Thinking in 3's

Patient Safety First
Hospital Association of Southern California
May 15, 2012

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Quality Surgical Care

1. Knowledge-driven
2. Patient-centered
3. System-based

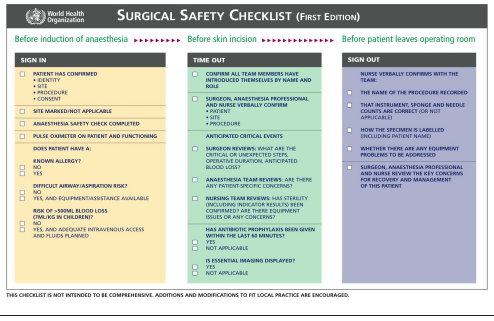
Knowledge

- Pace of new knowledge in ALL the surgical disciplines is beyond an individual surgeon's capacity
- Knowledge must be shared, flow freely
- We expect best available scientific and clinical knowledge to be practiced
- Development of expertise requires experience

Knowledge Application

1. Pre-Operative Planning
2. Intra-Operative Practice
3. Post-Operative Performance

Surgical Checklist



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.

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Reality

- The biggest resistance to change will come from within
- Everyone will tell you however it comes from without
- …and it does

Think of the patient

- Rather than thinking of yourself and your needs
  - "If I do that it will increase my liability"
  - "But this is my practice and it works for me"
  - "I only read what I see"
- Think of the patient's needs FIRST
  - Good information
  - Safe operation
  - Uncomplicated recovery

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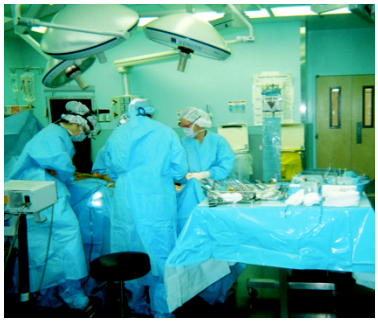
System Problem

- A case of a retained surgical item should be thought of as a "canary in the surgical coal mine".
- It tells you there is a system problem in the OR
- System problems require system solutions

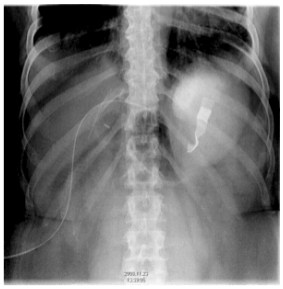
Case



Can't Happen to You?

- This is a system problem

1. Surgeon's inadequate sweep
2. Nurse's incorrect count
3. Radiologist's incorrect film interpretation



Dimensions of Quality

Donabedian, JAMA 260:1743-1748, 1998

1. **Structure**
   the attributes of how system is organized and its components
2. **Process**
   the collection of individual steps to achieve desired outcome
3. **Outcome**
   change in status attributed to the process

SPONGE ACCOUNTING SYSTEM (SAS)

Monitoring "Sponge Traffic"

- Nurses use a standardized process to put sponges in hanging plastic holders and document the counts on a wall-mounted dry erase board in every OR
- Surgeons perform a methodical wound exam in every case and before leaving the OR - verify with the nurses that *all* the sponges (used and unused) are in the holders.

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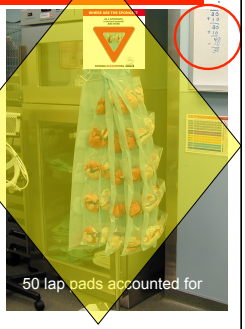
PROCESS



NoThing Left Behind

ZOOMING IN ON

ZERO

RETAINED SURGICAL SPONGES

OUTCOME

Surgical Patient Safety

Establish structure of safe surgical care

Prevent surgical errors

Optimize human performance

FedEx delivers 7.5 million packages a day at low cost with low error rates yet surgical teams using 10 sponges per case fail to retrieve them all

Patient Safety First...
a California Partnership for Health

Anthem. Hospital Association Hospital Association Hospital Council

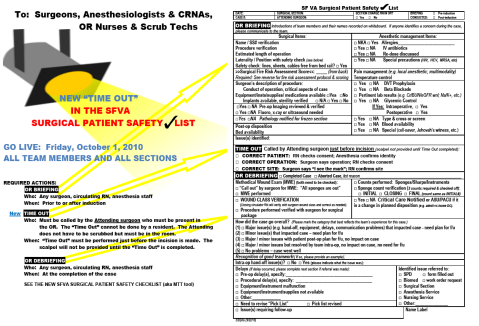
Time to Coordinate Efforts in Surgical Patient Safety

1. The Wrongs
2. Surgical Fires
3. Retained Surgical Items

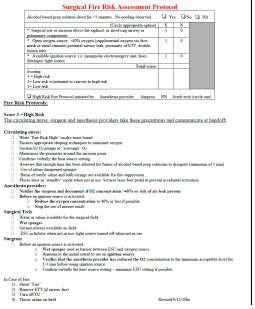
The Wrongs

1. Wrong patient
   - Planned operation performed on the wrong person
2. Wrong operation
   - Wrong operation performed on the right person
3. Wrong site
   - Planned operation performed at the wrong place (usually wrong side or wrong level)

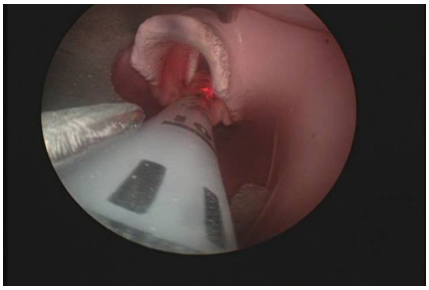
Surgical Safety CheckList



Surgical Fires



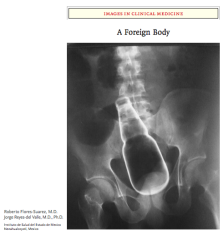
Airway Fire



Retained Surgical Items

- New preferred term rather than RFO
- Foreign Objects include swallowed pennies, pins,shrapnel, bullets
- Surgical Items are the tools and materiel that we use in procedures to heal not to harm
- It's a surgical patient safety problem

Retained Foreign Body



Retained Surgical Items

IMAGES IN CLINICAL MEDICINE

Gossypiboma in the Pouch of Douglas

Recently in California

CDPH Issues $850,000 in Penalties to California Hospitals

December 2011

14 Hospitals cited with Administrative Penalties. Vary from $25,000 to $100,000.

7 of the 14 related to retained surgical items

1. Fresno Surgical Hospital
2. LAC+USC
3. Mission Hospital Regional Med Ctr
4. Scripps Memorial
5. Sutter Solano
6. Torrance Memorial
7. Ventura County Med Ctr

Incidence 2012

STILL > ZERO

When is it Retained?

- After all incisions have been closed in their entirety
- Devices have been removed
- Final surgical counts have concluded
- Patient has been taken from the operating/procedure room

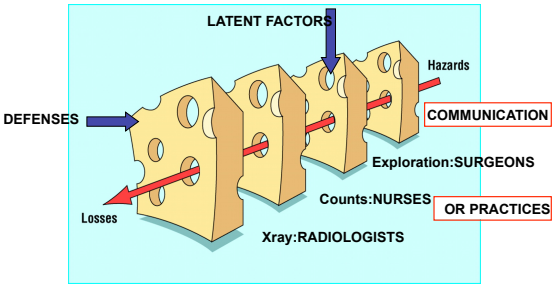
http://www.qualityforum.org/projects/hacs_and_sres.aspx

Why do they occur?

- Communication and Practice problems with the THREE major stakeholders
  - 1. Surgeons
  - 2. Nurses
  - 3. Radiologists

Elements of Causation

Applying Swiss Cheese Model of Sir James Reason BMJ 2000;320:768



Common Language

Who's on First?

- Final count "correct"
- That's 8 + 2 in the vagina
- Is that correct?
- Yes, there are two
- No, 8+2 that's 10, the count is 10
- Oh, yes, count correct

Bud Abbott & Lou Costello perform "Who's on First"

But there were two sponges left in the vagina!

Communication

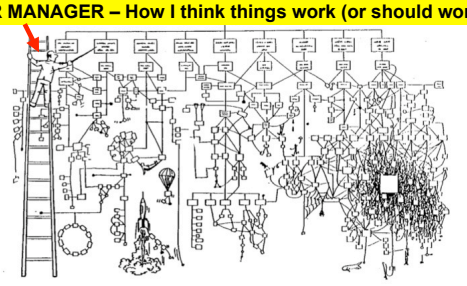
- **It's what is right not who is right**
  - Between nurses and surgeons
    - "We're missing a sponge" " OK,Lets re-explore the wound!"
    - "Dr. Is this a good time for lunch relief?"
  - Between nurses and scrub techs
    - "Separate each raytex so we can make sure we have 10"
    - "Let's verify the sponge holders before you take permanent relief"
  - Between surgeons
    - "Make sure you check behind the heart for any raytex before you close"
    - "Let's do our wound exam and look for sponges"

OR Practices

- **What we do and how we manage our work**
  We = Multiple Stakeholders
- Anesthesiologists: 4X4 management, coordinated reversal from anesthesia
- Surgeons: use only radiopaque items, perform a wound exploration
- Nurses: surgical item accounting process
- Scrub Techs: organize field, know equipment
- Radiologists/Technologists: film quality, review
- Risk Managers/Administrators: resources

Perception vs Reality

OR MANAGER – How I think things work (or should work)

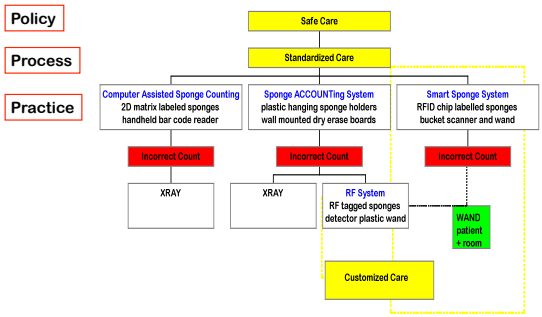


OR STAFF – How things really work: unintended variation

Practice Issues

- Variable counting processes exist throughout an OR - no standardization, little transparency, counting in unit of issue
- Frequent confirmation bias between scrub and circulator
- Loss of situational awareness and missing events that occur outside the scrub or circulator's locus of control
- Normalization of deviance
- Retained sponge cases have occured when low numbers of sponges (≤20 sponges) have been used or in any size wound - it's not about counting!

Sponge Management



New Technology

At least right now there are:

THREE CHOICES

Count

Two dimensional data matrix label. Sponges passed under reader and counted in at the beginning of case and then counted out at the end of case

[Surgicount]

Safety-Sponge™ System

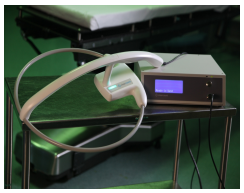
Maintains "line of sight", provides accuracy, all sponges

Detect

Reusable detecting wand, 9ft cord attaches to console. Can scan trash in any receptacles in room. Reads through tissue up to 24 inches Readout on console

Count and Detect

Complete count and detection system



Standalone RFID wand system

7mm RFID tag

Which one to choose?

- Local environments will need individual solutions
- All new systems are adjuncts to a manual count (at least for now)
- Cost vs benefit
- Behavior change needed for surgeons and nurses for successful adoption of any program to prevent retained items

Analogy

- Glucose
- Sugar
- Sweet & Low (saccharine)
- Equal (aspartame)
- Splenda (sucralose)
- Stevia
- ? What's next

- Manual Practice (SpongeACCOUNTing)
- SurgiCount (2D matrix counter)
- RF Surgical (RF tag detection)
- ClearCount (RFID)
- OR Locate (RFID)
- ? What's next

New Standard

Reliable Manual Practice

DON'T JUST COUNT - ACCOUNT!

NoThing Left Behind

- Multistakeholder project
- Work with any hospital
- Adoption of simple principles and if needed, technological adjuncts
- Engage in research studies to define best practices
- Develop an evidence base to inform policies and procedures that can be systematically applied

What I see is .....

- Lots of practice variation within OR
- Focus on "counting"
- Massaging the policy
- Adding steps that aren't part of natural work flow
- Reliance on Memory - "don't forget to...."
- Not seeing how people have set themselves up for failure
- Risk management trumps patient safety

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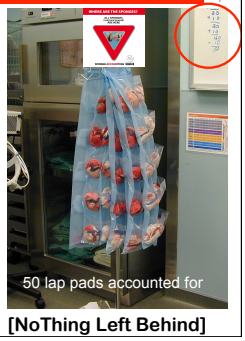
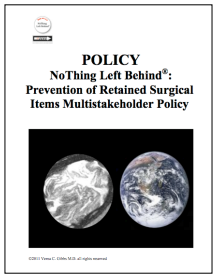


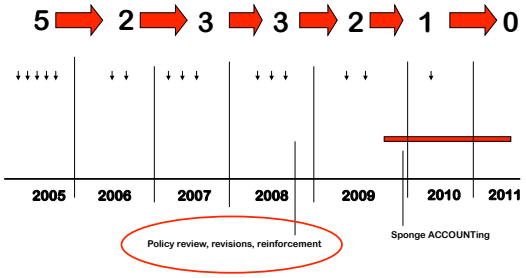
[NoThing Left Behind]

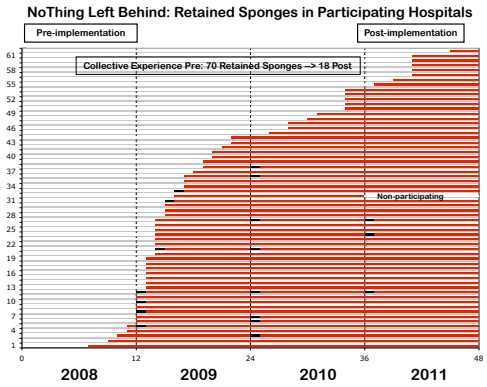
NLB Policy & Practice



http://www.nothingleftbehind.org

Zero for at Least a Year





Findings

- 80% of retained sponge cases occur in the setting of a CORRECT COUNT
  - Problems with OR practices
- 20% occur in the setting of an INCORRECT COUNT
  - Problems with knowledge and communication

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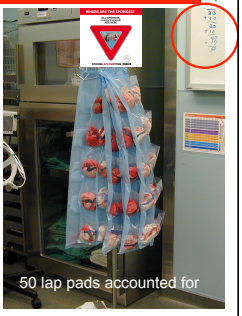
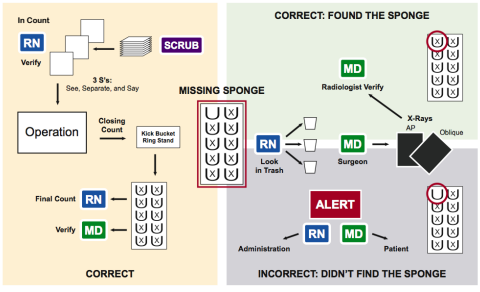


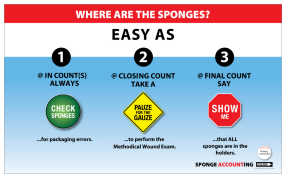
Trust but Verify



EASY AS 1-2-3

1.

2.



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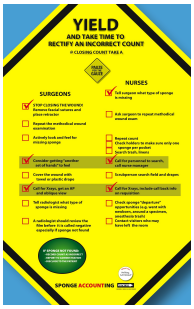
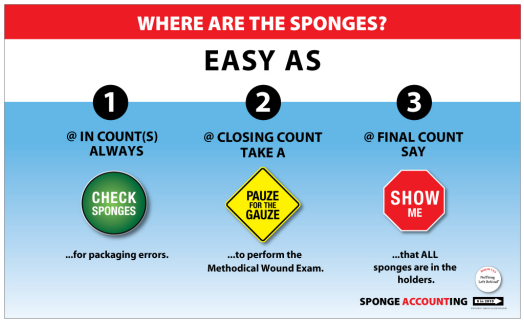
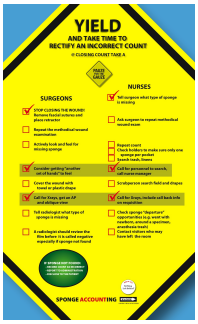


Safety Rules Poster



Incorrect Count CheckList



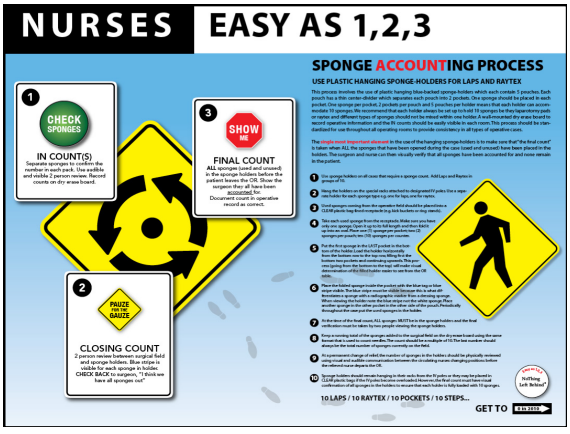
- Visible in every OR
- Levels the playing field
- Knowledge and Communication so all team members can do the right thing
- It's what is right not who is right… remember?

NOT business as usual

- Practice change for nurses and surgeons, accounts for sponges
- Visible, transparent system
- Different process for use of sponge holders (not counters), dry erase board data for all to see
- "Show me" step proves that "the count is correct"

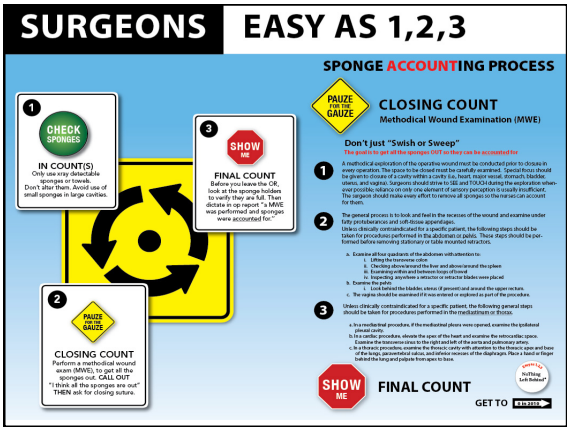
Nursing Essence

- In every case where an incision is made and surgical sponges are used, the sponges MUST be accounted for
- Work with free sponges ONLY in multiples of TEN
- At the IN count the most important element is to SEPARATE the sponges
- At the FINAL count all the sponges (used and unused) must be in the sponge holders

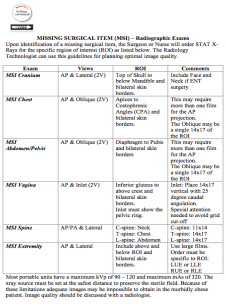


Surgeon Essence

- Perform a methodical wound exam in every case
- If you're told of a missing sponge, stop closing the wound and look again
- At the end of every case say "show me" and look at the sponge holders and see that there are no empty pockets



Radiology Guidelines



MISSING SURGICAL ITEM (MSI) – Radiographic Exams

Upon identification of a missing surgical item, the Surgeon or Nurse will order STAT X-Rays for the specific region of interest (ROI) as listed below. The Radiology Technologist can use this guidelines for planning optimal image quality.

Exam	Views	ROI	Comments
MSI Cranium	AP & Lateral (2V)	Top of Skull to below Mandible and bilateral skin borders	Include Face and Neck if ENT surgery
MSI Chest	AP & Oblique (2V)	Apices to Costophrenic Angles (CPA) and bilateral skin borders.	This may require more than one film for the AP projection. The Oblique may be a single 14x17 of the R/L
MSI Abdomen/Pelvis	AP & Oblique (2V)	Diaphragm to Pubis and bilateral skin borders	This may require more than one film for the AP projection. The Oblique may be a single 14x17 of the R/L
MSI Vagina	AP & Inlet (2V)	Inferior gluteus to above crest and bilateral skin borders. Inlet must show the pelvic ring.	Inlet: 14x17 cassette with 25 degree caudal angulation. Special attention needed to avoid grid cut-off
MSI Spine	AP/PA & Lateral	C-spine: Neck Region, Chest L-spine: Abdomen	C-spine: 11x14 T-spine: 14x17 L-spine: 14x17
MSI Extremity	AP & Lateral	Include above and below ROI and bilateral skin borders.	Use large films. Order must be specific to ROI: LUE or LLE RUE or RLE

Most portable units have a maximum kVp of 90 – 120 and maximum mAs of 320. The xray source must be set at the safest distance to preserve the sterile field. Because of these limitations adequate images may not be obtained to obtain in the morbidly obese patient. Image quality should be discussed with a radiologist.

- Region of Interest specifics
- Instructions for radiology techs to take correct images
- Information to help get it right

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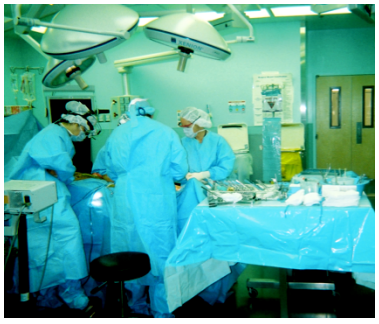
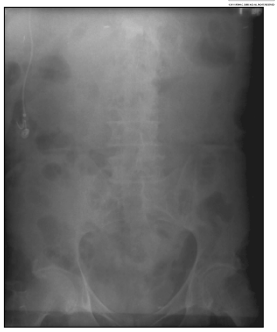
Case



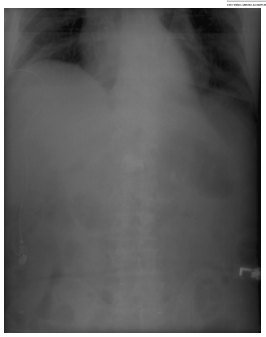
Intraoperative Xray

- "There isn't anything easily seen."
- "But it's not a complete view"
- "OK - Let's take another film to see the diaphragm"



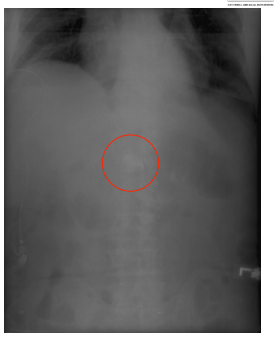
Repeat OR Film

- "There isn't anything there. The film is negative. Let's get out of here."



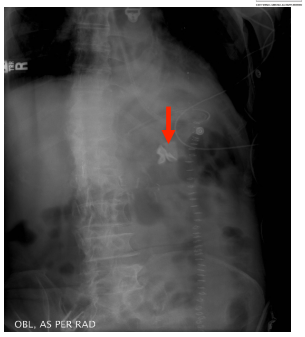
Repeat OR Film

- "Could there be something in the midline there?"
- "No, Its just the spinous process"

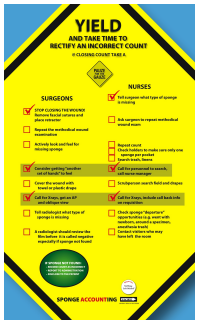


ICU film

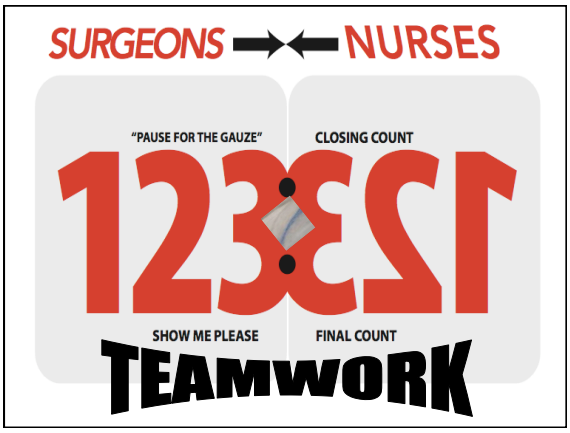
- Oblique view
- Return to OR for removal



Incorrect Count CheckList



- Visible in every OR
- Levels the playing field
- Knowledge and Communication so all team members can do the right thing
- It's <u>what</u> is right not who is right… remember?



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Time to Coordinate Efforts to Prevent Retained Surgical Items

There is NO excuse

SAFER SURGERY

Verna C. Gibbs M.D.

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