



Central California Pediatrics

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Specialty information for physicians who treat children and expectant mothers.

Antimicrobial Stewardship: Why It's Important



Fouzia Naeem, MD

Infectious Disease Specialist, Valley Children's Healthcare and immediate past chair of Valley Children's Antimicrobial Stewardship Program (ASP)



Brenik Kuzmic, PharmD

Antimicrobial Stewardship Program Pharmacist

Antibiotics are a precious resource to help save lives from serious bacterial infections such as sepsis. However wonderful they are, the misuse/inappropriate use of antibiotics leads to resistance and adverse side effects. In 2017, healthcare providers prescribed 258.2 million antibiotic prescriptions. This is equivalent to 793 antibiotic prescriptions per 1,000 persons. In patients under 20 years of age, it was 60.4 million prescriptions or 735 antibiotic prescriptions per 1,000 persons¹. This is nearly one antibiotic prescription per person per year. Complications from antibiotics include not only resistance, but also side effects such as rashes, diarrhea and less common adverse events like severe allergic reactions. These adverse drug events lead to an estimated 143,000 emergency department visits annually and contribute to excess use of healthcare resources². It is estimated that more than 2.8 million antibiotic-resistant infections occur in the U.S. each year, and more than 35,000 people die as a result.³

To address this growing threat, in 2015 the U.S. government developed a National Action Plan for Combating Antibiotic-Resistant Bacteria, which set a goal to implement antibiotic stewardship programs in all hospitals that align with the CDC's Core Elements of Hospital Antibiotic Stewardship Programs. The main purpose of this program is to promote decrease in bacterial resistance through appropriate use of antimicrobials without affecting patient outcomes⁴.

Over the past few years at Valley Children's, we were able to decrease unnecessary antibiotics use through combined efforts with other departments. In collaboration with neonatologists, we standardized treatment for early and late onset sepsis, as well as for patients with necrotizing enterocolitis. Amongst our hospitalists and intensivists, we aim to use the most appropriate and guideline-supported therapies: ampicillin, for community-acquired bacterial pneumonia, and azithromycin, when warranted.

We have also made some progress in decreasing unnecessary use of antibiotics in patients with bronchiolitis. A recent study of U.S. emergency departments investigated antibiotic prescribing between 2007 and 2015 for pediatric patients with acute bronchiolitis. The results showed that 25.6% of the patients received antibiotics (an estimated ~83,000 prescriptions annually), yet 70% of those patients did not have documented bacterial co-infection⁵. Though we have made positive strides in decreasing inappropriate antimicrobial usage and received designation of IDSA Antimicrobial Stewardship Centers of Excellence, there is still much work to do with antimicrobial stewardship.

Antimicrobial Stewardship: Why It's Important continued

In outpatient settings, guidelines to avoid unnecessary antibiotic use and improve patient outcomes have been established to assist primary care providers to care for patients with acute rhinosinusitis, otitis media, common cold, bronchiolitis, urinary tract infection and community-acquired pneumonia. It is our responsibility to continue to focus on prescribing and taking antibiotic time-outs to further evaluate the patient's true antibiotic need. This will likely take more time to explain to families that antibiotics don't treat viral infections such as bronchiolitis. Instead of antibiotics, offer alternatives to treat the symptoms to help alleviate whatever ailment brought patients to see you that day.



References:

1. <https://www.cdc.gov/antibiotic-use/community/pdfs/Annual-Report-2017-H.pdf> accessed 3/24/2020
2. Shehab N, Patel PR, Srinivasan A, Budnitz DS. Emergency department visits for antibiotic-associated adverse events. Clin Infect Dis 2008; 47:735-43.
3. CDC. Antibiotic Resistance Threats in the United States, 2019. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2019
4. Policy statement on antimicrobial stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS). Infect Control Hosp Epidemiol 2012; 33(4):322-327
5. Inappropriate Antibiotic Prescribing for Acute Bronchiolitis in US Emergency Departments, 2007-2015. Journal of the Pediatric Infectious Disease Society 2019; 8(6):567-570.

Medical Staff News

The following pediatric specialists recently joined Valley Children's:

Complex Pediatrics

Albert Vu, MD

Complex Pediatrics Childhood Development

Jennifer Johnson, MD

Critical Care

Nataly Schildt, DO

Critical Care

Deborah Sung, MD

Endocrinology

Isra Abugroun, MD

Gastroenterology

Mohamed Shaban, MD

Infectious Diseases

Daniele Gusland, MD

Hospitalist

Arunima Bera, MD

Sierra View

Neonatology

Anum Ali, MD

Neonatology

David Box, MD

Neonatology

Vidhi Shah, MD

Giancarlo Lugo, MD

Milagros Silva Colon, MD

Primary Care

Thanh Huong Nguyen, MD

Devon Ward, MD