BELMATT

Antimicrobial Stewardship

Aneela Tehseen - Clinical Pharmacist

Learning Aims

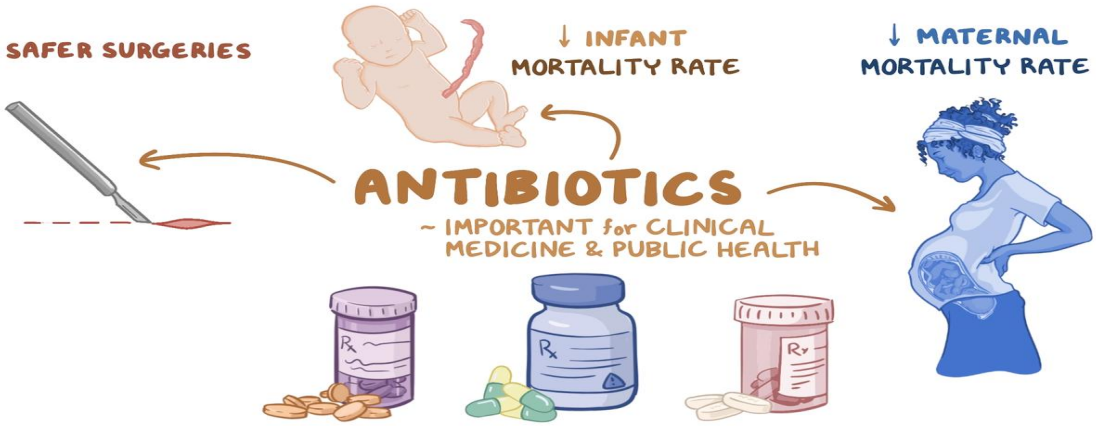
- Understanding Antimicrobial Stewardship and how you can play your role
- Understanding how the resistance to antimicrobials emerges and how it can be slowed down
- Learning ways to develop and implement system at organisational level to help guard the available antimicrobials from losing their effect
- Acknowledging common pitfalls and how to steer your way to success with evidence to show good practice

Let's get started

- NICE defines antimicrobial stewardship as, "An organisational or healthcare-system-wide approach to promoting and monitoring judicious use of antimicrobials to preserve their future effectiveness"

Antimicrobials

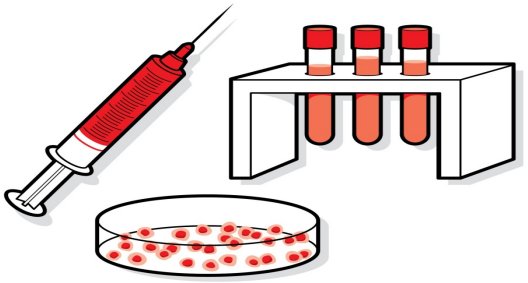
Why the growing resistance to antimicrobials is a big deal?



Stakeholders in safer use of antimicrobials

- Diagnostician/ Prescriber
- Pharmacist
- Carer/ Patient

It is everybody's business



Antimicrobial Stewardship within an organisation

- Microbiologist and an antimicrobial pharmacist
- Additional support from individuals involved in developing formularies, educational events, resources, exploring and addressing reasons for higher antimicrobial prescribing or deviating from guidelines.

  - ❖Technology development such as decision aids to highlight recent antimicrobial use history, rotational use of prophylactic antibiotics
  - ❖Have procedures in place for regular auditing and re-auditing.
  - ❖Providing practical solutions to prescribers, dispensers/Pharmacists and patients to self-care, where antimicrobials may not be indicated

NHS England

- NHS England has introduced incentives for safer and effective antimicrobials use since 2016 (CQUIN)

- CQUIN 2019/20 addressed Community pharmacy contractual framework. It required Community pharmacies to take part in compulsory audit focussing on provision of clinically appropriate advice to people consulting their pharmacy for upper respiratory tract infection related symptoms.

- CQUIN 2020/21 is planned to look at appropriate antimicrobial prescribing for UTI for adults over the age of 16. The audit standards and requirements are not available yet.

Prescribing of Antimicrobials

GP Practice	72%
Hospital In-Patient	13%
Hospital Outpatients	8%
Dental Practices	4%
Other Community settings	4%

Spectrum and its importance

Narrow Spectrum Antibiotic

- Penicillin- G
- Macrolides
- Vancomycin

Broad Spectrum Antibiotics

- Second generation Cephalosporins
- Third generation cephalosporins
- Co-Amoxiclav
- Aminoglycoside
- Neomycin
- Tobramycin

Antifungals

Very Broad Spectrum	Polyenes	Amphotericin-B
Broad Spectrum	Imidazoles, and Triazoles	Miconazole, Clotrimazole, Ketoconazole, Fluconazole, Itraconazole
Narrow Spectrum	Benzofurans	Griseofulvin

Why do pathogens acquire resistance?

- Mismatch between pathogen and the antimicrobial
- Too little antimicrobial VS heavy load of pathogen
- Too long interval between doses, allowing pathogens to multiply
- Too often exposure of the same antimicrobial to the same pathogen

Prescribing the right Antimicrobial

- Is it self-limiting?
- Using the recommended diagnostic criteria
  - ❖ CENTOR/ FEVERPAIN/ CRB-65
  - ❖ Urine Dip-stick/ Not to Dip-stick
- Using your local antimicrobial guidelines
- Keeping up to date with your local antimicrobial guidelines
- Previous exposure to the Antimicrobial agent and how long ago (eg. H-Pylori eradication)
- Other factors (although have no bearing on resistance) to consider; pregnancy, B.feeding, renal function, hepatic function, Co-administered drugs, allergies, intolerances, preferred route of administration

You have decided to prescribe!

- Does patient need an immediate prescription?
- Have you chosen the right length of treatment? (shortest effective course)
- Have you chosen the right dosage form?
- Is it the right route of administration?
- Do you need to review your decision when CnS results are available?
- Even if allergies status on medical record appears blank, please ask again of any known allergies

Promote Self-Care

- Treat your Infection TARGET leaflets
- Mentor topics (sore throat, scabies, common cold, cough, thread-worm, head-lice, athletes' foot, vaginal thrush etc)

Advice to accompany the Rx for antimicrobial

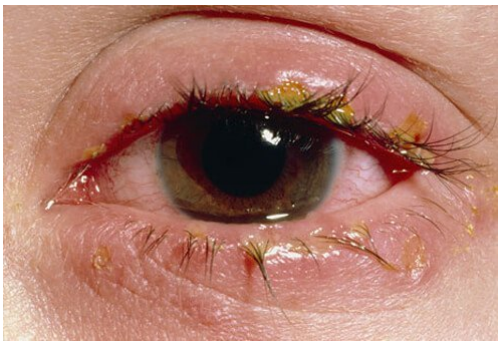
- How to take it / apply it / administer it
  - Be very clear on how many spoons or tablets or how many finger tips of a cream/ointment and how many times in a day.
  - Do not use phrase of "every 24 hours". Patients quite often try spreading out the dose over 24 hours, meaning having to take dose in the middle of night. Example: Pen-V tablet dose for adult is 500mg every 6 Hours. In layman's terms it should be, "Take 2 tablets four times a day, which is morning, lunch, tea and bed time".
- Explain, if patient is allowed to have alcohol with their antimicrobial. Again, many people assume that they are not allowed to drink with antibiotics so they either don't take it altogether or skip the dose when they are going to have a drink.

Advice to accompany the Rx for antimicrobial

- Whether to temporarily suspend some other meds whilst taking their antimicrobials. What else might need doing if they are taking interacting medication
- What are common Side effects
- When are they likely to start feeling better
- Whether and what analgesia can be used in addition if needed
- When to contact their prescriber/ pharmacist
- ***Check Patient understanding***

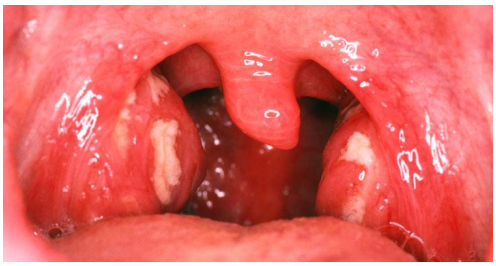
Quick journey through the most commonly encountered infections in primary care

Conjunctivitis



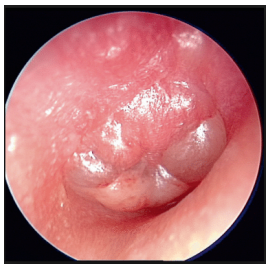
- Usually unilateral
- Self limiting
- Only treat if severe
- Current options Chloramphenicol/ Fusidic acid

Acute Sore throat



- Use FEVERPAIN score
- May use CENTOR criteria
- May use deferred antibiotic Rx if possible
- Penicillin-V for 10 days is first line. For Penicillin allergic population Calrithromycin is an option

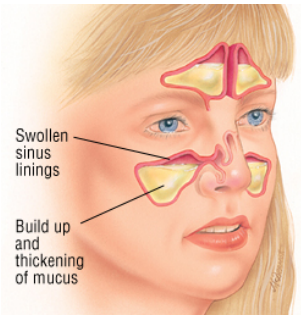
Acute Otitis Media



- 80% get better without antibiotic
- Antibiotics should be considered if patient is under the age of 2Y + OM is bilateral
- Antibiotics may be considered of OM is accompanied with otorrhoea

Acute Sinusitis

- 80% self resolving in 14 days
- Antibiotics may be considered if patient presents at day 10 and is getting worse, systemically unwell and/or there is high risk of serious complications



Acute cough/ Bronchitis

- If cough associated with URTI, no need for antibiotics
- Bear in mind that certain groups are at high risk of complications (very young children born prematurely, over the age of 80, Over 65 and had Diabetes/CCF/on oral steroids)
- Do not use low dose Penicillin-V due to resistance
- Do not use Quinolones as they have poor anti-pneumococcal activity

Acute Exacerbation of COPD

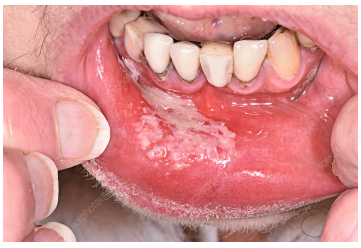
- Ensure that if patient qualifies for a rescue pack, it only has an oral steroid in it
- Carefully clinically assess each request and do not use very high dose of antibiotics
- Current recommendations are Doxycycline or Amoxicillin, either one for 5 days

Lower Urinary Tract Infection

- Do not dip-stick for anyone over the age of 65Y
- Do not Dip-stick catheterised urine sample
- Check from the below list of symptoms instead for decision on antibiotic prescription

    - Passing urine more frequently
    - Pain when passing urine
    - Sudden urge to pass urine
    - Feeling of inability to empty bladder after passing urine
    - Pain in lower abdominal region
    - Cloudy/ foul smelling/ blood stained urine
    - Feeling unwell, achy or tired

Oral candidiasis



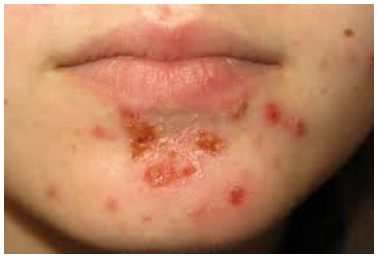
- Azoles are better than Nystatin
- It rarely happens in immunocompetent adults
- Miconazole oral gel (OTC)/ Fluconazole Capsule/ Nystatin

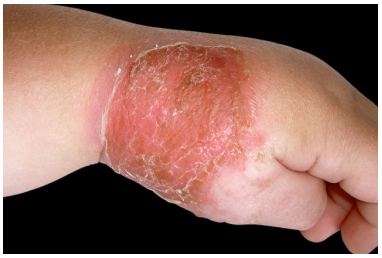
Vaginal Candidiasis

- Regardless of oral or vaginal route success rate is 75%
- For pregnant vaginal azoles for 7 days are preferred option

Impetigo

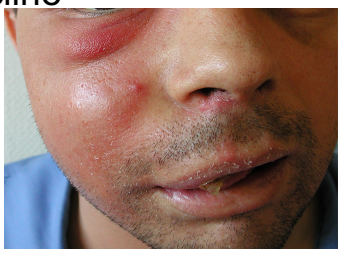
- Mild: Keep area clean, Fusidic acid is an option
- Moderate to severe: Oral Flucloxacillin or Clarithromycin
- Do not use Mupirocin (keep it reserved for MRSA)

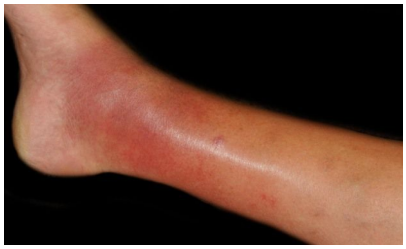




Cellulitis

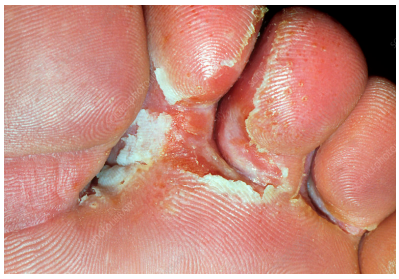
- Patient afebrile and well in oneself: Oral Flucloxacillin
- For facial cellulitis use Co-amoxiclav
- Alternatives for penicillin allergic population are Clarithromycin and Doxycycline

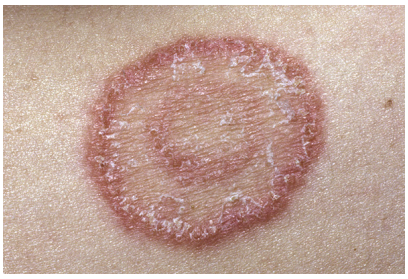




Dermatophyte Skin infections

- Terbinafine is superior to Imidazole (Miconazole/clotrimazole)
- If yeast/candida is likely to be the pathogen involved, use Imidazole in preference





Dermatophyte nail infections

- Only start therapy if nail clippings are confirmed to show fungal element by microbiology lab
- First line is Oral Terbinafine and Second line is Itraconazole
- Here the length of treatment plays a huge role in emergence of resistance, therefore agreement of the treatment plan is very important at the start of therapy.