Clinical Alert

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Maryland Department of Health and Mental Hygiene
Office of Health Care Quality
Spring Grove Center
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Preventing Retained Foreign Bodies (RFB)

The post-procedure retention of a foreign body (RFB) not intended to be left behind is classified as a National Quality Forum "Never Event." The Office of Health Care Quality has received reports of 15 RFBs since the inception of the State's Patient Safety Program in March, 2004. Prior to mandatory reporting of serious adverse events, the OHCQ had learned of only one RFB in the previous five years. RFBs are still causing death and disability to Maryland patients.

According to the Agency for Healthcare Quality and Research, "surgical teams have used sponge, sharp, and instrument counts as protection against this problem for decades. Four separate counts have been recommended: the first when the instruments are set up or sponges unpackaged, a second before surgery begins, a third as closure begins, and the final count performed during subcuticular or skin closure. Discrepancies at any stage are pursued with repeat counts and, if the discrepancy persists, steps are taken to locate any unaccounted for items. While the practice of sponge counts is a time-honored, simple preventive measure, it is heavily dependent on human performance practices and subject to human error. Anyone who has ever had to recount a pile of coins will recognize the potential. If the "double-check" doesn't produce the expected number, but a recount does, one simply stops there — ignoring the possibility that the previous discrepancy was correct and that the recount was in error."[1]

Risk Factors according to Maryland adverse event reports:

- Emergency procedures
- Patient obesity
- Hand-offs and personnel changes during procedure
- Length of procedure
- Procedures that start laparoscopic and are converted to open, plus abdominal and C-sections, are most prone to RFB.

The Office of Health Care Quality has received 15 reports of level 1 RFBs since March of 2004. Four occurred during C-sections, nine during abdominal surgeries, one during a spinal fusion, and one during a peripheral arterial bypass surgery.

- Two cases involved fatalities — one from sepsis after 10 day retention of a sponge, and one who bled out during re-operation after six month retention of a sponge that eroded his aorta. All of the non-fatal reported cases required at least one re-operation for removal of the foreign body.
- The spinal fusion case involved a retained radiopaque sponge that was tucked up against the hardware in the spine and not seen on post-op x-rays. The patient returned to the hospital several months later with a non-healing wound.
- The peripheral arterial bypass was an 11-hour surgery with numerous staff changes and hand-offs.
- Three of the C-sections were noted to be emergencies, although in one case, there was 2.5 hours between decision and incision. This should have been plenty of time to do the pre-incision count.
- Average length of retention = 11 months. Minimum was one day, maximum was 28 months.
- Patient obesity was noted in six out of nine abdominal surgeries, and played a part in the events associated with C-sections.

Root Causes:

- One patient had four separate surgical procedures done in a three-hour span of time.
- Three out of four support staff in OR were temporary employees and did not do the counts.
- Radiologist was not told to look for foreign bodies in post-op x-rays. In one case, the radiologist thought the foreign body was a drain left in on purpose. The foreign body was recognized when the surgeon looked at the x-rays and remembered she had placed the drain on the other side of the abdomen.
- Failure to follow up on testing when counts are incorrect. Four of the reported cases had known incorrect counts and confirmatory testing was ignored. In one case, the radiology tech was blamed for not knowing how to do x-rays in the ORs even though he had never been trained on how to do this, had not been in the OR before, and the hospital had no radiology competency for OR x-rays. Even though the three x-rays taken in the OR were unreadable, no one repeated them before the patient went home. In another case, two abdominal x-rays clearly showed the foreign body prior to discharge but no one acted upon the results.
- Use of non-radiopaque objects in the ORs. In at least three cases, the RFB was a non-radiopaque lap sponge. All of the C-section packs in one hospital contained non-radiopaque sponges and towels. Why even have non-radiopaque sponges and towels available? One hospital determined that sometimes their packs of five sponges actually contained six. The OR staff was adding an extra sponge into the count, rather than ensuring that the staff preparing the surgical packs were doing it properly.
- Several of the RCAs mention the contributing factor of intimidating behavior by the surgeon, but many hospitals are reluctant to tackle this issue. Activities in the OR need to be patient-centric, not personnel-centric. All cases of RFB need to have peer review on a parallel track to the RCA.
- One RCA cited the fact that the patient was a drug user three times. What does this have to do with the towel left in her abdomen after a C-section?

Continued

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Discussion:

In many hospitals, staff do not comply with standards and policies, due to job pressures or the idea that production is more important than safety. When bad things fail to happen, poor compliance becomes institutionalized. Without realizing it, people compromise safety to meet other goals (getting out on time, starting another case, etc.) Counting is seen as cumbersome, redundant, and non-value added. And this repetitive process is subject to other errors such as not acting on discrepancies, or rote confirmation by someone who is supposed to do the double-check.

David M. Gaba, in ***Human Error in Medicine***, cites several studies of team dynamics in the ORs.[2] Status and hierarchy are important in team behavior and performance, and the OR team is unusual because the surgeon and anesthesiologist are co-equal, with some overlapping responsibilities. And, each other member of the team — first assistants, nurses, etc. — comes from a profession with its own standard behaviors. This may lead to an inability of the team to respond effectively to inconsistencies in information and expectations. Moreover, the status differential may lead team members to be reluctant to question the decisions of the surgeon or anesthesiologist.

Recommendations:

Team training may compensate for the power differential in the OR. Team members need to feel their contributions to the patient outcome are understood and valued by other team members. The Maryland Patient Safety Center, with the Maryland Hospital Association, offers TeamStepps™ training free of charge to Maryland healthcare providers.[3] TeamStepps™ encourages effective performance by focusing on team structure, leadership, situational awareness, mutual support, and communication.

Consistency of processes of accounting for all objects on or in the surgical site will eliminate individual variation. All invasive procedures need to include the same counting processes. Each department needs to be consistent with all others. What is happening in your outpatient surgical services? Look at the forms used: Is there space to record counts done at each hand-off between personnel for breaks, etc.? Is there space to record the actions taken in event of a discrepancy? Does the form prompt for those actions?

Systems of accountability are vital in avoiding the assumption that counting is someone else's responsibility. The surgeon may assume it is the scrub tech's responsibility; the scrub tech assumes it is the circulation nurse's responsibility; the relief staff assume it is the assigned staff's responsibility… and the count is not done. We also recommend that requests for post-op x-rays be flagged for the need to identify RFB.

Reduction of distractions in the OR. The more people, noise, and commotion in the OR, the greater the chance of error.

The Office of Health Care Quality strongly suggests following the recommendations of the American College of Surgeons[4] and the Association of Perioperative Nurses[5] (AORN).

Your surgeons and OR staff are highly trained and committed professionals who adhere to high standards of practice. However, random oversight by hospital leadership can go a long way to ensure everyone keeps his or her focus on eliminating the death and serious disability associated with RFBs.

1. http://psnet.ahrq.gov/resource.aspx?resourceID=1275
2. Bogner, M.S., ed. Human Error in Medicine, 1994
3. http://www.marylandpatientsafety.org/html/education/index.html
4. www.facs.org
5. www.aorn.org