Quality Improvement Organizations
Sharing Knowledge. Improving Health Care.
CENTERS FOR MEDICARE & MEDICAID SERVICES

Lake Superior Quality Innovation Network
MICHIGAN | MINNESOTA | WISCONSIN

Top 10 Ways for Emergency Physicians to Avoid Prescribing Unnecessary Antibiotics

1. Beware urinary tract infection (UTI) myths

Forty percent of antibiotics given in hospital settings are avoidable. Odor, bacteriuria, nitrates, leukocyte esterase and pyuria cannot diagnose UTI without clinical signs/symptoms.

2. Use the modified Centor Score for pharyngitis

One point is assigned for each of the following criteria: fever, absence of cough, tonsillar exudates and swollen/tender anterior cervical nodes. Current guidelines recommend no rapid testing and withholding antibiotics in patients with scores of zero and one, and treating only positive rapid test results for scores of two or greater.

3. Treat sinusitis as viral unless strict criteria are met

Sinusitis symptoms must be present for 10 days or more without any evidence of clinical improvement *OR* patient has *severe* symptoms or signs of high fever (≥39°C [102°F]) and purulent nasal discharge or facial pain lasting for at least three-to-four consecutive days *OR* worsening symptoms or signs characterized by the new onset of fever, headache or increase in nasal discharge following a typical viral upper respiratory infection. If criteria are met, first-line therapy should be a 10-day course of amoxicillin.

4. Avoid screening for asymptomatic bacteriuria

Asymptomatic bacteriuria is common. It is present in up to 5 percent healthy premenopausal women, 22 percent community dwelling elder women, as well as 50 percent and 35 percent of institutionalized women and men respectively. Urinalysis for infection should only be sent in patients with urinary symptoms.

5. Think twice about "UTIs" in patients with altered mental status

Implement a "wait and see" approach to non-specific symptoms of weakness, falls, fatigue and/or delirium in elders, long term care residents and patients with cognitive impairment before starting antibiotic for UTI.

6. Consider not prescribing antibiotics for uncomplicated abscesses

Several studies conducted in the Emergency Department (ED) provide data to support withholding antibiotics after incision and drainage of uncomplicated abscesses, even in cases of suspected methicillin-resistant Staphylococcus aureus (MRSA). One large Randomized Controlled Trial (RCT) supports Trimethoprim/sulfamethoxazole (TMP/SMX) use in abscesses.

7. Avoid double coverage for community-acquired cellulitis

TMP/SMX retains nearly 100 percent effectiveness vs. community-acquired MRSA (CA-MRSA). Wisconsin clindamycin resistance rates are approaching 30 percent. No need to double cover uncomplicated cellulitis. Single agent cephalexin is sufficient.

8. Consider watch and wait prescriptions with acute otitis media

Most otitis media is viral. Delaying treatment is usually associated with resolution of clinical signs and symptoms. Only 40 percent of watch and wait prescriptions are filled.

9. Use procalcitonin to help guide decision to antibiose in Chronic obstructive pulmonary disease (COPD)

The Food and Drug Administration (FDA) approved procalcitonin in 2017 to guide antibiotic initiation in lower respiratory tract infection (LRTI).

10. Avoid antibiotics for routine dentalgia

Reversible pulpitis, periodontitis and mechanical endodontic conditions present as tooth pain, but do not require antibiotics. Nonsteroidal anti-inflammatory drugs (NSAIDs) and nerve blocks are recommended therapy. Antibiotics are appropriate if there is an adjacent space infection, trismus or odynophagia.

References

1. Schulz L, Hoffman RJ, Pothof J, Fox B. Top Ten Myths Regarding the Diagnosis and Treatment of Urinary Tract Infections. *J Emerg Med*. 2016;51(1):25-30.

   Ferroni M, Taylor AK. Asymptomatic Bacteriuria in Noncatheterized Adults. *Urol Clin North Am*. 2015;42(4):537-545.

2. CDC - Get Smart: Adult Acute Pharyngitis in Adults, Physician Information Sheet. Available at: http://www.cdc.gov/getsmart/campaign-materials/infosheets/adult-acute-pharyngitis.html. Accessed November 3, 2013.

   Aalbers J, et al. Predicting streptococcal pharyngitis in adults in primary care: a systematic review of the diagnostic accuracy of symptoms and signs and validation of the Centor score. BMC Med. 2011;9:67.

3. Chow, Anthony W., et al. "IDSA clinical practice guideline for acute bacterial rhinosinusitis in children and adults." *Clinical Infectious Diseases* (2012): cir1043.

4. Ferroni M, Taylor AK. Asymptomatic Bacteriuria in Noncatheterized Adults. *Urol Clin North Am*. 2015;42(4):537-545.

5. Schulz L, Hoffman RJ, Pothof J, Fox B. Top Ten Myths Regarding the Diagnosis and Treatment of Urinary Tract Infections. *J Emerg Med*. 2016;51(1):25-30.

6. Singer AJ, Thode HC Jr. Systemic antibiotics after incision and drainage of simple abscesses: a meta-analysis. Emerg Med J EMJ. 2013.

   Talan DA, Mower WR, Krishnadasan A, Abrahamian FM, Lovecchio F, Karras DJ, Steele MT, Rothman RE, Moran GJ. Trimethoprim-Sulfamethoxazole versus Placebo for Uncomplicated Skin Abscess. *N Engl J Med*. 2016;374(9):823-832.

7. Pallin DJ, et al. Clinical trial: comparative effectiveness of cephalexin plus trimethoprim-sulfamethoxazole versus cephalexin alone for treatment of uncomplicated cellulitis: a randomized controlled trial. *Clin Infect Dis*. 2013;56(12):1754-1762.

8. Le Saux, Nicole, et al. "A randomized, double-blind, placebo-controlled noninferiority trial of amoxicillin for clinically diagnosed acute otitis media in children 6 months to 5 years of age." *Canadian Medical Association Journal* 172.3 (2005): 335-341.

9. Administration USF and D. FDA clears test to help manage antibiotic treatment for lower respiratory tract infections and sepsis. Accessed March 9, 2017.

10. Peedikayil, F. C. "Antibiotics: Use and misuse in pediatric dentistry." *Journal of Indian Society of Pedodontics and Preventive Dentistry* 29.4 (2011): 282.

Lake Superior Quality Innovation Network serves Michigan, Minnesota, and Wisconsin, under the Centers for Medicare & Medicaid Services Quality Improvement Organization Program.

www.lsqin.org | Follow us on social media @LakeSuperiorQIN

This material was prepared by Lake Superior Quality Innovation Network, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The materials do not necessarily reflect CMS policy. 11SOW-MI/MN/WI-C310-17-66 111717