

Outpatient Preoperative Prophylactic Antimicrobial Use and Surgical Site Infection Rates

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Problem Statement/ Review of Literature

- In the U. S., most postoperative surgical site infections (SSIs) and prophylactic antimicrobial use research are hospital-based; nearly 50% of those undergoing outpatient orthopedic procedures go unnoticed after discharge (Berríos-Torres et al., 2017).
- Outpatient orthopedic procedures are expected to increase 51% nationally by 2026 (Crowe, 2014).
- Infections lead to increased mortality and morbidity rates, unnecessary hospital admissions, extended inpatient stays, the need for skilled nursing care, and an economic burden (Al-Mulhim et al., 2014).
- Preoperative prophylactic IV antibiotics supported decreased SSI rates within the hospital (Al-Mulhim et al., 2014).

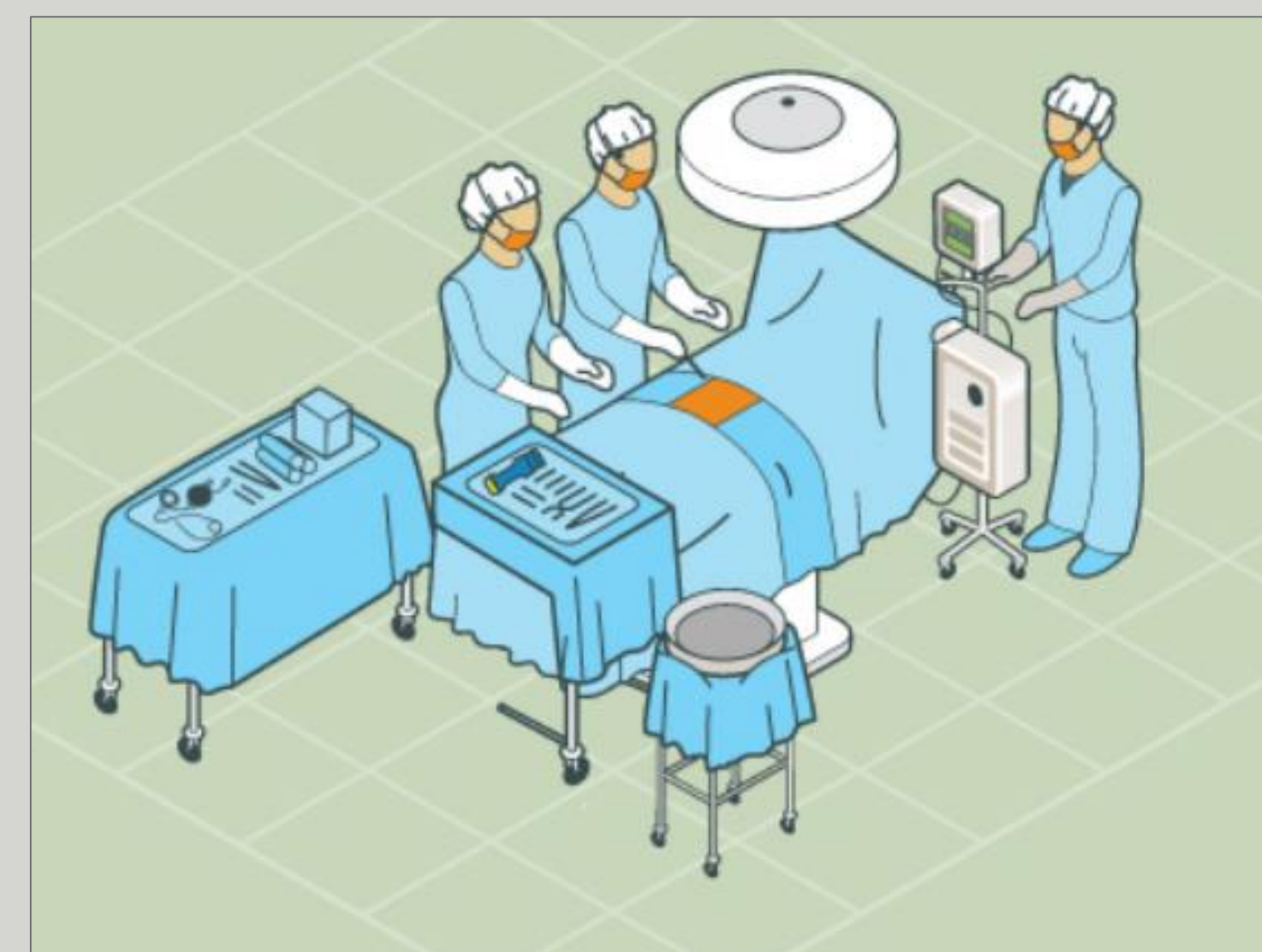
Theoretical Framework

- Dr. Afaf Ibrahim Meleis' Transitions Theory
- Analyzes the care practice interventions as the patient transitions through the surgical experience to reduce risks that may negatively affect one's health such as an SSI (Omar, 2017; Penn Nursing, n.d.).



Purpose

- Reduce the gap in knowledge between hospital-based and outpatient facility-based SSI rates, establish benefits of preoperative antimicrobials, and determine an effective way to monitor patients following discharge from an outpatient facility.



Research Question

For the adult patient undergoing an orthopedic surgical procedure at an outpatient facility, what is the effect of a preoperative prophylactic antimicrobial on postoperative surgical site infection rates within the first 30 days following surgery?

Methodology

Design: A retrospective, descriptive, non-probability sampling study design using convenience sampling.

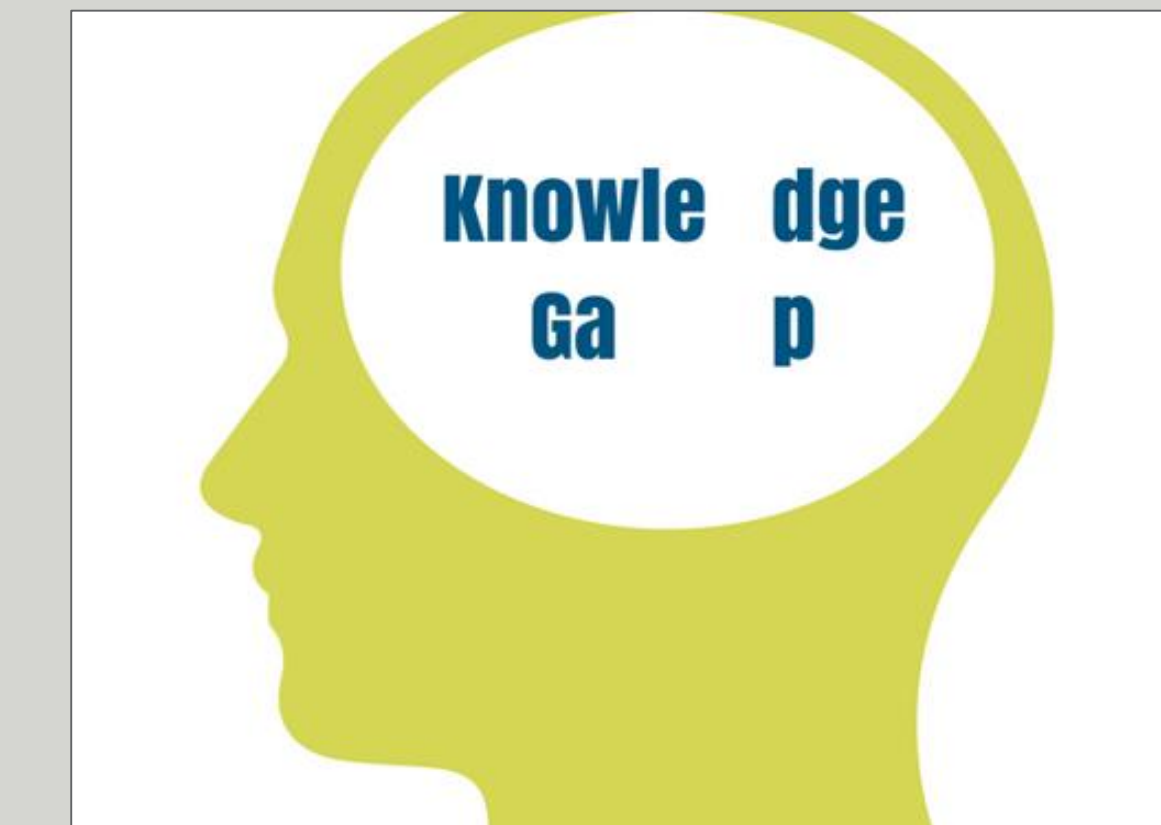
Setting: A single-site study conducted at an outpatient surgical facility where varying orthopedic procedures are performed.

Population: Adults aged 19 or older who underwent an orthopedic procedure at this facility between January 1, 2019 - April 30, 2019 (per orthopedic surgeon discretion of preoperative antimicrobial use).

Data Collection: Access to the sample was obtained via chart reviews.

There were two data collection forms: 1) Master Code List which included the subjects medical record number with an assigned research code, 2) Data Collection Form which identified each subject by research code only. Next to each research code number, the corresponding type of orthopedic procedure, antibiotic given (name/dose), and if the research participant experienced a post-op infection within 30 days post-op (yes/no) was documented. A 30-day phone call and/or subject visit occurred by the surgeons or their nurses at the clinic to assess for postoperative SSIs

Data Analysis: Percentages of the overall SSI rates was calculated. Frequencies and percentages were also calculated for the type of antibiotic given.



Findings

- N = 103 patients met the inclusion criteria
- Antimicrobials: Cefazolin 1 gram (36), Cefazolin 2 grams (54), Clindamycin 600mg (6), Clindamycin 900mg (3), Vancomycin 1 gram (3), and Rocephin 1 gram (1).
- Only 1 (0.01%) SSI was reported and documented, who was given Rocephin
- 99.9% of the subjects who had a preoperative prophylactic antimicrobial given did not experience a SSI

Recommendations/ Application to Practice

- Little to no risk for a post-op SSI
- Antimicrobials recommended: Cefazolin, Clindamycin, or Vancomycin (*DynaMed Plus*, 2019)
- Follow up appointment and/or 30 day post-op phone call made by surgeon is effective method of monitoring of SSIs
- Alleviated gap in knowledge
- Serves as a basis for future, more advanced research to be done within outpatient surgical centers
- Reduce anxiety levels for patients
- Initiate quality improvement program or preoperative prophylactic recommendations
- Positive outpatient surgical outcomes

References

- Available upon request