

Get Smart: Know When Antibiotics Work

Recommended readings

There are numerous articles about antibiotic resistance, appropriate antibiotic use, and other related issues. However, the Get Smart: Know When Antibiotics Work campaign has developed an abbreviated list of recommended readings to introduce people to the topic of appropriate antibiotic use.

CDC Antibiotic Resistance Efforts

Emmer CL, Besser RE: Combating antimicrobial resistance: intervention programs to promote appropriate antibiotic use. *Infect Med* 19:160-173, 2002.

Interagency Task Force on Antimicrobial Resistance: A public health action plan to combat antimicrobial resistance. Available at <http://www.cdc.gov/drugresistance/actionplan/html/index.htm>. Accessed June 22, 2004.

Friedman, CR, Whitney, CG: It's time for a change in practice: Reducing antibiotic use can alter antibiotic resistance. *The Journal of Infectious Diseases* 197:1082-1083, 2008.

Stephenson J: CDC campaign targets antimicrobial resistance in hospitals. *JAMA* 287:2351-2352, 2002.

Weissman J, Besser RE: Promoting appropriate antibiotic use for pediatric patients: a social ecological framework. *Sem Pediat Infect Dis* 15:41-51, 2004.

Whitney CG, Farley MM, Hadler J, et al: Decline in invasive Pneumococcal disease after introduction of protein-polysaccharide conjugate vaccine. *New Engl J Med* 348:1737-1746, 2003.

Antibiotic Use and Resistance

Bronzwaer SLAM, Cars O, Buchholz U, et al: A European study on the relationships between antimicrobial use and antimicrobial resistance. *Emerg Infect Dis* 8:278-282, 2002.

Infectious Diseases Society of America: Bad bugs, no drugs: As antibiotic discovery stagnates...a public health crisis brews. Available at <http://www.idsociety.org/Template.cfm?Section=Antimicrobials&Template=/ContentManagement/ContentDisplay.cfm&ContentID=9718>. Accessed July 22, 2004.

Levin BR: Minimizing potential resistance: a population dynamics view. *Clin Infect Dis* 33:S161-S169, 2001.

Lipsitch M, Samore MH: Antimicrobial use and antimicrobial resistance: a population perspective. *Emerg Infect Dis* 8:347-354, 2002.

McGowan JE: Antimicrobial resistance in hospital organisms and its relationship to antibiotic use. *Rev Infect Dis* 5:1033-1048, 1983.

Reichler MR, Allphin AA, Breiman RF, et al: The spread of multiply resistant *Streptococcus pneumoniae* at a day care center in Ohio. *J Infect Dis* 166:1346-1353, 1992.



Prescribing Data

Besser RE: Antimicrobial prescribing on the United States: good news, bad news. *Annals Int Med* 137:605-606, 2003.

Bauchner H, Besser RE: Promoting the appropriate use of oral antibiotics: there is some very good news. *Pediatrics* 111:668-670, 2003.

Finkelstein JA, Stille C, Nordin J, et al: Reduction in antibiotic use among US children, 1996-2000. *Pediatrics* 112:620-627, 2003.

Gonzales R, Malone DC, Maselli JH, et al: Excessive antibiotic use for acute respiratory infections in the United States. *Clin Infect Dis* 33:757-762, 2001.

Gonzales R, Steiner JF, Sande MA: Antibiotic prescribing for adults with colds, upper respiratory tract infections, and bronchitis by ambulatory care physicians. *JAMA* 278:901-904, 1997.

Linder JA, Bates DW, Lee, GM, Finkelstein JA: Antibiotic treatment of children with sore throat. *JAMA* 294:2315-2322, 2005.

Linder JA, Huang ES, Steinman MA, Gonzales R, Stafford RS: Fluoroquinolone prescribing in the United States: 1995-2002. *Am J Med* 118:259-268, 2005.

Mangione-Smith R, Wong L, Elliott MN, McDonald L, Roski J: Measuring the quality of antibiotic prescribing for upper respiratory infections and bronchitis in 5 US health plans. *Arch Pediatr Adolesc Med* 159:751-757, 2005.

McCaig LF, Besser RE, Hughes JM: Antimicrobial drug prescriptions in ambulatory care settings, United States, 1992-2000. *Emerg Infect Dis* 9:432-437, 2003.

McCaig LF, Besser RE, Hughes JM: Trends in antimicrobial prescribing rates for children and adolescents. *JAMA* 287:3096-3102, 2002.

McCaig LF, Hughes JM: Trends in antimicrobial drug prescribing among office-based physicians in the United States. *JAMA* 273:214-219, 1995.

Nash DR, Harman J, Wald ER et al: Antibiotic prescribing by primary care physicians for children with upper respiratory tract infections. *Arch Pediatr Adol Med* 156: 1114-1119, 2002.

Nyquist AC, Gonzales R, Steiner JF, et al: Antibiotic prescribing for children with colds, upper respiratory tract infections, and bronchitis. *JAMA* 279:875-877, 1998.

Pichichero ME: Dynamics of antibiotic prescribing for children. *JAMA* 287:3133-3135, 2002.

Steinman MA, Gonzales R, Linder JA, et al: Changing use of antibiotics in community-based outpatient practice, 1991-1999. *Annals Int Med* 138:525-534, 2003.

Steinman MA, Landefeld CS, Gonzales R: Predictors of broad-spectrum antibiotic prescribing for acute respiratory tract infections in adult primary care. *JAMA* 289:719-725, 2003.

Knowledge, Attitude, and Practice Studies

Avorn J, Solomon DH: Cultural and economic factors that (mis)shape antibiotic use: the nonpharmacologic basis of therapeutics. *Annals Int Med* 133:128-135, 2000.



Barden LS, Dowell SF, Schwartz B, et al: Current attitudes regarding use of antimicrobial agents: results from physicians' and parents' focus group discussions. *Clin Pediatr* 37:665-672, 1998.

Bauchner H, Pelton SI, Klein JO: Parents, physicians, and antibiotic use. *Pediatrics* 103:395-401, 1999.

Belongia EA, Naimi TS, Gale GM, et al: Antibiotic use and upper respiratory infections: a survey of knowledge, attitudes, and experience in Wisconsin and Minnesota. *Prev Med* 34:346-352, 2002.

Friedman JF, Lee GM, Kleinman KP, Finkelstein JA: Child care center policies and practice for management of ill children. *Ambul Pediatr* 4:455-460, 2004.

Larson E, Lin SX, Gomez-Duarte C: Antibiotic use in Hispanic households, New York City. *Emerg Infect Dis* 9:1096-1102, 2003.

Mangione-Smith R, Elliott MN, Stivers T, et al: Racial/ethnic variation in parent expectations for antibiotics: implications for public health campaign. *Pediatrics* 113:e385-e394, 2004.

Mangione-Smith R, McGlynn EA, Elliott MN, et al: The relationship between perceived parental expectations and pediatrician antimicrobial prescribing behavior. *Pediatrics* 103:711-718, 1999.

Srinivasan A, Song X, Richards A, et al: A survey of knowledge, attitudes, and beliefs of house staff physicians from various specialties concerning antimicrobial use and resistance. *Arch Int Med* 164:1451-1456, 2004.

Stivers T, Mangione-Smith R, Elliott MN, et al: Why do physicians think parents expect antibiotics? What parents report vs what physicians believe. *Fam Prac* 52:140-147, 2003.

Vanden Eng J, Marcus R, Hadler JL, et al: Consumer attitudes and use of antibiotics. *Emerg Infect Dis* 9:1128-1135, 2003.

Interventions

Belongia EA, Knobloch MJ, Kieke BA, Davis JP, Janette C, Besser RE: Impact of statewide program to promote appropriate antimicrobial drug use. *Emerg Infect Dis* 11:912-920, 2005.

Belongia EA, Sullivan BJ, Chyou PH, et al: A community intervention trial to promote judicious antibiotic use and reduce penicillin-resistant *Streptococcus pneumoniae* carriage in children. *Pediatrics* 108:575-583, 2001.

Finkelstein JA, Davis RL, Dowell SF, et al: Reducing antibiotic use in children: a randomized trial in 12 practices. *Pediatrics* 108:1-7, 2001.

Finkelstein JA, Huang SS, Kleinman K, et al: Impact of a 16-community trial to promote judicious antibiotic use in Massachusetts. *Pediatrics* 121:e15-23, 2008.

Gonzales R, Steiner JF, Lum A, et al: Decreasing antibiotic use in ambulatory practice: impact of a multidimensional intervention on the treatment of uncomplicated acute bronchitis in adults. *JAMA* 281:1512-1519, 1999.

Hennessy TW, Petersen KM, Bruden D, et al: Changes in antibiotic-prescribing practices and carriage of penicillin-resistant *Streptococcus pneumoniae*: a controlled intervention trial in rural Alaska. *Clin Infect Dis* 34:1543-1550, 2002.



Kiang KM, Kieke BA, Como-Sabetti K, Lynfield E, Besser RE, Belongia EA: Clinician knowledge and beliefs after statewide program to promote appropriate antimicrobial drug use. *Emerg Infect Dis* 11:904-911, 2005.

Metlay JP, Camargo Jr CA, MacKenzie TD, et al: Randomized trial of a multidimensional educational intervention to improve antibiotic use for adults with acute respiratory infections managed in the emergency department. *Annals of Emergency Medicine*, 50:221-30, 2007.

Perz JF, Craig AS, Coffey CS, et al: Changes in antibiotic prescribing for children after a community-wide campaign. *JAMA* 287:3103-3109, 2002.

Taylor JA, Kwan-Gett TSC, McMahon EM: Effectiveness of an educational intervention in modifying parental attitudes about antibiotic usage in children. *Pediatrics* 111:e548-e555, 2003

Cultural Competency

Korbett KK, Gonzales R, Leeman-Castillo BA, et al: Appropriate antibiotic use: variation in knowledge and awareness by Hispanic ethnicity and language. *Prev Med* 40:162-169, 2005.

Kreuter MW, Lukwago SN, Bucholtz RD, et al: Achieving cultural appropriateness in health promotion programs: targeted and tailored approaches. *Health Educ Behav* 30:133-146, 2003.

Kreuter MW, McClure SM: The role of culture in health communication. *Annu Rev Public Health* 25:439-55, 2004.

Kreuter MW, Oswald DL, Bull FC, et al. Are tailored health education materials always more effective than non-tailored materials? *Health Educ Res* 15:305-315, 2000.

Kreuter MW, Wray RJ: Tailored and targeted health communication: strategies for enhancing information relevance. *Am J Health Behav* 27 Suppl 3:S227-S232, 2003.

Principles/Guidelines

American Academy of Family Physicians, American Academy of Otolaryngology-Head and Neck Surgery, and American Academy of Pediatrics Subcommittee on Otitis Media With Effusion: Otitis media with effusion. *Pediatrics* 113:1412-1429, 2004.

Cooper RJ, Hoffman JR, Bartlett JG, et al: Principles of appropriate antibiotic use for acute pharyngitis in adults: background. *Annals Int Med* 134:509-517, 2001.

Dowell SF, Marcy SM, Phillips WR, et al: Otitis media—principles of judicious use of antimicrobial agents. *Pediatrics* 101:165-171, 1998.

Dowell SF, Marcy SM, Phillips WR, et al: Principles of judicious use of antimicrobial agents for pediatric upper respiratory tract infections. *Pediatrics* 101:163-165, 1998.

Gonzales R, Bartlett JG, Besser RE, et al: Principles of appropriate antibiotic use for treatment of acute respiratory tract infections in adults: background, specific aims, and methods. *Annals Int Med* 134:479-486, 2001.

Gonzales R, Bartlett JG, Besser RE, et al: Principles of appropriate antibiotic use for treatment of nonspecific upper respiratory tract infections in adults: background. *Annals Int Med* 34:490-494, 2001.

Gonzales R, Bartlett JG, Besser RE, et al: Principles of appropriate antibiotic use for treatment of uncomplicated acute bronchitis: background. *Annals Int Med* 134:521-529, 2001.



Hickner JM, Bartlett JG, Besser RE, et al: Principles of appropriate antibiotic use for acute rhinosinusitis in adults: background. *Annals Int Med* 134:498-505, 2001.

Irwin RS, Baumann MH, Bolser DC, et al: Diagnosis and management of cough: ACCP evidence-based clinical practice guidelines. *Chest* 1S-292S, 2006.

O'Brien KL, Dowell SF, Schwartz B, et al: Acute sinusitis--principles of judicious use of antimicrobial agents. *Pediatrics* 101:174-177, 1998.

O'Brien KL, Dowell SF, Schwartz B, et al: Cough illness/bronchitis--principles of judicious use of antimicrobial agents. *Pediatrics* 101:178-181, 1998.

Rosenstein N, Phillips WR, Gerber MA, et al: The common cold--principles of judicious use of antimicrobial agents. *Pediatrics* 101:181-184, 1998.

Schwartz B, Marcy SM, Phillips WR, et al: Pharyngitis--principles of judicious use of antimicrobial agents. *Pediatrics* 101:171-174, 1998.

Sinus and Allergy Health Partnership: Antimicrobial treatment guidelines for acute bacterial rhinosinusitis: Executive summary. *Otolaryngol Head Neck Surg* 130:1-45, 2004.

Subcommittee on Management of Acute Otitis Media: Diagnosis and management of acute otitis media. *Pediatrics* 113:1451-1465, 2004.

Adverse Drug Events

Budnitz, DS, Pollock, DA; Weidenbach, KN et al: National surveillance of emergency department visits for outpatient adverse drug events. *JAMA* 296:1858-1866, 2006.

Shehab, N, Patel, PR, Srinivasan, A, Budnitz, DS: Emergency department visits for antibiotic-associated adverse events. *CID*, 47, 2008.

