

Antibiotic Prescribing

Getting it right!!

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Clinical Microbiologists in the UK

What do we do?



**INFECTION
CONTROL
MANUAL**





Antimicrobial prescribing in the UK

30% of in-patients at any given time receive antimicrobials

Up to 50% on ICU and Cancer

In hospitals up to 50% of antimicrobials used inappropriately

Up to 30% surgical prophylaxis is inappropriate

Changes in use paralleled by changes in prevalence of resistance

Areas with highest rates of resistance also have the highest rates of antimicrobial use



Antibiotic resistance is now as serious a threat as terrorism and could trigger an 'apocalyptic scenario', warns UK's top doctor

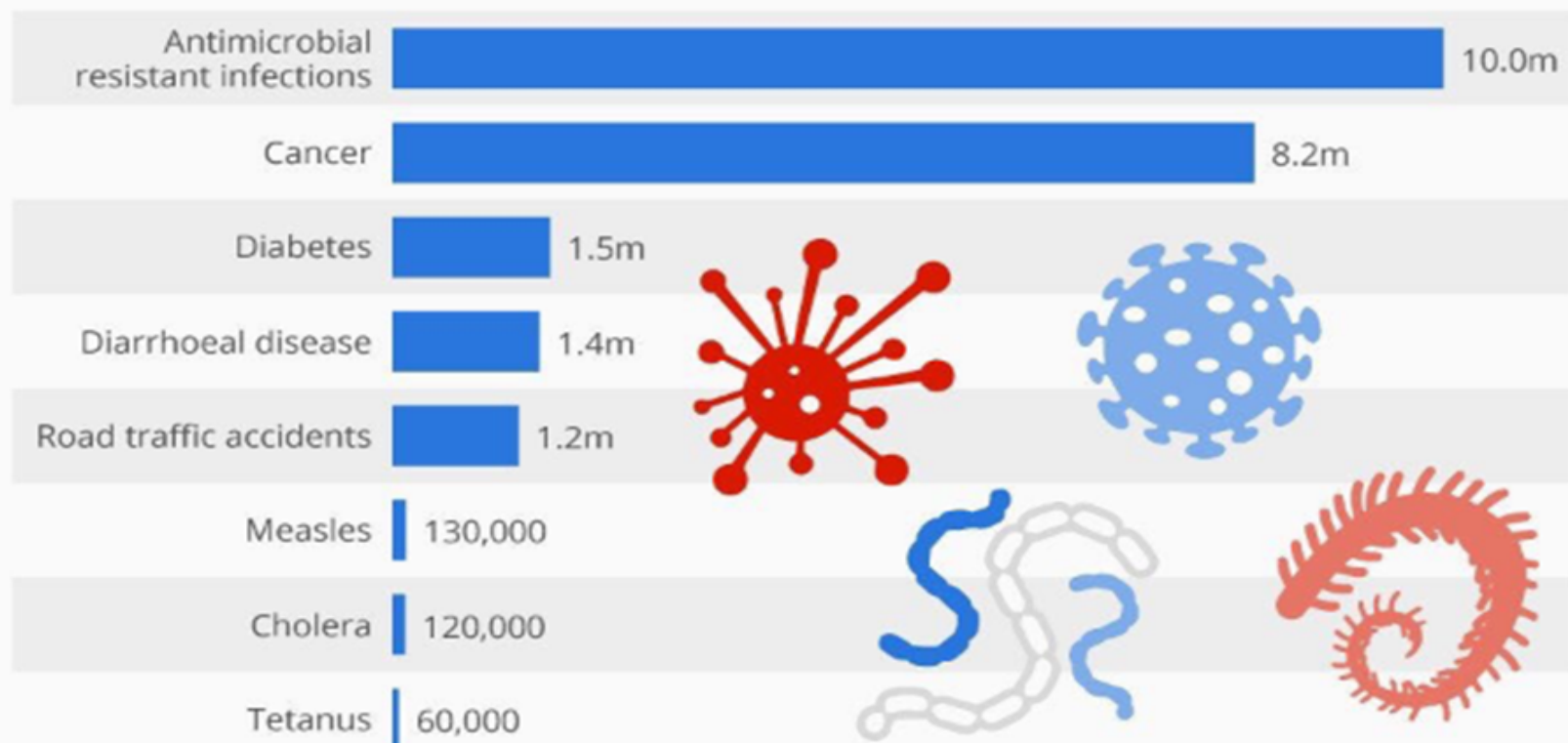
- Dame Sally Davies said people may die from routine infections after surgery within 20 years
- This is due to a lack of effective antibiotics
- Says situation so serious that the issue should be added to Government's list of civil emergencies

Why a sore throat could soon be fatal: Bugs are becoming more resistant to antibiotics, warn health chiefs 'A post-antibiotic era means, in effect, an end to modern medicine as we know it,' warns WHO chief Dr Margaret Chan



Deaths From Drug-Resistant Infections Set To Skyrocket

Deaths from antimicrobial resistant infections and other causes in 2050



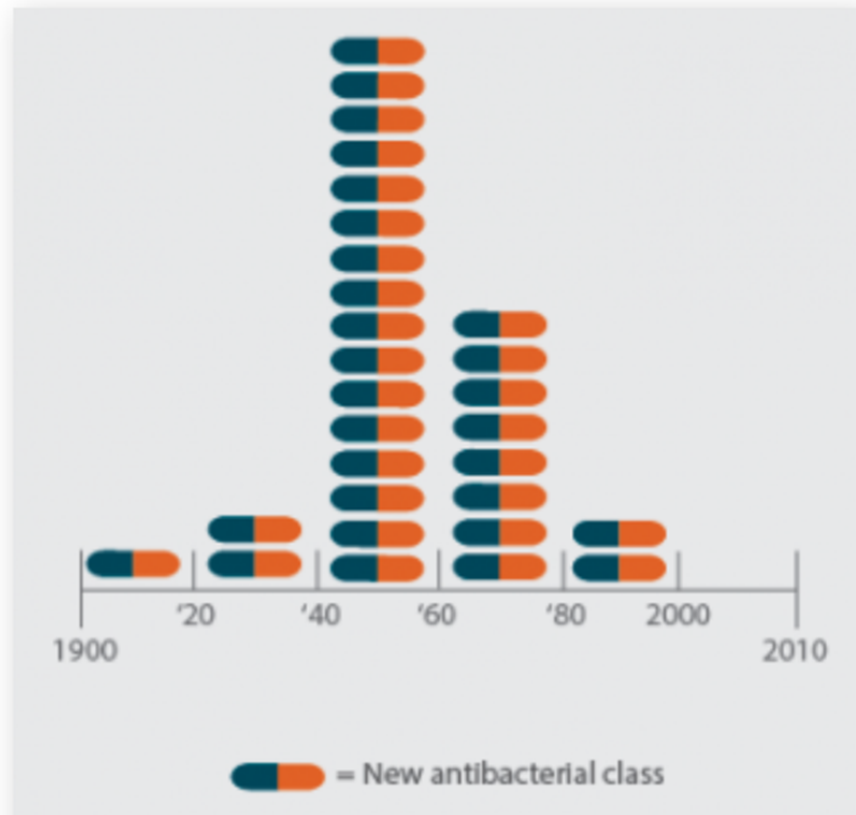
@StatistaCharts

Source: Review on Antimicrobial Resistance

statista

Why does it matter?

Antibiotic Timeline



Antibiotic Quality

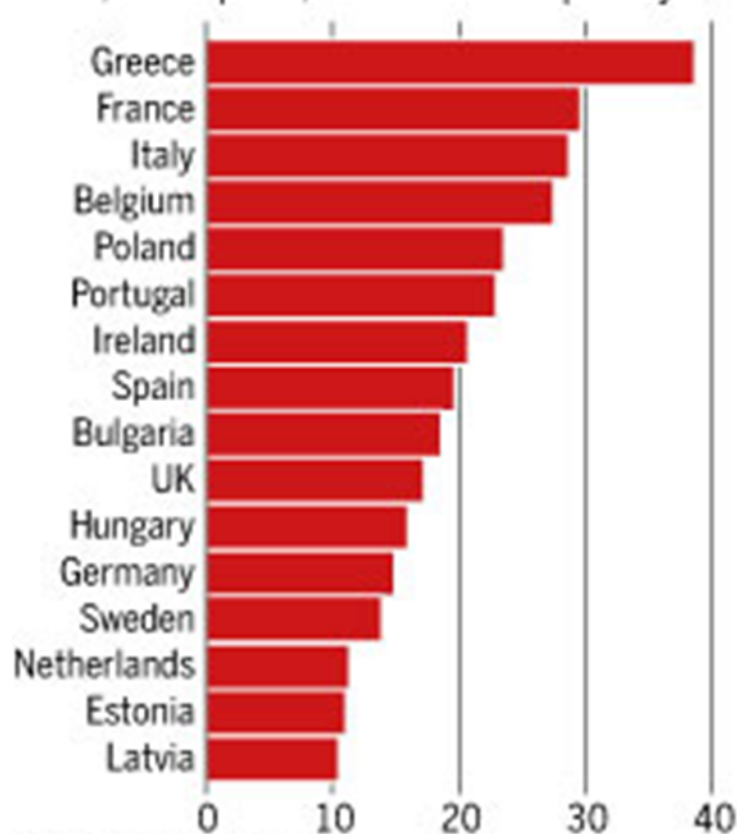


- Can be variable
- Estimated that abx from Asia & China may be up to 40% fake
- Available online all over the world
- Fake antibiotics feed the superbug resistance problem

Popping pills

Consumption of antibiotics in Europe

2009, doses per 1,000 inhabitants per day

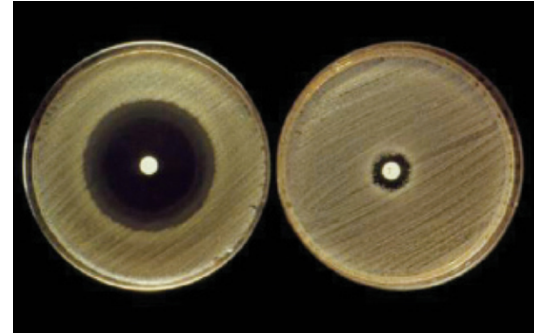


Sources: Esac; The Lancet

Access to antibiotics

Survey respondents who had obtained antibiotics without a prescription in past 12 months, 2009 (% European countries with highest percentage)

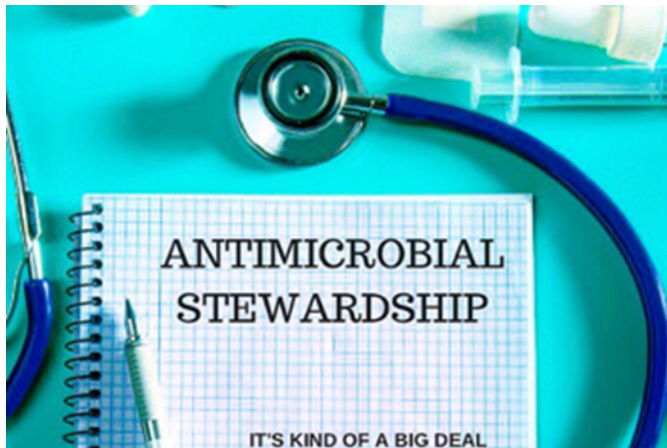
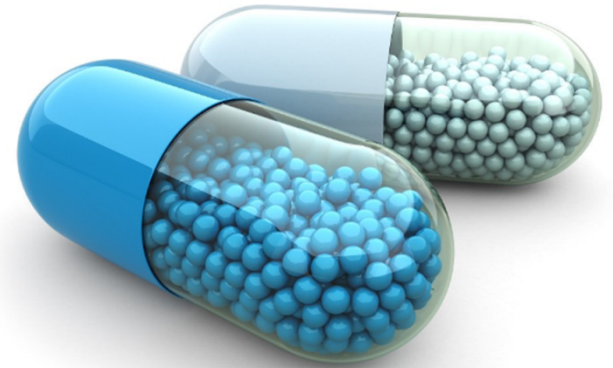
Romania	16	Bulgaria	6
Estonia	8	Cyprus	6
Greece	8	Austria	5
Lithuania	8	Hungary	5
Latvia	7	Spain	5



**HOW DO YOU CONTROL
ANTIBIOTIC USAGE?**

Antibiotic Stewardship

What is it?





The right drug for the bug



For the right drug for the patient





The right drug at the right time - for
the right amount of time!

The right drug for the
ecology of...

The patient

The unit

The hospital

The country - ?



How does stewardship work?

- Inter-professional effort (doctors, nurses, pharmacy)
- Timely and optimal selection, dose, route and duration
- For best clinical outcome
- With minimal toxicity to patient
 - e.g Clostridium difficile
- Minimal resistance antibiotics

When do you start antibiotics?

You start SMART

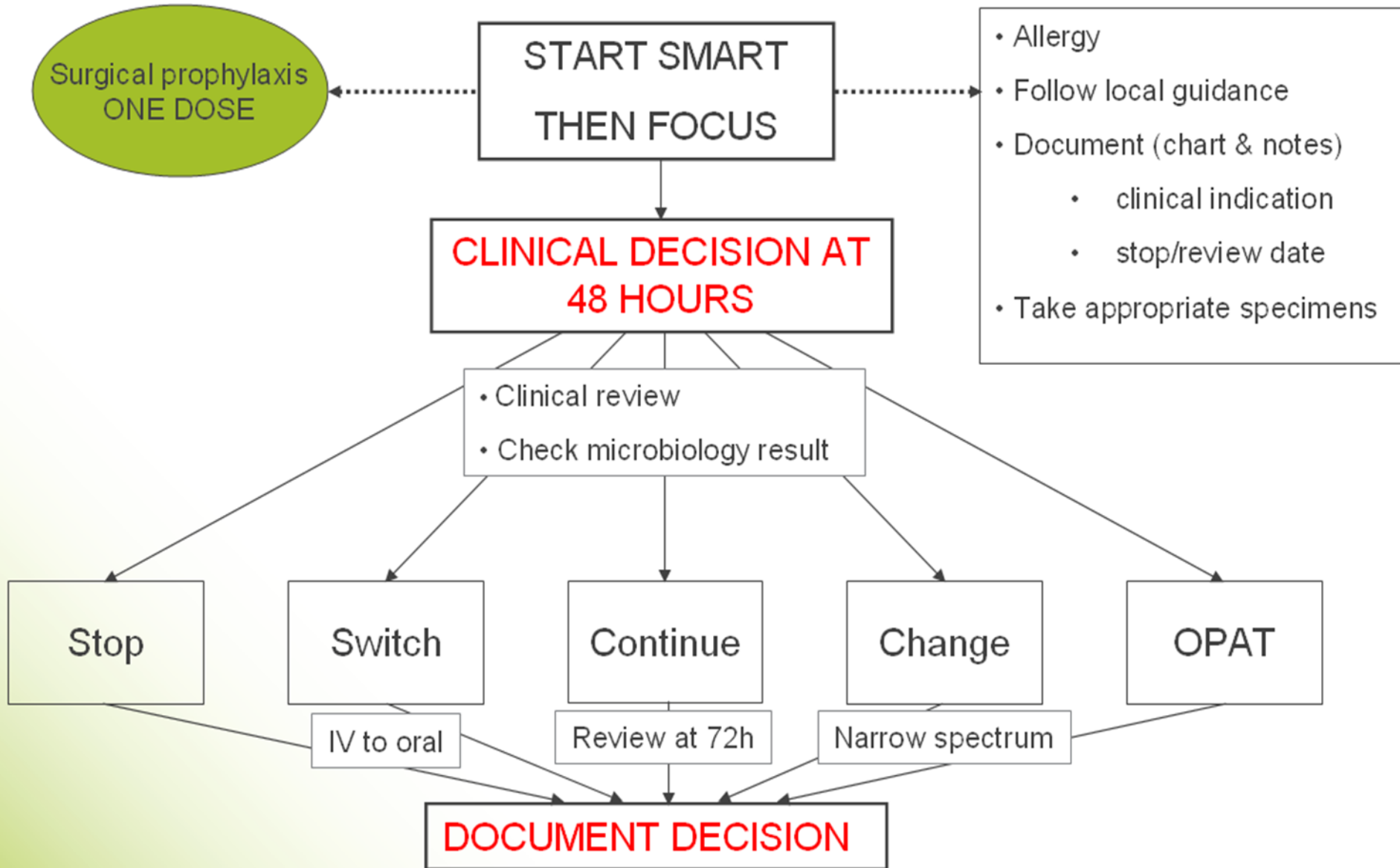
- Do NOT start antibiotics UNLESS there is clinical evidence of INFECTION e.g.
 - Fever
 - Haemodynamically unstable
 - Change in respiratory requirements
 - Altered mental status
- Take cultures before starting antibiotics
- Check patient allergies

Start SMART

- Prescribe in line with local policies/guidelines
- Give the first dose of antibiotic within 1 hour in life-threatening infection
- Document the reason for the antibiotic in the notes/drug chart
- Record the duration (how long)
- Contact the microbiologist if you need help

Then FOCUS

- At 48 hours review the clinical diagnosis
- Check the culture results
- STOP antibiotics if no evidence of infection
- SWITCH from IV to oral abx if possible
- CHANGE antibiotics/de-escalate/add if needed
- If antibiotics CONTINUE review again in 24-48h
- Consider OPAT if appropriate



What's the harm in antibiotic 'prophylaxis'?

- It contributes to antibiotic resistance on your ward/unit which affects everyone
- There is no evidence it works
- It may do real harm
 - C difficile infection
 - Diarrhoea
 - Increase resistance
- It's a waste of a precious resource

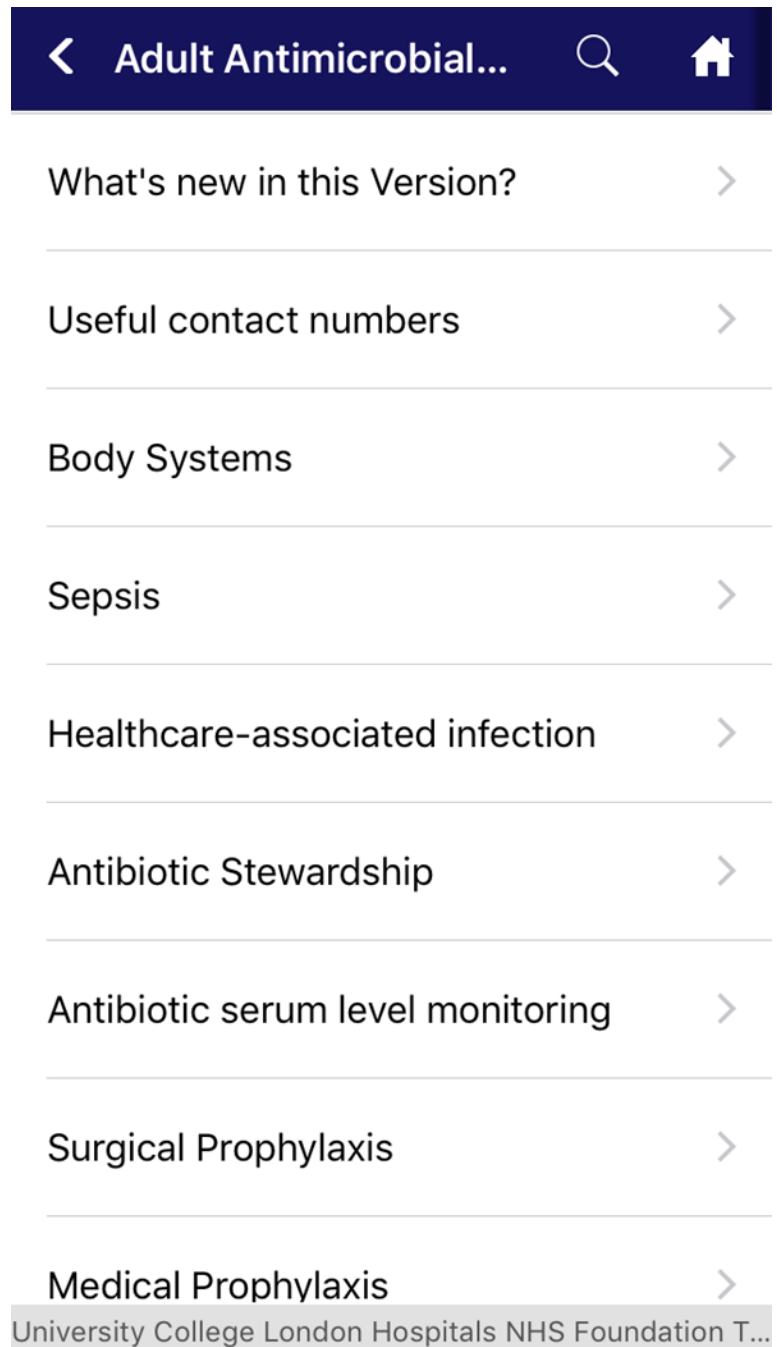
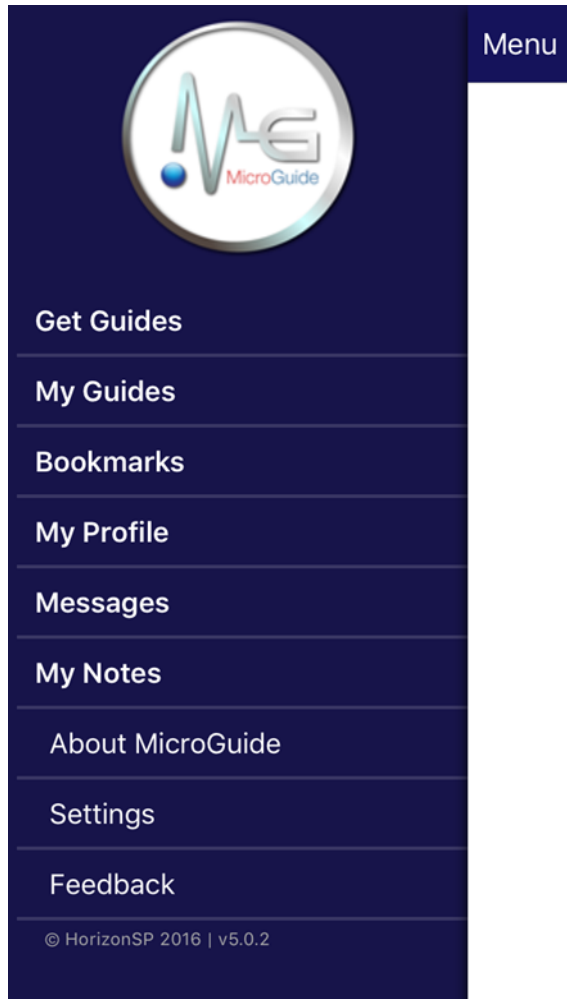
Choosing wisely – the top 5!

1. Don't continue antibiotics beyond 72 hours unless the patient has clear evidence of infection
2. Avoid invasive devices (e.g CVP lines, urinary catheters), and if used remove as quickly as not needed – they pose a major infection risk
3. Don't perform urinalysis, urine cultures, blood cultures if the patient has no signs or symptoms of infection

Choosing wisely.....top 5





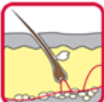


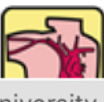
4. Don't use antibiotics in patients with recent *Clostridium difficile* infection unless you have convincing evidence of infection.
5. Don't continue surgical prophylactic antibiotics after the patient has left the operating room.

Microguide



< Adult Antimicrobial... 🔍 🏠

Body Systems

-  Central Nervous System >
-  Gastrointestinal >
-  Respiratory >
-  Ear, Nose & Oropharynx >
-  Skin and Soft Tissue >
-  Bone & Joint >
-  Genito-Urinary >
-  Cardiovascular >

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< Body Systems > Ce... 🔍 🏠

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Central Nervous System

Meningitis community-acquired

Do NOT delay treatment. Start treatment as soon as blood cultures have been taken.

Empirical Treatment

1st line:

Ceftriaxone 2g IV bd (give IM if no venous access)

Penicillin allergy:

Chloramphenicol 12.5mg/kg IV qds

No single dose should exceed 1g. Total daily dose should not exceed 4g.

If pregnant, immunocompromised or aged over 50 years to cover Listeria meningitis:

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On iPhone or Android

- Free!!
- Regularly updated
- Both Adult and Paediatric section
- Lots of extra information on antibiotics
- App store or Google store
 - Search for Microguide
 - Choose 'UCLH NHS Foundation Trust'

In summary.....

- Antibiotic resistance is a global problem - in OUR hospitals and in OUR communities
- Inappropriate use drives resistance
- Few new antibiotics being made available
- Antimicrobial stewardship ESSENTIAL
 - preserve activity of antibiotics
 - multidisciplinary process
- All healthcare professionals have a role in antimicrobial stewardship
- Start Smart, then Focus



Remember washing
your hands is still the
most important thing
to control infection



**PROCEED
AND
BE BOLD**