

TITLE: ANTIMICROBIAL STEWARDSHIP PROGRAM POLICY

EFFECTIVE:

REVISION DATE:

REVIEWED WITH NO CHANGES:

RETIRED:

PURPOSE:

The purpose of the Antimicrobial Stewardship Program (ASP) is to promote optimal antimicrobial use at Children's Mercy (CM) through a multidisciplinary team approach. The ASP provides oversight for antimicrobial prescriptions by promoting the selection of optimal antimicrobial drug regimen(s), dose, duration of therapy, and route of administration. The goals of the program are to facilitate appropriate antibiotic utilization based on available guidelines and best practices to prevent the emergence of antimicrobial resistance, improve patient outcomes, and enhance prescriber education.

LOCATION/SCOPE: All (Children's Mercy Hospital and all of its affiliates)

CLINICAL DESIGNATION TO WHICH THIS APPLIES: Medical Staff (including residents), Nursing, Pharmacy

DEPARTMENT RESPONSIBLE FOR POLICY MANAGEMENT & EXECUTION: Medical Executive

POLICY:

The ASP provides prospective monitoring of antimicrobial prescriptions, with real time feedback and advice to clinicians regarding appropriate antimicrobial use in patients. The ASP functions are integrated with the Infectious Diseases division, but independent of, the Infectious Diseases consultation service.

ANTIMICROBIAL STEWARDSHIP PROGRAM CORE MEMBERS:

A. ASP Leadership:

- a. ASP Medical Director: A physician member of the Medical Staff of CM, who is board certified in Pediatric Infectious Diseases and has dedicated time supported by administrative leadership to lead stewardship activities.
- b. Infectious Diseases Pharmacist(s): Member of the Department of Pharmacy, who has earned a Pharm. D. degree, has specialized training in infectious diseases and antimicrobial agents, and whose activities are supervised by a manager in the Department of Pharmacy as well as the Director of the ASP.

- B. ASP core members:
- a. Pediatric Infectious Disease Physicians
 - b. Director of Microbiology
 - c. Hospital Epidemiologist
 - d. Pediatric Infectious Diseases Fellows
 - e. Infection Preventionist
 - f. Data analyst
 - g. General pediatric clinician

DEFINITIONS:

Monitored antibiotics. The ASP actively monitors broad spectrum antibiotics including: 3rd generation cephalosporins (ceftriaxone, cefotaxime, ceftazidime), 4th generation cephalosporins (cefepime), beta-lactam/beta-lactamase inhibitor combinations (amoxicillin/clavulanate, ampicillin/sulbactam, piperacillin/tazobactam), carbapenems (meropenem), fluoroquinolones (ciprofloxacin, levofloxacin), aminoglycosides (amikacin, tobramycin), aztreonam, colistimethate, linezolid, daptomycin, vancomycin; additionally, antimicrobials that may not be on the CMH formulary are also reviewed. The monitored drugs could change at any time based on changes in utilization and prescribing and the addition of new anti-infective agents as they become available.

Restricted antimicrobials: These antimicrobials are selected for restriction (requiring approval before use) due to their spectrum of activity relating to commonly observed drug-resistant organisms and cost (when effective, less costly alternatives are available). The restricted drugs will change based on prescribing practices and new drugs made available. See Restricted Antimicrobial policy.

PROCEDURES:

- A. Programmatic description: tracking, audit and feedback, reporting, use of guidelines, antibiotic education:
- a. Prospective audit and feedback for each patient receiving broad-spectrum antimicrobial therapy will be performed by the Infectious Diseases Pharmacist or Pediatric Infectious Diseases Physician on a daily basis; patients receiving broad-spectrum antibiotics for two calendar days will be reviewed.
 - i. If the antimicrobial therapy is considered to be appropriate, no further interventions are needed.
 - ii. If the antimicrobial therapy may be optimized based on clinical syndrome, pathogen, susceptibility data, history of patient allergy and antibiotic side effect profile:
 1. Direct communication with the prescriber will be ongoing to assure appropriate therapy.
 2. If the recommendations are accepted or a mutually acceptable plan is agreed upon, a brief note outlining the recommendations and rationale may be placed in the medical record.
 - iii. To track the efforts of the ASP, an electronic form will be completed, which is not a part of the patient's medical record.
 - b. The ASP Pharmacist reviews patients who have been receiving a broad-spectrum antimicrobial for 7 calendar days, to identify potential IV-to-PO transitions,

reviews positive cultures on hospital inpatients and the utilization of antimicrobials to define whether the prescribed antimicrobials are appropriate.

- i. The appropriateness of the prescribed antimicrobial therapy is based on the review of clinical presentation and illness course (as written in the medical record) and clinical laboratory and microbiology data. Assessment of the appropriateness of therapy per indication, optimal dosage, and appropriate duration of therapy will be performed, based on the best available evidence from the medical literature.

B. Restriction: See Restricted Antimicrobial Policy

C. Formulary management:

- a. The Infectious Diseases Pharmacist or Pediatric Infectious Diseases Physician recommends antimicrobial additions and/or deletions to the CM Formulary Committee. Agents with the best efficacy, safety, side effect profile and cost are made available for prescription within the hospital.
- b. Implementation of prior authorization policies for selected antimicrobial agents.
- c. All formulary revisions are performed by the Infectious Diseases Pharmacist and Pediatric Infectious Diseases Physician, reviewed by the CM Formulary Committee, and approved by the Pharmacy and Therapeutic Committee.

D. Clinician and Patient Education and Development of Antibiotic Guidelines:

- a. Continuous effort to educate practitioners concerning the appropriate use of antimicrobial agents. These will include, but are not limited to:
 - i. Use of Computerized Physician Order Entry (CPOE)/Electronic Medical Record (EMR) to provide and update guidelines and reminders about acceptable and recommended diagnostics and antimicrobial use
 - ii. Provide real time antimicrobial education to clinicians through patient-based cases
 - iii. Provide education to parents and families regarding appropriate antibiotic use
 - iv. Offer formal educational opportunities to learn about the program and various antimicrobial therapy associated topics to medical house staff, members of the medical staff and nursing staff
 - v. Develop and perform annual updates of empirical antibiotic guidelines and apply the hospital antibiogram to guide empiric antibiotic selection
 - vi. Integrate Evidence-Based Practice and Clinical Practice Guideline development to guide antibiotic best practices

E. Outcome Measures

- a. Performance measures: “Process” measures will be used to determine the activity of ASP and whether interventions have had impact on the utilization of antimicrobials. “Outcome” measures will be used to determine if process changes have reduced or prevented the unintended consequences of antimicrobial use.
 - i. Process measures
 1. Track utilization of targeted antimicrobials

2. Track utilization of antimicrobial agents for specific diagnoses
 3. Track number and types of interventions made by the ASP
 4. Track compliance with ASP interventions
- ii. Outcome measures
1. Susceptibility data will also be utilized to identify antimicrobial agents requiring preauthorization for use; for example, *Enterococcus* sp., *Staphylococcus aureus*, *Klebsiella* sp., *Acinetobacter* sp., *Pseudomonas aeruginosa*
 2. Track incidence of health care-associated infections due to antibiotic-resistant target organisms hospital-wide and for high-risk units
 3. Track incidence of health care-associated *C. difficile* infections hospital-wide and for units
 4. Adverse drug events related to antimicrobial agents

REQUESTS FOR DEVIATION FROM POLICY: Requests for deviation from this policy will be directed to the Administrative Council Sponsor for this policy or the Administrator on Call.

RELATED POLICIES:

Restricted Antimicrobial Policy