



Implementation of a Multidisciplinary Prophylactic Antibiotic Redosing Protocol in the Surgical Services Department: A Quality Creighton

Background/Problem Identification

- Surgical site infections (SSIs) are the most common complication and costliest hospital-associated type infection.
- While research and guidelines demonstrate the efficacy of prophylactic antimicrobial therapy and the importance of redosing antibiotics during long operative cases, surgical site infections persist and cause financial havoc for health care organizations.
- Nonadherence to prophylactic antimicrobial guidelines among surgical staff remains a barrier to reducing SSIs as identified by infection prevention data at a level 1 trauma center in Nebraska.
- Due to the lack of a prophylactic antibiotic administration and re-dosing protocol within the surgical services department, patients undergoing invasive surgical procedures are potentially at highe risk for developing SSIs and may suffer negative surgical outcomes such as prolonged hospital stay, increased recovery time, and significant morbidity a mortality.

Aims

The aims of this quality improvement project included: 1) Evaluation of the reach of the multidisciplinary surgical prophylactic antimicrobial re-dosing protocol among the surgical services team by tracking completed antibiotic audit forms.

2) Assessing the effectiveness of the multidisciplinary surgical prophylactic antimicrobial re-dosing protocol by comparing frequency of SSI incidence rates collected by the infection prevention team, before and after intervention.

Improvement Project

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Methods/Design

	The DNP project was based on a quality improvement
	project theoretical framework with the
	implementation of a practice intervention design.
of	The antibiotic audit tool tracked surgical antimicro prophylaxis administration and re-dosing informat
he	and facilitated the evaluation of adherence among to perioperative staff.
	This project included a convenience sample of 326
	adult patients, age 19 years or older, who have had pre-operative physical and had a planned surgical
	intervention performed.
	IOWA Model of Evidence-Based Practice Change
	Problem-New changes to organizational protocol in the surgical services department to improve patient's surgical outcomes (Surgical antimicrobial prophylaxis re-dosing protocol) -Organizational Support (Director of surgical services, OR educator, and infection prevention team).
	Identification
	Form a Team -Director of surgical services -Surgical services educator -Infection prevention team -Leader of anesthesia staff
er	Evidence-PubMed, Google Scholar and CINAHL were utilized to perform a thorough search of articles and publications on surgical antimicrobial prophylaxis re-dosing, barriers to surgical antimicrobial prophylaxis guideline adherence, and knowledge of surgical antimicrobial prophylaxis -Clinical guidelines retrieved from the American College of Surgeons and Surgical Infection
	Retrieval Society, The American Society of Health-System Pharmacists, the CDC, and CMS.
	Grading the -Is there sufficient evidence? Yes -Evidence was graded utilizing the John Hopkins Nursing Evidence-Based Practice Rating Scale.
and	
inu	-Develop and create a surgical antimicrobial prophylaxis protocol -Adapt the antibiotic audit tool to meet organization's needs as recommended by AHRQ -Create educational PowerPoint for surgical services staff in-service, and present to the entire surgical service department team. Education will be carried out an entire week to ensure all staff is informed.
	-Hold an in-service to educate the surgical services staff on the new protocol and audit tool
	-Target outcomes: 1) Improve staff awareness about best practices regarding surgical antimicrobial prophylaxis; 2) Implement surgical antimicrobial prophylaxis re-dosing protocol

Intervention

Evaluation

The surgical antimicrobial prophylaxis protocol that was implemented in the general surgery department required a collaborative effort from the multidisciplinary surgical team.

-Modify the surgical antimicrobial prophylaxis re-dosing protocol as necessary

and audit form in the general surgical services department

successes and areas of opportunity

Recommend policy change for long-term sustainability

feedback from staff, implementation team, and other key stakeholders to assess and

The protocol started in the preoperative setting and extended through the intraoperative phase until the case is finished and the patient left the operating room suite. See Surgical Antimicrobial Prophylaxis **Re-Dosing Protocol Flow Chart**



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Results

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• Out of the 326 cases analyzed, in 260 (79.8%) cases, surgical staff completed the antibiotic audit form appropriately. When examining proper administration of prophylactic antibiotics within the appropriate time before incision, all patients who required antimicrobial prophylaxis, (286 patients) received proper administration.

- Furthermore, 58 cases out of the 326 cases required redosing of antibiotics, which were redosed appropriately 100% of the time.
- During the eight weeks before the implementation period, in the month of May of 2021, there was a reported infection rate of 9.09% in abdominal hysterectomies and colorectal surgeries had an SSI infection rate of 18.18%.
- Drill down data noted that prophylactic antimicrobials were not administered appropriately. The post implementation data from the infection prevention team revealed zero infections for the months of Aug 2021, and September 2021.



Surgical Antimicrobial Prophylaxis Re-Dosing Protocol Flow Chart







