



Stanford
MEDICINE

Children's Health

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 and prospective audit and feedback

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 healthcare costs

Mandate

- There is a growing recognition that antimicrobial effectiveness is a limited resource given the increasing rates of antimicrobial resistance
- Antimicrobial stewardship is required of hospitals by The Joint Commission and California law to preserve antimicrobial effectiveness

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

ASP at LPCH



Mission Statement:

To promote judicious and appropriate antimicrobial use to achieve the best patient outcomes across the Stanford Medicine Children's Health enterprise.



Programmatic Aims:

1. Reduce inappropriate antimicrobial use across the enterprise.
2. Promote a culture where providers feel empowered to use antimicrobials appropriately and judiciously.
3. Improve visibility of ASP across the enterprise.
4. Achieve national recognition as a leader in antimicrobial stewardship.

ASP Interventions

Formulary
restriction and
authorization

Prospective
audit and
feedback

Clinical practice
guidelines

IV to PO
conversion

De-escalation

Dose
optimization

Clinician,
patient, and
family education

Formulary Restriction and Preauthorization

- **Definition**

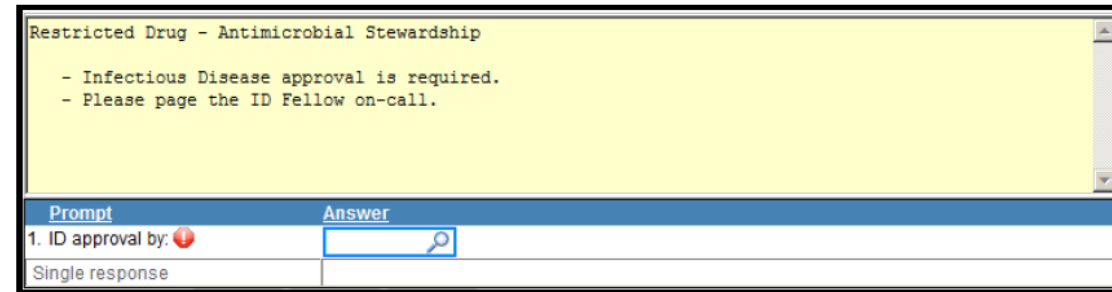
- To ensure appropriate use, certain antimicrobials require review by an infectious diseases expert before therapy is initiated

- **Reasons for restricting an antimicrobial**

- Potential for negative impact on antibiotic resistance
- Complexity of use
- High risk of toxicity
- Limited or unique indications
- Cost

Restriction and Preauthorization at LPCH

- Restricted drugs
 - All nonformulary drugs
 - Antimicrobials with high risk for toxicity
 - Antimicrobials with broad spectrum activity
 - Antimicrobials with narrow therapeutic index
 - Antimicrobials with complicated pediatric pharmacokinetics
- A complete list of restricted antimicrobials can be found in the Housestaff Manual
- Prescribers must contact the Pediatric Infectious Diseases 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



The screenshot shows a yellow alert box titled "Restricted Drug - Antimicrobial Stewardship". The alert contains the following text:

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

Below the alert is a table with two columns: "Prompt" and "Answer". The "Prompt" column contains the text "1. ID approval by:" followed by a red error icon. The "Answer" column contains an empty text input field with a magnifying glass icon. Below the table is a "Single response" label.

Prospective Audit and Feedback

- **Definition**

- Review of antimicrobial use by an infectious diseases expert, with feedback to the medical team regarding opportunities for antimicrobial optimization

- **Goals of prospective audit and feedback**

- Reduce antimicrobial use
- Reduce antimicrobial costs
- Reduce antimicrobial-related adverse events
- Reduce antimicrobial resistance

Prospective Audit and Feedback Opportunities

Streamlining

- Discontinue unnecessary “double gram negative” coverage

Dose optimization

- Adjust incorrect dose of perioperative antibiotics

Therapeutic duplication

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

Drug-bug mismatch

- Change vancomycin to nafcillin or cefazolin for the treatment of methicillin susceptible *S. aureus*

Therapeutic monitoring

- Check voriconazole levels, when appropriate

IV to PO conversion

- Transition intravenous clindamycin to enteral for patients on a full diet

Drug-drug interactions

- Monitor patients on concurrent azole antifungals and certain immunosuppressive medications

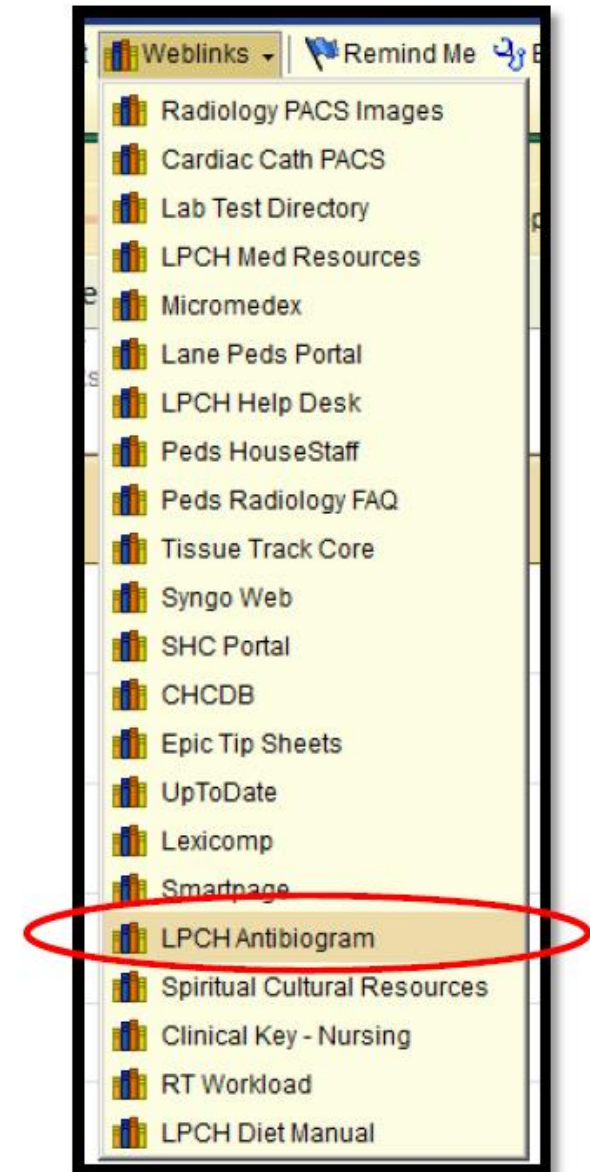
Prospective Audit and Feedback at LPCH

- At LPCH, the ASP team regularly reviews antimicrobial orders active for > 48 hours
- When an opportunity for antimicrobial optimization is identified, the rounding clinical pharmacist or another member of the medical team will be contacted regarding any ASP recommendations

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



Additional Information

Visit our website

OR

Search “ASP” in the LPCH
Housestaff Manual

Antimicrobial Stewardship
Program

About the Program

Meet Our Team

Guidelines & Protocols

Publications

Clinical Microbiology

PGY-2 Infectious Diseases
Pharmacy Residency

Contact Us

Antimicrobial Stewardship Program

Role of Antimicrobial Stewardship

To promote the appropriate use of antimicrobials, reduce antimicrobial resistance, and spread of infection caused by multi-drug-resistant organisms and reduce the spread of infection, with the goal of promoting improved patient outcomes in both inpatient and outpatient settings.

Mission Statement

To promote judicious and appropriate antimicrobial use to achieve the best patient outcomes across the Stanford Medicine Children’s Health enterprise.

asp.stanfordchildrens.org



Program Achievements



Antibiotic Pledge

Make An Antibiotic Pledge To Your Patients

“I am dedicated to prescribing antibiotics only when they are needed and will avoid giving patients antibiotic when they might do more harm than good.”

Have questions about appropriate use of antimicrobials at LPCH?

Please contact the ASP team to learn more about our hospital policies and resources:

pediatricasp@stanford.edu