NCPS
Nebraska Coalition for Patient Safety

NCPS De-identified Event: Retained Surgical Items (RSI)

Nebraska Coalition for Patient Safety

March 2022

Event

- Surgeon received a phone call from Radiologist who saw a retained sponge in patient's abdomen when reading a CT exam

- Review of patient record:
  - patient had abdominal surgery three months prior
  - sponge not seen on CT exam performed day prior to that surgery
  - length of time from surgery to discovery of sponge made reliance on EMR documentation the primary source of information about the event; interviews of persons in the operating room during the case were also completed

Event Investigation

- Documentation

  Review of documentation found the count of instruments, sharps, and sponges appeared to be accurate and all policies and procedures were appropriately followed. The case was on time.

- Staff interviews

  Staff were found to be knowledgeable of policies and procedures but unable to verify specific details because of the length of time between the case and investigation. The following insights were shared during the interviews:

  - with open belly cases it is difficult to keep track of the number of sponges used because the surgeon continues using them throughout the procedure and the person counting can not see into the body cavity
  - sponges can be folded in the kick bucket or in the sponge bag and look like two when there is only one sponge
  - staff may be asked to complete other duties during the counting process which causes them to be distracted
  - staff may become complacent during the counting process when the case is going well
  - several mentioned communication issues during the case but nobody could identify the exact area of communication breakdown due to the length of time from the actual event

Team Review of Current Policy

- Discrepancies between policy and practice (which could lead to potential inaccurate counts) were identified:

  - policy contains verbiage about a “no interruption zone” when counting; however, current practice allows for interruptions during the counting process

  - policy lacks a clear definition regarding visualization and separation of sponges which leads to lack of standardization in process and variation in the practice

  - policy includes verbiage regarding the sequence in which counting should occur; however, the multiple surfaces available to place items leads to a lack of standardization in following that prescribed sequence

Root Cause Analysis

Contributing Factor Categories:

- Distraction
- Protocol lacking definition regarding visualization and separation of sponges

Causal Factor Categories:

- Procedure/protocol not followed
- Handoff communication
- Knowledge deficit/training insufficient
- Performance (human) deficit
- Workflow disruption

RCA - Action Plan

- Review current best practice guidelines for mitigation of retained surgical items
- Revise current policy to create policies which incorporate best practice guidelines and include more actionable items to help secure accurate counts (including “no interruption” zone as a non-negotiable)
- Educate nurses and scrub techs in surgery department and procedural areas about new counting procedure and include hands-on demonstration of:
  a. how to separate and remove sponges from packs during pre-surgery count
  b. where to place used sponges when counting
- Educate physicians regarding changes to the current count procedure (includes anesthesiologists)
- Perform audits to ensure new counting practice is being used and is effective

Event Impact

To Patient:

- Immediately notified by surgeon
- Readmitted for surgery to remove sponge
- Laparoscopic removal attempted, converted to open procedure due to dense adhesions of RSI to the bowel
- Close exam of bowel found no obvious injury to transverse colon or small bowel however much inflammation along the area where sponge had been adherent
- 2-day inpatient hospital stay post surgery

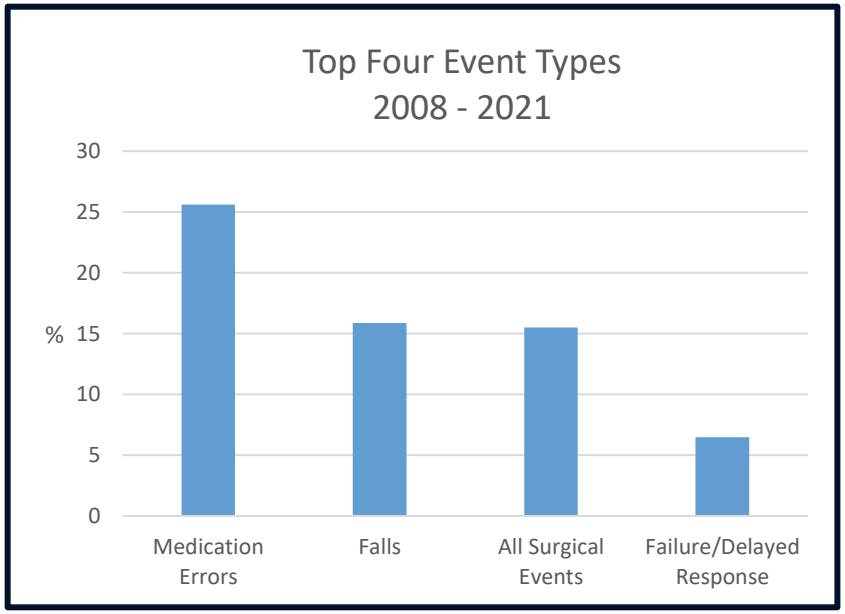
Event Impact

To Hospital:

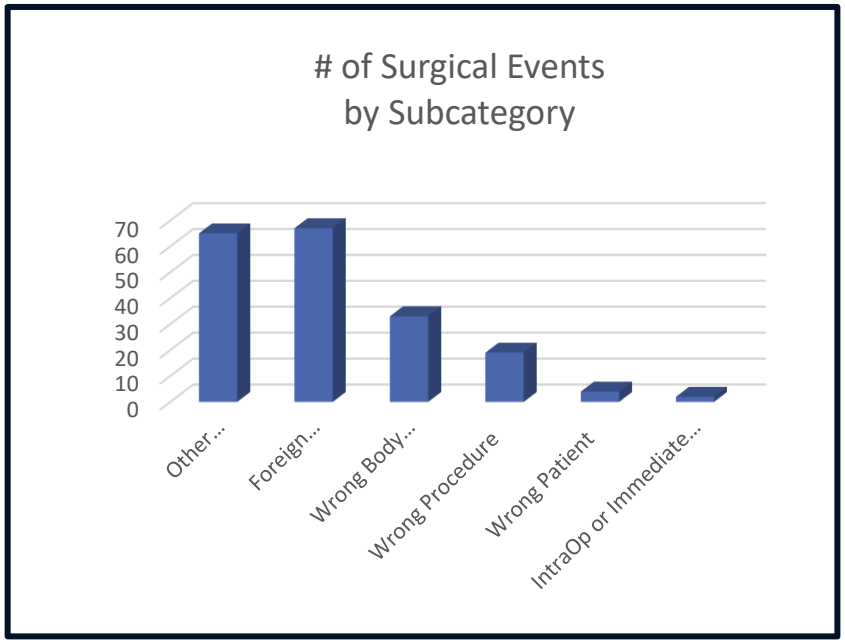
- Report of Sentinel Event to OR Management Team, Hospital Executive Team, and NCPS as hospital's PSO
- Immediate review of patient care records and interviews with staff present during the case
- Expedited review of evidence based best practices to prevent RSI, revision of current policies/procedures to improve counting process, development of education plan to demonstrate correct counting procedure for staff, and communication to physicians of counting process/policy changes

NCPS Event Data

The category “All Surgical Events” is the third most common event type reported to NCPS.

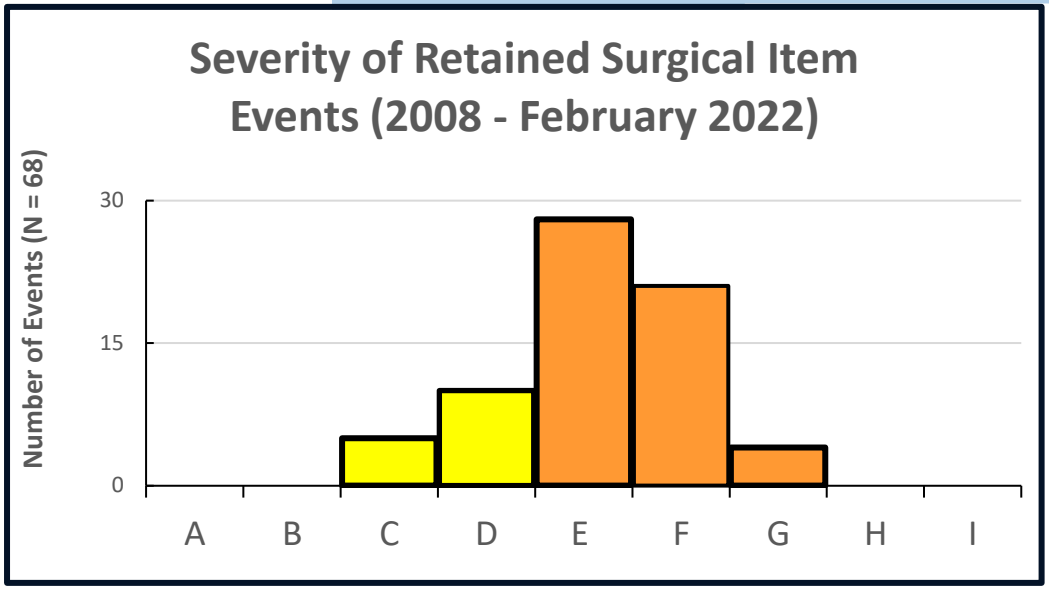


The subcategory “Foreign Object Retained” is the most common of the Surgical Event subcategories.



NCPS Data

- No deaths have been reported to NCPS related to events involving retained surgical items; however, all resulted in harm.
- This de-identified event provides shared learning from reported events, resources, and current recommendations for retained surgical items.



Harm Severity Index Key

1. NO Event, NO Harm	
Category A:	Circumstance or events that have the capacity to cause an adverse safety event
2. Event, NO harm	
Category B:	Event occurred but did not reach the patient
Category C:	Event occurred that reached the patient, but did not cause harm (includes errors of omission)
Category D:	Event occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient and/or required intervention to prevent harm.
3. Event, Harm	
Category E:	Event occurred that may have contributed to, or resulted in, temporary harm to the patient of unknown duration and required intervention.
Category F:	Event occurred that may have contributed to, or resulted in, temporary harm to the patient and required initial or prolonged hospitalization
Category G:	Event occurred that may have contributed to, or resulted in, harm to the patient
Category H:	Event occurred that required intervention necessary to sustain life.
4. **Event, Death**	
Category I:	Event occurred that may have contributed to, or resulted in, patient death.

National Data

- Retained surgical items are estimated to occur in 1 per 10,000 surgical procedures [1]
- The estimated cost associated with an RSI $525,000[2,3,4]
- Only 67% of RSIs are detected by x-rays[5]
- A review of reports to Joint Commission of unintentionally retained foreign objects (URFO) found that in 308 cases, 5 patient deaths resulted from the URFO.[6]

Association for periOperative Registered Nurses (AORN) Safe Surgery Together Resources

AORN's Center of Excellence in Surgical Safety: Prevention of RSI program

A program which utilizes scenario-based immersive technology to improve skills, and help teams mitigate risks and improve outcomes. Teams are taught:

- Evidence-based human behaviors and environmental influences that lead to unintended RSI
- Procedures for accurately counting surgical items
- Strategies to increase compliance with counting processes before, during, and after procedures
- Guidelines for reconciling discrepancies, including the use of adjunct technologies to augment manual counts.

Find complete information on this complimentary program at
http://www.aorn.org/education/facility-solutions/rsi

Additional AORN Resources

Guideline Quick View: Retained Surgical Items - 2022 - AORN Journal - Wiley Online Library [7]

https://aornjournal.onlinelibrary.wiley.com/doi/full/10.1002/aorn.13632

Retained Surgical Items: Evidence Review and Recommendations for Prevention[8]

https://aornjournal.onlinelibrary.wiley.com/doi/10.1002/aorn.12740

Preventing Retained Surgical Items During Endovascular Procedures: Bridging the Gap Between Guidelines and Practice[9]

https://aornjournal.onlinelibrary.wiley.com/doi/10.1002/aorn.13250

Joint Commission Sentinel Event Alert #51

The most common causes for unintended retained foreign objects reported to their agency are:[10]

- Absence of policies and procedures
- Failure to comply with existing policies and procedures
- Problems with hierarchy and intimidation issues
- Failure in communication with physicians
- Failure of staff to communicate relevant patient information
- Inadequate or incomplete education of staff

Click the following link to access the alert:

https://www.jointcommission.org/resources/patient-safety-topics/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-issue-51-preventing-unintended-retained-foreign-objects/

Joint Commission Recommened Strategies for Improvement[10]

- Establish and standardize counting policies and procedures using evidence-based guidelines
- Establish and standardize wound opening and closing procedures using evidence-based guidelines
- Establish effective team communication procedures and expectations
- Establish and standardize appropriate documentation including results of counts, items intentionally left inside (if needed), and actions taken if discrepancies occur
- Use tools and methods to manage equipment and materials, such as whiteboards and radiopaque materials
- Improve and standardize the physical environment, addressing room layout, lighting, and number of people in the room
- Define conditions in which radiology should be used and how communication will occur
- Establish reporting systems consistent with just and learning cultures

Effective Team Communication[11]

- **Team training** (using evidence-based curriculum) promotes assertiveness and helps overcome hierarchical barriers to effective communication, including:
  - **Closed loop communication** methods including verbal affirmation of correct counts
  - Use of team **briefs and debriefs**
  - **Call outs** for situations such as when an instrument is placed into a body cavity and not removed right away
  - **Establishing a safe environment** where staff are comfortable with and have the tools to speak up, stop the line and escalate concerns up the chain of command

TeamSTEPPS is an evidence-based teamwork system that has been demonstrated to improve team communication and includes the strategies noted above. For more information, visit: https://www.ahrq.gov/teamstepps/index.html.

Reporting and Disclosure

- High reliability organizations have strong cultures of safety, which include the following components:[12]

Reporting	People are on the lookout for and freely report adverse events, near misses and potenital safety hazards
Just	A fair and transparent culture of shared accountability between humans and systems that builds trust
Flexible	Teamwork is optimized to improve outcomes
Learning	The organization uses reported information to continuously improve safety sytems

- As a component of protecting patient rights, organizations inform the patient/family/caregiver about unanticipated outcomes of care, treatment, and services.[10]
- Disclosure policies and procedures may be developed with the guidance of your medical malpractice/liability carrier.

Could this happen in your organization?

	Yes	No	NA	Action
Do you have established standardized policies and procedures for counting sponges, instruments, and other surgical items? Are they current evidence-based best practice?				
Are the counting practices used in all areas where surgical items are used?				
Do you have established standardized wound opening and closing procedures that use evidence-based guidelines?				
Do actual practices conform to what stated policies outline?				
Are staff, including surgery teams, trained in effective team communication?				
Does your culture support speaking up, escalating concerns, and stopping the line?				
Has your organization standardized counting practices, surgical suite layout, and other factors that impact the environment?				
Does staff training in sponge counting and surgical safety practices include practice, simulation, and competency assessment?				
Are robust recovery mechanisms in place to identify potential retained foreign objects as quickly as possible?				
Do staff readily report events and near misses? Are thorough Root Cause Analyses conducted and system issues addressed?				
Does your organization have effective disclosure policies so that patients are informed of unanticipated events and outcomes?				

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4. Blanchfield BB, Acharya B, Mort E. The hidden costs of regulation: the administrative cost of reporting serious reportable events. *Jt Comm J Qual Patient Saf*. 2018;44(4):212-218.
5. Cima RR, Kollengode A, Garnatz J, Storsveen A, Weisbrod C, Deschamps C. Incidence and characteristics of potential and actual retained foreign object events in surgical patients. *J Am Coll Surg*. 2008;207(1):80-87
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10. Joint Commission, Sentinel Event Alert #51: Preventing unintended retained foreign objects. 2013.
11. Agency for Healthcare Research and Quality. TeamSTEPPS. https://www.ahrq.gov/teamstepps/index.html.
12. Reason, J. *Managing the Risks of Organizational Accidents*. (2019) Hampshire, England: Ashgate Publishing Limited.