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Beyond SCIP

Stanford Hospital and Clinics

John Morton, MD, MPH, FACS

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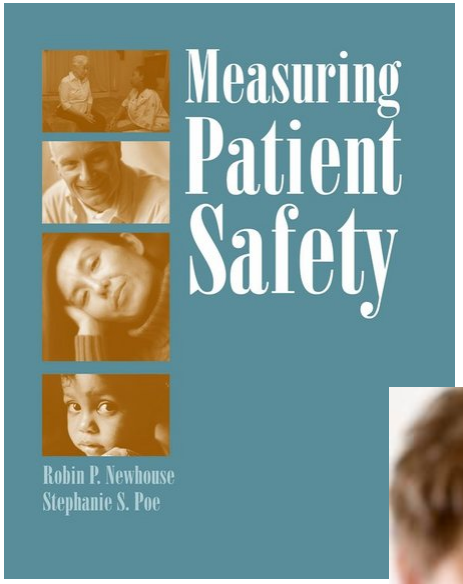
"To Err is Human"



The Joint Commission

STANFORD BOARD DIRECTIVE

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

U.S. Department of Health & Human Services

Surgical Safety
A serious public health issue

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- **Globally, 234 million operations/yr**
- **With a mortality rate of 0.4-0.8% and 3-16% complications rate:**
  - **1 million deaths**
  - **7 million disabling complications**

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SF Chronicle

Within health care hides massive, avoidable death toll

Experts estimate that a staggering 98,000 people die from preventable medical errors each year. More Americans die each month of preventable medical injuries than died in the terrorist attacks of Sept. 11, 2001.

Hospitals slow to adopt lifesaving practices
A look at AHRQ's budget
Timeline of events
Terminology
About the Medical Error Surveillance Tool
Introduction Video Slideshow

Phil Bronstein
Editor-at-Large,
Hearst Newspapers and the San Francisco Chronicle

About Dead by Mistake

Dead by mistake, the comprehensive story you see on this web site, is the result of two things converging: a team of skilled and dedicated journalists from across Hearst newspapers and television stations, and a critical and neglected health care issue that dramatically affects hundreds of thousands of Americans every year.
more...

Send us your tips

Common errors **Credits** Contact us

Cases

For hours, a feeding tube fed patient's lung

A feeding tube inserted into his right lung resulted in death.

Family suspects coverup behind altered files

By LANCE WILLIAMS HEARST NEWSPAPERS
July 30, 2009, 5:17PM

Family photo Family photo
Diane Stewart (with son at wedding) had knee replacement surgery at Stanford hospital. (Family photo)

A hospital patient suffers excruciating pain from what turns out to be a routine complication from elective surgery.

Department of Surgery Quality Plan Preview

- Imperative from SHC Board
- **Areas of Focus**
- Measurement
- Goals
- Communication
- Education
- Accountability
- Leadership

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Persistent Pursuit of Excellence

- Dedicated Monthly Grand Rounds on Quality
- NSQIP based Morbidity and Mortality Conference
- Resident Award for Quality Improvement
- Novel Quality Improvement/Patient Safety Resident Curriculum
- Documentation Improvement Program
- Peer Review/OR Checklist/Leadership
- Surgery Quality Council
- Quality Initiatives
- Rounding Policy

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Update:

FY 2010 SCIP CORE MEASURES

Surgical care improvement project

- SCIP is one of four categories of Core Measures

- The Surgical Care Improvement Project (SCIP) is a national quality partnership of organizations interested in improving surgical care by significantly reducing surgical complications.

- Each of the SCIP target areas are advised by a technical expert panel and supported by evidence-based research.

FY2010 SCIP CORE measures

- **SCIP INF 1: Patient receives prophylactic antibiotic within 60** minutes prior to surgical incision.
- **SCIP INF 2: Patient receives prophylactic antibiotics consistent** with current recommendations identified in published guidelines.
- **SCIP INF 3: Prophylactic antibiotics are discontinued within 24** hours of surgery end time (48 hours for cardiac surgery).
- **SCIP INF 4: Glucose control** in cardiac surgery patients.
- **SCIP INF 6:** Surgery patients with **appropriate hair removal**.

FY2010 SCIP CORE measures

- **SCIP CARD 2:** Beta Blocker therapy prior to Admission who **Received a Beta Blocker During the Perioperative Period**

- **SCIP VTE 1:** Surgery patients with recommended **VTE prophylaxis ordered**

- **SCIP VTE 2: Surgery patients who received appropriate VTE prophylaxis within 24 hours prior to surgery to 24 hours after surge 48 hours for CABG and other cardiac surgery.**

NEW

- **SCIP-INF-9: Urinary Catheter Removed** on Postoperative Day 1 (POD 1) or by midnight on Postoperative Day 2 (POD 2).

NEW

- **SCIP-Inf-10** Surgery Patients with **Perioperative Temperature Management.**

SCIP Infection Measure - 9

- **Measure:** Indwelling Urinary Catheter Removed on POD 1 or by midnight on POD 2

- **Science-based rationale:** Studies have shown that the longer indwelling urinary catheters remain in patients the greater risk of UTI.
- **Inclusion criteria:**
  - **Indwelling catheters:** Foley catheter 3-Way catheter, Coude catheter, Council tip catheter
  - **Intermittent catheters:** "in and out" catheterization, Texas catheter, "prn" catheterization for residual urine, self-catheterization, straight catheterization, "spot" catheterization
- **Exclusion criteria:** External catheter
- **Exceptions to removing catheter:**
  - Urological, GYN, Perineal procedures
  - Planned return to OR
  - Suprapubic catheter

Potential Exclusion Criterion

- Urological, gynecological or perineal procedure performed
- ICU bed and documentation of receiving diuretics
- Other surgical procedures that occurred within 3 days (4 days for CABG) prior to or after the procedure of interest
- Physician documented infection prior to surgical procedure
- Length of stay < two days postoperatively
- Suprapubic catheter or had intermittent catheterization preoperatively
- No catheter in place postoperatively
- **Physician documentation of a reason for not removing the urinary catheter postoperatively**

  Example: “Foley retained to monitor accurate input and output”

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SCIP INFECTION MEASURE - 9

Documentation that the catheter was removed on POD 1 or POD 2 with *Anesthesia End Date being* POD 0 (POD 2 ends at midnight on the second post-op day)

Role of Surgeons:

- Documentation of the reason why urinary catheter needs to stay in longer than midnight on POD 2.
- An order to just "continue catheter" will not suffice.
- *Example: The patient required ICU care AND receiving diuretics".*

Role of RNs:

- Check physicians' orders to discontinue catheter and then discontinue catheter asap and document removal.

SCIP Infection Measure - 10

- **Measure:** Surgery Patients with Perioperative Temperature Management

- **Science-based rationale:**

  Studies have shown that hypothermia has been associated with adverse outcomes, ir impaired wound healing, adverse cardiac events, altered drug metabolism, increased infection and coagulopathies.

- **Documentation** of at least one body temperature greater than or equal to 36° C within the 30 minutes immediately prior to or 15 minutes immediately after *Anesthesia End Time* (i.e. time associated with the anesthesia providers "signoff" after principal procedure).

SCIP Infection Measure - 10

- **Anesthesiologists:**
  - Temperature must be **36** degrees or higher by end of surgery, unless "*Intentional Hypothermia"* is documented in medical record.
  - Document core temperature on anesthesia record 30 minutes before patient is transferred.
  - Physicians/CRNAs need to document "intentional" hypothermia during perioperative period.

- **PACU and ICU RNs:**
  - Obtain and document temperature within first 15 minutes after patient arrives in unit.

Potential Exclusion Criterion

- Patients whose length of anesthesia was less than 60 minutes
- Patients who did not have general or neuraxial anesthesia
- Patients who received *Intentional Hypothermia* for the procedure performed.

NEW

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Focus on outstanding surgical care

Remove urinary catheters by POD 2

SCIP Measure effective NOW

Surgeons: **Document** reason catheter needs to stay in longer

Example: "Foley retained to monitor **accurate** urine output"

Exceptions to removing catheter:

☑Urological, GYN, and Perineal procedures
☑Planned return to OR
☑In ICU and receiving diuretic on POD1 or POD2

RNs: Check MD orders for the DC Catheter order
Ask MD to document any exceptions

Document! Document! Document!

SCIP Surgical Care Improvement Project
A National Quality Partnership

Document! Document! Document!

NEW

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Focus on outstanding surgical care

Perioperative Temperature Management

SCIP Measure effective NOW

Anesthesiologists:

☑ Temperature must be 36° C /**96.8°F** degrees or higher at handoff to PACU/ICU RNs, unless *Intentional Hypothermia* is documented

☑ Document End of Anesthesia time & final temperature

☑ Document use of Bair Hugger

PACU and ICU RNs:

☑ Temp must be ***taken and documented*** within **15 minutes** of handoff by Anesthesiologist

Document! Document! Document!

SCIP Surgical Care Improvement Project
A National Quality Partnership

Document! Document! Document!

Action Plan

- Educate all OR clinicians and staff on the two new SCIP measures by September 15.
- Review and monitor performance of two new SCIP measures monthly with OR personnel to ensure 95% compliance.
- Include performance of new SCIP measures on SHC Quality Alert dashboard and detail reasons for inadequate performance.
- Drill down on cases of noncompliance and reinforce individual clinician education.

Surgical Care Improvement Project (SCIP)

- SHC Goal: Increase compliance for the following measures to 90%:
  - SCIP
  - SCIP
  - SCIP
  - **SCIP**
  - **SCIP VTE 2—Surgery patients who received appropriate VTE prophylaxis within 24 hours prior to surgery to 24 hours after surgery**

25. Bernard HR, Cole WR. The prophylaxis of surgical infection: the effect of prophylactic antimicrobial drugs on the incidence of infection following potentially contaminated operations. Surgery 1964; 56:151-7.

Prophylactic Antibiotic Use: Hardwiring of Physician Behavior, Not Education, Leads to Compliance

Glenn Whitman, MD, FACS, Vincent Cowell, MD, Kristen Parris, MD, Patricia McCullough, RN, Teresa Howard, RN, John Gaughan, PhD, Dean Karavite, MSI, Madolin Kennedy, RHIA, John McInerney, RN, Christina Rose, PhD

CONCLUSIONS: Despite hospital-wide education, improving compliance with evidence-based recommendations for ProAbx required processes that "forced" physician behavior, specifically: specialty-specific, preprinted physician orders limiting ProAbx choice; linking administration of preoperative ProAbx administration to the universal timeout; and standardization of the postoperative ProAbx order in the computerized physician order entry. (J Am Coll Surg 2008;207:88–94.

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Does a Surgical Safety Checklist Improve Short-Term Patient Safety Culture and Outcomes?

Thomas C. Tsai, MD, MPH,[1] Tina Hernandez-Broussard, MPH, PhD, [2] Mark L. Welton, MD, FACS, [2] John M. Morton, MD, MPH, FACS[2]

[1]Brigham and Women's Hospital
[2]Stanford University School of Medicine

ACS Clinical Congress
October 6, 2010

LELAND STANFORD JUNIOR UNIVERSITY
DIE LUFT DER FREIHEIT WEHT
1891

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SURGICAL SAFETY CHECKLIST

World Health Organization

Before Induction of Anesthesia → **Before Skin Incision/Procedure** → **Before Patient Leaves Room**
(COMPLETED IN OR/PROCEDURE ROOM)

O.R. BOARDING CHECKLIST

OR CIRCULATING NURSE DOCUMENTS VERIFICATION OF THE FOLLOWING:

- ☐ Patient bypass preop?

Confirmation of the following with the patient:

- ☐ Patient ID
- ☐ Site Marking by Surgeon
- ☐ Consent
- ☐ Current H&P (within 30 days / within 24 hrs prior to scheduled procedure)
- ☐ Allergy band on
- ☐ Latex allergy
- ☐ ABO blood group verified
- ☐ UNOS ID# (if applicable)
- ☐ Equipment/Instrument Issues or any concerns

NEW **ANESTHESIOLOGIST & CIRCULATOR VERIFY: (confirmed by the Anesthesiologist)**

- ☐ Anesthesia Safety Check completed
- ☐ Pulse Oximeter on Patient and Functioning
- ☐ Difficult Airway/Aspiration risk?
- ☐ Risk of >500ML Blood Loss (7ML/KG in children)

TIME OUT

OPERATIVE TEAM MEMBER INTRODUCTION BY NAME & ROLE

VERBALIZED OUT LOUD

FOR ALL TEAM MEMBERS TO VERIFY

STOP!

SURGICAL TEAM CONFIRMS:

- ☐ Correct patient and procedure
- ☐ Correct position
- ☐ Correct operative site/side
- ☐ Consent is complete, accurate, and signed
- ☐ Surgical site marked by surgeon
- ☐ Mark visible after prep / after drape
- ☐ Images/implants available (if needed)
- ☐ Prophylactic antibiotic given / time
- ☐ DVT Prophylaxis

NEW

NURSING VERIFIES:

- ☐ Implementation of aseptic technique

SURGEON VERIFIES:

- ☐ Any critical or unexpected steps
- ☐ Procedure duration
- ☐ Anticipated blood loss
- ☐ Any patient-specific concerns

POST EVALUATION/TEAM DEBRIEF

VERBALIZED OUT LOUD
FOR ALL TEAM MEMBERS TO VERIFY

CIRCULATOR/SCRUB VERIFIES:

- ☐ Discharge to
- ☐ Notification to
- ☐ Post-op airway status
- ☐ Level of consciousness
- ☐ Allergy band on
- ☐ ID band on
- ☐ Implant sheet complete
- ☐ Video/photo to:

NEW

ALL TEAM MEMBERS DISCUSS:

- ☐ Name of procedure and wound class recorded
- ☐ Counts are correct (or NA)
- ☐ Read back specimen labeling & Path form filled out per protocol
- ☐ Equipment/Instrument problems to address
- ☐ Key concerns for recovery and management of patient

Based on the WHO Surgical Safety Checklist

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Results: OR Time

	Before Checklist (minutes)	After Checklist (minutes)	P-value
Mean Start to Incision Time	59.4	56.7	<0.01
Mean Total Elapsed Time	158.59	150.94	-

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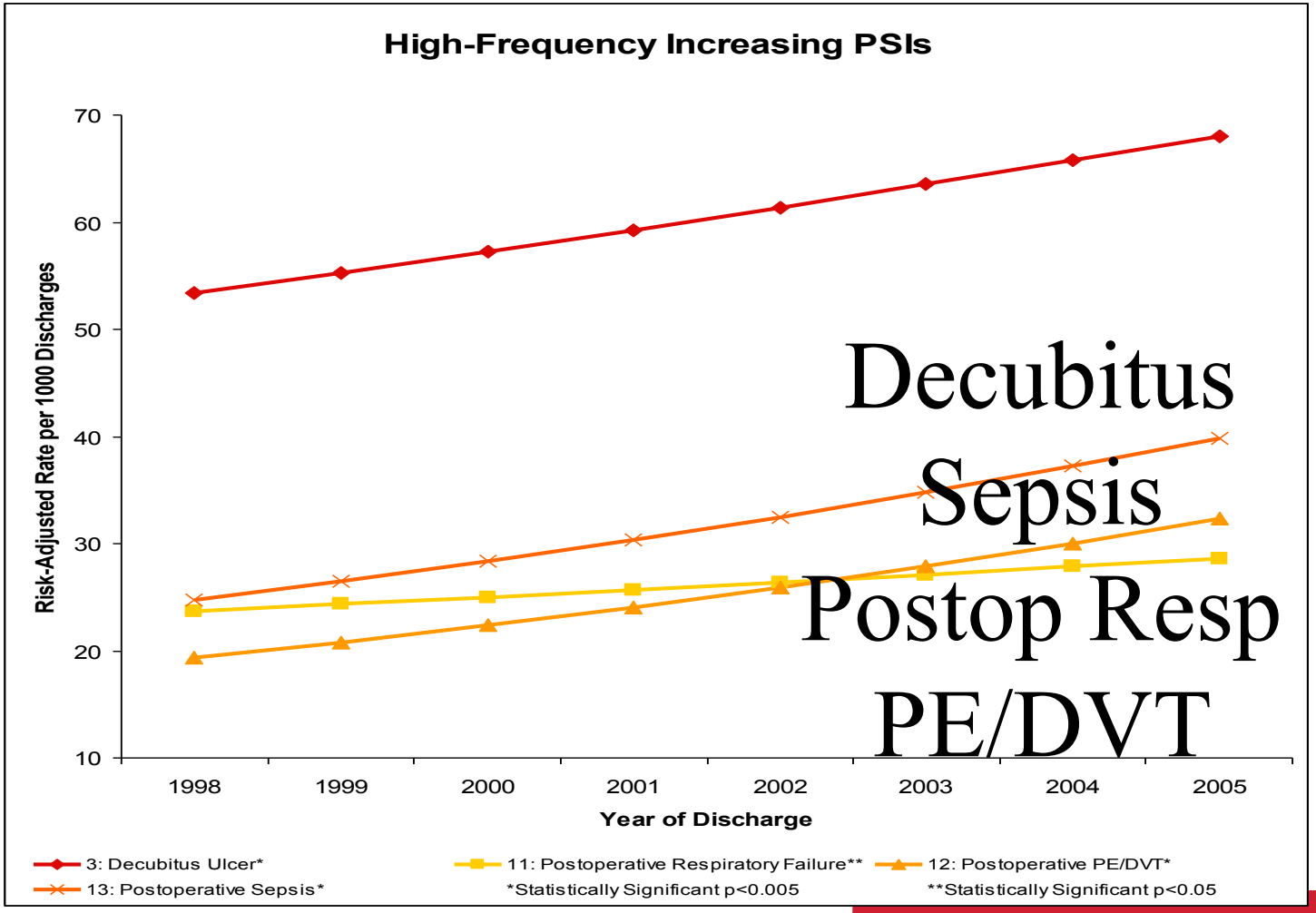
COLLOBORATION

National PSI Rates
Morton, HSR 2012



How did we get here?

JAMA®
Online article and related content current as of July 26, 2010.

Early Mortality Among Medicare Beneficiaries Undergoing Bariatric Surgical Procedures

David R. Flum; Leon Salem; Jo Ann Broeckel Elrod; et al.

JAMA. 2005;294(15):1903-1908 (doi:10.1001/jama.294.15.1903)
http://jama.ama-assn.org/cgi/content/full/294/15/1903

1 YEAR MORTALITY RATE 4.6%

EDITORIALS

Editorials represent the opinions of the authors and *JAMA* and not those of the American Medical Association.

Weighing In on Bariatric Surgery

Procedure Use, Readmission Rates, and Mortality

Bruce M. Wolfe, MD
John M. Morton, MD, MPH

IN RECENT YEARS, THERE HAS BEEN A DRAMATIC INCREASE in the number of bariatric surgical procedures performed in the United States and worldwide.[1-4] This in-

dren,[5] suggesting that the epidemic will worsen before it improves. Furthermore, it is estimated that at least 5% of the adult population in the United States experiences severe obesity, defined as a body mass index (BMI) greater than 40.[5]

Second, multiple epidemiologic studies have demonstrated that increasing BMI is a causative factor in many life-

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BARIATRIC SURGERY:
AMERICAN SURGICAL SUCCESS STORY

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Accreditation in Bariatric Surgery

CMS Centers for Medicare & Medicaid Services

CMS National Coverage Determination

February, 2006

CMS will approve and reimburse procedures at a program accredited by one of the two programs:

- **ASBS/ Surgical Review Corporation.**
- **American College of Surgeons – Bariatric Surgery Centers**

Recent Improvements in Bariatric Surgery Outcomes

William E. Encinosa, PhD, Didem M. Bernard, PhD,† Dongyi Du, MS,‡ and Claudia A. Steiner, MD, MPH**

TABLE 3. Risk Adjusted Changes in Bariatric Outcomes and Utilization Over Time

		Unadjusted		Risk Adjusted	
		2001–2002	2005–2006	2001–2002	2005–2006
Inpatient complication rate	**37%**	21.93%	15.31%*	23.60%	14.81%*
30-day overall complication rate	**24%**	32.39%	26.31%*	33.68%	25.45%*
180-day overall complication rate	**21%**	39.57%	33.64%*	41.69%	32.81%*

NEJM LABS DATA

Table 2. Adverse Outcomes within 30 Days after Surgery, According to Surgical Procedure.

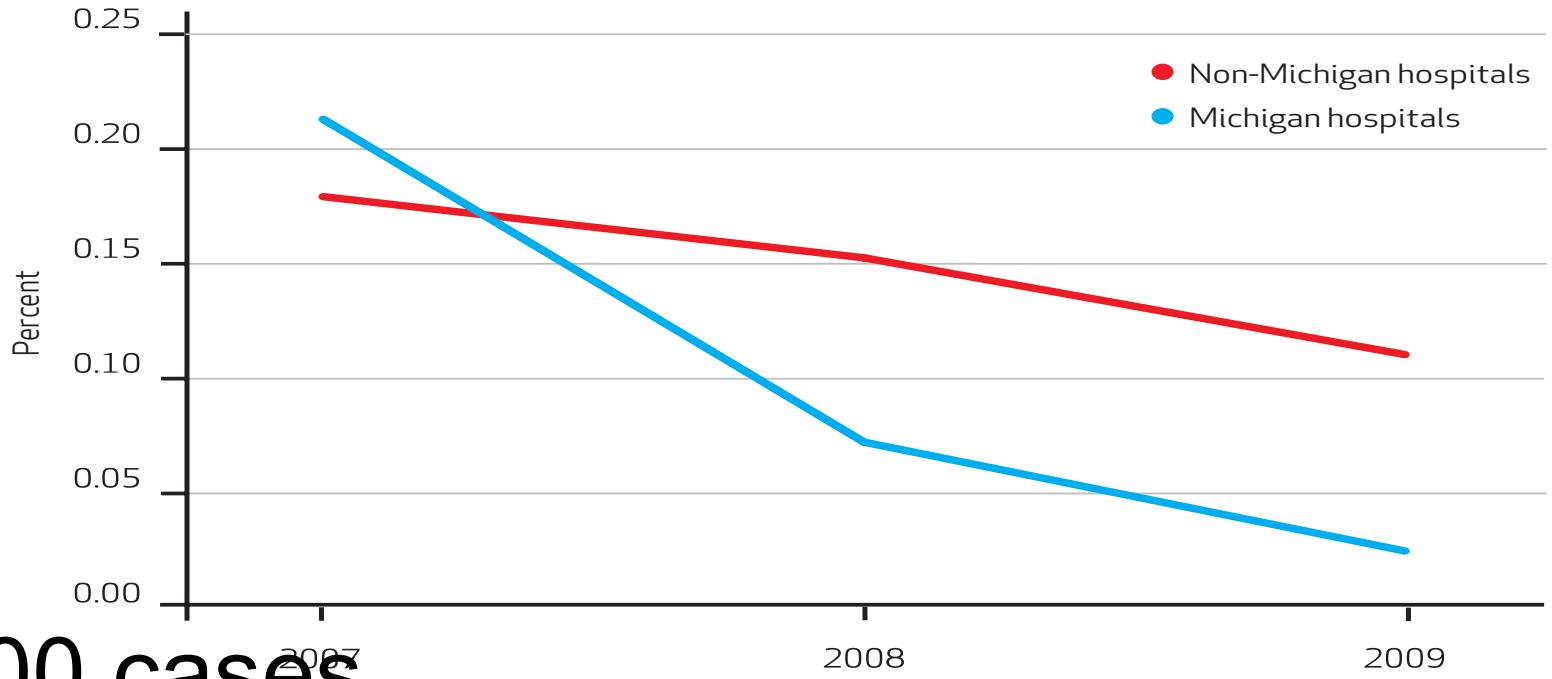
Outcome	Total (N=4610)*	Laparoscopic Adjustable Gastric Banding (N=1198)	Laparoscopic Roux-en-Y Gastric Bypass (N=2975)
		number (percent)	
Death	15 (0.3)	0	6 (0.2)
Deep-vein thrombosis or venous thromboembolism	20 (0.4)	3 (0.3)	12 (0.4)
Tracheal reintubation	20 (0.4)	2 (0.2)	12 (0.4)
Endoscopy	51 (1.1)	1 (0.1)	45 (1.5)
Operation			
Tracheostomy	11 (0.2)	0	6 (0.2)
Placement of percutaneous drain	16 (0.3)	0	13 (0.4)
Abdominal operation	118 (2.6)	9 (0.8)	94 (3.2)
Failure to be discharged by day 30	17 (0.4)	0	13 (0.4)
Composite end point‡	189 (4.1)	12 (1.0)	143 (4.8)

By David A. Share, Darrell A. Campbell, Nancy Birkmeyer, Richard L. Prager, Hitinder S. Gurm, Mauro Moscucci, Marianne Udow-Phillips, and John D. Birkmeyer

How A Regional Collaborative Of Hospitals And Physicians In Michigan Cut Costs And Improved The Quality Of Care

EXHIBIT 3

Thirty-Day Mortality After Bariatric Surgery: Hospitals In Michigan Versus Hospitals Outside Of Michigan, 2007–09

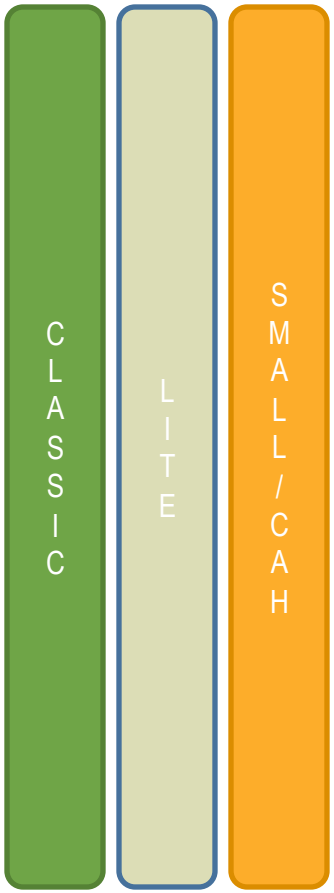


7000 cases

? mortalities

ACS NSQIP

New Data Collection Paradigms



"PROCEDURE TARGETED"
ACS NSQIP

PRINCIPLES
- Focus on high value procedures
- Reduce low value procedures
- Higher sampling rates
- Reduce existing data burden
- New, procedure-specific data (can include process)
- Cover the procedures relevant to the hospital, flexible
- Across specialties
- Voluntary (self-select)

Why the Change? Focused Modules

- For instance, in General Surgery (the largest set):

CORE
Colectomy
Gastric bypass
Cholecystectomy (acute cholecystitis)
Ventral hernia repair
Pancreatectomy
Appendectomy

OPTIONAL
Thyroidectomy
Proctectomy for cancer
Cholecystectomy (all cases)
Esophagectomy
Hepatectomy

Carotid (CEA or stent)
Abdominal Aortic Aneurysm (open or endo)
Aortoiliac Bypass (open or endo)
Lower Extremity Bypass (open or endo)

- Vascular Surgery (developed in conjunction with SVS)

Why the Change? Focused Modules

- For instance, a specific set for colectomy might include:
  - Primary indication for surgery
    - cancer, cancer w obstr, polyps, acute tics, chronic tics, bleeding, etc
  - If inflammatory bowel disease, use of preoperative steroids / immunosuppressive agents
    - yes/no
  - Preoperative mechanical bowel prep
    - yes/no
  - Preoperative Oral Antibiotic prep / Oral bowel prep
    - yes/no
  - Operative approach
    - open, lap, hand assisted, unplanned conversion to
  - Anastomotic leak
    - no, yes w/o intervention, yes w/perc intervention, yes w/reoperation
  - Postoperative ileus
    - yes/no (Postoperative placement of nasogastric tube or NPO for >72 hours)
- This set was developed with Dr. Anthony Senagore

Why the Change? Focused Modules

- To Re-emphasize: Focused sets should allow-
  - Site by site decisions on procedure focus
  - Reduction of "low impact" cases
  - Higher sampling rates (more robust performance assessments)
  - Specific risk factors (ie- bowell prep)
    - Can be process measures
  - Potential reduction in data burden (fewer adjusters needed)
  - Focused outcomes- (ie- colectomy anastamotic leak)
    - Can be process related
  - Improved risk adjustment, improved comparability across cases/sites.
  - Focused QI interventions- aligned with institutional desires
  - Improved individual reporting

A Means For Improvement

Stanford

Cedars Sinai

Mayo Clinic

University of MI

Saint Francis OS

North Shore – L

Cleveland Clinic

Northwestern

American College of Surgeons

Targeted Solutions Tool

Share solutions with 16,000 accredited institutions

Joint Commission Center for Transforming Healthcare - American College of Surgeons Surgical Site Infection Project

- Participating Hospitals
  - Cedars-Sinai, Cleveland Clinic, Mayo Clinic, Northwestern North Shore Long Island Jewish, OSF Saint Francis, Stanford
- In August 2010, CTH launched its fourth project in collaboration with ACS on SSI
  - NSQIP data on outcomes of surgery are widely regarded as highly reliable, with exemplary risk-adjusted outcomes

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Project Summary

Project Problem Statement:

- The incidence of Surgical Site Infections in colorectal surgery is high, variable, and represents opportunity for improvement.

Project Goal:

Reduce colorectal surgical site infections by 50% (Observed & O/E)

Project Scope:

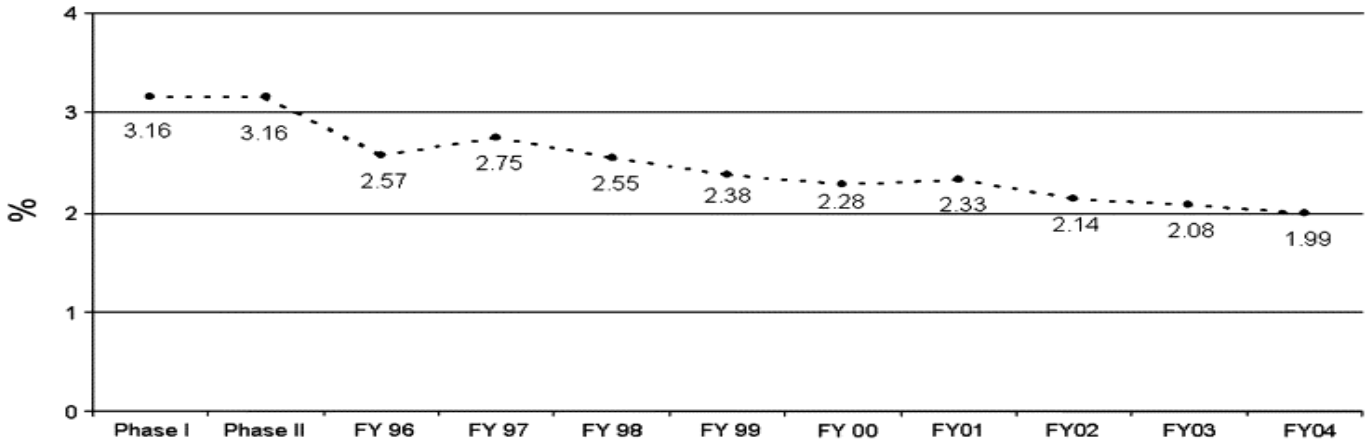
- *Process Begins:* Pre-Operative Processes (Pre-Op Clinic with Surgeon)
- *Process Ends:* 30 Days Post-Surgery
- *Includes:* All emergent & elective surgical procedures
- *Excludes:* Trauma and Transplant patients & Patients under 18 years of age

Joint Commission Center for Transforming Healthcare - American College of Surgeons Surgical Site Infection Project

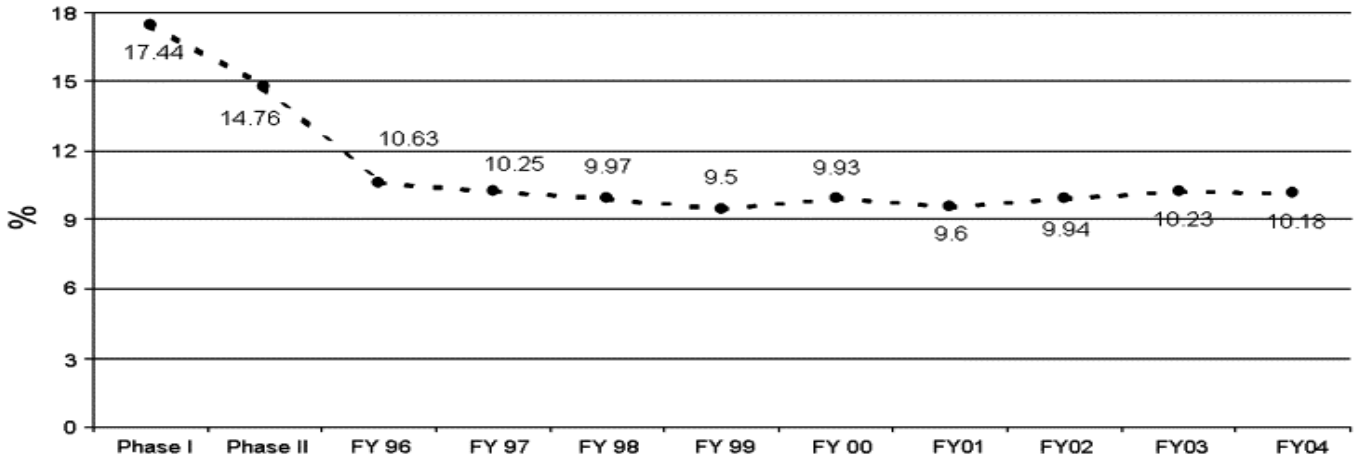
- Looked for a procedure/outcome that:
  - Is common across different types of hospitals
  - Complications have significant, adverse clinical impact
  - High variability in performance across hospitals
- Ideal Candidate = SSI in colorectal surgery

NSQIP Impact

Mortality 33% Reduction

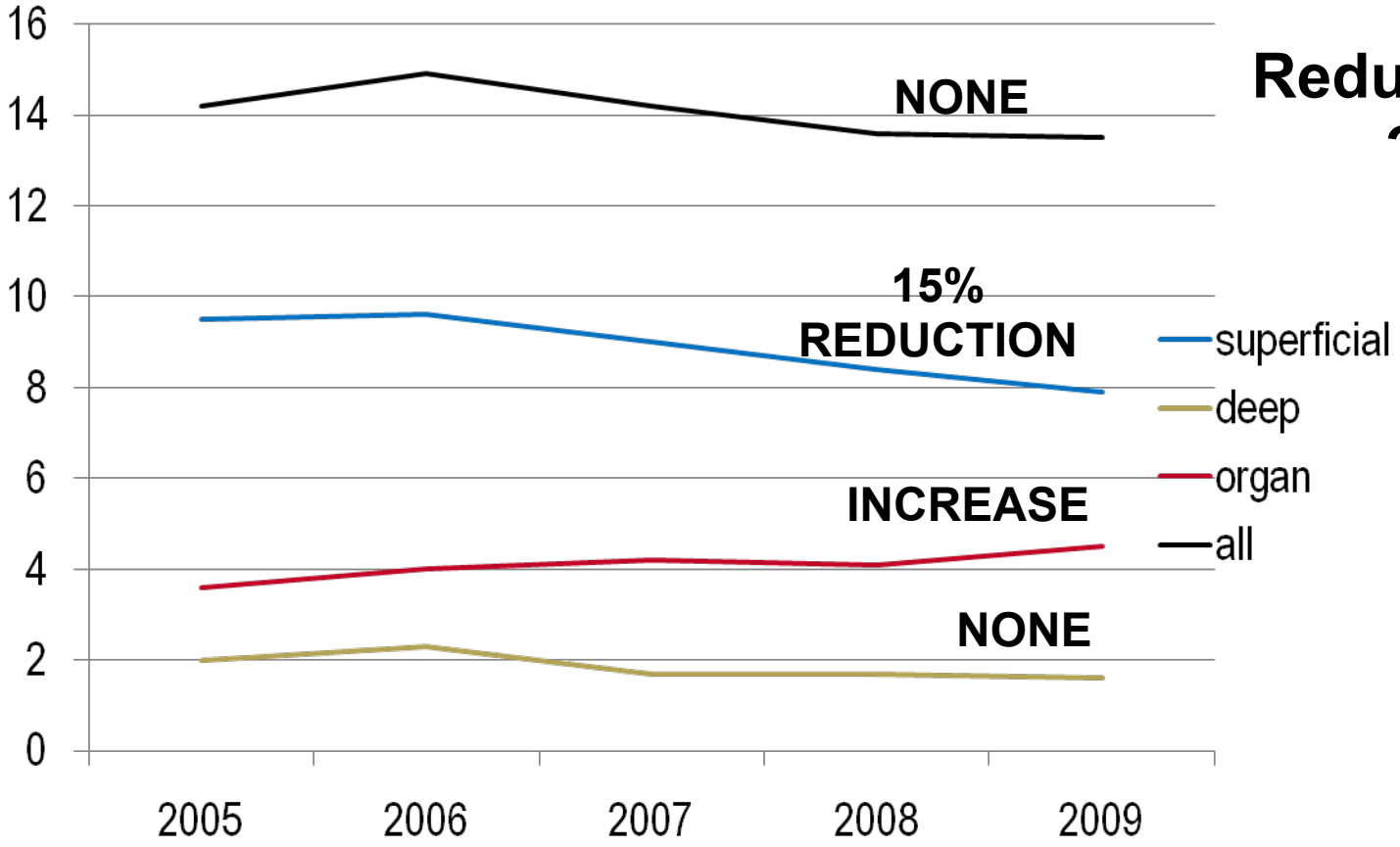


Morbidity 50% Reduction



Khuri, Ann Surg, 2002

NSQIP Colorectal SSI



Reduction ?

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Impact of Surgical Site Infections on Length of Stay and Costs in Selected Colorectal Procedures

Najjia N. Mahmoud,[1] Robin S. Turpin,[2,3] Guiping Yang,[4] and William B. Saunders[4]

TABLE 4. LOGISTIC REGRESSION ON HOSPITALIZATION COST ≥$15,000[a]

	Large bowel (n = *19,917*)	*Small bowel* (n = *2,715*)	*Stoma* (n = *3,193*)	*All procedures* (n = *25,825*)
Cefazolin/metronidazole[b]	*1.34 (1.16, 1.56)*	*1.63 (1.13, 2.34)*	1.12 (0.85, 1.48)	*1.39 (1.23, 1.56)*
Surgical site infection	*6.19 (5.19, 7.39)*	*9.20 (6.20, 13.66)*	*7.22 (5.01, 10.40)*	*7.46 (6.47, 8.60)*
Age ≥65 years	*1.79 (1.66, 1.93)*	*2.12 (1.78, 2.52)*	*1.70 (1.47, 1.96)*	*1.71 (1.61, 1.82)*
Female sex	*0.88 (0.81, 0.95)*	1.06 (0.89, 1.26)	*0.86 (0.74, 0.99)*	*0.87 (0.82, 0.93)*
Caucasian race	*0.78 (0.72, 0.85)*	*0.78 (0.65, 0.95)*	0.87 (0.73, 1.03)	*0.81 (0.75, 0.86)*
Body mass index ≥30	*1.39 (1.26, 1.54)*	0.93 (0.74, 1.17)	*1.43 (1.15, 1.79)*	*1.29 (1.19, 1.40)*
High SENIC score	*3.38 (2.98, 3.82)*	*3.44 (2.63, 4.51)*	*2.20 (1.71, 2.83)*	*3.34 (3.02, 3.70)*

[a]Odds ratio (95% confidence interval). Italic type indicates statistical significance.
[b]Compared with cefotetan. See Table 2 for number of patients in each category.
SENIC = Study of the Efficacy of Nosocomial Infection Control.

SURGICAL INFECTIONS
Volume 10, Number 6, 2009

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Complex Change

bowel prep
oral antibiotics
preop diet
bathing
Scheduling process

Epidual/spinal
preoperative temperature warming
standardized protocols
variable dosing based on weight
Skin prep product
Skin prep duration
performer
hair clipping
Rectal irrigation
Risk assessment
washing prior to s
erative heparin

Dressing type
Dressing duration
topical ointment to incision

Discipline: colorectal, general, gyn
Years in practice
Individual that does closure
wearing of scrubs outside OR

In/out of room traffic
Intraoperative room temperature
criteria for leaving wound open

handsewn vs. stapled
testing anastomosis
Interrupted vs. continuous suture
Skin staples/ subcuticular/subcutaneous suture
Tissue handling
Incision with scalpel/cautery
Duration of operation
Method of dividing the mesentary
Reperitonealization
wound protector
change gloves
assessment of quality of blood supply
perioperative fluid management

protocol for redosing
Case duration
Wound protector
Use of intra-abdominal drain
Use of subcutaneous drain
Use of ioban
IV fluid adminstration
Wound irrigation
Fixed vs. nonfixed retraction

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It Doesn't Work….

By Peter J. Pronovost, Jill A. Marsteller, and Christine A. Goeschel

Preventing Bloodstream Infections: A Measurable National Success Story In Quality Improvement

63% Reduction
ICU Catheter Infections 2001-2009

Motivation Needed?

Hospital-Acquired Conditions (HAC) in Acute Inpatient Prospective Payment System (IPPS) Hospitals

For discharges occurring on or after October 1, 2008, Inpatient Prospective Payment System (IPPS) hospitals do not receive the higher payment for cases when one of the selected conditions is acquired during hospitalization (i.e., was not present on admission). The case is paid as though the secondary diagnosis is not present.

Surgical Site Infection, Mediastinitis, Following Coronary Artery Bypass Graft (CABG)

Surgical Site Infection Following Certain Orthopedic Procedures:
- Spine
- Neck
- Shoulder
- Elbow

Surgical Site Infection Following Bariatric Surgery for Obesity:
- Laparoscopic Gastric Bypass
- Gastroenterostomy
- Laparoscopic Gastric Restrictive Surgery

Change Management

State of California—Health and Human Services Agency
California Department of Public Health

HOWARD BACKER, MD, MPH
Interim Director

EDMUND G. BROWN JR.
Governor

Commencing with surgeries performed on or after June 1, 2011, GACHs must report to CDPH through the Centers for Disease Control Prevention National Healthcare Safety Network (NHSN) all SSI in accordance with HSC section 1288.55 (a) (3):

New Rules

- **Dialogue is almost always a signpost on the road to quality improvement**
- **Quality is not a personal virtue; it is an performance expectation that is accountable and rewarded.**
- **If you knock one down, you got to put up another one**
- **CAN NOT KEEP DOING THE SAME**

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Surgical Site Infections in a "High Outlier" Institution: Are Colorectal Surgeons to Blame?

Elizabeth C. Wick, M.D. • Jon D. Vogel, M.D. • James M. Church, M.D.
Feza Remzi, M.D. • Victor W. Fazio, M.D.

Department of Colorectal Surgery, Cleveland Clinic, Cleveland, Ohio

CONCLUSION: Participation in the National Surgical Quality Improvement Program brought attention to our high rate of SSI, which appeared to be due to a high proportion of colorectal patients, a high-risk subset.

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Prioritizing Quality Improvement in General Surgery

Peter L Schilling, MD, Justin B Dimick, MD, MPH, John D Birkmeyer, MD, FACS

CONCLUSIONS: A relatively small number of procedures account for a disproportionate share of the morbidity, mortality, and excess hospital days in general surgery. Focusing quality improvement efforts on these procedures may be an effective strategy for improving patient care and reducing cost.
(J Am Coll Surg 2008;207:698–704. © 2008 by the American College of Surgeons)

Table 1. Relative Contribution of 36 Procedures to Adverse Events and Excess Length of Stay in General Surgery, American College of Surgeons – National Surgery Quality Improvement Program, 2005–2006

Procedure	Procedures		Adverse event rate, %	Proportion of all adverse events, %	Average excess length of stay for adverse event, d	Proportion of all excess length of stay, %
	n	% of total				
1. Colectomy ± colostomy	12,767	9.9	28.9	24.3	9.8	23.5

COLECTOMY IS A COST AND DEFECT MULTIPLIER

Pareto Curve

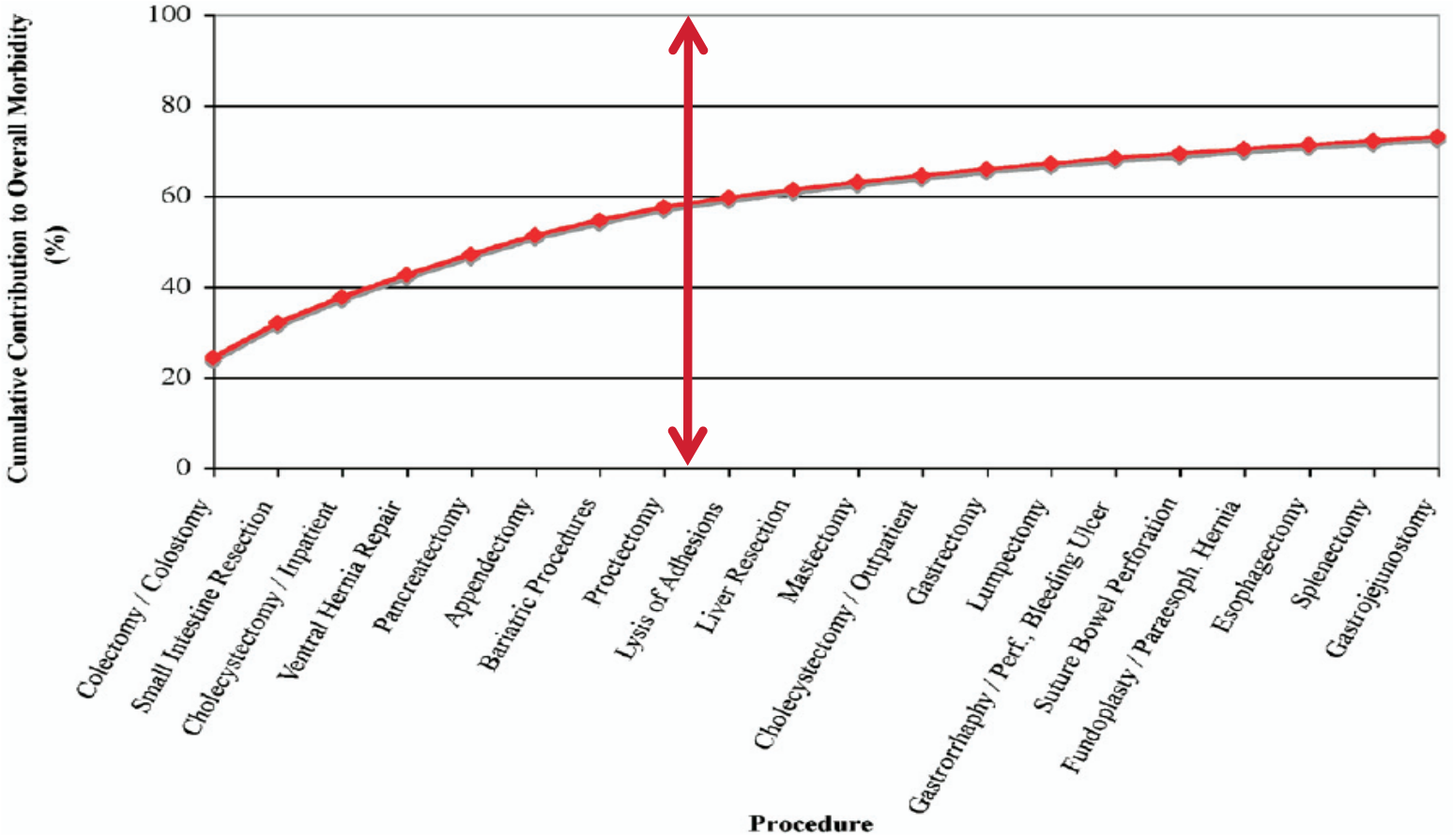

Figure 1. Cumulative contribution of different procedures to overall morbidity and mortality in general surgery patients.

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Laparoscopic Approach Significantly Reduces Surgical Site Infections after Colorectal Surgery: Data from National Surgical Quality Improvement Program

Ravi P Kiran, MD, Galal Hussein El-Gazzaz, MD, PhD, Jon D Vogel, MD, Feza H Remzi, MD, FACS

CONCLUSIONS: The LAP approach is independently associated with a reduced SSI when compared with open surgery and should, when feasible, be considered for colon and rectal conditions. (J Am Coll Surg 2010;211:232–238. © 2010 by the American College of Surgeons)

Surgery type			
Laparoscopic	9.5	1	
Open	16.1	1.62 (1.39–1.90)	<0.001
Operation time, min			
<180	12.3	1	
≥180	17.5	1.42 (1.22–1.62)	<0.001
Smoking			
No	13.2	1	
Yes	17.6	1.21 (1.02–1.44)	0.032
Diabetes			
No	13.4	1	
Yes	17.6	1.25 (1.03–1.52)	0.021
BMI		1.16 (1.10–1.22)	<0.001

BMI: Modifiable?

2009 Colorectal Cases (All NSQIP Hospitals)

Class I obesity (30 - 34.9): 21.69%

Class II obesity (35 - 39.9): 10.19%

Class III obesity (≥40): 8.00%

40% of Total Population with BMI > 30

13.23% of Total Population with Cancer

1/3 of our patients could benefit from pre-op surgical weight loss

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Adherence to Surgical Care Improvement Project Measures and the Association With Postoperative Infections

Conclusions Among hospitals in the Premier Inc Perspective Database reporting SCIP performance, adherence measured through a global all-or-none composite infection-prevention score was associated with a lower probability of developing a postoperative infection. However, adherence reported on individual SCIP measures, which is the only form in which performance is publicly reported, was not associated with a significantly lower probability of infection.

JAMA. 2010;303(24):2479-2485 www.jama.com

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Diminishing Surgical Site Infections After Colorectal Surgery With Surgical Care Improvement Project: Is It Time to Move on?

Michael Larochelle, B.A. • Neil Hyman, M.D.
Linda Gruppi, R.N. • Turner Osler, M.D.

Department of Surgery, University of Vermont College of Medicine, Burlington, Vermont

RESULTS: There was no improvement in the use of appropriate antibiotics ($P = .66$), administration within 1 hour of incision ($P = .11$), cessation within 24 hours ($P = .36$), or achievement of normothermia ($P = .46$).

CONCLUSIONS: A 5-year multidisciplinary program of targeted initiatives and interventions failed to improve compliance with Surgical Care Improvement Project measures or to decrease surgical site infection at our institution where colon resections are performed almost exclusively by high-volume specialists. These efforts consumed considerable resources and expenditures, but were of little or no value in our setting.

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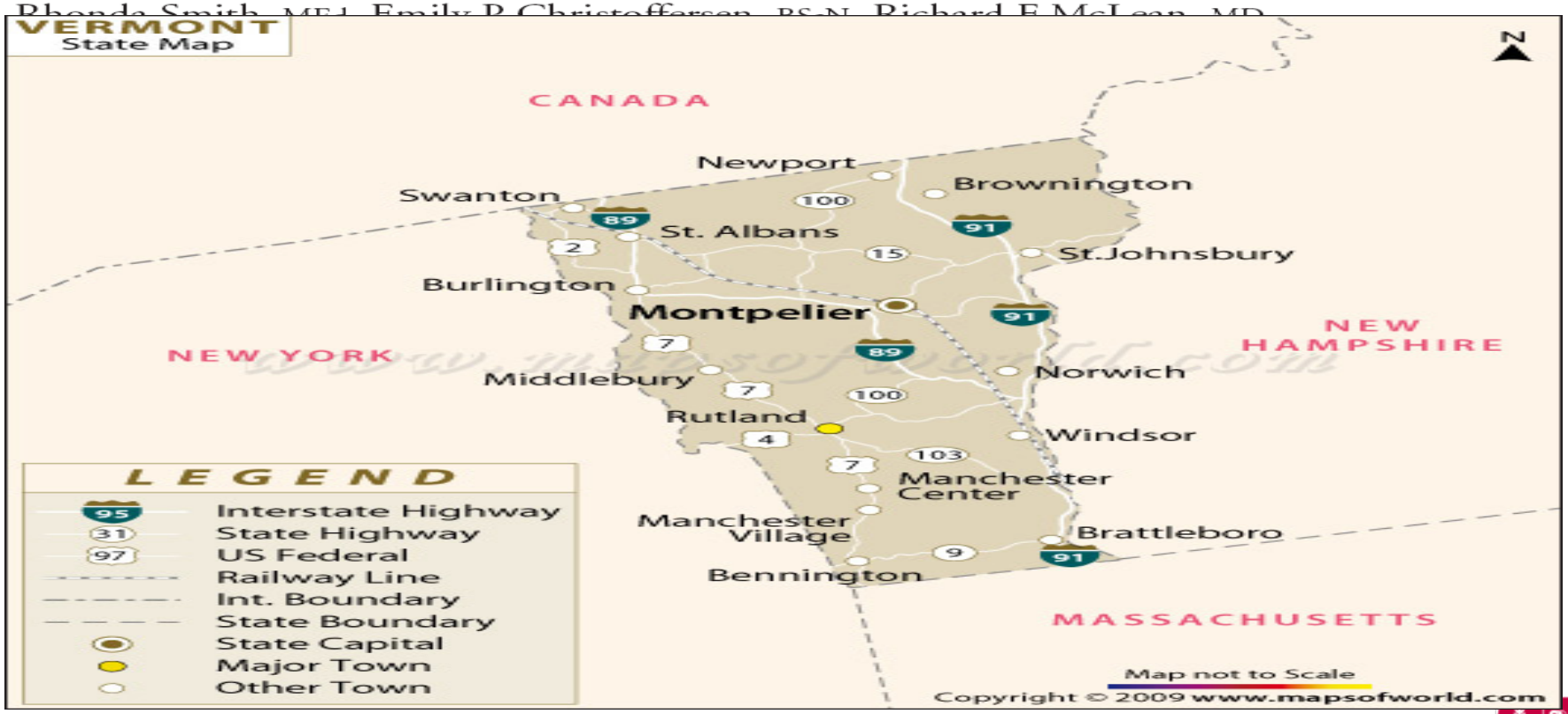
Implementation of Evidence-Based Practices for Surgical Site Infection Prophylaxis: Results of a Pre- and Postintervention Study

Shawn S Forbes, MD, Wesley J Stephen, MD, William L Harper, MD, Mark Loeb, MD,
Rhonda Smith, MEd, Emily P Christoffersen, BS-N, Richard E McLean, MD



Impact of SSI

- Year 2008: SSIs generate an average of $28,211 in extra costs per case and comprise 38% of all morbidities.

  (ACS NSQIP, Business case, 2008)

- SSI's add an additional 7-9 excess hospital days per case.

  (Infection Control Today, 2002)

Science of SSI

- The development of an SSI is a multifactorial and not dependent on perioperative antibiotic administration alone.

- Prophylactic Antibiotics
- Wound Oxygen Tension (↑O2 = ↓SSI risk)
- Normothermia

  Mild hypothermia, 1-2°C, increases wound infection rate.

  (Kurz, NEJM, 1996)

- Glucose Control (↑Hyperglycemia = ↑SSI risk)

What can be the following step?

- Further multivariate analysis of SSI risk factors
  - Diabetes*
  - Poor nutritional status*
  - Medications*
  - Body habitus
  - Age
  - Emergent surgery
  - Post discharge follow up and care

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What can be the following step?

- Identify pathogen
- Pattern recognition
- OR traffic
- Redosing

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Surgical Site Infection Prevention Strategies

Standardized OR Preps

☑ *Preps w/ highest efficacy*
(Chloraprep / Duraprep)

Surgery Chlorhexidine Guidelines

☑ *Outpatient Clinics:* **Provide patient with (4%) CHG EZ scrub sponges for Baths/Showers for pre-op skin prep night before surgery**

☑ *Pre Operative Units:* **If patient does not use (4%) CHG scrub RN to provide (2%) CHG wipes for use day of surgery**

☑ *Inpatient Units Nurses:* **Provide pre-operative antimicrobial skin prep using (2%) CHG Cloths night before or morning of surgery**

Scrubs Outside of the OR-Evidence Needed?

- We have a tremendous image problem in the medical industry anyway," Barone told me. "Because of the perceived prevalence of medical errors, people are amazed that anyone can get through the ordeal of being in the hospital. So just for the sake of improving our image, we should probably leave the scrubs at home."
- A few said that Martin was proposing a draconian solution to a relatively minor problem without **EVIDENCE** and that, should the health care field start clamping down on scrubs, they might as well prevent health care workers from carrying cell phones, laptops and all kinds of other objects that can ferry pathogens from the hospital to the home and everywhere in between

DATA Don't demonstrate…
If we can't be perfect why try?

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Preoperative bathing or showering with skin antiseptics to prevent surgical site infection (Review)

Webster J, Osborne S

- Three trials of 1443
- Participants compared bar soap with chlorhexidine; when combined there was no difference in the risk of SSIs (RR 1.02, 95% CI 0.57 to 1.84). Three trials of 1192 patients compared bathing with chlorhexidine with no washing, one large study found a statistically significant difference in favour of bathing with chlorhexidine (RR 0.36, 95%CI 0.17 to 0.79).

ITS SOAP!!!!

Preoperative bathing or showering with skin antiseptics to prevent surgical site infection (Review)
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Blood Utilization: Quality Improvement- Why and How?

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Frequency and Outcomes of Blood Products Transfusion Across Procedures and Clinical Conditions Warranting Inpatient Care: An Analysis of the 2004 Healthcare Cost and Utilization Project Nationwide Inpatient Sample Database

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Thomas F. Goss, PharmD,[2] and Sheri L. Dodd, MSc[3]

American Journal of Medical Quality

Blood Transfusion Methods

- **Nation-wide Inpatient Sample**
- **7 million annual discharges/1000 Hospitals**
- **All-Payor**
- **Blood Transfusion ICD 9 Procedure Codes** 99.XX or V58.2
- **Regression Analyses Controlled for Age, Gender, Race, Charlson Comorbidity, Admission Type, Payor**

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Blood Transfusion Prevalence Targeting Intervention

Table 1. Top 10 Primary Procedure Categories With Greatest Frequency of Transfusion

Primary Procedure (CCS Procedure Category)[a]	Transfusion Discharges (N = 2 231 419) n (%)
Upper gastrointestinal endoscopy; biopsy (70)	163 628 (7.3)
Hip replacement; total and partial (153)	108 495 (4.9)
Knee arthroplasty (152)	99 455 (4.5)
Respiratory intubation and mechanical ventilation (216)	86 202 (3.9)
Treatment; fracture or dislocation of hip and femur (146)	74 432 (3.3)
Coronary artery bypass graft (44)	64 240 (2.9)
Other vascular catheterization; not heart (54)	53 173 (2.4)
Colonoscopy and biopsy (76)	48 061 (2.2)
Colorectal resection (78)	46 433 (2.1)
Other operating room procedures on vessels other than head and neck (61)	41 676 (1.9)

Blood Transfusion Prevalence Targeting Intervention

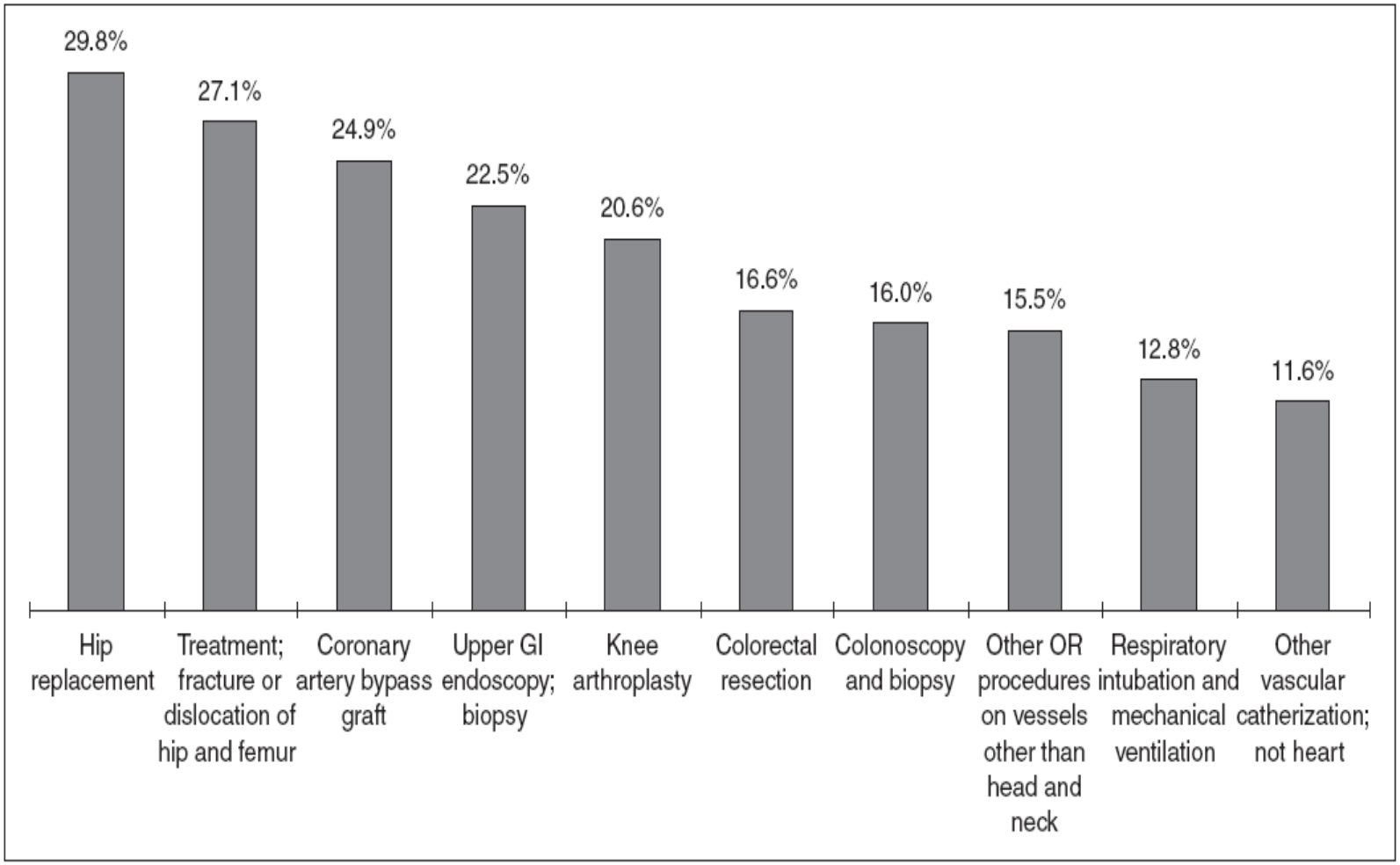

Figure 1. Frequency of transfusion among top 10 procedures with greatest frequency of transfusion.

Blood Transfusion Prevalence
How Are Patients Different?

Table 2. Demographic and Clinical Characteristics of Inpatient Stays Among Top 10 Procedures With Greatest Frequency of Transfusion

Characteristic	Overall (N = 4 085 168)	Transfused (N = 785 795)	Nontransfused (N = 3 299 372)	*P* Value
Age, mean (standard error)	61.1 (0.36)	66.9 (0.38)	59.7 (0.40)	<.0001
Male, n (%)	1 829 001 (44.7)	323 336 (41.1)	1 505 665 (45.6)	<.0001
Charlson comorbidity index, n (%)				<.0001
0	2 103 260 (51.5)	357 784 (45.5)	1 745 476 (52.9)	

Blood Transfusion Prevalence
How Are Patients Different?

Payer			
Medicare	2 234 278 (54.7)	502 469 (63.9)	1 731 809 (52.5)
Private	1 188 805 (29.1)	183 193 (23.3)	1 005 612 (30.5)
Medicaid	391 778 (9.6)	59 583 (7.6)	332 195 (10.1)

Blood Transfusion Prevalence Outcomes

Table 3. Outcomes Associated With Blood Transfusion in Hospitalized Patients Among Top 10 Procedures With Greatest Frequency of Transfusion

Outcome	Overall (N = 4 085 168)	Transfused (N = 785 795)	Nontransfused (N = 3 299 372)	*P* Value[a]
Death				
n (%)	262 110 (6.4)	59 356 (7.6)	202 754 (6.1)	<.0001
OR (95% CI)[b]		1.7 (1.56, 1.85)		<.0001
Length of stay (days)				
Mean (SE)	7.3 (0.10)	9.2 (0.20)	6.8 (0.10)	<.0001
Incremental change[b] (SE)		2.5 (0.17)		<.0001
Total charges				
Mean (SE)	$40 687 ($875)	$55 363 ($1730)	$37 242 ($784)	<.0001
Incremental change[b] (SE)		$17 194 ($1273)		<.0001

Blood Transfusion Prevalence Outcomes

Infections				
At least 1, n (%)	7720 (0.189)	2606 (0.332)	5114 (0.155)	<.0001
OR of at least 1 (95% CI)[b]		1.9 (1.36, 2.55)		.0001
Pneumonia, n (%)	2964 (0.073)	958 (0.122)	2006 (0.061)	<.0001
Sepsis, n (%)	2131 (0.052)	824 (0.105)	1307 (0.040)	<.0001
Urinary tract infection, n (%)	1780 (0.044)	569 (0.072)	1211 (0.037)	<.0001
Cellulitis and abscess, n (%)	516 (0.013)	144 (0.018)	372 (0.011)	<.0001
Bacteremia, n (%)	306 (0.007)	89 (0.011)	217 (0.007)	<.0001
Osteomyelitis, n (%)	24 (0.001)	24 (0.003)	0 (0.000)	<.0001

Predictors of Postoperative Bleeding

1) Advanced age
2) Small body size or preoperative anemia (low RBC volume)
3) Anti-platelet & anti-thrombotic drugs.
4) Prolonged operation (CPB time) – high correlation with OR type.
5) Emergency operation
6) Other co-morbidities (CHF, COPD, HTN, PVD, renal failure, etc.)

Causes of Postoperative Bleeding & Blood Transfusion

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- Patient-related
  - Age
  - Red blood cell volume
  - Co-morbidities
    - CHF
    - Renal failure
    - COPD
- Procedure-related
  - Prolonged operation
  - Emergency operation
  - Surgical site bleeding ('hole in the artery')

Guidelines & Aspirin – the Dilemma

- Aspirin causes increased bleeding.
  - Amount of bleeding is small (0.5 units/patient)
- Aspirin important for better outcome in acute coronary syndromes
  - Nothing more important than aspirin including heparin, thrombolytics, 2b/3a, & *PCI*.
- STS recommendation – stop aspirin for a few days in very low risk patients, continue in all others.

Ferraris VA, et al. STS Guidelines. Ann Thorac Surg. 2005;79:1454-61.

Do Thienopyridines Cause Postoperative Bleeding?

- Evidence is more compelling than for aspirin
- 11 studies with clopidogrel & CABG.
- All studies show increased bleeding when clopidogrel given within 5 days of CABG – some with increased mortality.
- AHA/ACC & STS guidelines recommend stop clopidogrel for 5 days before operation, if possible.

Ferraris VA, et al. STS Guidelines. Ann Thorac Surg. 2005;79:1454-61.; www.acc.org, Accessed Jan. 2006.

Thienopyridines (Plavix®) & Postoperative Bleeding

Study	Pts.	Outcome in clopidogrel-treated patients.
CURE Investigators. NEJM, 2005; 345:492.	910	Increased major bleeding if plavix-treated within 5 days of CABG in UA/NSTEMI patients.
van der Linden, Circulation. 2005;112:I276.	37	Increased bleeding & re-exploration - aprotinin used in one group
Akowuah, ATS. 2005;80:149.	24	Increased mortality, transfusion, and re-exploration in placebo - aprotinin & EACA used in one group.
Von Heymann, CCM; 2005:33:2241.	36	Increased chest tube drainage & non-heme.
Lindvall, ATS. 2005;80:922.	18	Increased transfusion (heme & non-heme), & re-exploration
Ascione, ATS. 2005;79:1210.	91	Increased mortality, transfusion and re-exploration.
Chu, ATS. 2004;78:1536.	41	Increased transfusion (heme & non-heme)
Chen, JTCVS. 2004;128:425.	45	Increased transfusion (heme & non-heme)
Gansera, Thorac Cardiovasc Surg.2003;51:185.	64	Increased transfusion (heme and non-heme), & re-exploration
Ray, BMC Cardiovasc Disord, 2003;3:3.	57	Increased re-exploration & transfusion
Yende, CCM. 2002;29:2271.	51	Increased transfusion (heme & non-heme) & re-exploration.
Hongo, JACC. 2002:40:231.	59	Increased morbidity, transfusion, & re-exploration.

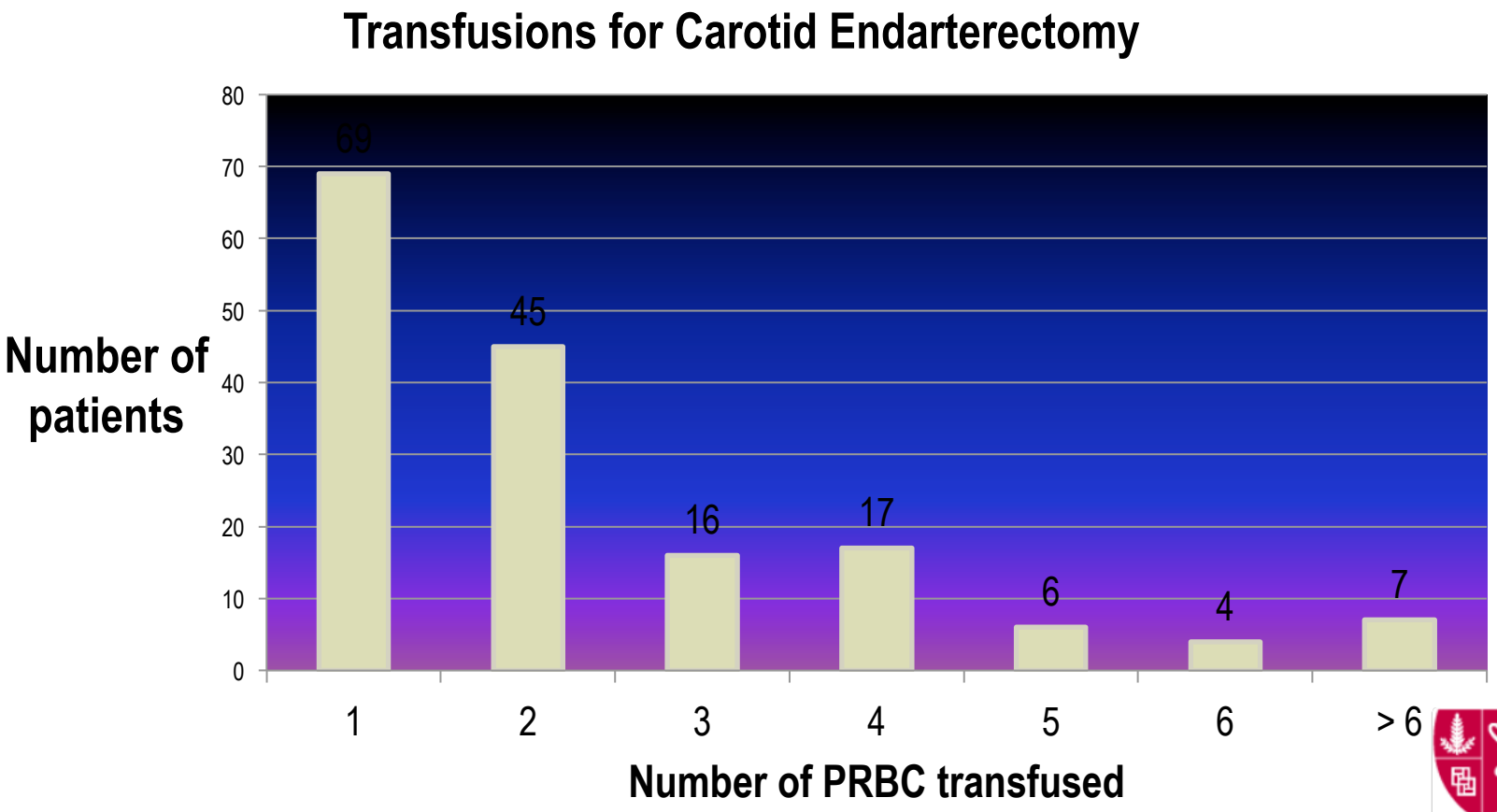
What Works for Blood Conservation?

- Multiple interventions are better than a few ‘favorite’ interventions.
- TQM approach – ‘Measurement & Management’.
- ‘Outcome greater than sum of parts’
  - Examples
    - Normovolumic hemodilution
    - Anti-fibrinolytic drugs

Normovolemic Hemodilution – Class IIb Recommendation

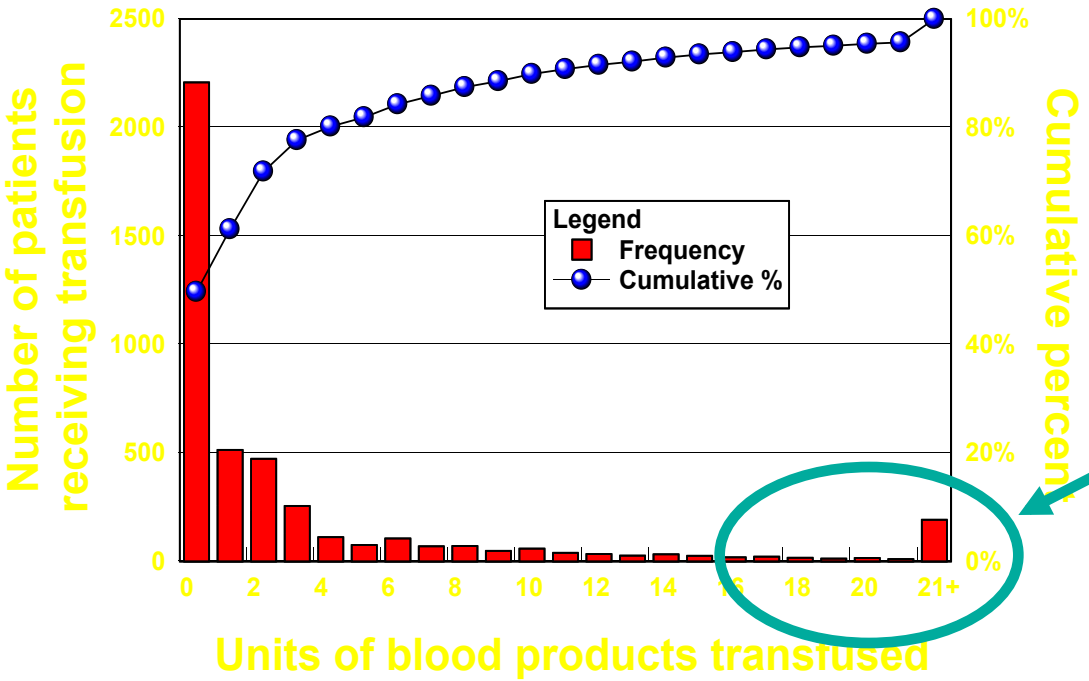
- 5 prospective studies
  - 3 showed no benefit
  - 2 showed benefit
  - Not possible to do meta-analysis.
- Contraindications
  - Urgent operation
  - Anemia
  - Sepsis
- May be beneficial when used as part of a multimodality approach.

Most of Patients Received One Unit PRBC!



Transfusion Profile

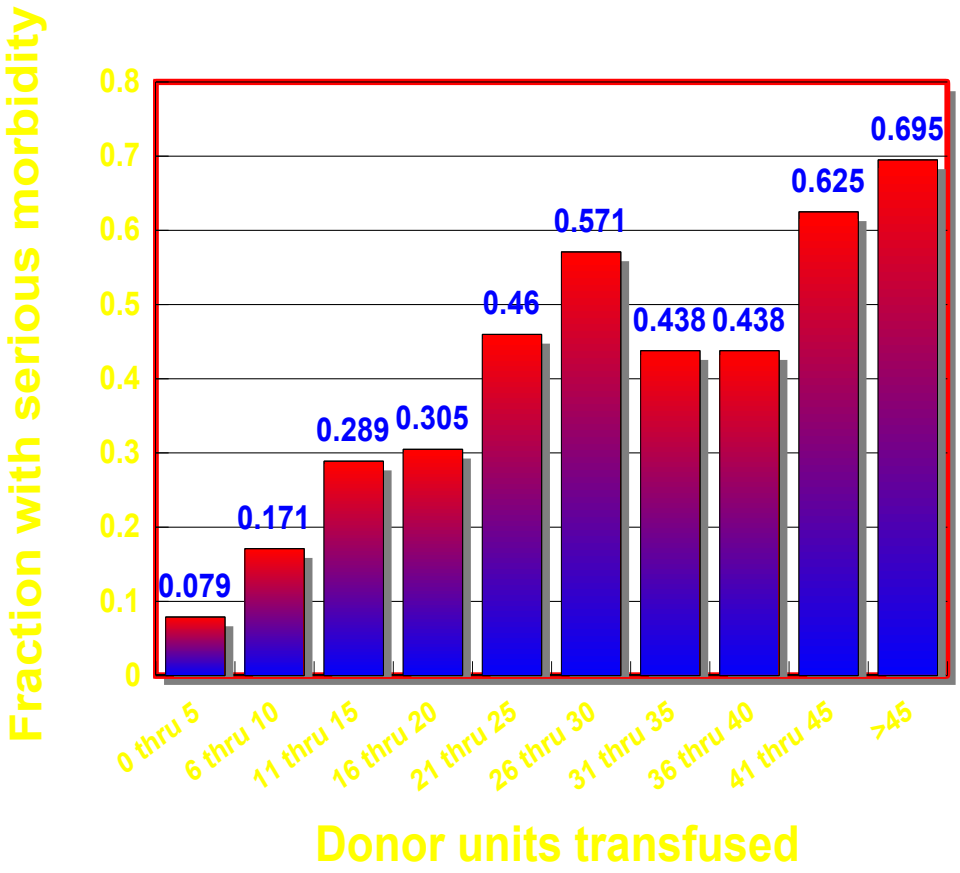
4445 patients having cardiac procedures w/ CPB over 4 years.



- More than 50% do not get transfusion.
- Patients who receive > 10 units of blood are in 90th percentile
- 10-20% of patients consume 80% of blood products.

Ferraris, *Int. J. Angiology*, 2006.

Transfusion & Serious Morbidity



- Serious morbidity and mortality increase with the amount transfused.

What About Small Amounts of Blood Transfusion

Study	Mortality without transfusion	Mortality from Transfusion of 1-2 U PRBC	Mortality from Transfusion of 3 or more U PRBC	Relative Risk for Transfusion of 1-2 U PRBC
Carotid Endarterectomy	0.8%	6.1%	8.0%	2.74 ($p < 0.001$)
Non-cardiac Chest Operations	2.4%	7.2%	13.9%	2.01 ($p < 0.001$)
Lower Extremity Revascularization	1.9%	6.2%		2.48 ($p < 0.001$)

Ferraris, STSA, 2009

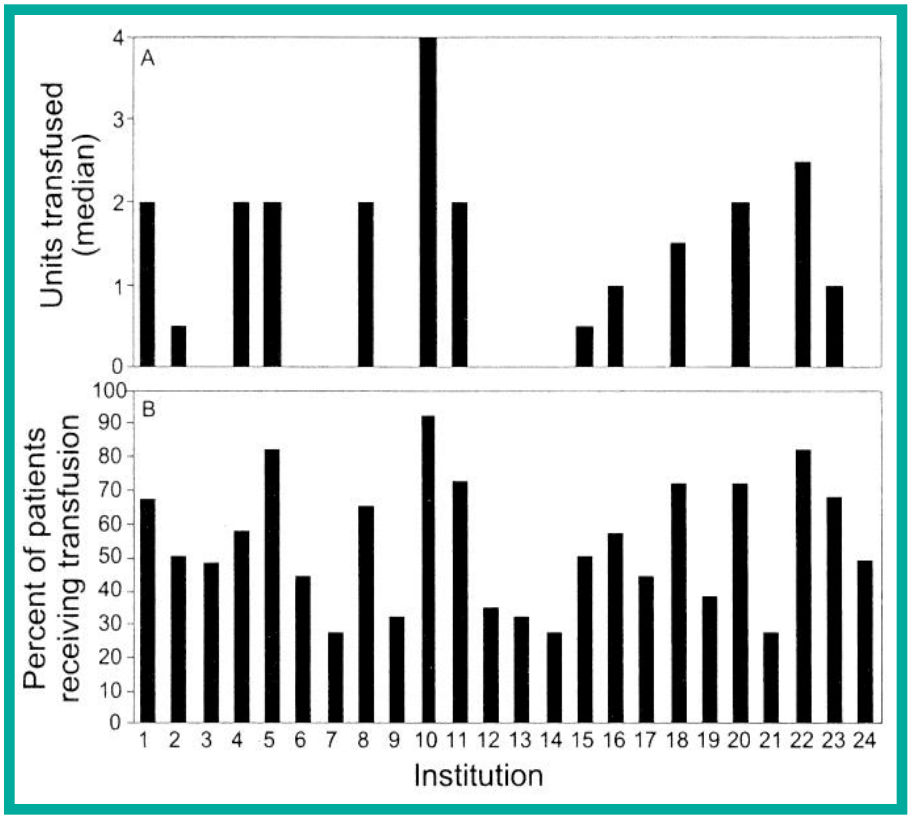
Bleeding After PCI Is a Risk for 1-year Mortality (5,384 patients)

- Independent predictors of 1-year mortality.

Variable	Hazard Ratio (95% CI)
Bleeding w/in 30 days	2.96 (1.96 -4.48)
MI w/in 30 days	2.29 (1.52 - 3.46)
Urgent revascularization w/in 30d	2.49 (1.16 - 5.35)
Age (years)	2.27 (1.78 - 2.89)
Diabetes	1.47 (1.11 - 1.96)
Multivessel CAD	2.72 (1.58 -4.67)
Elevated troponin	1.77 (1.27 -2.47)
LV ejection fraction	0.71 (0.60 - 0.85)
Creatinine	1.10 (1.06 - 1.14)

Ndrepepa, 2008

Variability in Transfusion Practices



- Physician & institution practices are hard to manage (*control* is a bad word!).
- Accurate & timely information is not available ('lab' takes too long).

Stover, Anesthesiology. 1998;88:327.

Problems with Interventions - Consensus Guidelines for RBC Transfusion

Transfusion indicated	***Transfusion not indicated***	***Uncertain benefit of transfusion***
Hgb ≤ 6.0 on CPB	Hgb ≥ 10 after CPB without critical end-organ ischemia.	Hgb between 8 -10g/dl in a stable patient benefit is unclear.
Hgb ≤ 8.0 in high risk (age > 65, and/or co-morbidity).		
Acute blood loss (30% of blood volume).		
Rapid blood loss without immediate control.		
Hgb ≤ 10 g/dl in certain patients with critical end-organ ischemia.		

Guidelines for Transfusion of Non-red Cell Hemostatic Factors

- No evidence base!
- Transfuse for clinical bleeding only.

Can be guided by accurate & timely point-of-care tests (e.g. Platelet count, PFA-100, TEG, POC PT/PTT, etc.).

Ferraris VA, et al. STS Guidelines on blood conservation. Ann Thorac Surg, 2007.

Transfusion Algorithms

- 7 RCT's tested transfusion algorithms w/ point-of-care testing to reduce transfusion.
  - 6 of 7 RCT's showed reduced transfusion or re-exploration rates.
    - Didn't matter what type of POC testing.
    - Various algorithms used.

Ferraris VA, et al. STS Guidelines on blood conservation. Ann Thorac Surg, 2007.

Transfusion Algorithms & POC Testing –

Study	Pts	Algorithm	POC tests	Outcome
Avidan, 2004	210	• Transfuse PRBC for Hb ≤ 8.0. • DDAVP for abnormal PFA-100 followed by platelets if no response to DDAVP. • Aprotinin for abnormal TEG amplitude. • Explore for failure to respond & continued bleeding.	• TEG • PFA-100 • Hepcon	Decreased transfusion of heme & non-heme blood products.

Avidan MS, Br J Anaesth. 2004; 92:178.

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Blood Utilization: Quality Improvement- Why and How?

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Director of Surgical Quality
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Evidence-based Guidelines

Based on SHC's transfusion practices and over utilization of blood, evidence based guidelines were developed.

RBC Guidelines (for hemodynamically stable, non-bleeding pts):

- **Transfusions indicated only for pts with Hgb <7g/dl (for post-cardiac surgery pts and pts with acute coronary syndrome Hgb <8 g/ dl).**

Platelet Guidelines

- **A single dose of platelets (adult: one apheresis product) is generally recommended as it increases the platelet count by 30,000- 60,000/ µL. (Guidelines for transfusions are based on specific disease states with corresponding platelet count triggers)**

EPIC Interventions:

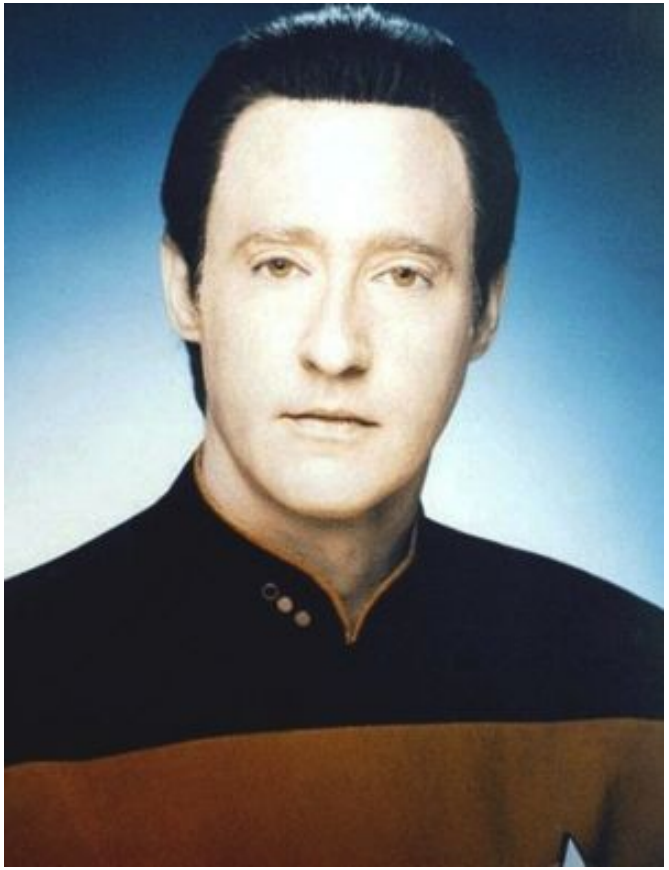
- Best Practice Alert (BPA) for RBC Transfusions (now available)
  - Pulls in most recent hemoglobin values and scans diagnoses on the problem list for active bleeding
  - If the requested transfusion does NOT meet the guidelines, a "pop up" reminder flashes
- Platelet Order template in EPIC (live in Sep 2010)
  - Embedded into the blood product order screen:
    - Decision support built in to check the previous platelet level prior to ordering additional units.
    - Guidelines on disease states/platelet levels that trigger the requirement of platelet transfusion.
    - Indications for platelet transfusion needs to be identified when ordering

NOW WHAT?

Engaging Your Surgeons

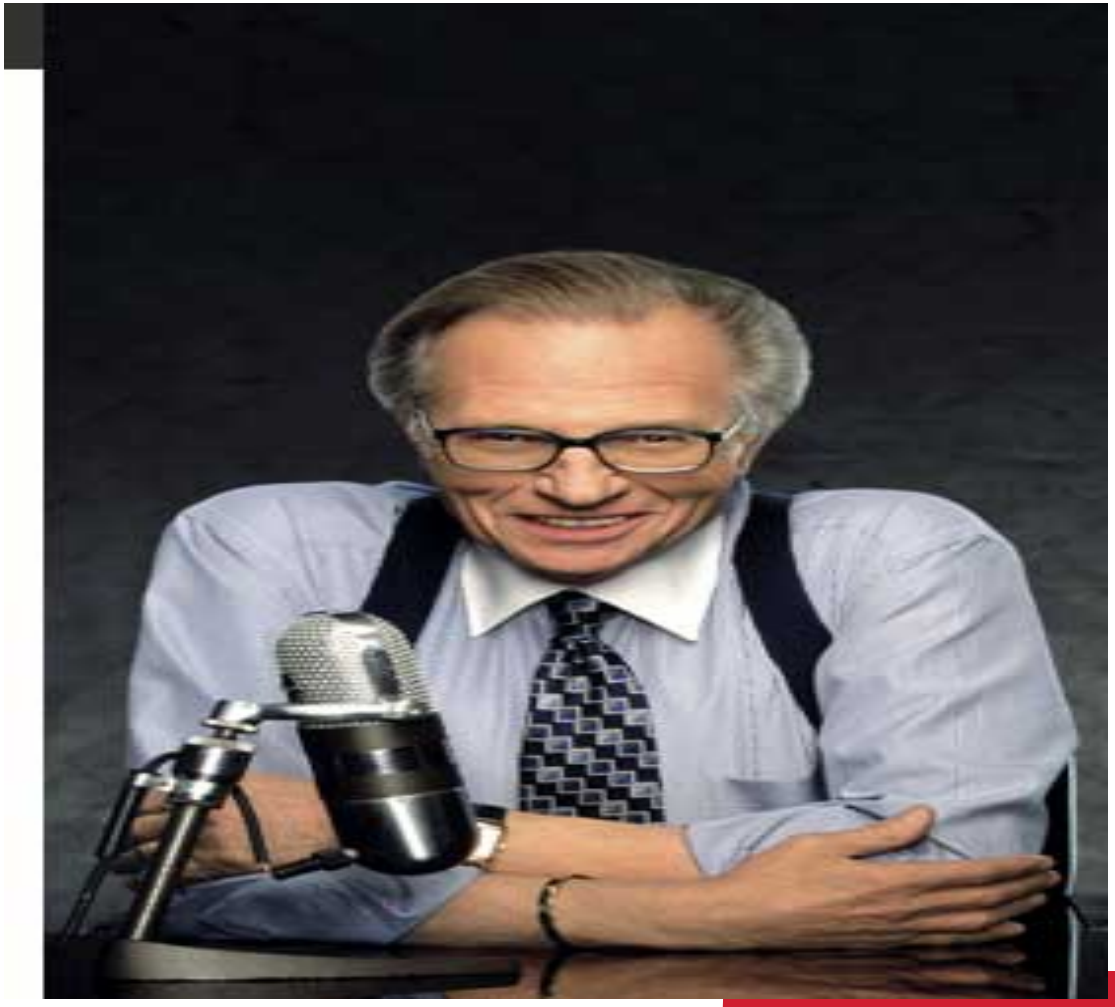
- Leadership Commitment
- Data Transparency
- Target Areas of Improvement
- Be Prepared for:
- Stages of Grief- Denial, Anger, Bargaining, Acceptance
- Types of Surgeons

Data, Data, Data

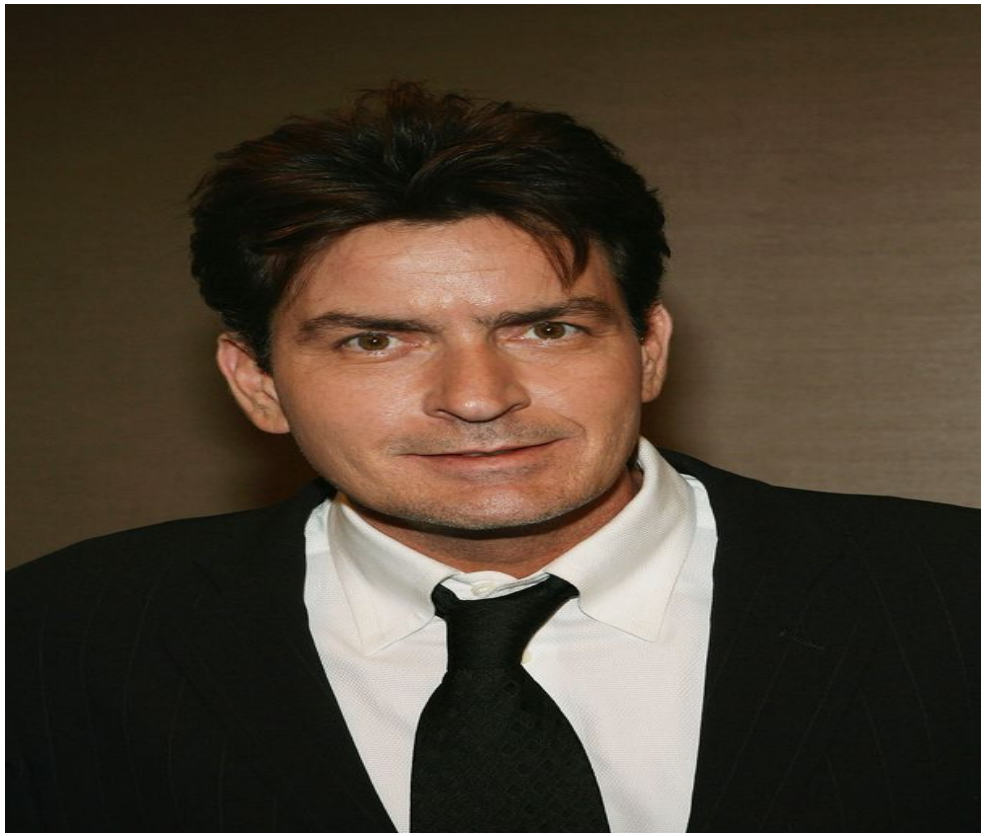


I've Got Friends in High Places

I've Always Done It This Way



I Don't Have a Problem



A Success Story
American Bariatric Surgery

Table 3. Outcomes of Bariatric Surgery for Medicare-Only Patients Within the 18 Months Before and After Implementation of the Medicare National Coverage Determination (NCD)[a]

Outcomes	Before NCD (n=1847)	After NCD (n=1639)	OR (95% CI)
Length of hospital stay, mean (SD), d	3.8 (4.3)[b]	3.1 (3.7)	NA
Overall complications	270 (14.6)[c]	170 (10.4)	1.48 (1.21-1.82)
Pulmonary complications	54 (2.9)[c]	28 (1.7)	1.76 (1.10-2.82)
Cardiac complications	2 (0.1)	0 (0.0)	NA
Wound infection	30 (1.6)[c]	11 (0.7)	2.16 (1.10-4.25)
Venous thrombosis or pulmonary embolism	26 (1.4)[c]	10 (0.6)	2.24 (1.07-4.67)
Hemorrhage	44 (2.4)	26 (1.6)	1.51 (0.93-2.47)
Urinary tract infection	4 (0.2)	0 (0.0)	1.78 (0.33-9.71)
30-Day readmission	203 (11.0)	162 (9.9)	1.13 (0.91-1.40)
In-hospital mortality	7 (0.38)	4 (0.3)	1.56 (0.45-5.32)
Observed-to-expected mortality ratio	1.07	0.89	NA
Cost, mean (SD), $	15 061 (12 324)[b]	14 152 (9746)	NA

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The Role of Surgical Champions in the American College of Surgeons National Surgical Quality Improvement Program – A National Survey

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- **Aim: Determine Who the Surgical Champion and How Does Surgical Champion Achieves Change**

- **Study Population: All 238 NSQIP Surgical Champions Surveyed**

QI Practice Patterns for Surgical Champions

- "Veteran" Participation
- Meeting With Nurse Abstractor
- Presenting Data to Administration
- Presenting Data to Surgeons

QI Practice Patterns for Surgical Champions

- "Veteran" Participation
- >2 years
- Building Relationships
- Cementing Administrative Support
- Learning Your Field

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QI Practice Patterns for Surgical Champions

Meeting With Nurse Abstractor

QI Practice Patterns for Surgical Champions

- Presenting Data to Administration
- Critical
- ROI
- Create Standing Meeting
- Surgical Council- Administration, Nursing, Anesthesiology, All Surgeons, Internists

NSQIP Notification

- NSQIP Adverse Event
- Each Surgeon Receives email
- Opportunity to further inform
- Must Conform to NSQIP Standards

Presenting the Data

- Using Data as Quality Diagnostic Tool
- Benchmark to Other Hospitals
- Identifying Adverse Events
- Peer Review

Remaining Challenges

- Adequate Staffing
- Surgeon Apathy
- Lack of Established QI Programs
- Lack of Hospital Support

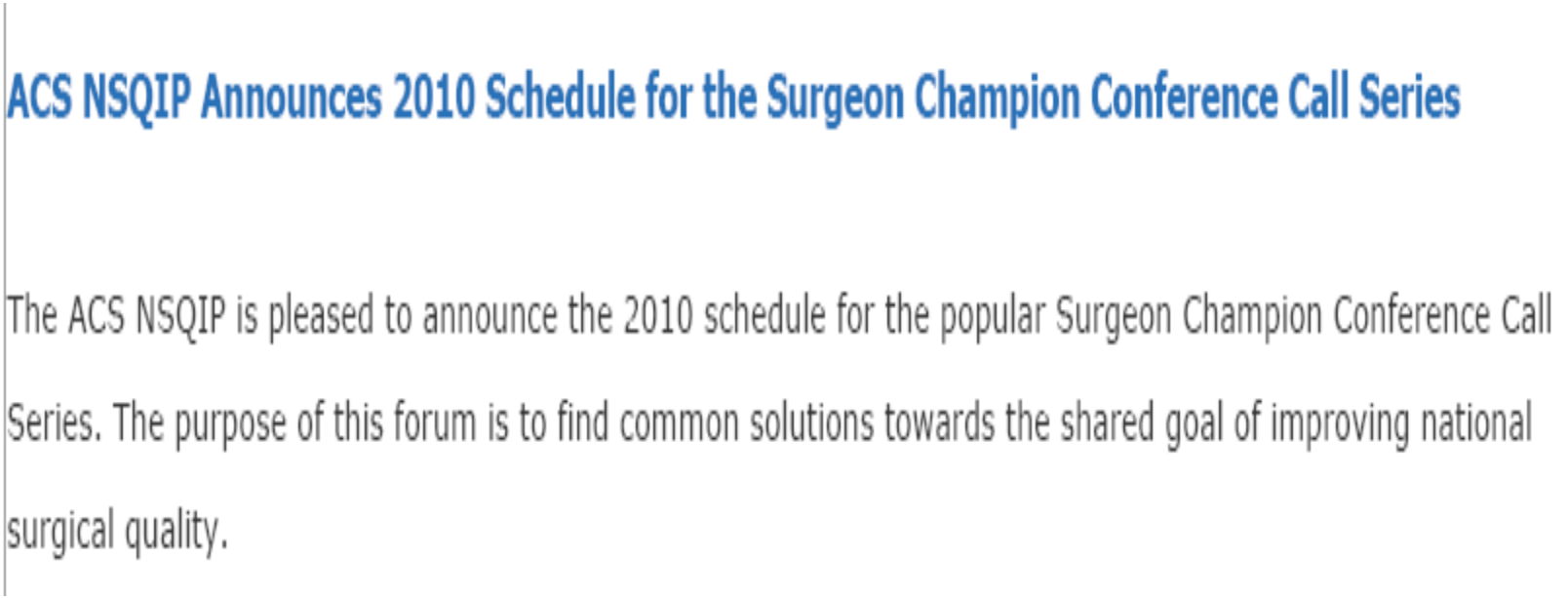
Surgical Champion Cornerstones

- Time
  - Average 10 hours a week
- Money
  - 100 vs 73% Participation in CQI for paid vs not
- Influence and Authority
- Persistence
- Passion

Quality Is Not a Personal Virtue; Quality is an Expectation of Performance That Is Accountable and Rewarded

- Identification
- Prevention
- Collaboration
- Elimination

- Utilize resources available from the ACS NSQIP secure website



ACS NSQIP Announces 2010 Schedule for the Surgeon Champion Conference Call Series

The ACS NSQIP is pleased to announce the 2010 schedule for the popular Surgeon Champion Conference Call Series. The purpose of this forum is to find common solutions towards the shared goal of improving national surgical quality.

- Monitor the impact of quality improvement initiatives and disseminate those achievements.
  - All of health care benefits when best practices are identified and shared.

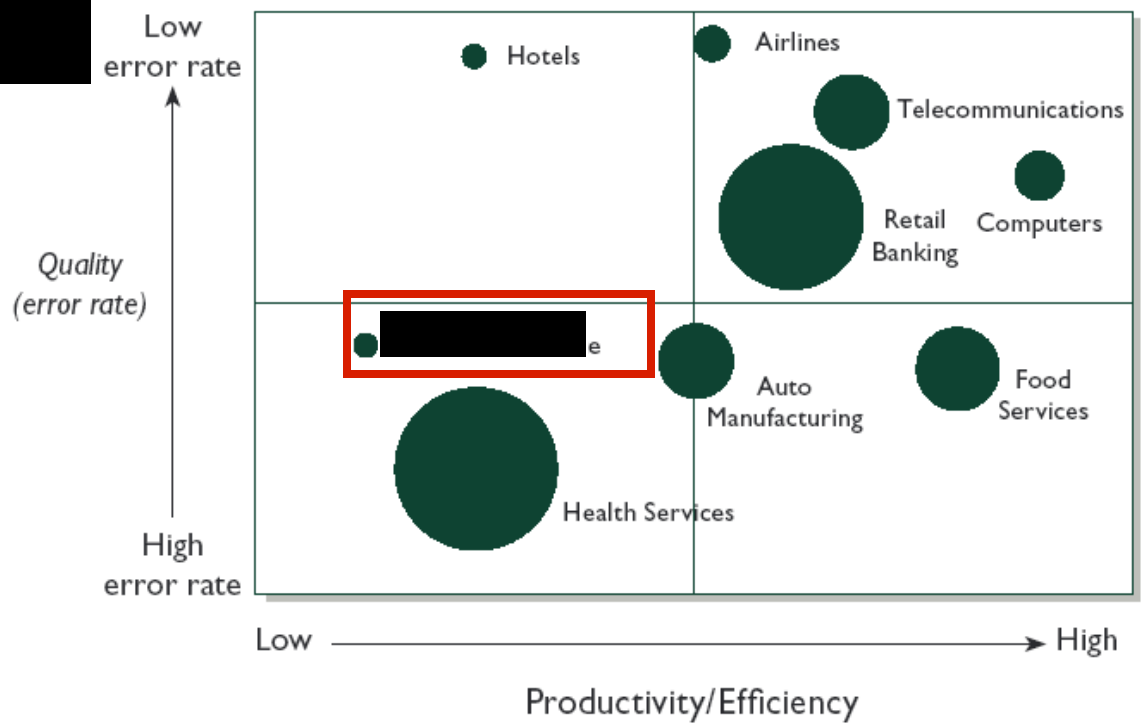
Surgical Champion Calls

- Common Problems Call For Common Solutions
- Monthly
- Call Transcripts
- Want Everyone Involved
- Call In from 35-120
- Lively Discussion
- WIPs welcome

Industries by Size, Productivity, and Efficiency

[redacted]

Cross-Industry Comparison of Size, Productivity, and Efficiency



Optimism

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