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 Payers Summit
  - Other Education Opportunities
- Future Goals of AS Team
- How to use Antibiotic Prescribing Guidelines
  - Dr. Zach Willis

Public Health’s Role in AS

Public Health's Role in AS

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

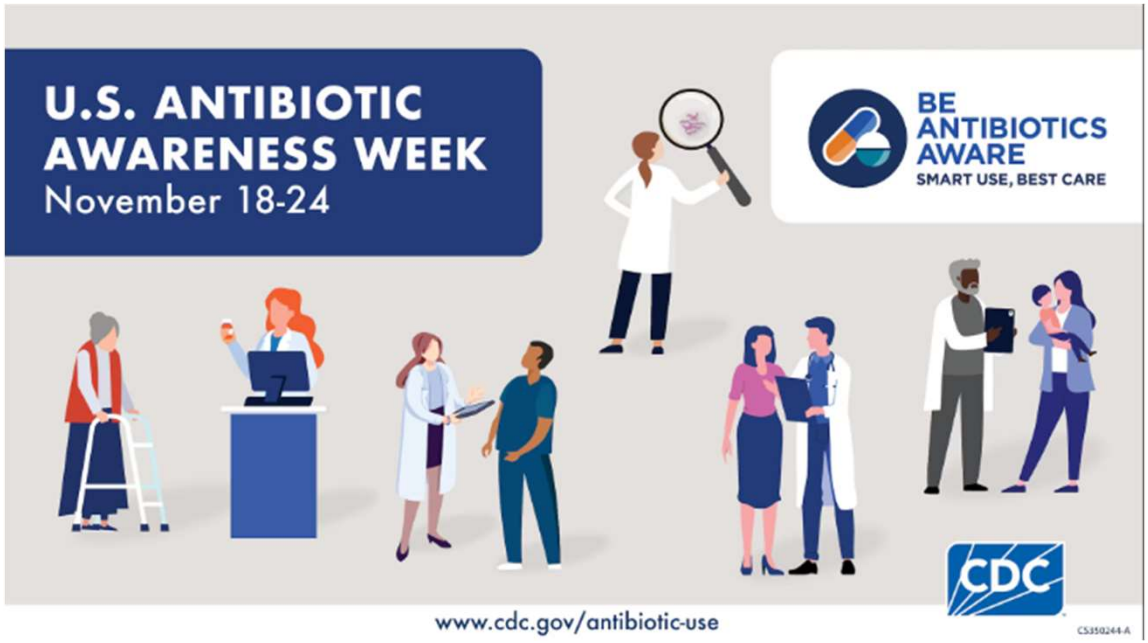
CDC's Core Elements of AS

- 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 Antibiotic Prescribing Guidelines
Pediatric Antibiotic Prescribing Guidelines

AS Payers Summit

- **Key Themes**
  - Challenges to prioritizing AS activities
    - Financial
    - Challenges within medical encounter
    - Lack of capacity and/or time
  - Payer considerations for implementing AS programming
  - Provider considerations for implementing AS programming
  - Data for provider feedback
  - Partnerships

PARTICIPATING ORGANIZATIONS	
•Advocate Health	•Johnston County Public Health Dept.
•Aetna	•NC DHHS, Division of Health Benefits
•Alliant Health Solutions	•NC DHHS, Division of Public Health
•AmeriHealth Caritas North Carolina	•Novant Health
•Carolina Complete Health	•Pew Charitable Trusts
•CDC	•UNC Health
•Cigna Healthcare	•UNC School of Medicine
•Duke Antimicrobial Stewardship Outreach Network (DASON)	•UNC Children's Hospital
•Duke Health	•United Healthcare

<u>Presenters:</u>

•Dr. Sarah Kabbani, Director, CDC Office of Antimicrobial Stewardship

•Dr. Michael Smith, Professor of Pediatrics, Duke University School of Medicine

•Dr. Kelly Flett, Ambulatory Antibiotic Stewardship Program, Novant Health

Antimicrobial Stewardship (AS) Payer Summit Post-Conference Summary Report

KEY INSIGHTS

An Antimicrobial Stewardship (AS) Summit was held on Nov. 19, 2024, for North Carolina (NC) Medical Payers; Medical & Public Health Experts; and AS Leaders from the Centers for Disease Control and Prevention (CDC) & Pew Charitable Trusts. Insights from the Summit about AS in NC outpatient settings include:

- Successful AS promotion includes strategies that occur at points of care to influence providers' prescribing in real time, and strategies that incorporate feedback to providers about their prescribing habits.
- Ideal feedback would be given to providers on a regular basis; would include AS-related prescribing data synthesized from all payers into one "scorecard" or "report card;" and would allow providers to review their own prescribing practices and compare their practices with other NC providers.
- Providers may be encouraged to overcome anticipated challenges and to support outpatient AS activities if reimbursements are tied to meeting specific AS goals.
- Uniquely tailored education and engagement aimed at changing patient expectations for prescriptions and promoting a "culture" of AS acceptance within communities are needed.
- Payers may be motivated to adopt AS activities with state emphasis on AS as an area of Quality Improvement.
- To incorporate AS with other Quality Improvement (QI) priorities, payers will need to focus on a few AS-related metrics, including Healthcare Effectiveness Data and Information Set (HEDIS) measures, for ongoing tracking.
- State agencies can support AS by championing AS activities to encourage collective buy-in; aggregating and distributing AS-related data to providers for feedback; and facilitating AS-centered research and scholarly collaborations.

Payer Considerations for Implementing AS Programming

Prioritizing AS Initiatives

Value Determination – As described previously, payers struggle with finding a financial imperative to justify large resource allocations for AS activities. The state may need to create value by linking reimbursement to meeting AS goals and by aligning statewide AS priorities to encourage implementation of AS initiatives. Payers reiterated that they could find capacity to address any priority if defined and galvanized by NC DHHS.

Opportunities: Value can be created by linking medical reimbursements to meeting AS goals and/or by NC state agencies championing AS practices.

"If it's a priority for the department, then we have capacity... In state fiscal year '24, outpatient antibiotic prescriptions were about 0.1-0.3% of our overall total medicine expense. Not much. So when you are talking from an incentive perspective, those are relatively small dollars for us to say, 'Oh. We're going to spend a bunch of resources on this.' However, if [state agencies] say, 'Guess what? This is going in your contract,' all of a sudden, we're going to have capacity, and it's going to be a priority."

- Physician and Insurance Chief Medical Officer

Determining Intervention Priorities

Where to Intervene – There are questions about whether prescriber-level initiatives should focus on the point of clinical decision-making, by implementing algorithms for a particular International Classification of Diseases (ICD)-10 code, or "on the back-end," in the form of

provider feedback with or without an education component. One initiative might be linked to an EMR that initiates a real-time series of steps or flags if a particular ICD-10 code has been

Data for Prescriber Feedback

Including Metrics

How to Prioritize Metrics – Ideal metrics would provide robust insights while requiring relatively low effort to track. Many metrics are already being tracked for other performance targets, such as chronic disease management. Participants expressed concern that adding many more will impede a provider or system's ability to track any metric consistently or well. Commercial payers are moved by the state's priorities for metric tracking. Goal prioritization must weigh national guidelines, state-based measures, current incentives, costs and availability of funding to track, leadership preferences, and other considerations.

EXAMPLE METRICS FOR AS TRACKING

- **Established HEDIS measures**
- **Encounter Details**
  - Diagnosis
  - Patient Age
  - Service Type
- **Prescription Information**
  - Type of Medication/Antibiotic
  - Dose and Duration
- **Appropriateness of Antibiotic Prescribed**
- **Prescriber Characteristics**
  - Geographic Region of Practice
  - Area of Clinical Specialty
  - Credentialing Type
- **Patient Satisfaction**

"At the highest level, we look at state priorities [and] where we are from a HEDIS perspective rating, especially those metrics that are going to impact our health plan accreditation rating. We look at things from a cost perspective: 'What do we think are metrics that are associated with drivers of controllable expense?' We put things like...where we want to focus from a population perspective. We kind of mush all of those things together and we try to have a metric portfolio of around eight to ten measures. I've worked with payers that had 30 measures. That just tells me you don't know how to prioritize."

- Physician and Insurance Chief Medical Officer

Other Educational Opportunities

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

Future Goals

- Obtain a DUA to analyze AUR module in NHSN
- Obtain a DUA with NC Division of Health Benefits to analyze Medicaid and Medicare antibiotic prescribing data
- Create an annual AS Data Report
- Investigate antibiotic susceptibility rates over time
- Create more opportunities for partnership and education around stewardship

Antibiotic Prescribing Guidelines in Practice

Zach Willis, MD, MPH
Associate Professor of Pediatrics, Pediatric Infectious Diseases | UNC School of Medicine
Pediatric Director, Carolina Antimicrobial Stewardship Program | UNC Medical Center

Antibiotic Prescribing Guidelines

- **NC DPH: Communicable Disease Info for Healthcare Providers**
  - **Under Antibiotic Stewardship**
    - Adult Antibiotic Prescribing Guidelines
    - Pediatric Antibiotic Prescribing Guidelines

Thank you!