ICR-CAP-020

Pulmonary / infectious · critical care

Updated 20 Jun 2026

CRITICAL CARE ORDER SET

Community-acquired Pneumonia

ICU management of severe CAP. Start oxygen and the sepsis bundle early, draw cultures but never delay the first antibiotic dose, and choose empiric coverage by MRSA and Pseudomonas risk. Send the full microbiology panel up front so therapy can be narrowed at 48–72 hours. Adapt every dose to your institutional antibiogram, allergies, and the patient in front of you.

PATIENT	MRN	WEIGHT (KG) / CRCL	MRSA / PSEUDO. RISK
ALLERGIES	**FIRST ANTIBIOTIC TIME**	**ORDERING CLINICIAN**	**CODE STATUS**

01 Admission & level of care

- [ ] Admit to: **ICU / critical care service**
- [ ] Diagnosis: community-acquired pneumonia, severe; **± septic shock** (if applicable)
- [ ] Code status: full code / as per patient wishes
- [ ] Isolation: droplet ± contact if concern for resistant organisms or viral pneumonia

02 Monitoring & nursing

- [ ] Vital signs `q15–60 min` initially, then per ICU protocol

- [ ] Continuous telemetry & pulse oximetry
- [ ] Neuro checks **q1–4 h** (if altered mental status, sepsis)
- [ ] Strict intake/output; daily weights
- [ ] Positioning: head of bed ≥ **30°** (aspiration prevention, ventilator bundles)

03 Airway / respiratory support

Order as indicated by severity.

Oxygen & noninvasive support

- [ ] Oxygen — titrate to SpO_2 ≥ **92%** (or 88–92% in chronic hypercapnic COPD if appropriate)
- [ ] High-flow nasal cannula — start **40–60 L/min**, FiO_2 titrated to target SpO_2
- [ ] Noninvasive ventilation (BiPAP / CPAP) as indicated (e.g., COPD exacerbation, cardiogenic edema)

Intubation / mechanical ventilation

- [ ] Mode per ICU protocol (e.g., volume-controlled)
- [ ] Initial tidal volume **6 mL/kg** predicted body weight
- [ ] PEEP / FiO_2 per ARDS / ICU protocol

SEDATION / ANALGESIA

- [ ] Fentanyl infusion **25–200 mcg/h IV**, titrate
- [ ] ± Propofol infusion **5–50 mcg/kg/min IV**, titrate
- [ ] Daily sedation interruption & readiness-to-extubate assessment

Respiratory therapy

- [ ] Incentive spirometry for nonintubated patients **q1–2 h** while awake
- [ ] Chest physiotherapy / airway clearance as needed

04 Hemodynamic support / sepsis bundle

IF SEPTIC / HYPOTENSIVE Activate the sepsis bundle — cultures, fluids, and the first antibiotic dose within the first hour.

FLUIDS

- [ ] IV access — 2 large-bore peripheral IVs; central venous catheter & arterial line if vasopressors / frequent ABGs needed
- [ ] Initial bolus — 0.9% NaCl or balanced crystalloid **`30 mL/kg IV over first 3 h`** if hypotensive or lactate ≥ 4 mmol/L
- [ ] Maintenance — 0.9% NaCl or balanced crystalloid **`75–125 mL/h IV`**, titrate to perfusion & volume status

VASOPRESSORS — MAP < 65 MMHG AFTER ADEQUATE FLUIDS

- [ ] **Norepinephrine infusion** — start **`0.01–0.05 mcg/kg/min IV`**, titrate to MAP ≥ 65 mmHg
- [ ] Add vasopressin or epinephrine per ICU protocol if refractory

OTHER SEPSIS ORDERS

- [ ] Serum lactate now; repeat in **`2–4 h`** if initial elevated
- [ ] Urine output goal ≥ **`0.5 mL/kg/h`**

05 Empiric antimicrobial therapy — severe CAP, ICU

TAILOR TO Local antibiogram, allergy history, prior culture data, and risk factors for MRSA / Pseudomonas / aspiration.

5.1 Standard severe CAP — no MRSA or Pseudomonas risk

QTC NOT PROLONGED · PREFERRED

β-lactam + macrolide

- [ ] Ceftriaxone **`1–2 g IV daily`**

PLUS

- [ ] Azithromycin **`500 mg IV daily`**

QTC PROLONGED · HIGH TDP RISK

β-lactam + doxycycline

- [ ] Ceftriaxone **`1–2 g IV daily`**

PLUS

- [ ] Doxycycline **`100 mg IV q12h`**

QTC Avoid or minimize macrolides & fluoroquinolones when QTc is substantially prolonged or multiple QT-prolonging risk factors / drugs are present.

ALTERNATIVE B-LACTAMS (NO PSEUDOMONAS RISK)

- [ ] Ampicillin–sulbactam `3 g IV q6h`
- [ ] Cefotaxime `1–2 g IV q8h`

5.2 **If Pseudomonas risk** · prior colonization, recent broad-spectrum abx, structural lung disease

ANTIPSEUDOMONAL B-LACTAM — CHOOSE ONE

- [ ] Piperacillin–tazobactam `4.5 g IV q6h` (extended infusion per protocol)
- [ ] Cefepime `2 g IV q8h`
- [ ] Meropenem `1 g IV q8h`

PLUS SECOND AGENT — BY QTc

- [ ] **QTc acceptable:** Levofloxacin `750 mg IV daily` as second antipseudomonal agent
- [ ] **QTc prolonged / high risk:** avoid levofloxacin — consider non–QT-prolonging second agent (e.g., aminoglycoside) and/or β-lactam + doxycycline for atypical coverage, with ID / pharmacy input

5.3 **MRSA coverage** · prior MRSA, recent influenza, necrotizing / post-viral, severe shock

ADD ONE

- [ ] Vancomycin `15–20 mg/kg IV q8–12h`, adjust for renal function; trough / AUC-guided

OR

- [ ] Linezolid `600 mg IV q12h`

5.4 **Aspiration component suspected**

- [ ] Ampicillin–sulbactam `3 g IV q6h`
- [ ] If already on ceftriaxone, add metronidazole `500 mg IV q8h` (per local practice)

5.5 **De-escalation / duration**

- [ ] Obtain cultures and relevant rapid tests before the first antibiotic dose when feasible, but **never delay antibiotics** in unstable patients
- [ ] Reassess at `48–72 h` with cultures, MRSA / Pseudomonas PCRs if available, and clinical status; narrow as feasible

- [ ] Usual duration **5–7 days** for uncomplicated CAP once clinically stable; longer if slow response, empyema, necrotizing pneumonia, or extrapulmonary focus

06 Microbiology & diagnostics

ORDER STAT ON ICU ADMISSION

- [ ] Blood cultures × 2 sets from separate sites
- [ ] Sputum (or lower respiratory specimen via ET tube / BAL if intubated) — Gram stain & culture; ± fungal / mycobacterial per suspicion
- [ ] Respiratory viral PCR panel (influenza, RSV, SARS-CoV-2, etc.)
- [ ] Legionella urine antigen
- [ ] *S. pneumoniae* urine antigen
- [ ] MRSA nasal screen (to help de-escalate MRSA coverage)

IMAGING

- [ ] Chest x-ray (PA & lateral if possible) STAT
- [ ] Consider CT chest with contrast if complication suspected (abscess, empyema, PE) and stable for transport

07 Laboratory studies

ON ADMISSION — STAT, THEN DAILY OR MORE OFTEN

- [ ] CBC with differential
- [ ] Basic metabolic panel
- [ ] Liver function tests (AST, ALT, ALP, bilirubin, albumin)
- [ ] Magnesium, phosphate, calcium
- [ ] Coagulation panel — PT/INR, aPTT
- [ ] Lactate
- [ ] ABG (if hypoxic, hypercapnic, or intubated)
- [ ] CRP and/or procalcitonin (stewardship)
- [ ] Troponin (if concern for type 2 MI / ACS)
- [ ] BNP / NT-proBNP if heart failure suspected
- [ ] Type & screen if unstable / high bleeding risk

Follow-up labs

- [ ] Daily CBC, BMP, magnesium, phosphate; additional labs per clinical course & organ dysfunction

08 Supportive care & adjuncts

Antipyretics / analgesia

- [ ] Acetaminophen `650–1000 mg PO/NG/IV q6h` PRN (max 3–4 g/day; lower in liver disease)

Bronchodilators — if bronchospasm

- [ ] Albuterol neb `2.5 mg q4–6h` PRN wheeze
- [ ] ± Ipratropium–albuterol neb `3 mL q6h`

Stress ulcer prophylaxis — if vent / coagulopathy

- [ ] Pantoprazole `40 mg IV/PO daily`
- [ ] Or famotidine `20 mg IV/PO q12h` (adjust in CKD)

VTE prophylaxis — if no contraindication

- [ ] Enoxaparin `40 mg SC daily` (CrCl < 30 → 30 mg SC daily or UFH)
- [ ] Or heparin `5000 units SC q8–12h`; SCDs if anticoagulation contraindicated

Glycemic control

- [ ] Target glucose `140–180 mg/dL`; sliding scale or IV insulin per ICU protocol

Nutrition

- [ ] Early enteral nutrition within `24–48 h` if intubated / poor intake
- [ ] Diet order for nonintubated — regular / diabetic / cardiac as appropriate

Diuretics — if volume overload

- [ ] Furosemide `20–40 mg IV`, titrate to goal fluid balance

09 Lines, tubes & devices

Order as needed.

- [ ] Peripheral IV × 2
- [ ] Central venous catheter (vasopressors / difficult access)

- [ ] Arterial line (frequent ABGs & continuous BP)
- [ ] Indwelling urinary catheter if strict I/O required
- [ ] NG / OG tube for nutrition & meds in intubated patients

10 Corticosteroids

DO NOT DOUBLE-DOSE If indicated for both severe CAP and septic shock, use a **single hydrocortisone regimen**; coordinate with any COPD / asthma steroids to avoid excessive cumulative dose.

10.1 Severe CAP · non-influenza

Consider adjunctive corticosteroids if ALL of:

- [ ] Meets severe CAP criteria (e.g., IDSA/ATS severe CAP, high PSI / SCAP / SMART-COP)
- [ ] No major contraindication (uncontrolled GI bleeding, uncontrolled psychosis, severe uncontrolled hyperglycemia)
- [ ] Clinical picture suggests predominant bacterial pneumonia

ORDER

- [ ] **Hydrocortisone `50 mg IV q6h`**

OR

- [ ] **Hydrocortisone `200 mg/day IV`** continuous infusion (per local protocol)

DURATION / REASSESSMENT

- [ ] Typical total course **`5–7 days`**; reevaluate daily, taper / discontinue once clearly improving and support decreasing
- [ ] Avoid routine steroids when pneumonia is predominantly influenza viral without clear bacterial superinfection (unless indicated for septic shock)

10.2 Septic shock · any source

- [ ] If vasopressor-dependent shock persists despite adequate fluid resuscitation: **Hydrocortisone `50 mg IV q6h`** (or 200 mg/day infusion)

10.3 COPD / asthma exacerbation · if present

- [ ] Methylprednisolone **`40–60 mg IV daily`** (or equivalent), with plan to convert to oral and taper; coordinate with hydrocortisone regimen to avoid excessive cumulative

steroids

Vaccination at discharge / follow-up

- [ ] Pneumococcal & influenza vaccination as indicated once stabilized (often outpatient or floor)

EDUCATIONAL USE ONLY

Not a substitute for clinical judgement. Verify doses, allergies, renal function, and contraindications. Adapt all agents, targets, and thresholds to your institutional protocols, formulary, and the individual patient.

Spreading knowledge
Improving outcomes