Journey to High Reliability Healthcare

Becker's Hospital Review
Annual Meeting

Charles D. Stokes
System Chief Operating Officer

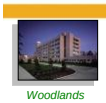
M. Michael Shabot, M.D.
System Chief Medical Officer

MEMORIAL HERMANN

May 17 – 18, 2012

Memorial Hermann Healthcare System

MEMORIAL HERMANN


Woodlands


Sugar Land


TMC


Katy


Memorial City


Southeast

Fiscal Year Ended June 30, 2011

- Total Hospitals: 12 (9 Acute, 2 Rehab, 1 Children's)
- Ambulatory Surgery Centers: 18
- Heart & Vascular Institutes: 3
- Imaging Centers: 19
- Breast Care Centers: 9
- Sports Medicine & Rehab Centers: 26
- Diagnostic Laboratories: 21
- Retirement/Nursing Center: 1
- Home Health Branches: 3
- Cancer Centers: 7

- Adjusted Admissions: 236,158
- Annual Emergency Visits: 433,191
- Annual Deliveries: 24,174
- Employees: 19,165
- Beds (acute licensed): 3,375
- Medical Staff Members: 4,973
- Physicians in Training: 1,821
- Annual Labor Cost: $1.153 billion


Northwest


Northeast


TIRR


PaRC


Children's


Southwest

What is the Burning Platform for Becoming a High Reliability Healthcare System?

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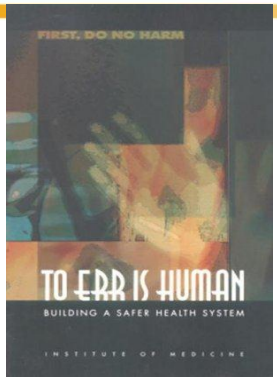
- It is the right thing to do … "First Do No Harm"
- Higher public accountability
- Transparency of quality data
- Our current healthcare system is harming and killing patients at an unacceptable rate
- Reimbursement is now tied to quality

Not-So-New Demands for Quality and Patient Safety



Institute of Medicine Report on Errors in Medicine (1999)

Findings:

- ***44,000-98,000 accidental deaths/yr in US hospitals***
- ***Many due to drug errors***
- ***Most errors were preventable***

4

Medical Mistakes

- **One in seven Medicare patients (13.5%) experienced at least one serious instance of harm from medical care that prolonged their hospital stay, caused permanent harm, required life-sustaining intervention, or contributed to their death**
- **An estimated 134,000 hospitalized Medicare beneficiaries experienced harm from medical care in one month, with the event contributing to death for 1.5% or approximately 15,000 patients**

DOI: oig.hhs.gov/newsroom/news-releases/2010/plague.asp

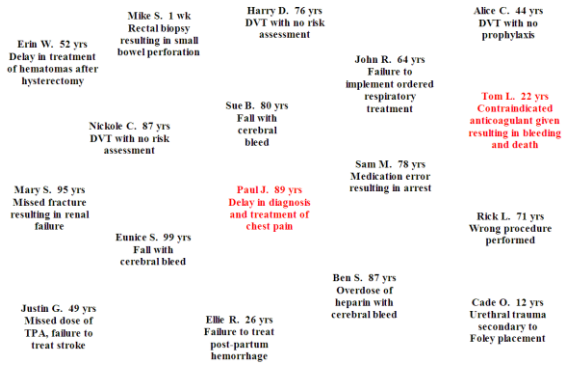
5

What is Required to Become a High Reliability Organization?

- **Commitment from Governance**
  - **More time discussing quality at board meetings and board quality committee meeting**
  - **Hold leadership and physicians accountable for practicing high quality evidence-based medicine**
  - **Make quality a high priority in credentialing and re-credentialing**

6

Serious Safety Event Summary – (Month Year)



"No Excuses Accountability" from Leadership

MEMORIAL HERMANN

How Do We Improve Quality and Patient Safety?

- Senior leadership rounding
- Hourly nurse rounding
- "Just culture"
- Patient safety is everyone's responsibility

8

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Move the organization from Safety as a priority to Safety is a Core Value

….

What is the leadership behavioral expectation when safety is a core value?

9

Our Current Healthcare Model is Unsustainable

The current healthcare system is economically unsustainable. A significant portion of the unsustainability is because of

- Waste
- Not getting it right the first time
- Hospital and physician error
- Poor discharge planning and readmissions
- Fraud and abuse
- Unnecessary care
- End of life/futile care

10

We must think outside of the box for solutions to decrease harm to those who entrust their lives to our organizations.

We must be proactive.

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The Culture of Quality and Safety

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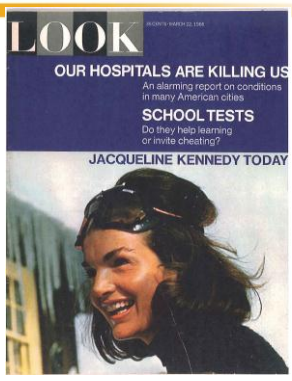
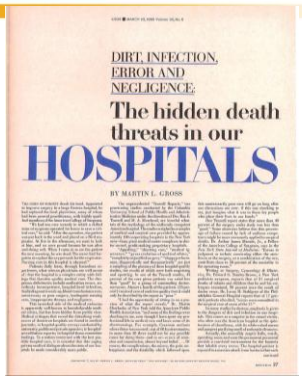
Hospital Safety 1966



Look Magazine
March 22, 1966

13

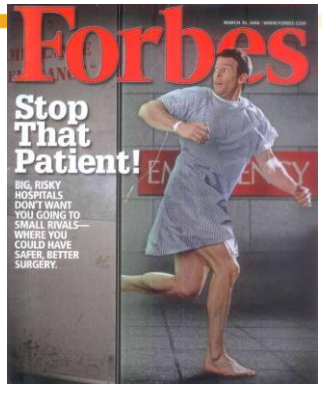
Hospital Safety 1966



Look Magazine
March 22, 1966

14

2008 - Still a Problem



Forbes 3/10/08

15

2008 - Still a Problem

"One in 200 patients who spends a night or more in the hospital will die from a medical error. One in 16 will pick up an infection. Deaths from preventable hospital infections exceed 100,000, more than those from AIDS, breast cancer and auto accidents combined."

Forbes 3/10/08

16

Public Reporting of Hospital Acquired Infections

Issue No. 5 • July 2005

PHC4 Research Briefs

Hospital-acquired Infections in Pennsylvania

In January 2004, Pennsylvania hospitals began submitting data on hospital-acquired infections to the Pennsylvania Health Care Cost Containment Council (PHC4). While concerns remain about whether all hospitals are fully complying with this new initiative, the first year of data collected provides some eye-opening information for all parties involved in the delivery and payment of hospital care. In 2004, hospitals reported 11,668 hospital-acquired infections, that is, 7.5 hospital-acquired infections per 1,000 patients admitted to Pennsylvania's general acute care hospitals. 15.4 percent or 1,793 of these patients died. $2 billion in additional hospital charges and 205,000 additional hospital days were associated with the hospital admissions in which these devastating infections occurred. However, until all Pennsylvania hospitals have met the current PHC4 reporting requirements for hospital-acquired infection data, the full impact of these infections remains unknown.

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Public Reporting of Hospital Acquired Infections

Type of Infection	Number	Average Payment	Average Length of Stay in Days	Percent Died
Surgical Site	242	$24,223	13.1	0.8
Urinary Tract	1,379	$18,589	9.7	1.9
Pneumonia	948	$28,691	12.2	5.9
Bloodstream	528	$40,129	15.4	13.8
Multiple Infections	260	$71,325	23.9	11.9
Any of the Above Infections	3,357	$29,320	12.6	5.6
Without an Infection	102,657	$8,319	3.4	0.7

3.5X

8X

PHC4 2004

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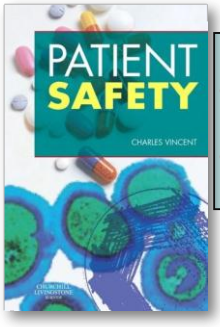
4.8X

20X

PHC4 2004

19

"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

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

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High Reliability Organizations

Commercial Aviation

Nuclear Aircraft Carriers

Air Traffic Control

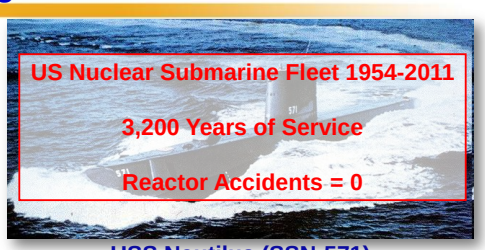
High Reliability Organizations

US Navy Submarine SSN-571

High Reliability Organizations

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

High Reliability Organizations



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

OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST

High Reliability Organizations?

Soviet November Class Nuclear Submarine

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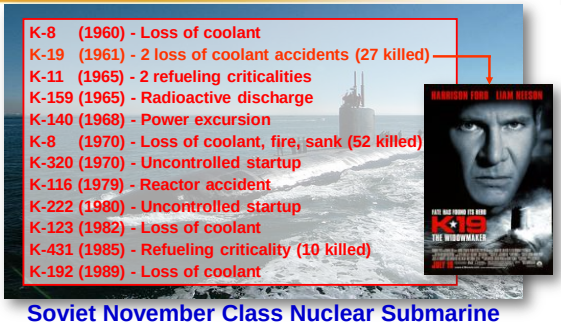
High Reliability Organizations?



Soviet November Class Nuclear Submarine
Reactor Accidents

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USS Nimitz
Distinguished Visitors
Cruise 2004


Arrival!!


The Bridge – War Games

Flight Deck


Night Ops


Arresting Wire

Naval Aviation Mishaps

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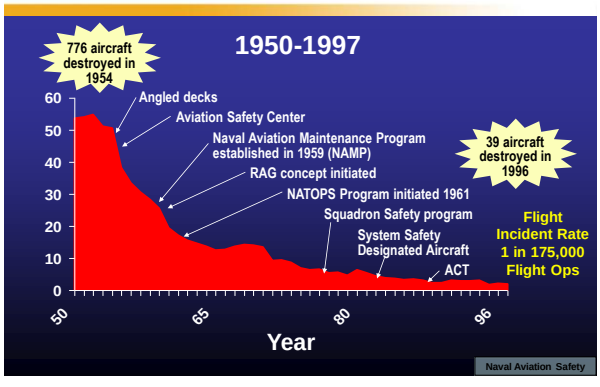


Departure


NO SMOKING
Departure


CATAPULT
FASTEN SEAT BELT
Departure

Memorial Hermann's Quality and Safety Journey

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Transformation to a High Reliability Organization

MEMORIAL HERMANN

August 14, 2006

A Call to Action on Patient Safety

Transfusion Errors
Serious Safety Events

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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


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BREAKTHROUGHS IN PATIENT SAFETY

Make Every Day a Safe Day.
Patient Safety Is Our Core Value.

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

2. Communicate Clearly
Assure Accurate and Complete Communication and Handoff
Three-way Repeat Back and Read Back
• Sender initiates communication (a Read Back: receiver writes it down)
• Receiver repeats/reads back
• Sender acknowledges accuracy by saying, "That's correct" or "NOT correct...(state error correction)"
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 problem, patient, or project?
Background — What is important to know?
Assessment — What is your thought?
Request/Recommend — What action do you need?

3. Questioning Attitude
Qualify — 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
• Comply with policy, procedures and protocol
• Use checklists and flow sheets
Protect Patients from Harm
• Absolute compliance with Red Rules
• Perform hand hygiene
• Prevent falls
• Activate Rapid Response
RED RULES

5. Support Each Other
Be a Safety Partner
• Look out for each other
• Positively reinforce safe and productive behaviors (ATs)
• Correct unsafe behaviors in a helpful manner
Speak Up: Use ARCC and CUSS Words
Ask a question
Request a change
Express a safety concern using the safe word
Chain of command
CUSS Words
I am concerned
I am uncomfortable
This is for safety
Stand up and stand together

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Breakthroughs in Patient Safety Training

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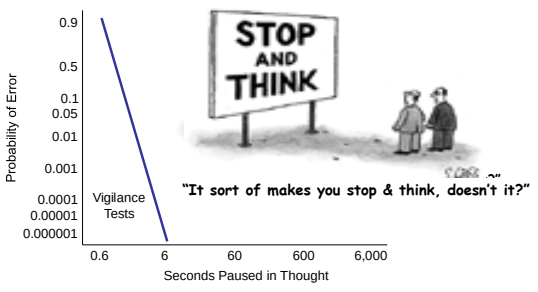
Self-Checking With STAR* (Stop, Think, Act, & Review)



* Jefferson Center for Character Education

Support Each Other: CUSS Words

- I am *Concerned*
- I am *Uncomfortable*
- This is for *Safety*
- *Stand* up and *Stand* Together

OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST

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MHHS Safety Culture Training

Hospital Training Complete

>20,000 Employees Trained

>2,000 Physicians Trained

>540 Safety Coaches Trained

>$18M Expense

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OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST

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OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST

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Red Rules
Absolute Compliance

1. Patient Identification
2. Time Out
3. Two Provider Check

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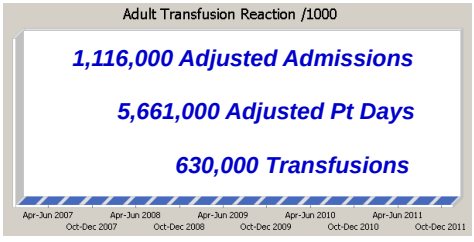
Hospital Acquired Conditions *"Never Events"*

Hemolytic Transfusion Reactions

Transfusion Events 2007 - 2011



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Hospital Acquired Conditions *"Never Events"*

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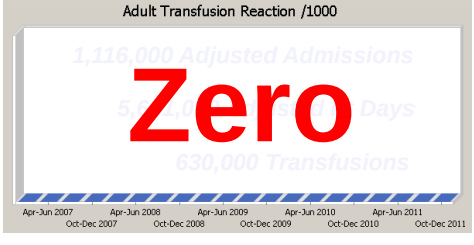
Transfusion Events 2007 - 2011



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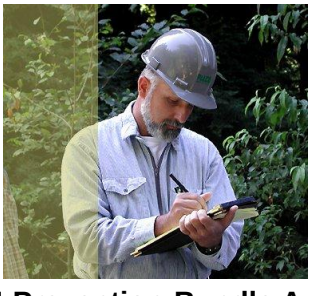
Hospital Acquired Infections (HAIs) - *"The Cure"*



HAI Prevention Bundle Audit

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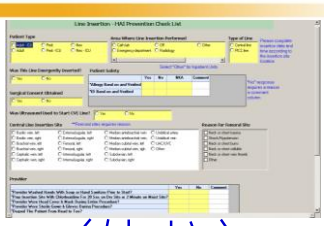
Automated Extraction of Core Measure & Bundle Data



Computerized Electronic Health Record

HOB Elevation

Medications

Sedation Holiday

IV Site Dressing

IV Site Condition

Line Insertion Bundle

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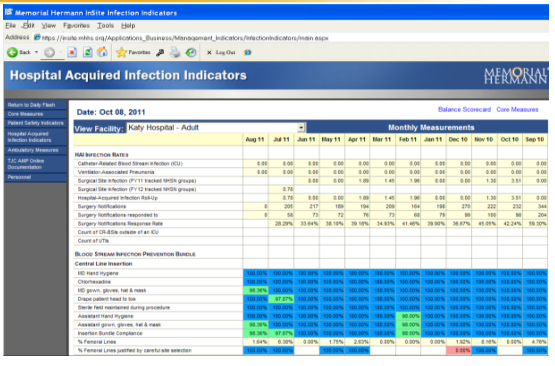
Central Line Bundle Compliance



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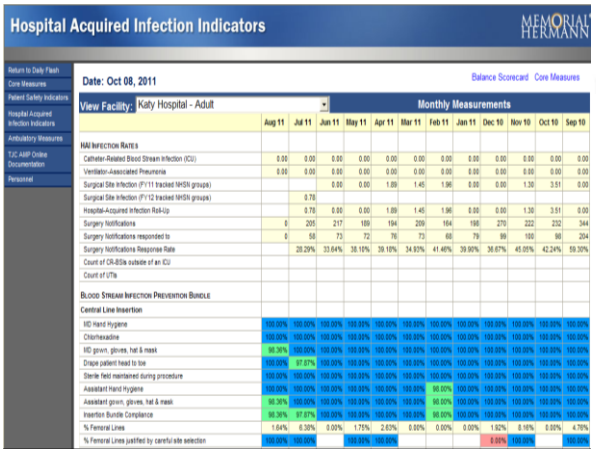
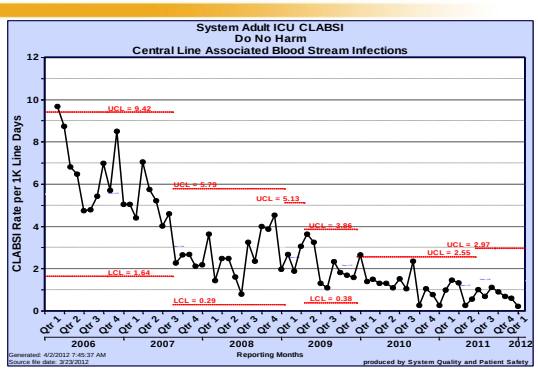


Adult ICU Central Line Associated Blood Stream Infections (CLABSI)



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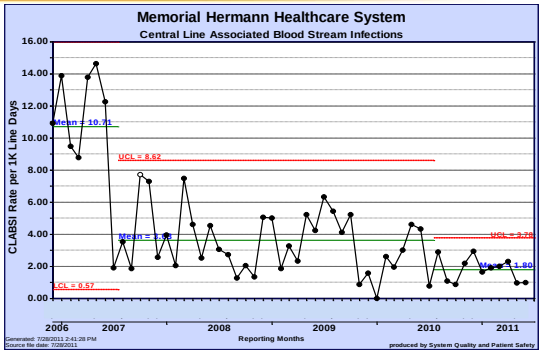
NICU Central Line Associated Blood Stream Infections (CLABSI)



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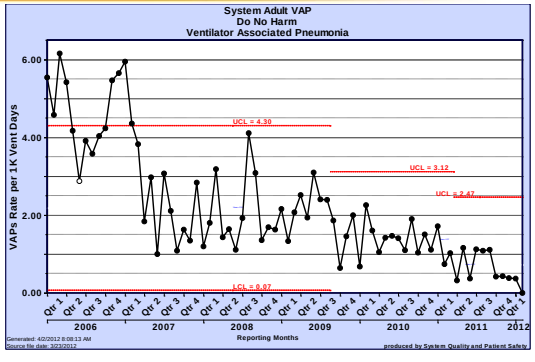
Ventilator Associated Pneumonias (VAP)



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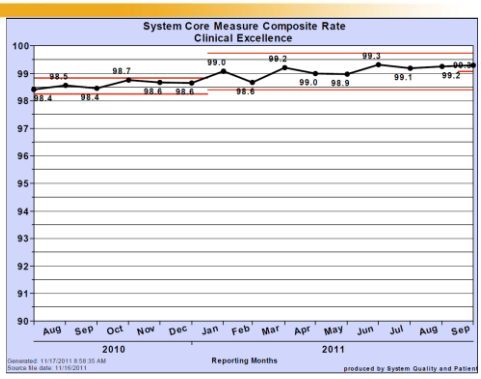
High Reliability Core Measures
MH System Compliance Rate



99.3%

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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

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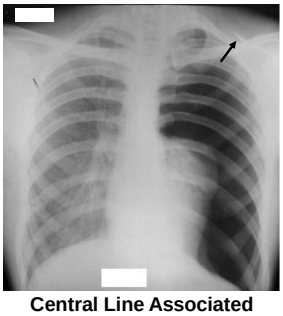
Patient Safety Indicator *Iatrogenic Pneumothorax*



Central Line Associated Iatrogenic Pneumothorax

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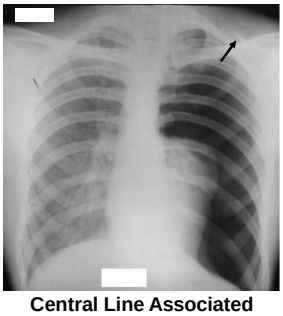
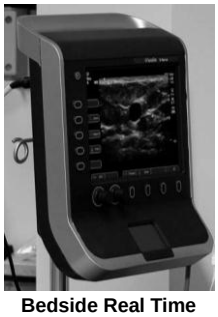
Patient Safety Indicator *Iatrogenic Pneumothorax*



Central Line Associated Iatrogenic Pneumothorax



Bedside Real Time Ultrasound Guidance

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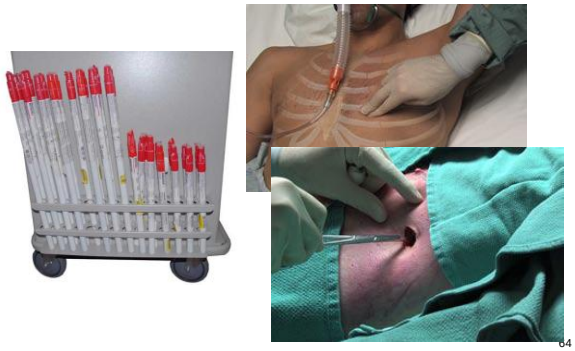
Chest Tube Insertion for Iatrogenic Pneumothorax



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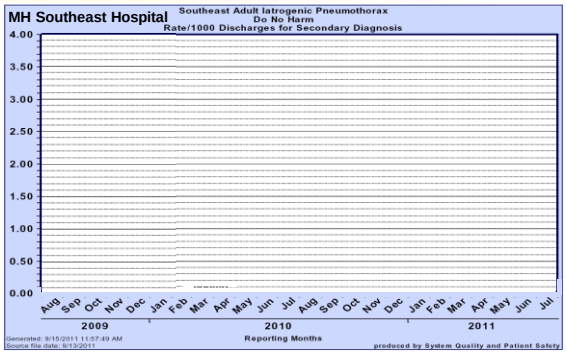
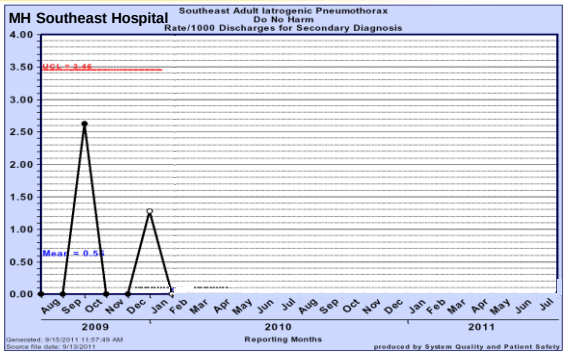
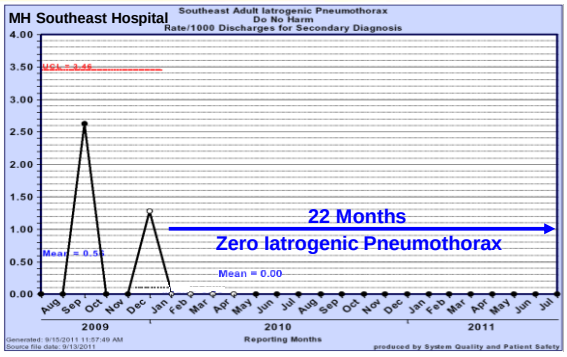
MH Southeast Hospital *Iatrogenic Pneumothorax*



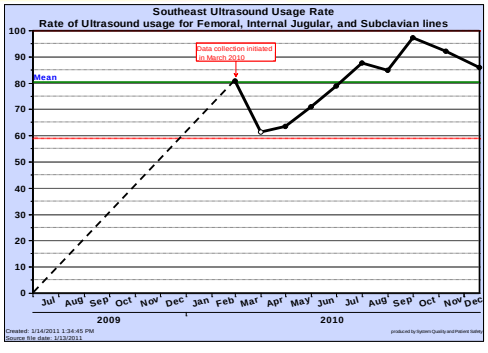
MH Southeast Hospital *Iatrogenic Pneumothorax*



MH Southeast Hospital
Iatrogenic Pneumothorax



MH Southeast Hospital
Real Time Ultrasound Guidance



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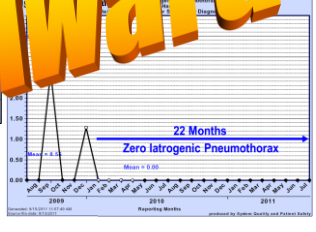
MH Southeast Hospital
Iatrogenic Pneumothorax

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

MH [illegible]heast Hospital



New Award

High Reliability
Certified Zero Award

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1. **Zero Events**

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

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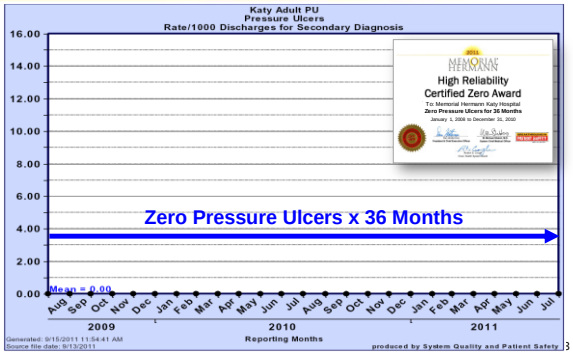
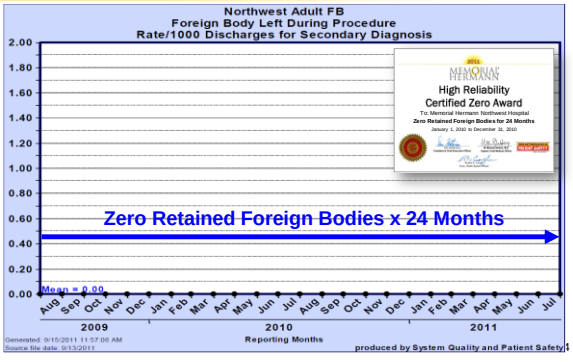
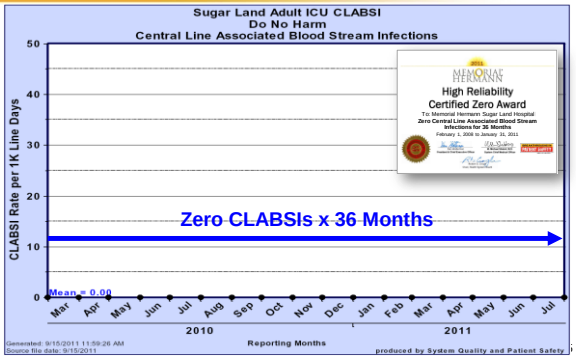
Katy: Zero Pressure Ulcers Stages 3 & 4



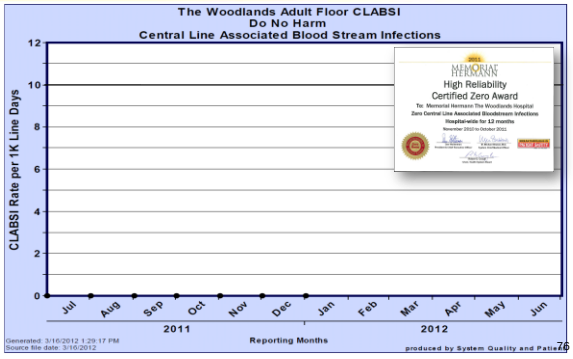
Northwest: Zero Retained Foreign Bodies



Sugar Land: Zero ICU Central Line Blood Stream Infections



Woodlands: Zero Hospital Central Line Blood Stream Infections



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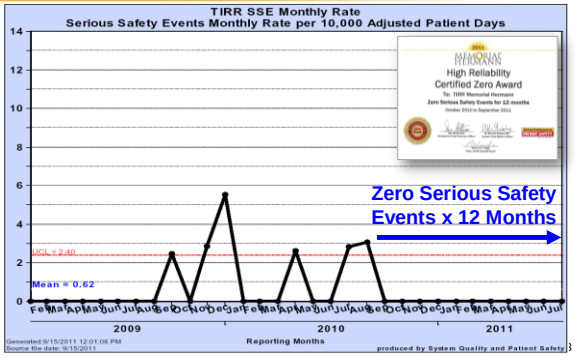
TeamHealth 8 EDs: Zero Iatrogenic Pneumothorax

77

TIRR: Zero Serious Safety Events



High Reliability 2011
Certified Zero Hospitals

40

- Central Line Associated Bloodstream Infections (4)
- Ventilator Associated Pneumonias (7)
- Surgical Site Infections
- Retained Foreign Bodies (9)
- Iatrogenic Pneumothorax (4)
- Accidental Punctures and Lacerations
- Pressure Ulcers Stages III & IV (8)
- Hospital Associated Injuries (2)
- Deep Vein Thrombosis and/or Pulmonary Embolism (1)
- Deaths Among Surgical Inpatients with Serious Treatable Complications
- Birth Traumas (4)
- Serious Safety Events (1)

79

MEDSAFE

Eliminate Medication Errors

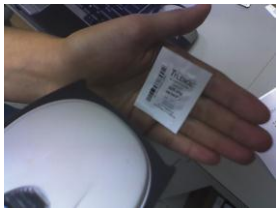
"~~5~~ 6 Rights" Checking:

- *Right patient?*
- *Right drug?*
- *Right dose?*
- *Right route?*
- *Right time?*
- *Right labs?*

80

MEDSAFE

Eliminate Medication Errors



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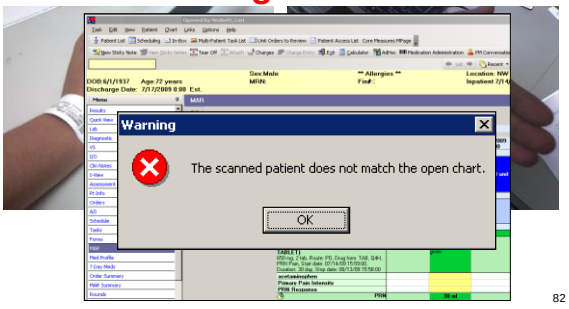
MEDSAFE

MEMORIAL HERMANN

Wrong Patient



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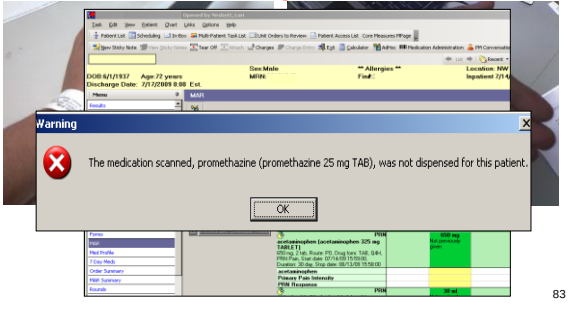
MEDSAFE

MEMORIAL HERMANN

Wrong Med



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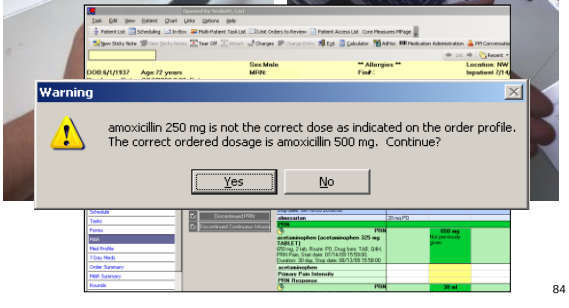
MEDSAFE

MEMORIAL HERMANN

Wrong Dose



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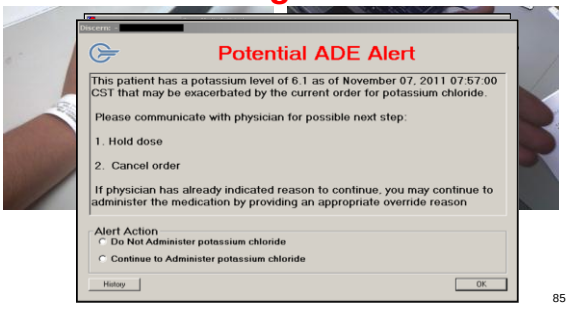
Wrong Labs



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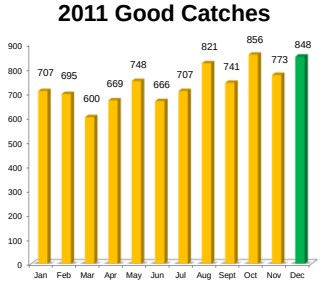
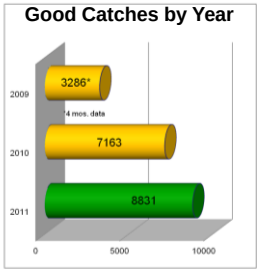
"Good Catches" Decision Support Alerts





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Does All This Make A Difference at Memorial Hermann?

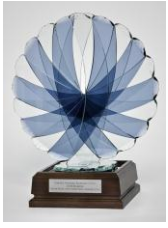
National Patient Safety Leadership Award

VHA Foundation

NATIONAL BUSINESS GROUP ON HEALTH
Creative Health Benefits Solutions for Today
Strong Policy for Tomorrow
Influencing Policy

National Patient Safety Leadership Award

December 2, 2008



"This award recognizes health systems where senior leaders have gone beyond attending to the bottom line and are driving a culture that places the highest value on safety," said Linda DeWolf, President of the VHA Foundation. "The safety results these health systems are seeing clearly show that their approach to safety is saving lives.

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National Quality Forum
National Quality Healthcare Award

"In a remarkable group of applicants, Memorial Hermann stood out as true leader in its commitment to quality in healthcare."

Janet Corrigan
CEO, National Quality Forum

May 19, 2009

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HealthGrades & Thomson Reuters
Top 50 & Top 100 Awards

THOMSON REUTERS™

2011 THOMSON REUTERS TOP HOSPITALS NATIONAL

MH Southwest
MH Northwest
MH Southeast
MH The Woodlands
MH Sugar Land
MH Katy

HEALTHGRADES AMERICA'S 50 BEST HOSPITALS 2010

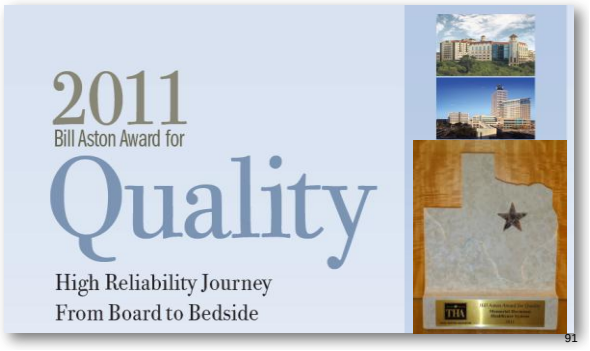
HEALTHGRADES AMERICA'S 50 BEST HOSPITALS 2011

HealthGrades 2010, 11 & 12

MH Southwest
MH Northwest
MH Southeast
MH The Woodlands

90

Texas Hospital Association
Bill Aston Quality Award



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Thomson Reuters 2012
Top 5 Large Health Systems

Modern Healthcare

By The Numbers

A systematic approach to quality improvement

Healthcare systems nationwide have been investing heavily to improve quality of care and patient satisfaction at their organizations. And those investments are paying off.

That's among the findings based on Thomson Reuters' fourth annual list of the 100 Top Hospitals: 15 Top Health Systems.

This year, for the first time, Thomson Reuters divided health systems into three size groups—large, medium and small, based on overall operating expenses—to obtain more valid comparisons.

The alphabetical list of the 15 Top Health Systems is presented here, along with the other health systems that together make up the top 20% of all systems in the study, also presented in alphabetical order.

According to Thomson Reuters' analysis, the 15 Top Health Systems, in matchups with their peers, are

TOP 5 LARGE HEALTH SYSTEMS[1]

System	Location
Banner Health	Phoenix
CareGroup Healthcare System	Boston
Main Line Health	Bryn Mawr, Pa.
Memorial Hermann Healthcare System	Houston
St. Vincent Health	Indianapolis

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Texas Medical Foundation
Texas Health Care Quality Improvement Awards

TMF Health Quality Institute

TEXAS HEALTH CARE QUALITY IMPROVEMENT AWARD

"Quality is the result of a carefully constructed cultural environment. It has to be the fabric of the organization, not part of the fabric."
– Phillip Crosby

Gold Award (2 in Texas)	Silver Award
MH Southwest Hospital	MH Texas Medical Center
MH Northwest Hospital	MH Memorial City Hospital
MH Southeast Hospital	MH Northeast Hospital
MH The Woodlands	MH Katy Hospital
	MH Sugar Land Hospital

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Next Generation Healthcare Quality Assurance

MEMORIAL HERMANN

Healthcare as a High Reliability Organization

MEMORIAL HERMANN


Special report: Home health providers wary over reform impact / Page 28

Modern Healthcare

THE ONLY HEALTHCARE BUSINESS NEWS WEEKLY

CMS SAYS HEALTH SPENDING WILL INCREASE TO $4.6 TRILLION BY 2019 DESPITE REFORM LAW

EXTENDING THE COST CURVE

Report says hospitals' share of spending will shrink while rising for doctors

Page 6

"This has been the most significant effort to bring the cost curve in one direction."

Preparing for the debt fallout / Page 8

Embezzlers test compliance / Page 12

Hidden cost of capital access / Page 32


From the C-Suite

Dan Wolterman and Dr. M. Michael Shabot

A new standard

Aim for safety of planes, nuclear plants

Everyone counts on high-reliability organizations to ensure their safety when flying on commercial airlines or traveling near nuclear power plants. Air traffic control, nuclear submarines, nuclear aircraft carriers and naval aviation all have well-deserved reputations for high-reliability operation.

But can hospitals be evaluated by HRO standards? In general, the answer seems to be no, beginning with the Institute of Medicine's 2000 publication of *To Err Is Human* and continuing to the 2010 report by HHS' inspector general's office that 13.5% of Medicare beneficiaries suffer a preventable serious adverse event during hospital stays.

In 2006, the Memorial Hermann Healthcare System in Houston embarked on a quest to become an HRO. The high-reliability program is a key element of

Wolterman

Shabot

lists were implemented in all intensive-care units and operating rooms. Memorial Hermann worked with the Joint Commission's Center for Transforming Healthcare to radically improve hand hygiene.

In 2010-11, the results of these initiatives became apparent. Zero cases of blood incompatibility (transfusion reaction) occurred from January 2007 to present among a population of 867,000 adjusted admissions, 4.3 million days of care and nearly 900,000 transfusions.

Several hospitals had gone for years without a ventilator-associated pneumonia or a central-line-associated blood-stream infection. Serious medication errors decreased to zero most months while nearly a million medications per month were being administered. Many of our hospitals had gone a full year without the occurrence of a particular HAI, PSI or HAC.

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Healthcare as a High Reliability Organization

MEMORIAL HERMANN


Nuclear Aircraft Carriers


Commercial Aviation

Air Traffic Control

OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST

MHHS as a High Reliability Organization

Memorial Hermann Healthcare System

Nuclear Aircraft Carriers

Commercial Aviation

Air Traffic Control

OPERATION BREAKTHROUGH PATIENT SAFETY BEST OF THE BEST

Discussion

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