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Creating a Culture of Safety in the Operating Room

David L. Feldman, MD MBA CPE FAAPL FACS

June 12, 2025

Disclosure of Conflict(s) of Interest

David L Feldman, MD reports no financial interest/relationships.

Agenda

- Background - Respect
- Reliable teams
  - TeamSTEPPS
  - Time-outs & Checklists
  - Advanced teamwork tools
- Reliable processes
  - System Design
  - Human factors
- Just Culture
  - Reporting and accountability

Patient Safety & Respect

"...the key success factors in a safety effort are teamwork and respect, two basic ideas that are too often lacking in medicine. People have to be trained to work in teams and to respect others on the team."

Interview with Lucian Leape, MD. *Journal of Healthcare Management*. Volume 53, Number 2. March/April 2008.

Polling Question #1

Polling Question #2

Prior Results

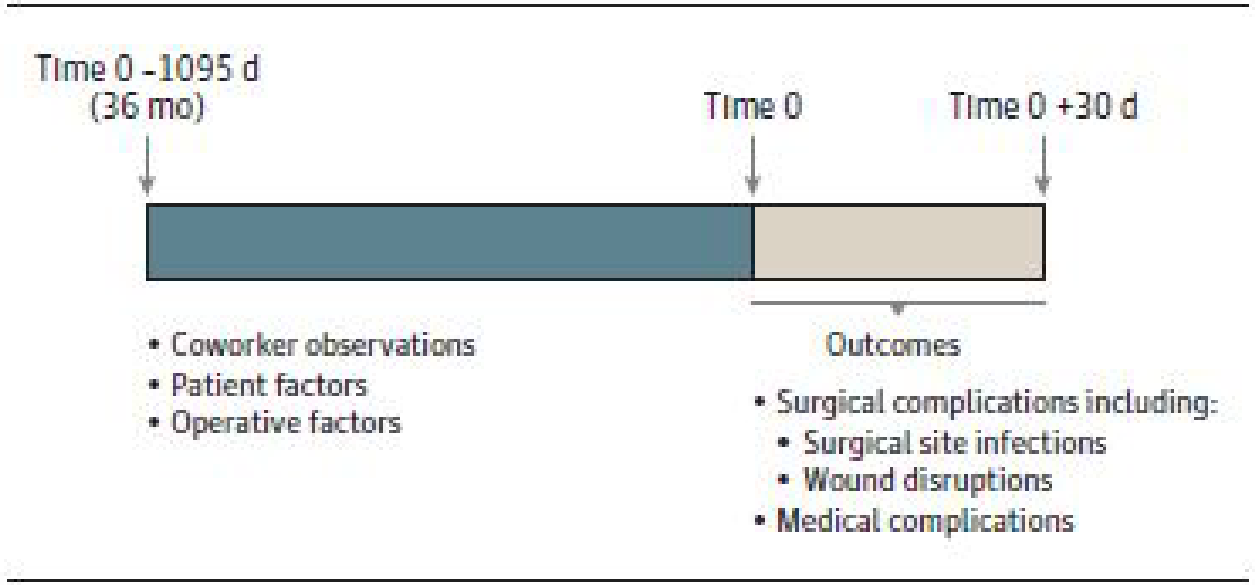
"I have been treated disrespectfully"

	AHA Webinar 4-19 (n=414)	AHA Conf 6-19 (n=33)	MSIII 9-22 (n=67)	FMA 2-23 (n=134)	NY Hospital 3-24 (n=64)
Yes	37%	30%	13%	22%	63%
No	63%	70%	87%	78%	38%

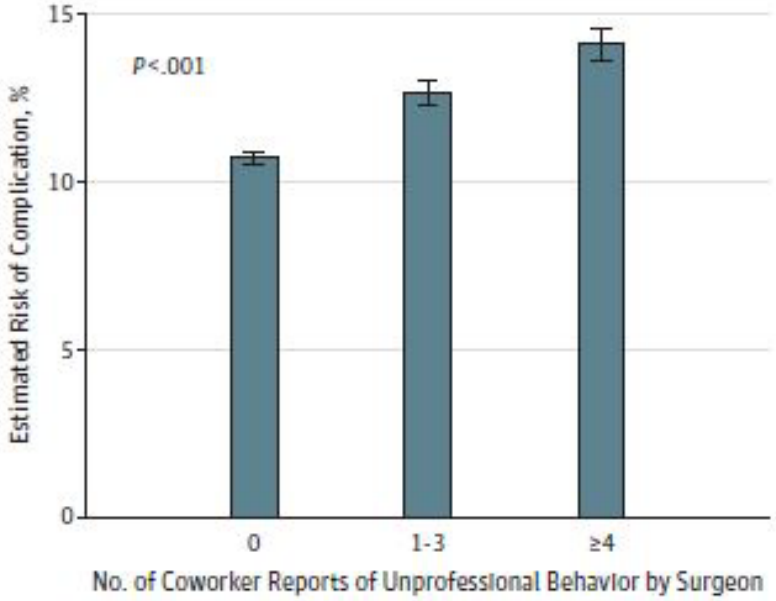
"I've seen others being treated disrespectfully"

	AHA Webinar 4-19 (n=411)	AHA Conf 6-19 (n=36)	MSIII 9-22 (n=77)	FMA 2-23 (n=157)	NY Hospital 3-24 (n=76)
Yes	66%	67%	57%	31%	86%
No	34%	33%	43%	69%	13%

Co-Worker Complaints & Outcomes



CORS & NSQIP data from Stanford and Vanderbilt



"...nurse [who] reports, "I asked for the procedure time out. Dr X said, 'Look, we're all on the same page here. Let's get going without all this time out nonsense,'"

Cooper, *JAMA Surgery*, 2019.

Co-Worker Complaints by Specialty

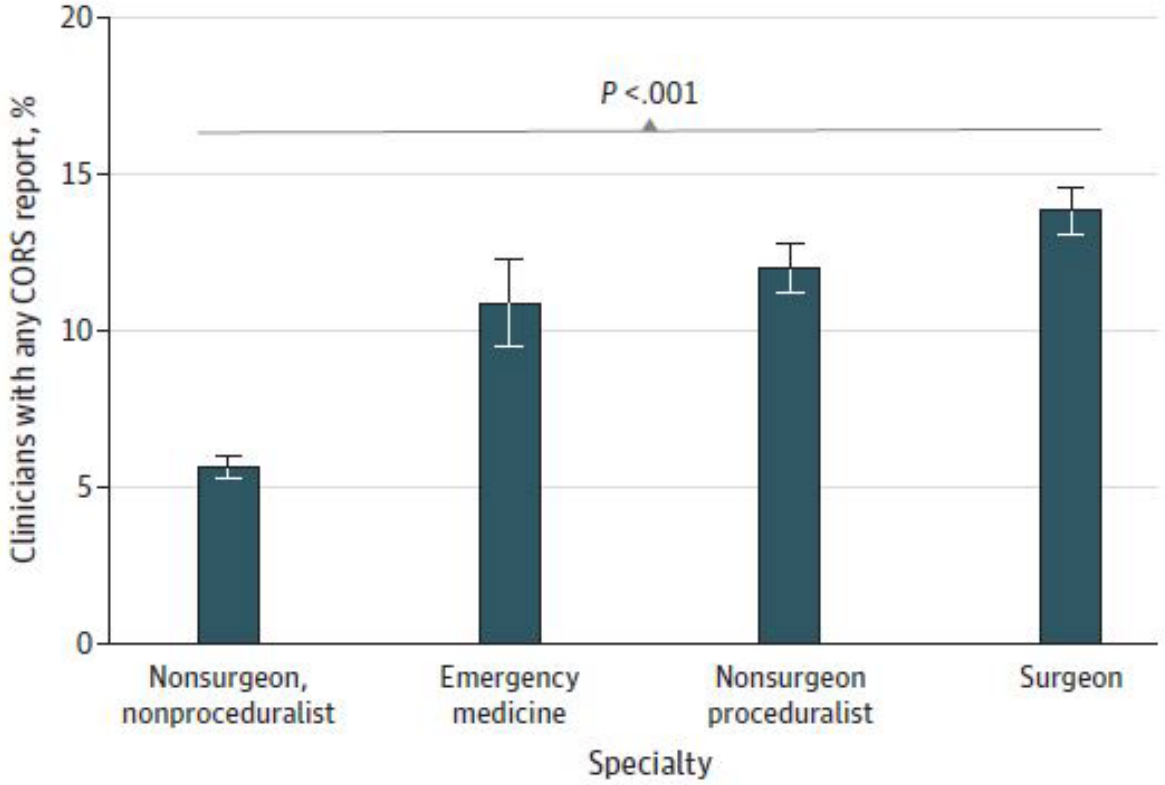
35,120 physicians – 1/1/18 to 12/31/22

18,288 (52.1%) non-surgeon non-proceduralists

8,213 (23.4%) surgeons

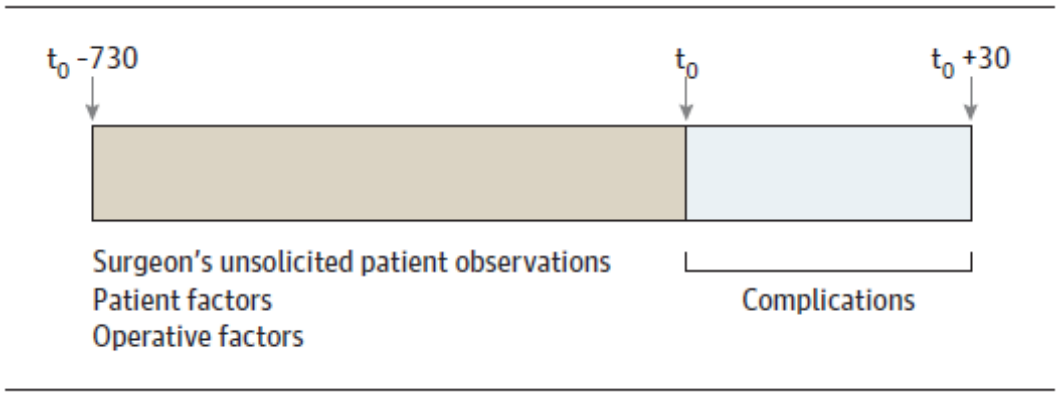
6,743 (19.2%) non-surgeon proceduralists

1,876 (5.3%) emergency medicine MDs

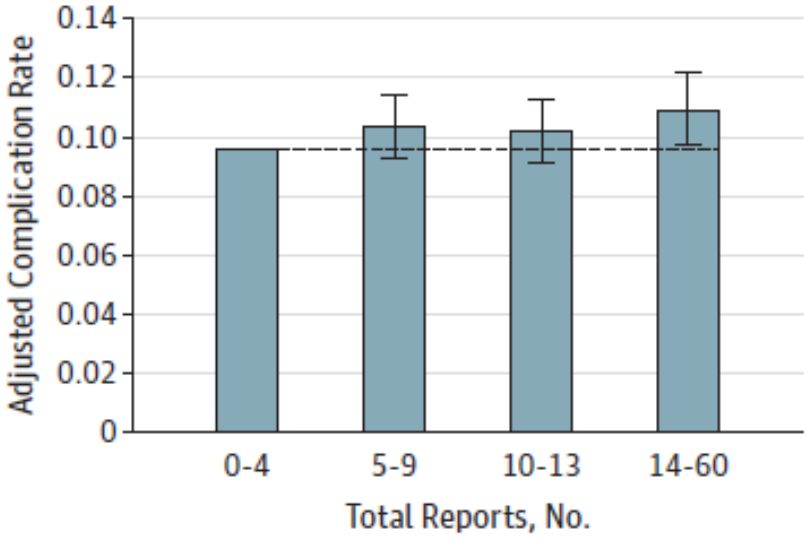


Cooper, *JAMA Network Open*, 2024.

Patient Complaints & Outcomes



PARS & NSQIP data from Emory, Stanford, UCLA, UNC, UPenn, Wake, Vanderbilt

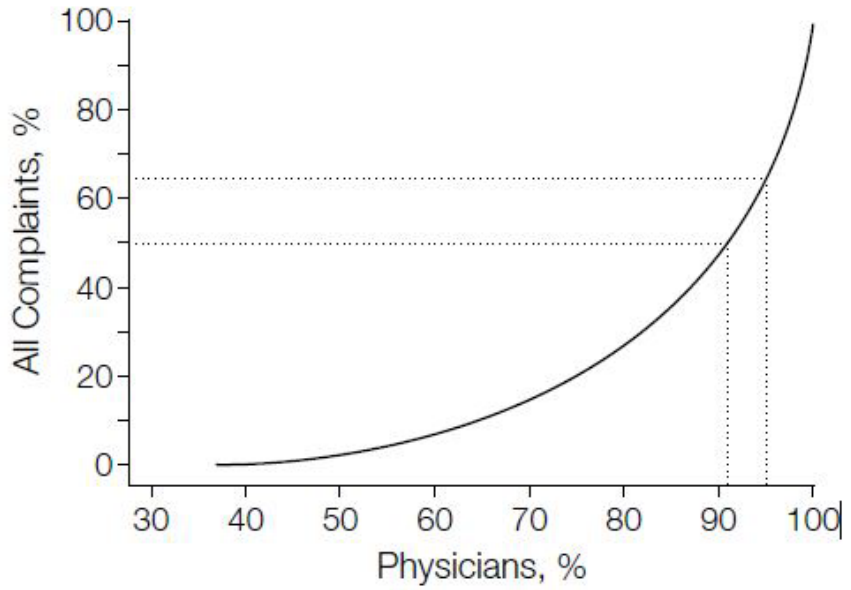


"I asked Dr Y how long he thought the operation would take. He said, 'Look, your wife will die without this procedure. If you want to ask questions instead of allowing me to do my job, I can just go home and not do it.'"

Cooper, *JAMA Surgery*, 2017, 522-529.

Patient Complaints & Malpractice Risk

Figure. Cumulative Distribution of Physician Cohort Members and Unsolicited Complaints



The dotted lines illustrate that 9% of cohort members were associated with 50% of patient complaints and 5% were associated with approximately one third of all complaints.

645 general and specialist physicians.
January 1992 - March 1998.
2,546 physician-years of care.

Patient Complaints (adjusted for clinical activity) related to:

- Risk management file openings
- File openings with expenditures
- **Lawsuits**

Hickson, *JAMA*, 2002.

Reports by Medical Students

42 Med Students applying in Urology at University of Minnesota

"There was a floating OR nurse - she would bark at students in the operating room and yell in the hall."

"Tension is often between surgery and anesthesia. . .for example, anesthesia is pushing pressers and didn't tell the surgeon."

"It was a long day in the operating room…Emotions were high, communication was poor, the surgeon was lashing out due to frustration."

TABLE 1. Types of Disruptive Behavior

	Number of Students Mentioning
Nonphysical (Verbal)	
Yelling, cursing, cussing, barking, tantrum	25
Nasty comments, scolding, berating, demeaning, criticizing, belittling	10
Aggressive, short, rude, blunt, mean, inpatient	3
Passive aggressive stunts	3
Making staff leave room	2
Threatening	2
Complaining	1
Unwilling to take advice	1
Distracting others	1
Physical	
Throwing things	9
Banging, stomping, pacing	3
Bumping resident	1
Hitting, slapping	1
Eye rolling	1
Postural changes	1
Pouting	1

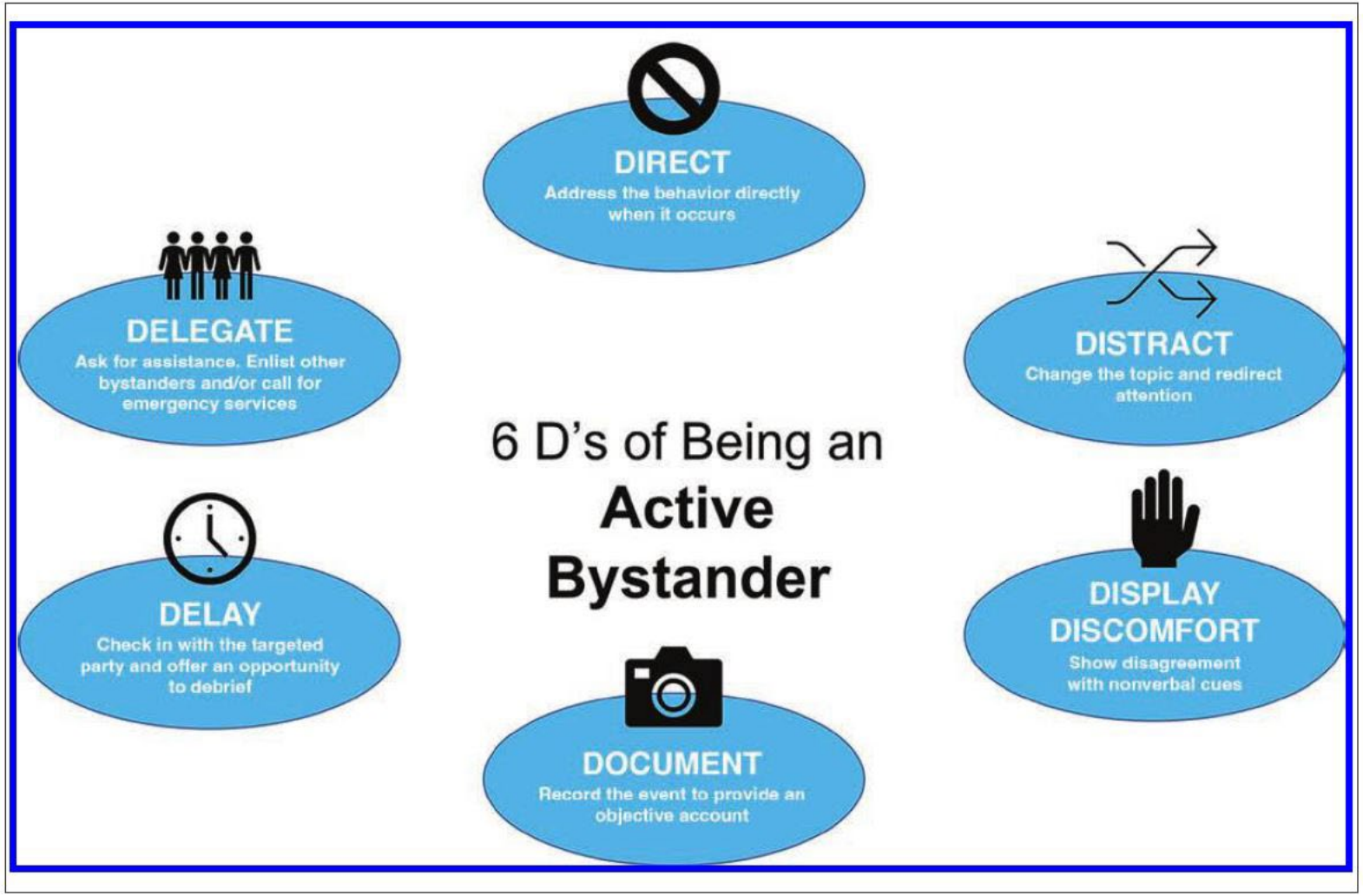
Chrouser, *Jnl Surg Ed*, 2019, 1231-1240.

Range of Disrespectful Behavior

- Disruptive behavior
- Humiliating, demeaning treatment of nurses, residents, and students
- Passive-aggressive behavior
- Passive disrespect
- Dismissive treatment of patients
- Systemic disrespect

Leape, *Acad Med*, 2012, 845-852.

Being an Active Bystander



"Disruptive behaviors can occur in many settings… These events are harmful and disproportionately affect women and radiologists from underrepresented backgrounds, contribute to burnout, and pose a barrier to increasing diversity in radiology."

Perchik, *AJR*, 2023, 163-170.

Effective Disrespectful Behavior Policies

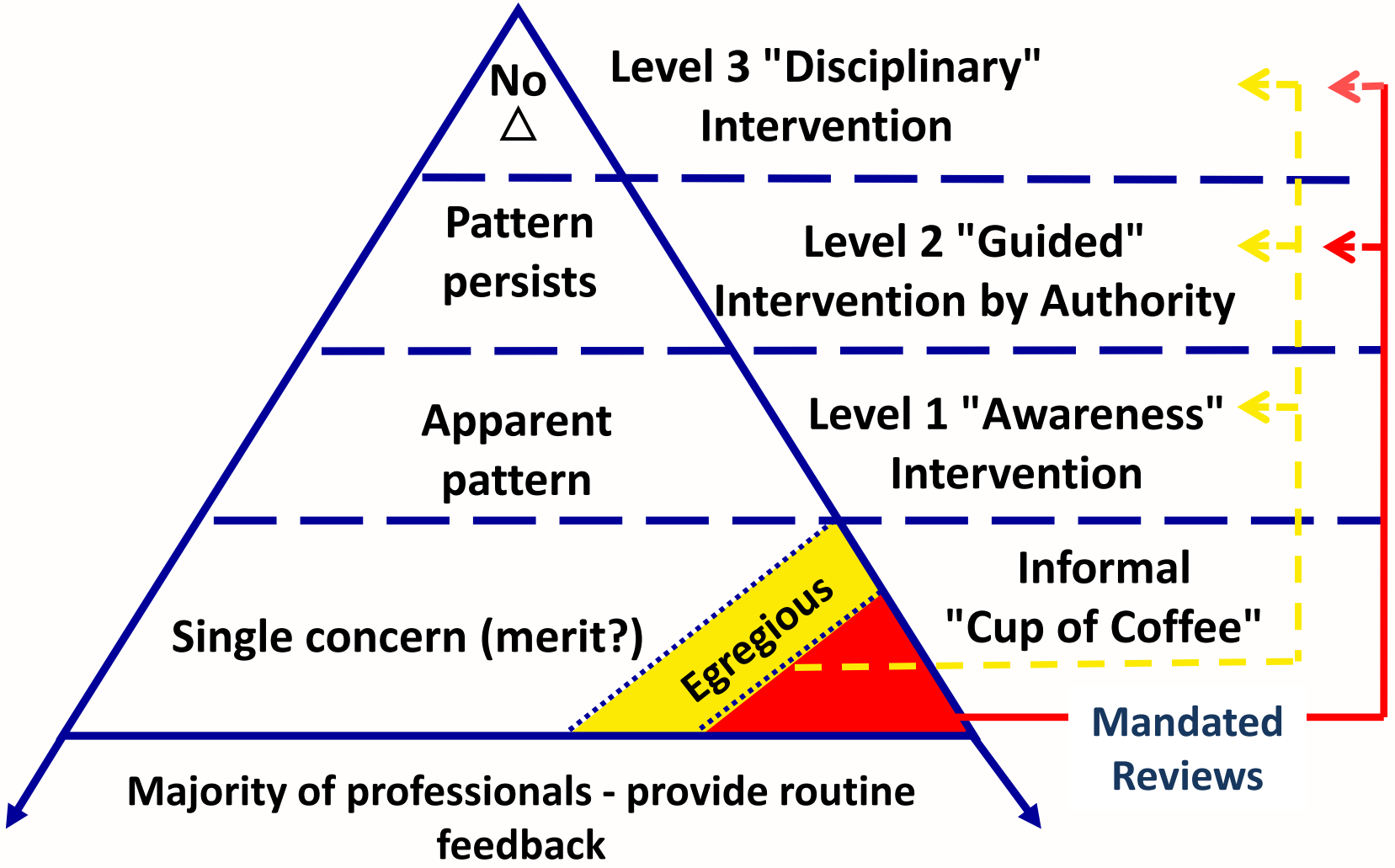
- Fairness
- Consistency
- Graded response
- Restorative process
- Surveillance mechanisms

Leape, *Acad Med*, 2012, 853-858.

Vanderbilt University Medical Center
Center for Patient and Professional Advocacy

- Professional Conduct Policy
- Training for faculty in
  - Commitment to *Credo behaviors*
  - Feedback to students & residents
  - Behavior policy
- Patient Advocacy Reporting System (PARS℠)
- Co-Worker Observation Reporting System℠ (CORS℠)

Promoting Professionalism Pyramid



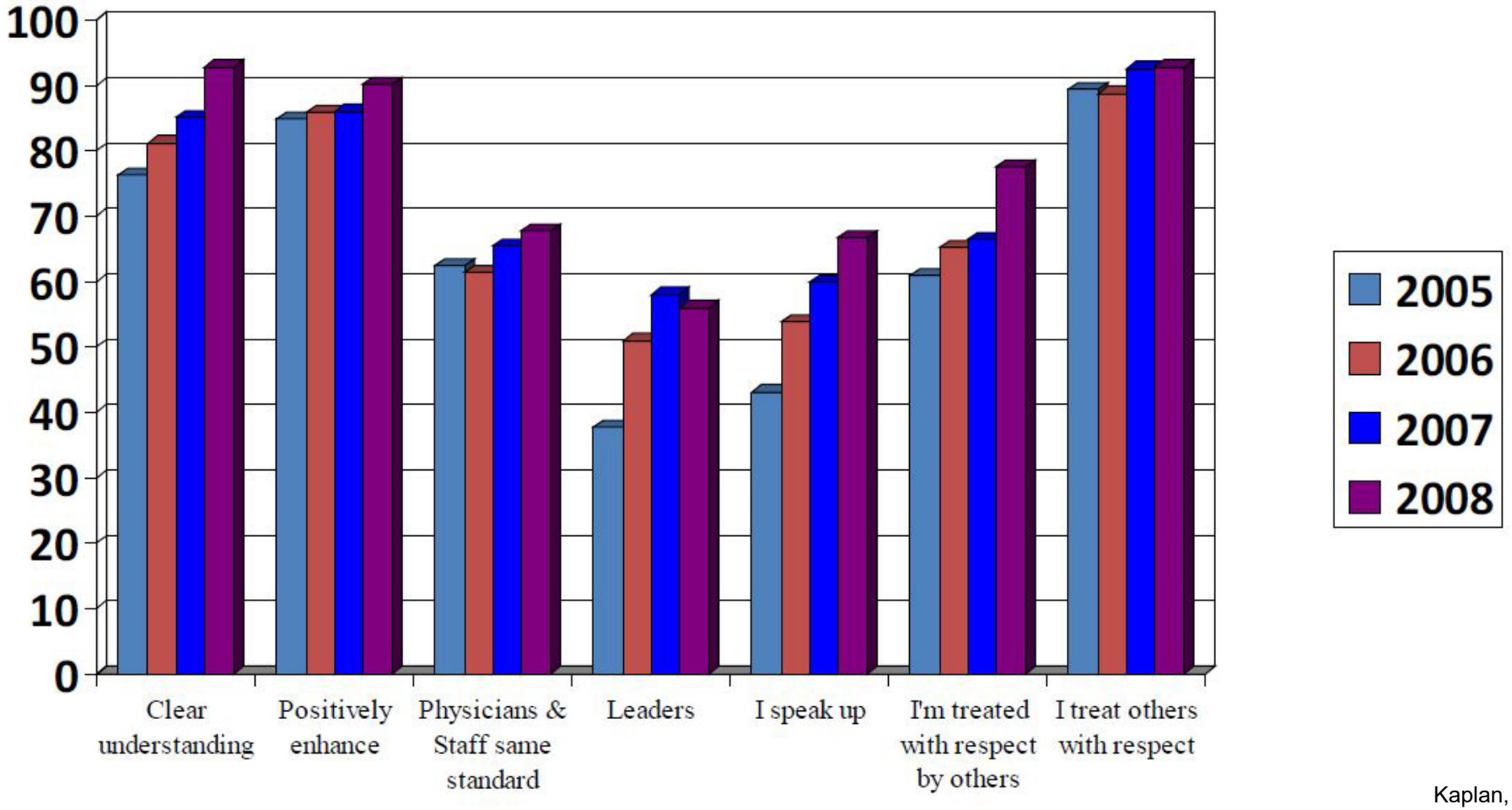
Webb et al. *Jt Comm Jnl Qual Saf* 2016;149-161

Maimonides Medical Center

- Code of Mutual Respect
  - Clear expectations of respectful behavior that applies equally to everyone
  - Recognition of and mechanisms to address systems issues that cause frustrations
  - Investigations conducted by unbiased peers from other departments
  - Progressive discipline that is similar in concept for physicians and other employees
- Skills training program
- Mediated conversations
- Respect survey

Maimonides Medical Center

Respect Survey Results –Perioperative Services



Kaplan, *AORN J,* 2010, 495-510.

Polling Question #3

Agenda

- Background - Respect
- **Reliable teams**
  - **TeamSTEPPS**
  - **Time-outs & Checklists**
  - **Advanced teamwork tools**
- Reliable processes
  - System Design
  - Human factors
- Just Culture
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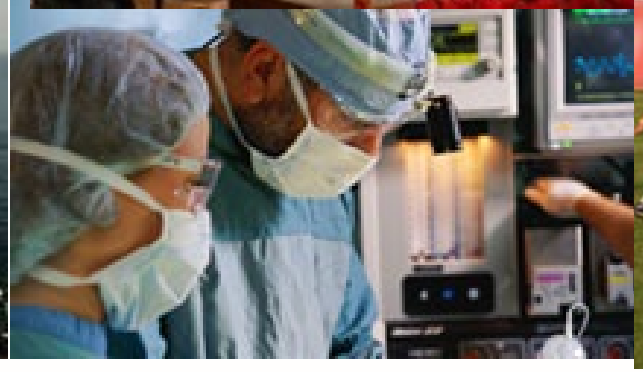
Teamwork is all around us



Polling Question #4

What is a team?

- Two or more people who achieve a mutual goal through *interdependent* and *adaptive* actions
- Not a “group” which achieves its goal through *independent, individual* contributions

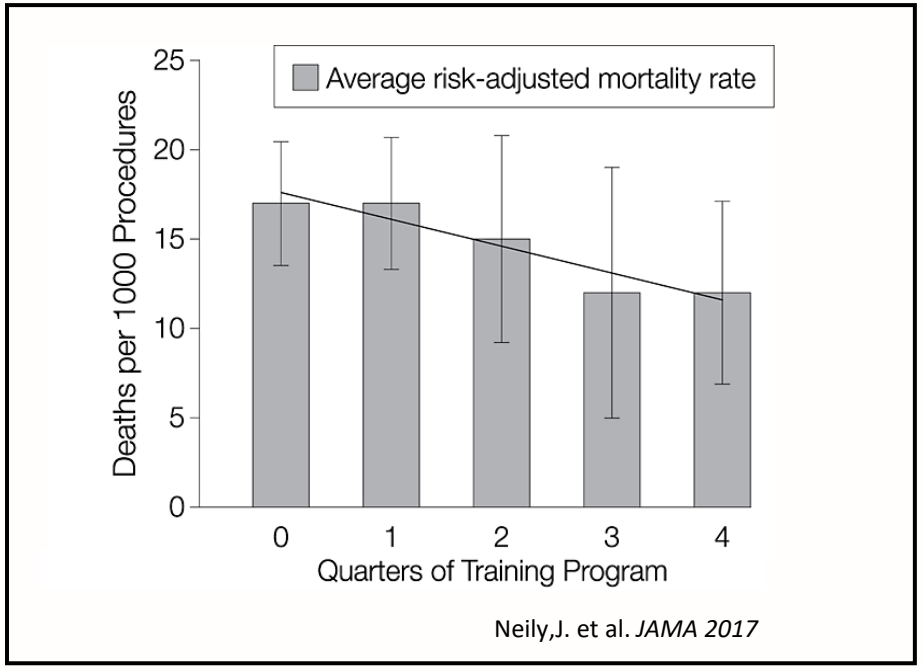
An expert team!

TeamSTEPPS®

Team Strategies & Tools to Enhance Performance & Patient Safety

"Initiative based on evidence derived from team performance…leveraging more than 25 years of research in military, aviation, nuclear power, business and industry…to acquire team competencies"

TeamSTEPPS®



Neily,J. et al. *JAMA 2017*

OR Safety

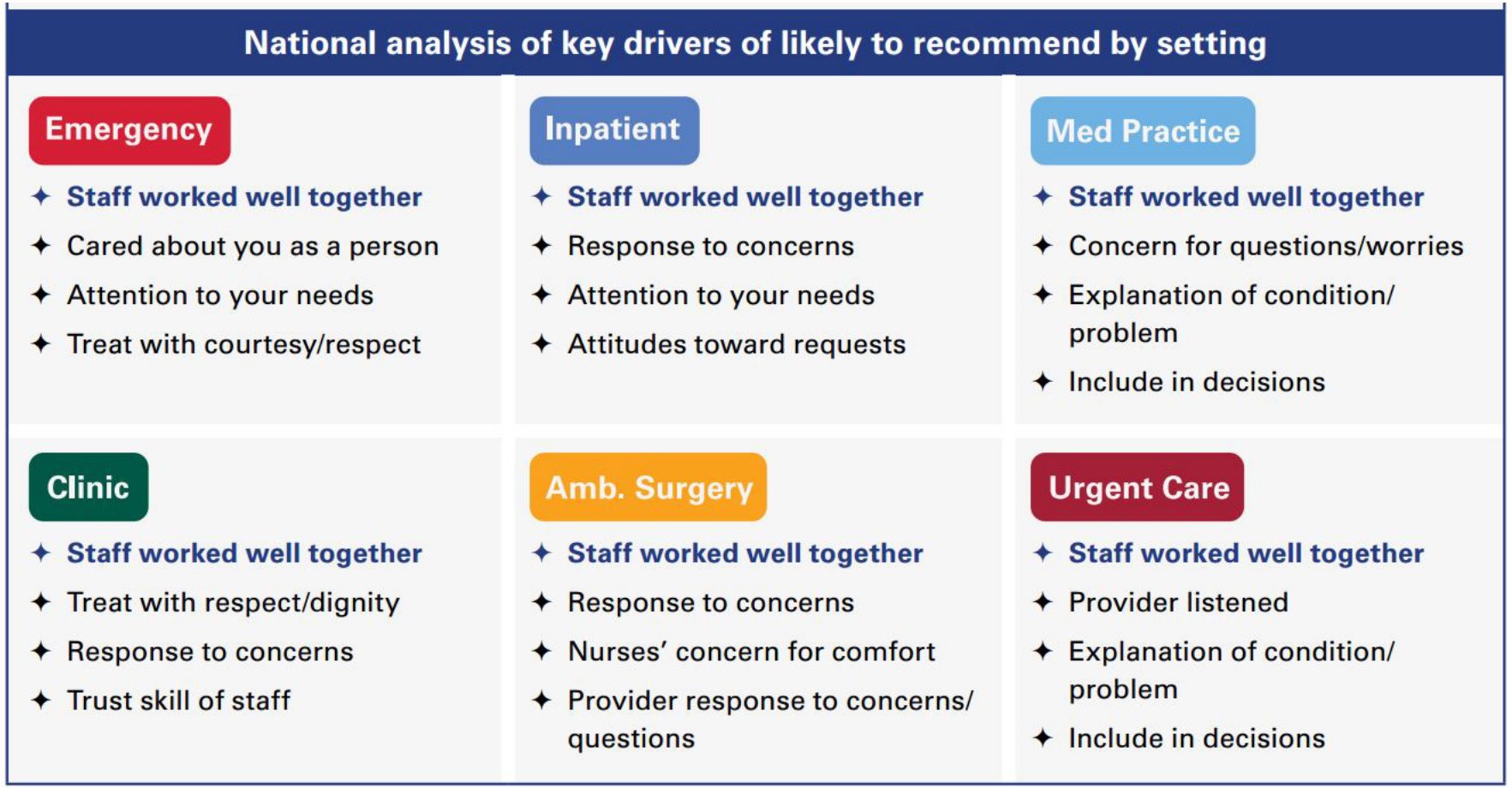
- ⬆ Communication/Team Satisfaction
- ⬆ Use of antibiotics/DVT prophylaxis
- ⬇ Morbidity
- ⬇ Mortality

OR Efficiency

- ⬆ Communications among staff
- ⬆ Staff awareness
- ⬆ Equipment utilization
- ⬇ Length of procedures
- ⬆ First-case start times

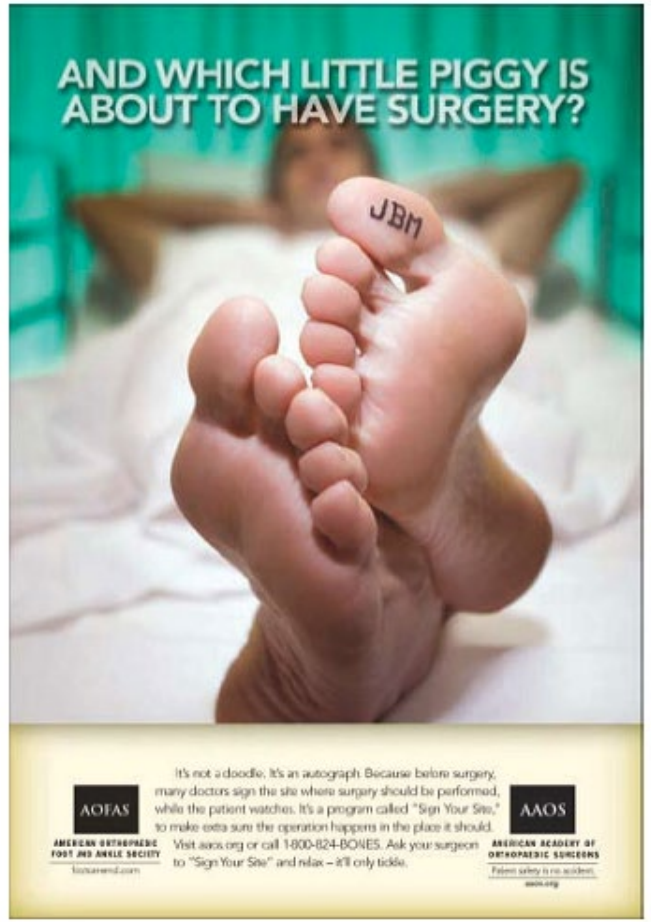
Teamwork and Patient Experience

"Patients are attuned to team dynamics and interpersonal competencies"



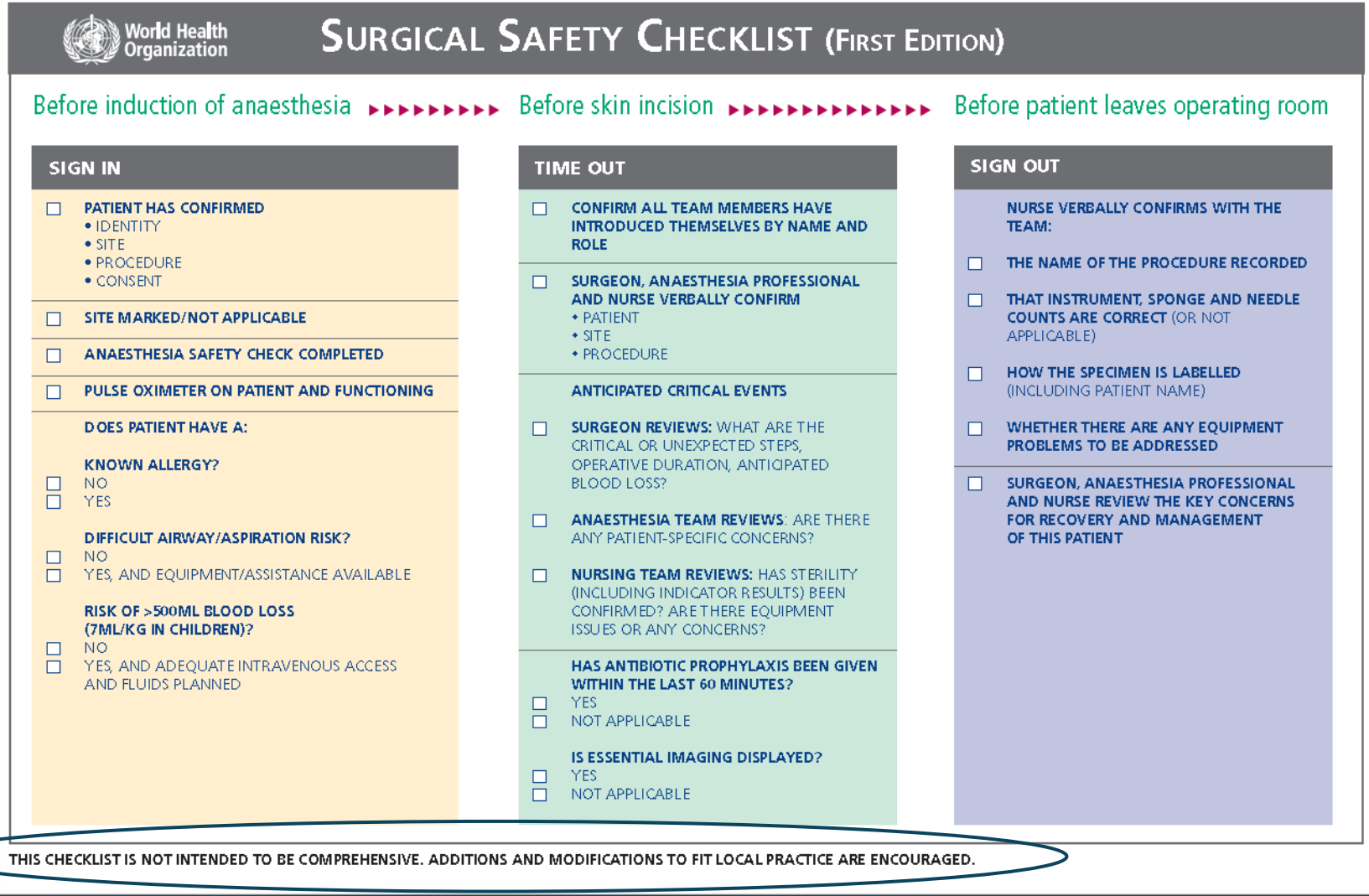
The Joint Commission Universal Protocol

- Pre-procedure verification process
  - A conversation between Attending Anesthesiologist and Attending Surgeon
- Site Marking
  - NYS – surgeon marking site, must be present for time-out and perform procedure
- Time-Out
  - NYS – immediately prior to incision
  - Best practice requires:
    - Attending Surgeon
    - Attending Anesthesiologist
    - Circulating RN



WHO Surgical Checklist - 2009

"Safe Surgery Saves Lives"



World Health Organization

SURGICAL SAFETY CHECKLIST (FIRST EDITION)

Before induction of anaesthesia ▸▸▸▸▸▸▸▸▸ Before skin incision ▸▸▸▸▸▸▸▸▸▸▸▸▸ Before patient leaves operating room

SIGN IN

☐ **PATIENT HAS CONFIRMED**
- IDENTITY
- SITE
- PROCEDURE
- CONSENT

☐ **SITE MARKED/NOT APPLICABLE**

☐ **ANAESTHESIA SAFETY CHECK COMPLETED**

☐ **PULSE OXIMETER ON PATIENT AND FUNCTIONING**

DOES PATIENT HAVE A:

KNOWN ALLERGY?
☐ NO
☐ YES

DIFFICULT AIRWAY/ASPIRATION RISK?
☐ NO
☐ YES, AND EQUIPMENT/ASSISTANCE AVAILABLE

RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)?
☐ NO
☐ YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED

TIME OUT

☐ **CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE**

☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM**
- PATIENT
- SITE
- PROCEDURE

ANTICIPATED CRITICAL EVENTS

☐ **SURGEON REVIEWS:** WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS?

☐ **ANAESTHESIA TEAM REVIEWS:** ARE THERE ANY PATIENT-SPECIFIC CONCERNS?

☐ **NURSING TEAM REVIEWS:** HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS?

HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES?
☐ YES
☐ NOT APPLICABLE

IS ESSENTIAL IMAGING DISPLAYED?
☐ YES
☐ NOT APPLICABLE

SIGN OUT

NURSE VERBALLY CONFIRMS WITH THE TEAM:

☐ **THE NAME OF THE PROCEDURE RECORDED**

☐ **THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT** (OR NOT APPLICABLE)

☐ **HOW THE SPECIMEN IS LABELLED** (INCLUDING PATIENT NAME)

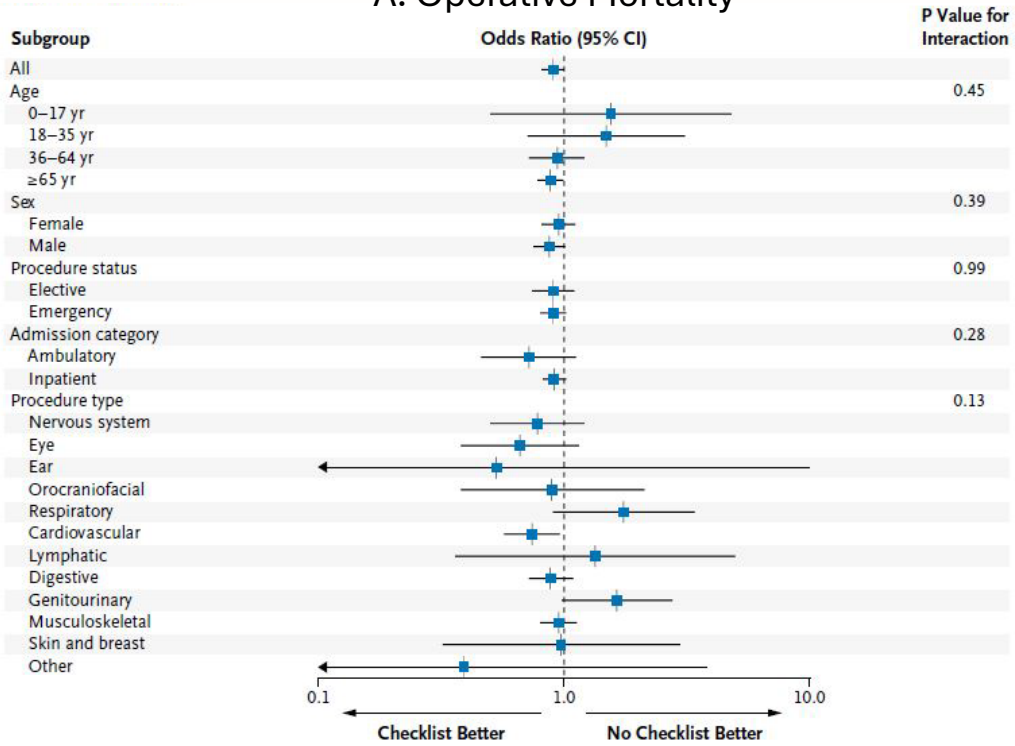
☐ **WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED**

☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT**

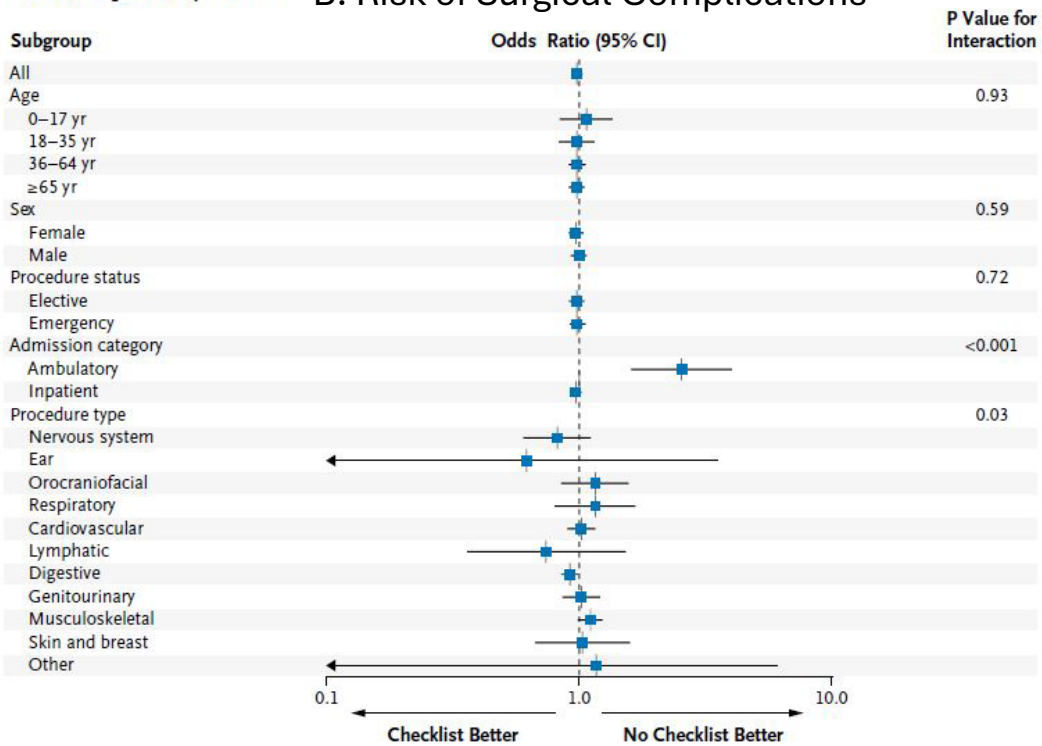
THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. ADDITIONS AND MODIFICATIONS TO FIT LOCAL PRACTICE ARE ENCOURAGED.

Checklists in a Vacuum

A: Operative Mortality



B: Risk of Surgical Complications



"Ninety-two of the 101 study hospitals provided copies of their checklist; of these, 90% used an unmodified World Health Organization (WHO) or Canadian Patient Safety Institute checklist. Educational materials were made available to hospitals, but no team training or other support was provided."

Urbach, *NEJM* 2014, 1029-1038. Leape, *NEJM* 2014, 1063-1064.

Checklists as Part of a Safety Program

Fig. 1 Time-series analysis for overall mortality rates across preimplementation, implementation and postimplementation intervals

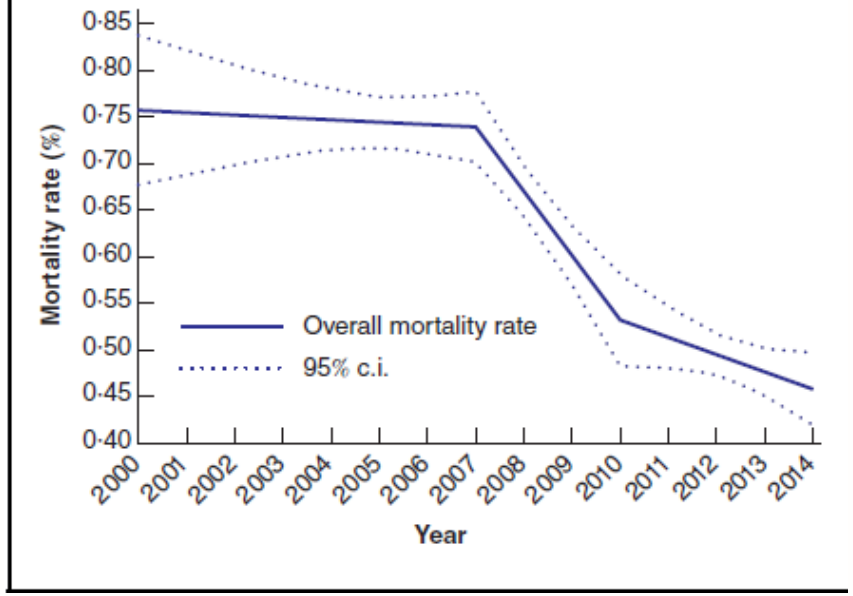
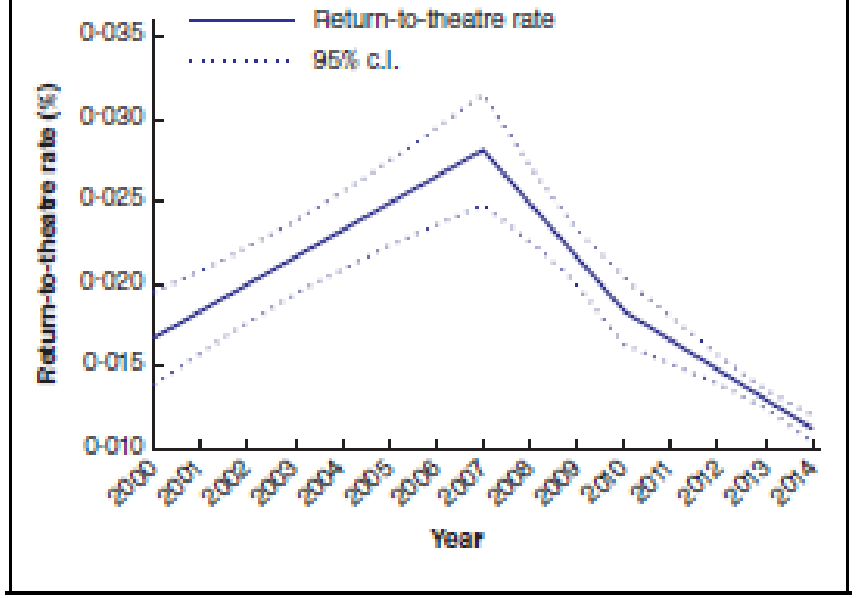


Fig. 3 Time-series analysis for return-to-theatre rates after admission for elective surgery across preimplementation, implementation and postimplementation intervals



"The surgical checklist was not a stand-alone intervention. This study provides further evidence that the success of checklist implementation is more pronounced when it is supported by a cohesive and wider approach to patient safety."

Ramsay, *Br J Surg* 2019.

Telling is Not Training

- Training requires four steps:
  - Provide information
  - Demonstrate how to apply the information
  - Provide the learner an opportunity to practice
  - Provide feedback relative to a standard

From: "*Telling is not training*"
Capt. Stephen W. Harden

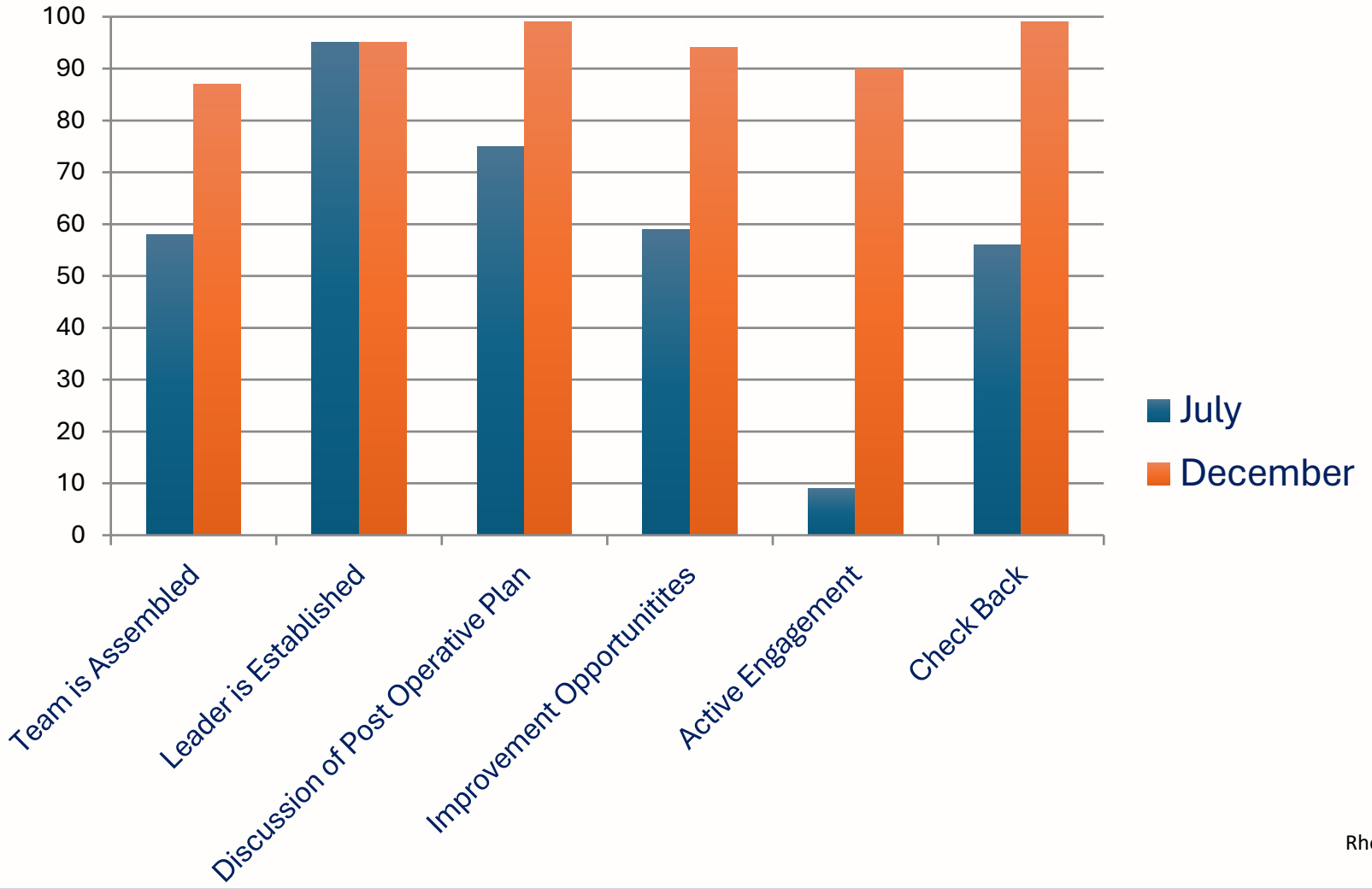
Time Out/Sign Out Observation

- Customized observation tool
- Developed by 25-30 surgeons, anesthesiologists and nurses
- Time Out & Sign Out as proxies for teamwork events
- Database collection of observations - Checkbox
- Training of observers/ Install video cams
- Feedback to surgical teams
- Video v live observation

	Total #	Live	Video	P value
Time Out	1410	325	1085	
Compliance		30.5%	15.3%	<.001
Sign Out	1398	166	1232	
Compliance		28.3%	21.8%	.075

Bui et al, Surgery, 2018

Time Out Audit Performance



Rhee et al, *Am J Med Qual*, 2017

Polling Question #5

Agenda

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  - Advanced teamwork tools
- **Reliable processes**
  - **System Design**
  - **Human factors**
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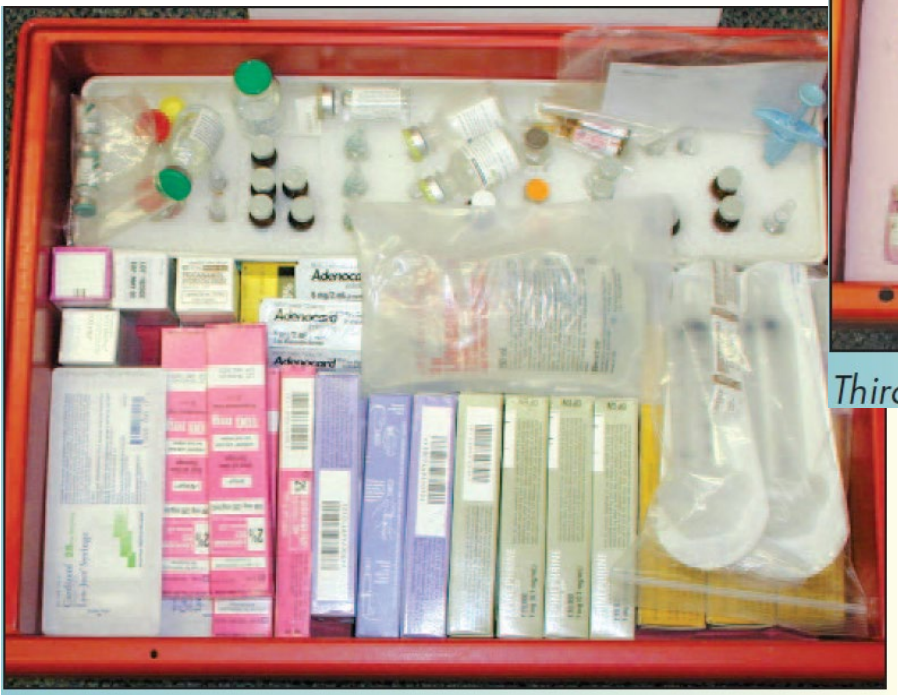
  - Reporting and accountability

Human Factors All Around Us…

Where do I go…?

Visual Controls in the Code Cart



Baseline drawer

Third iteration

Final product

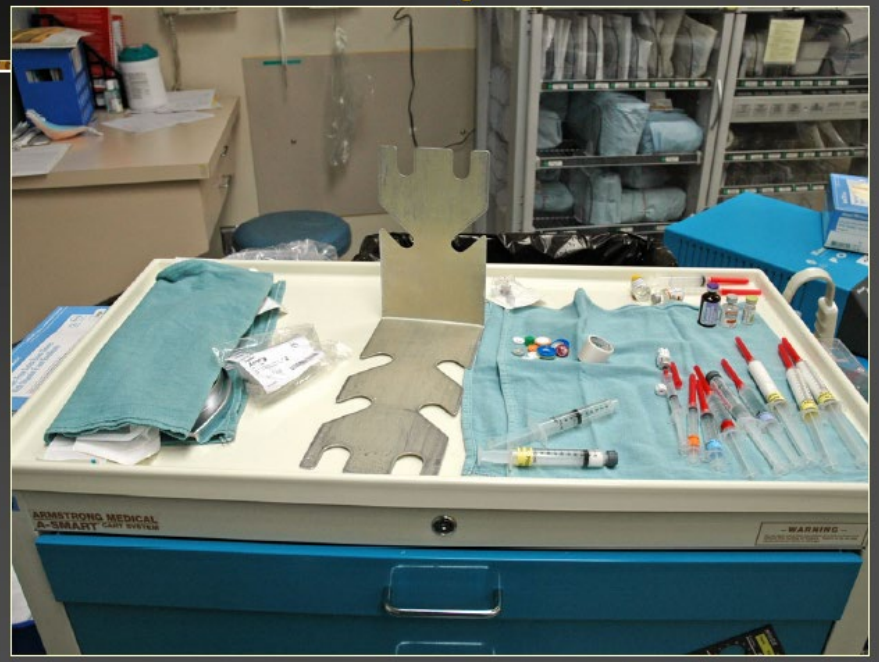
McLaughlin *Am J Nurs*, 2003

Visual Controls in the OR

June 28, 2004

Visual Control for Safety

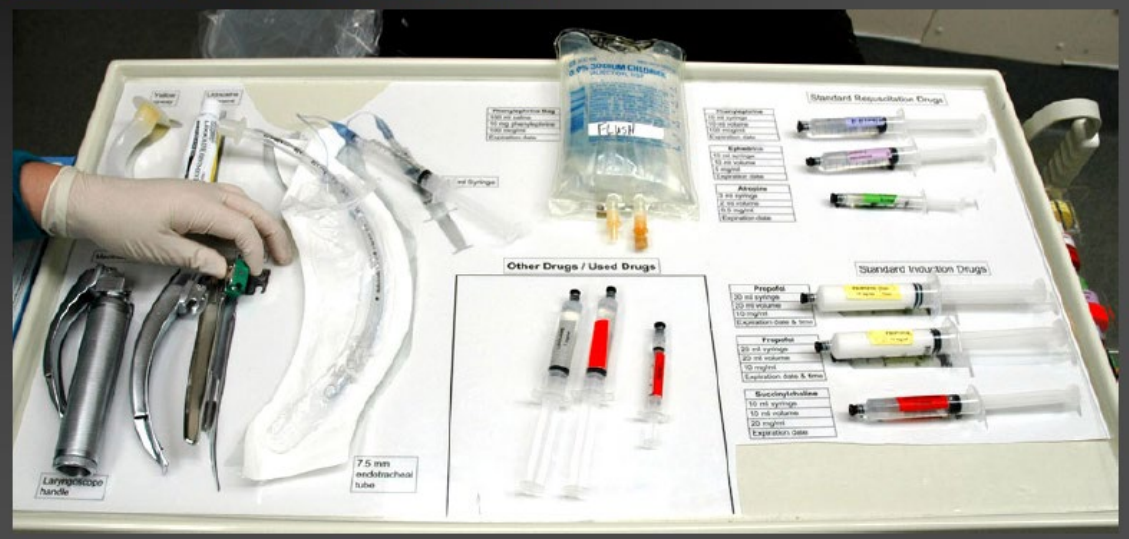
TEAM MEDICINE VIRGINIA MASON



5S Anesthesia "Shadow Board" - Before

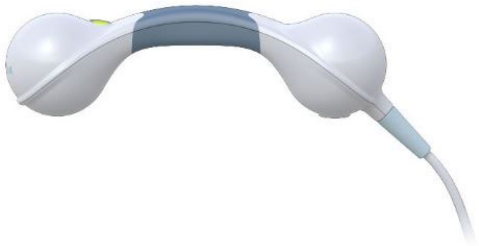
Visual Control for Safety

TEAM MEDICINE VIRGINIA MASON



5S Anesthesia Shadow Board - After

Preventing Retained Surgical Items



Radiofrequency

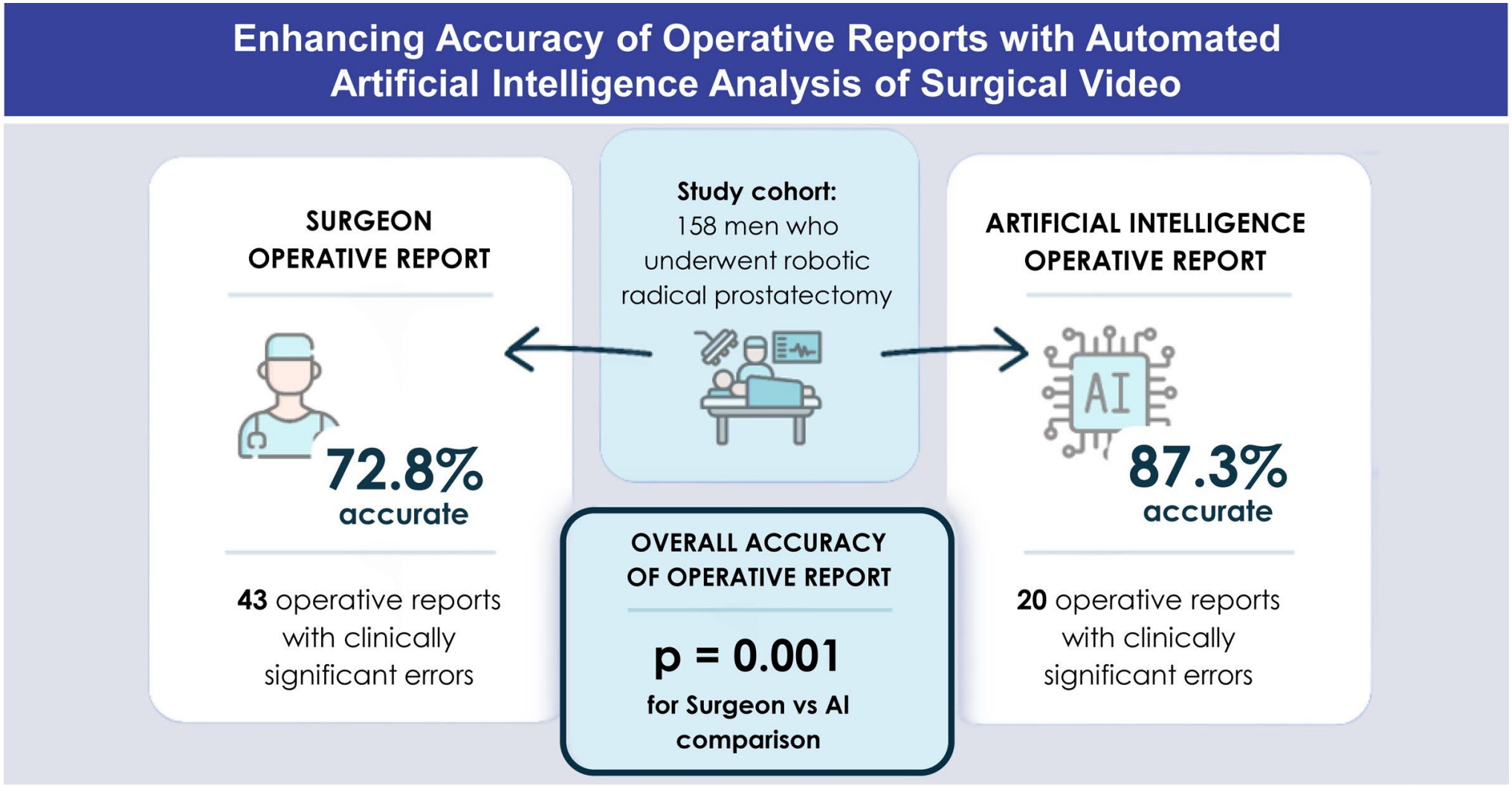
Bar Coding

Preventing Retained Surgical Items

- Prevention - Counting, Teamwork, Radiography, New technology
- Risk Reduction Strategies to Decrease the Incidence of RSI
  - 997,237 Operative Procedures
  - TeamSTEPPS training and RF technology interventions
  - RSI decreased - 11.66 to 5.80 events per 100,000 operations
  - RSI involving RF detectable items decreased - 5.21 to 1.35 events per 100,000 operations

Feldman, *Mt Sinai J Med,* 2011.
Kaplan, *JACS*, 2022.

The Future: AI & OP Notes!



Khanna et al, *J Am Coll Surg*, May 2025

JACS JOURNAL OF THE AMERICAN COLLEGE OF SURGEONS

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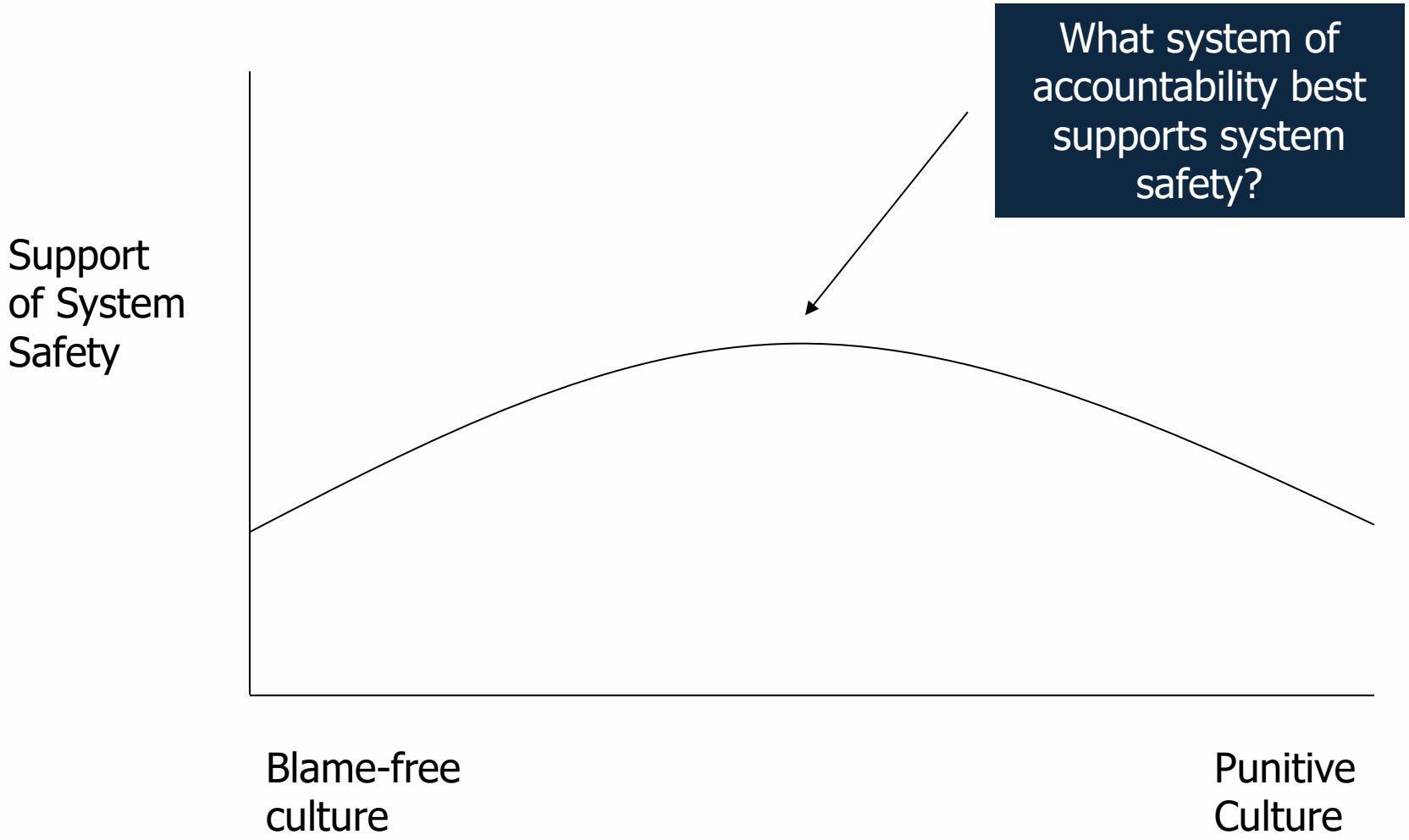
  - **Reporting and accountability**

Polling Question #6

What is a Just Culture?



Accountability for Our Behaviors

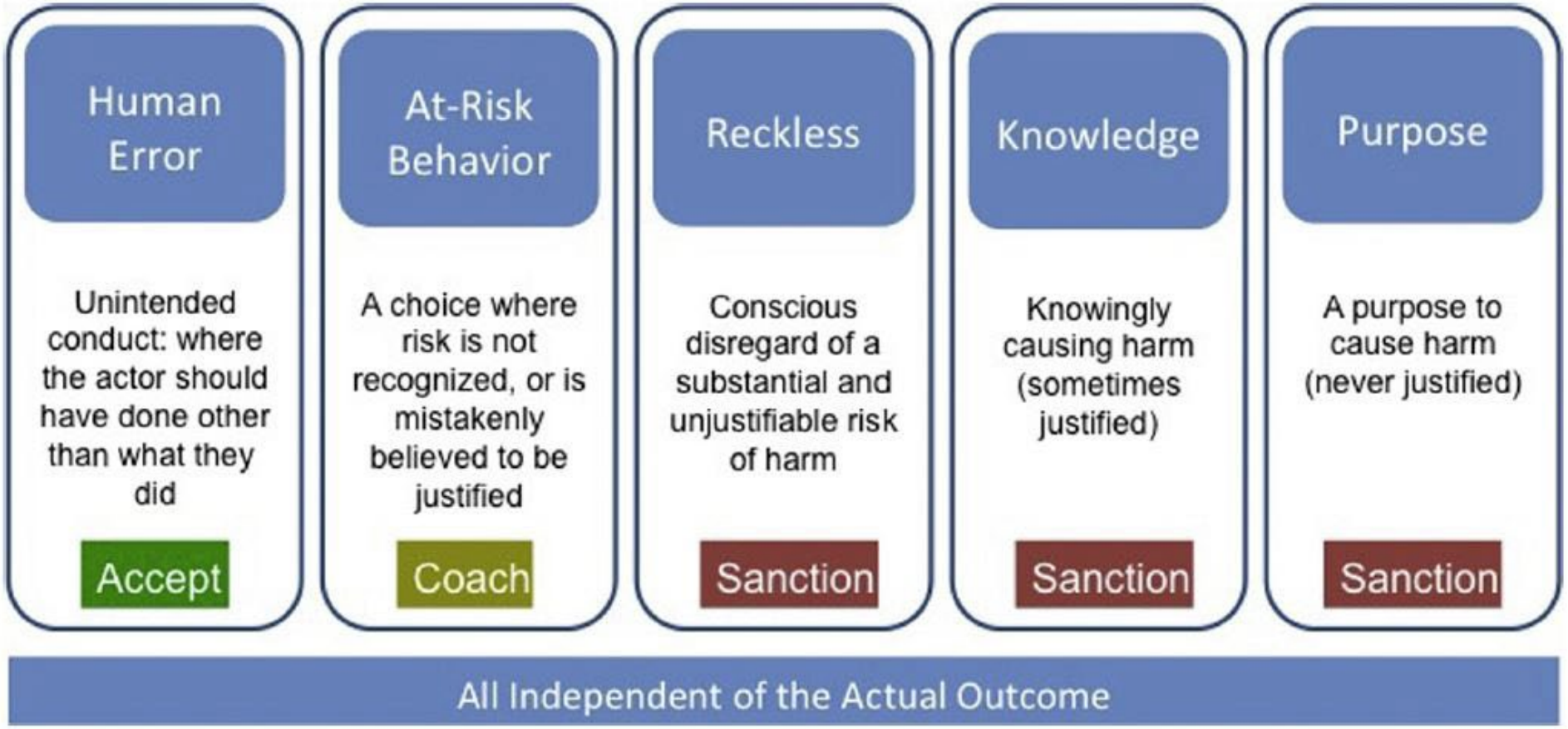
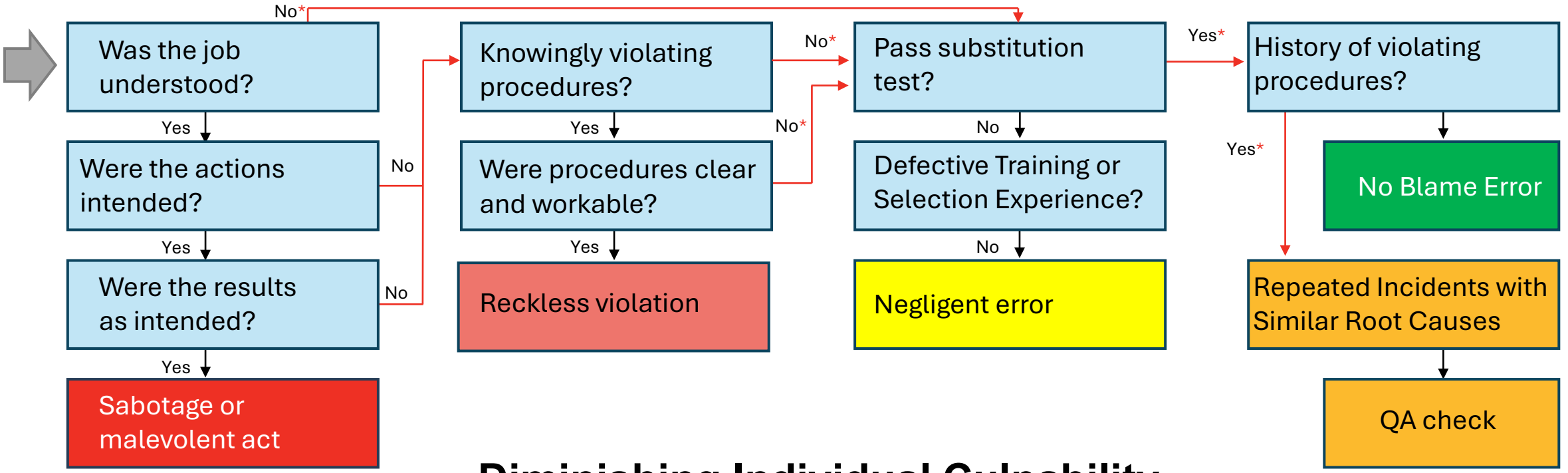


Fig. 3. Just response to the 5 behaviors. (Copyright Outcome Engenuity 2017.)

Focus on choices NOT outcome

Marx *OB-GYN Clin NA,* 2019.

Just Culture "Decision Tree"



Diminishing Individual Culpability

Severe Sanctions	Final Warning and Negative Performance Evaluation	First Written Warning + Coaching + Greater Supervision	Console if necessary + Provide Training + Document to Track and Increase Awareness

*Indicates a Systems Error: Corrective and Preventive Action is Required

Adapted from The Just Culture Community (2016). David, *J Pat Saf*, 2019

Why a Just Culture?

- Punishing human error (and even at-risk behavior) creates a culture of fear
- In a culture of safety reporting of all events, whether near misses or real misses, is encouraged
- Excellence not perfection
- Error is inevitable, error management is the aim

Scenario

A surgery resident accidently contaminates an instrument in the OR. No one notices. The instrument is critical to the procedure and the resident knows if the instrument has to be re-sterilized it will delay the procedure by at least 20 minutes to either re-sterilize or call for a replacement. Knowing the attending surgeon has a history of being abusive to residents, the resident says nothing.

Polling Question #7

Just Culture

“Tragedy followed by injustice, once again.”

7 Strategies for Creating Psychological Safety

- Reduce the rate of harm
- Revise your disciplinary policies
- Conduct and share a complete root cause analysis
- Take organizational ownership of the event
- Reject no harm, no foul
- Express a fierce intolerance for reckless behavior
- Get professional board, regulators, and the press on your side

David Marx. Thoughts in the Aftermath of the Criminal Prosecutions of RaDonda Vaught and Kim Potter. *LinkedIn* 4-5-22

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Comments and Questions?

David L Feldman
feldman1833@gmail.com