The speakers have no conflicts to disclose
Who are we?
Kaiser Permanente Northern California

Consists of:
- 19 licensed hospitals on 21 campuses, including 12 ambulatory surgery units
- All ACS NSQIP participants
- 67 medical offices

Annual Statistics:
- Over 230,000 hospital discharges
- Over 32,000 deliveries
- 25.5 million prescriptions dispensed
- 30 million lab orders processed
- 17 million office visits

Serving 3.6 million Kaiser Permanente members plus those in the communities we serve
A Highly Reliable Surgical Team is one in which the performance of high risk activities is the norm, however accident or harm rates are low. The goal is to take a team of experts and create expert teams with excellent outcomes.

Launched in 2006 across NCAL.
Why is HRST Important?

- Surgical “never events” are included in the 29 serious, reportable health care events as defined by the National Quality Forum and the Joint Commission.

- Never events can lead to serious physical or psychological harm for the patient, the teams caring for the patient, and the relationship between the patient and provider.

- At an institutional level, such events add a serious financial burden as a consequence of their medical-legal implications as well as a negative impact on the reputation of the health care provider.

- The application of high reliability science assists us in having a better understanding of why these events occur and designing better systems to prevent them from occurring.

- Efforts directed at decreasing their frequency are important for patient safety, provider wellbeing, and society.
What are the components?

Mission: HRST embodies a culture of learning, where teams provide patient-centered and evidence-based care to achieve optimal outcomes for every patient, every time, everywhere.
NCAL HRST Journey

HRST Launch 2006
RFO Summit 2008
NSQIP Pilot 2009
NSQIP Roll Out 2011
RF Tech 2013
HRST Reassessment 2015
Safer Surgery
7 Steps for hardwiring Hard Stuff?

While a journey of 1,000 miles begins with a single step, you should be most mindful of these seven!
Step Definitions

**Socialization:** Socialize the issue at hand for the primary purposes of increasing stakeholder knowledge, identifying what’s currently working and what’s not, and creating the will for change

**Standardization:** Standardize a change that will result in an improvement

**Education and Demonstration:** Provide education to all that will be affected by the change...not just the “what”, but again, the “why” behind the change, offer opportunity to practice the change in a safe environment

**Implementation:** The change is appropriately planned and measured, including sponsorship and communication

**Observation and Coaching:** Supervisors / managers / chiefs to “go to gemba” and observe the behavior / practice change in real time, using coaching and giving feedback

**Conversation:** Fully develop the expectation, create the operational climate, and continue to nurture staff’s ability and motivation to “speak up” about the desired behavior

**Escalation:** Create an escalation policy/procedure, establish an expectation of its use, and provide staff the ability and motivation to escalate when needed
Teamwork and Communication
Physician Champions

FROM OPERATING ROOM ...

SURGEONS AS LEADERS

... TO BOARDROOM
TeamSTEPPS, Speaking up

TeamSTEPPS® 2.0

Framework and Competencies

Team Competency Outcomes

Knowledge
- Shared Mental Model

Attitudes
- Mutual Trust
- Team Orientation

Performance
- Adaptability
- Accuracy
- Productivity
- Efficiency
- Safety

PERFORMANCE
Leadership
- Communication
- Situation Monitoring
Mutual Support
- Knowledge
SKILLS
 PATIENT CARE TEAM
ATTITUDES
I am CONCERNED!
I am UNCOMFORTABLE!
This is a SAFETY ISSUE!
“Stop the Line”
Question #1

- Teamwork and Communication:

What are you working on?
Evidence Based Practices
NSQIP - Data to Drive Improvement

National Surgical Quality Improvement Program (NSQIP) is an outcomes-based, data driven, risk adjusted quality improvement program developed by the American College of Surgeons with report capability for both risk/non-risk adjusted outcomes data. NSQIP uses precise case selection criteria, systematic sampling process, and valid reliable data collection. Provides surgical outcome data that is nationally benchmarked with the focus of driving performance improvement.

Outcome measures targeted are:
- SSI
- Pneumonia
- Post-operative Unplanned Intubation/ On ventilator >48 hours
- Pulmonary Embolism/ vein Thrombosis
- Progressive Renal Insufficiency/ Acute Renal Failure
- Cardiac Arrest/ Myocardial Infarction
- Transfusion Intraop/ Postop
- Sepsis
- UTI
- Stroke/ CVA
- Readmission
- Unplanned return to OR

Includes: General, Vascular, Colorectal, Gynecology, Neurosurgery, Orthopedic, Otolaryngology, Plastics, Thoracic, and Urology surgeries
NSQIP Results

National Surgery Quality Improvement Program (NSQIP) Inpatient Complication Free Surgery

(higher is better)

National Surgery Quality Improvement Program (NSQIP) Risk Adjusted Rate

(lowest is better)

NSQIP National Average (7.2%) [NSQIP 25th Percentile]

KP Target (5.5%)
SSI Prevention

- Wt based Antibiotics
- Antibiotic re-dosing
- CHG Wipes
- Normothermia
- Wound Protectors
- Clean Closing Tray

**KP NCAL RISK ADJUSTED ODDS RATIOS**

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Total Cases</th>
<th>Observed Cases</th>
<th>OR</th>
<th>Decile</th>
<th>Percent &quot;Exemplary&quot;</th>
<th>Percent &quot;As Expected&quot;</th>
<th>Percent &quot;Needs Improvement&quot;</th>
<th>Collaborative Minimum OR</th>
<th>25th Percentile</th>
<th>75th Percentile</th>
<th>Maximum OR</th>
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<td>460</td>
<td>0.88</td>
<td>4</td>
<td>15</td>
<td>85</td>
<td>0</td>
<td>0.37</td>
<td>0.81</td>
<td>1.25</td>
<td>4.21</td>
</tr>
</tbody>
</table>
Standard Processes

- Beginning of Case
- Counting
- End of Case
- Emergency Checklists
- Standard Packs
What is the Beginning Process Flow?

**Patient Verification**
- Use two identifiers

**Site Marking**
- Clear, unambiguous
- Involve the Patient

**Surgical Briefing**
- Interactive
- Involves Patient
- Invite speaking up

**Time Out**
- Immediately prior to incision
- Site mark visible

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**Pre Op**

**In OR**
Counting and RF Technology

- 2008 Summit “No Thing Left Behind”
- Standard Counting Processes
- Technology Simulation
- 2013 RF Technology Implementation
What is the Ending Process Flow?

**Surgeon Announces Intent to Close**
- Stop the Music

**Assure Nothing Retained**
- Check for specimen confirm labeling
- Products intact

**Close Incision**
- All In Bag
- RF Scan Clear
- Perform wound exploration

**Debriefing**
- Is this a good time?
- Confirm Procedure & Dx
- Confirm Wound Class
- Next steps
- Visualize Sponges in counter bag

**Record Feedback**
- Enter glitches or good catches in Better Book
Emergency Checklists: They Work
75% Reduction in Failure to Adhere to Life Saving Processes of Care

Simulation-Based Trial of Surgical-Crisis Checklists, Arriaga et al, NEJM 2013
Common Themes, Other Industries

- Training for Emergencies, Entire Career
- Routine Briefings are Foundational, they all do these
- Emergencies briefly considered and discussed in briefings, usually first brief of day
  - Review of specific lists if indicated
- Lists have Memory Items (no more than 4, critical things that buy time, KNOW these) then refer to list
- Clarity of roles: Leader, Reader, Monitor
- Events are debriefed and reported and analyzed
- Downtime used for mental rehearsal, what-if drills
  - Regular sim testing helps motivate this process
KPs Journey

- Only one piece of a multifaceted approach to reliable emergency management
  - We really underestimated the culture changes required for optimum emergency management, but we’re on the right track
  - How best to implement and measure this is still unclear, we’re all still testing
  - Electronic Record may be helpful, but also a bit scary
  - Your leadership will be critical; regular and career long emergency training and drills are the only way to use these optimally
Standard Packs — The Problem

- Supplies and equipment not available for surgery
- Wrong items are picked
- Extra work picking items which then need to be restocked
- RN leaves room to get items missing – sometimes not available!

- More supplies need to be purchased
- More supplies need to be stored
- Cards are not kept up to date
- Try to remember what surgeon wants and forgets other important information

- Tracking delays, backlogs of items, re-orders, missing supplies
- Lose track of items stored, not enough storage, further from OR
- Some medical centers with more than 20,000 different cards
Performance Improvement Perspective

Reduce Variation
Standardize the different workflows, steps, supplies in order to have a single process from which to improve.

Eliminate Waste
Everything except the minimum amount of supplies, equipment, space and worker’s time and knowledge, which is essential to add value to the product/service from the point of view of the customer.
Model: Spend Comparison Lap Appy
Evolution of NCAL Standard Pack Process

Variation in supply on preference cards

NCAL standard pack redesign

Standardize and “lock” procedure cards
Question #2

- Evidenced Based and Standard Practices:

What are you working on?
Briefing and Debriefing
Structured Communication

Sharing the Plan

- **Brief** - Short session prior to start to share the plan, discuss team formation, assign roles and responsibilities, establish expectations and climate, anticipate outcomes and likely contingencies

Monitoring and Modifying the Plan

- **Huddle** - Ad hoc meeting to re-establish situational awareness, reinforce plans already in place, and assess the need to adjust the plan

Reviewing the Team’s Performance

- **Debrief** - Informal information exchange session designed to improve team performance and effectiveness through lessons learned and reinforcement of positive behaviors
## Surgical Safety Checklist

### BRIEFING
**Before Anesthesia Induction**
- **ALL TEAM**
  - Introduce Self (Names on Board)
- **SURGEON**
  - Patient’s Identity (2 identifiers)
  - Informed Consent Correct
  - Side/Site with Site Marking Visualized
  - Special Needs, Implants, Instruments, Images Available
- **CIRCULATOR**
  - DVT Prophylaxis & Warming
  - Lab Work & Blood Available
  - Positioning & Protective Devices
- **SCRUB**
  - Equipment & Instrument Sterility
  - Medications & Solutions Labeled
- **ANESTHESIA**
  - Anesthesia Plan / Use of Multimodal
  - Allergies & Beta Blockers
  - Antibiotics Timing & Redosing
- **SURGEON**
  - Safety/Quality Concerns Addressed?
  - Do We All Agree?

### TIME OUT
**Before Skin Incision**
- **SURGEON**
  - Correct Patient Identity
  - Correct Procedure
  - Side/Site with Site Marking Visualized

### COUNTING
**Before Surgery Conclusion**
- **SURGEON**
  - Announce “Closing”
  - Confirm Wound Exploration
- **CIRCULATOR**
  - Stop the Music
  - Confirm Tucked Items Removed
  - Final Count Correct
  - RF Wanding Complete
  - Specimen(s) Labeled & Verified
- **SCRUB**
  - Products Intact

### DEBRIEFING
**Before Patient Leaves the OR**
- **CIRCULATOR**
  - “Is this a good time?”
- **SURGEON**
  - Patient Complications/Next Steps
  - Post-Op Diagnosis
  - Confirm Procedure Done
  - Confirm Wound Class
  - Confirm Implant(s) Used
  - Visualize All Sponges in Counter Bag
- **ALL TEAM**
  - Issues/Best Practice for Better Book

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**Kaiser Permanente®**
NCAL Surgery Safety Checklist 2015

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Confidential & Protected Under Evidence Code 1157
Glitch or Better Book
Question #3

- Briefing, Debriefing and Feedback Processes:

What are you working on?
Learning from Errors
What have we learned? Focus for Improvement:

Site Marking
- Not visible after draping
- Incision not correlated to site - trigger finger(s)
- Ambiguous – arrows, initials etc.
- Not done

Counting
- Sponge bag not used/used incorrectly
- Count not reconciled before closing
- RF technology use not yet standardized
- Tucked items not called out/ on white board

Debriefing
- Specimens not immediately removed – not considered tucked item
- Sponge count unreconciled before closing
- Methodological wound exploration missed
- Done too late/Poor quality interaction

Better Book
- Not effectively capturing glitches and feedback
The Importance of Leadership
Regional Perioperative Management Group

- Executive Sponsors
- RPMG Workgroup – Regional and Facility Leaders
- RPMG All – Sponsors and All Surgeons, Operational and Quality Leaders
We are all accountable!!

RPMG Exec
- Goals
- Priorities
- Expectations

RPMG Workgroup
- Communication
- Tools & Policies
- Oversight

Facility Leadership
- Support
- Alignment
- Oversight

Periop Leadership
- Implement
- Monitor
- Give Feedback

Periop Staff
- Adopt
- Give Feedback
- Speak up
## Leadership Rounding

1. Universal Protocol: Patient verification with two identifiers, unambiguous site marking
   - Yes
   - No
   - NA
   - Not in Rm

2. Briefing: Initiated by Surgeon, active engagement by all
   - Yes
   - No
   - NA
   - Not in Rm

3. Briefing: Sterility confirmed, procedure specific issues discussed
   - Yes
   - No
   - NA
   - Not in Rm

4. Universal Protocol: Time Out includes name, procedure, site marking visible
   - Yes
   - No
   - NA
   - Not in Rm

5. Speaking Up: Staff are invited to, or observed speaking up
   - Yes
   - No
   - NA
   - Not in Rm

6. Whiteboards: Consistently updated, tucked items listed
   - Yes
   - No
   - NA
   - Not in Rm

7. RFO Prevention: Sponge bags in use, filled bottom to top
   - Yes
   - No
   - NA
   - Not in Rm

8. RFO Prevention: RF scanning in use
   - Yes
   - No
   - NA
   - Not in Rm

9. RFO Prevention: Final Count completed before closing
   - Yes
   - No
   - NA
   - Not in Rm

10. RFO Prevention: Wound/Cavity Sweep performed
    - Yes
    - No
    - NA
    - Not in Rm

11. RFO Prevention: RF Scan done correctly to confirm closing count
    - Yes
    - No
    - NA
    - Not in Rm

12. Debriefing: Includes confirming procedure name, specimen, wound class
    - Yes
    - No
    - NA
    - Not in Rm

13. Debriefing: What went well, what could be improved, Better Book used
    - Yes
    - No
    - NA
    - Not in Rm

14. Observations and notes about any "No" answers above.
Question #4

Where are your greatest Opportunities or Successes?
Questions?