NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

State Update: Antimicrobial Stewardship (AS)

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Agenda

- Public Health's Role in AS
  - CDC's Core Elements of AS
- NC Initiatives
  - US Antibiotic Awareness Week (USAAW)
  - AS Workgroup
    - Antibiotic Prescribing Guidelines
    - AS Pledge
- Future Goals of AS Team

Public Health’s Role in AS

Public Health's Role in AS

- Act in an advisory capacity
- Surveillance
- Implementation of programs
- Convening stakeholders
- Education

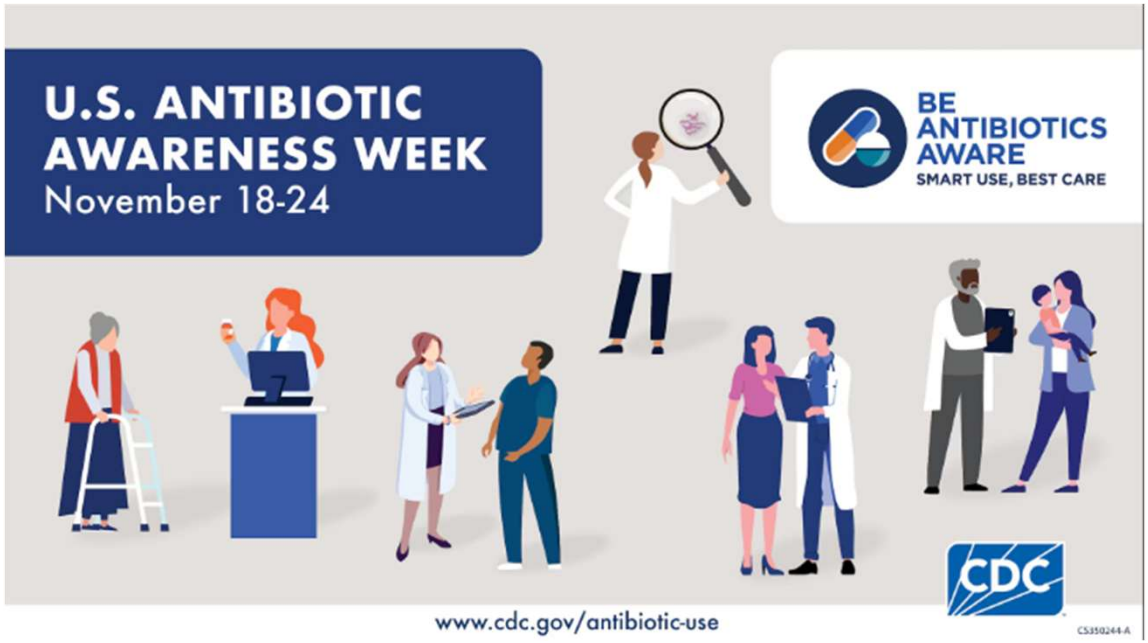
CDC's Core Elements of AS

- Core Elements of Antibiotic Stewardship for Health Departments
- Core Elements of Hospital Antibiotic Stewardship Programs
- Priorities for Hospital Core Element Implementation
- Implementation of Antibiotic Stewardship Core Elements at Small and Critical Access Hospitals
- Core Elements of Outpatient Antibiotic Stewardship
- Antibiotic Stewardship in Outpatient Telemedicine
- Core Elements of Antibiotic Stewardship for Nursing Homes
- Core Elements of Human Antibiotic Stewardship Programs in Resource-Limited Settings

NC Initiatives

USAAW

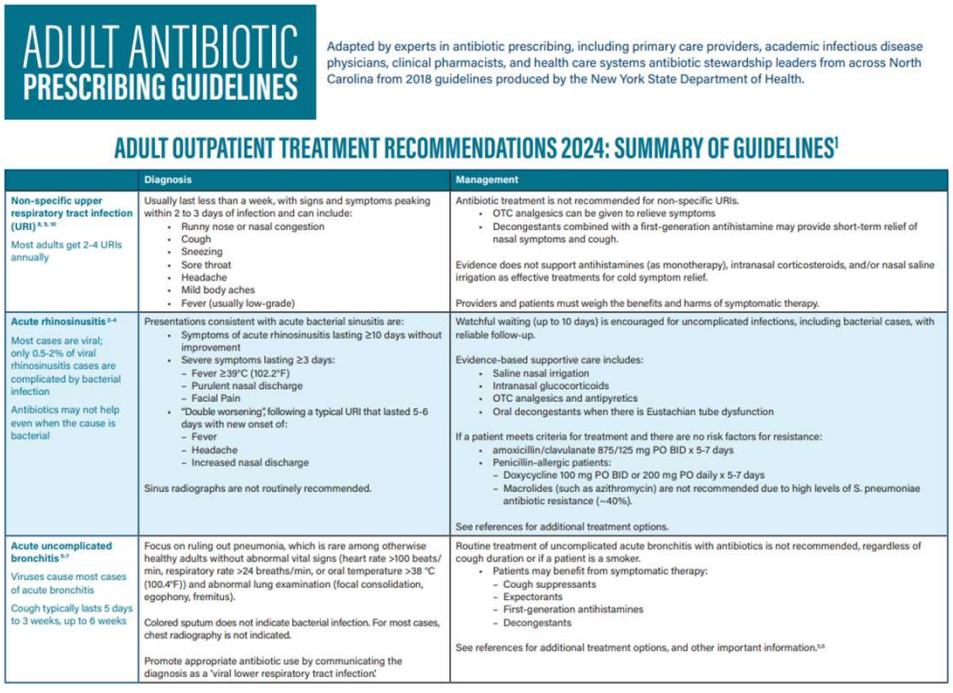
- Governor's proclamation
- Social media posts
- Educational event
  - Conference
  - Webinar
  - Summit



AS Workgroup

- **Invited members are AS experts from across NC**
- **Advise on yearly goals for the NC AS Program**
- **Members often partake in other activities as they arise like a conference planning committee or revision of documents.**

Adult and Peds Clinical Prescribing Guidelines

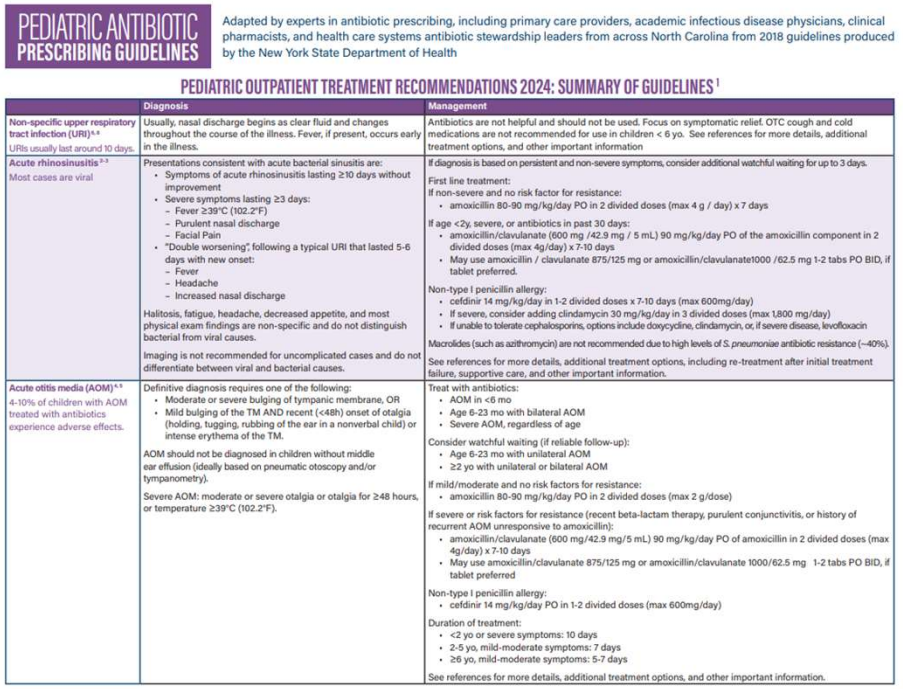


ADULT ANTIBIOTIC PRESCRIBING GUIDELINES

Adapted by experts in antibiotic prescribing, including primary care providers, academic infectious disease physicians, clinical pharmacists, and health care systems antibiotic stewardship leaders from across North Carolina from 2018 guidelines produced by the New York State Department of Health.

ADULT OUTPATIENT TREATMENT RECOMMENDATIONS 2024: SUMMARY OF GUIDELINES[1]

	Diagnosis	Management
Non-specific upper respiratory tract infection (URI)[4, 8, 10] Most adults get 2-4 URIs annually	Usually last less than a week, with signs and symptoms peaking within 2 to 3 days of infection and can include: • Runny nose or nasal congestion • Cough • Sneezing • Sore throat • Headache • Mild body aches • Fever (usually low-grade)	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/or nasal saline irrigation as effective treatments for cold symptom relief. Providers and patients must weigh the benefits and harms of symptomatic therapy.
Acute rhinosinusitis[2-4] Most cases are viral; only 0.5-2% of viral rhinosinusitis cases are complicated by bacterial infection Antibiotics may not help even when the cause is bacterial	Presentations consistent with acute bacterial sinusitis are: • Symptoms of acute rhinosinusitis lasting ≥10 days without improvement • Severe symptoms lasting ≥3 days: – Fever ≥39°C (102.2°F) – Purulent nasal discharge – Facial Pain • "Double worsening", following a typical URI that lasted 5-6 days with new onset of: – Fever – Headache – Increased nasal discharge Sinus radiographs are not routinely recommended.	Watchful waiting (up to 10 days) is encouraged for uncomplicated infections, including bacterial cases, with reliable follow-up. Evidence-based supportive care includes: • Saline nasal irrigation • Intranasal glucocorticoids • OTC analgesics and antipyretics • Oral decongestants when there is Eustachian tube dysfunction If a patient meets criteria for treatment and there are no risk factors for resistance: • amoxicillin/clavulanate 875/125 mg PO BID x 5-7 days • Penicillin-allergic patients: – Doxycycline 100 mg PO BID or 200 mg PO daily x 5-7 days – Macrolides (such as azithromycin) are not recommended due to high levels of S. pneumoniae antibiotic resistance (~40%). See references for additional treatment options.
Acute uncomplicated bronchitis[5-7] Viruses cause most cases of acute bronchitis Cough typically lasts 5 days to 3 weeks, up to 6 weeks	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 communicating the diagnosis as a 'viral lower respiratory tract infection'	Routine treatment of uncomplicated acute bronchitis with antibiotics is not recommended, regardless of cough duration or if a patient is a smoker. • Patients may benefit from symptomatic therapy: – Cough suppressants – Expectorants – First-generation antihistamines – Decongestants See references for additional treatment options, and other important information.[5,6]



PEDIATRIC ANTIBIOTIC PRESCRIBING GUIDELINES

Adapted by experts in antibiotic prescribing, including primary care providers, academic infectious disease physicians, clinical pharmacists, and health care systems antibiotic stewardship leaders from across North Carolina from 2018 guidelines produced by the New York State Department of Health

PEDIATRIC OUTPATIENT TREATMENT RECOMMENDATIONS 2024: SUMMARY OF GUIDELINES[1]

	Diagnosis	Management
Non-specific upper respiratory tract infection (URI)[4, 8] URIs usually last around 10 days.	Usually, nasal discharge begins as clear fluid and changes throughout the course of the illness. Fever, if present, occurs early in the illness.	Antibiotics are not helpful and should not be used. Focus on symptomatic relief. OTC cough and cold medications are not recommended for use in children < 6 yo. See references for more details, additional treatment options, and other important information
Acute rhinosinusitis[2-3] Most cases are viral	Presentations consistent with acute bacterial sinusitis are: • Symptoms of acute rhinosinusitis lasting ≥10 days without improvement • Severe symptoms lasting ≥3 days: – Fever ≥39°C (102.2°F) – Purulent nasal discharge – Facial Pain • "Double worsening", following a typical URI that lasted 5-6 days with new onset: – Fever – Headache – Increased nasal discharge Halitosis, fatigue, headache, decreased appetite, and most physical exam findings are non-specific and do not distinguish bacterial from viral causes. Imaging is not recommended for uncomplicated cases and do not differentiate between viral and bacterial causes.	If diagnosis is based on persistent and non-severe symptoms, consider additional watchful waiting for up to 3 days. First line treatment: If non-severe and no risk factor for resistance: • amoxicillin 80-90 mg/kg/day PO in 2 divided doses (max 4 g / day) x 7 days If age <2y, severe, or antibiotics in past 30 days: • amoxicillin/clavulanate (600 mg /42.9 mg / 5 mL) 90 mg/kg/day PO of the amoxicillin component in 2 divided doses (max 4g/day) x 7-10 days • May use amoxicillin / clavulanate 875/125 mg or amoxicillin/clavulanate1000 /62.5 mg 1-2 tabs PO BID, if tablet preferred. Non-type I penicillin allergy: • cefdinir 14 mg/kg/day in 1-2 divided doses x 7-10 days (max 600mg/day) • If severe, consider adding clindamycin 30 mg/kg/day in 3 divided doses (max 1,800 mg/day) • If unable to tolerate cephalosporins, options include doxycycline, clindamycin, or, if severe disease, levofloxacin Macrolides (such as azithromycin) are not recommended due to high levels of *S. pneumoniae* antibiotic resistance (~40%). See references for more details, additional treatment options, including re-treatment after initial treatment failure, supportive care, and other important information.
Acute otitis media (AOM)[4, 9] 4-10% of children with AOM treated with antibiotics experience adverse effects.	Definitive diagnosis requires one of the following: • Moderate or severe bulging of tympanic membrane, OR • Mild bulging of the TM AND recent (<48h) onset of otalgia (holding, tugging, rubbing of the ear in a nonverbal child) or intense erythema of the TM. AOM should not be diagnosed in children without middle ear effusion (ideally based on pneumatic otoscopy and/or tympanometry). Severe AOM: moderate or severe otalgia or otalgia for ≥48 hours, or temperature ≥39°C (102.2°F).	Treat with antibiotics: • AOM in <6 mo • Age 6-23 mo with bilateral AOM • Severe AOM, regardless of age Consider watchful waiting (if reliable follow-up): • Age 6-23 mo with unilateral AOM • ≥2 yo with unilateral or bilateral AOM If mild/moderate and no risk factors for resistance: • amoxicillin 80-90 mg/kg/day PO in 2 divided doses (max 2 g/dose) If severe or risk factors for resistance (recent beta-lactam therapy, purulent conjunctivitis, or history of recurrent AOM unresponsive to amoxicillin): • amoxicillin/clavulanate (600 mg/42.9 mg/5 mL) 90 mg/kg/day PO of amoxicillin in 2 divided doses (max 4g/day) x 7-10 days • May use amoxicillin/clavulanate 875/125 mg or amoxicillin/clavulanate 1000/62.5 mg 1-2 tabs PO BID, if tablet preferred Non-type I penicillin allergy: • cefdinir 14 mg/kg/day PO in 1-2 divided doses (max 600mg/day) Duration of treatment: • <2 yo or severe symptoms: 10 days • 2-5 yo, mild-moderate symptoms: 7 days • ≥6 yo, mild-moderate symptoms: 5-7 days See references for more details, additional treatment options, and other important information.

Adult Guidelines	Pediatric Guidelines
Adult Antibiotic Prescribing Guidelines	Pediatric Antibiotic Prescribing Guidelines
Adult Antibiotic Prescribing Guidelines Brochure	Pediatric Antibiotic Prescribing Guidelines Brochure
Adult Antibiotic Prescribing Guidelines (Mobile-Friendly)	Pediatric Antibiotic Prescribing Guidelines (Mobile-Friendly)

Other Educational Opportunities

- **NC CLASP / SPICE**
  - **Conferences**
  - **Webinars**
  - **Site visits**

Future Goals

- **Obtain a DUA with NC Division of Health Benefits to analyze Medicaid antibiotic prescribing data**
- **Create more opportunities for partnership and education around stewardship**

Antibiotic Stewardship Resources

- Antibiotic Stewardship Resources | Division of Public Health
- Take NC's Antibiotic Stewardship Pledge | Division of Public Health

Thank you!