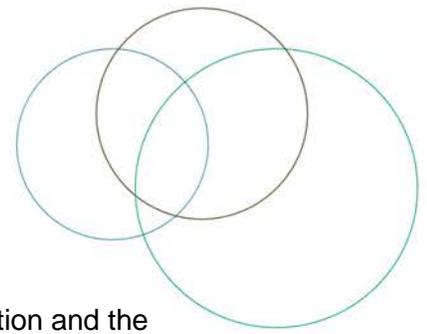


HOSPITAL HARM IMPROVEMENT RESOURCE

# Retained Foreign Body



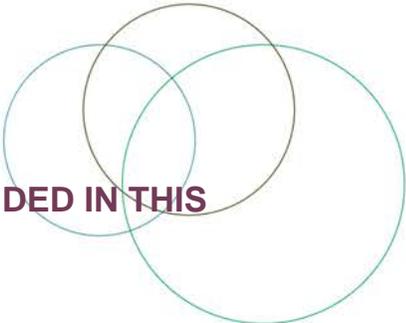
## ACKNOWLEDGEMENTS



The Canadian Institute for Health Information and the Canadian Patient Safety Institute have collaborated on a body of work to address gaps in measuring harm and to support patient safety improvement efforts in Canadian hospitals.

The Hospital Harm Improvement Resource was developed by the Canadian Patient Safety Institute to complement the Hospital Harm measure prepared by the Canadian Institute for Health Information. It links measurement and improvement by providing resources that will support patient safety improvement efforts.



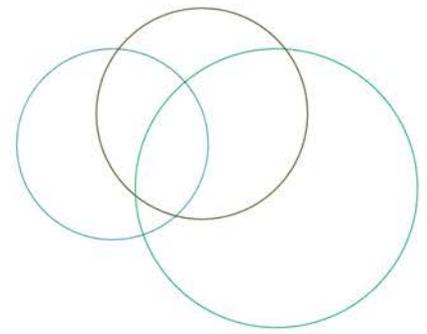


**DISCHARGE ABSTRACT DATABASE (DAD) CODES INCLUDED IN THIS CLINICAL CATEGORY:**

**D24: Retained Foreign Body**

<b>Concept</b>	Foreign object or substance unintentionally left in the body during a medical or surgical procedure
<b>Selection criteria</b>	
T81.5 T81.6	Identified as diagnosis type (2)





## **OVERVIEW AND IMPLICATIONS**

### **Retained foreign body during surgery**

A retained foreign body is a patient safety incident in which a surgical object is accidentally left in a body cavity or operation wound following a procedure (Canadian Patient Safety Institute (CPSI), 2016a). Patients with retained foreign bodies may sustain both physical harm (perforation of the bowel, sepsis and even death) and emotional consequences (depression, post-traumatic stress disorder, anxiety) following the incident. These complications can occur early in the postoperative period, or even months or years later (Gawande et al., 2003; Healthcare Insurance Reciprocal of Canada (HIROC), 2016; The Joint Commission, 2013).

The Organisation for Economic Co-operation and Development (OECD) reports for the year 2017 that the average rate for a foreign body left inside the patient's body during a procedure, per 100,000 medical and surgical discharges is 3.8, versus the Canadian rate of 9.8, which represents a 14 per cent increase over the last five years (Canadian Institute for Health Information (CIHI), 2019a and CIHI, 2019b).

A 10-year review of medico-legal cases in Canada between 2004 and 2013 found that retained foreign bodies or wrong surgery were identified in 12 to 18 per cent of surgical incidents (Canadian Medical Protective Association (CMPA & HIROC, 2016).

Retained foreign bodies can include:

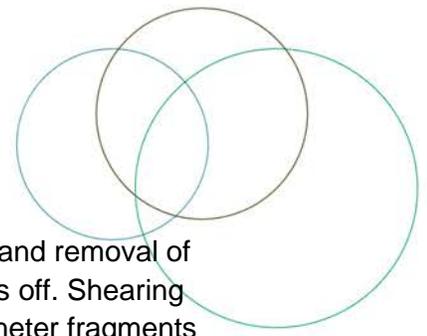
- Soft devices, such as sponges and towels
- Small miscellaneous items, including unretrieved device components or fragments (such as broken parts of instruments), stapler components, parts of laparoscopic trocars, guidewires, catheters, and pieces of drains
- Needles and other sharps
- Instruments, most commonly malleable retractors  
(The Joint Commission, 2013)

The most common root causes of retained foreign objects reported to The Joint Commission are:

- The absence of policies and procedures
- Failure to comply with existing policies and procedures
- Problems with hierarchy and intimidation
- Failure in communication with physicians
- Failure of staff to communicate relevant patient information
- Inadequate or incomplete education of staff  
(The Joint Commission, 2013)

Traditional methods of preventing retained foreign bodies included "cavity sweeps" and manual counting protocols – both of which are prone to human error. Current practices for counting sponges have a 10 to 15 per cent error rate. In addition, 80 per cent of retained sponges occur with what staff believe is a correct count (The Joint Commission, 2013)





## **Catheter shearing leading to retained foreign body**

Most catheter procedures occur without complications however the insertion and removal of catheters can lead to retained foreign bodies when part of the catheter breaks off. Shearing typically occurs during insertion or removal of the catheter from patients. Catheter fragments remaining in patients can result in serious complications due to the location or migration of the fragment or inflammation at the fragment site. Reasons for catheter shearing include the following:

- Applying excessive force while removing the catheter
  - Withdrawing the catheter back through the insertion needle
  - Withdrawing the catheter over a deformed or damaged needle bevel
  - A flaw in the catheter from defects during the manufacturing process
  - Damaging the catheter during or after placement in the patient
- (Pennsylvania Patient Safety Authority, 2009; Weinstein & Hagle, 2014)

## **GOAL**

Reduce the incidence of retained foreign body.

## **IMPORTANCE FOR PATIENTS AND FAMILIES**

Communication failures are common in the operating room and can lead to increased complications such as retained foreign bodies. Use of a surgical safety checklist may prevent communication failures and reduce complications. While the physical act of “checking the box” may not necessarily prevent all adverse events, the checklist is a scaffold on which attitudes towards teamwork and communication can be encouraged and improved. Compliance with the checklist includes communication with the patient and is critical for the effects on patient safety to be realized (Pugel et al., 2015).

## **Patient Stories**

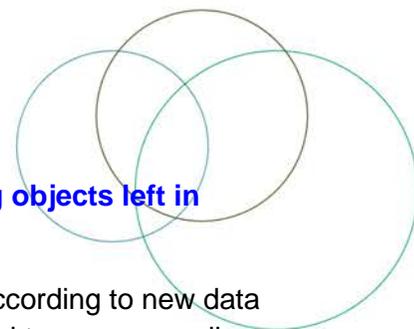
### **Retained Foreign Body in the News**

#### **'It felt like I had been stabbed,' says patient left with 33-cm metal plate inside after surgery**

Sylvie Dubé couldn't figure out why she was overcome with pain in her shoulder after she woke up following an operation... "It felt like I had been stabbed," Dubé told Radio-Canada, recalling the surgery on March 14....As weeks went on, the pain worsened....Feeling discouraged, the couple showed up at the emergency room more than two months after the surgery..

That's when Dubé underwent an X-ray. Puzzled radiologists told her there was a large medical instrument lodged inside her stomach (Gentile, 2017).





## **Canada worse than other wealthy countries in patient safety – including objects left in body after surgery, data show**

Canada is lagging other wealthy countries when it comes to patient safety, according to new data that show our country's hospitals record significantly higher rates of obstetrical trauma, as well as foreign objects, such as sponges and instruments, left in patients after surgery.... (Leung, 2019).

## **CLINICAL AND SYSTEM REVIEWS, INCIDENT ANALYSES**

Given the broad range of potential causes of a retained foreign body, clinical and system reviews should be conducted to identify potential causes and determine appropriate recommendations.

Occurrences of harm are often complex with many contributing factors. Organizations need to:

1. Measure and monitor the types and frequency of these occurrences.
2. Use appropriate analytical methods to understand the contributing factors.
3. Identify and implement solutions or interventions that are designed to prevent recurrence and reduce risk of harm.
4. Have mechanisms in place to mitigate consequences of harm when it occurs.

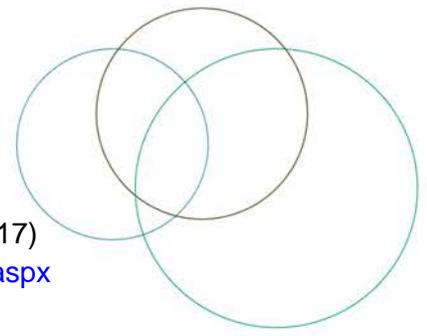
To develop a more in-depth understanding of the care delivered to patients, chart audits, incident analyses and prospective analyses can be helpful in identifying quality improvement opportunities. Links to key resources for [conducting chart audits](#) and [analysis methods](#) are included in the [Hospital Harm Improvement Resources Introduction](#).

If your review reveals that your cases of retained foreign body are linked to specific processes or procedures, you may find these resources helpful:

- Agency for Healthcare Research and Quality (AHRQ). <https://www.ahrq.gov/>
- American College of Surgeons - Revised statement on the prevention of unintentionally retained surgical items after surgery (2016). <http://bulletin.facs.org/2016/10/revised-statement-on-the-prevention-of-unintentionally-retained-surgical-items-after-surgery/#.WxVdN0xFyUI>
- Association of periOperative Registered Nurses (AORN). <https://www.aorn.org/>
- Canadian Patient Safety Institute. [Surgical Safety Checklist \(2009\)](#)
- HIROC Retained Surgical Items - Risk Reference Sheet (2016). <https://www.hiroc.com/resources/risk-reference-sheets/retained-surgical-items>
- Nothing Left Behind. [www.nothingleftbehind.org](http://www.nothingleftbehind.org)



## HOSPITAL HARM IMPROVEMENT RESOURCE RETAINED FOREIGN BODY



- Pennsylvania Patient Safety Advisory. <http://patientsafety.pa.gov/>
  - Retained Surgical Items: Events and Guidelines Revisited (2017) [http://patientsafety.pa.gov/ADVISORIES/Pages/201703\\_RSI.aspx](http://patientsafety.pa.gov/ADVISORIES/Pages/201703_RSI.aspx)
  - Epidural or Subarachnoid Catheter Shear (2009) [http://patientsafety.pa.gov/ADVISORIES/Pages/200909\\_84.aspx](http://patientsafety.pa.gov/ADVISORIES/Pages/200909_84.aspx)
- Plumer's Principles and Practice of Infusion Therapy. Text Book (Weinstein, S.M.; Hagle, M.E. 9th Edition. 2014).
- The Joint Commission. Preventing unintended retained foreign objects. *Sentinel Event Alert*. Issue 51, 2013. Available at: [https://www.jointcommission.org/assets/1/6/SEA\\_51\\_Retained foreign bodies\\_10\\_17\\_13\\_FINAL.pdf](https://www.jointcommission.org/assets/1/6/SEA_51_Retained_foreign_bodies_10_17_13_FINAL.pdf)
- World Health Organization - Safe Surgery. <https://www.who.int/patientsafety/safesurgery/en/>

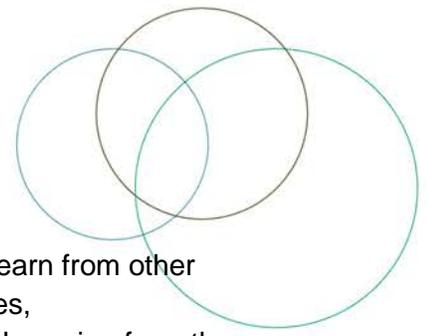
## MEASURES

Vital to quality improvement is measurement, and this applies specifically to implementation of interventions. The chosen measures will help to determine whether an impact is being made (primary outcome), whether the intervention is actually being carried out (process measures), and whether any unintended consequences ensue (balancing measures).

In selecting your measures, consider the following:

- Whenever possible, use measures you are already collecting for other programs.
- Evaluate your choice of measures in terms of the usefulness of the final results and the resources required to obtain them; try to maximize the former while minimizing the latter.
- Try to include both process and outcome measures in your measurement scheme.
- You may use different measures or modify measures to make them more appropriate and/or useful to your particular setting. However, be aware that modifying measures may limit the comparability of your results to others.
- Posting your measure results within your hospital is a great way to keep your teams motivated and aware of progress. Try to include measures that your team will find meaningful and exciting (IHI, 2012).





## **GLOBAL PATIENT SAFETY ALERTS**

[Global Patient Safety Alerts](#) (GPSA) provides access and the opportunity to learn from other organizations about specific patient safety incidents including alerts, advisories, recommendations and solutions for improving care and preventing incidents. Learning from the experience of other organizations can accelerate improvement.

### **Recommended search terms:**

- Retained foreign body
- Retained foreign object
- Surgical safety
- Implant
- Catheter
- Unretrieved Device Fragments

## **RETAINED FOREIGN BODY SUCCESS STORIES**

### **Surgical Instruments Management Program**

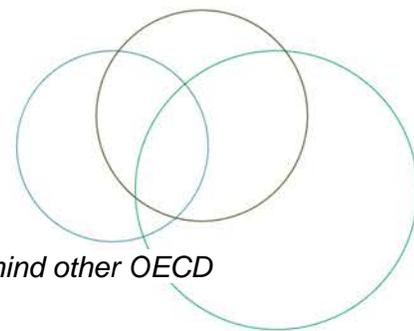
Hopital Charles LeMoyne, Quebec, 2009

The surgical instruments management program at Hôpital Chalres LeMoyne is effective and provides the highest level of safety. There is a well-established, efficient tracking system. All instruments are identified with a unique number. When trays are prepared, instruments are logged using a scanner system. Trays are then identified with a barcode. During surgery, all instruments and devices are logged in a computer databank referenced to the patient's name. This system makes it possible to identify every instrument used in a specific operation (Hôpital Charles LeMoyne, 2009).

### **Surgical error inspires doctor to champion the safety of all patients**

Peter Pisters, [former] President and CEO of University Health Network also saw himself as the Chief Patient Safety Officer... a duty he takes very seriously, fuelled by the painful memory of a single surgical sponge left behind in one of his patients (CPSI, 2016b)





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## HOSPITAL HARM IMPROVEMENT RESOURCE RETAINED FOREIGN BODY



<http://www.ihi.org/resources/Pages/Tools/HowtoGuidePreventHarmfromHighAlertMedications.aspx>

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