

Perioperative Antibiotic Prophylaxis Administration Best Practice

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BACKGROUND

- Surgical site infections (SSIs) prevention is a top goal
 - Complex and influenced by numerous factors
 - With high compliance, antibiotic prophylaxis can influence SSI rates
- To reduce SSIs, the following criteria must be met:
 - Selection of appropriate antibiotic prophylaxis
 - Administration prior to incision and PRN re-dosing

METHODS

- Process Excellence project identified opportunity to improve antibiotic administration process.
- Antibiotic prophylaxis administration & infusion protocol continuously refined.
- Goal: Achieve optimal infusion time prior to incision
- Population: colon and gynecology surgical patients
- Protocol: preoperative RN initiate prescribed IV antibiotics
 - IV antibiotics infused via pump
 - For antibiotics infused over 30 minutes, preop RN handoff to the OR staff
 - For antibiotics infused over 60 minutes: infusion initiated earlier in pre-op, based on OR start time
 - Complete infusion of antibiotic prior to incision or inflation of tourniquet required to lower SSI
- Once compliance was achieved on this patient population, the project was expanded to include all surgical patients receiving preoperative antibiotics.

RESULTS

Standardization of antibiotic infusion times ≤ 60 minutes prior to incision, or 60-120 minutes for vancomycin and FQ, correlates with decreased SSI rates.

Reduced colon SSIs is associated with:

- Standardization of practice
 - Infusion of preop antibiotics completed prior to intraoperative incision or tourniquet inflation
 - Antibiotics administered via smart pump infusion

Preoperative Antibiotic Start Compliance

Baseline data: 78% in sample did not have antibiotic started within 30-60 minutes prior to procedure start.

After implementation: 100% compliance of antibiotics on a pump in all service lines was achieved in Feb 2021.

Colon SSIs Pre and Post Intervention Data

	Pre 1	Post 1	Post 3
Date/ Timeframe	FY 2019	FY 2020	FY 2021
Procedure Count	387	332	346
Infections	16	11	11
Number Predicted	10.381	9.029	9.287
SIR	1.541	1.218	1.184

* Zero Colon SSIs were achieved in Q4 2020