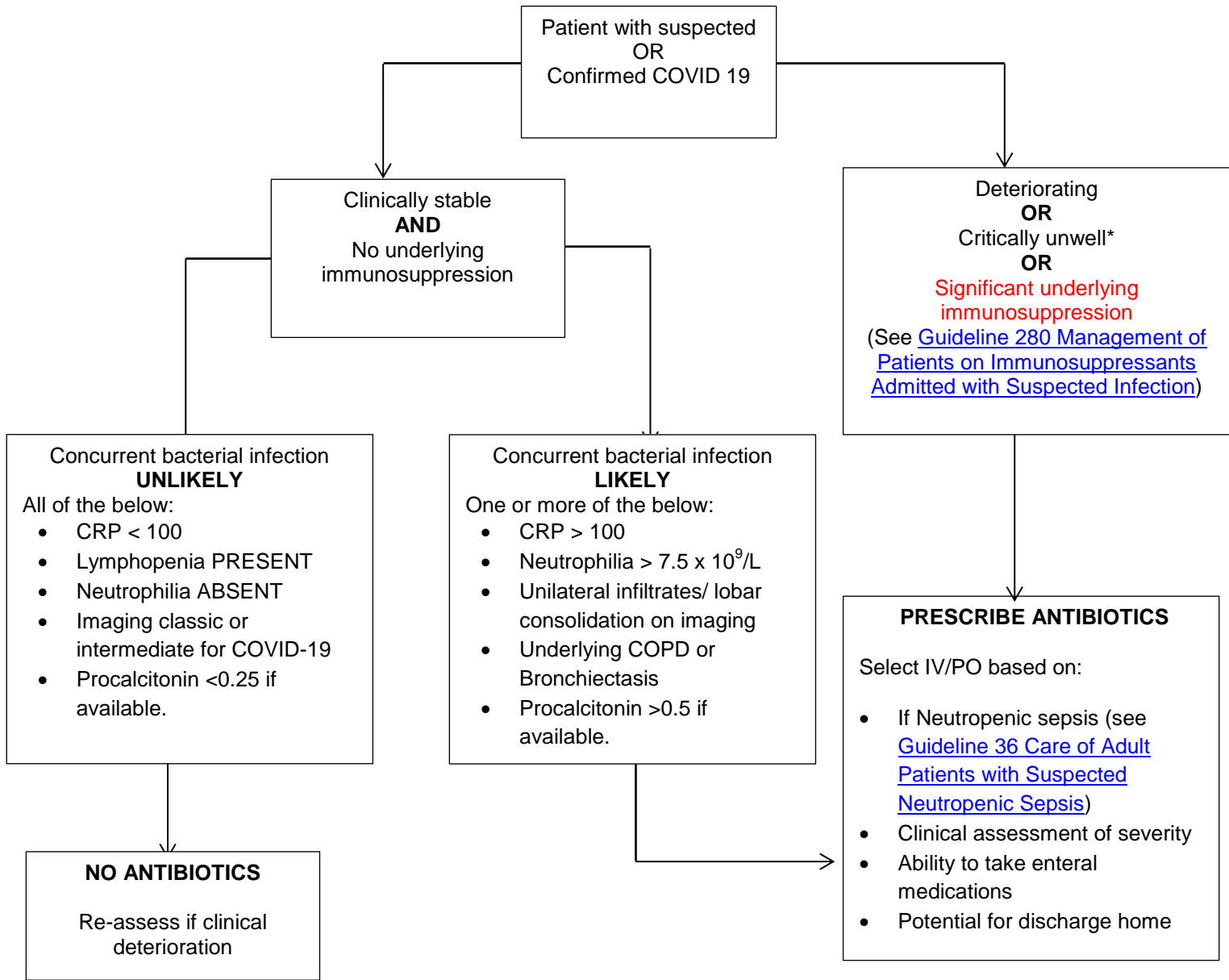


**ANTIBIOTIC THERAPY FOR PNEUMONIA WHERE COVID-19 INFECTION IS SUSPECTED**



\*Features that may imply deterioration or critical illness:

- Rising FiO2 or >40%
- RR>30
- Worsening hypoxemia
- Drowsiness or confusion
- Hypotension
- Requiring proning at any FiO2 or location
- Acute Kidney Injury

Use clinical judgement as this list is not exhaustive by any means.

Change in PCT or CRP alone without clinical deterioration does not necessitate antibiotic start or switch.

Figure 1: Management of COVID-19 Respiratory Infection

**Colour code:**

- Antibiotics highlighted **red** and **bold** are **penicillin** based. They are contra-indicated in patients with a history of penicillin allergy with life-threatening reaction e.g. anaphylaxis, angioedema and/or urticaria.
- Antibiotics highlighted *orange* and *italic* belong to either the cephalosporin or carbapenem groups of antibiotic and should be used with caution in patients a history of non-severe penicillin allergy e.g. delayed / minor rash. They are contra-indicated if serious penicillin allergy e.g. anaphylaxis or angioedema.
- Antibiotics highlighted **green** are considered safe to use in patients allergic to penicillin.

The indication for antibiotics should be clearly documented in the medical notes and on the drug chart.

**Intravenous (IV) antibiotics should ONLY be used where disease severity demands urgent action** or where oral therapy cannot be taken.

**If a specific pathogen is identified the spectrum of antibiotic therapy may be narrowed.**

Whenever possible, **stop or review dates should be specified** for antibiotic prescriptions.

**Sampling:**

- If meeting sepsis criteria, send relevant samples, i.e. blood cultures, sputum, urine etc
- Send urine for Legionella and Pneumococcal antigen - see [Guideline 135 – Appropriate Requesting of Legionella and Pneumococcal Antigen Testing in Urine Samples](#).
- Send clotted blood sample for atypical pneumonia serology.

**NOTE:**

- If patient known to be colonised or infected with MRSA add **Vancomycin** (see [Guideline 241](#)) or **Teicoplanin** (see [Guideline 143](#)).
- If patient known to be colonised or infected with an ESBL / AmpC-producing organism, use **Meropenem** 1g IV stat and review with microbiology consultant / results of culture and sensitivities.
- Infections **other** than those of the respiratory tract should be treated with appropriate antibiotics (refer to Rx Guidelines). For example, the source of infection may be the urinary tract or abdomen, where broad-spectrum antibiotic cover will be required.
- Although CURB scoring has not been validated for COVID-19 infections, it is a reasonable way to assess the severity of Community-Acquired Pneumonia, and is used in the following tables.

1. Patient not admitted to hospital OR Community Acquired Pneumonia CURB-65 score 0-1)

First line treatment (contra-indicated in pregnancy)	Alternative treatment (contra-indicated in Type 1 penicillin hypersensitivity)
Doxycycline 200 mg stat then 100mg 24 hourly PO	Amoxicillin 500 mg 8 hourly PO
Length of Treatment: 5 days	

2. Patient admitted to hospital - Community Associated

	Moderate severity CURB-65 = 2	High severity CURB-65 = 3 or more
First line treatment	<p><b>Benzympenicillin</b> 1.2 g 6 hourly IV  <b>PLUS</b>  <b>Clarithromycin</b> 500 mg 12 hourly PO/IV<sup>1</sup></p> <p>After 48 hours review and consider step down to  <b>amoxicillin</b> 1 g 8 hourly PO and continue <b>Clarithromycin</b> 500 mg 12 hourly PO</p>	<p><b>Co-amoxiclav</b> 1.2g IV 8 hourly  <b>PLUS</b>  <b>Clarithromycin</b> 500 mg 12 hourly PO/IV<sup>1</sup></p> <p>After 48 hours review and consider step down to  <b>Co-amoxiclav</b> 625mg PO 8 hourly and continue <b>Clarithromycin</b> 500 mg 12 hourly PO</p>
Type 1 penicillin hypersensitivity	<p>Patients <b>unable</b> to take oral antibiotics:  <b>Teicoplanin</b> 400 mg (if &lt;70 kg) <b>or</b> 600 mg (if &gt;70 kg) IV 12 hourly for 3 doses then 24 hourly  (see <a href="#">Guideline 143 Use of Teicoplanin in Adults</a>)  <b>Plus</b>  <b>Ciprofloxacin</b><sup>+</sup> 400 mg IV 12 hourly  <b>If suspected aspiration, add</b>  <b>Metronidazole</b> 500 mg 8 hourly IV (400 mg 8 hourly PO)</p> <p>Patients <b>able</b> to take oral antibiotics:  <b>Doxycycline</b> 200 mg stat then 100 mg 24 hourly PO  <b>or</b>  <b>Moxifloxacin</b><sup>+</sup> 400 mg 24 hourly PO (check / monitor for QT prolongation) – NB 5 day treatment only  <b>If suspected aspiration, add</b>  <b>Metronidazole</b> 400 mg 8 hourly PO</p>	
<p><b>For patients in whom COVID-19 infection is confirmed and there are no indication of a secondary bacterial infection, empirical antibiotics should be stopped</b></p> <p><b>Length of treatment:</b> usually 7 days.</p>		

<sup>1</sup>Bioavailability of oral clarithromycin is good and IV administration should only be considered in patients unable to take orally.

<sup>+</sup> [Fluoroquinolone Patient Safety Information](#)

### 3. Hospital Acquired or Unresponsive above regimens at 48-72 hours

First line treatment	Alternative regimens or type 1 penicillin hypersensitivity
<b>Piperacillin / tazobactam</b> 4.5 g 8 hourly IV	<b>Teicoplanin</b> 400 mg (if <70 kg) <b>or</b> 600 mg (if >70 kg) IV 12 hourly for 3 doses then 24 hourly (see <a href="#">Guideline 143 Use of Teicoplanin in Adults</a> ) <b>Plus</b> <b>Ciprofloxacin</b> <sup>+</sup> 500 mg – 750 mg 12 hourly PO (400 mg 12 hourly IV unable to take orally)  <b>If suspected aspiration plus</b> <b>Metronidazole</b> 500 mg 8 hourly IV (400 mg 8 hourly PO)
<p><b>For patients in whom COVID-19 infection is confirmed and there are no indication of a secondary bacterial infection, empirical antibiotics should be stopped.</b></p> <p><b>Length of treatment:</b> usually 7 days.</p>	

<sup>+</sup> [Fluoroquinolone Patient Safety Information](#)

### 4. References

- NICE NG 165. COVID-19 Rapid Guideline: Managing Suspected or Confirmed Pneumonia in Adults in the Community. April 2020. Available: <https://www.nice.org.uk/guidance/ng165/resources/covid19-rapid-guideline-managing-suspected-or-confirmed-pneumonia-in-adults-in-the-community-pdf-66141902429125>

See also:

- [Guideline 48 Use of Gentamicin in Adults](#)
- [Guideline 59A Urgent Care Sepsis Screening and Action Tool](#)
- [Guideline 59B Urgent Care Maternal Sepsis Tool](#)
- [Guideline 59C Inpatient Sepsis Screening and Action Tool](#)
- [Guideline 67 Established Bronchiectasis Outpatient Parenteral Antimicrobial Therapy \(OPAT\) Pathway](#)
- [Guideline 135 Appropriate requesting of Legionella and Pneumococcal Antigen Testing in Urine Samples](#)
- [Guideline 211 Diagnosis and Management of Pneumonia in High Cervical Cord Injury Patients](#)
- [Guideline 222 Adult and Paediatric Injectables Guide](#)
- [Guideline 241 Intravenous Vancomycin for Adults](#)
- [Guideline 246 Referral of Patients for Home IV Antibiotics \(OPAT\)](#)
- [Guideline 302 Use of Antivirals during Seasonal Influenza – Treatment and Prophylaxis – Adults and Children](#)
- [Guideline 669 Nebulised Drugs for use in Adults in Hospital](#)
- [Guideline 698 Management and Control of Panton-Valentine Leukocidin \(PVL\) associated Staphylococcal Infections](#)
- [Guideline 709 Seasonal Influenza Adult Hospital Pathways](#)

Title of Guideline	MANAGEMENT AND ANTIBIOTIC THERAPY FOR COVID-
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Antimicrobial Stewardship Committee	
Clinical Guidelines Subgroup	
Author/s	Trust Antimicrobial Pharmacist, Consultant Microbiologists, Consultants for Respiratory Medicine,
SDU(s)/Department(s) responsible for updating the guideline	Microbiology, Respiratory Medicine
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