HCA's MRSA & CDI "ABC" Programs:

Using The New Business Case for Safety, Simplifying the Science and Empowering Patients to Drive Change

Richmond, VA – May 21, 2009

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Conclusion (and Overview) . . .

- "Value-based Healthcare" provides the emerging business case for safety
  - Creates "constructive tension" for improvement
  - Good quality is good business !
- Simplifying science (& policy) and packaging it effectively for different audiences can drive behavior change
- Empowering patients (and their visitors) is essential
- Goal & expectation should be zero preventable infections

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Discussion Details . . .

- "Value-based Healthcare" provides the emerging business case for safety
  - CMS "Hospital-Acquired Conditions" & Commercial Payer "Never Events" new non-reimbursement policies
- Simplifying science & policy and packaging it effectively for different audiences can drive behavior change
  - Creating management accountability
    - Drawing relationship between clinical & financial performance
  - Creating Clinical Accountability
    - Using /simplifying the evidence & Making it easier to do the right thing
      - HCA "ABC's" for MRSA & CDI
    - Adding an emotional appeal (the care wanted for one's own family)
- Empowering patients (and their visitors) is essential
  - Reinforces desired behaviors

Safety & Quality in Healthcare & Aviation

- Airline Safety: > 99.999999
- Airline Baggage Handling: > 99.999
- B-Blocker p MI: 70 – 99%
- Immunization: 55 – 94%
- MD Hand Hygiene in ICU: 3 – 40%

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Frequency of Failures Occurring

Value-Based Healthcare: New Value Prop for Clinical Performance

- Until recently, minimal relationship between clinical & financial performance
  - No performance measurement & healthcare represented as different from other industries
  - Bottom Line: Volume → Revenue
    - Incentive: "The More You Do, the Better You Do"
- The Era of Value-Based Healthcare

Value = QUALITY / COST

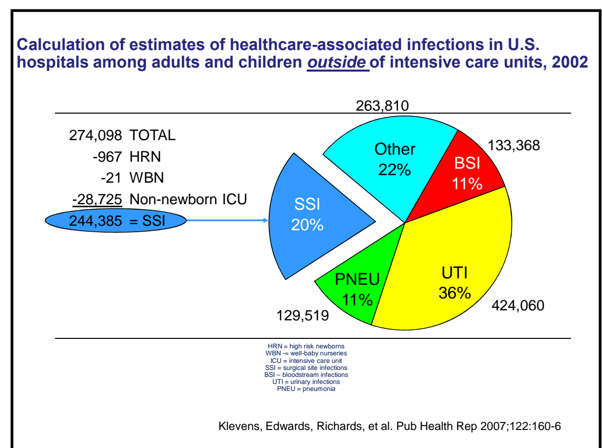
1) Value Based Insurance Design (& Purchasing)
   - Demonstrated successful outcomes for inclusion in networks (Private payors);
   - Employers buying outcomes, not just units-of-services, from Preferred Networks
   - The New Bottom Line (2) : Performance → Volume (Access to Preferred Networks) → Revenue
   - Incentive: "The Better You Do, Better Volume Growth, The Better You Do"
2) "Pay-for-Performance" (P4P)
   - Reimbursement for successful outcome or evidence-based process (Medicare)
   - The New Bottom Line (1) : Performance → Revenue
   - Incentive: "The Better You Do, The Better You Do"
3) No Reimbursement for Serious Preventable Adverse Events

The Epidemic of HAI's Results in . . .

- 1.7 million infections in hospitals
  - Most (1.3 million) were outside of ICUs
  - 9.3 infections per 1,000 patient-days
  - 4.5 per 100 admissions
- 99,000 deaths associated with infections
  - 36,000 – pneumonia
  - 31,000 – bloodstream infections
- Mortality: 99,000 > AIDS + MVA + Breast CA
- > $10 Billion (probably approaching $20 Billion)

Public Health Reports

Klevens, Edwards, Richards, et al. Pub Health Rep 2007;122:160-6



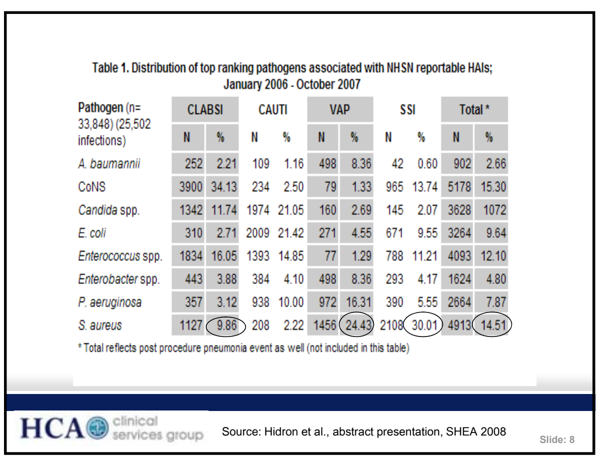
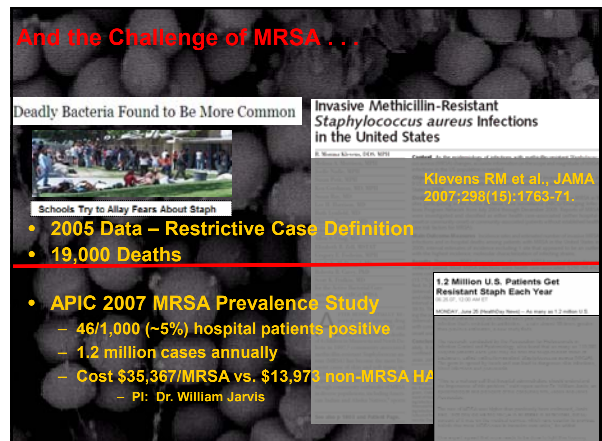
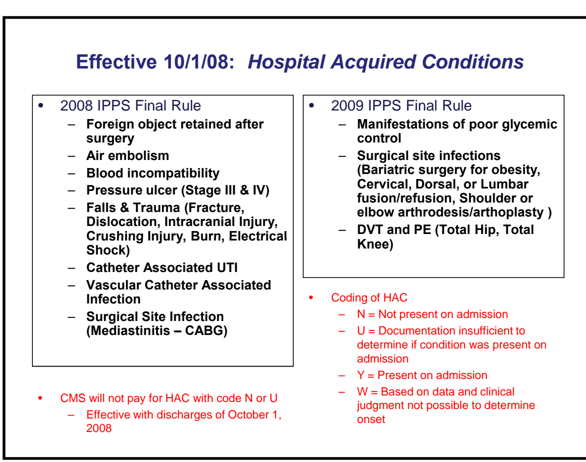


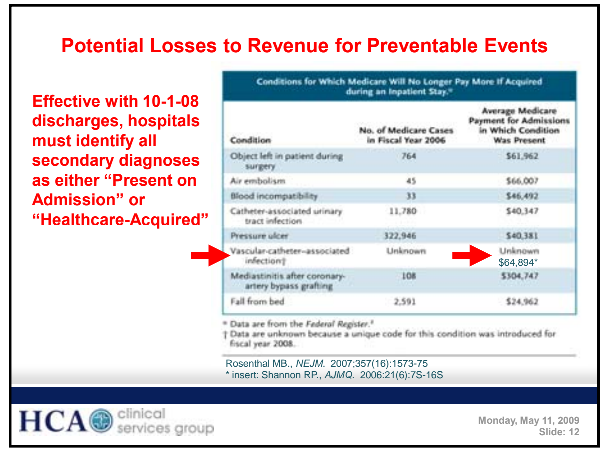
Table 1. Distribution of top ranking pathogens associated with NHSN reportable HAIs; January 2006 - October 2007

Pathogen (n= 33,848) (25,502 infections)	CLABSI		CAUTI		VAP		SSI		Total *	
	N	%	N	%	N	%	N	%	N	%
A. baumannii	252	2.21	109	1.16	498	8.36	42	0.60	902	2.66
CoNS	3900	34.13	234	2.50	79	1.33	965	13.74	5178	15.30
Candida spp.	1342	11.74	1974	21.05	160	2.69	145	2.07	3628	1072
E. coli	310	2.71	2009	21.42	271	4.55	671	9.55	3264	9.64
Enterococcus spp.	1834	16.05	1393	14.85	77	1.29	788	11.21	4093	12.10
Enterobacter spp.	443	3.88	384	4.10	498	8.36	293	4.17	1624	4.80
P. aeruginosa	357	3.12	938	10.00	972	16.31	390	5.55	2664	7.87
S. aureus	1127	9.86	208	2.22	1456	24.43	2108	30.01	4913	14.51

* Total reflects post procedure pneumonia event as well (not included in this table)



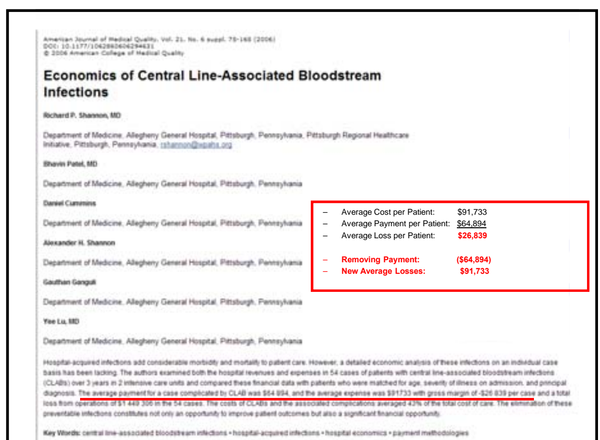




Conditions for Which Medicare Will No Longer Pay More If Acquired during an Inpatient Stay.*

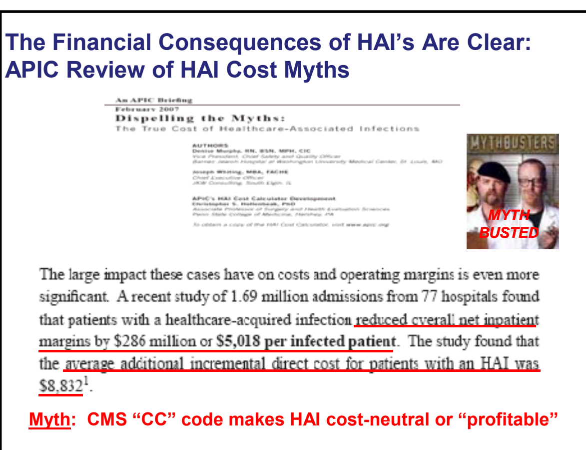
Condition	No. of Medicare Cases in Fiscal Year 2006	Average Medicare Payment for Admissions in Which Condition Was Present
Object left in patient during surgery	764	$61,962
Air embolism	45	$66,007
Blood incompatibility	33	$46,492
Catheter-associated urinary tract infection	11,780	$40,347
Pressure ulcer	322,946	$40,381
Vascular-catheter–associated infection†	Unknown	Unknown $64,894*
Mediastinitis after coronary-artery bypass grafting	108	$304,747
Fall from bed	2,591	$24,962

* Data are from the *Federal Register*.
† Data are unknown because a unique code for this condition was introduced for fiscal year 2008.


American Journal of Medical Quality, Vol. 21, No. 6 suppl. 7S-16S (2006)

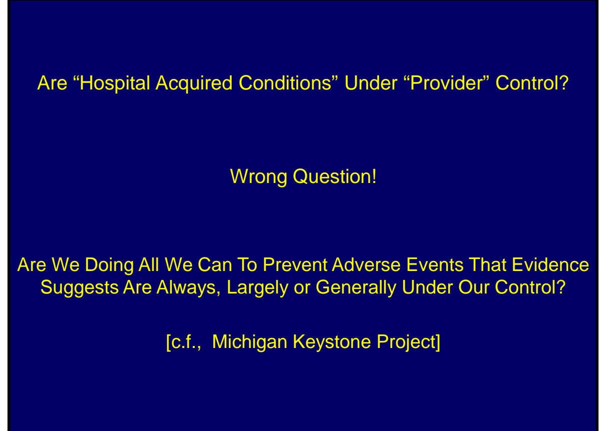
Economics of Central Line-Associated Bloodstream Infections

– Average Cost per Patient: $91,733
– Average Payment per Patient: $64,894
– Average Loss per Patient: $26,839
– Removing Payment: ($64,894)
– New Average Losses: $91,733


The Financial Consequences of HAI's Are Clear: APIC Review of HAI Cost Myths

The large impact these cases have on costs and operating margins is even more significant. A recent study of 1.69 million admissions from 77 hospitals found that patients with a healthcare-acquired infection reduced overall net inpatient margins by $286 million or $5,018 per infected patient. The study found that the average additional incremental direct cost for patients with an HAI was $8,832[1].

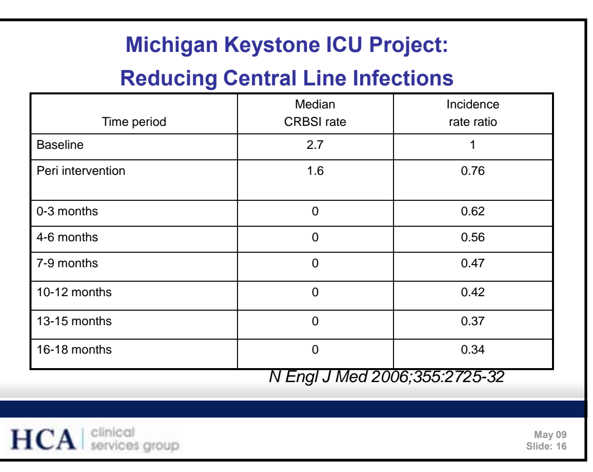
Myth: CMS "CC" code makes HAI cost-neutral or "profitable"


Are "Hospital Acquired Conditions" Under "Provider" Control?

Wrong Question!

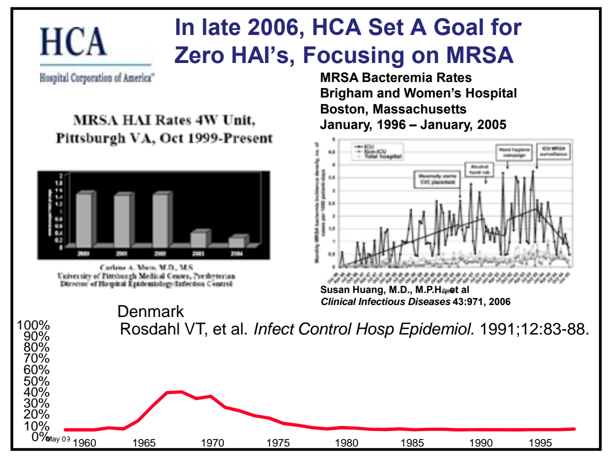
Are We Doing All We Can To Prevent Adverse Events That Evidence Suggests Are Always, Largely or Generally Under Our Control?

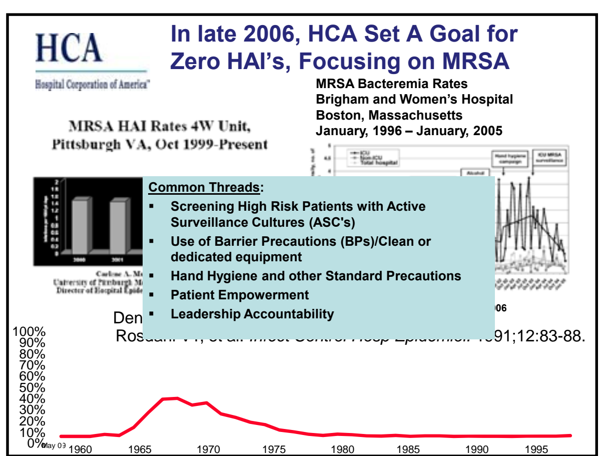
[c.f., Michigan Keystone Project]


Michigan Keystone ICU Project: Reducing Central Line Infections

Time period	Median CRBSI rate	Incidence rate ratio
Baseline	2.7	1
Peri intervention	1.6	0.76
0-3 months	0	0.62
4-6 months	0	0.56
7-9 months	0	0.47
10-12 months	0	0.42
13-15 months	0	0.37
16-18 months	0	0.34

N Engl J Med 2006;355:2725-32

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In late 2006, HCA Set A Goal for Zero HAI's, Focusing on MRSA
MRSA Bacteremia Rates
Brigham and Women's Hospital
Boston, Massachusetts
January, 1996 – January, 2005
MRSA HAI Rates 4W Unit, Pittsburgh VA, Oct 1999-Present
Common Threads:
Screening High Risk Patients with Active Surveillance Cultures (ASC's)
Use of Barrier Precautions (BPs)/Clean or dedicated equipment
Hand Hygiene and other Standard Precautions
Patient Empowerment
Leadership Accountability
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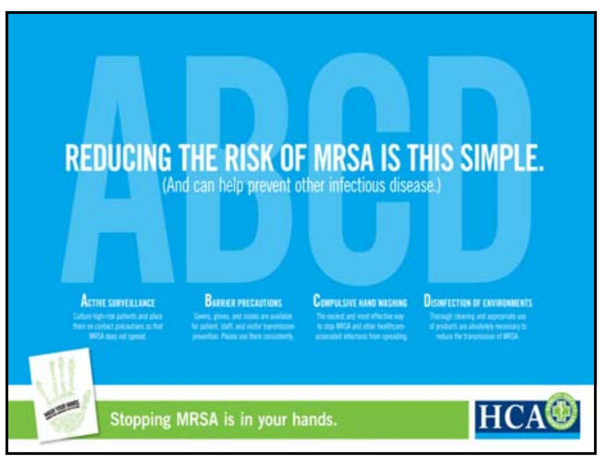
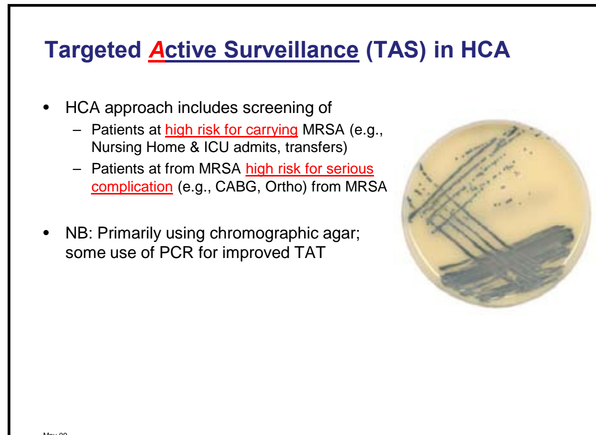

ABCD
REDUCING THE RISK OF MRSA IS THIS SIMPLE.
(And can help prevent other infectious disease.)
Active surveillance
Barrier precautions
Compulsive hand washing
Disinfection of environments
Stopping MRSA is in your hands.
HCA


Targeted Active Surveillance (TAS) in HCA
HCA approach includes screening of
– Patients at high risk for carrying MRSA (e.g., Nursing Home & ICU admits, transfers)
– Patients at from MRSA high risk for serious complication (e.g., CABG, Ortho) from MRSA
NB: Primarily using chromographic agar; some use of PCR for improved TAT
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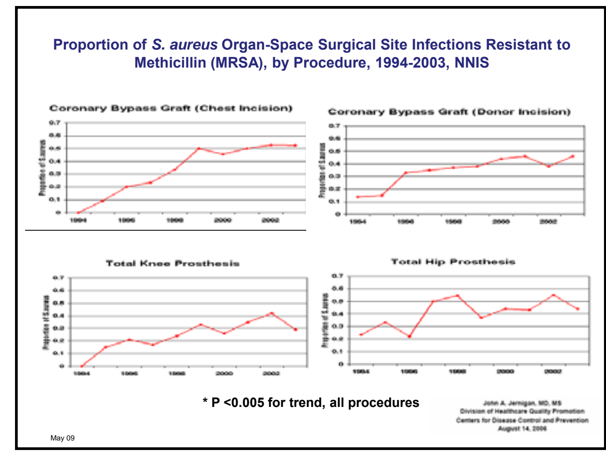
Proportion of S. aureus Organ-Space Surgical Site Infections Resistant to Methicillin (MRSA), by Procedure, 1994-2003, NNIS
Coronary Bypass Graft (Chest Incision)
Coronary Bypass Graft (Donor Incision)
Total Knee Prosthesis
Total Hip Prosthesis
* P <0.005 for trend, all procedures
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Science Re-education:
What MRSA Infections Look Like . . .
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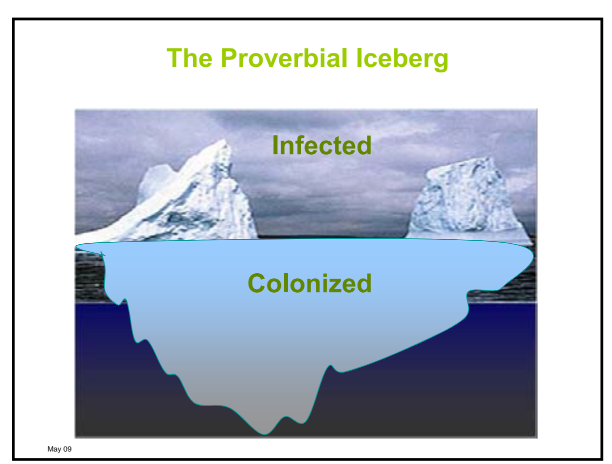
The Proverbial Iceberg
Infected
Colonized
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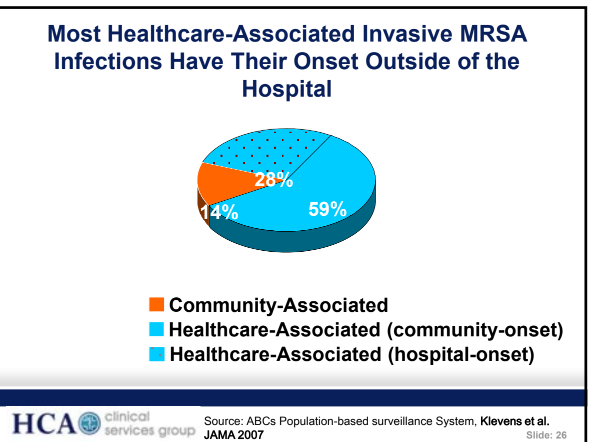
Science Re-education: What MRSA Carriers Look Like . . .



Active Surveillance Debate: *To Screen or Not to Screen?*

- Literature Ambiguous . . .
- Professional Society / Authority Recommendations Mixed
  - SHEA: Original (2003) Guidelines Endorsed Active Surveillance

    CONCLUSION: Active surveillance cultures are essential to identify the reservoir for spread of MRSA and VRE infections and make control possible using the CDC's long-recommended contact precautions (*Infect Control Hosp Epidemiol* 2003;24:362-386).

    - Highly Political, recanted to some degree
  - SHEA/APIC Statement that "screening should not be legislated" misconstrued as recommendation against screening. In fact, it was a recommendation against legislating the practice of medicine!
    - SHEA / APIC Talking Points:

    While reducing the burden of antimicrobial-resistant pathogens including MRSA and VRE is of preeminent importance, APIC and SHEA do not support legislation to mandate active surveillance cultures for MRSA, VRE or other antimicrobial-resistant pathogens.

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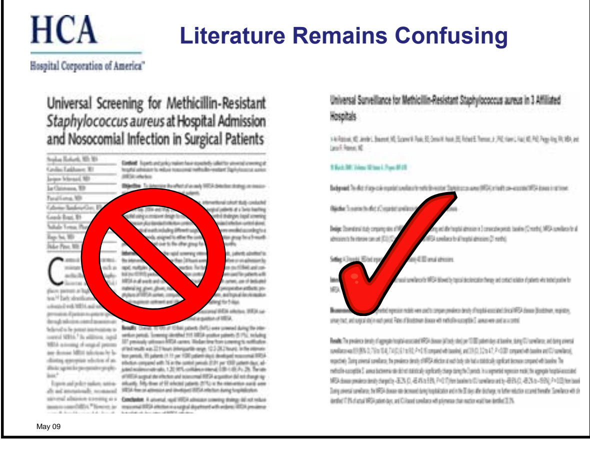

Evidence for Active Surveillance is Class Ib, when other interventions inadequate. (Class IIb, in general)

Management of Multidrug-Resistant Organisms In Healthcare Settings, 2006

Jane D. Siegel, MD; Emily Rhinehart, RN MPH CIC; Marguerite Jackson, PhD; Linda Chiarello, RN MS; the Healthcare Infection Control Practices Advisory Committee

CDC Department of Health and Human Services Centers for Disease Control & Prevention

Prevention and Control of MDRO transmission

Overview of the MDRO control literature. Successful control of MDROs has been documented in the United States and abroad using a variety of combined interventions. These include improvements in hand hygiene, use of Contact Precautions until patients are culture-negative for a target MDRO, active surveillance cultures (ASC), education, enhanced environmental cleaning, and improvements in communication about patients with MDROs within and between healthcare facilities.

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Barrier Precautions

- Isolation of positive patients
- Gown, gloves, and mask with eye protection (per CDC recommendations)
- Standard precautions for all patients
- Pictorial instructions for staff and patients
- Dedicated equipment for MRSA+ patients
- Education on aseptic technique in all areas
- "Ticketing" for non compliance

HCA — Barrier Precautions

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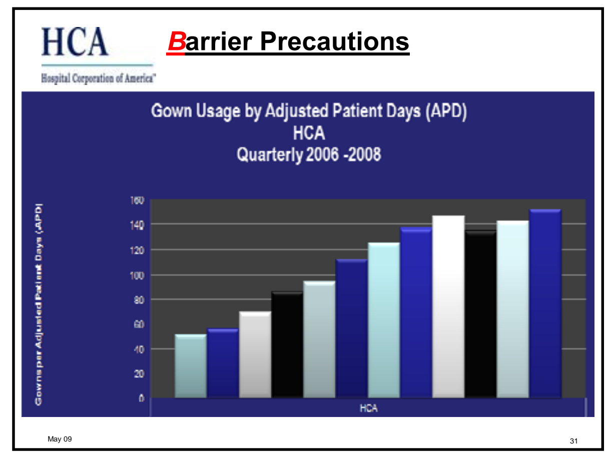

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HCA — Compulsive Hand Hygiene

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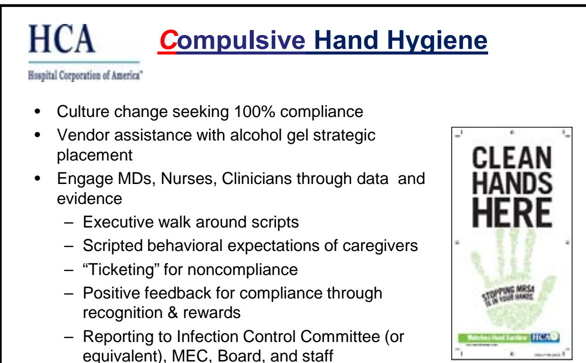

- Culture change seeking 100% compliance
- Vendor assistance with alcohol gel strategic placement
- Engage MDs, Nurses, Clinicians through data and evidence
  - Executive walk around scripts
  - Scripted behavioral expectations of caregivers
  - "Ticketing" for noncompliance
  - Positive feedback for compliance through recognition & rewards
  - Reporting to Infection Control Committee (or equivalent), MEC, Board, and staff
- Encourage patient involvement and questioning of hand hygiene practices of their caregivers

Handwashing Compliance by Health Care workers: The impact of introducing an accessible, alcohol-based hand antiseptic.

Bischoff WE, Reynolds TM, Sessler CN, Edmond MB, Wenzel RP., *Arch Intern Med.* 2000 Apr 10;160(7):1017-21.

- **Under routine hospital conditions handwashing compliance of health care workers including nurses, physicians, and others (eg, physical therapists and radiologic technicians) is unacceptably low.**
- **Baseline handwashing compliance before and after defined events was 9% and 22% for health care workers in the medical ICU and 3% and 13% for health care workers in the cardiac surgery ICU, respectively.**
- **Introduction of increasingly accessible, alcohol-based, waterless hand antiseptic revealed significantly higher handwashing rates (P<.05), and handwashing compliance improved as accessibility was enhanced-before 19% and after 41% with 1 dispenser per 4 beds; and before 23% and after 48% with 1 dispenser for each bed.**
- **HCA added > ½ million hand sanitation stations (to the nearly ½ million existing stations) !**

CLEAN HANDS HERE

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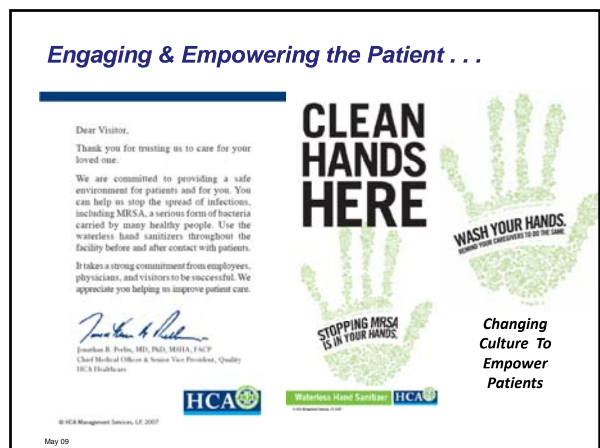
Engaging & Empowering the Patient . . .



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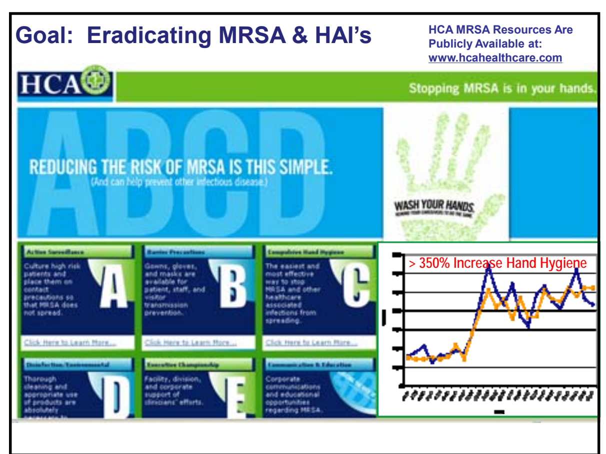
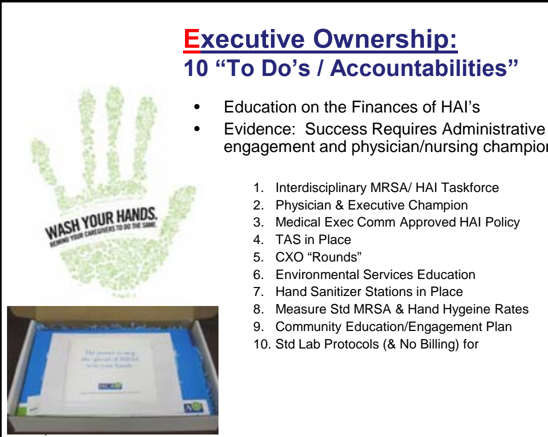
Goal: Eradicating MRSA & HAI's

HCA MRSA Resources Are Publicly Available at: www.hcahealthcare.com



Disinfection / Environmental Cleaning

- Pictorial illustrations of proper cleaning techniques
- Appropriate use of cleaning agents and adhering to vendor specifications
  - Timed disinfection that cannot be thwarted
- Dedicated cleaning staff for a specific area to improve accountability

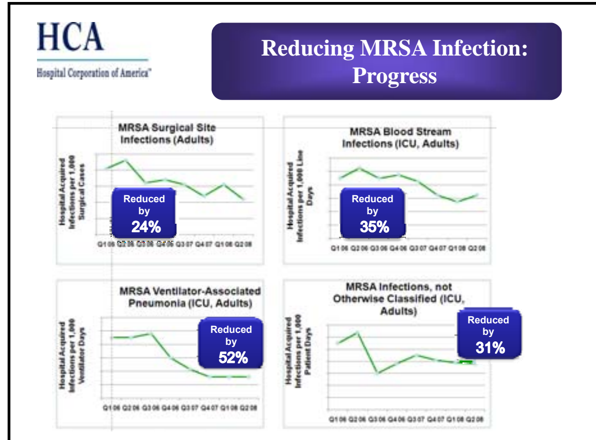


Executive Ownership:
10 "To Do's / Accountabilities"

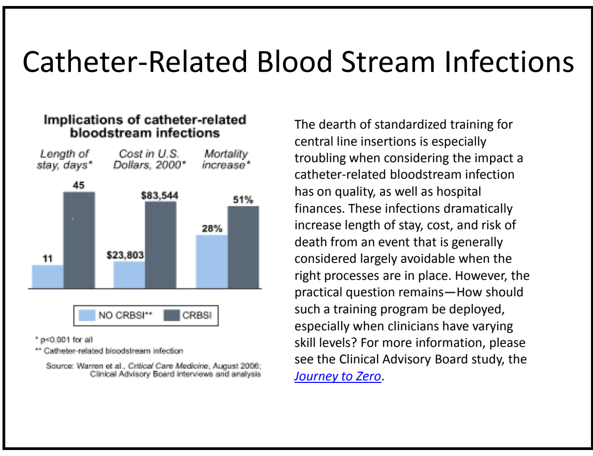
- Education on the Finances of HAI's
- Evidence: Success Requires Administrative engagement and physician/nursing champions

1. Interdisciplinary MRSA/ HAI Taskforce
2. Physician & Executive Champion
3. Medical Exec Comm Approved HAI Policy
4. TAS in Place
5. CXO "Rounds"
6. Environmental Services Education
7. Hand Sanitizer Stations in Place
8. Measure Std MRSA & Hand Hygeine Rates
9. Community Education/Engagement Plan
10. Std Lab Protocols (& No Billing) for

Reducing MRSA Infection: Progress



Catheter-Related Blood Stream Infections



The dearth of standardized training for central line insertions is especially troubling when considering the impact a catheter-related bloodstream infection has on quality, as well as hospital finances. These infections dramatically increase length of stay, cost, and risk of death from an event that is generally considered largely avoidable when the right processes are in place. However, the practical question remains—How should such a training program be deployed, especially when clinicians have varying skill levels? For more information, please see the Clinical Advisory Board study, the *Journey to Zero*.

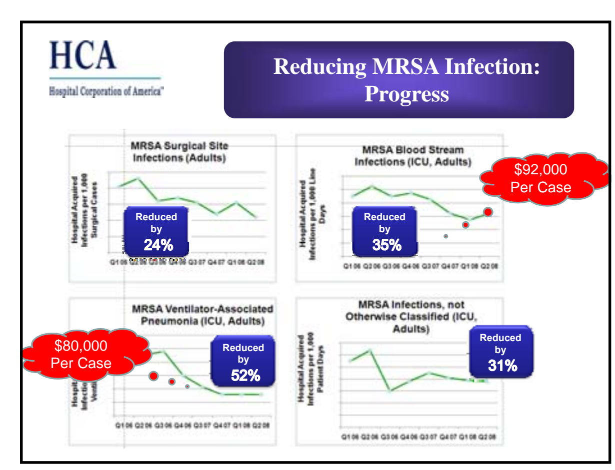
Epidemiology of VAP

- Approximately 300,000 cases annually
- 5–10 cases per 1,000 admissions
- Up to 20 times more common in ventilated patients
- Increases hospitalization costs by $80,000 per patient

McEachern R, Campbell GD. *Infect Dis Clin North Am.* 1998;12:761-779; George DL. *Clin Chest Med.* 1995;1:29-44; Ollendorf D, et al. Poster presented at 41st annual Interscience Conference on Antimicrobial Agents and Chemotherapy. September 22-25, 2001. Abstract K-1126; Warren DK, et al. Poster presented at 39th annual conference of the Infectious Diseases Society of America. October 25-28, 2001. Abstract 829

HCA clinical services group Slide: 41

Reducing MRSA Infection: Progress



HCA Represents Approximately 5% of Inpatient Services in the US

Admission Category	HCA	National	HCA as % of National
Deliveries	249,221	4.3M	5.80%
Inpatient Cardiac Cath	26,691	490,285	5.44%
CABG	12,518	266,072	4.70%
CHF	44,775	1,012,404	4.42%
Joint Replacement	31,128	504,686	6.17%
Total Inpatients	1,765,704	37,067,877	4.76%

*12 Months ending June 30, 2006.

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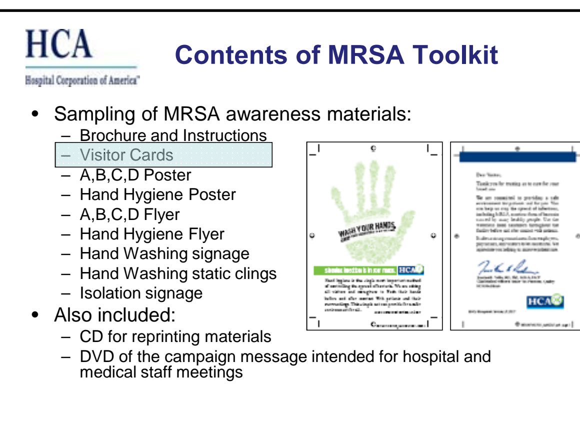
Contents of MRSA Toolkit

- Sampling of MRSA awareness materials:
  - Brochure and Instructions
  - Visitor Cards
  - A,B,C,D Poster
  - Hand Hygiene Poster
  - A,B,C,D Flyer
  - Hand Hygiene Flyer
  - Hand Washing signage
  - Hand Washing static clings
  - Isolation signage
- Also included:
  - CD for reprinting materials
  - DVD of the campaign message intended for hospital and medical staff meetings



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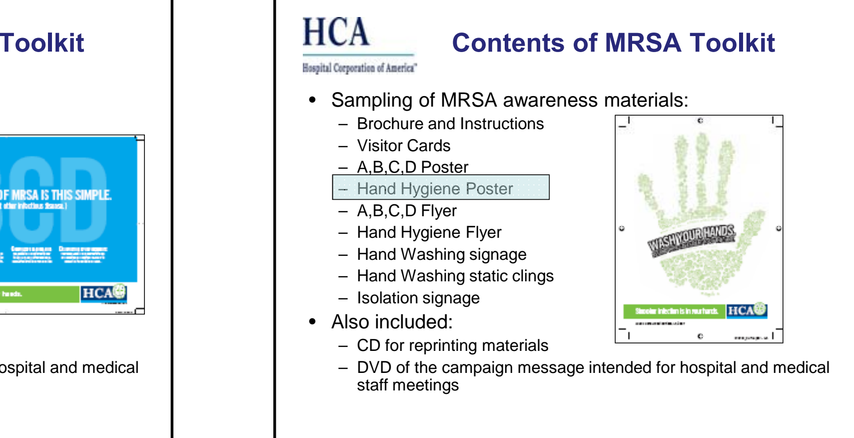

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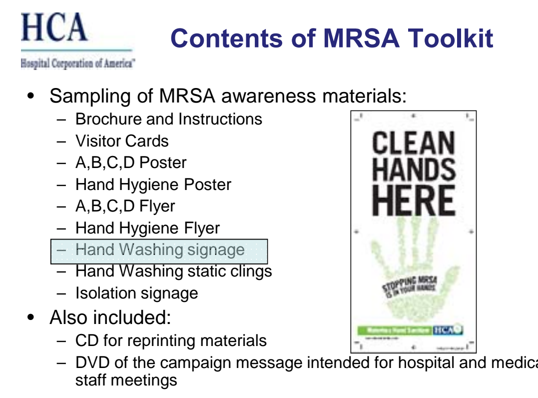

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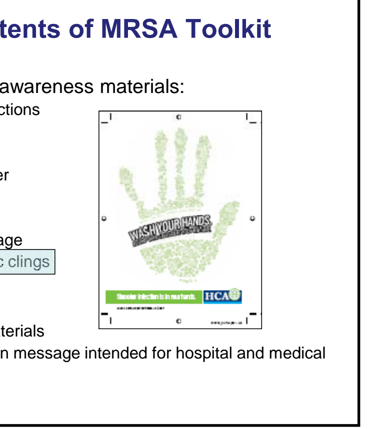

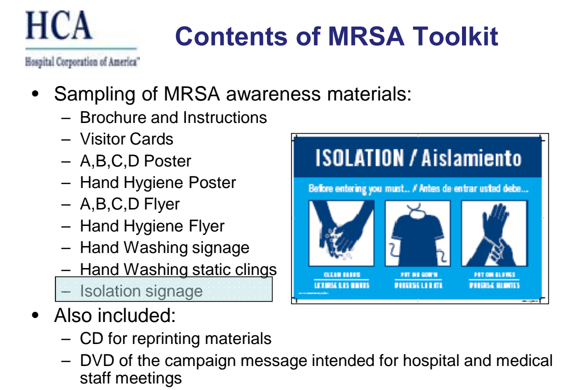
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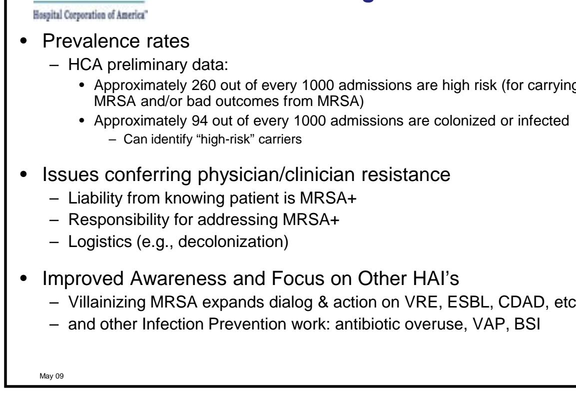
– Brochure and Instructions
– Visitor Cards
– A,B,C,D Poster
– Hand Hygiene Poster
– A,B,C,D Flyer
– Hand Hygiene Flyer
– Hand Washing signage
– Hand Washing static clings
– Isolation signage
ISOLATION / Aislamiento
Before entering you must... / Antes de entrar usted debe...
• Also included:
– CD for reprinting materials
– DVD of the campaign message intended for hospital and medical staff meetings

MRSA News…
THE WALL STREET JOURNAL.
September 17, 2008
Rising Foe Defies Hospitals' War on 'Superbugs'
By Laura Landro
THE NEW YORKER
August 11, 2008
Superbugs
By Jerome Groopman
The new generation of resistant infections is almost impossible to treat.
U.S.News
SEPTEMBER 9, 2008
CDC Campaign Targets MRSA Infections
The New York Times
March 4, 2008
A Bug Rises, and With It a Company
By Andrew Pollack
Patients might not particularly like the new admission procedure at a growing number of hospitals: having what looks like an elongated Q-Tip stuck up their noses....
SUPERBUG KILLS NYC 12-YEAR-OLD
USA TODAY
January 10, 2008
Hospitals marshal resources to wipe out MRSA
By Phil Galewitz, Special for USA TODAY
THE WALL STREET JOURNAL.
SEPTEMBER 3, 2008
Curbing Antibiotic Use In War on 'Superbugs'
By LAURA LANDRO
Hospitals are turning to a new breed of antibiotic SWAT team to win the war against "superbugs" -- the bacteria that are outmaneuvering nearly every weapon in the arsenal of drugs long used to fight them......

HCA clinical services group
CLEAN HANDS ARE COOL HANDS
Kid's Zone | Teachers & Parents
Hey Guys!
Kids Zone
Teachers Parents
Mitchel's Clean Hands TV Spot
CHOOSE A DESTINATION!
5/11/2009
Protected Quality Improvement Data - Do Not Duplicate
51

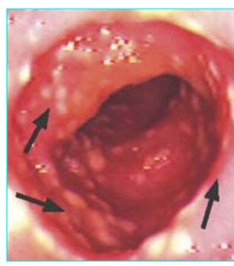
Clean Hands Are Cool Hands Campaign
www.cleanhandsarecoolhands.com
• Collaborative education effort aimed at encouraging hand hygiene in school-age children
– HCA Foundation
– Steris Foundation
• Messengers:
– Mitchel Musso,
• "Hannah Montana" co-star, Oliver
– Dr. Jonathan Perlin
• Materials:
– PSAs
– Interactive website
• Teaching plans
• Posters
• Stickers
• Link to CDC information
• Impact: 46 million "hits" (impressions)
Germs can make you sick. So wash up!
HCA Foundation STERIS
HCA clinical services group
Monday, May 11, 2009
Slide: 52


HCA
Hospital Corporation of America
Process Learnings . . .
• Prevalence rates
– HCA preliminary data:
• Approximately 260 out of every 1000 admissions are high risk (for carrying MRSA and/or bad outcomes from MRSA)
• Approximately 94 out of every 1000 admissions are colonized or infected
– Can identify "high-risk" carriers
• Issues conferring physician/clinician resistance
– Liability from knowing patient is MRSA+
– Responsibility for addressing MRSA+
– Logistics (e.g., decolonization)
• Improved Awareness and Focus on Other HAI's
– Villainizing MRSA expands dialog & action on VRE, ESBL, CDAD, etc.
– and other Infection Prevention work: antibiotic overuse, VAP, BSI
May 09

HCA
Hospital Corporation of America
Hospital Acquired Infection (HAI) Atlas Website
HCA
"I'm asking you to help us stop the spread of CDI"
Jonathan B. Perlin, MD, PhD, MSHA,FACP
Chief Medical Officer, and President, Clinical Services Group
WASH YOUR HANDS
Clostridium difficile
What is it?
Present on Admission (POA)
Healthcare-Acquired Conditions...
2008 Flu Vaccine Planning
What is the Plan?

Hospital-Associated *C. difficile* Diarrhea and Colitis

- 10%-30% of healthcare associated diarrhea is caused by *C. difficile*
- 50%-75 of cases of antibiotic-associated colitis are caused by the organism
- 90% of pseudomembranous colitis are caused by *C. diff* with adherent intestinal plaques composed of neutrophils, fibrin, mucin and cell debris in areas of mucosal destruction



Scope of the Problem

- Leading identified cause of infectious nosocomial diarrhea, 10-12 million cases/yr
- Occurrence of diarrhea in hospitalized patients who receive antibiotics: 3%–29%[1]
- Mortality due to CDAD ranges from 6%–30% when pseudomembranous colitis is shown to be present[1]
- Hospital costs attributable to C. difficile are an estimated $1,200 per day[2]
- The average length of stay is prolonged by 8.7 days
- Recurrences typically occur 3-21 d after recovery from first bout (mean 6 d) with rate of subsequent recurrence rate of > 50% often over years
- Annual cost $1.1 billion/yr

HCA clinical services group

1. Aslam S et al. *Lancet Infect Dis.* 2005;5:549-557.
2. Weinberg E et al. *Am J Gastroenterol.* 2006;101:S196.

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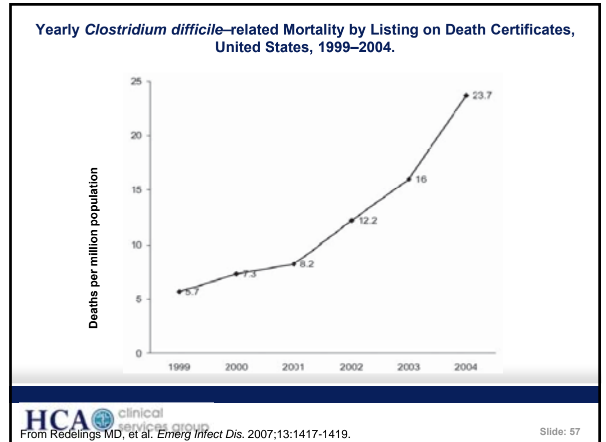
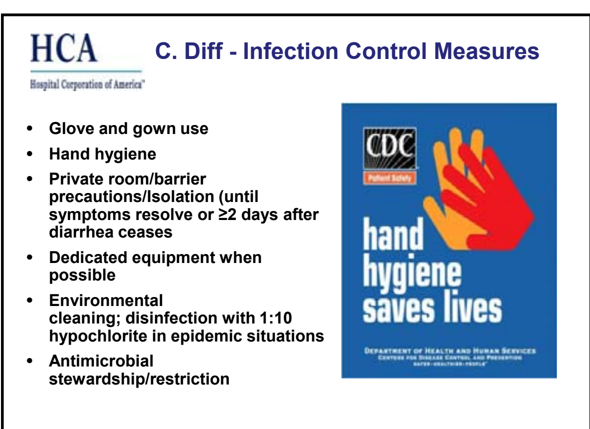




C. difficile – HCA's 2009 "ABC's" Bundle 2

Antimicrobial Stewardship

Barrier precautions

Compulsive hand hygiene

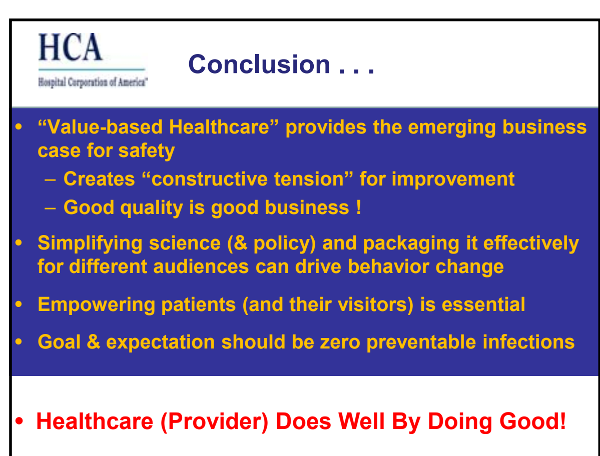
Disinfection of environment

Executive ownership

ABCs to Eradication	Key Actions	Key Actors
Appropriate Antibiotic Selection	1. Order set development 2. Medication use evaluation	Pharmacy, Physician Champion
Barrier Precautions	Gowns, gloves	All patient care personnel
Compulsive Hand Hygiene	Hand hygiene, every patient, every time	All patient care personnel
Disinfection of Environment	Cleaning patient environment areas using appropriate agents for the appropriate amount of time	Environmental Services and patient care personnel
Executive Ownership	Oversight of implementation, mitigating barriers	Executive Sponsor

Safety is in Our Hands . . .
HCA MRSA Resources Are Publicly Available at: www.hcahealthcare.com
HCA
Stopping MRSA is in your hands
We can't buy enough gowns, gloves and masks not to have a positive ROI… and for the patient, priceless!
What is it?
V.A.P Reduction...
How to Prevent...
www.hcahealthcare.com
May 09

Close Calls: The Opportunity to Turn Back Time . . .
Meditech Risk, ASC SQI or New Anonymous Internet Form


HCA
Hospital Corporation of America
Conclusion . . .
• "Value-based Healthcare" provides the emerging business case for safety
– Creates "constructive tension" for improvement
– Good quality is good business !
• Simplifying science (& policy) and packaging it effectively for different audiences can drive behavior change
• Empowering patients (and their visitors) is essential
• Goal & expectation should be zero preventable infections
• Healthcare (Provider) Does Well By Doing Good!