

# Respiratory Tract: Chronic Obstructive Pulmonary Disease (COPD) Exacerbation

CLINICAL AND THERAPEUTIC ALGORITHM	CLINICAL SEVERITY	RECOMMENDED REGIMENS
<p><b>Diagnosis:</b> Based on the clinical presentation of the patient, including complaints of an acute change of cardinal symptoms as follows:</p> <p><b>Does patient have:</b> increased sputum purulence <b>AND</b> increased dyspnea <b>OR</b> increased sputum</p> <p><b>1. Initiate therapy with:</b></p> <ul style="list-style-type: none"> <li>Short-acting bronchodilators (i.e. albuterol) increased to 6 to 8 puffs Q1-2H in severe exacerbations</li> <li>+/- Short-acting anticholinergics (i.e. ipratropium bromide) increased to 6 to 8 puffs Q3-4H in severe exacerbations given via nebulizer/inhaler <b>PLUS</b></li> <li>Corticosteroids (prednisone or equivalent PO 40 mg/day for 5 days) if admitted <b>OR</b> have significant shortness of breath Methylprednisolone IV Q6-12H may be used initially</li> </ul> <p><b>2. Consider obtaining sputum culture AND treat with an antimicrobial based on clinical severity</b></p> <ul style="list-style-type: none"> <li>If patient has only an acute increase in <u>1</u> cardinal symptom <b>no antibiotic therapy is recommended</b></li> </ul> <p><b>3. Manage risk factors:</b></p> <ul style="list-style-type: none"> <li>Assess if patient is due for influenza vaccine</li> <li>Smoking cessation counseling</li> </ul> <p><b>4. Inpatient:</b> If worsening clinical status <b>OR</b> inadequate response in 72H: re-evaluate <b>AND</b> obtain sputum culture <b>AND</b> gram stain</p>	<p><b>Outpatient Uncomplicated</b></p>	<p><b>Select <u>ONE</u> of the following:</b></p> <ul style="list-style-type: none"> <li>Doxycycline 100 mg PO Q12H</li> <li>Amoxicillin 500 mg PO Q8H</li> <li>Azithromycin 500 mg once, then 250 mg PO Q24H</li> <li>SMX/TMP 1 DS tablet PO Q12H</li> </ul> <p>Treat for 3 to 5 days</p>
	<p><b>Outpatient Complicated* <u>OR</u> Failure of Previous Antimicrobial Therapy</b></p>	<p><b>Primary Recommendation:</b></p> <ul style="list-style-type: none"> <li>Amoxicillin/clavulanate 875 mg PO Q12H</li> </ul> <p><b>Penicillin Allergy or Treatment Failure with Primary Regimen:</b></p> <ul style="list-style-type: none"> <li>Moxifloxacin 400 mg PO Q24H**</li> </ul> <p>Treat for 3 to 5 days</p>
	<p><b>Inpatient</b></p>	<p><b>Primary Recommendation:</b></p> <ul style="list-style-type: none"> <li>Amoxicillin/clavulanate 875 mg PO Q12H</li> </ul> <p><b><u>OR</u></b></p> <ul style="list-style-type: none"> <li>Doxycycline 100 mg PO Q12H</li> </ul> <p><b>Penicillin Allergy or Treatment Failure with Primary Regimen:</b></p> <ul style="list-style-type: none"> <li>Moxifloxacin 400 mg PO Q24H**</li> </ul> <p>Treat for 5 days</p>

DS= double strength; H= hour(s); IV= intravenous; PO= by mouth; Q= every; SMX/TMP= sulfamethoxazole/trimethoprim

\*In patient with frequent exacerbations, (> 4 in previous 12 months) severe airflow limitation, and/or exacerbations requiring mechanical ventilation, FEV1 < 50%, and/or cardiovascular disease

\*\* Previously failed therapy with azithromycin, doxycycline, and a beta- lactam **OR** received treatment with the aforementioned antibiotics within the previous 90 days **OR** patient has other comorbidities (i.e. chronic heart, liver, or renal disease, diabetes, alcoholism, malignancy, asplenia, immunocompromised or on immunosuppressing drugs. An FDA advisory committee determined that the risks of fluoroquinolone use in COPD exacerbation outweighed any potential benefit, and should not be a first-line agent.

**NOTE: Dosing based on normal renal function. Refer to Table of Contents for section on Antimicrobial Dosing for Adult Patients Based on Renal Function**

#### References:

- Vollenweider DJ, et al. Antibiotics for exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2012 Dec 12;12:CD010257.
- Vestbo J, et al. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: GOLD executive summary. *Am J Respir Crit Care Med.* 2013 Feb 15;187(4):347-65.
- Food and Drug Administration. Joint meeting of the Antimicrobial Drugs Advisory Committee and the Drug Safety & Risk Management Advisory Committee (DSaRM)-Webcast Recording. 2015.