NEW YORK STATE Department of Health | Office of Health Insurance Programs
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Tackling the Antibiotic Ask Question:

Be Antibiotic Aware

Key Message 1: *Antibiotic resistance is one of the biggest threats to global health today. Antibiotics should be used at the right dose, for the right duration, and at the right time. Promoting appropriate antibiotic use in routine practice, incorporating delayed prescribing or watchful waiting techniques, and encouraging proper hand washing can all lead to improved patient outcomes and decreased antibiotic use.*

- **Each year in the U.S., at least 2.8 million people are infected with antibiotic-resistant bacteria and at least 35,000 people die as a result.** [1]
- **The time between the discovery of a new drug and the development of resistance to that drug is gradually decreasing.** [2]
- **At least 30% of antibiotic prescriptions in U.S. doctor's offices and emergency departments are unnecessary, based on national guidelines for common conditions.** [2]
- **Up to 50% of antibiotics prescribed in a hospital setting are inappropriate and unnecessary.**[2]

Promoting Appropriate Antibiotic Use in Routine Practice

"A key antibiotic stewardship principle is to use the shortest, most effective length of antibiotic treatment recommended by guidelines"

- CDC principles of appropriate adult antibiotic use[1,2,3]
  - Using the right antibiotic at the right dose, for the right duration and at the right time
- CDC principles of appropriate adult antibiotic use[3,4,5]
- Adult Antibiotic Prescribing Guideline Pocket Guide: https://www.health.ny.gov/publications/1174_11x17.pdf See APPENDIX A
  - Provides guidance for the management of patients presenting with:
    - Acute rhinosinusitis
    - Acute uncomplicated bronchitis
    - Common cold or non-specific upper respiratory tract infection (URI)
    - Pharyngitis
    - Acute uncomplicated cystitis

- Recommend **delayed prescribing or watchful waiting**, when appropriate[6,7]:
    - Ideal for patients presenting with conditions that usually resolve without treatment but who can benefit from antibiotics if the conditions do not improve.
    - **Delayed Prescribing:** Prescribers can provide patients with postdated prescriptions and provide instructions to fill the prescription after a predetermined period or by instructing the patient to call or return to collect a prescription if symptoms worsen or do not improve.
    - **Watchful Waiting:** Prescribers can suggest symptomatic support with a clear plan for follow-up if infection symptoms worsen or do not improve. Examples of symptomatic support include:
        - Rest, drinking extra water or fluids
        - A cool mist vaporizer or saline nasal spray to relieve congestion
        - For sore throats try ice chips, sore throat spray or lozenges
        - Use honey to relieve cough
- A delayed prescribing approach for acute respiratory tract infections combined with instructions for symptom control is effective in decreasing antibiotic use, while not adversely affecting patient satisfaction or symptom duration/severity.[7]
- Asking patients to call, pick up or hold a prescription for a specified time resulted in fewer than 40% of patients receiving antibiotics.[7]

"A 2017 Cochrane review found that when treating respiratory infections such as; sore throat, middle ear infection, cough/bronchitis and the common cold there was no difference between immediate, delayed and no antibiotics for symptomatic relief of fever, pain, feeling unwell, cough and runny nose. When compared to no antibiotics, delayed antibiotics use led to a small reduction in how long pain, fever and cough persisted in people with colds. [8]

Promoting Proper Hand and Respiratory Hygiene [9]

HANDWASHING:

- Essential to prevent the transfer of illnesses and spreading of germs to others
- Regular handwashing is one of the best ways to remove germs, avoid getting sick, and prevent the spread of germs to others
- Hands should be washed with soap and clean running water for at least 15 seconds and includes 5 main steps: wet, lather, scrub, rinse, and dry.
- Helpful handouts for patients can be found on the CDC website: (https://www.cdc.gov/handwashing/fact-sheets.html)

ALCOHOL BASED HAND SANITIZER:[10]

- Option for cleaning hands when there is no visible soiling
- Use an alcohol based sanitizer that contains at least 60% alcohol
- Apply enough product to fully cover hands and rub hands together until hands are dry, which should take about 20 seconds
- Remind patients not to wipe off or rinse hands prior to hand sanitizer drying, as it may not work as effectively

PROPER RESPIRATORY HYGIENE AND COUGH ETIQUETTE CAN PREVENT TRANSMISSION OF RESPIRATORY INFECTIONS:[11]

- To promote proper respiratory hygiene in your office:
  - Provide tissues and no-touch required receptacles for the disposal of the tissues
  - Provide alcohol-based hand rub that is easily accessible to patients in office
  - Offer masks to patients that are consistently coughing
  - Encourage those infected to sit at least three feet away from other persons
  - Consider posting visual posters, alerts, or signs at the entrance of the outpatient facilities
    - These posters should state that persons entering clinics/offices are to inform health care personnel of symptoms of possible respiratory infection upon registration

Benefits of Antibiotic Stewardship:

Antibiotic Stewardship Activities Can:[12,13]

- Improve patient outcomes
  - By reducing the number of unnecessary antibiotic prescriptions the treatment of infections can improve and side effects can be avoided.
- Decrease C. difficile infections
  - Reducing overall antibiotic prescribing in outpatient settings by 10 percent could lower C. difficile infections in the community by 17 percent.
- Decrease antibiotic resistance
  - Preventing and improving antibiotic prescribing could save 37,000 lives from antibiotic-resistant infections over 5 years.
- Decrease costs
  - Inpatient antibiotic stewardship programs have consistently demonstrated annual savings of $200,000 to $400,000 to hospitals and other health care facilities.

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Adult Outpatient Treatment Recommendations 2017: Summary of Guidelines[1]

Acute rhinosinusitis[2-4]

90-98% of cases are viral

Antibiotics may NOT help even if cause is bacterial

Diagnosis	Management
Symptoms of acute **bacterial** rhinosinusitis are: • Severe (>3-4 days), fever ≥39°C (102.2°F) and purulent nasal discharge or facial pain; • Persistent without improvement, such as nasal discharge or daytime cough for at least 10 days beyond the onset of viral upper respiratory symptoms; or • "Double worsening", such as worsening or new onset fever, daytime cough, headache or nasal discharge within 10 days after initial improvement of a viral URI Sinus radiographs are NOT routinely recommended.	If bacterial, watchful waiting encouraged for uncomplicated infections with reliable follow-up. Evidence-based supportive care: • Saline nasal irrigation • Intranasal glucocorticoids • Oral decongestants when there is Eustachian tube dysfunction • OTC analgesics and antipyretics Macrolides (such as azithromycin) are NOT recommended due to high levels of *S. pneumoniae* antibiotic resistance (~40%). If mild/moderate and no risk factors for resistance: • amoxicillin/clavulanate 500/125 mg PO 3x/day or 875/125 mg PO 2x/day x 5-10 days (Some experts recommend amoxicillin.) If severe disease or risk factors for resistance (>65 yo, antibiotics within 30 days, recent hosp, ≥10% penicillin non-susceptible *S. pneumoniae*, immunocompromised): • amoxicillin/clavulanate 2 g/125 mg PO 2x/day x 7-10 days. Penicillin-allergic patients: • doxycycline 100 mg PO 2x/day or 200 mg PO 1x/day x5-10 days See references for additional treatment options, including re-treatment after initial treatment failure, and other important information.

Acute uncomplicated bronchitis[5-7]

Viruses cause >90% of acute bronchitis

Cough typically lasts 5 days to 3 weeks, up to 6 weeks

Diagnosis	Management
Focus on ruling out pneumonia, which is rare among otherwise healthy adults without abnormal vital signs (heart rate >100 beats/min, respiratory rate >24 breaths/min, or oral temperature >38 °C (100.4°F)) and abnormal lung examination (focal consolidation, egophony, fremitus). Colored sputum does NOT indicate bacterial infection. For most cases, chest radiography is NOT indicated. Promote appropriate antibiotic use by labeling acute bronchitis as a 'chest cold' or 'viral upper respiratory infection'.	Routine treatment of uncomplicated acute bronchitis with antibiotics is NOT recommended, regardless of cough duration. Patients may benefit from symptomatic therapy: • Cough suppressants • Expectorants • First-generation antihistamines • Decongestants Consider pertussis especially with cough paroxysms, post-tussive emesis, or during known outbreaks. See references for additional treatment options, and other important information..

Common cold or non-specific upper respiratory tract infection (URI)[8,9]

Most adults get 2-4 colds annually

Management
Antibiotic treatment is NOT recommended for non-specific URIs. • OTC analgesics can be given to relieve symptoms • Decongestants combined with a first-generation antihistamine may provide short-term relief of nasal symptoms and cough. • Evidence does NOT support antihistamines (as monotherapy), intranasal corticosteroids, and nasal saline irrigation as effective treatments for cold symptom relief. • Providers and patients must weigh the benefits and harms of symptomatic therapy.

Pharyngitis[7, 10, 11]

Group A Streptococcus (GAS) is the only common indication for antibiotics

Only 5-10% cases in adults are caused by GAS

Diagnosis	Management
Clinical features alone do NOT distinguish between GAS and viral pharyngitis; a rapid antigen detection test is necessary to establish a GAS pharyngitis diagnosis. Adults with sore throat and 2 (3 if ≥45 yo) or more of the following features should get a rapid test: 1. Lack of cough 2. Tonsillar exudates 3. History of fever 4. Swollen and tender anterior cervical lymphadenopathy Throat cultures after negative rapid test are NOT routinely recommended for adults.	Antibiotic treatment is NOT recommended for patients with negative rapid test results. GAS resistance to clindamycin and azithromycin is increasingly common. First-line therapy for GAS: • penicillin V 250 mg PO 4x/day or 500 mg PO 2x/day x10 days • amoxicillin 1 g PO 1x/day or 500 mg 2x/day x10 days Non-type I penicillin allergy: • cephalexin 500 mg PO 2x/day x10 days • cefadroxil 1 g PO 1x/day x10 days • clindamycin 300 mg PO 3x/day x10 days • azithromycin 500 mg PO 1x/day x5 days • clarithromycin 250 mg PO 2x/day x10 days Immediate type I penicillin allergy: • clindamycin, clarithromycin, or azithromycin as dosed above See references for additional treatment options and other important information.

Acute uncomplicated cystitis[12, 13, 14]

Diagnosis	Management
Nitrites and leukocyte esterase are the most accurate indicators of acute uncomplicated cystitis Antibiotic treatment of asymptomatic bacteriuria is NOT recommended for healthy adults EXCEPT: • pregnant women • before some urological procedures	First-line therapy in healthy non-pregnant, premenopausal women: • nitrofurantoin 100 mg PO 2x/day x5 days (nitrofurantoin is NOT recommended if suspicious for early pyelonephritis) • TMP-SMX 160/800 mg PO (one DS tablet) 2x/day x3 days (where local resistance is <20%) • fosfomycin 3g PO x1 dose Reserve fluoroquinolones (e.g. ciprofloxacin) for situations in which other agents are NOT appropriate. See references for additional treatment options and other important information especially if early pyelonephritis is suspected.

Adult Outpatient References

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