

Building a Culture of Patient Safety in Today's Healthcare Environment

**A Discussion of the Tools and Healthcare Policies
Driving Improvements in Patient Safety**

PANELISTS



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- ① **Discuss today's culture of patient safety and how it has evolved**
- ② **Developing scorecards to begin engaging staff and building a culture of safety**
- ③ **Identify and understand the real financial impacts of Hospital Acquired Conditions (HACs)**
- ④ **Define the tools and prevention strategies that will make the most impact to HACs**
- ⑤ **Discuss what the future holds for these areas**

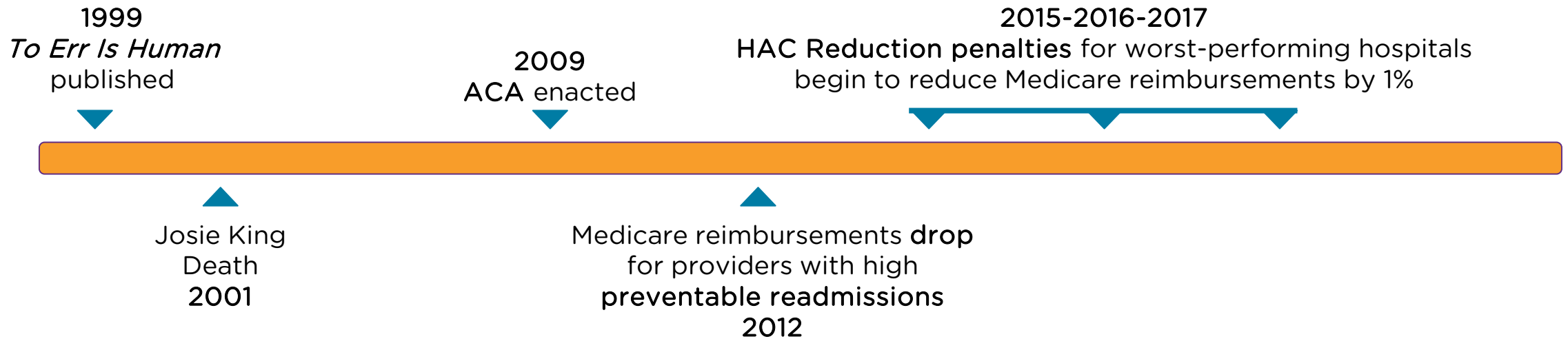
A CULTURE OF PATIENT SAFETY

What is it and how has it evolved?

Patient Harm & Medical Errors - Statistics

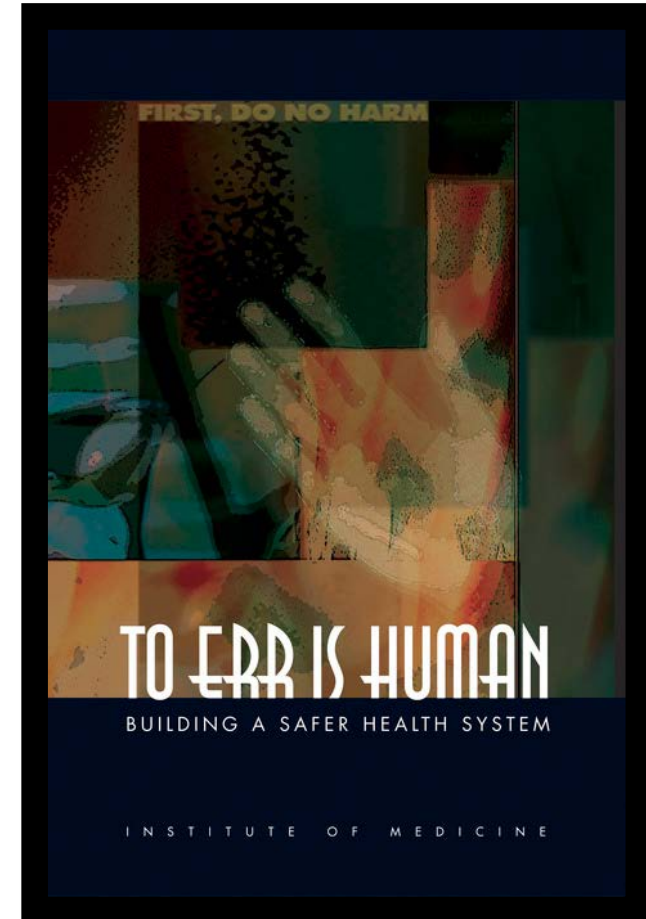
- The third highest cause of death in the U.S. is medical error.
 - Accounts for 10% of all U.S. deaths
- Centers for Disease Control and Prevention (CDC) statistics show that in the U.S., 1 in 25 patients will contract an HAI while in care, with close to 75,000 of these patients dying annually.
- CDC figures also show that HAIs cost the United States healthcare industry upwards of \$30 billion dollars annually.

Healthcare Transparency Aims for More Accountability & Less Patient Harm



To Err is Human: Building a Safer Health System

- 1999 report issued by the U.S. Institute of Medicine credited with raising awareness of U.S. medical errors
- Concluded that **between 44,000 to 98,000 people die each year as a result of preventable medical errors.**
- Lays out a comprehensive strategy by which government, health care providers, industry, and consumers can reduce preventable medical errors.



18-Month Old Josie King Dies of Medical Error

- Josie King dies of preventable dehydration while in Johns Hopkins Hospital being treated for burns.
- Parents seek damages from Johns Hopkins
- Settlement dollars helped establish the **Josie King Foundation** whose mission is “to prevent to prevent patients from dying or being harmed by medical errors.”
- **Changes include:** upgraded computer systems; implementation of patient safety checklists; improved collaboration of medical staff; improved accuracy and availability of patient data; increased efforts to reduce hospital-acquired infections; and more.



SCORECARDS & PATIENT SAFETY CULTURE

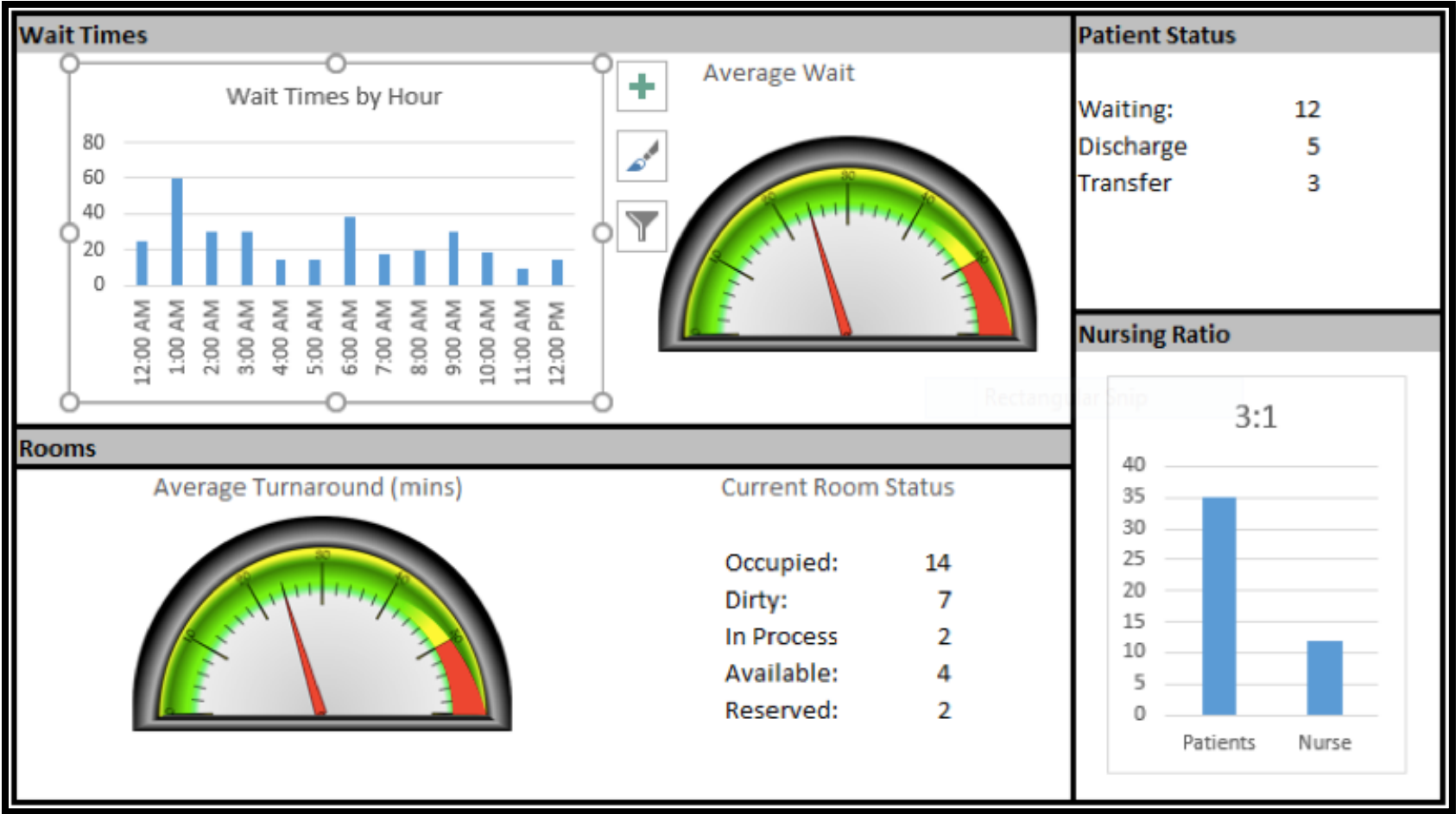
Can scorecards help us reinforce patient safety attentiveness?

Score Card Levels

Department ▶ Hospital ▶ State ▶ National



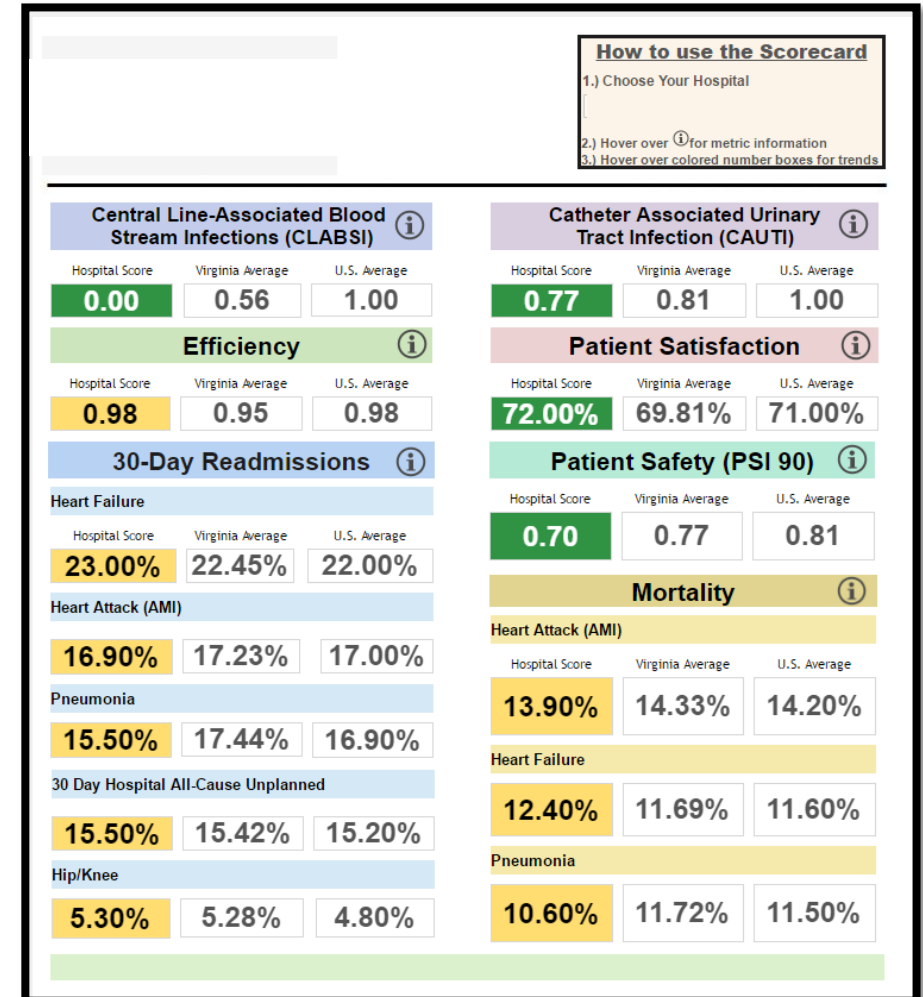
Dashboards: Daily Scorecards for Front Line Staff



Source: www.healthcatalyst.com

Explore Score Cards from Other States for Best Practices

- Provide a national benchmark
- Foster a competitive perspective
 - Other departments
 - Facility-wide



FINANCIALS OF HOSPITAL ACQUIRED CONDITIONS (HACS)

How do Hospital Acquired Conditions impact a hospital financially?

The Cost Equation

- Cost of patient's extended stay and treatment
 - + drug cost
 - + additional care
 - +3 days no complications; +6 days with complications
- Cost of RNs and/or labor loss
 - + double the cost for temp workers
- HAC Penalty of up to 1% of CMS reimbursement

Cost of Hospital Acquired Infections: Published Study References

	REFERENCE	ARTICLE	EXCESS COST \$	ADDED LOS (DAYS)
C. diff	R. Douglas Scott. The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention. Center for Disease Control & Prevention, March 2009	CDC	\$7,766	N/A
C. diff	APIC Cost Calculator for Medium Sized Hospital (Developed in collaboration with Texas Medical Institute of Technology)	APIC	\$10,577	6.7
C. diff	APIC Cost Calculator for Small Sized Hospital (Developed in collaboration with Texas Medical Institute of Technology)	APIC	\$10,963	7.9
C. diff	Eyal Zimlichman, MD, MSc; Daniel Henderson, MD, MPH; Orly Tamir, PhD, MSc, MHA; Calvin Franz, PhD; Peter Song, BSE; Cyrus K. Yamin, MD; Carol Keohane, BSN, RN; Charles R. Denham, MD; David W. Bates, MD, MSc. Health Care-Associated Infections: A Meta-analysis of Costs and Financial Impact on the US Health Care System	JAMA	\$11,285	3.3
MRSA	APIC Cost Calculator for Medium Sized Hospital (Developed in collaboration with Texas Medical Institute of Technology)	APIC	\$6248	4.5
MRSA	APIC Cost Calculator (Data from National Studies)	APIC	\$7,752	2
SSI	Eyal Zimlichman, MD, MSc; Daniel Henderson, MD, MPH; Orly Tamir, PhD, MSc, MHA; Calvin Franz, PhD; Peter Song, BSE; Cyrus K. Yamin, MD; Carol Keohane, BSN, RN; Charles R. Denham, MD; David W. Bates, MD, MSc. Health Care-Associated Infections: A Meta-analysis of Costs and Financial Impact on the US Health Care System	JAMA	\$20,785	11.2
SSI	R. Douglas Scott. The Direct Medical Costs of Healthcare-Associated Infections in U.S. Hospitals and the Benefits of Prevention. Center for Disease Control & Prevention, March 2009	CDC	\$23,272	N/A
VRE	Stosor V, Petersonb LR., Postelnick M, Noskin, GA. Enterococcus faecium Bacteremia Does Vancomycin Resistance Make a Difference? ARCH INTERN MED/VOL 158, MAR 9, 1998	Arch Intern Med	\$27,190	18.1
VRE	Pelz RK, Lipsett, PA, Sowboda, SM, Diener-West M, Powe NR, Brower RG, Perl TM, Hammond JM, Hendrix CW. Vancomycin-sensitive and vancomycin-resistant enterococcal infections in the ICU: attributable costs and outcomes	Intensive Care Med	\$33,251	22

HAI RATE REDUCTION TOOLS

Which tools can most effectively reduce HAI rates?

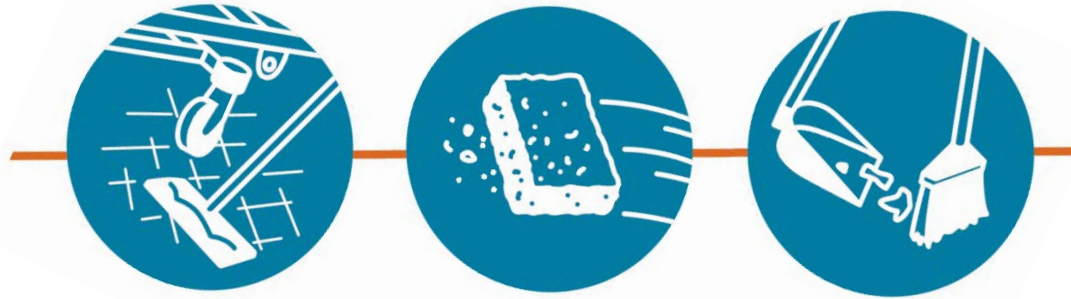
Hand Hygiene • EVS • Stewardship

Hand Hygiene
Efforts



ALL Staff

Expand EVS Teams



EVS Staff

Antibiotic
Stewardship



Clinical Staff

Q: Isn't housekeeping good enough?

A: No. ~50% surfaces missed.

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY JANUARY 2008, VOL. 29, NO. 1

ORIGINAL ARTICLE

Identifying Opportunities to Enhance Environmental Cleaning in 23 Acute Care Hospitals

P. C. Carling, MD; M. E. Parry, MD; S. M. Von Behren, RN, BSN, MS, CIC;
for the Healthcare Environmental Hygiene Study Group

Hydrogen Peroxide Vapor

- Effective in reducing environmental contamination when compared to conventional cleaning practices
- Room is cleaned. Ventilation ducts are sealed along with entire room which will receive the vapor
- Lower initial equipment cost
- Long process - 1 to 8 hours to complete decontamination
 - Cannot be used in routine cleaning process - only targeted disinfection
- Chemical costs after initial expense

Ultraviolet Light Disinfection

Single Spectrum vs Multi Spectrum (multiple manufacturers) (Xenex)

	SINGLE-SPECTRUM UV 254nm	MULTI-SPECTRUM UV 100nm to 400 nm
Bulb Type	Mercury vapor (continuous)	Xenon gas (pulsed)
Intensity	Low Intensity	High Intensity
<i>C. Diff</i> Kill Time	Varies; BETR-D study recently concluded 55 minutes average <i>C. diff</i> room time	5 minutes x 3 cycles 4 minute model also available
Effectiveness	3 studies from different manufacturers: BETR-D Study - Mixed outcomes (found no <i>C. diff</i> impact) 2 HAI rate reduction studies	10 HAI rate reduction peer-reviewed studies, all from hospitals using pulsed xenon UV

Pulsed Xenon UV Disinfection



- Studies demonstrate clinical effectiveness in decreasing microbial burden and reduction in HAI rates
- Effective at reducing rates of
 - MRSA
 - VRE
 - C. difficile
 - SSI
- 5-minute cycles in 2 to 3 positions
- 4 minute model available also

Pulsed Xenon UV Disinfection: Peer-Reviewed HAI Rate Reduction Studies

39% drop in C. diff rates in 6 month controlled study

APIC Conference Poster/June 2016 (Folkert, Mayo Clinic Rochester)

71% drop in UTI rates, and 100% in skin infection rates, 54% drop in hospital readmissions from nursing home

BMC Infectious Diseases/March 2017 (Kovach, Jewish Home and Care Ctr)

57% reduction in MRSA infection rates after 18 months

JIP/June 2013 (Simmons, Moses Cone Health)

46% reduction in Class I SSIs, \$478,055 saved

AJIC/February 2016 (Catalanotti, Lowell General Hospital)

70% reduction in ICU C. diff infection rates

AJIC/September 2015 (Nagaraja, Westchester Medical Center)

57% reduction in C. diff infection rates in an LTAC

AJIC/September 2015 (Miller)

87% reduction in ICU VRE infection rates, 29% facility wide/ 61% ICU reduction in combined VRE+ MRSA + C. diff infection rates, 390 bed days generated, \$730,000 saved

AJIC/October 2015 (Vianna, South Seminole Hospital - Orlando Health)

100% reduction in total joint SSIs and \$290,990 saved in 12 months

AJIC/September 2015 (Fornwalt, Trinity Medical Center)

53% reduction in C. diff infection rates after 12 months

AJIC/May 2013 (Levin, Cooley Dickinson Hospital)

FUTURE OF PATIENT SAFETY

What does the future hold?

The Future of Patient Safety

- People will use patient safety scorecards to choose providers
- Outcome-based reimbursement will continue to grow
- Prevention is always cheaper than treatment
 - *C. diff* vaccine - it's easier and more effective to vaccinate the population against *C. diff* than it is to control the bug in the environment

