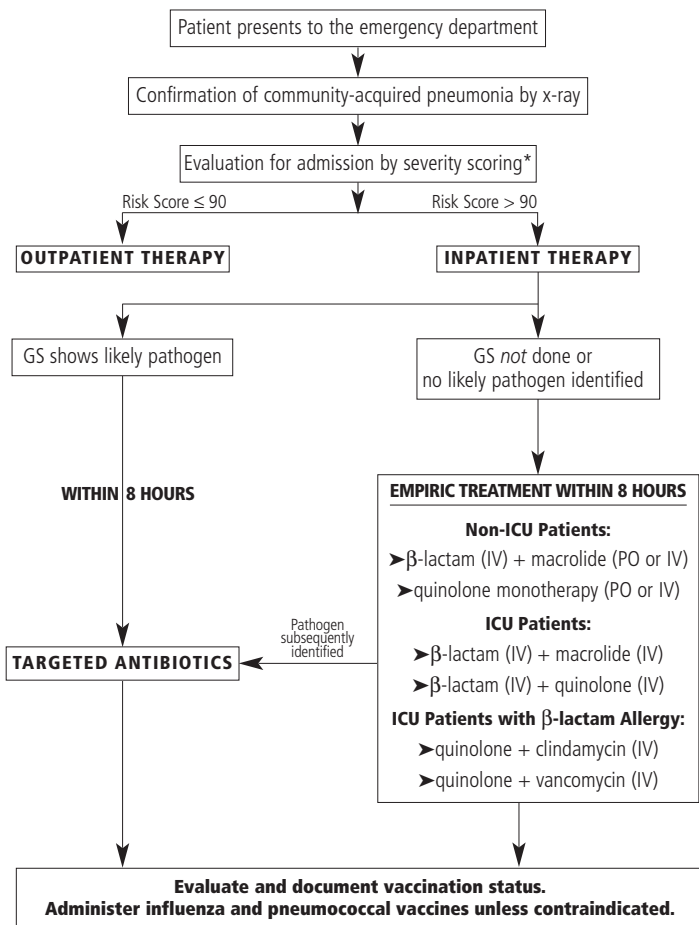




## MANAGEMENT OF COMMUNITY-ACQUIRED PNEUMONIA

### DECISION ALGORITHM



\*See reverse for risk scoring system



## CAP RISK SCORING SYSTEM

A risk score (total point score) for a given patient is obtained by summing the patient age in years (age -10 for females) and the points for each applicable patient characteristic. A risk score > 90 is associated with a mortality rate ranging from 8%–29%, therefore hospitalization is recommended.

<b>Patient Characteristic</b>	<b>Points Assigned</b>
<b>Demographic Factors</b>	
Age: male	age (in yrs)
Age: female	age (in yrs)-10
Nursing home resident	+10
<b>Comorbid Illnesses</b>	
Neoplastic disease	+30
Liver disease	+20
Congestive heart failure	+10
Cerebrovascular disease	+10
Renal disease	+10
<b>Physical Examination Findings</b>	
Altered mental status	+20
Respiratory rate $\geq$ 30/minute	+20
Systolic blood pressure < 90 mm Hg	+20
Temperature < 35 degrees C or > 40 degrees C	+15
Pulse $\geq$ 125/minute	+10
Pleural effusion	+10
<b>Laboratory Findings</b>	
pH < 7.35	+30
BUN > 10.7 mmol/L	+20
Sodium < 130 mEq/L	+20
Glucose > 13.9 mmol/L	+10
Hematocrit < 30%	+10
pO <sub>2</sub> < 60 mm Hg*	+10

\* Oxygen saturation < 90% also considered abnormal.

### References:

- Bartlett JG, et al. Practice guidelines for the management of community-acquired pneumonia in adults. *Clinical Infectious Diseases*. 2000;31:347-382.
- Fine MJ, et al. Validation of pneumonia prognosis index using the Medis Group Comparative Hospital Database. *Am J Med*. 1993;94:153.
- [www.Nationalpneumonia.org/Quality\\_Indicators/Quality\\_Indicators.html](http://www.Nationalpneumonia.org/Quality_Indicators/Quality_Indicators.html)



## RECOMMENDED ANTIBIOTICS

### FOR EMPIRIC TREATMENT OF CAP

- |   |  |   |
|---|--|---|
| ➤ <b>β-lactams:</b><br>ampicillin-sulbactam<br>cefepime<br>cefotaxime<br>ceftriaxone<br>cefuroxime<br>imipenem-cilastatin<br>meropenem<br>piperacillin-tazobactam | ➤ <b>Macrolides:</b><br>azithromycin<br>clarithromycin<br>erythromycin | ➤ <b>Quinolones:</b><br>ciprofloxacin<br>gatifloxacin<br>levofloxacin<br>moxifloxacin<br>ofloxacin<br>sparfloxacin<br>trovafloxacin |
|---|--|---|

#### Non-ICU Patients

- β-lactam [IV] + macrolide [PO or IV] or
- Quinolone [PO or IV]

#### ICU Patients

- β-lactam [IV] + macrolide [IV] or
- β-lactam [IV] + quinolone [IV]

#### ICU Patients with β-lactam Allergy

- Quinolone + clindamycin [IV] or
- Quinolone + vancomycin [IV]

#### References:

- Bartlett JG, et al. Practice guidelines for the management of community-acquired pneumonia in adults. *Clinical Infectious Diseases*. 2000;31:347-382.
- Fine MJ, et al. Validation of pneumonia prognosis index using the Medis Group Comparative Hospital Database. *Am J Med*. 1993;94:153.
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## **INFLUENZA + PNEUMOCOCCAL VACCINATION GUIDELINES**

### ► **Indications**

- 50 years or older for influenza;  
65 years or older for pneumococcal
- Age 2-64 and considered "high risk"  
due to any of the following:

*Chronic disease conditions* such as CHF, cardiomyopathy, COPD, emphysema (but not asthma), diabetes, liver disease, renal failure, or use of long term systemic steroids

*Compromised immunity* conditions (e.g. leukemia, lymphoma, multiple myeloma)

- Note: vaccines may be administered concurrently in different arms

### ► **Contraindications: Pneumococcal Vaccine** (Vaccine Time: Year-Round)

- Vaccinated prior to admission and revaccination not indicated (see below)
- Currently undergoing chemotherapy or radiation therapy
- History of idiopathic thrombocytopenic purpura
- Patient refusal

### ► **Contraindications: Influenza Vaccine** (Vaccine Time: September–January)

- Previous immunization this flu season

- Allergy to eggs or to thimerosal (preservative in contact lens solution)
- Severe reaction to previous influenza vaccination (e.g., anaphylaxis)
- History of idiopathic thrombocytopenic purpura
- Fever over 101° F
- Patient refusal

### **The following are NOT contraindications to influenza or pneumococcal vaccination:**

- Pneumococcal pneumonia during this admission
- Low grade fever (<101° F)
- Surgical procedures
- Colds, rhinitis, UTIs
- Unknown vaccination status

### ► **Revaccination: Pneumococcal Vaccine**

- Recommended if patient was vaccinated 5 or more years ago *and*:
- was less than 65 years when first vaccinated, *or*
  - is at highest risk for pneumococcal infection (asplenic or immunocompromised), *or*
  - is likely to have a rapid decline in pneumococcal antibody rate.

#### References:

- Centers for Disease Control. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practices. *MMWR*. 1997;46(RR-8).
- Centers for Disease Control. Prevention & control of influenza: recommendations of the Advisory Committee on Immunization Practices. *MMWR*. 2000;49(RR-3).