

Acute Respiratory Tract Infections



A VA Clinician's Guide to Identification and Management of Acute Respiratory Tract Infections (ARI) Without Overusing Antibiotics (2017)

VA



U.S. Department of Veterans Affairs

Veterans Health Administration
PBM Academic Detailing Service

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Attention Healthcare Provider:

These recommendations are intended for treatment of immunocompetent patients with uncomplicated acute respiratory tract infections (ARI), and do not pertain to patients with Acute Exacerbation of Chronic Bronchitis (AECB), pneumonia, or other severe illnesses. Individual patient-specific characteristics should be considered when determining appropriate therapy.

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Antibiotics in the United States: Increasing Use, Increasing Complications

The majority of antibiotics used in the United States are prescribed in ambulatory care settings.¹

Acute upper respiratory infections (ARI) account for the largest single block of diagnoses for which antibiotics are prescribed.

Figure 1. Unnecessary prescribing of antibiotics²

All Outpatient Antibiotic Prescriptions



Antibiotic Prescriptions for ARI

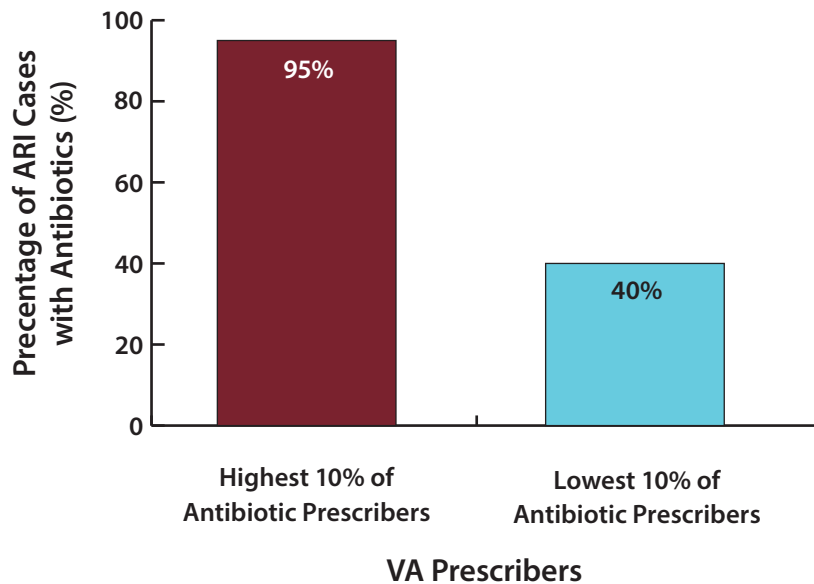


In 2012, a VA-wide analysis of uncomplicated ARI encounters indicated that antibiotics were prescribed in 69% of visits.³

Macrolides (e.g., azithromycin) were the primary class of antimicrobials prescribed.

Macrolides are NOT recommended as first or second line therapy for ARIs.⁴

Figure 2. Variations in antibiotic prescribing for ARI among VA prescribers³



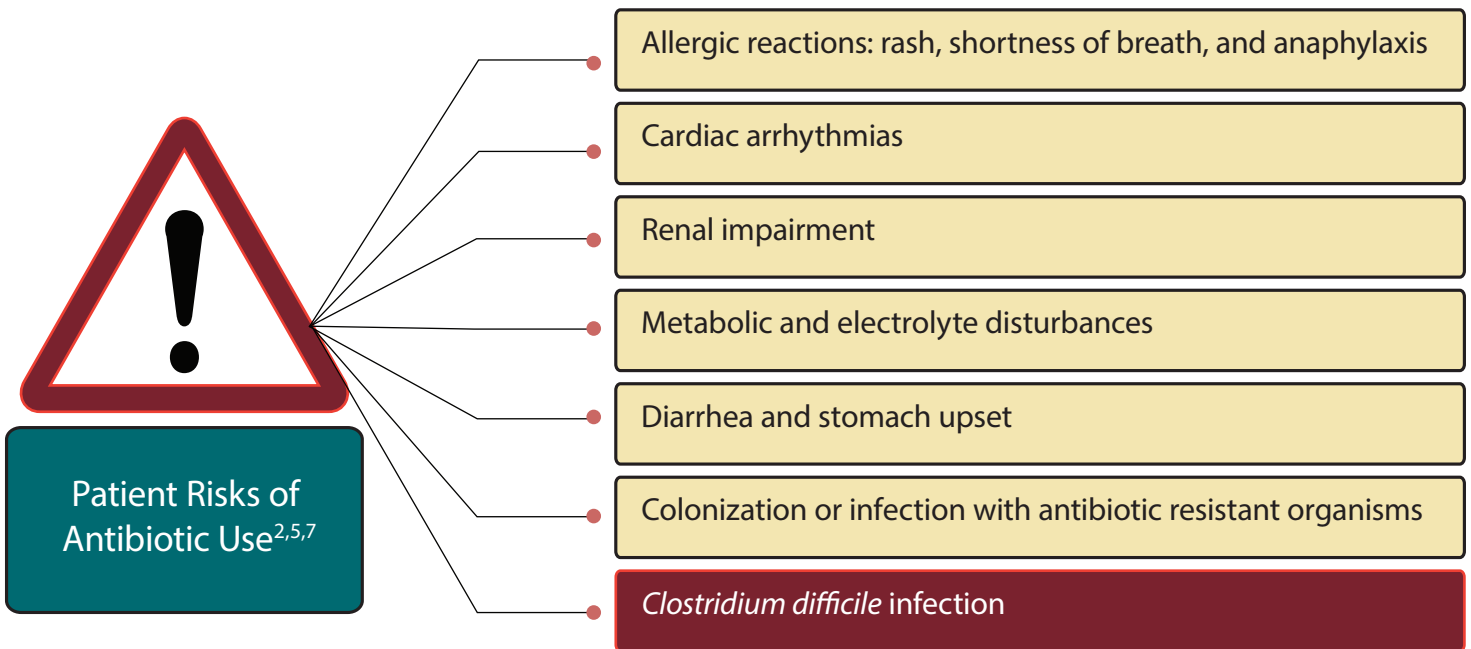
Adapted from a VA analysis of over 2,500 providers who treated 500,000 patients with ARIs. The highest 10% of VA antibiotic prescribers wrote for antibiotics in 95% of cases, the lowest 10% prescribed antibiotics in 40% of cases.

Unnecessary prescribing causes downstream consequences



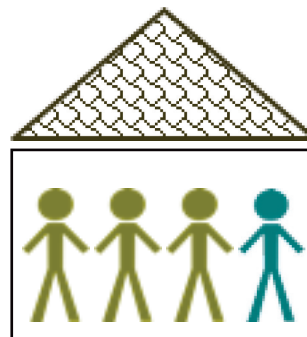
Did you know?
Antibiotics are among the most common drug classes involved in patients presenting to the ED with adverse effects.⁵

Figure 3. Risks of antibiotic use⁶



In 2011, there were an estimated 453,000 cases of *C. difficile* infections and 29,000 related deaths.⁷

Approximately 75% of *C. difficile* cases occur outside of the hospital setting.⁷



Use antibiotics sparingly in the treatment of ARIs to prevent adverse events.

Make a Specific ARI Diagnosis to Drive Appropriate Care

There are approximately 40 million outpatient antibiotic prescriptions a year for ARI.⁴ It is important to make a specific ARI diagnosis in order to improve therapeutic choices.

Table 1. Most ARIs are viral with no need for an antibiotic^{4, 9-11}

Condition	Usual Cause		Antibiotic Treatment Recommendations
	Viruses	Bacteria	
Pharyngitis	✓✓✓✓	✓	Rarely*
Sinusitis	✓✓✓	✓✓	Sometimes*
Uncomplicated bronchitis	✓✓✓✓✓		Never
Common Cold	✓✓✓✓✓		Never

*Antibiotic therapy may be warranted based on clinical diagnostic criteria located in Table 2.

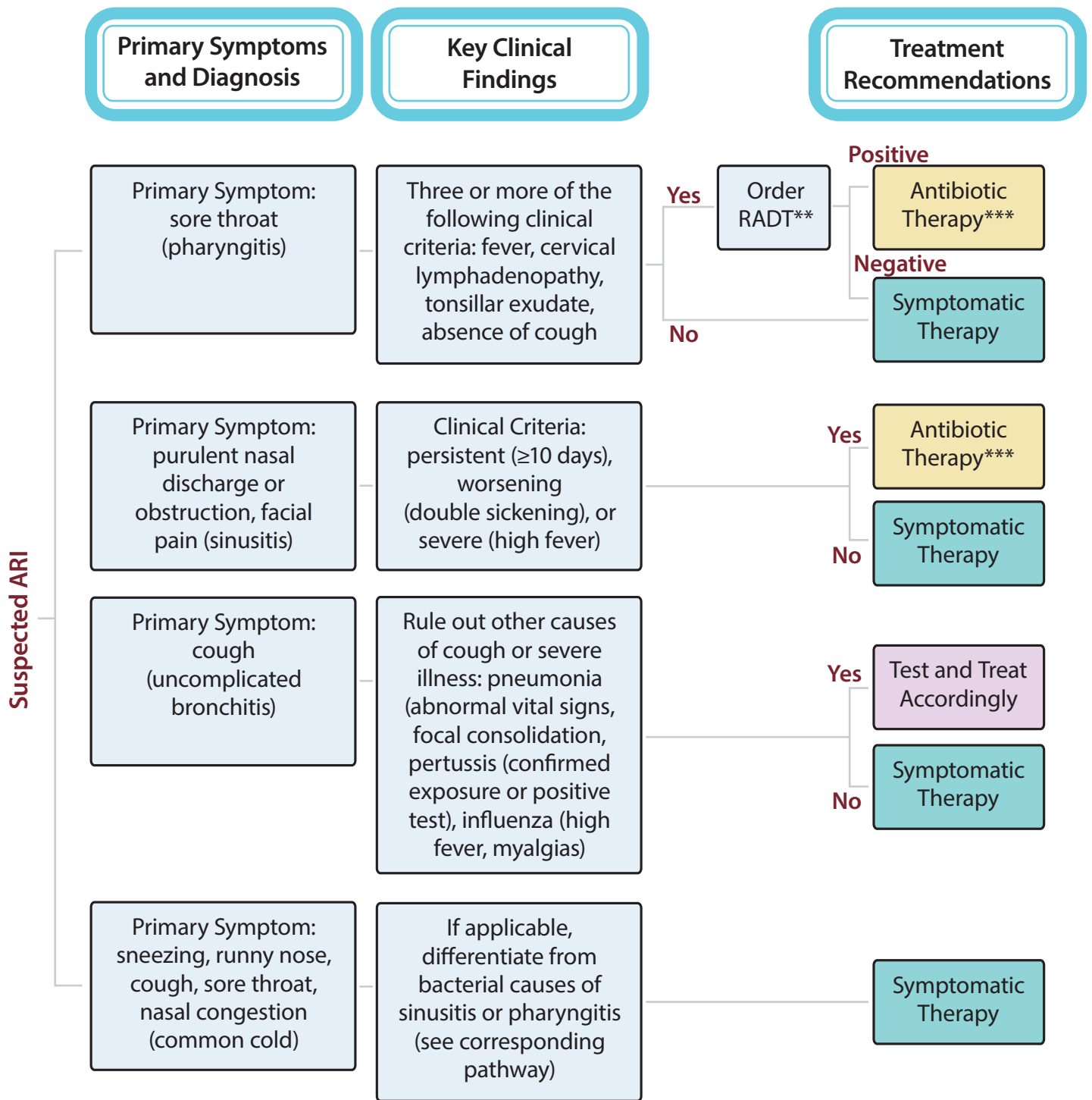
Table 2. Clinical diagnostic criteria and treatment considerations for ARI^{*4,9-11}

Diagnosis	Key Symptoms	Key Clinical Findings	Antibiotic Treatment Recommendations
Pharyngitis	Sore throat with or without other upper respiratory tract symptoms	Test for Group A <i>Streptococcus</i> if three of the following are present: <ul style="list-style-type: none"> Fever Swollen cervical lymphadenopathy Tonsillar exudate Absence of cough 	Antibiotics recommended only if Group A <i>Streptococcus</i> test or culture is positive
Sinusitis	Nasal obstruction, anterior or posterior purulent nasal discharge, facial pain, cough, decreased sense of smell	Criteria for Bacterial Sinusitis: Persistent and not improving (≥10 days) Worsening (new onset fever, nasal discharge or cough after initial improvement or “double- sickening”) Severe symptoms or febrile (>102°F) with purulent nasal discharge or pain lasting ≥3 days	Antibiotics may be indicated if clinical criteria are met for bacterial sinusitis
Uncomplicated bronchitis	Cough, possible phlegm production	Differentiate from severe illness: pneumonia (abnormal vital signs, focal lung consolidation), pertussis (confirmed exposure or positive test), influenza (high fever, myalgias)	Antibiotics not recommended; Cough duration or change in sputum color is not indicative of bacterial infection
Common cold	Runny nose, cough, sore throat, sneezing, nasal congestion	Differentiate from acute bacterial sinusitis	Antibiotics not recommended for any patient

*A diagnosis of influenza should be considered in all patients during influenza season

Make a specific clinical ARI diagnosis to drive appropriate care.

Figure 4. ARI Clinical Diagnostic Criteria and Treatment Algorithm^{4,9-11}



*A diagnosis of influenza should be considered in all patients during influenza season.

**RADT: Rapid Antigen Detection Test; If RADT is not available locally, consider antibiotic therapy for younger adults meeting ≥3 Centor criteria (tonsillar exudate, tender anterior cervical adenopathy, fever by history, and absence of cough).

***Consider adjunctive symptomatic therapy with antibiotic therapy.

Prescribe antibiotics only for patients who meet clinical diagnostic criteria for pharyngitis or bacterial sinusitis.^{4,9-11}

Provide therapies that help patients feel better

For most patients, symptomatic therapy provides more relief than antibiotics.

Neither antibiotics nor symptomatic therapy will shorten the duration of ARI illnesses caused by viruses.

General recommendations for effective non-antibiotic therapies

- Remind patients to get plenty of rest, fluids and to avoid airborne irritants (e.g. smoking)
- Focus on specific symptoms that trouble the patient the most and provide targeted treatment
- Provide patients with specific instructions for administration, to follow product labeling, and to contact the clinic or speak with their pharmacist if they have questions.



Non-Medication Approaches

Humidifier/cool mist vaporizer (sore throats/dry coughs)
Warm beverages (sore throats)
Warm compresses (sinus/ear pain)
Saline irrigation (nasal congestion)



Medication Approaches (non-antibiotic)

Analgesics
Mucolytics
Topical anesthetics
Anti-histamines
Antitussives
Anti-inflammatories
Decongestants

Further guidance on the selection of appropriate non-antibiotic options for ARI can be found here:

<https://www.cdc.gov/getsmart/community/for-patients/symptom-relief.html>.

Prescribe symptomatic therapies that help patients feel better.

Protect your patient and protect your community by selecting the correct antibiotic, dose, and duration

Treatment of choice: penicillin-type antibiotics

- Favorable side effect profile
 - Relatively low potential to induce development of antibiotic resistant bacteria
 - Efficacy
- There are no reported case of penicillin resistant group A *Streptococcus*; the recommended antibiotic of choice for group A Strep pharyngitis is penicillin or amoxicillin for 10 days.⁹
- The recommended antibiotic treatments for acute bacterial sinusitis are amoxicillin or amoxicillin/clavulanate for 5-7 days.¹⁰⁻¹¹
- High dose amoxicillin (\pm clavulanate)* may be appropriate for patients at risk for bacterial sinusitis due to amoxicillin-resistant bacteria (i.e., recent β -lactam exposure, treatment failure, acute severe presentation, or an immunocompromised state).

*Dosing guidance in quick reference guide

Penicillin Allergies:

Group A Strep Pharyngitis - First generation cephalosporins (non-anaphylaxis history) or clindamycin

Bacterial Sinusitis - Doxycycline or respiratory tract fluoroquinolones

Note that macrolide antibiotics* are not recommended as first or second line treatment for ARIs^{4,9-11} yet are the second most commonly prescribed antibiotic class in the outpatient setting.

- This raises concerns with:
 - Antibiotic resistance to macrolides in *S. pneumonia* and group A Strep
 - Increased risk of cardiovascular death¹²

*Exception: Macrolides are the treatment of choice for pertussis.

Use penicillin or penicillin-based antibiotics as the cornerstone of ARI therapy when prescribing antibiotics for pharyngitis and bacterial sinusitis.

Patients presenting with ARIs, are generally seeking a diagnosis, reassurance, and relief of symptoms; not necessarily antibiotics¹³

- A shared decision-making approach for management of ARIs is beneficial to both the provider and patient
- Engage patients in communication about ARI management that compares the benefits, harms and risks of therapy through meaningful dialogue about what matters most to the patient.



5 Steps of SHARE¹³:

Step 1: SEEK your patient's participation. Explain that it is difficult to determine the absolute best course of treatment without his or her input.

Step 2: HELP your patient compare treatment options. Discuss the limited benefits and risks of antibiotics, as well as, approaches like symptomatic therapy.

Step 3: ASSESS your patient's values and preferences. Ask the patient to explain preferences for treatment, and present options that align evidence based practice with patient preferences

Step 4: REACH a decision with your patient. Decide on a treatment plan including therapy details.

Step 5: EVALUATE your patient's decision. Ask the patient to explain the plan to you, convey follow-up steps, and ask for commitment to the treatment plan.

DO Provide supplemental written materials to enhance their understanding of the therapeutic options, treatment and follow-up plan.

SHARE treatment decisions for ARI management with patients to improve satisfaction.

Managing Acute Upper Respiratory Tract Infections (ARI) Without Overusing Antibiotics

Key Messages:

1. Use antibiotics sparingly in the treatment of ARIs to prevent adverse effects.
2. Make a specific clinical ARI diagnosis to drive appropriate care.
3. Prescribe antibiotics only for patients who meet clinical diagnostic criteria for pharyngitis or bacterial sinusitis.
4. Provide symptomatic therapies that help patients feel better.
5. Use penicillin or penicillin-based antibiotics as the cornerstone of therapy when prescribing antibiotics for pharyngitis and bacterial sinusitis.
6. SHARE treatment decisions for ARI management with patients to improve satisfaction.

Important Resources

- Antibiotic Stewardship Task Force SharePoint Site
 - <https://vaww.cmopnational.va.gov/cmop/PBM/pre/default/AntimicrobialMainPage/default.aspx>
- Center for Disease Control Resource Page for Outpatient Antibiotic Stewardship
 - <https://www.cdc.gov/getsmart/community/improving-prescribing/outpatient-stewardship.html>

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This reference guide was created to be used as a tool for VA providers and is available to use from the Academic Detailing Service SharePoint.

These are general recommendations only; specific clinical decisions should be made by the treating provider based on an individual patient's clinical condition.

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