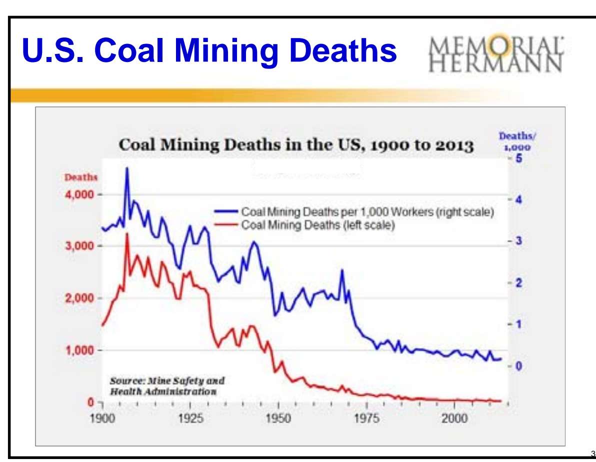
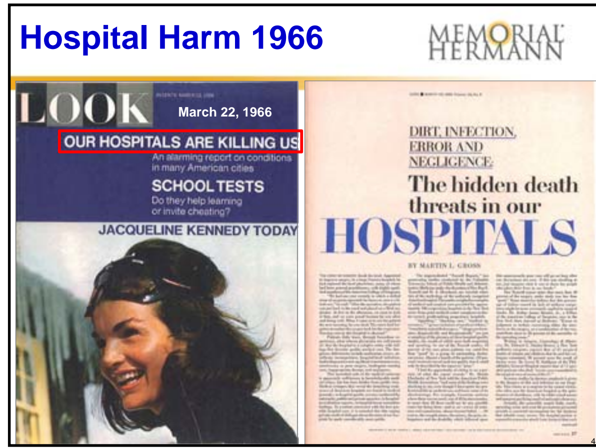
Leveraging Leadership for
High Reliability Safe Care
ACHE-SETC 3rd Quarter
Educational Session
August 9, 2018
M. Michael Shabot, MD, FACS, FCCM, FACMI
Executive Vice President
System Chief Clinical Officer
Memorial Hermann Health System
MEMORIAL HERMANN
V4
FOR DISTRIBUTION ONLY
1

High Reliability in Healthcare
MEMORIAL HERMANN
How is healthcare different from
many other industries?
2


U.S. Coal Mining Deaths
MEMORIAL HERMANN
Coal Mining Deaths in the US, 1900 to 2013
Deaths
4,000
3,000
2,000
1,000
0
Deaths/
1,000
5
4
3
2
1
0
Coal Mining Deaths per 1,000 Workers (right scale)
Coal Mining Deaths (left scale)
Source: Mine Safety and
Health Administration
1900
1925
1950
1975
2000
3



Hospital Harm Today

MEMORIAL HERMANN

Question: How many avoidable deaths occur in U.S. hospitals each year?

BMJ 2016 — ANALYSIS

Medical error—the third leading cause of death in the US

Medical error is not included on death certificates or in rankings of cause of death. **Martin Makary** and **Michael Daniel** assess its contribution to mortality and call for better reporting

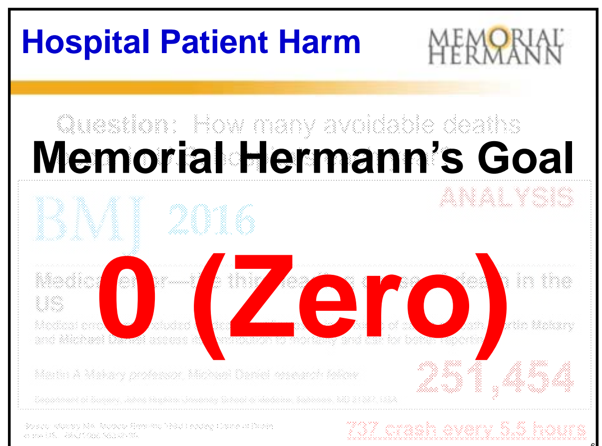
Martin A Makary *professor*, Michael Daniel *research fellow*

Department of Surgery, Johns Hopkins University School of Medicine, Baltimore, MD 21287, USA

251,454

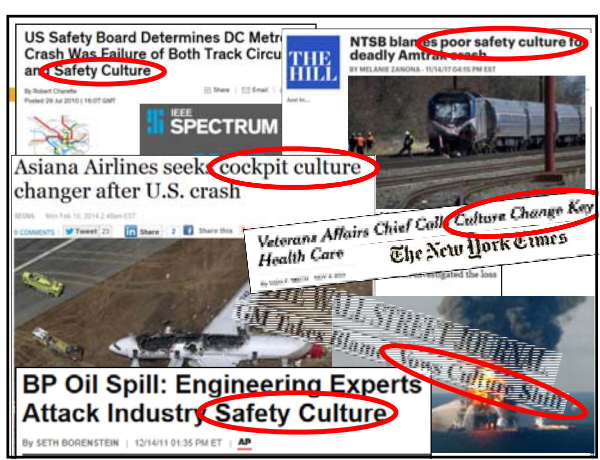
737 crash every 5.5 hours

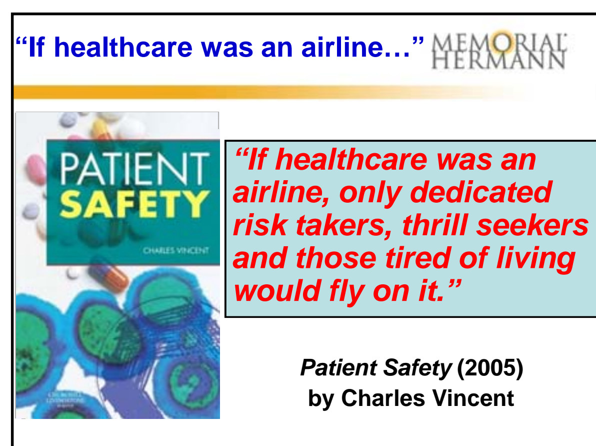
Source: Makary MA. Medical Error-the Third Leading Cause of Death in the US. *BMJ* 2006;353:i2139.



How Can Memorial Hermann Get to Zero?
MEMORIAL HERMANN
New Doctors?
New Nursing Staff?
All New Execs?

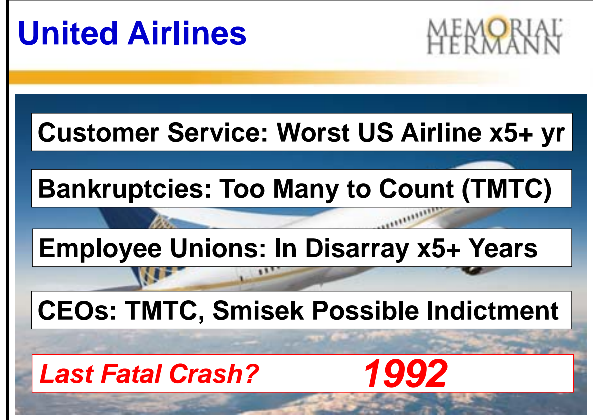
How Can Memorial Hermann Get to Zero?
MEMORIAL HERMANN
Robust Process Improvement
processes
models
organizations
event-driven
business
Joint Commission Center for Transforming Healthcare
The Path to Quality Outcomes


US Safety Board Determines DC Metro Crash Was Failure of Both Track Circuit and Safety Culture
IEEE SPECTRUM
THE HILL
NTSB blames poor safety culture for deadly Amtrak crash
Asiana Airlines seeks cockpit culture changer after U.S. crash
Veterans Affairs Chief Calls Culture Change Key
Health Care
The New York Times
THE WALL STREET JOURNAL
BP Oil Spill: Engineering Experts Attack Industry Safety Culture
By SETH BORENSTEIN


"If healthcare was an airline…"
MEMORIAL HERMANN
PATIENT SAFETY
"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
10

What if These Kinds of Risks Weren't an Option?
MEMORIAL HERMANN
11

High Reliability Organizations
MEMORIAL HERMANN
Commercial Aviation
Nuclear Aircraft Carriers
Air Traffic Control
OPERATION BREAKTHROUGH
PATIENT SAFETY
12



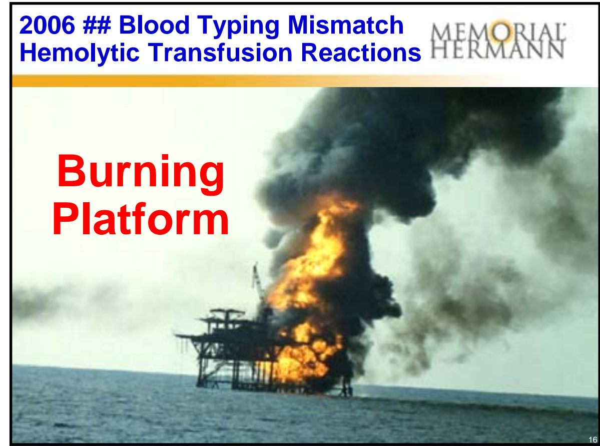
Transformation to a High Reliability Organization

MEMORIAL HERMANN

August 14, 2006

A Call to Action on Patient Safety

Transfusion Errors
Serious Safety Events



Safety as the Core Value

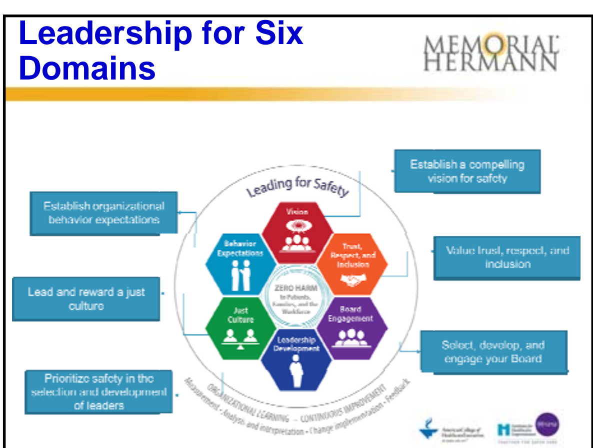
MEMORIAL HERMANN

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



Leveraging the Board for High Reliability

MEMORIAL HERMANN

- **Leadership for high reliability, safety & quality initiatives**
- **Ensuring the Board receives quality & safety results information it needs**
- **Providing guidance for the System Quality Committee**
- **Providing support for safety & quality initiatives, including financial support**

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Developing Leaders for Safety Outcomes

Paul H. O'Neil
Former Chairman & CEO, Alcoa

In October 1987 Paul O'Neill gave his first speech as CEO of Alcoa, the aluminum manufacturing giant. Investors were nervous, since Alcoa had faltered with failed product lines. But O'Neill didn't talk about profit margins, revenue projections, or anything else that would be comforting to Wall Street ears.

"I want to talk to you about worker safety", he began. *"I intend to make Alcoa the safest company in America. I intend to go for zero injuries."*

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Developing Leaders for Safety Outcomes

MEMORIAL HERMANN

Bill O'Rourke
(former President of Alcoa Russia)

"The tone at the top must be audible. This means that leaders ask about safety, talk about safety and know about injuries to their staff."

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Leveraging Leadership: Audible at the Local Level

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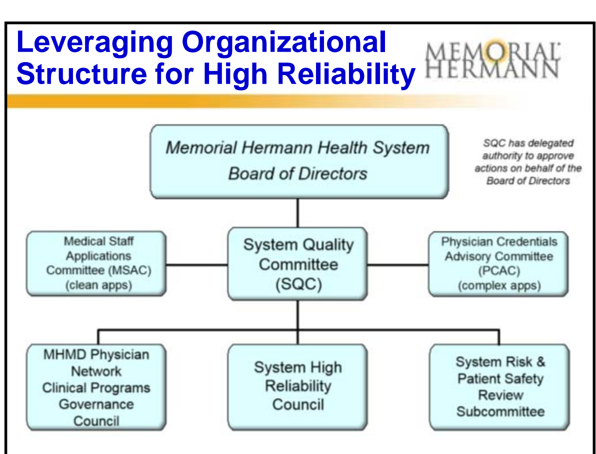
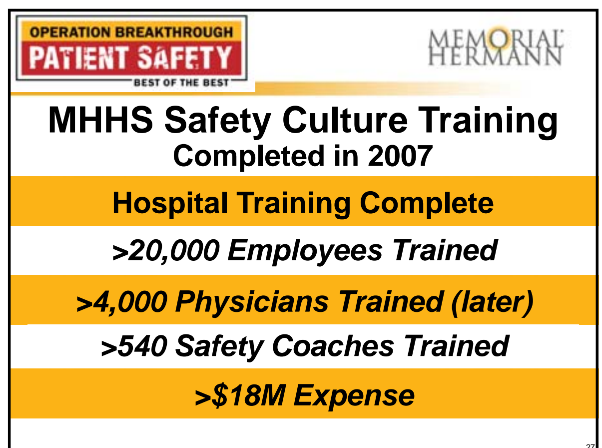
MH Sugar Land Hospital Daily Safety Huddle

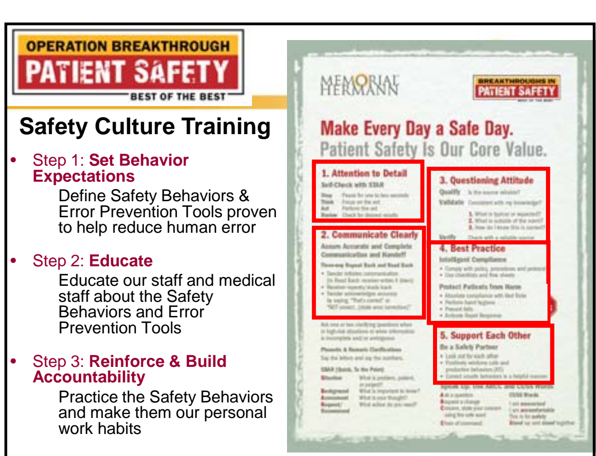
24

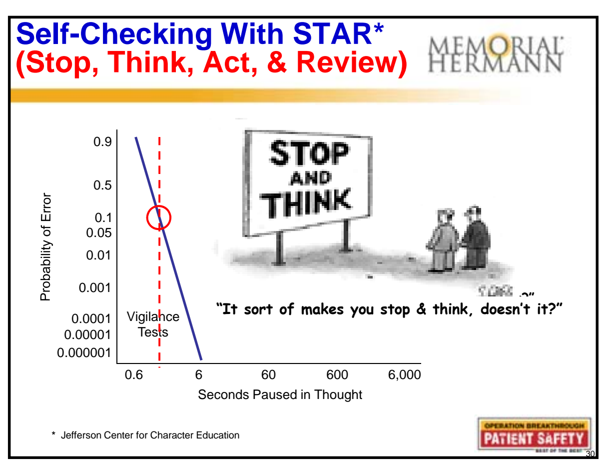
Leveraging Leadership:
Audible at the Local Level
MEMORIAL HERMANN
Everyday Excellence
Daily Safety Huddle
MEMORIAL HERMANN
Sugar Land
Date: January 20, 2015
Days Since Last Serious Safety Event (SSE)
689
Days Since Last Employee OSHA Recordable Injury
53
Days Since Last Patient Fall
25
Good Catches
Ragan Laventon recognized Greta Cool (OR) for discovering and removing expired drugs from the Pyxis and collaborating with Pharmacy to refill.
Announcements
Ann Asnaashari reported MHSL has reached 689 days without a SSE 1 or 2.
Boone Mashburn reported the EVS department has been accident free for 2 years.
25


Leveraging Organizational
Structure for High Reliability
MEMORIAL HERMANN
Memorial Hermann Health System
Board of Directors
SQC has delegated authority to approve actions on behalf of the Board of Directors
Medical Staff Applications Committee (MSAC) (clean apps)
System Quality Committee (SQC)
Physician Credentials Advisory Committee (PCAC) (complex apps)
MHMD Physician Network Clinical Programs Governance Council
System High Reliability Council
System Risk & Patient Safety Review Subcommittee
26


OPERATION BREAKTHROUGH
PATIENT SAFETY
BEST OF THE BEST
MEMORIAL HERMANN
MHHS Safety Culture Training
Completed in 2007
Hospital Training Complete
>20,000 Employees Trained
>4,000 Physicians Trained (later)
>540 Safety Coaches Trained
>$18M Expense
27

Breakthroughs in Patient Safety Training
OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST
MEMORIAL HERMANN
Take Action
28


OPERATION BREAKTHROUGH
PATIENT SAFETY
BEST OF THE BEST
Safety Culture Training
Step 1: Set Behavior Expectations
Define Safety Behaviors & Error Prevention Tools proven to help reduce human error
Step 2: Educate
Educate our staff and medical staff about the Safety Behaviors and Error Prevention Tools
Step 3: Reinforce & Build Accountability
Practice the Safety Behaviors and make them our personal work habits
MEMORIAL HERMANN
Make Every Day a Safe Day.
Patient Safety Is Our Core Value.
1. Attention to Detail
2. Communicate Clearly
3. Questioning Attitude
4. Best Practice
5. Support Each Other
29


Self-Checking With STAR*
(Stop, Think, Act, & Review)
MEMORIAL HERMANN
Probability of Error
0.9
0.5
0.1
0.05
0.01
0.001
0.0001
0.00001
0.000001
Vigilance Tests
0.6
6
60
600
6,000
Seconds Paused in Thought
STOP AND THINK
"It sort of makes you stop & think, doesn't it?"
* Jefferson Center for Character Education
OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST
30

Support Each Other: CUSS Words

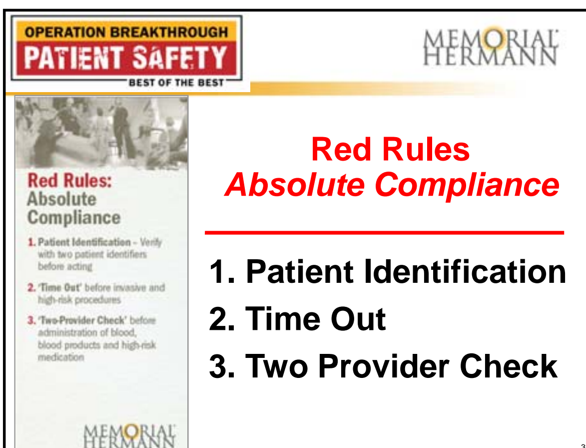
MEMORIAL HERMANN

- I am ***C**oncerned*
- I am ***U**ncomfortable*
- This is for ***S**afety*
- ***S**tand* up and ***S**tand* Together

MH Southwest Hospital
Central Line Standoff

OPERATION BREAKTHROUGH PATIENT SAFETY

32



Robust Process Improvement:
Path to Quality Outcomes
MEMORIAL HERMANN
processes
models
organizations
reactive
adaptors
service
event-driven
business
composition
Joint Commission Center for Transforming Healthcare
34

Robust Process Improvement:
Path to Quality Outcomes
MEMORIAL HERMANN
Lean
LEAN
Six Sigma
Reliability
Change Management
STRATEGY
MEASURE
ORGANIZE
CHANGE MANAGEMENT
IMPROVE
MOTIVATE
TEAMWORK
Joint Commission Center for Transforming Healthcare
35

Robust Process Improvement:
Changing Standard Work
MEMORIAL HERMANN
Step 8
Implement Standard Work
Standard Work =
What we do every day
What we do every day =
CULTURE!
Joint Commission Center for Transforming Healthcare
36

Robust Process Improvement:
High Reliability Standard Work
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Culture Change
Surgical Safety Checklist
High Reliability Hand Hygiene
OR Surgical Safety Checklist
37

Leveraging Physician Leadership
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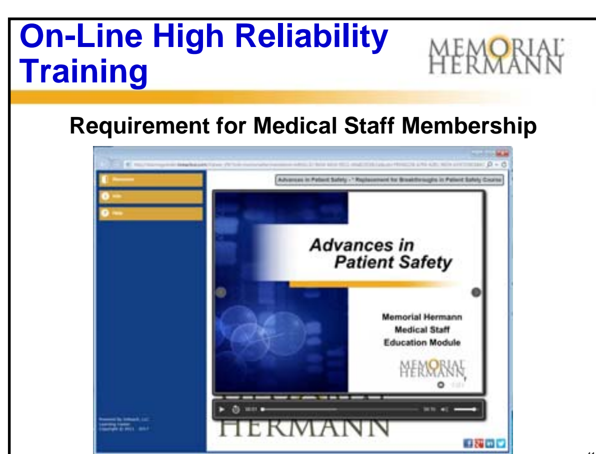
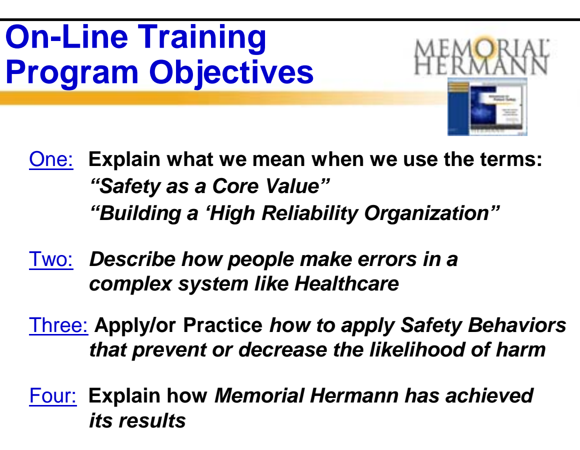
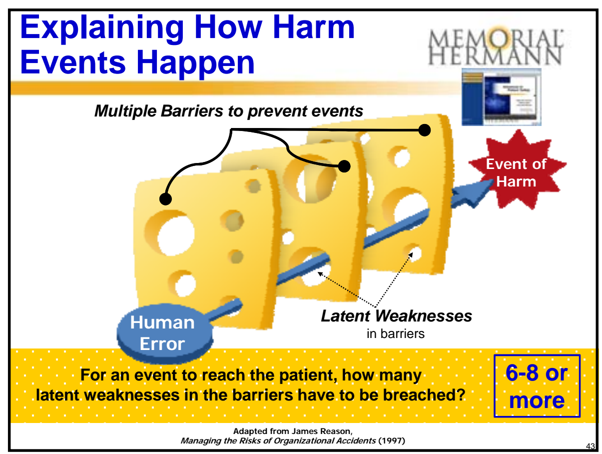
38

Engaging Your Medical Staff
MEMORIAL HERMANN
Oops!
39

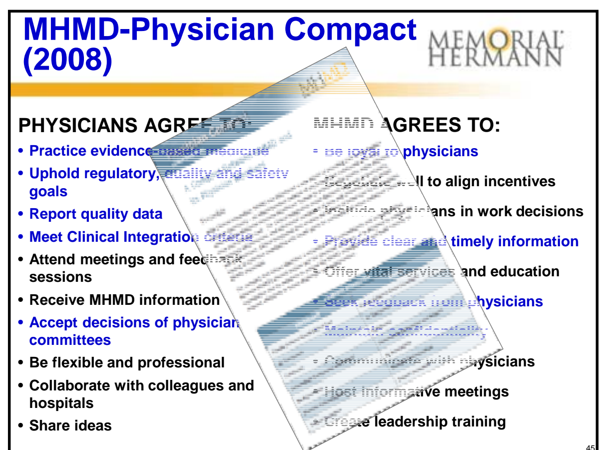
Engaging Your Medical Staff
MEMORIAL HERMANN
COURSE CORRECTION
Include Physicians!
40

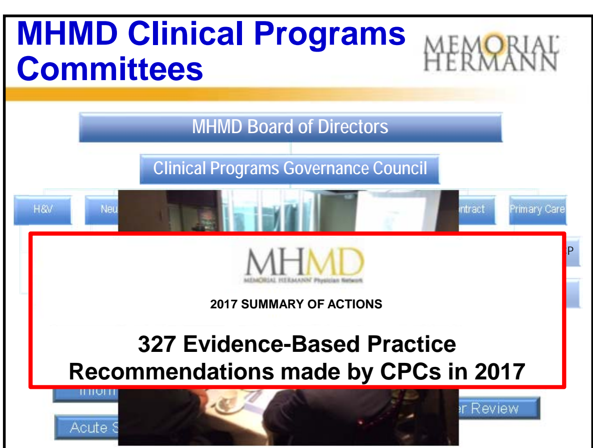

On-Line High Reliability Training
MEMORIAL HERMANN
Requirement for Medical Staff Membership
Advances in Patient Safety
Memorial Hermann Medical Staff Education Module
41


On-Line Training Program Objectives
MEMORIAL HERMANN
One: Explain what we mean when we use the terms:
"Safety as a Core Value"
"Building a 'High Reliability Organization"
Two: Describe how people make errors in a complex system like Healthcare
Three: Apply/or Practice how to apply Safety Behaviors that prevent or decrease the likelihood of harm
Four: Explain how Memorial Hermann has achieved its results
42


Explaining How Harm Events Happen
MEMORIAL HERMANN
Multiple Barriers to prevent events
Event of Harm
Human Error
Latent Weaknesses
in barriers
For an event to reach the patient, how many latent weaknesses in the barriers have to be breached?
6-8 or more
Adapted from James Reason,
Managing the Risks of Organizational Accidents (1997)
43

Physician Organization (MHMD) Initiatives
MEMORIAL HERMANN
44

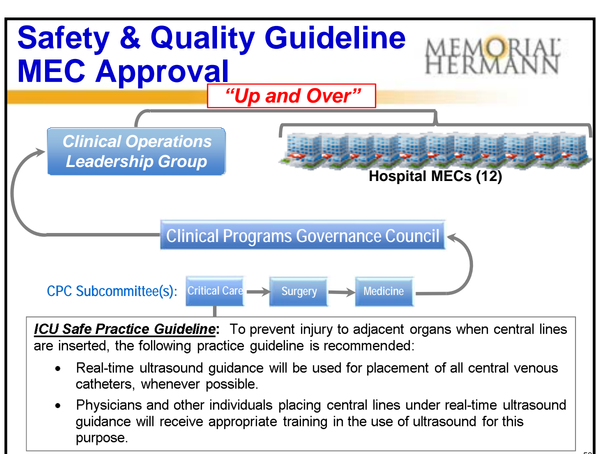

MHMD-Physician Compact (2008)
MEMORIAL HERMANN
PHYSICIANS AGREE TO:
• Practice evidence-based medicine
• Uphold regulatory, quality and safety goals
• Report quality data
• Meet Clinical Integration criteria
• Attend meetings and feedback sessions
• Receive MHMD information
• Accept decisions of physician committees
• Be flexible and professional
• Collaborate with colleagues and hospitals
• Share ideas
MHMD AGREES TO:
• physicians
• ll to align incentives
• ans in work decisions
• timely information
• and education
• physicians
• Maintain confidentiality
• Communicate with physicians
• Host informative meetings
• leadership training
45

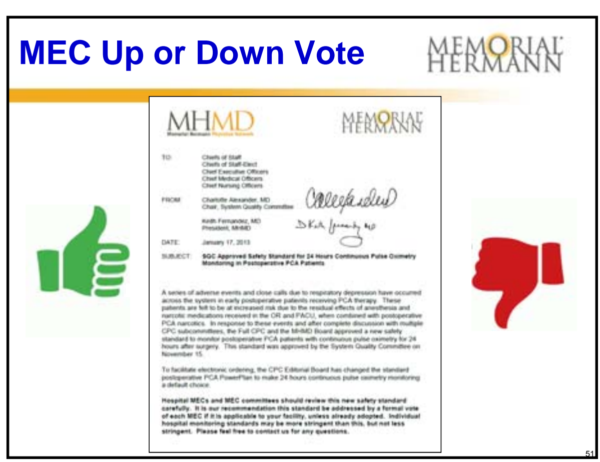


Selected MEC-Approved CPC & SQC Safety & Quality Guidelines

MEMORIAL HERMANN

- Real-Time Ultrasound for Central Line Insertion
- Real-Time Ultrasound for Cath Lab Central Punctures
- OB Safety Training
- Prevention of Retained Foreign Bodies Policy
- DVT/PE Prophylaxis
- Bariatrics Privileging and Leveling
- Moderate and Deep Sedation Privileging
- Peer Review for Physician-Related SSEs
- Clinical Escalation Policy
- Postoperative Pulse Oximetry Monitoring





MHMD
Memorial Hermann Physician Network

MEMORIAL HERMANN

TO: Chiefs of Staff
Chiefs of Staff-Elect
Chief Executive Officers
Chief Medical Officers
Chief Nursing Officers

FROM: Charlotte Alexander, MD
Chair, System Quality Committee

Keith Fernandez, MD
President, MHMD

DATE: January 17, 2013

SUBJECT: **SQC Approved Safety Standard for 24 Hours Continuous Pulse Oximetry Monitoring in Postoperative PCA Patients**

A series of adverse events and close calls due to respiratory depression have occurred across the system in early postoperative patients receiving PCA therapy. These patients are felt to be at increased risk due to the residual effects of anesthesia and narcotic medications received in the OR and PACU, when combined with postoperative PCA narcotics. In response to these events and after complete discussion with multiple CPC subcommittees, the Full CPC and the MHMD Board approved a new safety standard to monitor postoperative PCA patients with continuous pulse oximetry for 24 hours after surgery. This standard was approved by the System Quality Committee on November 15.

To facilitate electronic ordering, the CPC Editorial Board has changed the standard postoperative PCA PowerPlan to make 24 hours continuous pulse oximetry monitoring a default choice.

Hospital MECs and MEC committees should review this new safety standard carefully. It is our recommendation this standard be addressed by a formal vote of each MEC if it is applicable to your facility, unless already adopted. Individual hospital monitoring standards may be more stringent than this, but not less stringent. Please feel free to contact us for any questions.

Hospital Acquired Conditions
"Never Events"

MEMORIAL HERMANN

Acute Hemolytic Transfusion Reactions

Transfusion Events Jan 2007 - Dec 2017

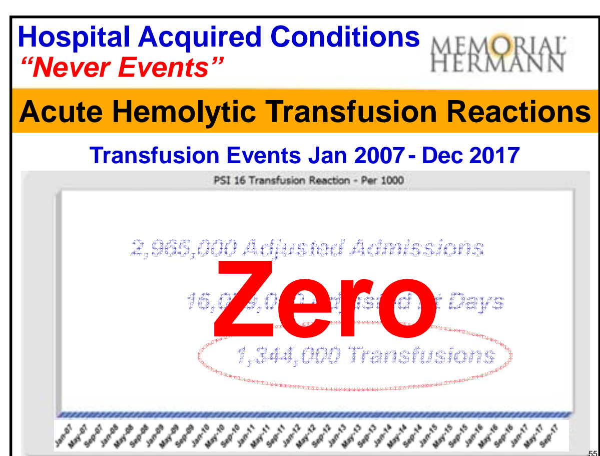
PSI 16 Transfusion Reaction - Per 1000

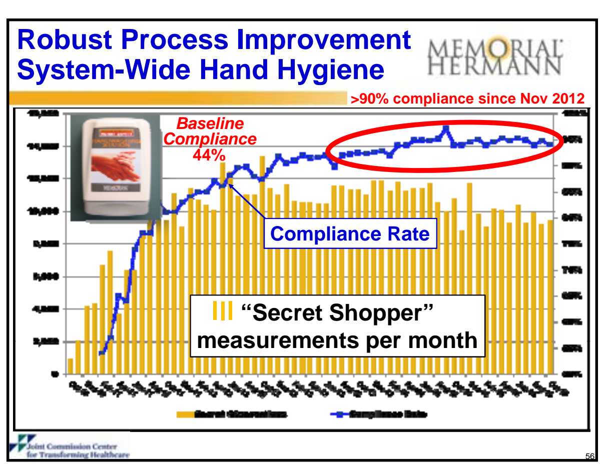
2,965,000 Adjusted Admissions

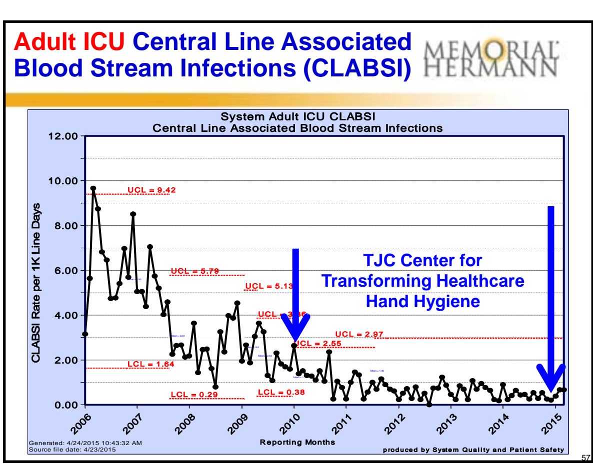
16,079,000 Adjusted Pt Days

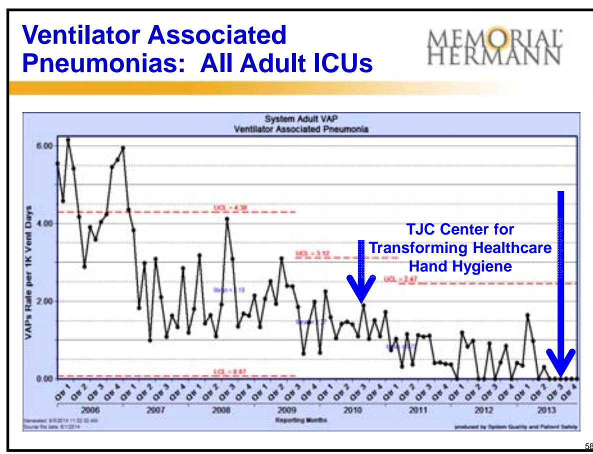
1,344,000 Transfusions

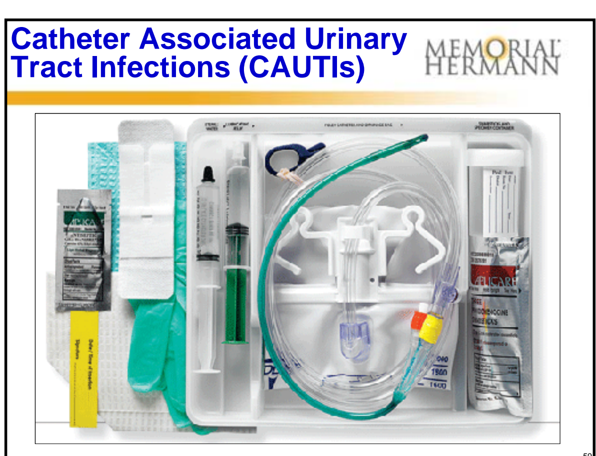
54

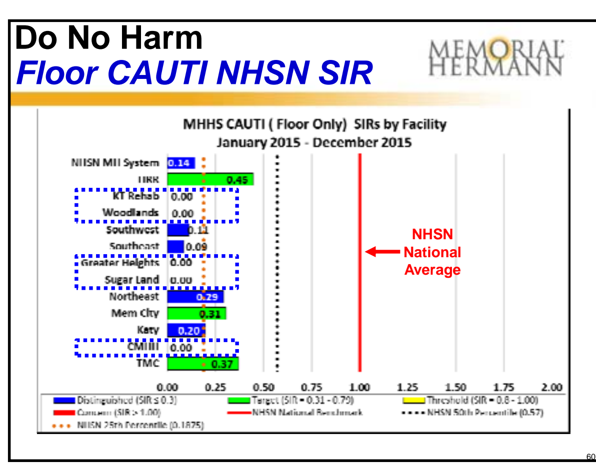

Hospital Acquired Conditions
"Never Events"
MEMORIAL HERMANN
Acute Hemolytic Transfusion Reactions
Transfusion Events Jan 2007 - Dec 2017
PSI 16 Transfusion Reaction - Per 1000
2,965,000 Adjusted Admissions
Zero
1,344,000 Transfusions
55

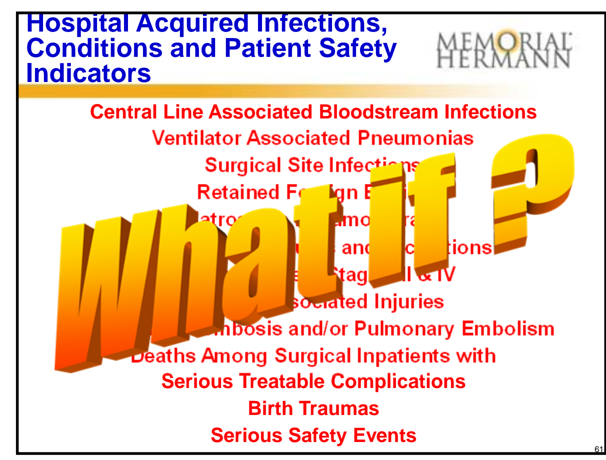

Robust Process Improvement
System-Wide Hand Hygiene
MEMORIAL HERMANN
>90% compliance since Nov 2012
Baseline Compliance 44%
Compliance Rate
"Secret Shopper" measurements per month
Joint Commission Center for Transforming Healthcare
56


Adult ICU Central Line Associated
Blood Stream Infections (CLABSI)
MEMORIAL HERMANN
System Adult ICU CLABSI
Central Line Associated Blood Stream Infections
CLABSI Rate per 1K Line Days
UCL = 9.42
UCL = 5.79
UCL = 5.13
UCL = 2.97
UCL = 2.55
LCL = 1.64
LCL = 0.29
LCL = 0.38
TJC Center for Transforming Healthcare Hand Hygiene
Reporting Months
57


Ventilator Associated Pneumonias: All Adult ICUs
MEMORIAL HERMANN
System Adult VAP
Ventilator Associated Pneumonia
VAPs Rate per 1K Vent Days
TJC Center for Transforming Healthcare Hand Hygiene
2006
2007
2008
2009
2010
2011
2012
2013
Reporting Months
58


Catheter Associated Urinary Tract Infections (CAUTIs)
MEMORIAL HERMANN
59


Do No Harm
Floor CAUTI NHSN SIR
MEMORIAL HERMANN
MHHS CAUTI (Floor Only) SIRs by Facility
January 2015 - December 2015
NHSN MH System 0.14
TIRR 0.45
KT Rehab 0.00
Woodlands 0.00
Southwest 0.11
Southeast 0.09
Greater Heights 0.00
Sugar Land 0.00
Northeast 0.29
Mem City 0.31
Katy 0.20
CMHH 0.00
TMC 0.37
NHSN National Average
0.00 0.25 0.50 0.75 1.00 1.25 1.50 1.75 2.00
60

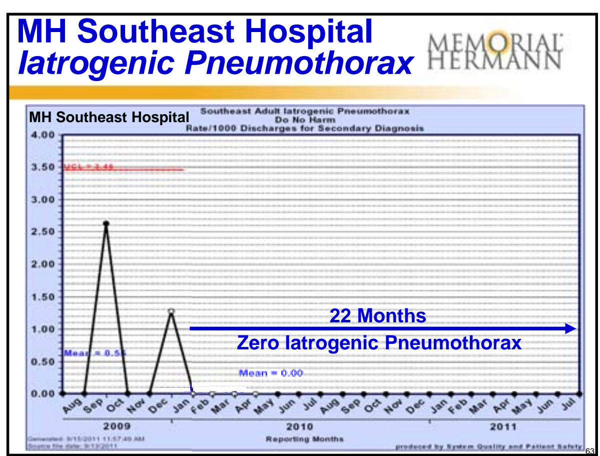


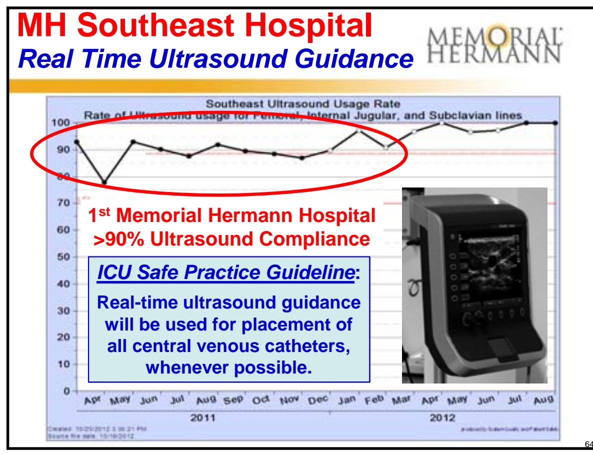
Hospital Acquired Infections, Conditions and Patient Safety Indicators

MEMORIAL HERMANN

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

62





High Reliability
Certified Zero Award

MEMORIAL HERMANN

1. **Zero Events**
2. **12 Consecutive Months**
3. **Certified Zero Category**

66

MH Greater Heights: Zero Retained Foreign Bodies
MEMORIAL HERMANN
Greater Heights Adult FB
Foreign Body Left During Procedure
Rate/1000 Discharges for Secondary Diagnosis
MD/Nursing OR Count Policy
Mandatory RFID Scanning
High Reliability Certified Zero Award
Zero Retained Foreign Bodies x 72 Months
2012
2013
2014
Reporting Months
produced by System Quality and Patient Safety
67

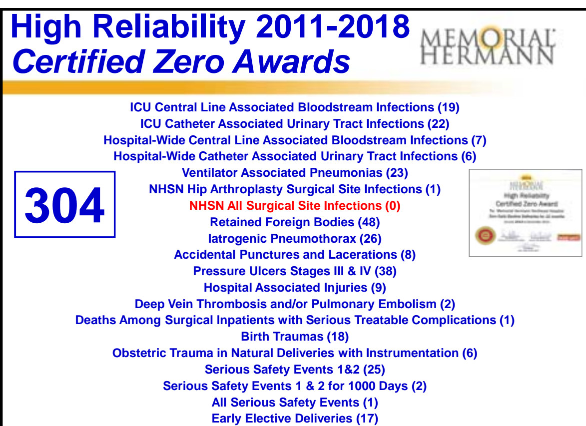
MH Greater Heights: Zero Retained Foreign Bodies
MEMORIAL HERMANN
Greater Heights Adult FB
MD/Nursing OR Count Policy
High Reliability Certified Zero Award
2012
2014
68

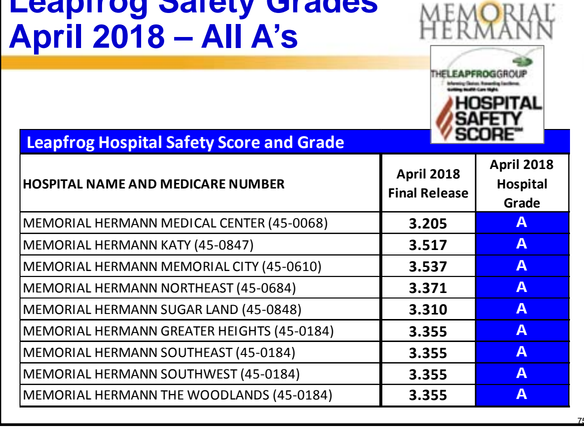
MH Greater Heights: Zero Retained Foreign Bodies
MEMORIAL HERMANN
Greater Heights Adult FB
Mandatory RFID Scanning
High Reliability Certified Zero Award
2012
2013
Reporting Months
69

2015
MEMORIAL HERMANN
High Reliability
Certified Zero Award
To: Memorial Hermann Greater Heights Hospital
Zero Retained Foreign Bodies for 72 months
January 2010 to December 2015
Dan Wolterman
President & Chief Executive Officer
M. Michael Shabot, M.D.
System Chief Medical Officer
Will Williams
Chair, Health System Board
BREAKTHROUGHS IN
PATIENT SAFETY
70

2015
MEMORIAL HERMANN
High Reliability
Certified Zero Award
To: Memorial Hermann Sugar Land Hospital
Zero Central Line Associated Blood Infections Hospital-wide for 12 months
May 2014 to April 2015
Dan Wolterman
President & Chief Executive Officer
M. Michael Shabot, M.D.
System Chief Medical Officer
Will Williams
Chair, Health System Board
BREAKTHROUGHS IN
PATIENT SAFETY
71

2017
MEMORIAL HERMANN
High Reliability
Certified Zero Award
To: Memorial Hermann Northeast Hospital
Zero Catheter-Associated Urinary Tract Infections Hospital-wide for 12 months
February 2016 to January 2017
Benjamin K. Chu, M.D.
President & Chief Executive Officer
M. Michael Shabot, M.D.
System Chief Clinical Officer
Deborah M. Cannon
Chair, Health System Board
BREAKTHROUGHS IN
PATIENT SAFETY
72





HOSPITAL NAME AND MEDICARE NUMBER	April 2018 Final Release	April 2018 Hospital Grade
MEMORIAL HERMANN MEDICAL CENTER (45-0068)	3.205	A
MEMORIAL HERMANN KATY (45-0847)	3.517	A
MEMORIAL HERMANN MEMORIAL CITY (45-0610)	3.537	A
MEMORIAL HERMANN NORTHEAST (45-0684)	3.371	A
MEMORIAL HERMANN SUGAR LAND (45-0848)	3.310	A
MEMORIAL HERMANN GREATER HEIGHTS (45-0184)	3.355	A
MEMORIAL HERMANN SOUTHEAST (45-0184)	3.355	A
MEMORIAL HERMANN SOUTHWEST (45-0184)	3.355	A
MEMORIAL HERMANN THE WOODLANDS (45-0184)	3.355	A

In 2013 the South Carolina Hospital Association established the Certified Zero Harm Award

www.SCZeroHarm.com

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Zero Harm Awards were first presented in 2014

Results to date:

- **Two-thirds** of South Carolina's acute care hospitals have received at least one Zero Harm Award
- All together, South Carolina hospitals have earned **258 Zero Harm Awards**
- This year's award winners amassed **55,291** central line days without an infection
- They also performed **9,700** harm-free surgical procedures
- And twelve of this year's winners were recognized for ***42 consecutive months*** without harm

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Serious Safety Events

MEMORIAL HERMANN

78

2014
MEMORIAL HERMANN
High Reliability
Certified Zero Award
To: Memorial Hermann Northwest Hospital
Zero Serious Safety Events 1 & 2 for 12 months
January 2013 to December 2013
Dan Wolterman
President & Chief Executive Officer
M. Michael Shabot, M.D.
System Chief Medical Officer
Will Williams
Chair, Health System Board
BREAKTHROUGHS IN PATIENT SAFETY
79

2017
25
80

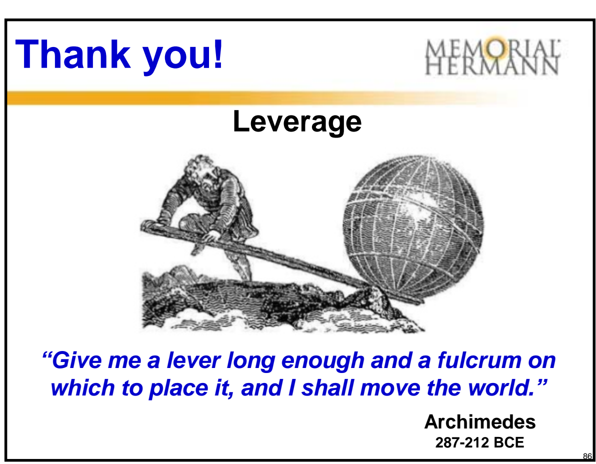
September 6, 2015
MH Greater Heights Hospital
1000 Days Since Last SSE1-2
81

John M. Eisenberg Patient Safety and Quality Award
MEMORIAL HERMANN
March 8, 2013 | Washington, DC
The Joint Commission
NATIONAL QUALITY FORUM
82

MH Sugar Land Hospital
Malcolm Baldrige Award
MEMORIAL HERMANN
Malcolm Baldrige
National Quality Award
2016 Award Recipient
83

High Reliability Organizations
MEMORIAL HERMANN
Commercial Aviation
Nuclear Aircraft Carriers
Air Traffic Control
OPERATION BREAKTHROUGH
PATIENT SAFETY
84

High Reliability Organizations
MEMORIAL HERMANN
Memorial Hermann Health System
Nuclear Aircraft Carriers
Air Traffic Control
Commercial Aviation
OPERATION BREAKTHROUGH
PATIENT SAFETY
85


Thank you!
MEMORIAL HERMANN
Leverage
"Give me a lever long enough and a fulcrum on which to place it, and I shall move the world."
Archimedes
287-212 BCE
86