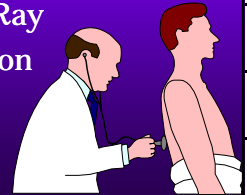


Community-Acquired Pneumonia

Ken Diamond, M.D.
Assistant Professor
Department Family Medicine
USD School of Medicine

Definition of Pneumonia

- Lower respiratory infection of lung tissue
- Infiltrate on chest X-Ray
- Findings on auscultation



Classification of Pneumonia

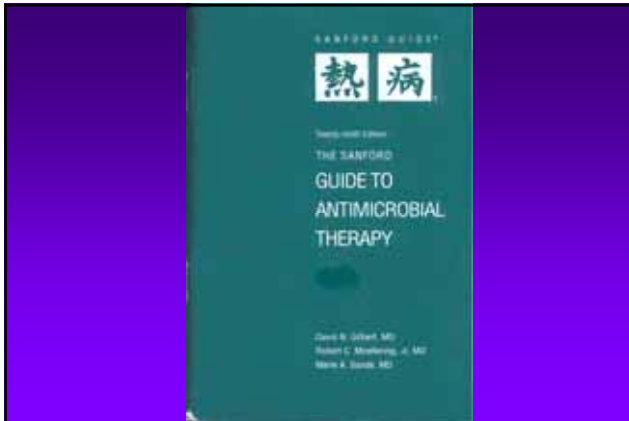
- Community Acquired Pneumonia (CAP)
- Hospital Acquired (Nosocomial)
- Nursing Home Acquired (NHAP)
- Opportunistic / Immunosuppressed

Changing Patterns of CAP

- Diagnosis of atypical pathogens
 - *Legionella*
 - *Mycoplasma pneumoniae*
 - *Chlamydia pneumoniae*
- Increased bacterial resistance

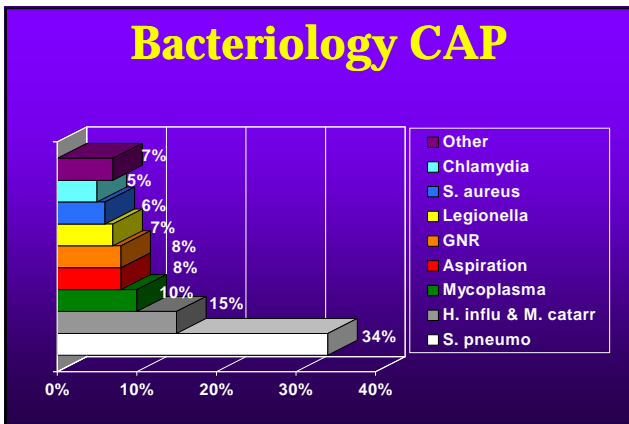
Treatment Guidelines

- American Thoracic Society - 1993
- Infectious Disease Society America - 1997
- Infectious Disease Society America - 2003
- Jay Sanford, MD - 2008



Treatment Strategy

- Presentations are nonspecific
- Testing takes time
- Treatment is initially empiric
- Need for hospitalization based on
 - Age and health of patient
 - Severity of pneumonia



Physical Diagnosis

● Symptoms	● Exam
<i>Cough</i>	<i>Fever (80%)</i>
<i>Sputum</i>	<i>RR > 20/min</i>
<i>Dyspnea</i>	<i>Crackles to exam</i>
<i>Malaise</i>	<i>Consolidation</i>

Sputum Testing

- Specimen should be from a deep cough
- Grossly purulent
- Must be collected before antibiotics given
- Immediate processing < 2 hours
- < 10 SECs and > 25 PMNs per LPF
- Office specimens can be smeared and dried

ATS/ IDSA Patient Categories

<p>OUTPATIENT</p> <ul style="list-style-type: none"> ● AGE <60 and ● NO RISKS 	<p>INPATIENT</p> <ul style="list-style-type: none"> ● STABLE
<p>OUTPATIENT</p> <ul style="list-style-type: none"> ● AGE >60 ● COMORBIDITY 	<p>INPATIENT</p> <ul style="list-style-type: none"> ● SEVERE

- Assessment of Severity**
Outpatient
- Age > 60 yr
 - Comorbid diseases
 - Abnormal Vital Signs
 - Complicated X-ray findings
 - Psychosocial issues

- Assessment of Severity**
Outpatient
- Age > 60 yr

- Diagnosis in the Elderly**
- Mental Status Change
 - Lethargy / weakness
 - Anorexia
 - Temperature instability

- Assessment of Severity**
Outpatient
- Comorbid diseases

- Comorbid Factors**
- COPD
 - DM
 - CRF
 - CHF
 - Liver Disease
 - Neoplastic Disease
 - Cerebrovascular Dz
 - EtOH / Drug abuse
 - Aspiration
 - Splenectomy
 - Immunosuppression
 - Psychosocial issues

Assessment of Severity Outpatient

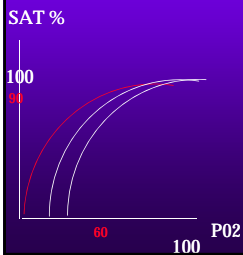
- Abnormal Vital Signs

Outpatient Assessment Risk Factors for Admission

- RR > 30
- DBP < 60 or SBP < 90 mm Hg
- Temp < 95 °F or > 104 °F
- Pulse > 125
- Pulse Oximetry < 90 %
- Altered Mental Status
- Complicated CXR

“The Fifth Vital Sign”

- Pulse oximetry



Assessment of Severity Outpatient

- Complicated X-ray findings





Chest X-ray

- Documents pneumonia
- Detects “complicated” pneumonia
 - empyema
 - multilobar disease
 - masses, abscess, gas forming infection
- Provides baseline for comparison

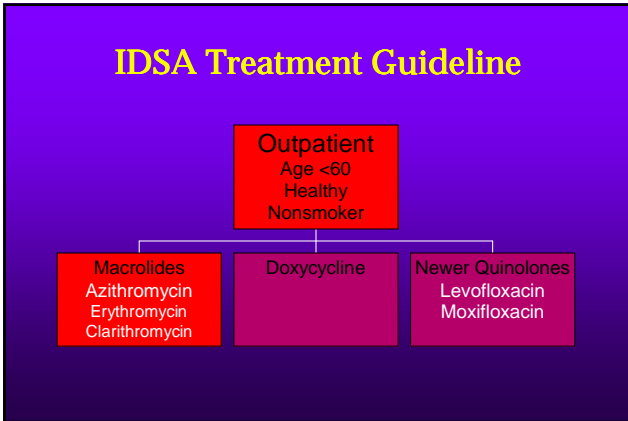
Assessment of Severity

Outpatient

- **Psychosocial issues**
 - Follow-up
 - Compliance

ATS/ IDSA Patient Categories

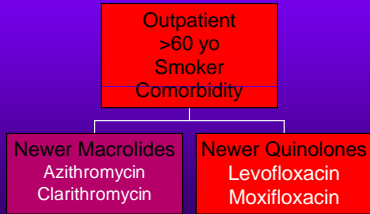
<p>OUTPATIENT</p> <ul style="list-style-type: none"> ● AGE <60 and ● HEALTHY 	<p>INPATIENT</p> <ul style="list-style-type: none"> ● STABLE
<p>OUTPATIENT</p> <ul style="list-style-type: none"> ● AGE >60 or ● COMORBIDITY 	<p>INPATIENT</p> <ul style="list-style-type: none"> ● SEVERE



ATS/ IDSA Patient Categories

<p>OUTPATIENT</p> <ul style="list-style-type: none"> ● AGE <60 and ● NO COMORBIDITY 	<p>INPATIENT</p> <ul style="list-style-type: none"> ● STABLE
<p>OUTPATIENT</p> <ul style="list-style-type: none"> ● AGE >60 or ● COMORBIDITY OR ● BOTH 	<p>INPATIENT</p> <ul style="list-style-type: none"> ● SEVERE

IDS A Treatment Guideline



Assessment of Severity Inpatient

- Vital Signs
- CXR
- CBC
- Blood Cx
- Labs
- Pleural fluid

Inpatient Assessment Laboratory Risk Factors for M & M

- pH < 7.35
- BUN > 30
- Hct < 30
- PaO₂ < 60
- Bacteremia
- 4K < WBC > 20K
- Pleural effusion
- Multilobar disease

ATS/ IDS A Patient Categories

OUTPATIENT

- AGE < 60 and
- NO COMORBIDITY

INPATIENT

- STABLE

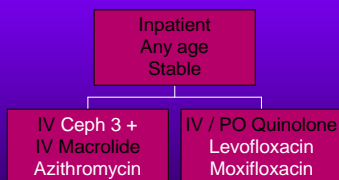
OUTPATIENT

- AGE > 60 or
- COMORBIDITY OR
- BOTH

INPATIENT

- SEVERE

IDS A Treatment Guideline



ATS/ IDS A Patient Categories

OUTPATIENT

- AGE < 60 and
- NO COMORBIDITY

INPATIENT

- STABLE

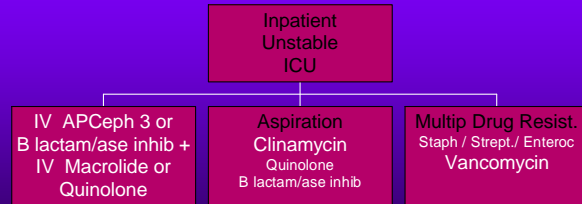
OUTPATIENT

- AGE > 60 or
- COMORBIDITY OR
- BOTH

INPATIENT

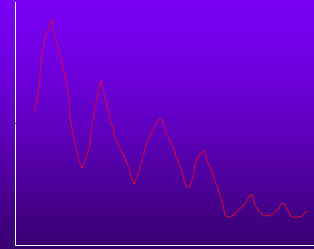
- UNSTABLE

IDSA Treatment Guideline



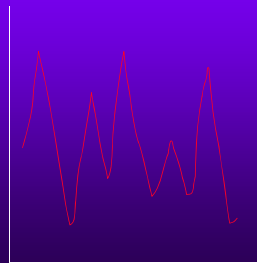
Treatment Success

- Decreasing fever curve
- Decreasing WBC counts
- Decreasing oxygen requirement
- Decreased cough
- Improved breath sounds



Treatment Failure

- Consultation
- Wrong Bug
- Wrong Drug
- Complicating pathology
- Alternative Diagnosis



“Zebras” of CAP

- Legionella
- SARS / Hanta
- Chlamydia psittaci
- Coxiella burnetti
- Plague

Alternative Diagnosis

- Pulmonary Embolism
- ARDS
- XRT pneumonitis
- Malignancy
- Auto immune diseases
- Congestive Heart Failure

Prevention

- Influenza vaccination and prophylaxis
- Pneumococcal vaccination
- Smoking cessation / counsel at every visit

