ANTIBIOTIC USE IN **ADULT** PATIENTS WITH **COVID-19**
Guidance for use within NLaG and ULHT

This guidance is for use in the current COVID-19 pandemic. It stands alone from the main Trust Antibiotic Guidelines, and should be read in conjunction with NICE NG173 "*COVID-19 rapid guideline: antibiotics for pneumonia in adults in hospital*". https://www.nice.org.uk/guidance/ng173

PROPHYLACTIC ANTIBIOTICS

There is no indication for the use of prophylactic antibiotics in the management of COVID-19 except for those clinical situations in which prophylactic antibiotics are already indicated. These include asplenic patients, and patients undergoing procedures for which prophylaxis is required. A complete list is included in the Trust Antibiotic Guidelines.

TREATMENT ANTIBIOTICS

For all infections other than COVID-19 pneumonia, the Trust Antibiotic Guidelines should be followed as usual. There is no need to change the Antibiotic agents or regimens that would routinely be used, even for patients presenting with Bronchitis or COPD exacerbations, whether severe or non-severe.

The usual consideration should be given to allergies, intolerances and drug interactions, with routine second or third line agents prescribed as appropriate. Supply chains are under constant review as difficulties may arise from the current global situation, and the Trust Pharmacy Department and the Consultant Microbiologists will advise on appropriate alternatives accordingly.

COVID-19 pneumonia is caused by a virus; therefore, antibiotics are NOT effective unless there is a bacterial co-infection (only seen in approx. 10% of cases). Inappropriate antibiotic use will compromise availability, increase risk of C.difficile infection and Antibiotic resistance. If there is confidence that the clinical features are typical for COVID-19, it is reasonable not to start empirical antibiotics.

When a patient first presents with suspected pneumonia, it is difficult to differentiate between COVID-19 pneumonia and bacterial pneumonia on clinical features alone. Initiate empirical antibiotics if there is clinical suspicion of bacterial infection, including characteristic symptoms and localised chest findings. A neutrophil count outside the normal range or lobar consolidation on chest imaging may suggest a bacterial infection, but their absence does not exclude it. Note that patients in critical care have an increased likelihood of bacterial infection compared with patients in other hospital wards or settings.

In addition to a COVID-19 swab, the following investigations will help review decisions around antibiotics: Microbiological samples for routine culture and sensitivities (i.e., sputum, tracheal aspirate, blood), chest imaging (X-ray, CT or ultrasound), and urinary antigen tests. COVID-19 pneumonia usually raises CRP levels, so this does not indicate bacterial cause. A full blood count will help as bacterial pneumonia will often be accompanied by raised neutrophil count. Severity of COVID-19 pneumonia should be based on clinical judgement as CURB-65 Score is not validated in this context.

For patients admitted on antibiotics for COVID-19 pneumonia, ensure these are in line with guidance, escalating from oral to IV antibiotics only if indicated. Seek advice from a Consultant Microbiologist for patients who are immunocompromised, pregnant, in critical care, or have history of infection with resistant organisms, repeated infective exacerbations of lung disease.

Table 1 Antibiotics for ADULT patients with suspected COMMUNITY acquired pneumonia

Empirical treatment (for 5 days)	**Antibiotic options and doses**
Antibiotics not usually indicated for mild cases as unlikely to have bacterial co-infection.	
ORAL antibiotics **For moderate or severe pneumonia**	**Doxycycline** 200mg on day 1, then 100mg once a day **Co-amoxiclav** 625mg three times a day **with Clarithromycin** 500mg twice a day. **DO NOT use in penicillin allergic patients** **Levofloxacin** 500mg once a day in moderate cases, or 500mg twice a day in severe cases. ONLY use if the other options are unsuitable, considering the safety issues with fluoroquinolones.
INTRAVENOUS antibiotics **For moderate or severe pneumonia**	**Co-amoxiclav** 1.2g three times a day **with Clarithromycin** 500 mg twice a day. **DO NOT use in penicillin allergic patients** **Cefuroxime** 1.5g three times a day **with Clarithromycin** 500mg twice a day. **Use with CAUTION in penicillin allergic patients.** **Levofloxacin** 500mg twice a day. ONLY use if the other options are unsuitable, considering the safety issues with fluoroquinolones.

Table 2 Antibiotics for ADULT patients with suspected HOSPITAL acquired pneumonia

Empirical treatment (for 5 days)	**Antibiotic options and doses**
For <u>non-severe</u> pneumonia	**Doxycycline oral** 200mg on day 1, then 100mg once a day **Co-amoxiclav oral** 625mg three times a day. **DO NOT use in penicillin allergic patients** **Co-trimoxazole oral** 960mg twice a day **DO NOT use in Sulphur allergy.** **Levofloxacin oral** 500mg once a day. ONLY use if the other options are unsuitable, considering the safety issues with fluoroquinolones.
For <u>severe</u> pneumonia **(eg suspected sepsis, ventilator-associated pneumonia)**	**Piperacillin with tazobactam IV** 4.5g three times a day. **DO NOT use in penicillin allergic patients** **Ceftazidime IV** 2g three times a day. **Use with CAUTION in penicillin allergic patients.** **Levofloxacin IV** 500mg twice a day. ONLY use if the other options are unsuitable, considering the safety issues with fluoroquinolones.
If MRSA infection suspected or confirmed	**Vancomycin IV** with dosing as per Trust Antibiotic Guidelines. For dual therapy in conjunction with an intravenous antibiotic listed above.

The full Trust Antibiotic Guidelines for ADULTS can be found on the NLAG hub here and on the ULH intranet here.