

ANTIMICROBIAL STEWARDSHIP AT LPCH

Prescriber Education

Objectives

- Understand the imperative for and potential benefits of an antimicrobial stewardship program
- Identify potential best practices of an antimicrobial stewardship program
- Recognize antimicrobial stewardship efforts currently implemented at LPCH, including formulary restriction, audit and feedback, and institutional antibiogram interpretation

Rationale

- Antimicrobials account for >30% of hospital pharmacy budgets
- Up to 50% of antimicrobial use is inappropriate
- Inappropriate antimicrobial use increases selection of resistant pathogens
- Infection due to resistant pathogens increases patient morbidity, mortality and health care costs

Mandate

- Growing recognition that antimicrobial effectiveness is a limited resource given increasing rates of resistance
- Antimicrobial stewardship is required of hospitals to preserve antimicrobial effectiveness:
 - California law
 - California Senate Bill 739 & 158 require that, “...general acute care hospitals develop a process for evaluating the judicious use of antibiotics...”
 - Joint Commission Requirement
 - “The hospital has an antimicrobial stewardship program based on current scientific literature.”
 - CDC Get Smart for Healthcare Campaign
 - Improving antibiotic use is a public health imperative

Mission

- Antimicrobial stewardship is designed to promote:
 - The appropriate **selection** of antibiotics
 - The appropriate **dosing** of antibiotics
 - The appropriate **route** of antibiotics
 - The appropriate **duration** of antibiotics

LPCH ASP Program

- Core ASP team
 - Medical Director: Hayden Schwenk, MD, MPH
 - Antimicrobial Stewardship Pharmacist: Betty Lee, PharmD
 - Specialist, Analytics & Clinical Effectiveness: Jenna Kruger, MPH
- Other team members
 - Infection Preventionist
 - Clinical Microbiologist
 - **Medical Staff** → **YOU!**
- Administration
 - Subcommittee of the LPCH Pharmacy and Therapeutics Committee
 - Collaborates with the LPCH Laboratory and Infection Prevention and Control Program as part of the Integrated Infectious Disease Program
- Policy
 - <https://intranet.lpch.org/formsPoliciesReferences/policies/hospitalWide/patientCare/antimicrobialStewardshipProgram.html>

ASP Strategies for Optimizing Appropriate Use of Antimicrobials

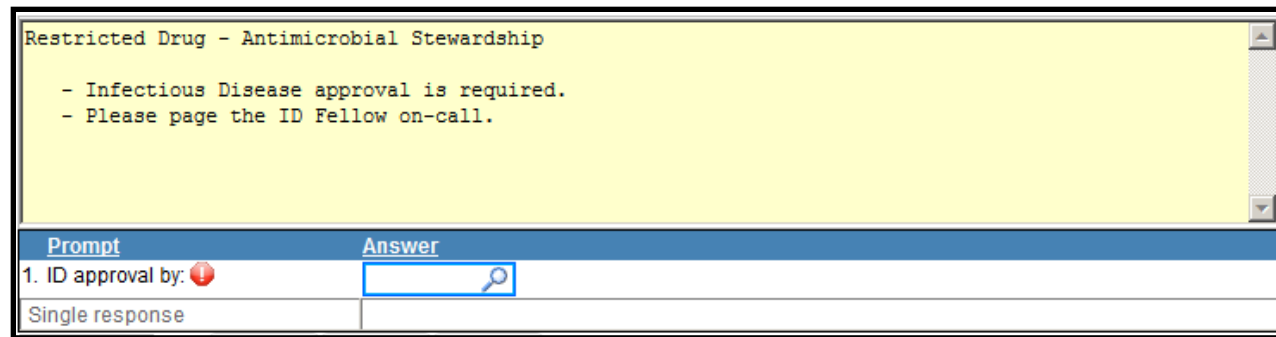
- Formulary restriction and authorization
- Prospective audit with intervention and feedback
- Clinical practice guideline development
- IV to PO conversion
- De-escalation
- Dose optimization
- Clinician, patient, and family education

Formulary Restriction & Authorization

- Definition
 - To ensure appropriate use, certain antimicrobials require review by an infectious disease expert before therapy is initiated
- Reasons for restricting an antimicrobial include
 - Potential for negative impact on antibiotic resistance
 - Complexity of use
 - High risk of toxicity
 - Limited or unique indications
 - Cost


Formulary Restriction & Authorization at LPCH

- Seven restricted drugs
 - Colistin (IV)
 - Daptomycin
 - Tigecycline
 - Micafungin
 - Posaconazole
 - Linezolid
 - Cidofovir



Restricted Drug - Antimicrobial Stewardship

- Infectious Disease approval is required.
- Please page the ID Fellow on-call.

Prompt	Answer
1. ID approval by: 	<input type="text"/>
Single response	

- Prescribers **MUST** contact the Pediatric Infectious Disease fellow on call (24/7) for approval and document the approving provider in EPIC **BEFORE** release of a restricted antimicrobial from the Pharmacy.
- In the event of an **EMERGENCY**, and if an attempt to contact an approval source is unsuccessful, the pharmacy is authorized to dispense a **SINGLE** dose of any restricted antimicrobial.

Prospective Audit & Feedback

- Definition
 - Review of antimicrobial use by an infectious disease expert, with feedback to the medical team regarding opportunities for antimicrobial optimization
- Goals of prospective audit & feedback
 - Reduce antimicrobial use
 - Reduce costs
 - Reduce adverse events
 - Reduce antimicrobial resistance

Prospective Audit & Feedback Common Opportunities at LPCH

Streamlining

- Appropriate discontinuation of “double gram negative” coverage

Dose optimization

- Incorrect dose of perioperative antibiotics

Therapeutic duplication

- Redundant anaerobic coverage (e.g., use of metronidazole with piperacillin-tazobactam)

Drug-bug mismatch

- Vancomycin for methicillin-susceptible *S. aureus* infections

Therapeutic monitoring

- Appropriate vancomycin trough targets

Parenteral to oral conversion

- Oral quinolone for patients on full diet

Drug-drug interactions

- Concurrent use of QT prolonging agents

Prospective Audit & Feedback at LPCH

- At LPCH, the ASP Medical Director and Pharmacist regularly review antimicrobial orders active for >48 hours
- When an opportunity for antimicrobial optimization is identified, the unit based pharmacist will be contacted and is responsible for verbal communication of ASP recommendations
- ASP recommendations are also visible within the EPIC ASP Navigator

Prospective Audit & Feedback EPIC ASP Navigator

Antimicrobial Stewardship Program

ANTIMICROBIAL STEWARDSHIP PROGRAM
Monitoring Reports

Antibiotic 1
Antibiotic 2
Antibiotic 3
Antibiotic 4
Antibiotic 5
Antibiotic 6
Antibiotic 7
Antibiotic 8
Antibiotic 9
Antibiotic 10
Antibiotic 11
Antibiotic 12
Antibiotic 13
Antibiotic 14
Antibiotic 15
Audit Document...

Antimicrobial Stewardship Audit Documentation

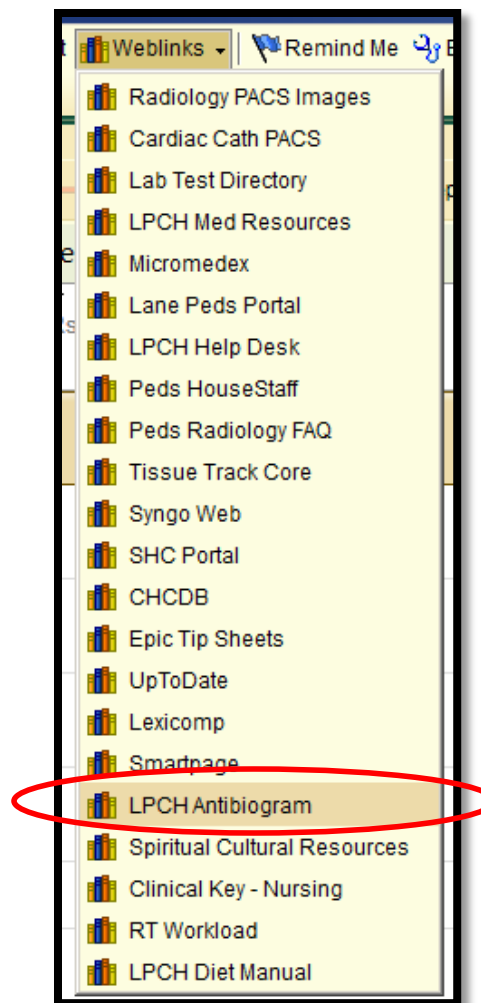
Antimicrobial Stewardship Program Audit

	Most Recent Value
<u>Antibiotic 1</u>	
Name of Antimicrobial	
Is med active?	
Attending MD Dictation Number	
Service	
Infectious Disease Consulting for Patient	
Infectious Problem	
Recommendation Type 1	
<u>Antibiotic 2</u>	
Name of Antimicrobial	
Is med active?	
Attending MD Dictation Number	
Service	
Infectious Disease Consulting for Patient	
Infectious Problem	
Recommendation Type 1	
<u>Antibiotic 3</u>	
Name of Antimicrobial	
Is med active?	
Attending MD Dictation Number	
Service	
Infectious Disease Consulting for Patient	
Infectious Problem	
Recommendation Type 1	
<u>Antibiotic 4</u>	
<u>Antibiotic 5</u>	
<u>Antibiotic 6</u>	

Select ASP Navigator from the "More" tab

LPCH Antibigram

- The LPCH antibiogram contains valuable information regarding institutional resistance patterns
- The antibiogram is updated annually and can be accessed as a weblink within EPIC or via the Lane Library at <http://lane.stanford.edu/bio-med-resources/antibiograms-lpch.html>



Additional Information

For additional information, please refer to the LPCH
Antimicrobial Stewardship Policy

[https://intranet.lpch.org/formsPoliciesReferences/poli
cies/hospitalWide/patientCare/antimicrobialStewards
hipProgram.html](https://intranet.lpch.org/formsPoliciesReferences/policies/hospitalWide/patientCare/antimicrobialStewards
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