AORN Center of EXCELLENCE in Surgical Safety

MAKING THE CASE FOR for Evidence-Based Education on Retained Surgical Items

Problem Identification

Unintentionally retained surgical items (RSIs) continue to be among the top high-risk, avoidable sentinel events tracked by The Joint Commission.1There are evidence-based practices that can minimize the risk for RSI incidents. In addition, all organizations should participate in quality improvement projects that focus on improving patient outcomes. The tools in this package will help you focus on those areas most in need of improvement as you review your procedural environment.

While the estimated rate of RSI occurrence varies widely depending on the source of information. They are likely underreported2 and underestimated3. A study by Gunnar et al4 at the Veterans Health Administration cited the rate as 124/2,964,472 equating to 0.42 per 10,000 surgeries. In another study at the Veterans Health Administration by Chen et al5 the rate was 290/2,342,690 equating to 1.20 retained items per 10,000 cases. No patient wants to be that one occurrence. No institution wants to incur the public scrutiny or risk to safety scores or credit ratings due to preventable patient harm occurrences.

Solution

Prevention is the best approach for patient safety. Ensuring that your team is following the evidence-based recommendations in the Guideline for Prevention of Unintentional Retained Surgical Items is the best way to avoid sentinel events or near misses.

Benefits

This program, based on the AORN Guideline for Prevention of Unintentionally Retained Surgical Items6, includes a policy and procedure template, quality process audits, education, scenario-based immersive technology, and simulation exercises. Documented activities can provide validation of performance improvement activities for accreditation, Magnet status, and other reviewing bodies.

The activities can educate and assist your teams in implementing the recommendations to prevent count discrepancies and RSIs. Improving the effectiveness of teams in preventing RSIs can also reduce the number of count discrepancies and time reconciling count discrepancies. Count discrepancies increase costs by increasing the time spent searching for the item and through time and costs associated with radiologic imaging.

Evaluate Return on Investment

Each incidence of RSI costs an average of $166,000-$600,000.7-10

1. Calculate the current volume of surgeries and divide by 7,000 for the expected rate of RSIs in a year.

2. Multiply this number by $166,000 for an expected cost of an occurrence this year. (If the known rate of current occurrence is higher, use that number. If the known rate of occurrence is lower, use that number. For this document, the published estimated rate is used for consistency.)

3. Calculate the cost of this project.

    a. Cost of education and resources = 0

    b. Cost of staff time to complete the education: average staff cost/hour x # of staff

    c. included x expected hours (may be different for RNs and non-RNs based on how package elements are used).

    d. cost for the performance improvement activity ($5,000) in the large facility example below).

4. Costs avoided or saved would be the cost of an RSI occurrence minus the activity costs ($707,140.00 avoided costs in the large facility example below).

Large Facility Example			Notes
COSTS			
	Average reported cost to the organization	$166,000.00	Costs may include additional days in the hospital, care such as reoperation for removal of the RSI, state penalties, and medical litigation and settlement fees.
	Rate of occurrence/ surgical volume	1.20/10,000	
Facility's cost calculation	• Facility's yearly surgical volume	30,000	
	• Facility's expected yearly occurrence	3.6	30,000 x 1.2=36,000 36,000 ÷ 10,000=3.6
	Costs of expected occurrences	**$597,600.00**	$166,000.00 x 3.6 = $597,600.00
Education costs	• Education modules, scenarios, immersive technology	$ 0	Free program and resources
	• Average cost of education time per hour	$50	
	• Number of staff completing education	100	
	• Cost of education time	$5000	
Avoided costs	Cost of occurrences -education costs	$592,600.00	$597,600.00-$5000= $592,600.00

REFERENCES

1. Most Commonly Reviewed Sentinel Event Types. 2021. **https://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/sentinel-event/most-frequently-reviewed-event-types-2020.pdf**. Accessed October 19, 2021.

2. Gawande AA, Studdert DM, Orav EJ, Brennan TA, Zinner MJ. Risk factors for retained instruments and sponges after surgery. ***N Engl J Med***. 2003;348(3):229-235.

3. 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.

4. Gunnar W, Soncrant C, Lynn MM, Neily J, Tesema Y, Nylander W. The impact of surgical count technology on retained surgical items rates in the veterans health administration. ***J Patient Saf***. 2020

5. Chen Q, Rosen AK, Cevasco M, Shin M, Itani KM, Borzecki AM. Detecting patient safety indicators: How valid is "foreign body left during procedure" in the Veterans Health Administration?. ***J Am Coll Surg***. 2011;212(6):977-983.

6. Guideline for prevention of unintentionally retained surgical items. In: Guidelines for perioperative practice. Denver, CO: AORN, Inc; 2022.

7. Steelman VM, Shaw C, Shine L, Hardy-Fairbanks AJ. Retained surgical sponges: a descriptive study of 319 occurrences and contributing factors from 2012 to 2017. Patient Saf Surg. 2018;12(20). doi: 10.1186/s13037-018-0166-0.

8. Beyond the count: preventing the retention of foreign objects. ***Pa Patient Saf Advis***. 2009;6(2):39-45. http://patientsafety.pa.gov/ADVISORIES/Pages/200906_39.aspx. Accessed February 8, 2021.

9. Eisler P. What surgeons leave behind costs some patient dearly. US Today. https://www.usatoday.com/story/news/nation/2013/03/08/surgery-sponges-lost-supplies-patients-fatal-risk/1969603/. Published March 8, 2013. Accessed February 8, 2021.

10. Lagasse J. Damages from left-behind surgical tools top billions as systems seek end to gruesome errors. Healthcare Finance. https://www.healthcarefinancenews.com/news/damages-left-behind-surgical-tools-top-billions-systems-seek-end-gruesome-errors. Published May 6, 2016. Accessed February 8, 2021.