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Center for Transforming Healthcare

Center for Transforming Healthcare announces new solutions to decrease risk of colorectal SSIs

On November 28, the Joint Commission Center for Transforming Healthcare, in collaboration with the American College of Surgeons, announced that its project to reduce surgical site infections (SSIs) saved more than \$3.7 million in costs for 135 avoided SSIs. The two-and-a-half year project included seven hospitals and was directed by the Center in collaboration with the ACS. The participating hospitals were able to reduce superficial incisional SSIs, which affect skin and underlying tissue, by 45 percent and all types of colorectal SSIs by 32 percent. The average length of stay for hospital patients with any type of colorectal SSI decreased from an average of 15 days to 13 days. In comparison, patients with no SSIs had an average length of stay of eight days. The seven health care organizations and systems that volunteered to address colorectal SSIs as a critical patient safety problem were:

- Cedars-Sinai Medical Center, Los Angeles, California
- Cleveland Clinic, Cleveland, Ohio
- Mayo Clinic-Rochester Methodist Hospital, Rochester, Minnesota
- North Shore-Long Island Jewish Health System, Great Neck, New York
- Northwestern Memorial Hospital, Chicago, Illinois
- OSF Saint Francis Medical Center, Peoria, Illinois
- Stanford Hospital & Clinics, Palo Alto, California

Colorectal surgery was identified as the focus of the project because it is a common procedure across different types of hospitals, can have significant complications, presents substantial opportunities for improvement, and has high variability in performance across hospitals. The project addressed preadmission, preoperative, intraoperative, postoperative, and post discharge follow-up processes for all surgical patients undergoing emergency and elective colorectal surgery, with the exception of trauma and transplant patients and patients under the age of 18. The hospitals in the SSI project identified 34 unique correlating variables that increased the risk of colorectal SSIs, including patient characteristics, surgical procedure, antibiotic administration, preoperative, intraoperative and postoperative processes, and measurement challenges.

Examples of some of the targeted solutions to reduce superficial incisional colorectal SSIs include standardizing the preoperative instruction to patients and caregivers for applying the preoperative skin cleaning product; and establishing specific criteria for the correct management of specific types of wounds, which promotes healing and helps decrease the risk of developing SSIs. Examples of some of the targeted solutions to reduce all types of colorectal SSIs include preoperative warming interventions to ensure that the patient's temperature is consistently maintained at the recommended range for optimal wound healing and infection prevention; and establishing solutions such as a weight-based antibiotic dosing protocol in order to address the inadequate administration of antibiotics.

The project used SSI outcomes data from ACS's National Surgical Quality Improvement Program (NSQIP) to guide the improvement effort. NSQIP data on outcomes of surgery are highly regarded by physicians as clinically valid, using detailed medical information on severity of illness and comorbidity to produce data on risk-adjusted outcomes. Solutions for colorectal SSIs will be added to the Targeted Solutions Tool (TST) in 2013 after the learning and tools from this project are pilot tested in other health care organizations. The TST provides a step-by-step process to assist Joint Commission accredited health care organizations in measuring performance, identifying barriers to excellent performance, and

implementing the Center's proven solutions that are customized to address specific barriers. Targeted solutions are now available for improving hand hygiene, hand-off communications, and wrong site surgery. Accredited organizations can access the TST and solutions on their secure Joint Commission Connect extranet. Read the entire [news release](#).
(Contact: Siew Lee Grand-Clement, sgrand-clement@jointcommission.org)

Accreditation

Piped medical gas: compliance and safety tips

This article provides compliance and safety tips for piped medical gas systems. Freestanding medical gas systems will be covered in a future issue of *Joint Commission Online*. These tips are applicable to ambulatory care, critical access hospital, hospital, long term care, and Medicare/Medicaid certification-based long term care organizations.

- **Inspection, testing, and maintenance:** Joint Commission Environment of Care (EC) standards require an organization to define and adopt a maintenance strategy for managing medical gases. EC.02.05.09, element of performance (EP) 1 requires an organization to define, in writing, time frames for inspecting, testing, and maintaining critical components of the piped medical gas system. Although the National Fire Protection Agency (NFPA) publication *NFPA 99: Standard for Health Care Facilities*, 1999 Edition (NFPA 99-1999) states that medical gas systems and components are to be tested, it does not specify with what frequency. Appendix C-4 of NFPA 99-1999 suggests testing methods and frequencies, but NFPA provides appendix material only as supplemental information and does not require the frequencies under the code. Some states and local jurisdictions may have specific requirements.
- **Breached and modified systems:** Whenever a piped medical gas system is opened – whether for new construction, repair, or renovation – the system must be tested for correct gas, gas purity, and correct pressure. In addition, the individuals who work on the piped medical gas system must be qualified (NFPA 99-1999, 4-3.1.2.12). These steps ensure safety; an accidental breach and subsequent repair could result in cross-connections or contaminated gases.
- **Clear and unobstructed access:** The qualified individuals working on gas systems must have clear and unobstructed access to the shut-off valves for medical gases (EC.02.05.09, EP 3; NFPA 99-1999, 4-3.1.2.3). The shut-off valves must be easily accessible in an emergency. If there were a fire, oxygen would accelerate its spread, so quickly cutting off the gas supply is critical. Placing the medical gas shut-off valves behind a door or other building feature is prohibited (EC.02.05.09, EP 3). Equally important is determining who has the authority to shut off medical gases during an emergency. Although maintenance staff might seem like a logical choice, they would not have immediate access during the emergency unless they are stationed in the area. Respiratory therapy staff, another seemingly logical choice, would also have a delayed response time since they might be in their department when a fire begins. Therefore, many organizations choose to have the unit charge nurse manage the decision to shut off the medical gas system during an emergency. This individual knows which patients are affected by a medical gas and can implement clinical interventions as the gases are shut off.
- **Labeling:** According to EC.02.05.09, EP 3, and NFPA 99-1999, 4-3.5.4.2, every shut-off location must have labels identifying the gases present and the areas served. This can be stated in ranges, provided that there are no breaks in the sequencing. For example, if 10 rooms were supplied with piped nonflammable medical gases from a wall-mounted shut-off and no other rooms were in the sequence, a range of rooms could be used (for example, Rooms 1–10). However, if an exam room were located between rooms 6 and 7, the signage would need to read as follows: Rooms 1-6, Exam Room X, Rooms 7-10. According to NFPA 99-1999, 4-3.1.2.13, 4-3.1.2.14, and 4-3.5.4.1, all gas piping must be labeled with contents, including the gas in the piping. In the interstitial space (the area between the lay-in ceiling and the roof or floor deck above), the piping must be labeled every 20 feet with its contents. All labeling must be current and accurate.

- **Discrete location of valves:** The medical gas shut-off valve cannot be in the same room as the area served (NFPA 99-1999, 4.3.1.2.3[m & n]). In a fire, isolating and shutting off the gas source must be done from a safe location – which would not be in the same room as the fire. One clarification: In an operating suite, where rooms are not required to be defined, the medical gas shut-off valve cannot be in the operating room; it must be outside that space. (Contact: George Mills, gmills@jointcommission.org)

Patient safety

The Joint Commission publishes free patient and worker safety monograph

The Joint Commission released a free monograph, "Improving Patient and Worker Safety: Opportunities for Synergy, Collaboration and Innovation," to draw attention to the need to create a culture that focuses on both the safety of patients and the health care workers who care for them. The monograph contends that high rates of injuries and illnesses among health care workers serve as a warning that the health care environment as a whole must be transformed in order to improve safety. The monograph highlights examples of health care organization practices that address patient and worker safety simultaneously and the benefits and potential cost savings attained through collaboration between employee and patient safety departments. The monograph also identifies functional management systems and processes, strategies and tools that have been used to successfully integrate health and safety activities.

The monograph explores high reliability in health care organizations and the benefits to improving safety for both patients and workers. It describes barriers to recognizing and addressing patient and worker safety issues and suggests strategies to overcome them and make safety a priority. In addition, the monograph recommends action steps that health care organizations can take to improve safety for both patients and workers, as well as topics for future research. Work on the monograph, which was supported in part by the National Institute for Occupational Safety and Health (NIOSH), National Occupational Research Agenda (NORA) Healthcare, and Social Assistance Sector Council, began with a national call soliciting effective or innovative safety practices from a wide range of settings that address both patients and workers. These practices were related to topics such as worker and patient safety culture, worker and patient satisfaction, injury prevention, infection prevention, performance improvement, and individual engagement in safety activities. (Contact: Barbara Braun, bbraun@jointcommission.org)

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