Surgical Site Infections: Where are We and Where are We Going?

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Surgical site infection (SSI) continues to represent a significant portion of healthcare-associated infections. The impact on morbidity, mortality, and cost of care has resulted in SSI reduction being identified as a top national priority in the US Department of Health and Human Services Action Plan to Prevent Healthcare-Associated Infections. The risk of developing a surgical site infection is associated with a number of factors, including aspects of the operative procedure itself, such as wound classification, and patient-related variables, such as preexisting medical conditions. Patients with chronic conditions such as renal failure, hypertension, chronic obstructive pulmonary disease (COPD), peripheral vascular disease (PVD), osteoporosis, diabetes, obesity, BMI greater than or equal to 30, smoking, and hospitalization prior to the surgical procedure are at higher risk for experiencing post-op surgical site infections. Of all the risk factors, the ones that are consistently reported in the literature as independent variables for Surgical Site Infections are obesity, diabetes, and hospitalization prior to the procedure.

The majority of SSIs are largely preventable and evidence-based strategies have been available for over ten years and implemented in many hospitals, as nationally recognized by SCIP and SHEA in the US. Worldwide attention to safer surgery including prevention of SSI led to the development of the WHO Surgical Safety Checklist demonstrating the importance of teamwork and communication in addition to evidence-based care for preventing SSI. When analyzing and developing a surgical site infection reduction program it is important to look at outcome measures, process measures, and balancing measures.

**Outcome Measures**
These measures tell you whether changes are actually leading to improvement — that is, helping to achieve the overall aim of preventing HAIs.

**Process Measures**
To affect the outcome measure of preventing HAIs, you will make changes to improve processes intended to prevent transmission of bacteria and other organisms — including the processes for prevention of transmission from patient to patient, staff to patient, and environment to patient. Measuring the results of these process changes will tell you if the changes are leading to an improved, safer system. Examples include percent of...
patient encounters in compliance with hand hygiene procedure and percent of environmental cleanings completed appropriately.

**Balancing Measures**

Use these measures to make sure that changes to improve one part of the system aren’t causing new problems in other parts of the system. For example, the change of using a checklist for room cleaning might initially increase the amount of time spent cleaning a room.

Here at Carondelet many of the initiatives that we have implemented include Back to Basics education, focus on environmental cleanliness, post op glucose control, and patient education.

To improve our results, it is important to collaborate with all stakeholders in the development of a culture of accountability for adhering to proven infection prevention measures and practices. As healthcare has attempted to move from care driven by specialized groups to collaborative groups, it is imperative that both processes and products are designed and implemented in the most effective and efficient manner to achieve desired outcomes. Every Hospital Acquired Infection impacts the life of a patient, and even one Hospital Acquired Infection should be considered too many.


**PUBLIC HEALTH UPDATE**

**Norovirus Outbreaks in Pima County**

Pima County Health Department has received reports of outbreaks of gastrointestinal illness in MULTIPLE long term care facilities and rehabilitation hospitals over the past few weeks, likely due to norovirus. Cases possibly related to the outbreaks include hospitalizations and fatalities. This has prompted us to alert the medical community. For those in residential medical facilities, please enhance your vigilance and surveillance for vomiting and diarrheal illnesses in your patients AND staff. For medical providers who suspect norovirus in ambulatory patients please give them instructions to avoid visiting or working in any congregate living facility for a minimum of 48 hours after their symptoms resolve. **IMMEDIATELY** notify Pima County Health Department at (520) 243-7797 if you suspect norovirus at your facility, as we can assist you in ending the outbreak.