



COMMUNITY ACQUIRED PNEUMONIA – Clinical Pathway



Name :

Age :

Gender :

BMI :

UHID :

Co Morbidities :

DM

HTN

CAD

CKD

CLD

CVA/SEIZURE

Smoker

Ethanolic

Immunosuppression

Respiratory Specific:

ASTHMA

COPD

ILD

Cystic fibrosis/Bronchiectasis

NMD

OSA

H/O CAP

Recent Hospitalisation

LTOT

CPAP/BiPAP

SPARSH CRITICAL CARE

Symptoms:

Cough

Cold

Fever

SOB

Throat Pain

Sputum

Others

Prior Hospitalization: Yes. No

Duration: _____

Prior antibiotic use: Yes. No

Duration: _____

Outside Cultures: _____

Outside Significant labs: _____

Examination:

Fever

Tachypnoea

Tachycardia

Crepts/Wheeze

Shock

Hypoxia

Drowsy

Respiratory arrest

Clinical Pathway

History, Physical Examination and CXR

Clinical Evidence/Infiltrate

No Clinical Evidence/Infiltrate

Evaluate need for admission

CURB - 65 > 3 - ICU

(Appendix 1)

PSI - 4 AND ABOVE – ADMISSION

(Appendix 2)

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Alternate Diagnosis

OPD

WARD

ICU



- ❑ CBP/RFT/CXR/ABG
- ❑ HRCT Chest - if indicated
- ❑ RAT/H1N1 PCR/RT PCR - if indicated
- ❑ PCTQ - optional
- ❑ Sputum - gram stain/ AFB stain/ Cultures
- ❑ Blood cultures - Septic
- ❑ Legionella urinary Antigen
- ❑ Respiratory PCR Panel - Atypical pathogens
- ❑ Pleural fluid analysis - Sy pneumonic effusions
- ❑ Lung Ultrasound - if available

Treatment:

A. Cardiopulmonary disease - CHF/COPD

B. Modifying factors:

- Penicillin resistant streptococci - Age >65, Immunosuppression, Alcohol, Prior beta lactam in 3 months
- Enteric gram-negative infection - nursing home, dialysis centre, Rehab, prior exposure
- Pseudomonas - alcohol, structural lung disease, malnutrition, Steroid therapy
 - ❑ Outpatient without both - Macrolide
 - ❑ Outpatient with both - Beta lactam with Macrolide
 - ❑ Inpatient with both. - IV Beta lactam with IV/Oral Macrolide
or
IV Anti pseudomonal Fluoroquinolone

- ❑ ICU - no risk for pseudomonas - IV Beta lactam + IV Macrolide
- ❑ ICU - risk for pseudomonas - IV anti pseudomonal Beta lactam + IV Macrolide

Or

- IV anti pseudomonal Beta lactam + IV Aminoglycoside

Note: Macrolide allergic/intolerant - Consider Doxycycline
 Penicillin Allergy - Aztreonam/Carbapenem

- ❑ Elderly /post influenza - Staph Aureus
- ❑ HIV/Neutropenia/Cystic fibrosis/Bronchiectasis - Pseudomonas
- ❑ Aspiration/ Lung abscess - Anaerobic

Complications:

- ❑ Pleural Effusions/Empyema
- ❑ Lung Abscess
- ❑ Septicemia /Shock
- ❑ Necrotizing pneumonia

Respiratory Support:

- ❑ Oxygen therapy - Nasal prongs/Face mask
- ❑ HFNC
- ❑ Mechanical Ventilator
- ❑ NRBM
- ❑ NIV
- ❑ ECMO

Circulatory Support:

- ❑ Vasopressors - Single/Dual/Triple

Duration of therapy:

- ▣ S.Pneumoniae – 5-7 days
- ▣ Mycoplasma/Chlamydia/Legionella – 5 – 7 days
- ▣ On Steroids - 10 to 14 days
- ▣ Drug resistant: 10 to 14 days



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ICU Days	EVENTS / SUPPORTS				
1	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
2	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
3	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
4	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
5	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
6	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
7	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
>7 days Course of illness					

Outcome:

- | | |
|---|--------------------------------|
| <input type="checkbox"/> Recovered - Home discharge | <input type="checkbox"/> LTOT |
| <input type="checkbox"/> Tracheostomy - Bipap/Portable ventilator | <input type="checkbox"/> Rehab |
| <input type="checkbox"/> LAMA | <input type="checkbox"/> Death |

Appendix 1:

CURB-65 severity score(1)

Method: Score 1 point for each of following features that are present:

Confusion (mental test score ≤ 8 new disorientation in person, place or time)

BUN > 20 mg/dL

Respiratory rate ≥ 30 breaths/min

Blood pressure (systolic < 90 mm Hg, or diastolic ≤ 60 mm Hg)

Age ≥ 65 years

Interpretation of CURB-65 score:

0-1: Probably suitable for home treatment; low risk of death

2: Consider hospital supervised treatment

≥ 3 : Manage in hospital in ICU as severe pneumonia; high risk of death

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Appendix 2:(2)

PNEUMONIA SEVERITY INDEX FOR COMMUNITY-ACQUIRED PNEUMONIA (PSI)

Risk factor	Points
Demographics	
Men	Age (years): ____
Women	Age (years) - 10: ____
Nursing home resident	+10
Comorbidities	
Neoplasm	+30
Liver disease	+20
Heart failure	+10
Stroke	+10
Renal failure	+10
Physical examination findings	
Altered mental status	+20
Respiratory rate \geq 30 breaths per minute	+20
Systolic blood pressure $<$ 90 mm Hg	+20
Temperature $<$ 95°F (35°C) or \geq 104°F (40°C)	+15
Pulse rate \geq 125 beats per minute	+10
Laboratory and radiographic findings	
Arterial pH $<$ 7.35	+30
Blood urea nitrogen $>$ 30 mg per dL	+20
Sodium $<$ 130 mmol per L	+20
Glucose \geq 250 mg per dL	+10
Hematocrit $<$ 30 percent	+10
Partial pressure of arterial oxygen $<$ 60 mm Hg	+10
Pleural effusion	+10
Total points:	

Point total	Risk class	Deaths/total (%)		Recommendation†
		Adults with CAP*	Nursing home patients with CAP ¹	
$<$ 51	I	3/1,472 (0.2)	None	Outpatient therapy should be considered, especially for patients in classes I and II
51 to 70	II	7/1,374 (0.5)	None	
71 to 90	III	41/1,603 (2.6)	1/21 (4.8)	
91 to 130	IV	149/1,605 (9.3)	6/50 (12.0)	Patient should be hospitalized
$>$ 130	V	109/438 (24.9)	28/85 (32.9)	

References:

1. Lim WS, van der Eerden MM, Laing R, Boersma WG, Karalus N, Town GI, et al. Defining community acquired pneumonia severity on presentation to hospital: an international derivation and validation study. Thorax. 2003;58(5):377-82.
2. Fine MJ, Auble TE, Yealy DM, Hanusa BH, Weissfeld LA, Singer DE, et al. A prediction rule to identify low-risk patients with community-acquired pneumonia. N Engl J Med. 1997;336(4):243-50.

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