Guideline/Protocol Title:	UCSF Benioff Children's Hospitals Guidelines for Fever in Patients Receiving Cancer Therapy and/or Hematopoietic Transplantation
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P&T Approval Date:	SF: 01/2016 (ED); 03/2016 (inpatient); OAK: 04/2016
Last revision Date:	02/20/2024

PURPOSE/SCOPE:	To provide standardized guidelines for management of fever in patients who have received chemotherapy or hematopoietic transplantation, including all hospital units and emergency departments at Benioff Children's Hospitals. These guidelines do not address all aspects of infection prevention, supportive care and management in patients who are receiving cancer therapy or transplantation. Refer to Oncology and BMT Standards of Practice for other topics not addressed in these guidelines.

EXECUTIVE SUMMARY

Patients who develop fever while undergoing cancer therapy or hematopoietic stem cell transplantation will be treated according to the best available clinical evidence and guidelines. Clinical algorithms for management of fever were developed based on national and international evidence-based guidelines, other published evidence, local antimicrobial susceptibility data, and consensus review with clinical services.

BACKGROUND / INTRODUCTION

Patients undergoing cancer therapy and/or receiving hematopoietic cell transplantation are at high risk for infection and related complications. Management goals include:

1. Prompt initiation of appropriate broad-spectrum antibiotics for patients with fever and neutropenia and for patients with fever without neutropenia who are clinically unstable.
2. Identification and appropriate treatment of serious infections.
3. Avoidance of antimicrobial resistance, superinfections, and other adverse effects of antimicrobial therapy.

SUPPORTING EVIDENCE
Sources considered in development of the guidelines include references below, and bloodstream infection antibiogram data for each BCH hospital Pediatric Oncology and BMT services. See Appendix 6 Summary and Rationale for Changes for description of changes in this version, rationale and supporting literature.

APPENDIX
1. Emergency Department Algorithm (page 4)
2. Initial Inpatient Management Algorithm (page 5)
3. Inpatient Non-Neutropenic Fever Algorithm (page 6)
4. Inpatient Re-assessment Algorithm (page 7)
5. Prolonged Fever with Ongoing Neutropenia Algorithm (page 8)
5. Alternative Antibiotics for Patients with Beta-Lactam Allergy (page 9)
6. Summary and Rationale for Changes (page 10-14, online version see web link to Box folder)
7. Content Reviewers (page 15)

Reference #	Citation
1	Lehrnbecher T, Robinson P, Fisher B, et al. Guideline for the management of fever and neutropenia in children with cancer and hematopoietic stem-cell transplantation recipients: 2023 update. J Clin Oncol 2023;41:1774-1785.
2	Averbuch D, Orasch C, Cordonnier C, et al. European guidelines for empirical antibacterial therapy for febrile neutropenic patients in the era of growing resistance: summary of the 2011 4th European Conference on Infections in Leukemia. Haematologica 2013; 98:1826–1835.

Revision History	
Revision Date	**Update(s)**
July 24, 2019	• Format change to incorporate ED and inpatient algorithms together • Antimicrobial dosing removed from all but ED algorithm, to separate table • Adding inpatient re-assessment algorithm (Appendix 3) with guidelines for de-escalation of therapy • Referencing Oncology Standards of Practice for low-risk stepdown management and new diagnosis ALL antibiotic de-escalation • Changes incorporated due to levofloxacin prophylaxis adoption: ○ Escalation with vancomycin + carbapenem rather than with second Gram-negative agent

	○ Guidance to discontinue levofloxacin at start of empiric therapy • Non-neutropenic fever ○ Algorithm differentiates patients with intestinal GvHD at higher risk for bloodstream infection with antibiotic-resistant organisms ○ Guidance not to routinely treat clinically stable, well-appearing patients with serotherapy-related fever on BMT service • Allergy alternatives modified to be concordant with Inpatient Beta-Lactam Allergy Guideline and add reference to Beta-Lactam Allergy Guideline • Therapeutic drug monitoring guidance added to antimicrobial dosing table
February 20, 2024	• Cross-Bay Update combining BCH OAK and BCH SF guidelines • Added prolonged fever/invasive fungal disease evaluation pathway • Removed dosing from pathways and tables, referring to standard Pediatric Antimicrobial Dosing Guidelines as primary resource. • Added Appendix 6 Summary and Rationale for Changes, refer for more detail regarding changes from prior versions.