







Advancing Antimicrobial Stewardship for the Future

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Learning Objectives

- Identify the major pathogens associated with postoperative orthopedic surgeries.
- Discuss the methods employed to ensure proper antibiotics are utilized for surgical prophylaxis in orthopedic procedures.
- Outline strategies to engage multidisciplinary and leadership teams in the redeployment of a diagnostic testing application – leveraging the skills and knowledge of the antimicrobial stewardship program and microbiology department.
- Identify the implementation, engagement, and savings of a multi-facility centralized antibiotic stewardship program in a community health system.









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Prevention of Orthopedic Surgical Site Infections with a Modified Antimicrobial Prophylaxis Guideline

- As part of the ARMC Antimicrobial Stewardship Program (ASP), we ensure the appropriate use of prophylactic antibiotics by utilizing a surgical prophylactic antibiotic protocol (SPAP) based on published guidelines and local susceptibility patterns. Post-surgical infections are carefully monitored by the ASP team as a quality measure to ensure the optimal patient outcomes.
- In 2021, a relative increase in gram negative surgical site infections was noted for hip and knee arthroplasty procedures. Suggested antibiotic prophylaxis for these procedures includes cefazolin or vancomycin.
- Modification of our SPAP was warranted to enhance the coverage of the identified pathogens, where the addition of gentamicin or aztreonam were deemed viable options. This initiative resulted in a significant decrease in post-surgical infections.



Diagnostic Certainty: Redeploying Infectious Disease Diagnostics Across a Health System

Identify target diagnostics Gather subject-matter experts (SME) & stakeholders Meeting: assess current state, analytics, literature, & discuss optimal future state Dutcome: de SME's & key stakeholders	care
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Test(s)	Strategy	Launch Date	Outcome (2020 vs 2021)
Upper respiratory PCR panel	Use criteria/restrictions	February 2021	66.2% ↓ (\$424,000 savings)
Urine cultures	Urine culture test w/ required indications for use	March 2021	1.3% \downarrow inpatient cultures
Gastrointestinal PCR panel	Clinical decision support $ ightarrow$ GI PCR smart order set	July 2021	51.3% ↓ (\$131,000 savings)
C. difficile PCR	Process change from PCR to 2-step testing (PCR + toxin)	August 2021	7.2% \uparrow (however, \downarrow <i>C. difficile</i> cases by 84%)
Meningitis/encephalitis PCR panel	Pleocytosis-based reflexive ordering process	July 2022	TBD



Eight Birds, One Stone: Centralizing an ASP within a Multi-Facility Community Health System

Pre-2020: Minimal antimicrobial stewardship resources and oversight

- No established centralized or local ASP leadership/committee
- Minimal antimicrobial stewardship expertise
- Minimal stewardship interventions or protocol implementation
- Lack of ASP outcomes evaluation and education

2022: Centralized multi-system antimicrobial stewardship program

- Lead board-certified antimicrobial stewardship pharmacist
- Three established, license-specific multidisciplinary ASP committees
- Standardized pharmacy-driven antimicrobial stewardship interventions and protocols
- System-wide pharmacy ASP education
- Positive Clinical, Fiscal, and Hospital Administrative Impact









Questions?

