

# The evaluation of the empiric antibiotic protocol for neutropenic fever in pediatric patients at SSM Cardinal Glennon Children's Hospital

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## **Abstract**

Febrile neutropenia is a common adverse event for patients undergoing chemotherapy or other immunosuppressive therapies. The choice of empiric antibiotics for these patients is the cornerstone of therapy and prognosis. Antimicrobial stewardship is equally important for patient care since it involves periodically evaluating antibiotics for resistance and appropriateness. The objective of this evaluation highlights this fact because it is to ensure quality of care for febrile neutropenic patients at Cardinal Glennon Children's Hospital while ensuring optimal use of antibiotics to avoid unnecessary exposure to broad spectrum therapies. Positive bacterial culture results collected from January 2015 to June 2021 were compiled and sorted to focus on hematology/oncology patients. Patient encounter data associated with each culture was accessed through electronic medical records and recorded for Microsoft Excel analysis. Survey data was also collected and evaluated to generalize protocol therapy from other institutions. There were 156 encounters, 158 unique cultures, and 39 survey responses included in the analysis. Gram positive organisms were the most common etiology with 69% of patients having a gram-positive infection. For treatment failure, ceftazidime therapy was discontinued or changed to another antibiotic in 27 encounters (42%). Based on the data and local resistance patterns ceftazidime is an appropriate empiric therapy option if co-administered with additional gram-positive coverage, however, patients may benefit from a change in protocol to a more broad-spectrum monotherapy agent.