Prevention of Transmissible Infections in the Perioperative Setting
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INTRODUCTION
The overall costs to manage reported exposures to hepatitis B, hepatitis C and HIV have been estimated at $71 to $4,838 per exposure. The Association of periOperative Registered Nurses’ (AORN) Recommended Practices for Prevention of Transmissible Infections in the Perioperative Practice Setting states that healthcare practitioners should double glove during invasive procedures. This practice reduces the risk of transmissible infection to both patients and staff members.

This study at the Veterans Affairs Medical Center, Pittsburgh, Pennsylvania involved random observation of staff for compliance with double gloving in the operating room (OR) during a 12-month period from April 2007 to March 2008; and a 45-month review of sharps injuries following intensive education on the use of a hands-free neutral zone technique.

METHOD
• Educational sessions for staff members about double gloving, sharps injuries and the use of hands-free neutral zones for passing sharps were carried out.

• Additional indicator gloves were provided to enable all staff to double glove using the indicator system. Concurrently the use of blunt-tipped surgical needles was implemented.

RESULTS
• The recommended use of double gloving and changes to sharps handling practices resulted in a decrease in blood-borne pathogen skin contacts and rate of sharps injuries over the period of observation.

• The number of OR sharps injuries dropped from 26 to 11 after the launch of the safety awareness programme in 2007. In 2008 only six sharps injuries occurred in the OR. After an unexplained spike of 9 injuries in the first two quarters of 2009, more attention was focused on the affected areas which resulted in only one sharps injury for the third quarter of 2009.

• The number of blood-borne pathogen exposures dropped 19% in 2007 and continued to drop an additional 6% in 2008.

KEY POINTS
• Encouraging surgical staff to adopt double gloving techniques using colored under gloves provides an early indicator of outer glove puncture and decreases their risk of exposure to pathogens as well as decreasing the risk of surgical site infections for patients

• Sharps injuries can be prevented by encouraging the surgical team to use hands-free neutral zones for passing sharps
Exposures were decreased significantly amongst medical students – who often may be asked to use their hands to retract tissue during procedures.

A direct correlation between the reduction in sharps injury and the decrease in the rate of surgical site infections (SSI) was also noticed during the observation period.

The rate of SSI dropped from 1.9% in 2006 to 1.6% in 2007 and 1.5% in 2008 and in the first six months of 2009 the rate was 1.35%.

Despite evidence of decreased risk through the implementation of these changes, individuals who routinely scrub in the most (e.g. surgeons, surgical technologists and scrub nurses) were least receptive to changing their gloving or sharps handling practices.

Attending surgeons were most resistant to changing their practice from single to double gloving, followed by surgical technologists.

Medical students and physician assistants were most receptive to change.

A higher number of glove punctures were detected for wearers of the double glove system because the blue or green color of the inner glove showed through even the smallest of holes in the outer glove. Single gloved staff members often detected perforations only after skin damage.

CONCLUSION

Through education and hospital policy change to encourage double gloving with an indicator system and the use sharps prevention techniques, this centre was able to reduce blood-borne pathogen skin contacts, the rate of sharps injuries and, as a result, the rate of SSIs.

Perioperative education continues at the hospital to help staff understand the importance of these practices – with particular focus on medical students who have a high risk of sharps injury and pathogen exposure.