

Antimicrobial Guidelines

LOWER RESPIRATORY TRACT INFECTIONS amendment during CoVid 19 Pandemic for RAPID RESPONSE

This section covers treatment of

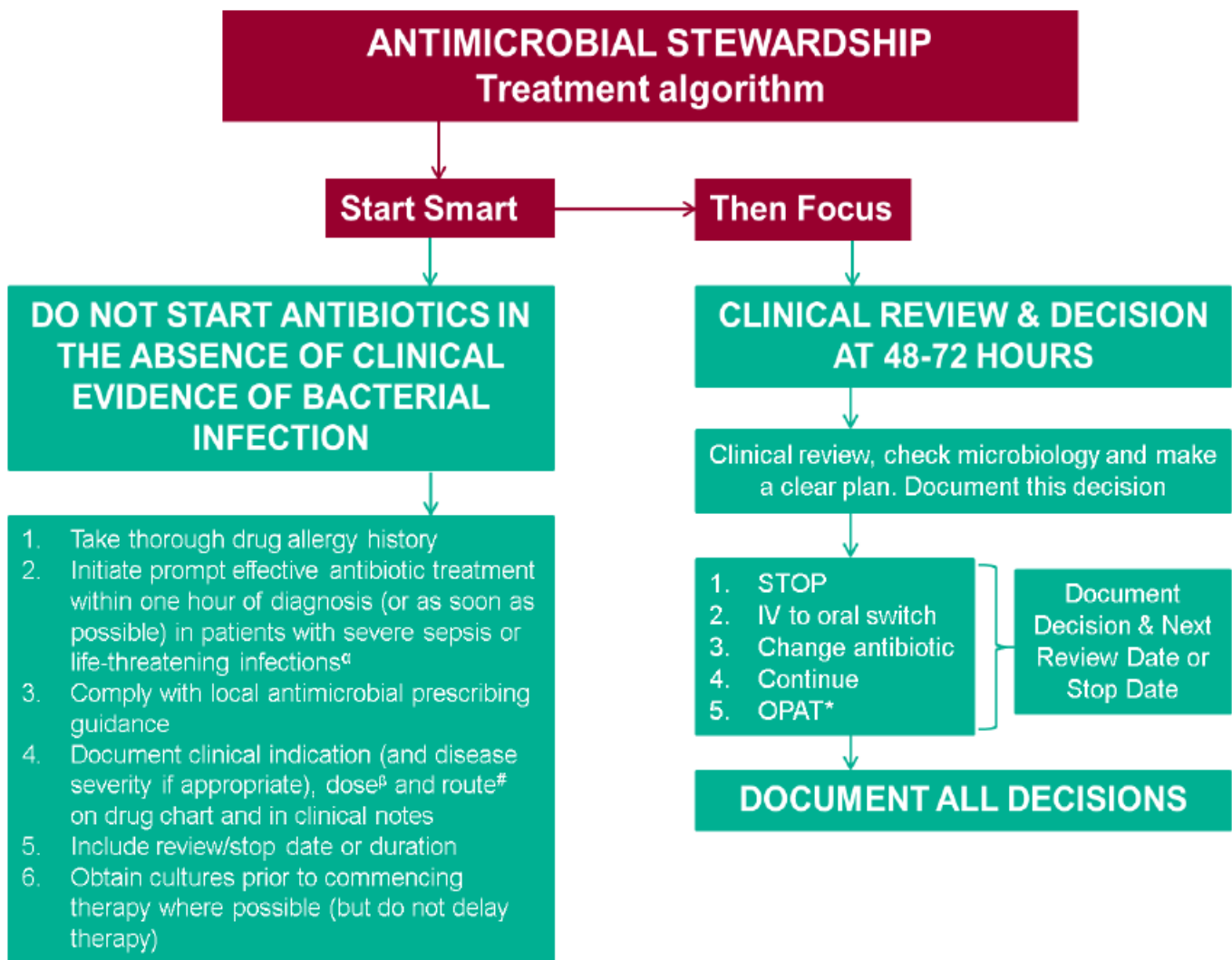
- Acute infective exacerbation of COPD
- Community acquired pneumonia (CAP)
- Bacterial respiratory tract infection secondary to COVID-19
- Aspiration Pneumonia

During the COVID-19 Pandemic

Start Smart then Focus

A Start Smart - then Focus approach is recommended for all antibiotic prescriptions.

Start Smart then Focus Treatment Algorithm



Fluoroquinolone antibiotics: In March 2019, the MHRA issued restrictions and precautions for the use of fluoroquinolone antibiotics because of rare reports of disabling and potentially long-lasting or irreversible side effects (see [Drug Safety Update](#) for details).

IMPORTANT – Fluoroquinolone Antibiotics (MHRA March 2019)

Systemic (by mouth, injection, or inhalation) fluoroquinolones (Ciprofloxacin, Levofloxacin, Moxifloxacin, Ofloxacin) can very rarely cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses

Consideration should be given to official guidance on the appropriate use of antibacterial agents. The new EU restrictions closely align with existing UK national guidance. The restrictions should not prevent use of a fluoroquinolone for serious or severe infections if this is consistent with UK national guidance or where there are microbiological grounds, and where the benefit is thought to outweigh the risk.

If you have any queries on choice of antibiotic please consult a microbiologist

IV Antimicrobials

Prescribing and administration of IV antimicrobials must only happen in services where colleagues are trained and competent to prescribe and administer IV treatments

Version	Change Detail	Date
2	For use during Covid 19 Pandemic by Rapid Response service- update to reflect NG 165 published April 2020	April 2020
2.1	Pg 6 addition of ageusia	May 2020

For review September 2020

Based on NICE summary of antimicrobial prescribing guidance – managing common infections
<https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-guidance/antimicrobial%20guidance/summary-antimicrobial-prescribing-guidance.pdf>

Reference NICE Guidance NG165 – COVID- 19 rapid guideline: managing suspected or confirmed pneumonia in adults in the community
<https://www.nice.org.uk/guidance/ng165>

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ACUTE INFECTIVE EXACERBATION OF COPD DURING COVID 19 PANDEMIC FOR Rapid Response

Definition: An exacerbation is a sustained worsening of the person's symptoms from their usual stable state, which is beyond normal day-to-day variations, and is acute in onset. Commonly reported symptoms are worsening breathlessness, cough, increased sputum production and change in sputum colour.

Consider an antibiotic after taking into account:

- The severity of symptoms, particularly sputum colour changes and increases in volume or thickness beyond the person's normal day-to-day variation
- Whether they may need to go into hospital for treatment
- Previous exacerbation and hospital admission history, and the risk of developing complications
- Previous sputum culture and susceptibility results
- The risk of antimicrobial resistance with repeated courses of antibiotics.

Acute infective exacerbation of COPD during COVID-19 pandemic for Rapid Response

Severity	1 st line	Penicillin Allergy (see explanatory notes)
Minor	AMOXICILLIN 500mg THREE times a day orally OR DOXYCYCLINE 200mg as a single dose on day one then 100mg DAILY orally OR CLARITHROMYCIN 500mg TWICE A DAY orally Treatment duration : 5 days	DOXYCYCLINE 200mg as a single dose on day one then 100mg DAILY orally Treatment duration : 5 days
Moderate	AMOXICILLIN 1g THREE TIMES orally Plus DOXYCYCLINE 200mg ONCE A DAY orally Treatment duration: 7 days	DOXYCYCLINE 200mg ONCE DAILY orally Treatment duration: 7 days
Severe During Co-Vid 19 pandemic **remember safety issues if considering a fluoroquinolone	<u>Patients under 65 years of age</u> DALBAVANCIN 1500mg IV stat Plus LEVOFLOXACIN 500mg TWICE A DAY orally or IV (oral route preferred)	<u>Non-severe penicillin allergy AND patients under 65 years of age</u> DALBAVANCIN 1500mg IV stat Plus LEVOFLOXACIN 500mg TWICE A DAY orally or IV (oral route preferred) (Fluoroquinolone antibiotics**

<p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX</p>	<p>(Fluoroquinolone antibiotics**) <u>Patients 65 years of age and over</u></p> <p>DALBAVANCIN 1500mg IV stat Plus CO-TRIMOXAZOLE 960mg orally or IV infusion TWICE A DAY (oral route preferred)</p> <p>Treatment duration: total of 7 days (after 48 hours review co-trimoxazole/levofloxacin IVs and switch to oral if clinically appropriate)</p> <p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX USE ERTAPENEM 1g IV DAILY</p> <p>Ertapenem treatment duration: total of 7 days -after 48 hours review ertapenem IV and switch to oral if clinically appropriate</p>	<p><u>Non-severe penicillin allergy AND patients 65 years of age and over</u></p> <p>DALBAVANCIN 1500mg IV stat Plus CO-TRIMOXAZOLE 960mg orally or IV infusion TWICE A DAY (oral route preferred)</p> <p>Treatment duration: total of 7 days (after 48 hours review co-trimoxazole/levofloxacin IVs and switch to oral if clinically appropriate)</p> <p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX USE ERTAPENEM 1g IV DAILY</p> <p>Ertapenem treatment duration: total of 7 days -after 48 hours review ertapenem IV and switch to oral if clinically appropriate</p>
<p>IV to oral switch for</p> <p>**remember safety issues if considering a fluoroquinolone</p>	<p>AMOXICILLIN 1g THREE TIMES orally</p> <p>plus</p> <p>DOXYCYCLINE 200mg ONCE A DAY orally</p> <p>Treatment duration: Total of 7 days including ertapenem/ levofloxacin/ co-trimoxazole treatment time</p>	<p>LEVOFLOXACIN 500mg ONCE DAILY orally (Fluoroquinolone antibiotic **)</p> <p>OR</p> <p>CO-TRIMOXAZOLE 960mg TWICE A DAY orally</p> <p>Treatment duration: Total of 7 days including ertapenem/ levofloxacin/ co-trimoxazole treatment time</p>

COMMUNITY ACQUIRED PNEUMONIA (CAP) DURING COVID 10 PANDEMIC FOR Rapid Response

Definition: Community-acquired pneumonia is a lower respiratory tract infection that is most commonly caused by bacterial infection. The main bacterial pathogen is *Streptococcus pneumoniae* however *Mycoplasma pneumoniae* occurs in outbreaks approximately every 4 years in the UK and is much more common in school-aged children. Although bacterial infection is the most common cause of community-acquired pneumonia, viral infection causes approximately 13% of cases in adults and approximately 66% of cases in children and young people.

Although the NICE guideline on pneumonia in adults: diagnosis and management recommends using the CRB65 tool, it has not been validated in people with COVID-19. It also requires blood pressure measurement, which may be difficult or undesirable during the COVID-19 pandemic and risks cross-contamination

During the COVID-19 pandemic, face to face examination of patients may not be possible. Where physical examination and other ways of making an objective diagnosis are not possible, the clinical diagnosis of community-acquired pneumonia of any cause in an adult can be informed by other clinical signs or symptoms such as:

- temperature above 38°C
- respiratory rate above 20 breaths per minute
- heart rate above 100 beats per minute
- new confusion (see the CEBM's rapid diagnosis of community-acquired pneumonia for clinicians).

Assessing severity

The following symptoms and signs to help identify patients with more severe illness to help make decisions about hospital admission:

- severe shortness of breath at rest or difficulty breathing
- coughing up blood
- blue lips or face
- feeling cold and clammy with pale or mottled skin
- collapse or fainting (syncope)
- new confusion
- becoming difficult to rouse
- little or no urine output.

It is difficult to determine whether pneumonia has a COVID-19 viral cause or a bacterial cause (either primary or secondary to COVID-19) in primary care, particularly during remote consultations. However, as COVID-19 becomes more prevalent in the community, patients presenting with pneumonia symptoms are more likely to have a COVID-19 viral pneumonia than a community-acquired bacterial pneumonia.

COVID-19 viral pneumonia may be more likely if the patient:

- presents with a history of typical COVID-19 symptoms for about a week
- has severe muscle pain (myalgia)



with you, for you

- has loss of sense of smell (anosmia)
- has loss of taste (ageusia)
- is breathless but has no pleuritic pain
- has a history of exposure to known or suspected COVID-19, such as a household or workplace contact.

A bacterial cause of pneumonia may be more likely if the patient:

- becomes rapidly unwell after only a few days of symptoms
- does not have a history of typical COVID-19 symptoms
- has pleuritic pain
- has purulent sputum.

Antibiotic treatment

COVID-19 pneumonia is caused by a virus therefore antibiotics are ineffective. Inappropriate antibiotic use may reduce availability if used indiscriminately, and broad-spectrum antibiotics in particular may lead to *Clostridioides difficile* infection and antimicrobial resistance.

Do not offer an antibiotic for treatment or prevention of pneumonia if:

- COVID-19 is likely to be the cause
and
- symptoms are mild.

Offer an oral antibiotic for treatment of pneumonia in people who can or wish to be treated in the community if:

- the likely cause is bacterial
or
- it is unclear whether the cause is bacterial or viral and symptoms are more concerning
or
- the patient is at high risk of complications because, for example,
 - they are older or frail
 - have a pre-existing comorbidity such as immunosuppression or significant heart or lung disease (for example bronchiectasis or COPD)
 - have a history of severe illness following previous lung infection.

Community acquired pneumonia (CAP) during COVID 19 pandemic for Rapid Response

Severity	1 st line	Penicillin Allergy (see explanatory notes)
Mild	<p>1st Line DOXYCYCLINE 200mg as a single dose on day 1, then 100mg ONCE DAILY orally</p> <p>Treatment duration: 5 days</p> <p>2nd line / pregnancy AMOXICILLIN 500mg THREE TIMES A DAY orally</p> <p>Treatment duration: 5 days</p>	<p>DOXYCYCLINE 200mg as a single dose on day 1 then 100mg ONCE DAILY orally</p> <p>Treatment duration: 5 days</p>
Moderate	<p>Send urine sample to microbiology for Pneumococcal/<i>Legionella</i> antigen tests</p> <p>AMOXICILLIN 1g THREE TIMES A DAY orally plus CLARITHROMYCIN 500mg TWICE A DAY</p> <p>Treatment duration: 5 days (7-10 days if poor response)</p>	<p>Send urine sample to microbiology for Pneumococcal/<i>Legionella</i> antigen tests</p> <p>DOXYCYCLINE 200mg ONCE DAILY orally</p> <p>Treatment duration: 5 days</p>
<p>Severe During Co-Vid 19 pandemic</p> <p>Rapid Response</p> <p style="color: red;">**remember safety issues if considering a fluoroquinolone</p>	<p><u>Patients under 65 years of age</u></p> <p>DALBAVANCIN 1500mg IV stat Plus LEVOFLOXACIN 500mg TWICE A DAY orally or IV (oral route preferred) (Fluoroquinolone antibiotics**)</p> <p><u>Patients 65 years of age and over</u></p> <p>DALBAVANCIN 1500mg IV stat Plus CO-TRIMOXAZOLE 960mg orally or IV infusion TWICE A DAY (oral route preferred)</p>	<p><u>Non-severe penicillin allergy AND patients under 65 years of age</u></p> <p>DALBAVANCIN 1500mg IV stat Plus LEVOFLOXACIN 500mg TWICE A DAY orally or IV (oral route preferred) (Fluoroquinolone antibiotics**)</p> <p><u>Non-severe penicillin allergy AND patients 65 years of age and over</u></p> <p>DALBAVANCIN 1500mg IV stat Plus CO-TRIMOXAZOLE 960mg orally or IV infusion TWICE A DAY (oral route preferred)</p>

<p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX</p>	<p>Treatment duration: total of 7 days (after 48 hours review co-trimoxazole/levofloxacin IVs and switch to oral if clinically appropriate)</p> <p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX</p> <p>USE</p> <p>ERTAPENEM 1g IV DAILY</p> <p>Ertapenem treatment duration: total of 7 days -after 48 hours review ertapenem IV and switch to oral if clinically appropriate</p>	<p>Treatment duration: total of 7 days (after 48 hours review co-trimoxazole/levofloxacin IVs and switch to oral if clinically appropriate)</p> <p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX</p> <p>USE</p> <p>ERTAPENEM 1g IV DAILY</p> <p>Ertapenem treatment duration: total of 7 days -after 48 hours review ertapenem IV and switch to oral if clinically appropriate</p>
<p>IV to oral switch</p> <p>**remember safety issues if considering a fluoroquinolone</p>	<p>AMOXICILLIN 1g THREE times a day orally</p> <p>Treatment duration: Total of 7 days including ertapenem/ levofloxacin/ co-trimoxazole treatment time</p>	<p>LEVOFLOXACIN 500mg TWICE A DAY orally (Fluoroquinolone antibiotic **)</p> <p>Treatment duration: Total of 7 days including ertapenem/ levofloxacin/ co-trimoxazole treatment time</p>

BACTERIAL LOWER RESPIRATORY TRACT INFECTION SECONDARY TO COVID 19 FOR RAPID RESPONSE

Definition: pneumonia (lower respiratory tract infection) that develops with/after COVID-19

Bacterial lower respiratory tract infection secondary to COVID-19 for Rapid Response

Severity	1 st line	Penicillin Allergy (see explanatory notes)
Minor	1st Line DOXYCYCLINE 200mg as a single dose on day 1, then 100mg ONCE DAILY orally Treatment duration: 5 days 2nd line / pregnancy AMOXICILLIN 500mg THREE TIMES A DAY orally Treatment duration: 5 days	DOXYCYCLINE 200mg as a single dose on day 1 then 100mg ONCE DAILY orally Treatment duration: 5 days
Moderate	AMOXICILLIN 1g THREE TIMES A DAY orally Plus DOXYCYCLINE 200mg ONCE DAILY orally Treatment duration: 5- 7 days	CO-TRIMOXAZOLE 960mg TWICE A DAY orally Treatment duration: 5- 7 days
Severe	<u>Patients under 65 years of age</u> DALBAVANCIN 1500mg IV stat Plus LEVOFLOXACIN 500mg TWICE A DAY orally or IV (oral route preferred) (Fluoroquinolone antibiotics**) <u>Patients 65 years of age and over</u> DALBAVANCIN 1500mg IV stat Plus CO-TRIMOXAZOLE 960mg orally or IV infusion TWICE A DAY (oral	<u>Non-severe penicillin allergy AND patients under 65 years of age</u> DALBAVANCIN 1500mg IV stat Plus LEVOFLOXACIN 500mg TWICE A DAY orally or IV (oral route preferred) (Fluoroquinolone antibiotics**) <u>Non-severe penicillin allergy AND patients 65 years of age and over</u> DALBAVANCIN 1500mg IV stat Plus CO-TRIMOXAZOLE 960mg orally or IV infusion TWICE A DAY (oral route

**remember safety issues if considering a fluoroquinolone

<p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX</p>	<p>route preferred)</p> <p>Treatment duration: total of 7 days (after 48 hours review co-trimoxazole/levofloxacin IVs and switch to oral if clinically appropriate)</p> <p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX</p> <p>USE</p> <p>ERTAPENEM 1g IV DAILY</p> <p>Ertapenem treatment duration: total of 7 days -after 48 hours review ertapenem IV and switch to oral if clinically appropriate</p>	<p>preferred)</p> <p>Treatment duration: total of 7 days (after 48 hours review co-trimoxazole/levofloxacin IVs and switch to oral if clinically appropriate)</p> <p>IF POOR RESPONSE TO DALBA +LEVO/CO-TRIMOX</p> <p>USE</p> <p>ERTAPENEM 1g IV DAILY</p> <p>Ertapenem treatment duration: total of 7 days -after 48 hours review ertapenem IV and switch to oral if clinically appropriate</p>
<p>IV to oral switch</p> <p>**remember safety issues if considering a fluoroquinolone</p>	<p>AMOXICILLIN 1g THREE TIMES orally</p> <p>plus</p> <p>DOXYCYCLINE 200mg ONCE A DAY orally</p> <p>Treatment duration: Total of 7 days including ertapenem/ levofloxacin/ co-trimoxazole treatment time</p>	<p>LEVOFLOXACIN 500mg ONCE DAILY orally (Fluoroquinolone antibiotic **)</p> <p>OR</p> <p>CO-TRIMOXAZOLE 960mg TWICE A DAY orally</p> <p>Treatment duration: Total of 7 days including ertapenem/ levofloxacin/ co-trimoxazole treatment time</p>

ASPIRATION PNEUMONIA DURING COVID 19 PANDEMIC FOR Rapid Response

Definition: symptoms of BACTERIAL pneumonia in a person with a history or risk factors for aspiration

Aspiration pneumonia during COVID-19 pandemic for Rapid Response

Severity	1 st line	Penicillin Allergy (see explanatory notes)
Minor to moderate infection	<p><u>Community Acquired</u></p> <p>AMOXICILLIN 1g THREE TIMES A DAY orally</p> <p><u>PLUS</u></p> <p>METRONIDAZOLE 400mg THREE TIMES A DAY</p> <p><u>Hospital Acquired</u></p> <p>CO-TRIMOXAZOLE 960mg TWICE A DAY orally</p> <p>plus</p> <p>METRONIDAZOLE 400mg THREE TIMES A DAY oral</p> <p>Treatment duration: 5 days</p>	<p><u>Community or Hospital Acquired</u></p> <p>CO-TRIMOXAZOLE 960mg TWICE A DAY orally</p> <p><u>PLUS</u></p> <p>METRONIDAZOLE 400mg THREE TIMES A DAY oral</p> <p>Treatment duration: 5 days</p>
C Severe	<p><u>Community or Hospital Acquired</u></p> <p>ERTAPENEM 1g IV DAILY</p> <p>Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)</p>	<p><u>Community or Hospital Acquired</u></p> <p>ERTAPENEM 1g IV DAILY</p> <p>Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)</p>
IV to ORAL switch	<p><u>Community Acquired</u></p> <p>AMOXICILLIN 1g THREE TIMES A DAY orally</p> <p>plus</p>	<p><u>Community or Hospital Acquired</u></p> <p>LEVOFLOXACIN 500mg TWICE A DAY orally (Fluoroquinolone antibiotic **)</p> <p>plus</p>

	<p>METRONIDAZOLE 400mg THREE TIMES A DAY orally</p> <p><u>Hospital Acquired</u></p> <p>CO-TRIMOXAZOLE 960mg TWICE A DAY orally</p> <p>plus</p> <p>METRONIDAZOLE 400mg THREE TIMES A DAY orally</p> <p>Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)</p>	<p>METRONIDAZOLE 400mg THREE TIMES A DAY orally</p> <p>Or</p> <p>CO-TRIMOXAZOLE 960mg TWICE A DAY orally</p> <p>plus</p> <p>METRONIDAZOLE 400mg THREE TIMES A DAY orally</p> <p>Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)</p>
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