

# ASP UPDATES

St. Louis Children's Hospital Antimicrobial Stewardship Program

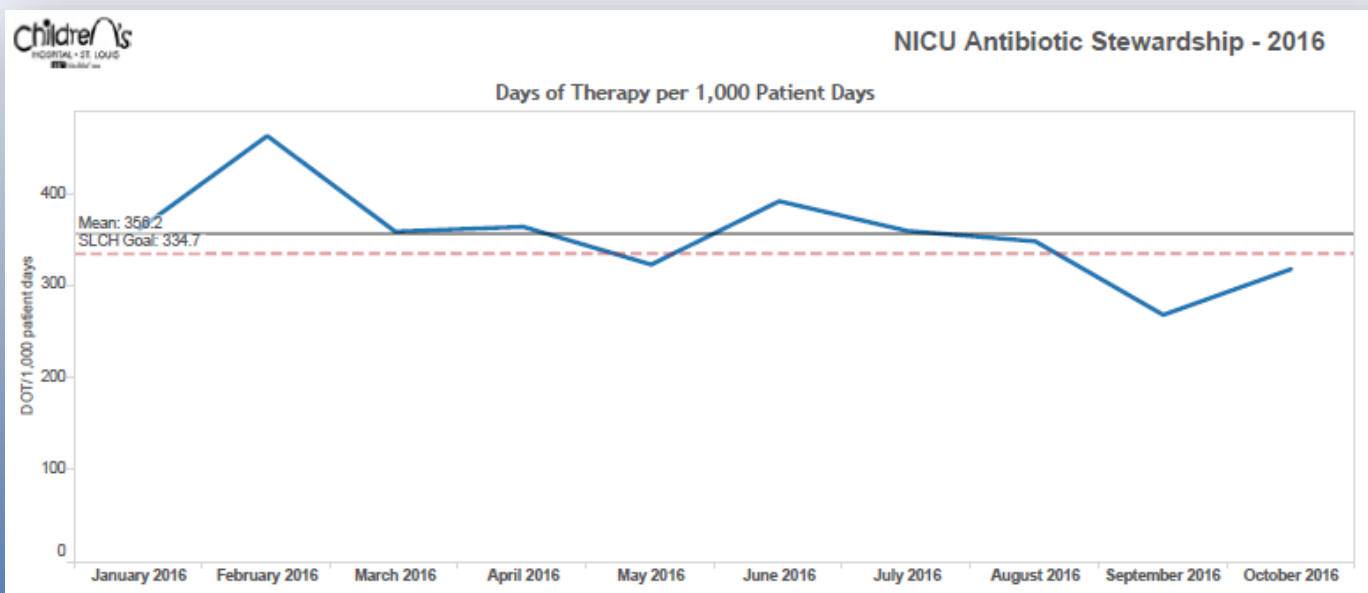
November 2016



In each ASP newsletter we want to showcase the great work individual departments are doing to improve antimicrobial use for their patients. In this article we are focusing on the neonatal intensive care unit (NICU). They have been collaborating with the Vermont Oxford Network (VON) in a nationwide NICU antimicrobial stewardship initiative. Each site participates in periodic webinars, identifies their own quality improvement project, and evaluates the impact of their initiative. The SLCH NICU decided to focus on discontinuation of antimicrobials in early onset sepsis as their first QI project. By encouraging daily discussions about antibiotics on each patient during NICU rounds and incorporation of stop dates to prevent unnecessary extra doses, the NICU was able to reduce their total antibiotic use by ~10 percent.

**THANK YOU!!!**  
For a  
**Successful**  
**Get Smart**  
**About**  
**Antibiotics**  
**Week**

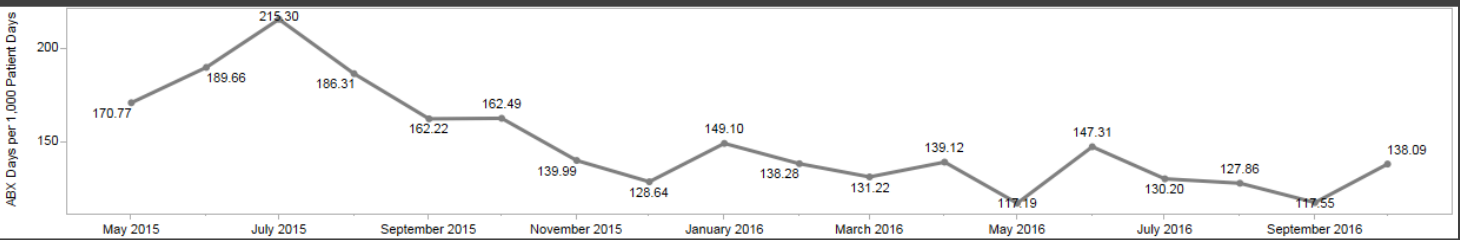
**November**  
**14-18, 2016**



# SLCH Antimicrobial Utilization

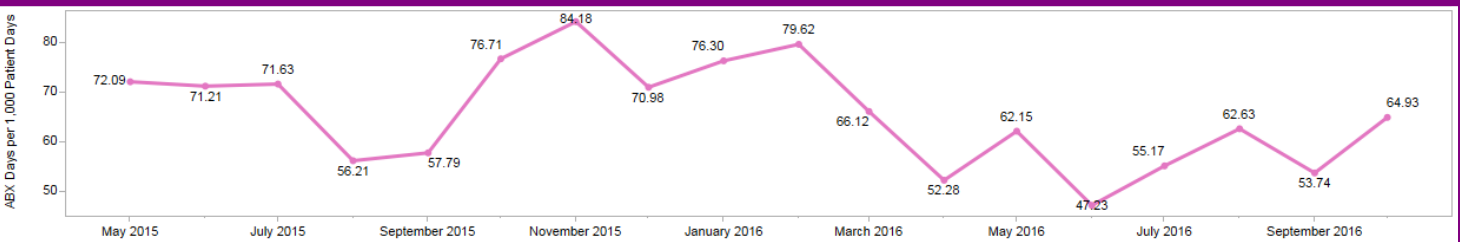
## BROAD SPECTRUM AGENTS FOR HOSPITAL ACQUIRED / MULTI-DRUG RESISTANT INFECTIONS

(Amikacin, Aztreonam, Cefepime, Ceftazidime-Avibactam, Ceftolozane-tazobactam, Colistimethate, Gentamicin, Imipenem-cilastatin, Meropenem, Piperacillin-tazobactam, Tigecycline, Tobramycin)



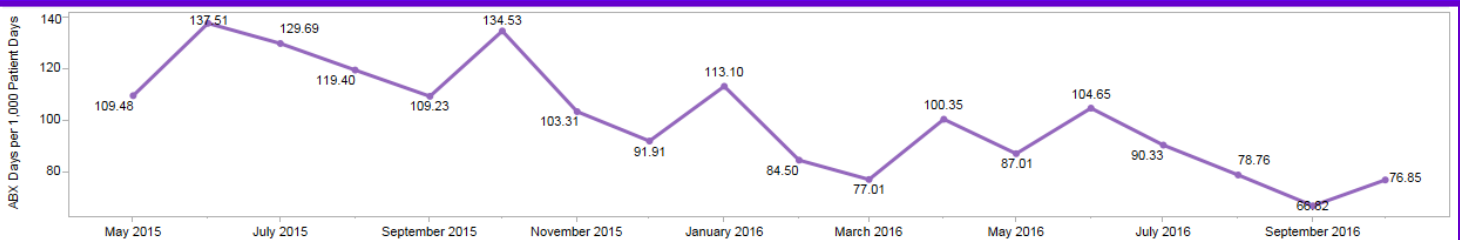
## BROAD SPECTRUM AGENTS FOR COMMUNITY-ACQUIRED INFECTIONS

(Cefotaxime, Ceftriaxone, Ciprofloxacin, Ertapenem, Levofloxacin, Moxifloxacin)



## ANTI-MRSA AGENTS

(Ceftaroline, Daptomycin, Linezolid, Telavancin, Vancomycin)

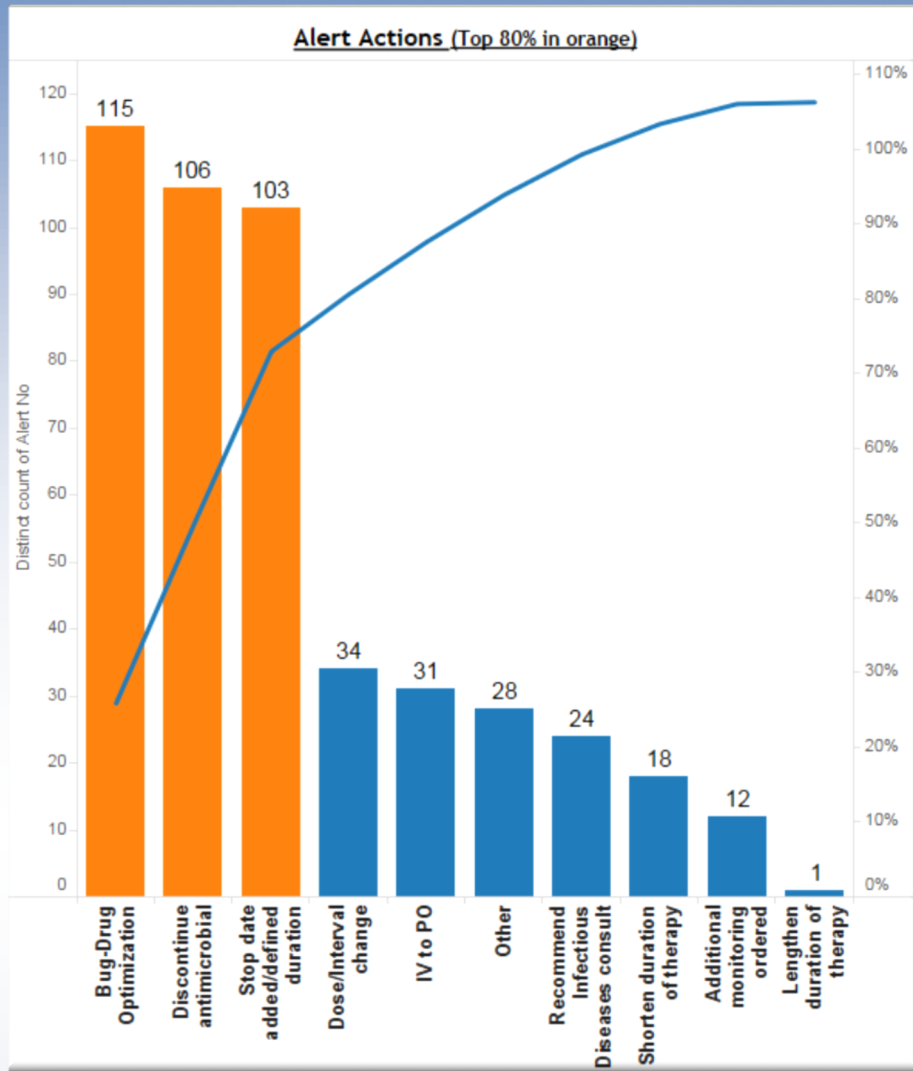


For each newsletter we will provide you with our current antibiotic use trends in days of therapy per 1000 patient days.

As can be seen in these figures our broad spectrum antibiotic use this year has been less than in 2015. In October we did see an increase in these categories from previous months. It should be noted that this data does not account for appropriateness and is not risk adjusted for severity of illness. We will continue to monitor the use of these antibiotics and if these increases continue we will further investigate reasons for these increases.

Below is data on the activity of the antimicrobial stewardship team. Our most common recommendation is bug-drug optimization which includes narrowing and broadening antibiotic therapy based on culture and susceptibility results. Additionally, we have focused on having stop dates included in our orders so that we better define our durations of therapy. Finally, we have the ASP action acceptance rates. We use this data to help us understand where we can improve the program and where we likely need additional conversations with frontline clinicians.

# SLCH ASP Alerts

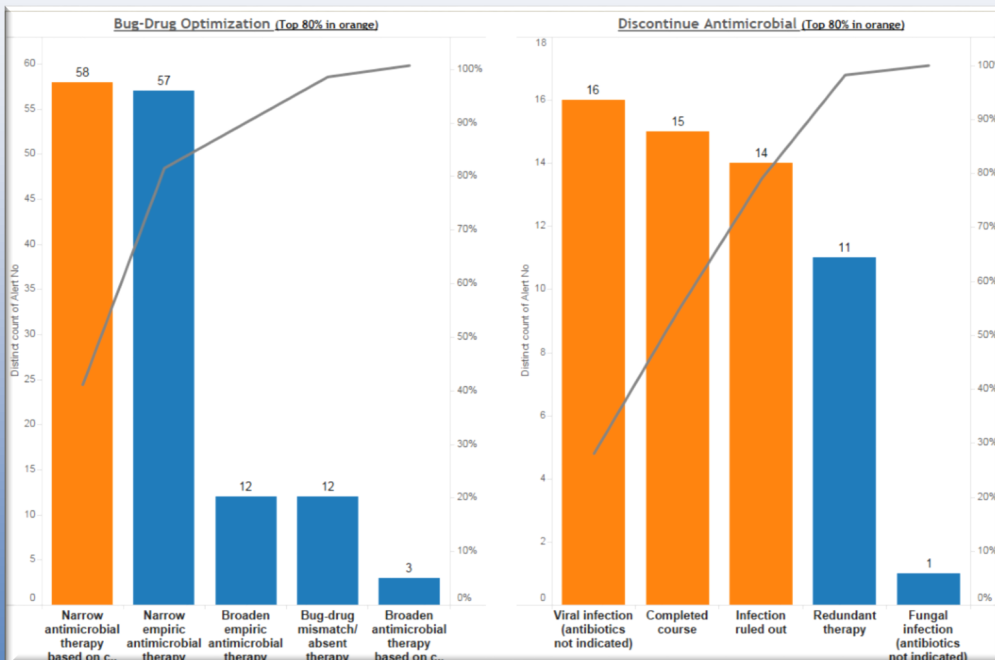


## Why is the data presented as antibiotic days of therapy (DOT) per 1,000 patient days?

Antibiotic days of therapy (DOT) per 1,000 patient days is a commonly used metric endorsed by the CDC to evaluate the amount of drug being utilized in an institution. Each antibiotic used in a day counts as one antibiotic day. For example, a patient receiving ampicillin and gentamicin for 5 days would equal 10 antibiotic DOT.

With fluctuations in patient census within the hospital, it can be difficult to compare utilization of antimicrobials month to month or even year to year. To account for this variability, the antibiotic DOT are standardized per 1,000 patient days.

This metric does not account for appropriateness of antibiotic use, but allows us to follow the amount being used over time.



## ASP Action Acceptance

ASP Actions	% of Actions Accepted
Additional monitoring ordered	83.3%
Bug-Drug Optimization	74.7%
Discontinue antimicrobial	70.5%
Dose/Interval change	79.4%
IV to PO	47.8%
Other	88.0%
Recommend Infectious Diseases consult	84.2%
Shorten duration of therapy	76.5%
Stop date added/defined duration	92.6%

# DID YOU KNOW?

## First Generation Cephalosporins for Urinary Tract Infections

Urinary tract infections are a common problem we treat frequently at SLCH. Did you know that for outpatient management of uncomplicated UTIs, first generation cephalosporins (eg. cephalexin) is the first line empiric therapy?

A recent review of over 25,000 cases of pediatric UTIs in the United States observed that *E. coli* resistance to first generation cephalosporins was only ~12%. This is significantly less than the 24% *E. coli* resistance to trimethoprim-sulfamethoxazole, a commonly prescribed empiric antibiotic. Furthermore, first generation cephalosporins are more cost-effective.

The microbiology lab is now reporting *E. coli* susceptibility to cefazolin (IV 1st generation cephalosporin) which can be utilized to determine if cephalexin (oral 1<sup>st</sup> generation cephalosporin) can be utilized. The recommended dose for cephalexin is 25mg/kg/dose (maximum: 500 mg/dose) three times a day.

By: Lyndsey Cole, WUSM MS4  
Jason Newland, MD, MEd

Source: Edlin, Rachel S., Daniel J. Shapiro, Adam L. Hersh, and Hillary L. Copp. "Antibiotic Resistance Patterns of Outpatient Pediatric Urinary Tract Infections." *The Journal of Urology* 190.1 (2013): 222-27. Web.

## SLCH ASP Trivia

What is the most frequently prescribed antibiotic at SLCH?

- A. Vancomycin
- B. Ceftriaxone
- C. Ampicillin
- D. Cefazolin

Answer provided on page 3

## Contact Us

Give us a call or email us for more information about antimicrobial stewardship

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*The ASP On-Call contact information is also listed in SmartWeb under Antimicrobial Stewardship*

## VISIT US ON THE WEB AT:

[www.stlouischildrens.org/health-care-professionals/resources/clinical-resources/antimicrobial-stewardship-program-asp](http://www.stlouischildrens.org/health-care-professionals/resources/clinical-resources/antimicrobial-stewardship-program-asp)

