

Infection Control for the Surgeon

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Outline

- Paradigm shift in NI prevention
- SSI risk reduction
 - SCIP
 - Perioperative antibiotics
 - Perioperative glycemic control
 - Preoperative hair removal
 - Perioperative normothermia
 - Surgical Hand antisepsis
 - Perioperative normothermia
- Implementation of process measures and risk reduction strategies
 - BSI,UTI,VAP
- *S.aureus*/MRSA SSI
- Control of MDROs through ASC
- Mandatory public reporting of NIs

HAIs in the US Annually

Site	Infections		Deaths	
	N	%	N	%
UTI	561,667	36%	13,088	32%
SSI	290,485	20%	8,205	22%
Bloodstream	248,678	11%	30,665	14%
Pneumonia	250,205	11%	35,967	15%
Other	386,090	22%	11,062	17%
TOTAL	1,737,125	100%	98,987	100%

Shifting Vantage Points on Nosocomial Infections

Many infections are inevitable, although some can be prevented



Each infection is potentially preventable unless proven otherwise

Sadly, we as medical
professionals and
health systems
frequently do not
practice well known
nosocomial infection risk
reduction practices

Surgical Site Infections

- 2% of surgical procedures are complicated by a surgical site infection
- Mean cost = \$10,443

Klevens RM et al. Pub Health Reports 2007;122:160-166.

Anderson DJ et al. Infect Control Hosp Epidemiol 2007;28:767-773.

SCIP

Surgical Care Improvement Project

- A national partnership of organizations to improve the safety of surgical care by reducing post-operative complications
- Goal: reduce surgical complications 25% by 2010
- Initiated in 2003 by CMS & CDC
 - Steering committee of 10 national organizations
 - >20 additional organizations provide technical expertise
- Strategy: Surgeons, anesthesiologists, periop nurses, pharmacists, infection control professionals, & hospital executives work together to improve surgical care
- Target areas: Surgical site infections, perioperative adverse cardiac events, deep venous thrombosis, postoperative pneumonia

SCIP Measures

1	Perioperative antibiotic prophylaxis	Antibiotic given within 1 hour prior to incision
2		Appropriate antibiotic selected
3		Antibiotic discontinued within 24 hrs of surgery end time (48 hrs for cardiac surgery)
4	Glycemic control	Cardiac surgery patients with 6 AM glucose \leq 200 mg/dL on postop day 1 & 2
5	Appropriate hair removal	No hair removal, or hair removal with clippers or depilatory
6	Normothermia	Colorectal surgery patients with T \geq 96.8°F within the first hour after leaving the OR
7	Perioperative β -blockers	Patients on a β -blocker prior to admission who received a β -blocker 24 hrs prior to incision through discharge from PACU
8	DVT prophylaxis	Patients with recommended DVT prophylaxis ordered during the admission
9		Patients who received appropriate DVT prophylaxis within 24 hours prior to <i>Surgical Incision Time</i> to 24 hours after <i>Surgery End Time</i>

SCIP



- A national partnership of organizations to improve the safety of surgical care
- Goal: reduce the incidence of surgical complications by 25 percent by the year 2010
- Initiated in 2003 by the Centers for Medicare & Medicaid Services (CMS) & the Centers for Disease Control & Prevention (CDC)
 - Steering committee of 10 national organizations
 - More than 20 additional organizations provide technical expertise

Monetary incentives for promoting quality and compliance with SSI risk reduction guidelines:

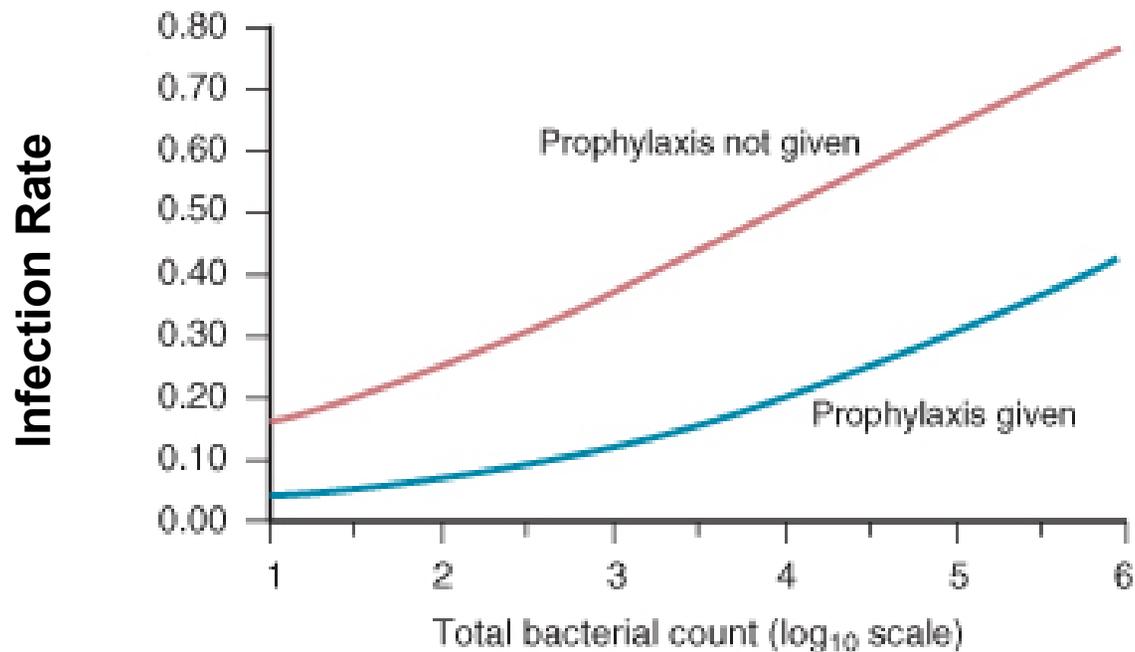


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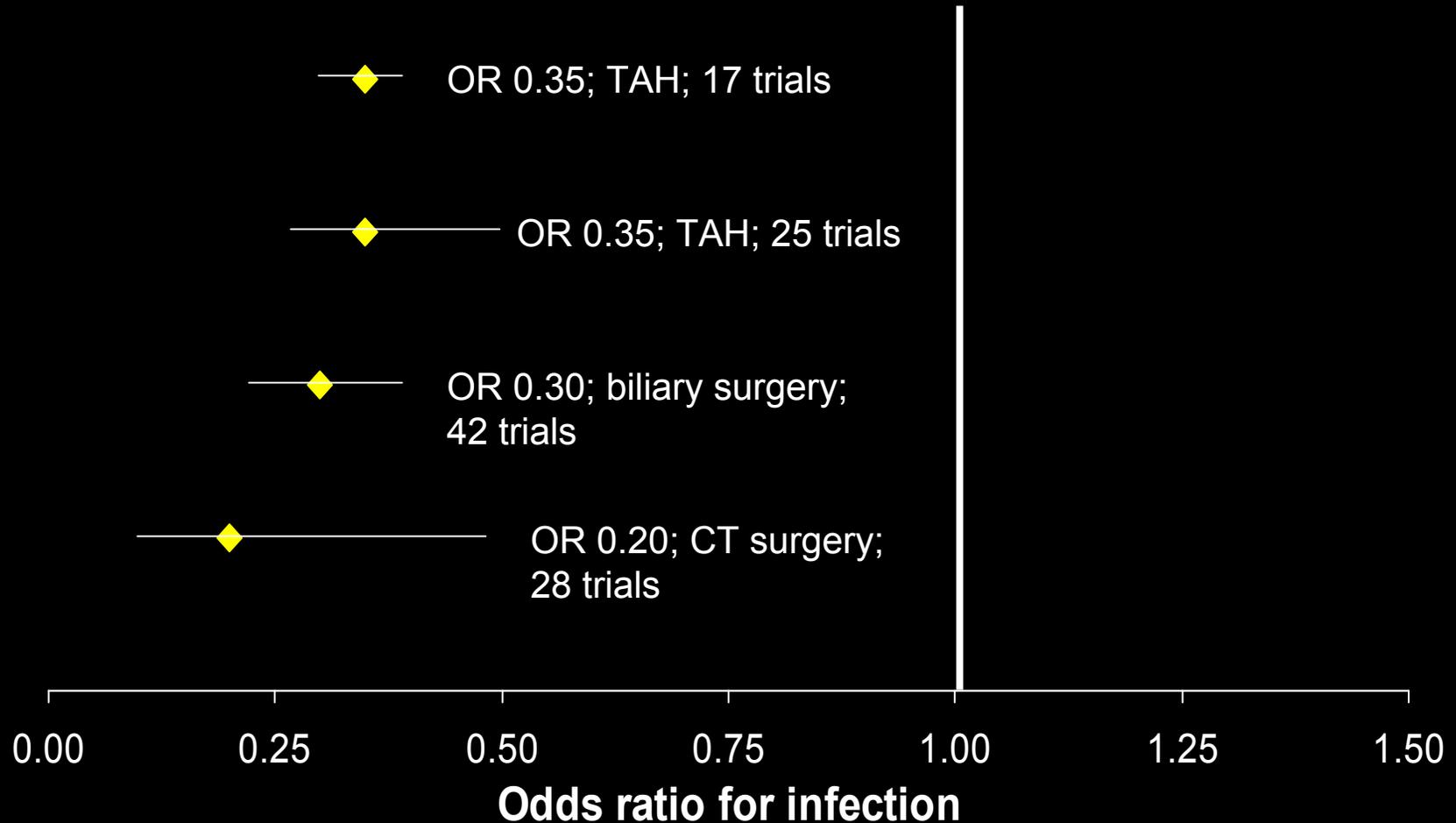
In recent years, the healthcare industry has placed a stronger emphasis on reducing medical errors, monitoring everything from how long doctors sleep to whether or not their handwriting is legible. Now one organization is not only recognizing the hospitals that follow patient safety and clinical guidelines, but rewarding them for doing so. Anthem Blue Cross and Blue Shield recently gave a total of \$6 million to 16 Virginia hospitals as part of the company's new Quality-In-Sights Hospital Incentive Program (Q-HIP).

Perioperative Antibiotics

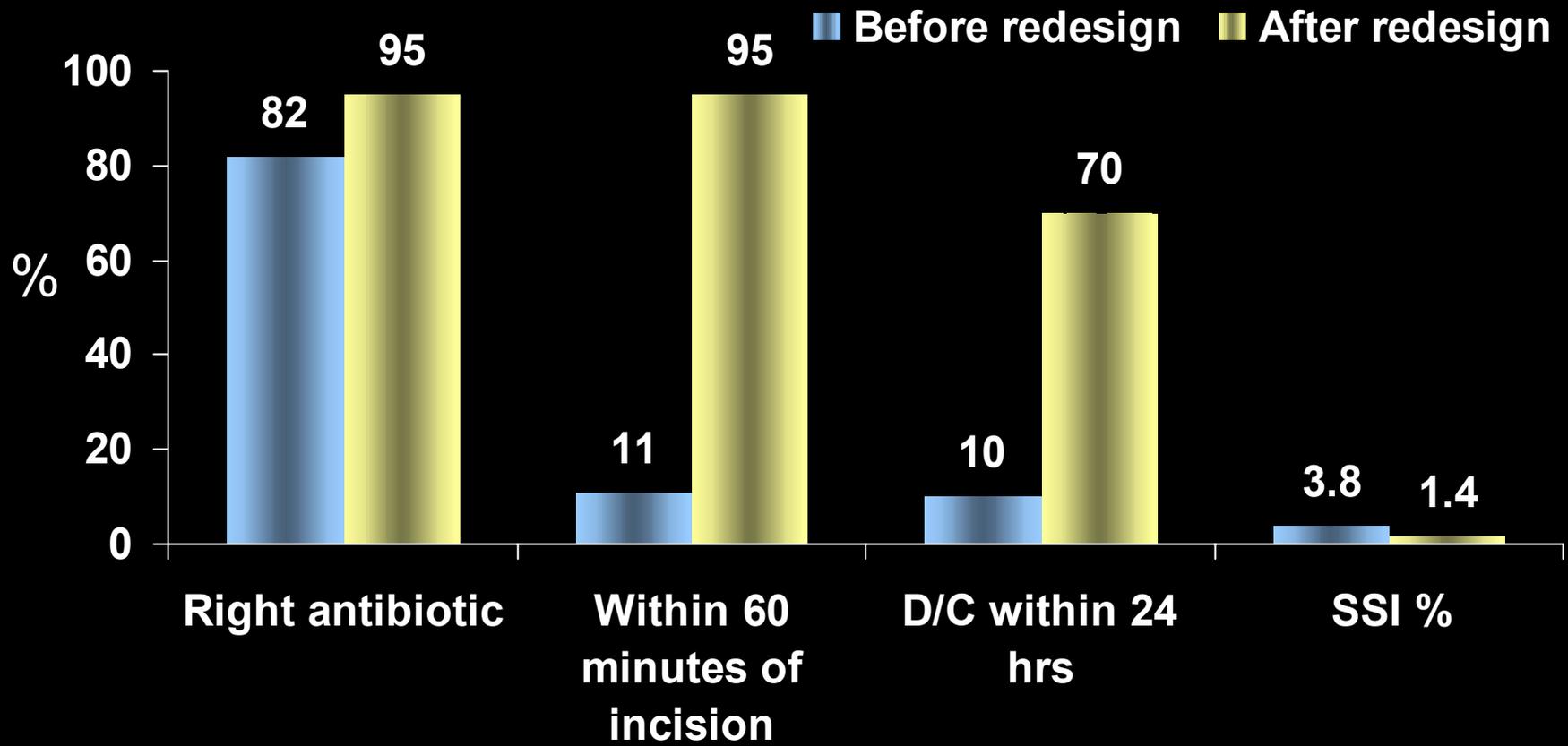


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Meta-analyses: Antibiotic Prophylaxis vs Placebo



Effect of Appropriate Perioperative Antibiotic Prophylaxis at a 650-bed Tertiary Care Hospital



Appropriate Antibiotic Prophylaxis

Procedure	Approved Antibiotics	Approved for β -lactam allergy
Cardiac	<ul style="list-style-type: none"> •Cefazolin •Vancomycin* 	<ul style="list-style-type: none"> •Vancomycin •Clindamycin
Vascular		
Hip/Knee arthroplasty		
Colon	Oral: <ul style="list-style-type: none"> •Neomycin + erythromycin •Neomycin + metronidazole Parenteral: <ul style="list-style-type: none"> •Cefoxitin •Cefazolin + metronidazole 	<ul style="list-style-type: none"> •Clindamycin + gentamicin •Clindamycin + levofloxacin •Metronidazole + gentamicin •Metronidazole + levofloxacin
Hysterectomy	<ul style="list-style-type: none"> •Cefazolin •Cefoxitin 	<ul style="list-style-type: none"> •Clindamycin + gentamicin •Clindamycin + levofloxacin •Metronidazole + gentamicin •Metronidazole + levofloxacin •Clindamycin

*requires documentation of justification

Process Indicators: Timing of First Antibiotic Dose

Infusion should begin within 60 minutes of the incision

- Little controversy regarding this indicator

Process Indicators:

Duration of Antimicrobial Prophylaxis

Prophylactic antimicrobials should be discontinued within 24 hrs after the end of surgery

- Areas of controversy:
 - ASHP recommends continuing prophylaxis for CT surgery procedures for up to 72 hrs after the operation; Society of Thoracic Surgeons recommends 48 hrs

Perioperative Glycemic Control

Perioperative Glucose Control

- Poor glucose control has been shown to be an *independent* risk factor for SSI in multiple studies
- Risk is increased due to vascular disease, neutrophil dysfunction, impairment of complement & antibodies
- Intervention: maintain glucose at 151-200 mg/dL via a continuous insulin infusion

Perioperative Glucose Control

- **141** diabetic patients undergoing CABG were randomized to tight glycemic control (125-200 mg/dL) with GIK or standard therapy (<250 mg/dL) using SQ SSI beginning before anesthesia & continuing for 12 hours after surgery

	SSI	GIK	P
Infection (wound, pneumonia)	13%	0%	0.01
Post-op LOS	9.2 days	6.5 days	0.001
Mortality	0%	0%	0.99

Perioperative Glucose Control

- 2,467 diabetic patients undergoing cardiac surgery at a community hospital
 - 968 patients treated with sliding scale insulin (1987-91)
 - 1499 patients treated with CII to target glucose of 150-200 until POD 3 (1991-97)

	SSI	CII	P
Wound infection	1.9%	0.8%	0.01
LOS	10.7 days	8.5 days	<0.01
Mortality	6.1%	3.0%	0.03

Furnary AP et al. Ann Thorac Surg 1999;67:352-360.

Perioperative Glycemic Control

- An increasing body of evidence demonstrates that tight glycemic control of blood glucose improves overall outcomes for patients with DM.
- The best quality data currently available is in the CT surgical literature
- Data appear promising but quality studies in the non-cardiac surgical populations are not yet available.

Preoperative Hair Removal

Preoperative Hair Removal

Category I A: Strongly recommended for implementation; supported by well designed, experimental, clinical or epidemiologic studies.



Not removing hair from the surgical site unless necessary to facilitate surgery.

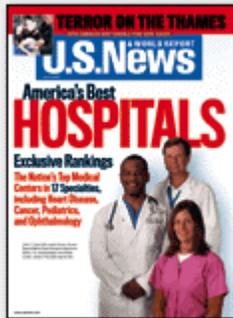
If hair is to be removed, then this should be done immediately before surgery and preferably with electric scissors and not by shaving.



CDC Hospital Infection Control Practices Advisory Committee Guideline for Prevention of Surgical Site Infection.

AJIC 1999;27:97-134.

July 2000 Bulletin of the American College of Surgeons



Much Cleaner Cuts

PROBLEM: Infection related to surgery ● **PROPOSAL:** Better use of antibiotics, don't shave with razor prior to surgery, tighten control of blood sugar ● **POSSIBLE LIVES SAVED: 8,000**

A hospital is a risky place for people who have had surgery. No matter how much antibacterial solution is painted on before the first cut, opening the body invites lurking microbes. Infections at the surgery site complicate an estimated 780,000 operations a year, or more than 1 in every 40 procedures. For abdominal surgery, the likelihood is as high as 1 in 5. And the complications are tough to

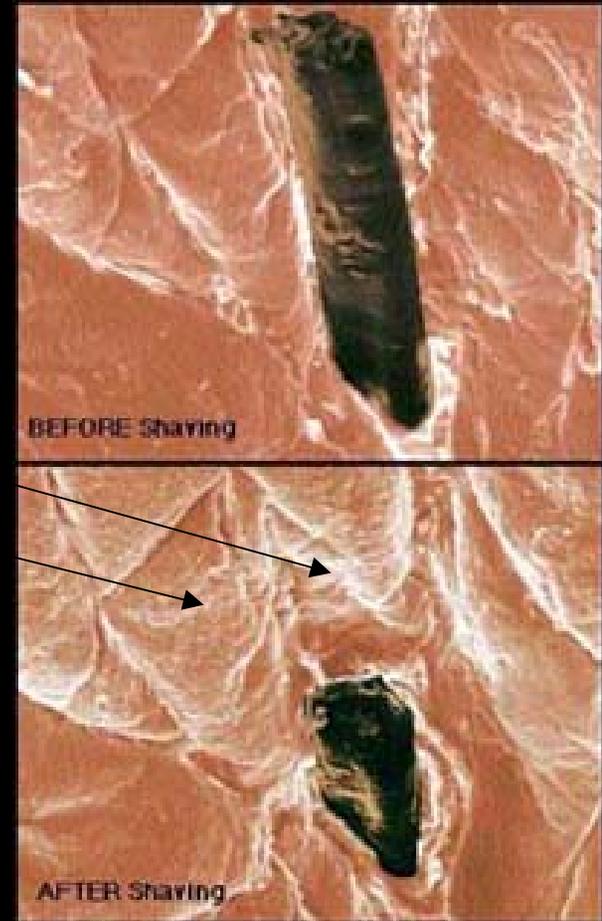


treat. Infected patients are two to three times more likely to die and are hospitalized an average of seven days longer than uninfected patients who had the same operation.

Even before the 100K campaign got underway, IHI had been working with a group of 56 hospitals on strategies to lower the rate of surgical-site infections. Results of the yearlong effort, published last month in the *American Journal of Surgery*, showed a re-

Pathophysiology of Shaving & SSI

- Hair removal with a razor can disrupt skin integrity
- Microscopic exudative rashes and skin abrasions can occur during hair removal.
- These rashes and skin abrasions can provide a portal of entry for microorganisms



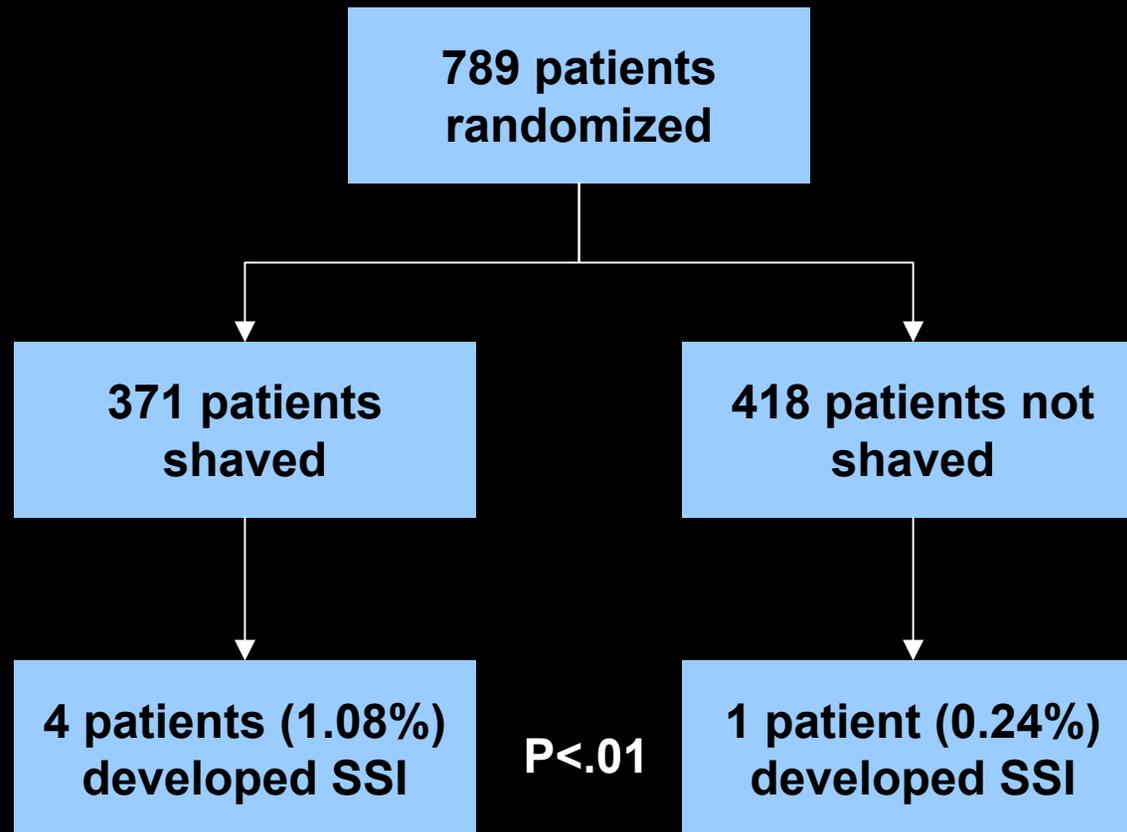
Cochrane Database of Systematic Reviews: Preoperative Hair Removal and SSIs

Trial	Result
3 trials compared hair removal with razor or depilatory cream vs no hair removal	No significant difference in SSI
3 trials compared hair removal with clippers vs shaving	Increased risk of SSI with Shaving (RR=2.02)
7 trials compared hair removal with shaving vs depilatory cream	Increased risk of SSI with Shaving (RR=1.54)
One trial each compared shaving the night before vs day of surgery, and clipping the day before vs day of surgery	No significant difference in SSI

Cochrane Database of Systematic Reviews: Preoperative Hair Removal and SSIs

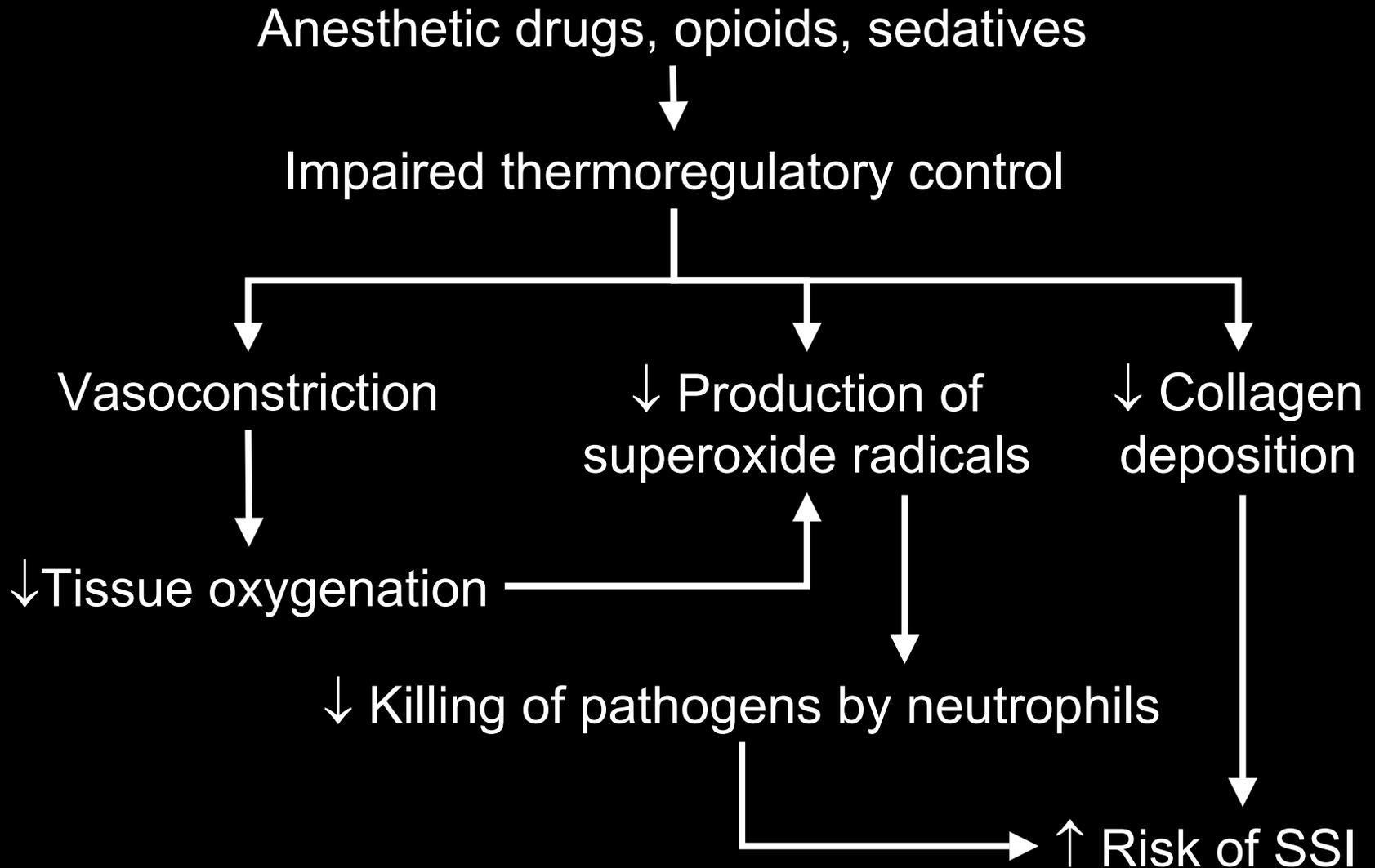
- No difference in SSI in those that have had hair removed prior to surgery vs those who have not.
- If hair removal is necessary then clipping and depilatory creams result in fewer SSIs than shaving with a razor
- There is no difference in SSI if hair is removed one day prior or on the day of surgery

Effect of Shaving in Spinal Surgery



Perioperative Normothermia

Physiologic Effects of Hypothermia



Perioperative Normothermia

- Blinded, randomized trial of 421 patients undergoing clean surgery (breast, varicose vein or hernia) comparing routine preoperative care to systemic warming (forced air warming blanket 30 minutes preop) to local warming (30 minute preop warming of planned incision with a radiant dressing)

	Non-warmed	Local warming	Systemic warming	P
Infection rate	14%	4%	6%	0.001
		5%		

Perioperative Normothermia

- Double-blinded, randomized trial of 200 patients undergoing colorectal surgery comparing routine intraoperative thermal care (34.5°C) to normothermia (36.5°C) using a forced air cover and heated fluids

	Hypothermia	Normothermia	P
Infection rate	19%	6%	0.009

Surgical Hand Antisepsis

Surgical Hand Antisepsis

Surgical hand antisepsis using either an antimicrobial soap (2-5 minute scrub) or an alcohol-based handrub with persistent activity is recommended before donning sterile gloves when performing surgical procedures.

Category I B recommendation

Surgical Hand Antisepsis

Study	Findings
<ul style="list-style-type: none">•Meers et al. J Hygiene 1978•Kikuchi et al. Acta Derm Venereol 1999	Surgical hand preparation requiring scrubbing with a brush damages the skin and leads to increased shedding of bacteria and squamous epithelial cells
<ul style="list-style-type: none">•Dineen,P. Surg Gynecol Obstet 1973•Bornside GH. Surgery 1968	Scrubbing with a disposable sponge or combination sponge-brush has reduced bacterial counts on the hands as effectively as scrubbing with a brush.
<ul style="list-style-type: none">•Mulberry et al. Am J Infect Control 2001•Loeb et al. Am J Infect Control 1997	Neither brush nor sponge is necessary to reduce bacterial counts on the hands of surgical staff to acceptable levels

Comparison of Different Regimens for Surgical Hand Preparation

- Prospective clinical trial comparing a traditional surgical scrub with chlorhexidine vs. a short application without scrub of a waterless, alcohol-based hand preparation (waterless hand rub)
- Waterless hand rub:
 - Caused less skin damage ($P=0.002$)
 - Produced lower microbial counts postscrub at days 5 ($P=0.002$) & 19 ($P=0.02$)
 - Required less time (1.3 minutes vs. 2.4 minutes; $P<0.0001$)
 - Was preferred by surgical staff ($P=0.001$)
 - Was cheaper

Alcohol-based Hand Rub vs Traditional Scrub

Prevention of Surgical Site Infection

- Prospective, randomized equivalence trial comparing comparing the effectiveness of waterless, alcohol-based hand rub vs traditional scrub (betadine or chlorhexidine) to prevent SSI
- 4,387 consecutive patients who underwent clean and clean contaminated surgery
- Findings:
 - Alcohol hand rub was as effective as traditional scrub in preventing SSIs in a 30 day follow-up
 - Alcohol hand rub was better tolerated by surgical teams
 - Alcohol hand rub can be safely used as an alternative to traditional surgical hand-scrubbing

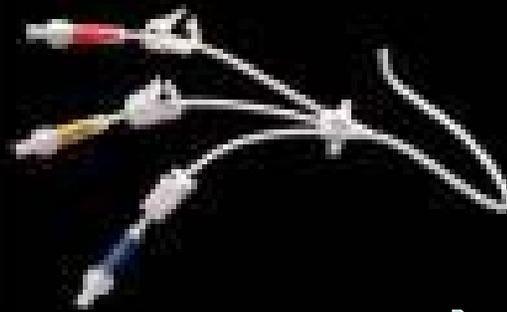
Nosocomial Bloodstream Infections

**The risk factors
interact in a
dynamic fashion**

**The CVC is the
greatest risk
factor for
Nosocomial BSI**

Host

The CVC: Subclavian, Femoral and IJ sites



The intensity of the Catheter Manipulation

**As the host cannot be altered, preventive measures are focused on risk factor
modification of catheter use, duration, placement and manipulation**

Nosocomial Bloodstream Infections

- 12-25% attributable mortality
- Risk for bloodstream infection:

Device	BSI per 1,000 catheter/days
Central venous SQ port	0.1
Peripheral IV	0.5
PICC (outpatient setting)	1.0
Noncuffed, rifampin/minocycline CVC	1.2
Noncuffed, chlorhexidine/silver sulfadiazine CVC	1.6
Cuffed, tunneled CVC	1.6
PICC (inpatient setting)	2.1
Noncuffed, nonmedicated CVC	2.7
Pulmonary artery catheter	3.7
Temporary dialysis catheter	4.8

Risk Factors for Nosocomial BSIs

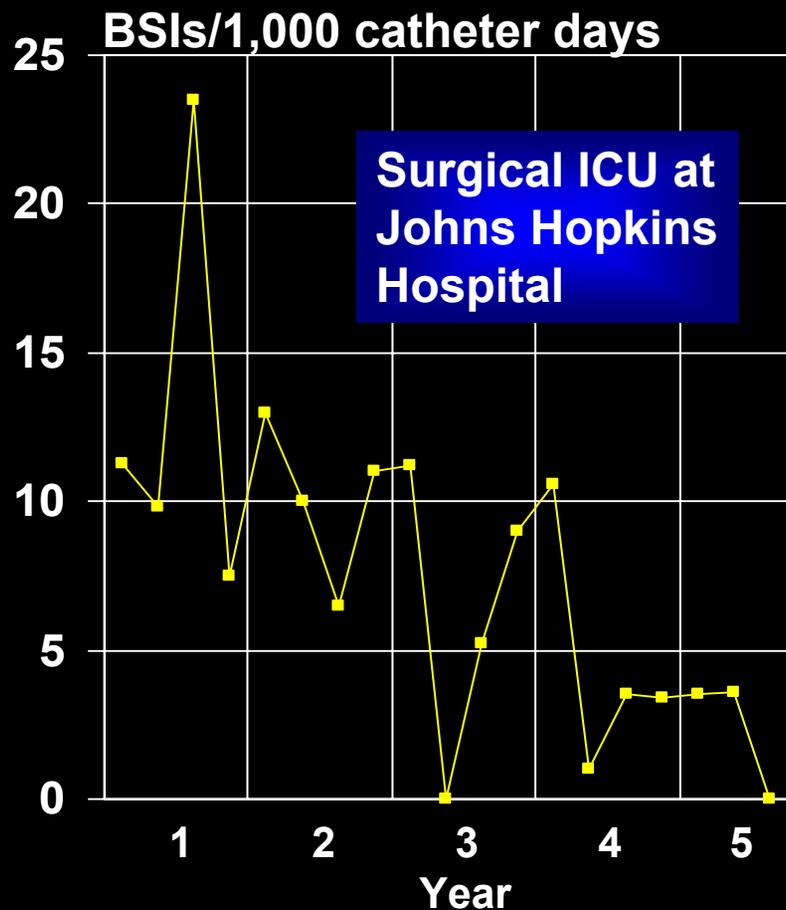
- Heavy skin colonization at the insertion site
- Internal jugular or femoral vein sites
- Duration of placement
- Contamination of the catheter hub

Prevention of Nosocomial BSIs

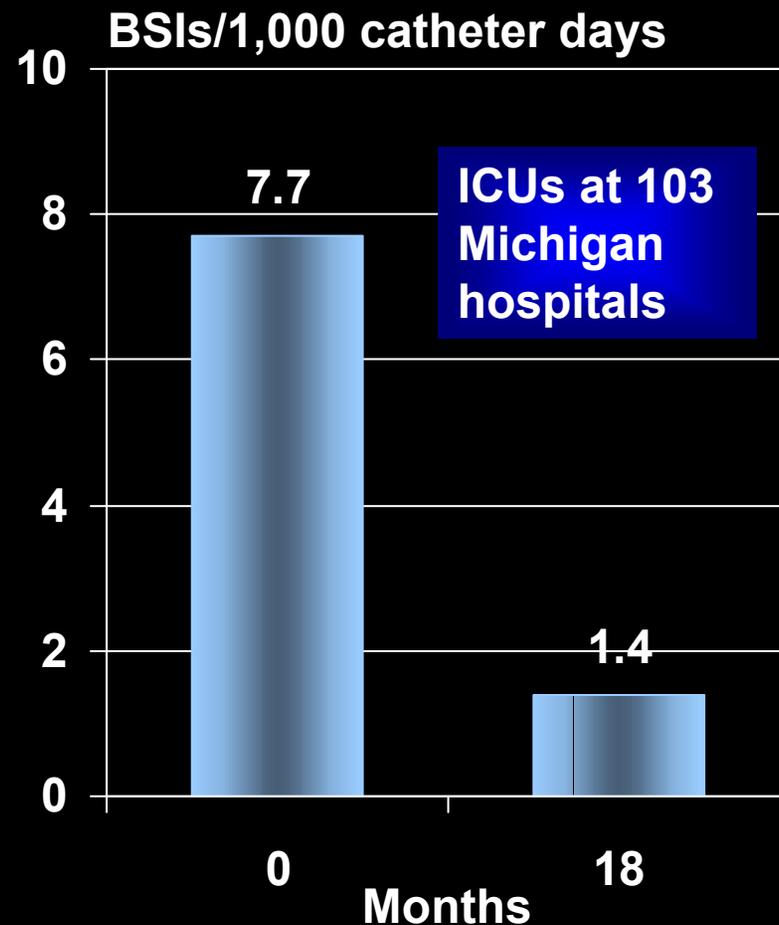
Hopkins Model (Central Line Bundle)

- Creation of a central line insertion cart
- Use of a insertion checklist to ensure:
 - Hand hygiene prior to the procedure
 - Sterile gloves, gown, mask, cap, full-size drape
 - Chlorhexidine skin prep of the insertion site
 - Use of subclavian vein as the preferred site
- Bedside nurse empowered to stop the procedure if a step is missed
- Ask every day during rounds whether catheters can be removed

Practice Standardization Leads to Major Reduction in ICU CR-BSIs



Berenholtz SM et al. Crit Care Med 2004;32:2014-20.



Pronovost P. New Engl J Med 2006; 355:2725-32.

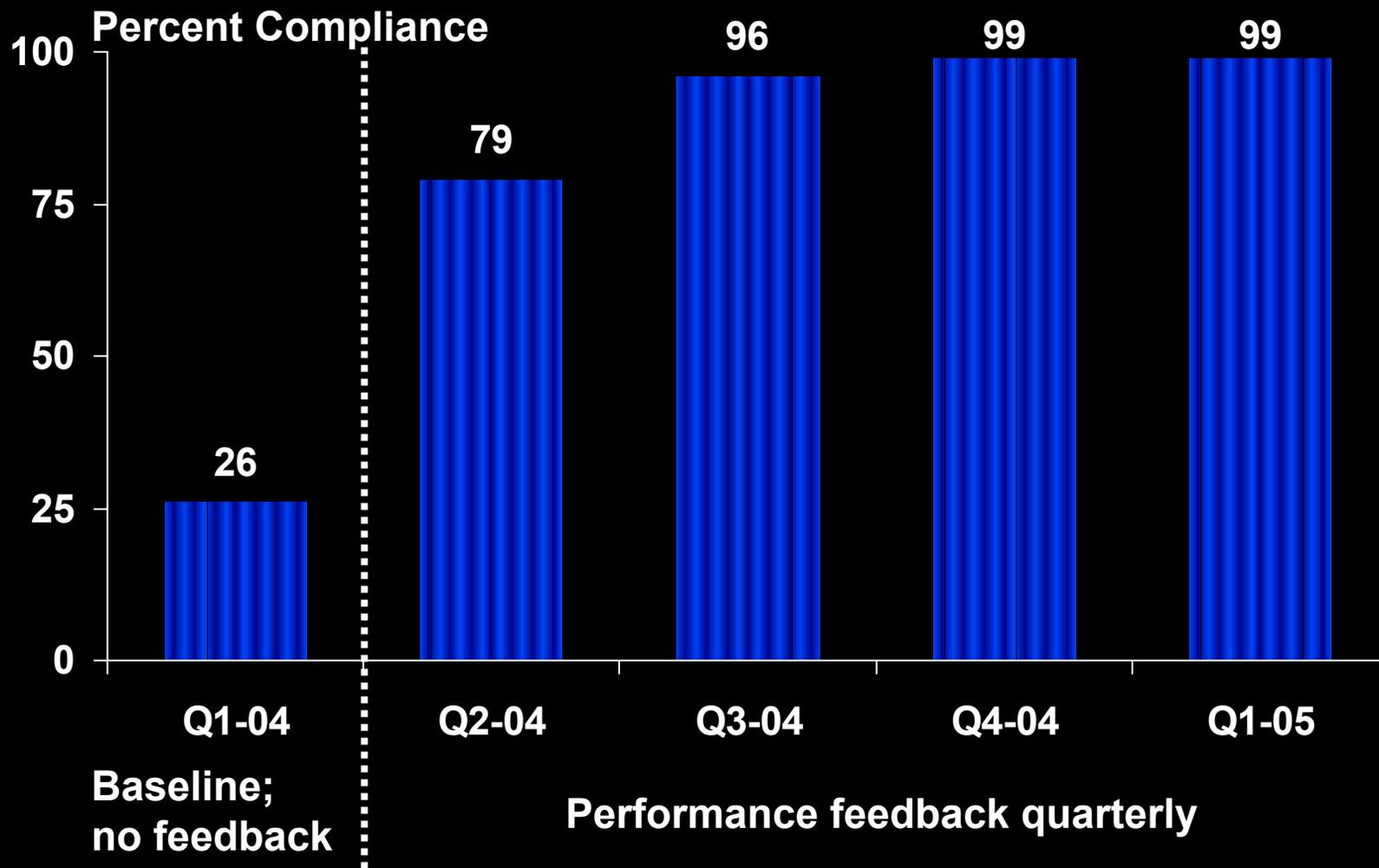
Catheter-related bloodstream infections are expensive and result in significant morbidity and mortality.

Simple, inexpensive, and evidence based interventions to reduce these infections are effective.

Broad use of these interventions could significantly reduce cost, morbidity and mortality.

Process of Care Measures and Ventilator associated Pneumonia

Head of Bed Elevation in VCU Medical ICU: Effect of Feedback

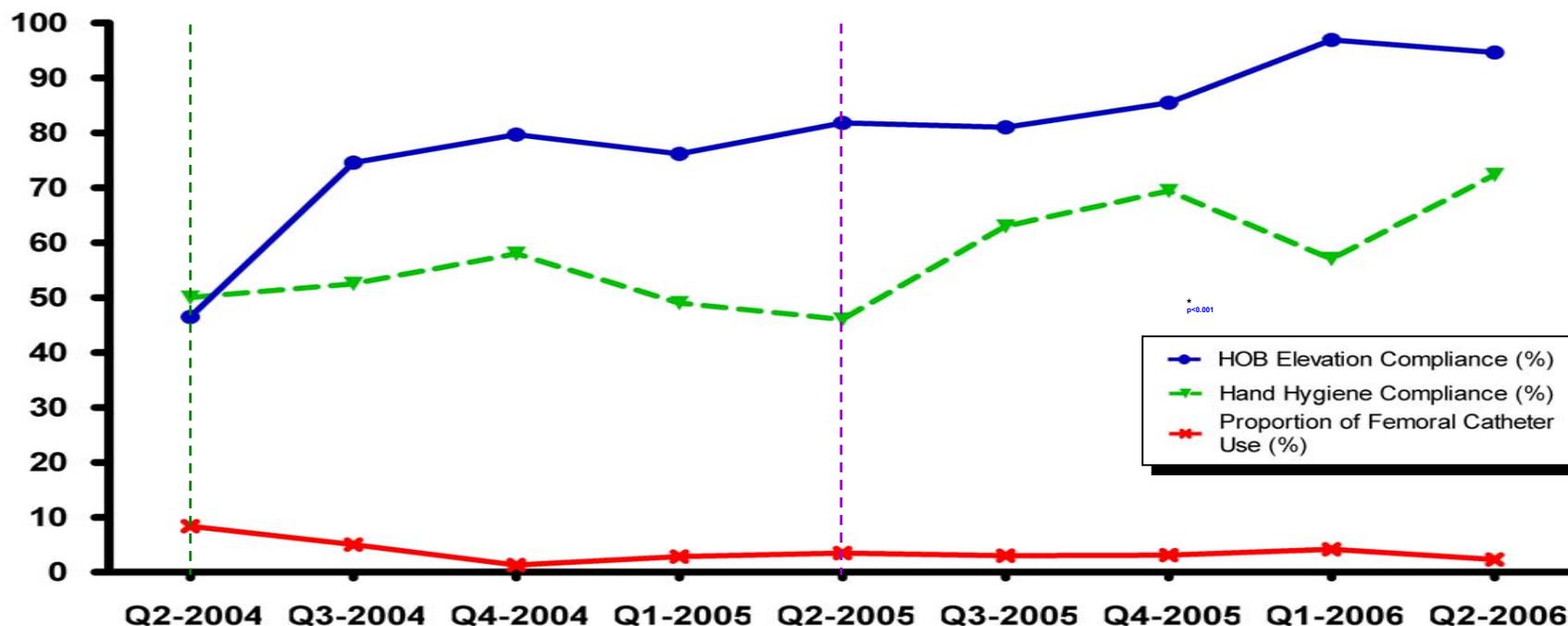


Impact of Two Different Levels of Performance Feedback on Compliance with Infection Control Process Measures in Two Intensive Care Units



Susan Assanasen, MD, Michael Edmond, MD, MPH, MPA, Gonzalo Bearman, MD, MPH
Virginia Commonwealth University Medical Center, Richmond, VA, USA

Trends of IC Process Measures in STICU



Baseline

Feedback to unit management

Feedback to unit management and to staff directly via IC posters

Nosocomial Urinary Tract Infections

Nosocomial Urinary Tract Infections

- Most common hospital-acquired infection (36% of all nosocomial infections) but has lowest mortality & cost
- >80% associated with urinary catheter
- 25% of hospitalized patients will have a urinary catheter for part of their stay
- Incidence of nosocomial UTI is ~5% per catheterized day

Risk Factors for Nosocomial UTIs

- Female gender
- Diabetes mellitus
- Renal insufficiency
- Duration of catheterization
- Insertion of catheter late in hospitalization
- Presence of ureteral stent
- Using catheter to measure urine output
- Disconnection of catheter from drainage tube
- Retrograde flow of urine from drainage bag

Prevention of Nosocomial UTIs

- Avoid catheter when possible & discontinue ASAP
- Aseptic insertion by trained HCWs
- Maintain closed system of drainage
- Ensure dependent drainage
- Minimize manipulation of the system
- Condom or suprapubic catheter
- Silver coated catheters

Staphylococcus aureus nasal
carriage and surgical site infections

S.aureus carriage in healthy populations

- Cross sectional surveys
 - Nasal carriage 20%-55%
- Longitudinal studies
 - 10%-35% of healthy adults are persistent nasal carriers
 - 20%-75% of healthy adults are intermittent carriers

Correlation of *S.aureus* nasal carriage and *S.aureus* SSI

Nasal <i>S.aureus</i> carriage CFUs (n)	Patients (N)	Infections rate (%)
0	345	8
10^1 to 10^3	14	7
10^3 to 10^5	28	11
10^5 to 10^6	26	19
$> 10^6$	38	29

Independent risk factors for *S.aureus* nasal carriage in a general surgical population

Risk Factor	Odds Ratio	P value
Current alcohol use	0.518	0.0336
Previous antimicrobial	0.529	<0.0001
Older age	0.983	<0.0001
Obesity	1.265	0.0162
Male	1.348	0.0029

- **4,030 surgical patients screened for *S.aureus* nasal carriage**
- **891/4,030- 22% were nasal carriers**

What about MRSA SSI?

SSI pathogens isolated from 10,672 surgeries in rural and urban community hospitals	
Organism	Number of Isolates (%)
<i>S.aureus</i>	19 (21.3)
MRSA	4 (4.5)
Streptococcal species	10 (11.2)
CNS	9 (10.1)
Enterococcus species	7 (7.9)
<i>P. aeruginosa</i>	6 (6.7)
Enterobacteriaceae	11 (12.4)
Other	3 (3.4)
No organism isolated	20 (22.5)
Total	89 (100)

Intranasal Mupirocin to prevent *S.aureus* SSI

Variable	Mupirocin Group	Placebo group
	<i>S.aureus</i> carriers N=444	<i>S.aureus</i> carriers N=447
Nosocomial infection	57/444 (12.8)	72/447 (16.1)
Nosocomial <i>S.aureus</i> infection	17/430 (4.0)	34/439 (11.6)
SSI	44/444 (9.9)	52/447 (11.6)
<i>S.aureus</i> SSI	16/32 (3.7)	26/439 (5.9)

Randomized, placebo controlled trial of placebo vs intranasal mupirocin ointment in 4030 patients undergoing general, gynecologic, neurologic or cardiothoracic surgeries

Intranasal Mupirocin in CT Surgery

	Control Group N=992	Intervention Group N=854	P Value
Sternal wound SSI	27 (2.7%)	8 (0.9%)	0.005
Deep Sternal Wound SSI	12 (1.2%)	3 (0.4%)	0.04
Superficial Sternal SSI	15 (1.5%)	5 (0.6%)	0.05
Diabetes Mellitus	N=277	N=588	
Sternal wound SSI	14 (5.1%)	3 (0.5%)	0.04

- Prospective cohort study; all patients received chlorhexidine shower prior to surgery
- Intervention group received intranasal mupirocin for 5 days starting the night prior to surgery

Other strategies to reduce MRSA SSI

- Chlorhexidine showers for all patients undergoing elective cases either the night before surgery or the morning of surgery for skin decolonisation
- For patients known to be MRSA positive
 - Vancomycin is the pre-operative antibiotic of choice.

Rapid Detection of MRSA

- The BD GeneOhm™ MRSA Assay
 - Qualitative *in vitro* diagnostic test for the direct detection of methicillin-resistant *Staphylococcus aureus* (MRSA) from a nasal specimen.
- Results available in less than 2 hours, directly from a nasal swab specimen
- No culture step required

Control of MDROs

Active Surveillance

- If patients who are infected or colonized with MDROs are identified by active surveillance cultures on admission and during hospitalization
 - They can be isolated from patient to limit the risk of cross transmission
 - They can be offered treatment to attempt to eradicate the antimicrobial resistant bacteria

Active Surveillance

- ASC during outbreak situations
 - Good evidence to support the interruption of MRSA and VRE transmission
 - E.M. Mascini, A. Troelstra and M. Beitsma *et al.*, *Clin Infect Dis* 42 (2006), pp. 739–746
 - M.A. Montecalvo, H. Horowitz and C. Gedris *et al.*, *Antimicrob Agents Chemother* 38 (1994), pp. 1363–1367
 - L.L. Livornese Jr., S. Dias and C. Samel *et al.* *Ann Intern Med* 117 (1992), pp. 112–116.
 - J.M. Boyce, L.A. Mermel and M.J. Zervos *et al.* *Infect Control Hosp Epidemiol* 16 (1995), pp. 634–637.
 - M. Armstrong-Evans, M. Litt and M.A. McArthur *et al.*, *Infect Control Hosp Epidemiol* 20 (1999), pp. 312–317
 - R.K. Malik, M.A. Montecalvo and M.R. Reale *et al.*, *Pediatr Infect Dis J* 18 (1999), pp. 352–356
 - K.E. Byers, A.M. Anglim and C.J. Anneski *et al.*, *Infect Control Hosp Epidemiol* 22 (2001), pp. 140–147.
 - J.M. Boyce, S.M. Opal and J.W. Chow *et al.*, *J Clin Microbiol* 32 (1994), pp. 1148–1153.
 - L. Saiman, A. Cronquist and F. Wu *et al.*, *Infect Control Hosp Epidemiol* 24 (2003), pp. 317–321.
 - J. Khoury, M. Jones, A. Grim, W.M. Dunne Jr. and V. Fraser, *Infect Control Hosp Epidemiol* 26 (2005), pp. 616–621.
 - N.A. Back, C.C. Linnemann Jr., J.L. Staneck and U.R. Kotagal, *Infect Control Hosp Epidemiol* 17
 - J.W. Pearman, K.J. Christiansen and D.I. Annear *et al.*, *Med J Aust* 142 (1985), pp. 103–108.

Active Surveillance

- The evidence supporting the use of ASC in non-outbreak, or in endemic situations is much more limited
 - E.M. Jochimsen, L. Fish and K. Manning *et al.*, Control of vancomycin-resistant enterococci at a community hospital: efficacy of patient and staff cohorting, *Infect Control Hosp Epidemiol* **20** (1999), pp. 106–109.
 - L.M. Dembry, K. Uzokwe and M.J. Zervos, Control of endemic glycopeptide-resistant enterococci, *Infect Control Hosp Epidemiol* **17** (1996), pp. 286–292.
- The effectiveness of ASC in limiting cross transmission when the MDRO prevalence is low is not clearly known
 - Findings from ASC studies in outbreak situations cannot be easily extrapolated to the endemic setting.

Active Surveillance

- There is reason to debate aggressive MRSA control policies as advocated by SHEA, APIC and IHI
- Evidence supports the control of MRSA in outbreak settings vs endemic settings
- The cost effectiveness of MRSA control practices through ASC hospital wide is still largely inconclusive

What are some of the
unintended consequences of
ASC?

Effects of contact precautions in a retrospective cohort study of patients at 2 university hospitals

Type of measure	OR 95%CI
Process of care	
Vital signs incompletely recorded	1.92 (1.61–2.30)
Days with no vital signs recorded	2.55 (1.14–5.69)
Days with no vital signs recorded	1.77 (1.40–2.24)
Days with no physician progress notes	2.91 (1.90–4.47)
Outcomes	
Adverse events per 1000 days	2.20 (1.47–3.30)
Supportive care failure (falls, pressure ulcers, and/or fluid or electrolyte disorders)	8.27 (3.09–22.1)
Patient complaint	23.5 (8.20–66.4)

Evaluation of 150 isolated patients and 300 matched, nonisolated control subjects

Active Surveillance Cultures are NOT Required to Control MRSA Infections in the Critical Care Setting

Number of MRSA infections (infections/10,000 pt days)		2004	2005	2006
Medical ICU	BSI	0 (0.0)	4 (7.7)	0 (0.0)
	UTI	0 (0.0)	0 (0.0)	1 (1.9)
	VAP	3 (7.0)	2 (3.8)	0 (0.0)
	Total	3 (7.0)	6 (11.5)	1 (1.9)
Surgical ICU	BSI	9 (17.7)	7 (11.8)	3 (5.0)
	UTI	1 (2.0)	0 (0.0)	2 (3.3)
	VAP	4 (7.9)	4 (6.7)	3 (5.0)
	Total	14 (27.6)	11 (18.5)	8 (13.3)

Abstract: SHEA 2007-Michael B. Edmond, MD, MPH, MPA, Janis F. Ober, RN, BSN, CIC, Gonzalo Bearman, MD, MPH. VCU Medical Center, Richmond, VA, USA

Mandatory Public Reporting of Nosocomial Infections

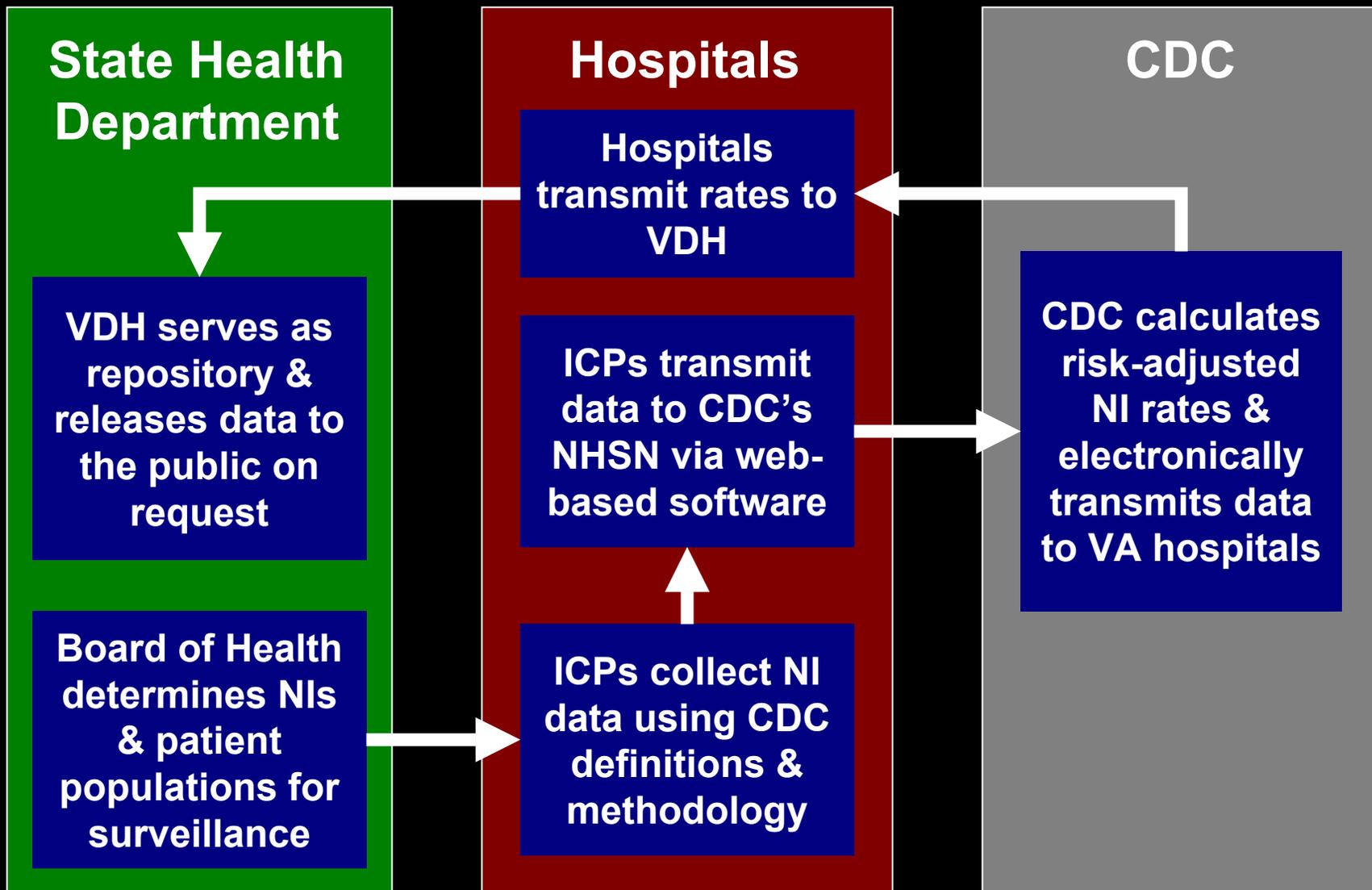
Assumptions underlying Public Reporting

1	Transparency, open exchange of information, & accountability are important societal values
2	Adverse events in health care are preventable
3	Publicly reported healthcare quality data are valid
4	Consumers make rational decisions regarding their health care
5	Consumers will use publicly reported data
6	Consumers are able & willing to change their site of care
7	Consumers who use publicly reported data will make decisions that will improve their care
8	Market forces derived from public reporting will provide incentive for hospitals to improve quality
9	Positive outcomes will outweigh negative unintended consequences
10	Health care is a commodity

Examples of Public Reporting-USA

State	Data Source	Metrics Reported	Reporting and Release
Illinois	Administrative claims & clinical data	Class I SSI, VAP, CL-BSI	Mandatory quarterly reports to the Dept of Health which then submits to the General Assembly a summary report to be published on its website
Virginia	Clinical data using CDC definitions for nosocomial infections	To be set by the State Board of Health	Hospitals required to report selected indicators to the CDC & forward adjusted infection rates to the State Health Department; data may be released to the public on request
Missouri	Data source not specified	Class I SSI, VAP, CL-BSI	Data collection, analysis and reporting rules to be recommended by an advisory committee. Dept of Health to publish a quarterly report on its website
Nevada	Data source not specified	SSI, VAP, CL-BSI,UTI	Hospitals report to the Health Division of the Department of Human Resources. No provision for public disclosure.

Virginia Plan for NI Reporting



Conclusion

- Risk reduction strategies for the prevention of nosocomial infections are well defined in the literature
 - Lack of adherence to IC measures is recognized as important in the pathogenesis of NIs
 - Sadly, HCWs overestimate their degree of compliance with infection control measures
- Increased compliance with process of care measures will likely reduce NI infection risk

Conclusion

- System level changes involving the measurement and feedback of adherence to IC measures are needed to implement risk reduction strategies consistently
- MRSA SSI can likely be reduced by proper use of intranasal mupirocin, chlorhexidine showers and preoperative vancomycin
- Active surveillance cultures for the control of endemic MDROs although helpful during outbreaks, remains a controversial issue
- Mandatory reporting of NIs, including SSI is now a reality