Updates in Community Acquired Pneumonia

20th Annual NW Regional Hospital Medicine Conference

Robin Stiller, MD

Assistant Professor of Medicine
Division of Pulmonary, Allergy and Critical Care Medicine

Oregon Health & Science University

Disclosures

No financial disclosures

Roadmap + Learning Objectives

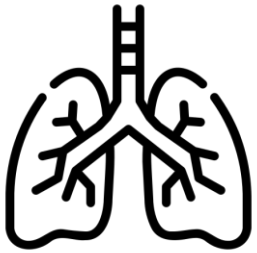
Meet our patient, learn brief history, and reason through some next steps in the case together

Review clinical practice guidelines for diagnosis and treatment of CAP

Share in discussion about application of 2019 ATS/IDSA guidelines in our inpatient* clinical practices

Introduce 2025 ATS updates to CAP clinical practice guidelines

Background



A lower respiratory tract infection, the second most common cause of hospitalization, and most common infectious cause of death

1.5 million CAP hospitalizations in the US per year

Risk

Age | Comorbidities

Substances | Lifestyle

*Vaccinations

Typical bacteria

Atypical bacteria

Viruses

Fungi

Clinical symptoms + chest imaging

Where we have been - 2019

AMERICAN THORACIC SOCIETY DOCUMENTS

Diagnosis and Treatment of Adults with Community-acquired Pneumonia

An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America

This official clinical practice guideline was approved by the American Thoracic Society May 2019 and the Infectious Diseases Society of America August 2019

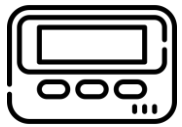
Where we are now - 2025

AMERICAN THORACIC SOCIETY DOCUMENTS

Diagnosis and Management of Community-acquired Pneumonia
An Official American Thoracic Society Clinical Practice Guideline

THIS OFFICIAL CLINICAL PRACTICE GUIDELINE OF THE AMERICAN THORACIC SOCIETY WAS APPROVED MAY 2025

Meeting our patient



You get a page from the ED…”New admit”

79-year-old woman, sent in from her adult living facility

EMS found her normotensive, tachycardic, saturating 83% on air and tachypneic

Medical history includes chronic diastolic heart failure, prior tobacco use and a recent ED visit for cellulitis on her leg

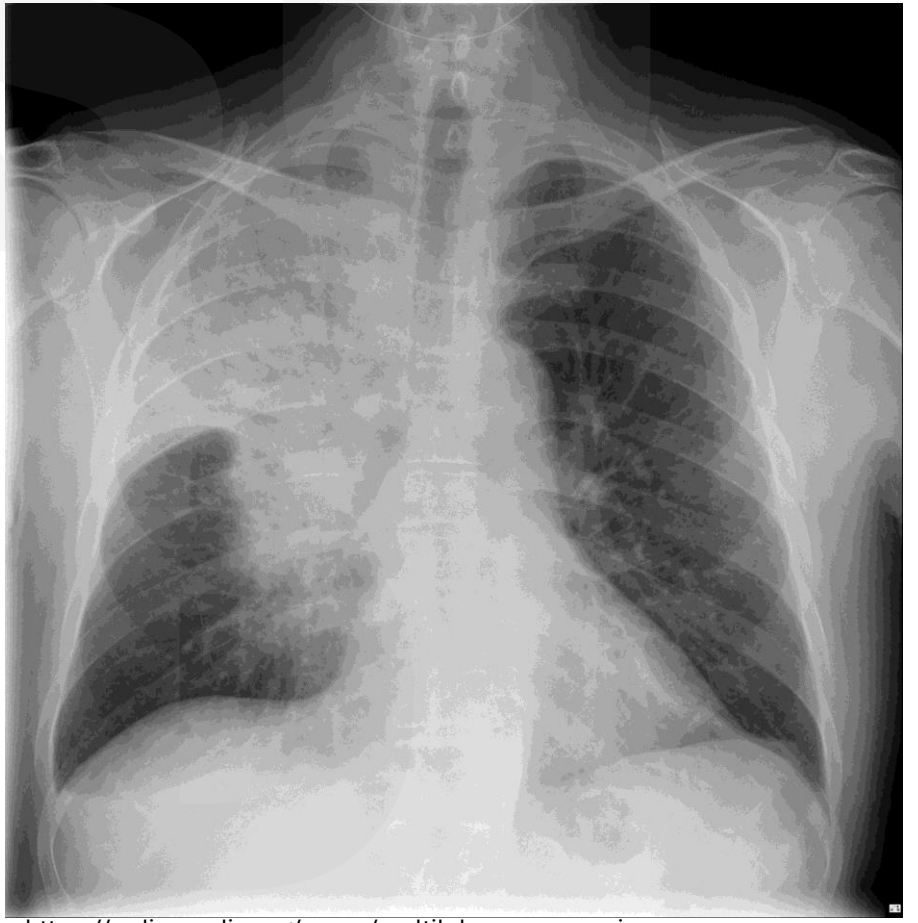
Meeting our patient

Temperature 99.9° F
Blood pressure 89/50 mmHg
Heart rate 108 bpm
O_2 saturation 92% on 6L/min by NC

1L lactated ringers infusing

White blood cells: 14K
Hemoglobin: 11 g/dL
Platelets: 96K

Chest radiograph obtained:



https://radiopaedia.org/cases/multilobar-pneumonia

Characterizing our patient

IDSA/ATS 2019

Major
Septic shock needing pressors
Respiratory failure requiring mechanical ventilation

Minor
RR ≥30
P:F ≤ 250
Multi-lobar infiltrates
Confusion/disorientation
Uremia ≥ 20
Leukopenia < 4
Thrombocytopenia < 100
Hypothermia
Hypotension

*IDSA/ATS validated severity definition:
1 major or at least 3 minor criteria

Patients in the US
No recent foreign travel
Immunocompetent adults

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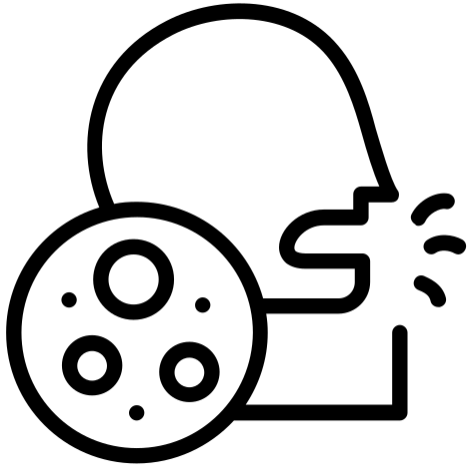
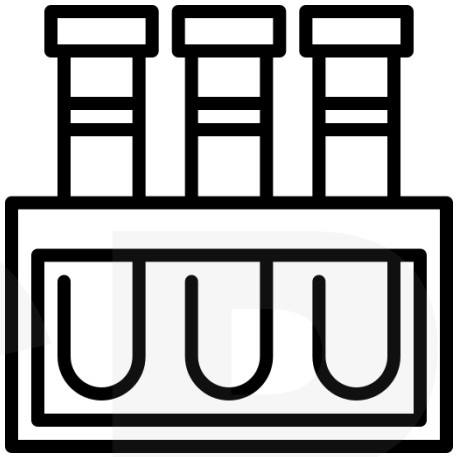
Next steps

Sputum



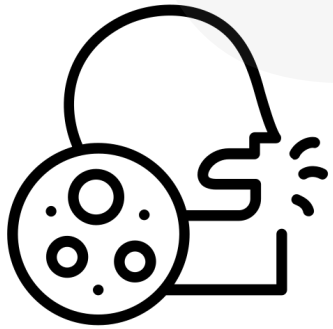
Diagnostics



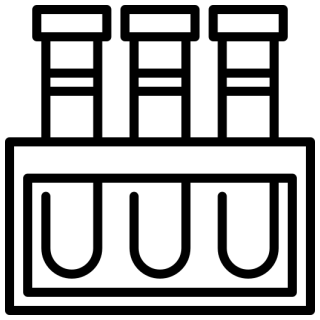
Treatment

Collect sputum and blood samples?

Sputum cultures



Blood cultures



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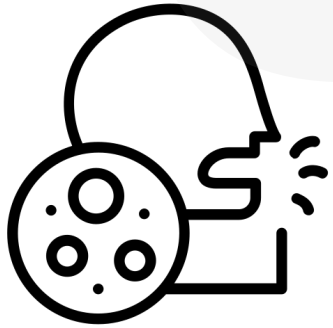
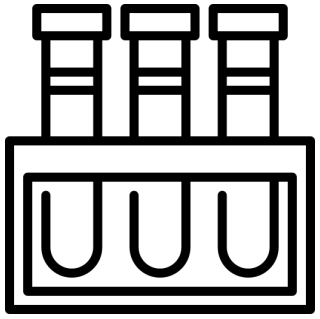


Severe CAP, especially if intubated (strong recommendation, very low quality of evidence)

OR

Are empirically being treated for MRSA or PsA (strong recommendation, very low quality of evidence)

Blood cultures



Were previously infected with MRSA or PsA (conditional recommendation, very low quality of evidence)

Were hospitalized and received parenteral antibiotics in last 90 days (conditional recommendation, very low quality of evidence)

IDSA/ATS 2019

Send urine antigens?

Urine antigens

L. pneumophila, serotype 1 antigen

Pneumococcal antigen

Send urine antigens?

Urine antigens

Severe CAP (conditional recommendation, low quality of evidence)

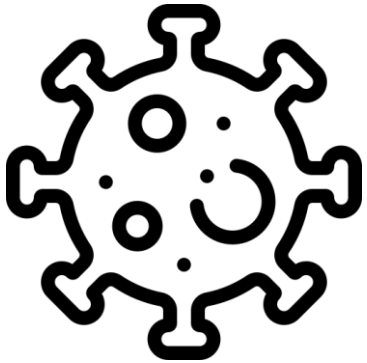
OR

Epidemiological factors (conditional recommendation, low quality of evidence)

IDSA/ATS 2019

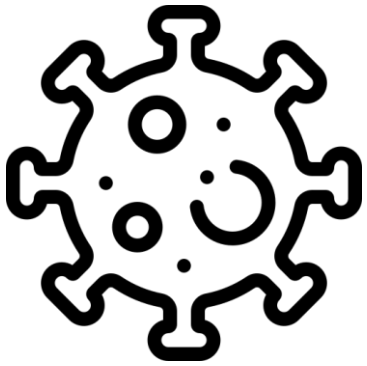
Send influenza testing?

Influenza testing



Send influenza testing?

Influenza testing



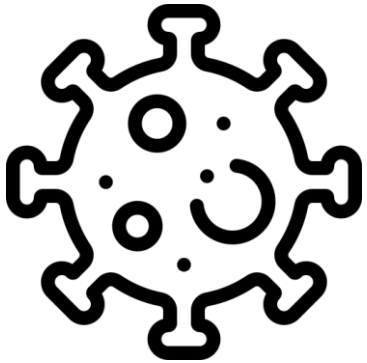
When influenza viruses are circulating, send a rapid molecular assay (i.e. NAAT; preferred over a rapid diagnostic antigen test) (strong recommendation, moderate quality of evidence)

If positive, administer antiviral (strong recommendation, moderate quality of evidence) and antibiotic therapies (strong recommendation, low quality of evidence)

IDSA/ATS 2019

Send other viral testing?

Viral testing



Nucleic acid-based testing of respiratory samples for non-influenza viral pathogens recommended in patients with:

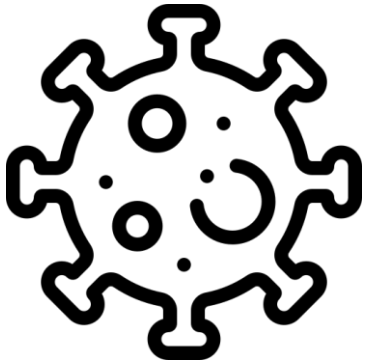
Severe CAP or immunocompromised
(conditional recommendation, very low quality evidence)

*Limited evidence re: relationship between nucleic acid-based testing for non-influenza viral pathogens and patient centered outcomes

ATS *2021*

Viral testing and treating

Viral testing



? Risk of missed or delayed antibiotics in coinfected patient vs risks of antibiotic exposure to the patient

Lean on patient and local factors to inform decision to send testing

If positive respiratory virus, treat with empiric antibiotics (conditional recommendation, very low quality evidence)

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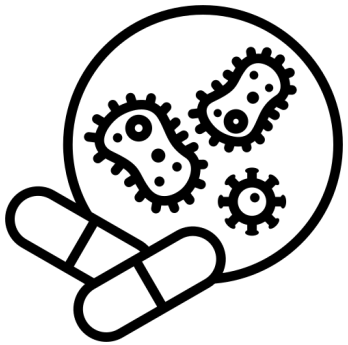
Antibiotic regimens?

Antibiotics



Non-severe:

ß-lactam + macrolide

or

respiratory FQ

Severe:

ß-lactam + macrolide

or

ß-lactam + respiratory FQ

Prior MRSA

Add MRSA coverage, obtain culture/nasal PCR

Prior PsA

Add PsA coverage, obtain cultures

Non-severe: culture, treat if positive

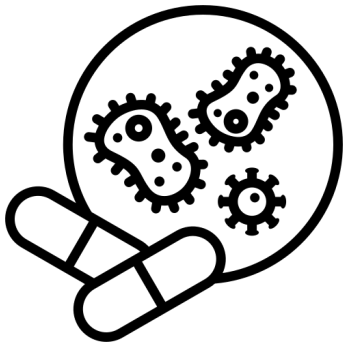
Recent hospital stay, IV antibiotics, local risk factors

Severe: culture, add coverage; deescalate

IDSA/ATS 2019

Antibiotic details*

Antibiotics



No additional anaerobic coverage necessary for aspiration unless: necrotizing pneumonia, pulmonary abscess or empyema

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Duration

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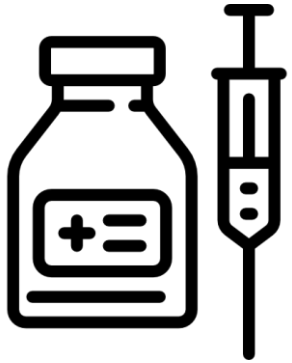
Non-severe: 3-5 days (conditional recommendation, low quality evidence)

Severe: 5 or more days (strong recommendation, low quality evidence)

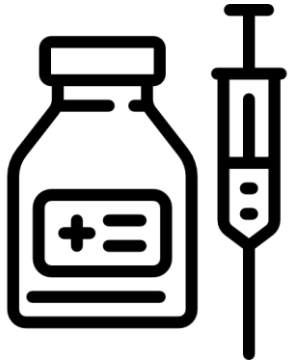
Who gets steroids?

Steroids



Who gets steroids?

Steroids



Do NOT start steroids in non-severe CAP
(strong recommendation, low quality of evidence)

START corticosteroids in severe CAP without influenza coinfection (conditional recommendation, low quality evidence)

ATS 2025

Summary of 2025 updates from ATS

Lung US is regarded as equivalent to XR in the right setting

Antibiotics should not be withheld in patients who are co-infected with a respiratory virus

Fewer than 5 days of treatment is acceptable unless severe CAP or the pathogen is necrotizing or resistant

Steroids should be administered to patients with severe CAP without influenza coinfection

Final notes

Update vaccinations

Smoking cessation!

New HAP/VAP guidelines anticipated Q4 this year

https://www.idsociety.org/guideline-highlights/

Thank you!

stiller@ohsu.edu

Resources

- Diagnosis and management of community-acquired pneumonia. an official American Thoracic Society Clinical Practice Guideline | American Journal of Respiratory and Critical Care Medicine | Articles in press. (n.d.). https://www.atsjournals.org/doi/10.1164/rccm.202507-1692ST
- Evans SE, Jennerich AL, Azar MM, Cao B, Crothers K, Dickson RP, Herold S, Jain S, Madhavan A, Metersky ML, Myers LC, Oren E, Restrepo MI, Semret M, Sheshadri A, Wunderink RG, Dela Cruz CS. Nucleic Acid-based Testing for Noninfluenza Viral Pathogens in Adults with Suspected Community-acquired Pneumonia. An Official American Thoracic Society Clinical Practice Guideline. Am J Respir Crit Care Med. 2021 May 1;203(9):1070-1087. doi: 10.1164/rccm.202102-0498ST. PMID: 33929301; PMCID: PMC8314899.
- Klompas, M. (2024, October 29). *Clinical evaluation and diagnostic testing for community-acquired pneumonia in adults*. UpToDate. https://www.uptodate.com/contents/clinical-evaluation-and-diagnostic-testing-for-community-acquired-pneumonia-in-adults?sectionName=GENERAL+APPROACH&topicRef=141410&anchor=H3261777362&source=kpp#H2
- *Legionnaires' disease*. Legionnaires' Disease - NYC Health. (n.d.). https://www.nyc.gov/site/doh/health/health-topics/legionnaires-disease.page
- Metlay JP, Waterer GW, Long AC, Anzueto A, Brozek J, Crothers K, Cooley LA, Dean NC, Fine MJ, Flanders SA, Griffin MR, Metersky ML, Musher DM, Restrepo MI, Whitney CG. Diagnosis and Treatment of Adults with Community-acquired Pneumonia. An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America. Am J Respir Crit Care Med. 2019 Oct 1;200(7):e45-e67. doi: 10.1164/rccm.201908-1581ST. PMID: 31573350; PMCID: PMC6812437.

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