

# ASP UPDATES

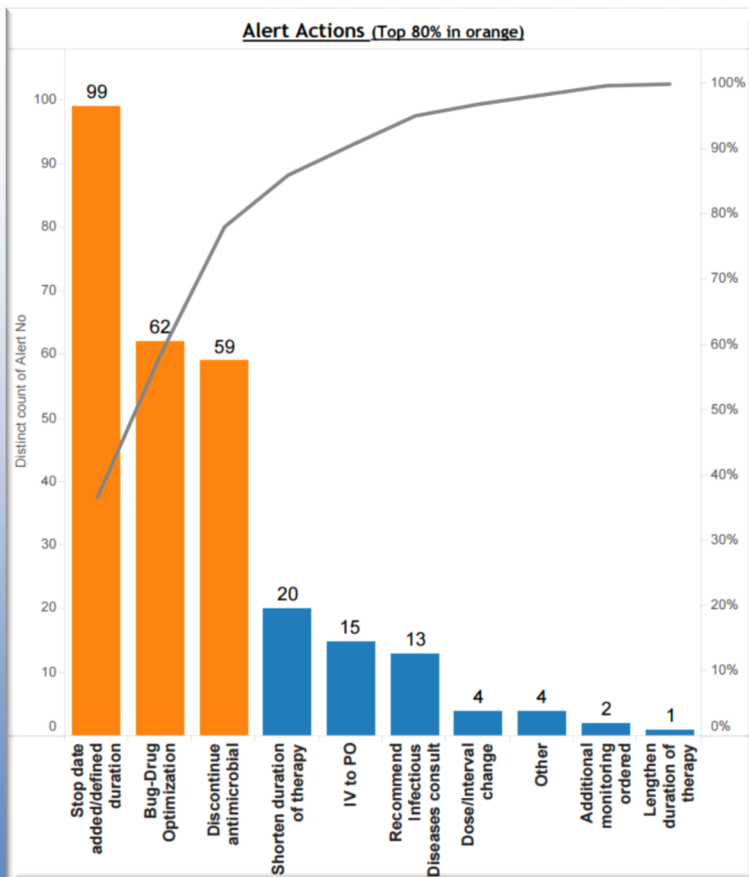
St. Louis Children's Hospital Antimicrobial Stewardship Program

March 2017



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 pediatric intensive care unit (PICU). In the PICU we average approximately 182 alerts per month and 37 ASP actions per month (20% of alerts result in an ASP action).

ASP Actions	% of Actions Accepted
Additional monitoring ordered	100.0%
Bug-Drug Optimization	83.3%
Discontinue antimicrobial	64.8%
Dose/Interval change	100.0%
IV to PO	54.5%
Other	66.7%
Recommend Infectious Diseases consult	81.8%
Shorten duration of therapy	61.1%
Stop date added/defined duration	92.7%

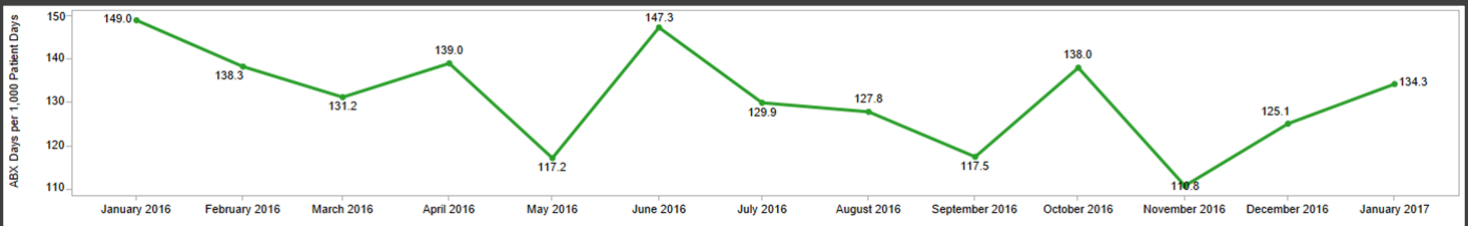


The top 3 ASP actions for the PICU include: 1) stop date

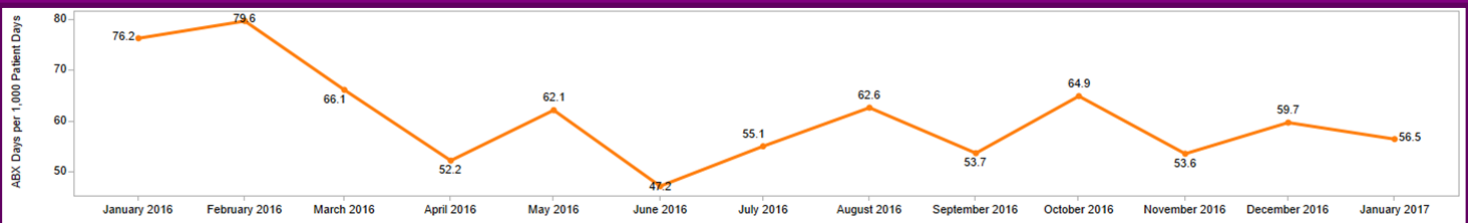
added/defined duration; 2) bug-drug optimization; 3) discontinue antimicrobial. Since starting the ASP rounds in August 2016, the most common reasons for discontinuing therapy are viral infection (antibiotics are not indicated) and infection ruled out. For bug-drug optimization approximately 47% are to narrow empiric antimicrobial therapy and 44% are to narrow based on culture results. Overall the acceptance rate for ASP actions is 80% in the PICU. The actions of least acceptance currently are IV to PO, shorten duration of therapy and discontinue antimicrobial. The PICU has been very welcoming to the antimicrobial stewardship program and have initiated studies to evaluate and improve their own use of antimicrobials. We are excited to partner with them and provide the best care to our patients.

# 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)

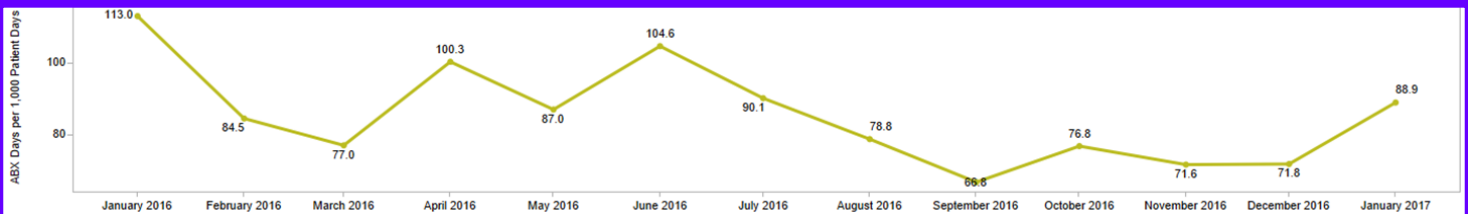


## BROAD SPECTRUM AGENTS FOR COMMUNITY-ACQUIRED INFECTIONS (Cefotaxime, Ceftriaxone, Ciprofloxacin, Ertapenem, Levofloxacin, Moxifloxacin)



## ANTI-MRSA AGENTS

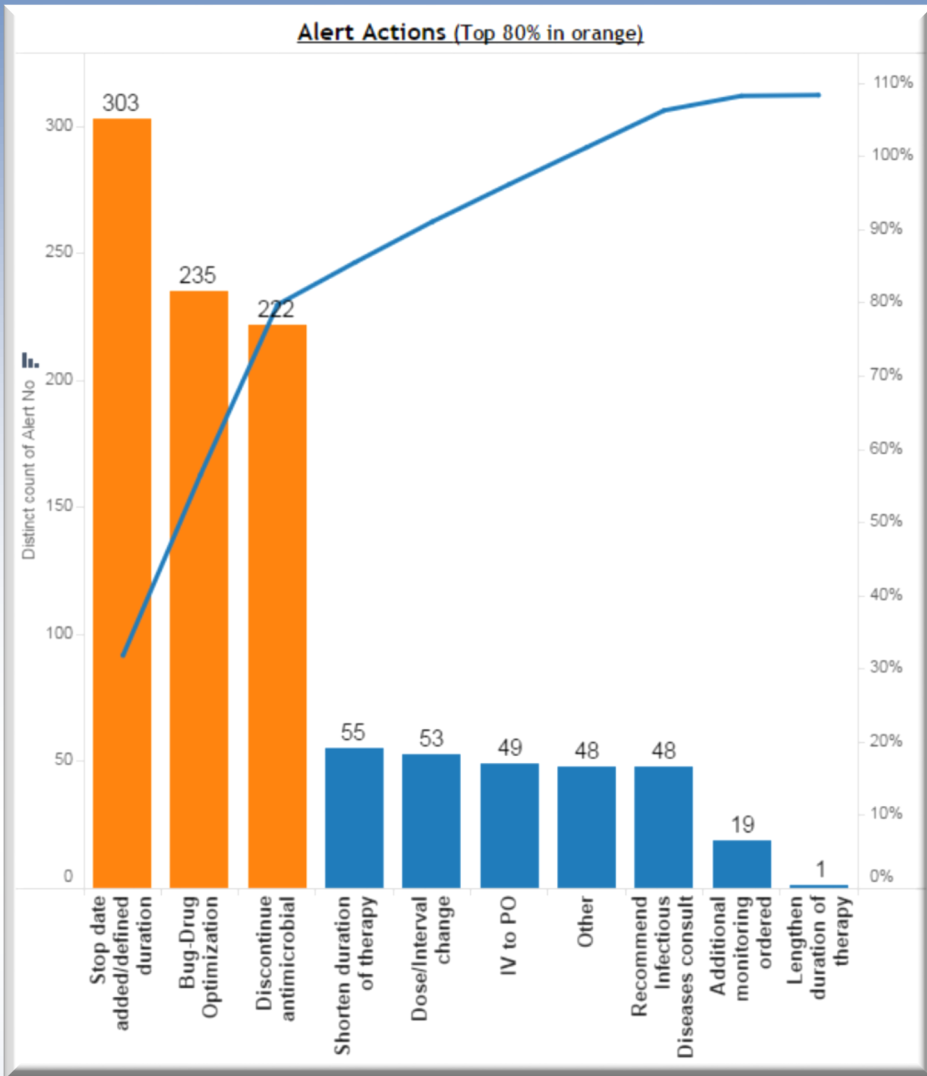
(Ceftaroline, Daptomycin, Linezolid, Telavancin, Vancomycin)



Since January of 2016 we have seen an overall decline in antibiotic use as measured by DOT per 1000 patient days. However in recent months we have seen some upward trends for antibiotics in the Hospital-acquired broad-spectrum agents and Anti-MRSA agents. While this data does not represent appropriateness, it is a trend we need to be cognizant and continue to be mindful of our use of these broad-spectrum agents.

The most common recommendations being made by the ASP include adding a stop date, bug-drug optimization, and discontinuing the antimicrobial. These 3 recommendations comprise 80% of all recommendations. The most common reason to have a recommendation for discontinuing an antibiotic is viral infection. Our overall acceptance rate continues to be approximately 80% with the worst acceptance rate being for discontinuing an antimicrobial.

# SLCH ASP Alerts

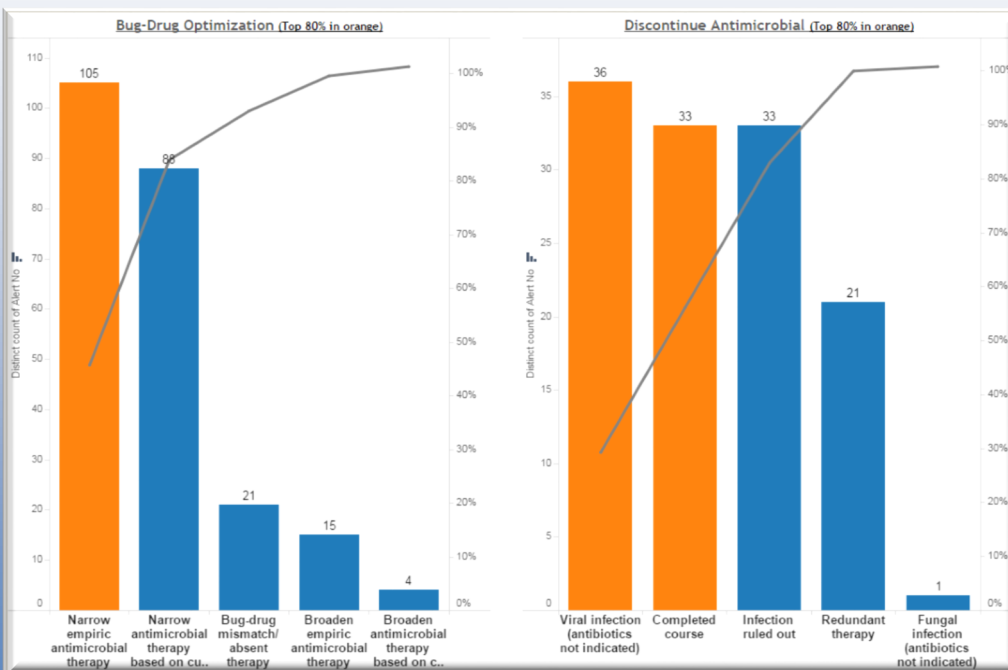


## Why is the data presented as antibiotic days of therapy (DOT) per 1,000 patient days?

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	84.2%
Bug-Drug Optimization	72.7%
Discontinue antimicrobial	64.3%
Dose/Interval change	82.4%
IV to PO	64.1%
Other	87.8%
Recommend Infectious Diseases consult	85.7%
Shorten duration of therapy	64.7%
Stop date added/defined duration	90.6%

# DID YOU KNOW?

## Duration of antibiotic treatment for acute otitis media

Acute otitis media (AOM) is one of the most frequently diagnosed illnesses in children in the United States, second only to the common cold. Additionally, AOM is the most common reason children receive antimicrobials. With increasing concerns for antimicrobial resistance, strategies to minimize antimicrobial use are necessary. One such strategy is to shorten the course for AOM.

A recent trial examined rates of clinical response, recurrence, and nasopharyngeal colonization in 520 children aged 6–23 months of age with AOM treated with either 5 or 10 days of amoxicillin-clavulanate dosed 90 mg/kg/day.

The results of the trial indicated children who were treated for 5 days were more likely than those who were treated for 10 days to have clinical failure (34% vs. 16%; 95% CI 9–25) with clinical failure being defined as worsening of symptoms, or of otoscopic signs of infection, or if they did not have complete or nearly complete resolution of symptoms and signs attributable to AOM by the end of treatment. No significant difference was found between the two groups in rates of recurrence, adverse events or nasopharyngeal colonization with penicillin-nonsusceptible pathogens.

Of note, rates of clinical failure were significantly greater in children who had exposure to  $\geq 3$  children for  $\geq 10$  hours per week than those with less exposure, and were greater in children with bilateral infection than those with unilateral infection.

By: Caitlyn Luecke, Pharm.D.

Source: Hoberman A, Paradise J, Rockette H, et al. Shortened antimicrobial treatment for acute otitis media in young children. *NEJM*. December 2016;375:2446-56.

## SLCH ASP Trivia

What is the drug of choice for the treatment of *Stenotrophomonas maltophilia*?

- A. Vancomycin
- B. Cefepime
- C. Levofloxacin
- D. Trimethoprim-sulfamethoxazole

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)

