

Title: Antimicrobial Stewardship Program, Adult and Pediatric	
Number 476, Version 3	Original Date: 02/09/2021
Effective: 03/31/2021	Last Review/Revision Date: 03/31/2021
Next Review Date: 03/31/2023	Author: Mary Manning
Approved by: Pharmacy Acute Senior Leader Team, Pharmacy Directors/Managers, PolicyTech Administrators , 03/31/2021	
Discrete Operating Unit/Facility: Banner Baywood Medical Center Banner Behavioral Health Hospital Banner Boswell Medical Center Banner Casa Grande Medical Center Banner Churchill Community Hospital Banner Del E Webb Medical Center Banner Desert Medical Center Banner Estrella Medical Center Banner Fort Collins Medical Center Banner Gateway Medical Center Banner Goldfield Medical Center Banner Heart Hospital Banner Ironwood Medical Center Banner Lassen Medical Center Banner Ocotillo Medical Center Banner Payson Medical Center Banner Thunderbird Medical Center Banner--University Medical Center Phoenix Banner--University Medical Center South Banner--University Medical Center Tucson East Morgan County Hospital McKee Medical Center North Colorado Medical Center Ogallala Community Hospital Page Hospital Platte County Memorial Hospital Sterling Regional Medical Center Torrington Community Hospital Washakie Medical Center Wyoming Medical Center	Pharmacy Acute and Ambulatory Care

Introduction

Overview

1. All inpatients are treated with the appropriate antimicrobial agent(s) to optimize clinical outcomes while minimizing unintended consequences of antimicrobial use.
 2. An Antimicrobial Stewardship 'program' guides antimicrobial therapy for appropriate and efficient uses to improve/ optimize patient care.
-

Population

All Employees, Adult, and Pediatric Patients

Rationale for program

1. As with all medical interventions, the use of antimicrobial medications can be associated with unintended consequences including:
 - drug toxicity,
 - super infection with *Clostridium difficile*, and
 - emergence of resistant organisms
 2. The inappropriate use of antimicrobials remains a common occurrence in health care facilities contributing to increased costs. Furthermore, antimicrobial resistance results in increased morbidity, mortality and health care costs.
 3. An effective antimicrobial stewardship program can improve patient care by optimizing the appropriate use of antimicrobials, resulting in improved patient outcomes and decreased costs.
-

The Antimicrobial Stewardship Program

Components

The antimicrobial stewardship program will consist of the following components:

1. Formulary restriction
 - Antimicrobials may be restricted based on therapeutic efficacy, toxicity, and to minimize antimicrobial resistance and cost.
 2. Treatment guidelines and clinical pathways
 - Treatment guidelines and clinical pathways should be developed incorporating evidence-based practice guidelines and local microbiology and resistance patterns.
 - De-escalation of empirical antimicrobial therapy based on culture results so as to eliminate redundant therapy and targeting the causative pathogen.
-

Continued on next page

The Antimicrobial Stewardship Program

Components

- Dose optimization based on individual patient characteristics, causative organism, site of infection and drug characteristics.
 - Parenteral to oral conversion when the patient's condition allows.
3. Computer surveillance and clinical decision support (CDS)
- A computer-based surveillance system will provide prescriber alerts, recommendations and record the usage of selected antimicrobials.
4. Education
- Education is an essential element for influencing prescribing behaviors and should be coupled with active interventions for greatest effectiveness (on-going education).
5. Antimicrobial use audit with intervention and feedback
- Audits may be prospective or retrospective dependent on the individual facilities capabilities.
 - Appropriate clinical personnel, including infectious disease physician, clinical pharmacist or other personnel as determined by individual facility capabilities, should perform audits, interventions and provide feedback.
 - Prescribers who repeatedly utilize selected antimicrobials inappropriately will require intervention, feedback from the facility, and perhaps peer review by appropriate Medical Staff committee.
6. A centralized stewardship team to review the effectiveness of individual facilities antimicrobial stewardship programs and to determine opportunities for improvement.
- Centralized stewardship team will be composed of a minimum of:
 - Clinical microbiologist
 - Infection prevention professional
 - Infectious disease physician and/or hospital epidemiologist
 - Clinical pharmacist
 - Information system specialist

Management of the program

The Antimicrobial Stewardship Program is managed with the Antimicrobial Stewardship Plan. The components of the Plan are described in Appendix A.

Continued on next page

The Antimicrobial Stewardship Program, Continued

References

Dellit et al. Infectious Disease Society of America and the Society for Healthcare Epidemiology of America guidelines for developing an institutional program to enhance antimicrobial stewardship. *Clin Infect Dis* 2007; 44:159-77.

Society for Healthcare Epidemiology of America, Infectious Diseases Society of America, Pediatric Infectious Diseases Society. (2012). Policy statement on antimicrobial stewardship by the Society for Healthcare Epidemiology of America (SHEA), Infectious Diseases Society of America (IDSA), Pediatric Infectious Diseases Society (PIDS). *Infection Control and Hospital Epidemiology*, 33(4):322-327.

The Joint Commission Medication Management standard MM.09.01.01

Keywords

Antimicrobial
Antimicrobial Stewardship
Stewardship
Antibiotic
Antibiotics
MM.09.01.01
Joint Commission
Medication Management
476

Appendix

Appendix A: Antimicrobial Stewardship Program



Appendix A: Antimicrobial Stewardship Program

Component	Actions	Responsible Group	Details/Comment
<p>Formulary restriction Antimicrobials may be restricted based on therapeutic efficacy, toxicity, and to minimize antimicrobial resistance and cost.</p>	<ul style="list-style-type: none"> ▪ Formulary Approval Process ▪ Therapeutic Substitution ▪ Discern Alerts 	<p>Pharmacy & Therapeutics Clinical Consensus Group</p>	<ul style="list-style-type: none"> ▪ Formulary decisions to add/restrict or not add antimicrobial medications to formulary ▪ Antimicrobial therapeutic substitution e.g., ceftaz to cefepime; caspo to micafungin; 1st and 2nd generation cephalosporins ▪ Develop CDS alerts to guide appropriate use of high-cost/broad spectrum agents ▪ Use ordersets in the EHR to guide appropriate use of antimicrobial medications (e.g. sepsis)
<p>Treatment guidelines and clinical pathways</p> <ol style="list-style-type: none"> a. Treatment guidelines and clinical pathways should be developed incorporating evidence-based practice guidelines and local microbiology and resistance patterns. b. De-escalation of empirical antimicrobial therapy based on culture results so as to eliminate redundant therapy and targeting the causative pathogen. c. Dose optimization based on individual patient characteristics, causative organism, site of infection and drug characteristics. d. Parenteral to oral conversion when patient condition allows 	<ul style="list-style-type: none"> ▪ Clinical Practice Development (e.g. Community Acquired Pneumonia, Sepsis) ▪ Clinical Pharmacy Practice Protocol Development (e.g. IV to PO Protocol, Renal Dosing Protocol) 	<p>All Clinical Consensus Groups</p> <p>Pharmacy & Therapeutics Clinical Consensus Group</p>	<ul style="list-style-type: none"> ▪ Banner Initiatives (Community Acquired Pneumonia, Sepsis, SCIP pathways)-develop ordersets and CDS alerts to guide therapy ▪ De-escalation – CDS alerts to identify patients for de-escalation based on cultures ▪ Dose-optimization – Pharmacy Renal Dosing Clinical Practice; Pharmacy Pharmacokinetic Clinical Practice; CDS alerts built to increase/decrease dose based on renal function ▪ IV to PO conversion – Pharmacy IV to PO Clinical Practice, Community Acquired Pneumonia Initiative
<p>Computer surveillance and decision support</p> <ol style="list-style-type: none"> 1. A computer-based surveillance system will provide prescriber alerts, recommendations and record the usage of selected antimicrobials. 	<ul style="list-style-type: none"> ▪ Development and monitoring of Antimicrobial Stewardship Discern Alerts 	<p>Pharmacy & Therapeutics Clinical Consensus Group (Clinical Pharmacy Informatics WG)</p>	<ul style="list-style-type: none"> ▪ CDS alerts for appropriate use of high-cost/broad spectrum agents ▪ CDS alerts built to increase/decrease dose based on renal function
<p>Education Education is an essential element for influencing prescribing behaviors and should be coupled with active interventions for greatest effectiveness (on-going education).</p>	<ul style="list-style-type: none"> ▪ Antimicrobial Stewardship Awareness ▪ Clinical Practice Implementation 	<p>Infectious Disease Clinical Consensus Group Clinical Educators</p> <p>All Clinical Consensus Groups</p>	<ul style="list-style-type: none"> ▪ Antimicrobial Stewardship Webcast for Providers ▪ BLC assignments to identified Hospital staff (i.e. Pharmacy, Nursing) ▪ Acknowledgement that education received

Continued on next page



Appendix A: Antimicrobial Stewardship Program, Continued

Component	Actions	Responsible Group	Details/Comment
<p>Antimicrobial use audit with intervention and feedback</p> <ol style="list-style-type: none"> 1. Audits may be prospective or retrospective dependent on individual facility capabilities. 2. Appropriate clinical personnel, including infectious disease physician, clinical pharmacist or other personnel as determined by individual facility capabilities, should perform audits, interventions and provide feedback. 3. Prescribers who repeatedly utilize selected antimicrobials inappropriately will require intervention, feedback from the facility, and perhaps peer review by an appropriate Medical Staff committee. 	<ul style="list-style-type: none"> ▪ System Discern Alert Reports [a),b), and c)] ▪ Facility Discern Alert Reports ▪ Clinical Practice Implementation-Outcomes 	<p>a) Infectious Disease Clinical Consensus Group</p> <p>b) Pharmacy & Therapeutics Clinical Consensus Group</p> <p>c) System Infection Prevention Discipline Team</p> <p>Facility Pharmacy & Therapeutics Committee</p> <p>Clinical Performance Reporting</p>	<ul style="list-style-type: none"> ▪ SCIP, sepsis, pneumonia antimicrobial use auditing ▪ Antimicrobial Stewardship reports to be reviewed by P & T CCG and ID CCG <ol style="list-style-type: none"> a. Reports to go to the CCGs and the IP facility Team and P&T committee(facility based) ▪ Facility Antimicrobial Stewardship reports to be reviewed quarterly by facility P&T Committee
<p>Centralized stewardship team</p> <ol style="list-style-type: none"> 1. A centralized stewardship team to review the effectiveness of individual facilities antimicrobial stewardship programs and to determine opportunities for improvement. <ol style="list-style-type: none"> a. Centralized stewardship team will be composed of a minimum of: <ol style="list-style-type: none"> i. Clinical microbiologist ii. Infection prevention professional iii. Infectious disease physician and/or hospital epidemiologist iv. Clinical pharmacist v. Information system specialist 	<ol style="list-style-type: none"> 1. Monitor effectiveness of Antimicrobial Stewardship – Monthly/Quarterly 	<p>Infectious Disease Clinical Consensus Group and Pharmacy and Therapeutics Clinical Consensus Group (Antimicrobial Stewardship WG)</p>	<ul style="list-style-type: none"> ▪ Antimicrobial Stewardship WG sponsored by ID CCG and P & T CCG to monitor effectiveness of antimicrobial stewardship at the system and facility level

Continued on next page



Appendix A: Antimicrobial Stewardship Program, Continued

Component	Actions	Responsible Group	Details/Comment
<p>Education</p> <p>1. Education is an essential element for influencing prescribing behaviors and should be partnered with active interventions for greatest effectiveness (on-going education).</p>	<ul style="list-style-type: none"> ▪ Antimicrobial Stewardship Awareness ▪ Clinical Practice Implementation 	<p>Infectious Disease Clinical Consensus Group Clinical Educators</p> <p>All Clinical Consensus Groups</p>	<ul style="list-style-type: none"> ▪ Antimicrobial Stewardship Webcast for Providers ▪ BLC assignments to identified Hospital staff (i.e. Pharmacy, Nursing) ▪ Acknowledgement that education received
<p>Antimicrobial use audit with intervention and feedback</p> <p>4. Audits may be prospective or retrospective dependent on individual facility capabilities.</p> <p>5. Appropriate clinical personnel, including infectious disease physician, clinical pharmacist or other personnel as determined by individual facility capabilities, should perform audits, intervention and feedback.</p> <p>6. Prescribers who repeatedly utilize selected antimicrobials inappropriately will require intervention and feedback from the facility.</p>	<ul style="list-style-type: none"> ▪ System Discern Alert Reports [a),b), and c)] ▪ Facility Discern Alert Reports ▪ Clinical Practice Implementation- Outcomes 	<p>a) Infectious Disease Clinical Consensus Group b) Pharmacy & Therapeutics Clinical Consensus Group c) System Infection Prevention Discipline Team</p> <p>Facility Pharmacy & Therapeutics Committee</p> <p>Clinical Performance Reporting</p>	<ul style="list-style-type: none"> ▪ SCIP, sepsis, pneumonia antimicrobial use auditing ▪ Antimicrobial Stewardship reports to be reviewed by P & T CCG and ID CCG <ul style="list-style-type: none"> a. Reports to go to the CCGs and the IP facility Team and P&T committee(facility based) ▪ Facility Antimicrobial Stewardship reports to be reviewed quarterly by facility P&T Committee
<p>Centralized stewardship team</p> <p>2. A centralized stewardship team to review the effectiveness of individual facilities antimicrobial stewardship programs and to determine opportunities for improvement.</p> <p>a. Centralized stewardship team will be composed of a minimum of:</p> <ul style="list-style-type: none"> i. Clinical microbiologist ii. Infection prevention professional iii. Infectious disease physician and/or hospital epidemiologist iv. Clinical pharmacist v. Information system specialist 	<p>2. Monitor effectiveness of Antimicrobial Stewardship – Monthly/Quarterly</p>	<p>Infectious Disease Clinical Consensus Group and Pharmacy and Therapeutics Clinical Consensus Group (Antimicrobial Stewardship WG)</p>	<ul style="list-style-type: none"> ▪ Antimicrobial Stewardship WG sponsored by ID CCG and P & T CCG to monitor effectiveness of antimicrobial stewardship at the system and facility level