USE OF X-RAYS FOR INCORRECT NEEDLE COUNTS

PA-PSRS received a report of an incorrect needle count during surgery in which a missing 7-0 suture needle could not be located. After searching the patient, the operating table, floor, and waste receptacles with a needle magnet and failing to locate the needle, the surgeon declined an x-ray of the surgical site, stating that the needle was too small to be visualized on an x-ray.

During the test phase from November 2003 through April 2004, involving 22 volunteer facilities, PA-PSRS received reports of occurrences in which needle, sponge, and equipment counts were incorrect, incomplete or not performed. Problems with needle counts were the most commonly reported (50%), followed by equipment (22%) and sponge (15%) counts. All occurrences of incorrect needle counts were reported as Incidents, and the majority (78%) were coded as Harm Score D—an event requiring monitoring to confirm that it resulted in no harm and/or required intervention to prevent harm. Sixty-four percent of reports of incorrect needle counts indicated that an x-ray was performed to search for potentially retained needles.

The clinical literature provides conflicting evidence for when x-rays may be useful in locating lost surgical needles. A 2001 study found that suture needles as small as 8-0 could be visualized on x-ray with unassisted eyesight. However, the results of a more extensive follow-up study conflict with these earlier findings. In a 2003 Australian study, the smallest needle that could be visualized by a majority of observers on at least one of three different films was 17 mm (corresponding to a 5-0 suture size), and only 13% of observers were able to find a 13 mm needle (6-0 suture size).

The authors of the 2003 study felt that x-rays for missing needles smaller than 13 mm (6-0 suture size) would expose patients to unnecessary radiation for a very small chance of locating retained needles. Participants in this study (which focused on the thoracoabdominal cavity) chose department x-ray (51%) as the preferred mode for detecting retained needles, followed by a mobile image intensifier (39%), and a portable x-ray machine (7%). Departmental radiography is not feasible in the OR, however, where a mobile image intensifier may be the best method.

Some healthcare facilities have developed formal policies or procedures for how clinicians respond to cases of incorrect counts following surgery—in particular when x-rays are used to search for potentially retained needles. Barrow, the author of the 2001 study, states that hospital staff reported decreased anxiety over when to order such imaging after a formal policy was developed and implemented.

Notes
The Patient Safety Authority is an independent state agency created by Act 13 of 2002, the Medical Care Availability and Reduction of Error (“Mcare”) Act. Consistent with Act 13, ECRI, as contractor for the PA-PSRS program, is issuing this newsletter to advise medical facilities of immediate changes that can be instituted to reduce serious events and incidents. For more information about the PA-PSRS program or the Patient Safety Authority, see the Authority’s website at www.psa.state.pa.us.

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The Institute for Safe Medication Practices (ISMP) is an independent, nonprofit organization dedicated solely to medication error prevention and safe medication use. ISMP provides recommendations for the safe use of medications to the healthcare community including healthcare professionals, government agencies, accrediting organizations, and consumers. ISMP’s efforts are built on a non-punitive approach and systems-based solutions.