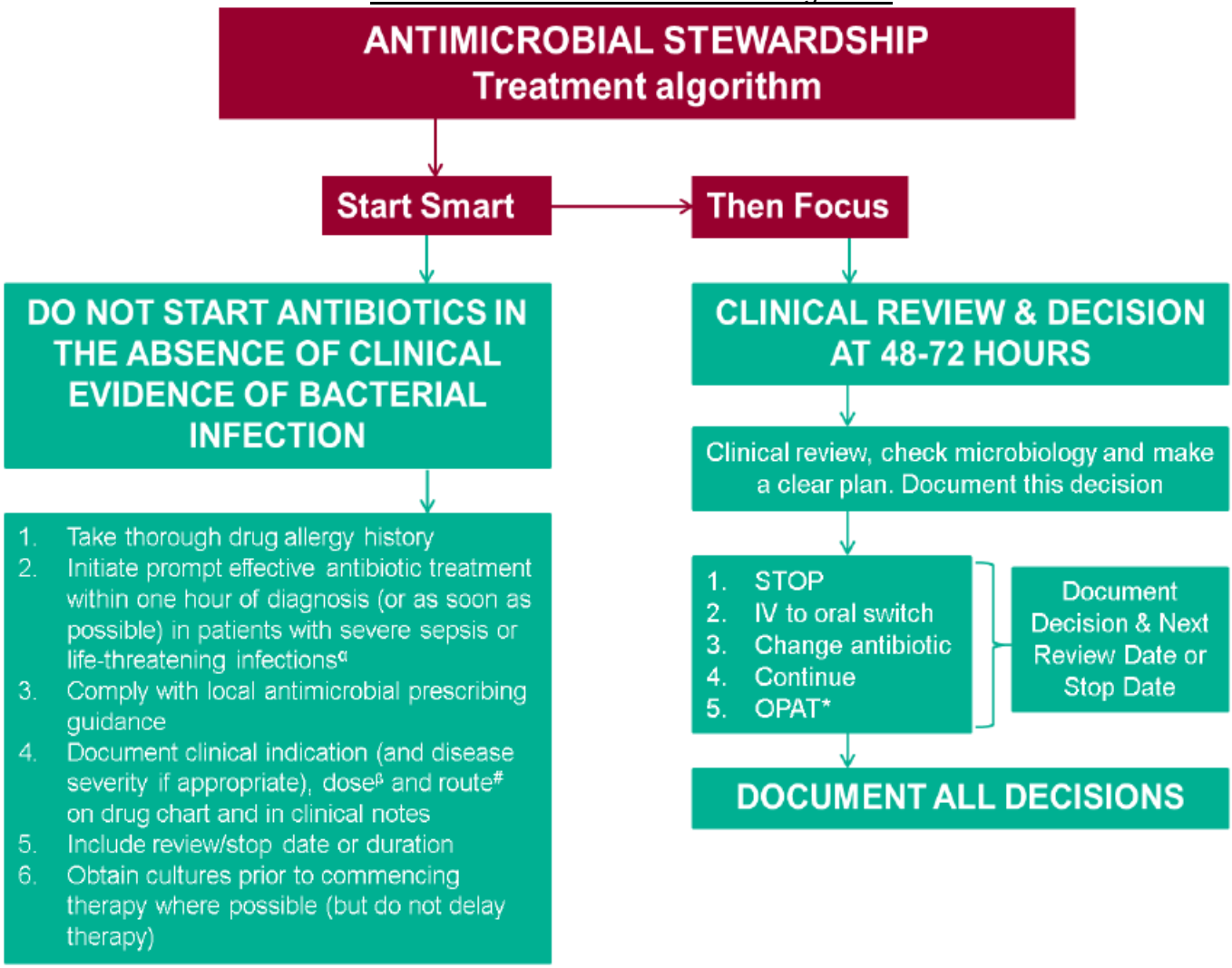
Antimicrobial Guidelines
LOWER RESPIRATORY TRACT INFECTIONS (v3)

This section covers

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). NICE is currently reviewing recommendations relating to fluoroquinolone antibiotics.

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
1	Put in place for new organisation	November 19
2	Reviewed in line with NICE – no changes	April 2021
3	Removal of post COVID pneumonia guideline, inclusion in CAP guideline	December 22

For review November 2024

Based on NICE summary of antimicrobial prescribing guidance – managing common infections

BNF hosts antimicrobial summary guidance on behalf of NICE and PHE - BNF Publications

Authors
Dr Philippa Moore, Consultant Medical Microbiologist, Gloucestershire Hospitals NHS Foundation Trust
Laura Bucknell, Chief Pharmacist, Gloucestershire Health and Care NHS Foundation Trust

INFLUENZA

Annual vaccination is essential for all those 'at risk' of influenza.

Antivirals are not recommended for healthy adults

In an inpatient setting, antivirals may be prescribed at any time for patients with suspected seasonal flu

In primary care antivirals may only be prescribed when the Chief Medical Officer has announces that flu is circulating in the community

See PHE influenza guidance on the use of antivirals agents for the treatment and prophylaxis of seasonal flu (https://www.gov.uk/government/publications/influenza-treatment-and-prophylaxis-using-anti-viral-agents)

ACUTE COUGH, BRONCHITIS

Definition: Acute cough is commonly defined as a cough that lasts less than 21 days (3 weeks). It is usually self-limiting and get better in 3-4 weeks **without antibiotics**. It is most commonly caused by an upper respiratory tract infection, such as a cold or flu, which are viral infections. It can also be caused by acute bronchitis, a lower respiratory tract infection, which is usually a viral infection but can be bacterial.

Acute bronchitis is a lower respiratory tract infection with temporary inflammation of the airways (the trachea and major bronchi) that causes cough and mucus production lasting for up to 3 weeks. It is usually caused by a viral infection, but may be caused by a bacterial infection.

Acute cough or bronchitis

Severity	**1st line**	**Penicillin Allergy (see explanatory notes)**
First line	**Self-care and safety netting advice**	
Second Line **Minor**	7 day delayed antibiotic, safety net and advise that symptoms can last 3 weeks **Consider immediate antibiotic:** If over 80 years of age and one of the following: • Hospitalisation in past year • Taking oral steroids • Insulin dependent diabetic • Congestive heart failure • Serious neurological disorder /stroke Or Over 65 years of age with 2 of the above **Consider CRP** if antibiotic being considered. No antibiotic if CRP less than 20mg/L and symptoms for more than 24 hours Delayed antibiotics if CRP 20-100mg/L Immediate antibiotics if CRP greater than 100m/L Or A young child born prematurely **Acute cough with upper respiratory infection = no antibiotic** **Acute bronchitis = no routine antibiotic** **Acute cough and higher risk of complications = immediate or back up antibiotics** **Acute cough and systemically unwell = immediate antibiotic**	
	ADULT DOSING	
Minor **See guidance above**	**AMOXICILLIN 500mg THREE TIMES A DAY orally** **OR** **DOXYCYCLINE 200mg as a single dose in day one then 100mg DAILY orally** **Treatment duration: 5 days**	**DOXYCYCLINE 200mg as a single dose in day one then 100mg DAILY orally** **Treatment duration: 5 days**
Moderate	**AMOXICILLIN 1g THREE TIMES orally**	**DOXYCYCLINE 200mg ONCE DAILY orally**

	plus **DOXYCYCLINE 200mg ONCE A DAY orally** **Treatment duration: 5 days**	**Treatment duration: 5 days**
Severe **consider transfer to an acute setting** **remember safety issues if considering a fluoroquinolone	**PIPERACILLIN/TAZOBACTAM 4.5g THREE TIMES A DAY – IV** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Treatment duration: 7 days**	**LEVOFLOXACIN 500mg TWICE A DAY orally or IV (**Fluoroquinolone antibiotic **) (Oral route preferred) **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Treatment duration: 7 days**
IV to oral switch **remember safety issues if considering a fluoroquinolone	**AMOXICILLIN 1g THREE TIMES orally** **plus** **DOXYCYCLINE 200mg ONCE A DAY orally** **Review antibiotic choice with culture and sensitivity result of sputum** **Oral switch for confirmed MRSA: as per MRSA sensitivities** **Treatment duration: 5-7 days**	**LEVOFLOXACIN 500mg ONCE DAILY orally (**Fluoroquinolone antibiotic **) **Treatment duration: 5-7 days**

For child dosing refer to BNFc or see visual summary below

NICE Antimicrobial prescribing summary for acute cough and bronchitis- NG120 Cough (acute): antimicrobial prescribing visual summary (nice.org.uk)

BACTERIAL LOWER RESPIRATORY TRACT INFECTION SECONDARY TO INFLUENZA

Definition: pneumonia (lower respiratory tract infection) that develops with/after influenza. Antibiotic therapy choice should be adjusted according to sputum culture results when available.

Bacterial lower respiratory tract infection secondary to influenza

	ADULT DOSING	
Severity	**1st line**	**Penicillin Allergy (see explanatory notes)**
Minor	**AMOXICILLIN 1g THREE TIMES A DAY orally** **Treatment duration: 5- 7 days**	**DOXYCYCLINE 200mg ONCE DAILY orally** Or if prior treatment with doxycycline **CLARITHROMYCIN 500mg BD oral** **Treatment duration: 5-7 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 **Consider transfer to the acute settings** Review doses in renal impairment **remember safety issues if considering a fluoroquinolone	**PIPERACILLIN/ TAZOBACTAM 4.5g THREE TIMES A DAY IV** **PLUS** **CLARITHROMYCIN 500mg BD orally/IV (oral route preferred)** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L	**LEVOFLOXACIN 500mg BD orally/IV** (oral route preferred) (Fluoroquinolone antibiotic **) Consider reducing to 500mg daily if patient clearly improving) **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L

	Total treatment duration (including oral step-down): 7-14 days	Total treatment duration (including oral step-down): 7-14 days
IV to oral switch **remember safety issues if considering a fluoroquinolone	**AMOXICILLIN 1g THREE TIMES A DAY orally** **plus** **DOXYXCLINE 200mg ONCE DAILY orally** **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**LEVOFLOXACIN 500mg TWICE A DAY orally** (Fluoroquinolone antibiotic **) **(**Consider reducing to 500mg od if patient clearly improving) **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**

ACUTE INFECTIVE EXACERBATION OF COPD

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

Severity	1st 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: 5-7 days**	**DOXYCYCLINE 200mg ONCE DAILY orally** **Treatment duration: 5-7 days**
Severe **remember safety issues if considering a fluoroquinolone	**PIPERACILLIN/TAZOBACTAM 4.5g THREE TIMES A DAY – IV** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg**	**LEVOFLOXACIN 500mg TWICE A DAY orally/IV** (Fluoroquinolone antibiotic **) (Oral route preferred) **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg**

	more than 100kg: 1000mg Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Treatment duration: 7 days**	**more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Treatment duration: 7 days**
IV to oral switch **remember safety issues if considering a fluoroquinolone	**AMOXICILLIN 1g THREE TIMES orally** **plus** **DOXYCYCLINE 200mg ONCE A DAY orally** **Review antibiotic choice with culture and sensitivity result of sputum** **Oral switch for confirmed MRSA: as per MRSA sensitivities** **Treatment duration: 7 days**	**LEVOFLOXACIN 500mg ONCE DAILY orally (**Fluoroquinolone antibiotic **) **Treatment duration: 7 days** **Review antibiotic choice with culture and sensitivity result of sputum**

NICE Antimicrobial prescribing summary for COPD exacerbation - guide-to-resources-pdf-6602624893 (nice.org.uk)

SUSPECTED OR CONFIRMED COMMUNITY ACQUIRED PNEUMONIA (CAP)

Definition: Community-acquired pneumonia is a lower respiratory tract infection that is most commonly caused by bacterial infection It is a pneumonia that has developed before or within 48 hours of hospital admission 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.

Symptoms and signs are consistent with an acute lower respiratory tract infection associated with new radiographic shadowing for which there is no other explanation (e.g. pulmonary oedema or infarction)

Aim to diagnose CAP (including chest x-ray) and commence antibiotic therapy within 4 hours

- Evidence of consolidation on CXR
- Clinical findings and severity rating using CURB-65 must be documented
- Collect sputum and blood cultures (If raised temperature)
- Atypical pneumonia serology and *Pneumococcal* and *Legionella* urinary antigen if indicated
- Mycoplasma infection is relatively rare in elderly (65 years and over)
- Seek risk factors for legionella and *Staphylococcus aureus* infection

If the diagnosis of community acquired pneumonia is not confirmed but the patient is thought to have a respiratory tract infection (i.e. not pneumonia), then a 5 day course of antibiotics may be sufficient

Use CURB-65 score to help guide and review CAP

CURB-65 is a BTS recommended severity rating for community acquired pneumonia (CAP) (and should not be confused with the ABC criteria defined in the flow diagram).
Patients with a CURB-65 score of 3 or more are at highest risk of death and should be managed as having severe pneumonia. Patients with a score of 2 are at increased risk of death and should be considered for short stay inpatient treatment or hospital supervised outpatient treatment. Patients with a score of 0 or 1 are at low risk of death and can be treated as having non-severe pneumonia possibly suitable for home treatment.

CURB-65 Severity rating score for CAP. 1 point for each below	
C	Mental **C**onfusion
U	Blood **U**rea 7mmol/L or greater
R	**R**espiratory Rate 30/min or greater
B	Low **B**lood pressure (diastolic 60mmHg or less or systolic less than 90mmHg
65	Aged **65** years and over

Score 0: suitable for home treatment
Score 1-2: assessment, consider community hospital referral/admission
Sore 3 or more: - urgent hospital admission/Rapid Response

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 may be 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.

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

- Presents with a history of typical COVID-19 symptoms for about a week
- Severe muscle pain (myalgia)
- Loss of sense of taste (dysgeusia) or smell (anosmia)
- Breathless but without pleuritic pain
- 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

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 immediate oral antibiotic for treatment of CAP 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.

When starting antibiotic treatment, the first-choice oral antibiotic is:

Bacterial Community acquired pneumonia (CAP)

Severity	1st line	Penicillin Allergy (see explanatory notes)
Mild **(CURB-65 SCORE 0-1)**	**AMOXICILLIN 500mg THREE TIMES A DAY orally** **or** **DOXYCYCLINE 200mg as a single dose on day 1, then 100mg ONCE DAILY orally** **or** **CLARITHROMYCIN 500mg TWICE 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 **CURB-65 SCORE 1-2**	**Send urine sample to microbiology for Pneumococcal/*Legionella* antigen tests** **AMOXICILLIN 1g THREE TIMES A DAY orally** **plus** **CLARITHROMYCIN 500mg TWICE A DAY** **Treatment duration: 5-7 days**	**Send urine sample to microbiology for Pneumococcal/*Legionella* antigen tests** **DOXYCYCLINE 200mg ONCE DAILY orally** **Treatment duration: 5-7 days**
Sever3 **CURB-65 score 3 or more** **remember safety issues if considering a fluoroquinolone	**Send urine sample to microbiology for Pneumococcal/*Legionella* antigen tests** **<u>Inpatient beds</u>** **PIPERACILLIN/TAZOBACTAM 4.5g IV THREE TIMES A DAY** **PLUS** **CLARITHROMYCIN 500mg TWICE A DAY orally or IV (oral route preferred)** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose**	**Send urine sample to microbiology for Pneumococcal/*Legionella* antigen tests** **LEVOFLOXACIN 500mg BD orally/IV** (Oral route preferred) **(**Fluoroquinolone antibiotic **)** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg**

	Less than 50kg: 400mg **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **<u>OPAT</u>** **CEFTRIAXONE 2G IV ONCE DAILY** **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**
IV to Oral Switch **remember safety issues if considering a fluoroquinolone	**AMOXICILLIN 1g THREE times a day orally** **plus** **DOXYCYLINE 200mg DAILY orally** **(for confirmed MRSA as per MRSA sensitivities)** **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**LEVOFLOXACIN 500mg TWICE A DAY orally** (Fluoroquinolone antibiotic **) (consider reducing to 500mg od if patient clearly improving) **(for confirmed MRSA as per MRSA sensitivities)** **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**
	If laboratory evidence of Pneumococci	
Severe **CURB greater or equal to 3** **remember safety issues if considering a fluoroquinolone	**<u>Inpatient Beds</u>** **BENZYLPENICILLIN 2.4g IV FOUR TIMES A DAY** **plus** **CLARITHROMYCIN 500mg orally or IV TWICE A DAY (oral route preferred)** **<u>OPAT</u>** **CEFTRIAXONE 2G IV ONCE DAILY** **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**Non-severe penicillin allergy AND less than 65 years of age** **CEFTRIAXONE 2g IV DAILY** **Plus** **CLARITHROMYCIN 500mg orally or IV TWICE A DAY (oral route preferred)** **Severe penicillin allergy AND/OR 65 years of age or above** **LEVOFLOXACIN 500mg TWICE a day orally or IV (oral route preferred)** (Fluoroquinolone antibiotic **) **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**

IV to Oral switch for laboratory evidence of Pneumococci **remember safety issues if considering a fluoroquinolone	**AMOXICILLIN 1g THREE times a day orally** **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**LEVOFLOXACIN 500mg TWICE A DAY orally (**Fluoroquinolone antibiotic **) **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**

NICE Antimicrobial prescribing summary for CAP - NG138 Pneumonia (community-acquired): antimicrobial prescribing visual summary (nice.org.uk)

HOSPITAL ACQUIRED PNEUMONIA (HAP)

Definition: Hospital -acquired pneumonia is a lower respiratory tract infection that may be life threatening. It is a pneumonia that develops 48 hours or more after hospital admission that was not incubating at hospital admission OR pneumonia present on admission but patient is within 10 days of previous in-patient stay. When managed in hospital, the diagnosis is usually confirmed by chest X-ray.
(If symptoms or signs of pneumonia start within 48 hours of hospital admission, see Community acquired pneumonia)
Prompt antibiotic treatment should be offered to everyone with hospital-acquired pneumonia.

Hospital Acquired Pneumonia

Severity	1st line	Penicillin Allergy (see explanatory notes)
Mild Review doses in renal impairment	**DOXYCYCLINE 200mg as a single dose on day 1 then 100mg ONCE DAILY orally** **Treatment duration: 5 days**	**DOXYCYCLINE 200mg as a single dose on day 1 then 100mg ONCE DAILY orally** **Treatment duration: 5 days**
Moderate Review doses in renal impairment	**CO-TRIMOXAZOLE 960mg TWICE A DAY orally** **Treatment duration: 5-7 days**	**CO-TRIMOXAZOLE 960mg TWICE A DAY orally** **Treatment duration: 5-7 days**
Severe **Consider transfer to the acute trust** Review doses in renal impairment	**Send urine sample to microbiology for pneumococcal/legionella antigen tests** **PIPERACILLIN-TAZOBACTAM 4.5g THREE TIMES A DAY IV** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Typical treatment duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**Send urine sample to microbiology for pneumococcal/legionella antigen tests** **LEVOFLOXACIN 500MG TWICE A DAY orally or IV (oral route preferred)** (Fluoroquinolone antibiotic **) **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Typical treatment duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**
IV to oral switch	**LEVOFLOXACIN 500mg TWICE A DAY orally** **Typical treatment duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**LEVOFLOXACIN 500mg TWICE A DAY orally** (Fluoroquinolone antibiotic **) **Typical treatment duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**

NICE Antimicrobial prescribing summary for HAP visual-summary-pdf-6903414829 (nice.org.uk)

ASPIRATION PNEUMONIA

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

Aspiration pneumonia

Severity	1st line	Penicillin Allergy (see explanatory notes)
Minor to moderate infection Review doses in renal impairment	**Community Acquired** **AMOXICILLIN 1g THREE TIMES A DAY orally** **plus** **METRONIDAZOLE 400mg THREE TIMES A DAY** **Hospital Acquired** **CO-TRIMOXAZOLE 960mg TWICE A DAY orally** **plus** **METRONIDAZOLE 400mg THREE TIMES A DAY oral** **Treatment duration: 5 days**	**Community or Hospital Acquired** **CO-TRIMOXAZOLE 960mg TWICE A DAY orally** **PLUS** **METRONIDAZOLE 400mg THREE TIMES A DAY oral** **Treatment duration: 5 days**
Severe **Consider transfer to the acute settings** Review doses in renal impairment	**Community or Hospital Acquired** **PIPERACILLIN/TAZOBACTAM 4.5g IV THREE TIMES A DAY** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg** Maintain treatment pending pre-dose	**Community or Hospital Acquired** **LEVOFLOXACIN 500mg orally/IV TWICE A DAY** (oral route preferred) **(**Fluoroquinolone antibiotic **) **plus** **METRONIDAZOLE 400mg THREE TIMES A DAY orally or 500mg THREE TIMES A DAY if IV (oral preferred)** **If suspected/confirmed MRSA add:** **TEICOPLANIN every 12 hours IV for 4 doses then ONCE DAILY** **Dose** **Less than 50kg: 400mg** **50-74kg: 600mg** **75-100kg: 800mg** **more than 100kg: 1000mg**

	(trough) level on Day 5. Target level 15-60mg/L **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	Maintain treatment pending pre-dose (trough) level on Day 5. Target level 15-60mg/L **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**
IV to ORAL switch	**Community Acquired** **AMOXICILLIN 1g THREE TIMES A DAY orally** **plus** **METRONIDAZOLE 400mg THREE TIMES A DAY orally** **Hospital Acquired** **CO-TRIMOXAZOLE 960mg TWICE A DAY orally** **plus** **METRONIDAZOLE 400mg THREE TIMES A DAY orally** Oral switch for confirmed MRSA: as per MRSA sensitivities **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**	**Community or Hospital Acquired** **LEVOFLOXACIN 500mg TWICE A DAY orally** (Fluoroquinolone antibiotic **) **plus** **METRONIDAZOLE 400mg THREE TIMES A DAY orally** Oral switch for confirmed MRSA: as per MRSA sensitivities **Typical duration: total of 7 days (after 48 hours review IVs and switch to oral if clinically appropriate)**

GHNHSFT Bronchiectasis Antibiotic Guidelines for Adults

Patient with **confirmed** diagnosis of Bronchiectasis **AND** symptoms of infective exacerbation

↓

Send sputum MCS, CXR, blood culture if pyrexial, FBC/UE/CRP/LFT

↓

Any positive sputum cultures in the last 2 years?

- +ve in last month
- No recent +ve but usual infective organism
- No previous +ve sputum

Organism	Non-Severe	Severe	Penicillin Allergy
S. pneumoniae	Amoxicillin 500mg TDS PO	Amoxicillin 1g TDS IV	Doxycycline 200mg OD PO
H. influenzae	Amoxicillin 500mg TDS PO (Co-amoxiclav if amoxicillin resistance) **OR** Doxycycline 200mg OD	Ceftriaxone 2g OD IV	Non severe allergy = Ceftriaxone 2g OD IV Severe allergy = Co-trimoxazole 960mg BD PO
M. catarrhalis	Co-amoxiclav 625mg TDS PO	Ceftriaxone 2g OD IV	Clarithromycin 500mg BD PO
Staph. aureus	Flucloxacillin 500mg PO QDS	Flucloxacillin 1-2g IV QDS	Doxycycline 200mg OD PO
Pseudomonas aeruginosa	Ciprofloxacin 750mg BD PO	Ceftazidime 2g TDS IV	Ciprofloxacin 750mg BD PO **AND** Tobramycin 3-5 mg/kg OD IV
	If resistance will need dual antibiotics according to sensitivities. Discuss with microbiology if no obvious combination available.		

Always check previous sensitivities before prescribing

Non-severe:

- Recent Diagnosis – Co-amoxiclav 625mg TDS PO **OR** Doxycycline 200mg OD PO
- Prolonged Hx / previous poor response to above – Levofloxacin 500mg BD PO

Severe:
Tazocin 4.5g QDS IV
(Note: QDS dosing intentional)

Non-Severe Allergy to Penicillin:
Meropenem 2g TDS IV **AND** Tobramycin 3-5mg/kg OD IV

Severe Allergy to Penicillin:
Discuss with microbiology

Duration - All courses need to be 14 days unless stated by Respiratory / Microbiology.

Any concerns or if questions about eradication / suppression of Pseudomonas – please contact Respiratory Team.

Respiratory Hot Consultant (GRH): 07384 834430 / Bleep SpR 1599 (CGH)

NOTE: Need to check Tobramycin levels 12-18 hours after the 1st dose and twice weekly thereafter.
https://www.gloshospitals.nhs.uk/gps/antimicrobial-resources/a-z-bugs-and-drugs/tobramycin-assays/

References

https://www.brit-thoracic.org.uk/document-library/clinical-information/bronchiectasis/bts-guideline-for-non-cf-bronchiectasis/
https://cks.nice.org.uk/bronchiectasis#!scenario:1

Bronchiectasis Antibiotic Guidelines – July 2019. R.Shorrocks, A.Usher, A.White, P.Moore