avoidable complications</td>
<td>• Worse outcomes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Functional decline</td>
<td>• Overtreatment</td>
<td></td>
</tr>
</tbody>
</table>

| Cost | $128B | $35B | $192B | $248B |

Total Cost Estimate Midpoint: $603B
(27% Total Health Spending)

## Enterprise QPSIC Functions

<table>
<thead>
<tr>
<th>Performance Improvement</th>
<th>Function</th>
<th>Enterprise QPSIC Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quality</td>
<td>PI Specialists</td>
</tr>
<tr>
<td></td>
<td>Robust Performance Improvement</td>
<td>All QPSIC Staff</td>
</tr>
<tr>
<td></td>
<td>Infection Control</td>
<td>Infection Control Preventionists</td>
</tr>
<tr>
<td></td>
<td>Patient Safety</td>
<td>Patient Safety Specialists</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting &amp; Compliance</th>
<th>Core Measure Tracking</th>
<th>Clinical Quality Review</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Registry Reporting</td>
<td>Registry PI</td>
</tr>
<tr>
<td></td>
<td>Regulatory Compliance</td>
<td>JACHO Compliance Officer</td>
</tr>
<tr>
<td></td>
<td>Data Management</td>
<td>MOR Reporting, etc</td>
</tr>
</tbody>
</table>
Pros of Enterprise Coordination

• Effective Leadership
• Consistency
• Local Relationships
• Collaboration
• Enterprise Expectations
• Enterprise Coordination
• Hardwiring Processes
## Enterprise Structure - System

### Enterprise Quality, Patient Safety & Infection Control

- **System Executive**
- **System QPS Director**
- **System Epidemiologist**
- **System Director of Infection Prevention**

### QPSIC Enterprise Support Services

- **Clinical Quality Review (Core Measures)**
- **Patient Safety & Registry Reporting**
- **Regulatory Compliance**
- **Infection Control**
- **Data Management**

<table>
<thead>
<tr>
<th>MH 4-Plex</th>
<th>Community Hospitals</th>
<th>TMC</th>
<th>TIRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Director</td>
<td>Regional Director</td>
<td>Regional Director</td>
<td>Regional Director</td>
</tr>
</tbody>
</table>
| NW | NE | SW | TW | K | SE | MC | SL | TMC | TIRRE
# Enterprise Structure - Local

## Enterprise Quality, Patient Safety & Infection Control
- **System Executive**
- **System QPS Director**
- **System Epidemiologist**
- **System Director of Infection Prevention**

## Memorial Hermann SW Hospital
- **Regional Clinical Effectiveness Director**

### Quality
- **Quality Director**
- **PI Specialist**

### Patient Safety & Infection Control
- **Patient Safety Specialist**
- **Patient Safety Specialist**
- **Infection Preventionist**

## QPSIC Enterprise Support Services

### Clinical Quality Review (Core Measures)

### Patient Safety & Registry Reporting

### Regulatory Compliance

### Infection Control

### Data Management
State of “Improvement”

• Usual approaches: best practices, toolkits, protocols, checklists, “bundles”
  – Describe specific set of process steps that must be followed to solve a problem
  – ICU central line protocol, VAP bundle

• The “one-size-fits-all” best practice produces good results in limited circumstances
  – Process varies little from place to place
  – Causes of failure are few and common
New State of Improvement

• Complex processes require more sophisticated problem-solving methods

• Three crucial and consistent findings:
  – Many causes of the same problem
  – Each cause requires a different strategy
  – Key causes differ from place to place

• Next generation of best practices will use Robust Process Improvement (RPI) to produce solutions – customized to most important causes
Key Concepts

**QPSIC**

- **QPSIC does not**…
  - Tell physicians or clinicians how to practice medicine, nursing, or other clinical disciplines

- **QPSIC does**…
  - Utilize tools, techniques and frameworks to assist physicians and clinicians in care delivery enhancement and optimization

- QPSIC methodologies are modeled on evidence based techniques with documented results

- QPSIC is a resource to help physicians and clinicians improve many aspects of care delivery – and align with future state incentive models
The Joint Commission’s “Stairway to Excellence”

Adapted from the Joint Commission
Five Essential Steps

1. Specify the improvement target (Define)
2. Measure the size of the problem (Measure)
3. Identify specific causes (Analyze)
4. Target interventions to most important modifiable causes (Improve)
5. Embed intervention into routine work (Control)
Robust Process Improvement (RPI)

Compilation of PI Tools and Techniques to Accomplish:

• Diligent attention to processes and procedures
  – Increase quality by eliminating system variation (*Six Sigma*)
  – Eliminate waste (*Lean tools*)

• Analyze/improve every process step across entire span
  – Use structured methods to reveal opportunities for improvement and brainstorm team solutions (*Work-out*)
  – Learn from data generated with small tests of change (*PDCA*)

• Engage leaders, physicians and employees in change
  – Prepare for organizational change (*Change Management*)
Attributes of RPI Projects

• Fix existing processes – *specific* challenges
• Processes are repetitive
• Outputs are measurable
• Solutions are not known
• Support strategic vision
• Team leaders manage projects throughout

Effectiveness = Quality of Solution X Acceptance X Accountability
RPI Training Projects

• Initial focus on Core Measures
  – VTE data abstraction/management/reporting
    • Physician compliance with discern advisor to identify patients at risk for VTE in ICU
    • Dietary instructions for patients discharged on warfarin
    • Post hospitalization follow up for patients discharged on warfarin
    • Process to ensure VTE screening for all patients in the ICU within 24 hours
  – Removal of Foley catheter on post-op day one (SCIP)
RPI Curriculum Topics

• Project Management
  – Project Chartering

• Lean
  – Simulation
  – Concepts
  – Waste Walk

• Change Management
  – Change Acceleration Process (CAP)
RPI Curriculum Topics

- Workout
  - Introduction
  - Sample
- Basics of Six Sigma
- Analytical Package – Engine Room
- Report Out
- Recognition

Support via Mentoring/Coaching
Analytical Package: Engine Room
RPI is integrated into the way we work. Aligned with system and facility needs. No longer manage to get the measure. Early detection of opportunities for improvement. Enhance reliability.
RPI Training Timeline

• **Wave One: Jul 18, 31, Aug 14 – Complete**
  – Clinical Effectiveness Dirs and PI Specialists

• **Wave Two: Aug 28, Sept 10, 25 - Complete**
  – CE Dirs, Quality Dirs and Mgrs, PI Specialists, Senior and Lead IPs, Rehab

• **Wave Three: Oct 11, 30, Nov 13 - Complete**
  – PI Specialists, Quality Directors, Pt Safety Specialists, Certified IPs

• **Wave Four: Jan 10, 24, Feb 6 – Complete**
  – Non-certified IPs, New QPSIC Staff

• **Wave Five: Feb 18, March 5, 20 - Complete**
  – New QPSIC Staff, Other Staff

• **Wave Six: June 24, July 10, July 24**
  – New QPSIC Staff, CQR, RR
Wave One Training Projects – Core Measures

- TAT for CT Head for Stroke Pts in ED (Stroke-SW)
- Compliance with cardiac/CABG post op blood glucose protocol (SCIP-WDL)
- Nursing Implementation of VTE prophylaxis in the ICU (VTE-NE)
- Ensure antibiotics are discontinued within 24 hours post-op for appropriate SCIP pts (SCIP-TMC)
- Ensure VTE prophylaxis is implemented for all SCIP pts (SCIP/VTE-MC)
- Stroke eligible patients are discharged on Statins (Stroke-MC)
- AMI eligible patients are discharged on Statins (AMI-TMC)
- Dietary instructions for patients discharged on warfarin (VTE-SW)
- Post hospitalization follow up instructions for patients discharged on warfarin (VTE-NW)
- Removal of Foley catheter on post-op day 1 or 2 (SCIP-SE)
- Accurate identification of surgical patients on beta blockers (SCIP-NE)
Wave Two Training Projects

• Appropriate antibiotics for SCIP (SW)
• External shipping boxes in patient care areas (WDL)
• Process to ensure VTE screening for all patients in the ICU within 24 hours (KT)
• Hand off communication between ED and ICU (SL)
• Pneumococcal vaccine 6-64 years (MC)
• Process to ensure glucose levels for diabetic patients are accurately assessed prior to CV surgery (SW)
• Appropriate weight based dosing of antibiotic prophylaxis prior to CV surgery (TMC)
• Consistent practice of aseptic technique throughout scheduled C-Section cases in L&D Ors (TMC)
• Process to ensure pre-op bathing via evidence based practice (MC)
Wave Three Training Projects

- Traffic during elective orthopedic surgeries (KT)
- Standardized process for loaner set (NE)
- Consistent coagulation TAT for code stroke patients (NE)
- Appropriate post case cleaning of L&D Ors (SL)
- Pneumonia and flu screening of perinatal patients (SL)
- Central sterile processing best practices (System)
- Surgical site infection report card (System)
- Standardized operating room scrub attire (NW)
- Pre-op bathing of scheduled surgical outpatients (SE)
- Bowel management in rehabilitation patients (TIRR)
- Reducing catheter UTIs in spinal cord injury patients (TIRR)
- Operating room cleaning policy and protocol (CMHH)
- CHG bathing before craniotomy (TMC)
Wave Four Training Projects

- Development of automated list to identify SCIP pts
- Increase accuracy of medication home list upon admission
- Increase compliance for VTE overlap therapy
- Accurate screening and admin of pneu and flu vaccine for pediatric pts
- Accurate screening and admin of pneu and flu vaccine for adult pts
- Wrong site surgery
- Preventing deliveries prior to 39 weeks
- Formalized process for initiating Safety Coach program
- Preventing gross contamination in C-Section cases
- Increase meeting education needs for post-op renal pts re dialysis devices
- Pre-op hair clipping before entering OR
- Standardized process for continued auditing of Midas security and reports by the business unit
- Methodology to optimize communication needs for reports/data to QPSIC DM staff
- Prevention of incomplete data submission and missing of deadlines for MOR
Wave Five Training Projects

- Consistency in ordering and documenting ACE or ARB for pts with EF < 40%
- Reduce delay of pain assessment and treatment
- Reduction of CAUTI in SICU
- Rebilling of PSI fall outs to prevent non recoded cases from being included on CMS report
- Order and RASS goal for ventilated pts receiving titrated IV sedation
- Reduction of overall indwelling catheter days to reduce CAUTI
- Direct admission of cervical ripening/induction pts
- Reduce delay in care for pts needing medical equipment
- Achieve 100% compliance in abx prophylaxis for scheduled C-section pts
- Reduction of clotting in dialysis pts by utilizing one dialyzer
It is not the strongest species that survives, nor the most intelligent, but the one most responsive to change.

- Charles Darwin
Historic Barriers to Physician Engagement

Physician’s perspective:
“Let me tell you what I think the problem/solution is”

vs

Hospital/System perspective:
“What’s best for the bottom line?”
Historic Barriers to Physician Engagement

New Perspective:

“How can I help improve our performance in an evidence-based, data driven, sustainable way”

Execution is the difference between commentary and leadership – we desperately need more physician leaders to complement the commentators
## Two Kinds of Challenges

<table>
<thead>
<tr>
<th></th>
<th>Technical</th>
<th>Adaptive</th>
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</thead>
<tbody>
<tr>
<td><strong>Problem is…</strong></td>
<td>simpler</td>
<td>more complex</td>
</tr>
<tr>
<td><strong>Solving requires…</strong></td>
<td>finding the solution</td>
<td>changing ingrained habits, deeply held assumptions and values</td>
</tr>
<tr>
<td><strong>Solution is…</strong></td>
<td>well-defined</td>
<td>less well-defined</td>
</tr>
<tr>
<td><strong>Change required…</strong></td>
<td>is external</td>
<td>is internal</td>
</tr>
<tr>
<td><strong>Implementation requires…</strong></td>
<td>applying the fix</td>
<td>new ways of thinking and relationships</td>
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*“The most common cause of failure to make progress: Treating an *adaptive* problem with a *technical* fix.”*

Source: Leadership Without Easy Answers, Ronald A Heifetz
Adaptive Challenge

1. *Takes longer* than technical work
2. Involves *changing hearts & minds*
3. *Incompetence must be tolerated as new competencies are developed*
4. Is *risky* to lead
5. *Generates disequilibrium, distress, (distrust), and work avoidance*
<table>
<thead>
<tr>
<th>Technical Fixes</th>
<th>Adaptive Solutions (Hospital)</th>
<th>Adaptive Solutions (Physicians)</th>
</tr>
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<tbody>
<tr>
<td>Incentives or compensation</td>
<td>Give authority to solve problems to the implementers, allow access to sensitive data</td>
<td>Learn new methods of problem analysis and solution implementation</td>
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<tr>
<td>Reorganization</td>
<td>Incorporate stakeholders into decision making process</td>
<td>Incorporate institutional considerations in decision making process</td>
</tr>
<tr>
<td>Issue a new vision statement</td>
<td>Build a shared vision from multiple, divergent visions</td>
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</tr>
<tr>
<td>Brand a “service line”</td>
<td>Re-organize resources around the optimal care delivery and quality</td>
<td>Develop new ways to coordinate care using a multidisciplinary approach</td>
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<tr>
<td>Hire a concurrent reviewer</td>
<td>Convince physicians that knowing how to use the EMR to document properly is necessary to future success</td>
<td>Incorporate a knowledge of documentation and ramifications into workflow and habits</td>
</tr>
</tbody>
</table>
Physician Engagement Process Map

Immediate Steps
- Urgency to Improve
  - Establish relationships
  - Share reform and incentive structure information, performance metrics

Shorter Term
- Shared Vision
  - Establish shared vision of optimization to market transition
  - Connect with trained improvement resources

Medium Term
- Physician-Led RPI Projects
  - Establish early-adopter group to focus on early wins and targeted QPSIC opportunities

Longer Term
- Program Expansion
  - Continue QPSIC PI
  - Expand to other areas (LOS, Resource Consumption, Care Variance)
Create Awareness

- Share information with key physician stakeholders (MEC, Service Lines)
  - Serious Safety Events & Quality Metrics
    - Must share examples: (‘Faces of Quality’)
      - MEC
      - Peer Review & Credentials/Professional Ethics
      - Critical Care Committee
  - Be willing to admit we have harmed patients & we are going to do everything to hold ourselves accountable for decreasing harm.
This document is privileged and confidential Quality Committee or Peer Review work product under Hospital Committee Privilege contained in the Texas Health and Safety Code §§ 161.031 & 161.032, or Medical Peer Review under the Medical Practice Act, Texas Occupations Code, § § 151.001 et. seq & 160.007.; and the Medical Peer Review immunity provided by federal law, the Health Care Quality Improvement Act, 42. U.S.C. 11101, et. seq.
Create Understanding

• *Educate on opportunities for improvement:*
  – *Breakthroughs in Patient Safety (BIPS)* Module
    • All Physicians & Allied Health Providers
    • 1 hour module with pre- & post-test
No significant change in SSER for 2 years (2009-2010) until physicians required to take BIPS program.

SSER decreased by 50% after > 70% of Medical Staff completed BIPS
Foster Ownership

• Identify areas that have a high chance of producing early wins
  – Conducted targeted Patient Safety Incident (PSI) education
  • Iatrogenic Pneumothorax during Central Line Insertion
    – Provided with evidence-based tool(s) for safe practice (*Ultrasound Guided Central Line Placement*)
Physician Engagement

Fostering Ownership

• Identify leaders who are open to change for improvement.
  – ‘Physician Patient Safety Champions’
    • Physician Champions from each clinical area (Ex: EC, FBC, Cath Lab, Surg, Anest, Urgent Care, Lab, Pharm, Rad.)

• Work in collaboration with Mgrs, Dirs & Safety Coaches to design **Unit-specific Safety Programs.**
MHMD Today

- Includes 3,600 Physicians
- 2,100 Clinically Integrated Physicians (plus 600 UT)
- 20 Member physician Board of Directors
- Focus on collecting, reporting and managing quality outcomes – *Clinical Integration*
- Clinical Programs Committee and System Quality Committee are linked
- Sets Clinical, Protocol, and Performance Standards for MHHS
- Physicians participate with management of MHHS
Clinical Integration

An interdependent network of physicians and hospitals that collaborate to provide the highest quality, cost efficient, safest care by using evidence based medicine and practice and demanding accountability, technology infrastructure and a substantial investment in time and resources by all participants.
Clinical Integration takes effort.

- Participating physicians must--
  - Participate in selecting quality measures
  - Participate in reporting performance (e.g., PQRS measures)
  - Participate in determining what level of performance is the goal
  - Participate in committee work, performance feedback, quality improvement activities
MHMD agrees to:
- Maintain *loyalty* to physicians
- Negotiate to *align incentives*
- Include physicians in work and decision making
- Provide *clear and timely information*
  - Membership Criteria, Quality Measure Scoring
  - Accountability / Improvement Process
  - Contract, Financial Performance
- Provide physicians with information, services, and education to ensure high quality and ease practice burdens
- Seek feedback from its physicians
- Maintain confidentiality
- Communicate, communicate, communicate with physicians
- Make meetings worthwhile and engaging
- Create leadership training programs
Physicians agree to:
- Practice evidence-based medicine
- Uphold regulatory, quality, and safety goals
- Report quality data
- Meet CI criteria
- Come to meetings and performance feedback sessions
- Pay attention to information from MHMD
- Accept decisions by physicians in MHMD committee settings
- Be flexible, share ideas
- Collaborate with colleagues and hospitals
- Behave as professionals
Examples of CPC Activities

- MH System Quality Committee delegated authority to the CPC to create and oversee Order Sets for system-wide use
- Approved 500 Order Sets for use in CPOE and on paper
- Developed multiple on-line CME
- Approves MH System Inpatient Drug Formulary using “best drug first” philosophy
- Determined choice of orthopedic / cardiovascular device/neurosurgery vendors for MH System
- Approved ~ 100 specialty-specific Quality Measures to be reported by physicians to MHMD
Connecting the Quality Enterprise

MHHCS Board

Medical Executive Committee

System Quality Committee

MHMD Board

CPC

CMO

COS
If you don't like change, you're going to like irrelevance even less.

- General Eric Shinseki
  Retired Chief of Staff, US Army