There’s Waldo! Standardized Workflow for Optimizing Communication for Retained Surgical Instruments

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Retained surgical instruments (RSI) remain the most frequently reported sentinel event, occurring in approximately 1 in 1,000 to 1 in 18,000 surgeries.

Approximately 90% of RSI events are attributable to team-based or systems errors.

The cost of operating room time is reported to range from $36 to $155 per minute depending on the complexity of the case.
SMART Aim

To improve communication between surgeons and radiologists using a standardized workflow to expedite reporting times for intraoperative RSI radiographs.
Prior to intervention, radiologist call-to-OR times (RSI TAT) for RSI results were inconsistent and often exceeded our target of < 15 minutes.

Technologists and radiologists identified factors contributing to delays:

- Information about the type, expected appearance, and likely location of the potential RSI was frequently missing.
- Intraoperative radiographs were frequently limited by overlying non-biological material in the surgical field, incomplete visualization of the relevant anatomy and suboptimal technique in a fully-draped patient.
Methods

A team of radiologists, surgeons and RT’s designed a simple 3-step standardized workflow to optimize identification and minimize RSI TAT.

1. Send **RSI-in-Progress** Notification
2. Send **Simple 3-item OR Checklist Data**
3. Send **Sample Radiograph** of the Missing RSI (if any)
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**STEP 1:** Send alert to radiologist
- 10 minutes ahead of anticipated completion: “RSI in Progress”
- Upon image transfer to PACS

**STEP 2:** Send OR checklist data to PACS
- **Procedure:** Median sternotomy with AVR RVOT repair
- **Surgical Field:** Chest cavity
- **Missing RSI:** White towel

**STEP 3:** Send sample radiograph of the missing RSI to PACS along with the intraoperative radiograph.
Methods

The impact of this workflow was assessed by comparing 40 consecutive RSI TAT for cases prior to workflow implementation to 40 consecutive RSI TAT for cases following workflow implementation.

RSI TAT was measured as the time in minutes from radiologist notification of exam completion to the time a result was called to the OR.
Results

Following implementation of the standardized workflow, the mean TAT for communication with the OR team decreased from $17.7 \pm 5.7$ minutes to $4.3 \pm 1.9$ minutes.

- No RSI was identified prior to the workflow
- One RSI identified after workflow in place
Our standardized workflow expedited time to surgical site closure by improving TAT for RSI radiograph reporting. A limitation of this study is that we did not have a process (e.g. follow-up post-op imaging) for determining accuracy of identification of RSI.

Using the core process improvement tools of standardization and communication, we developed a clear and detailed workflow to expedite results reporting for RSI radiographs.


