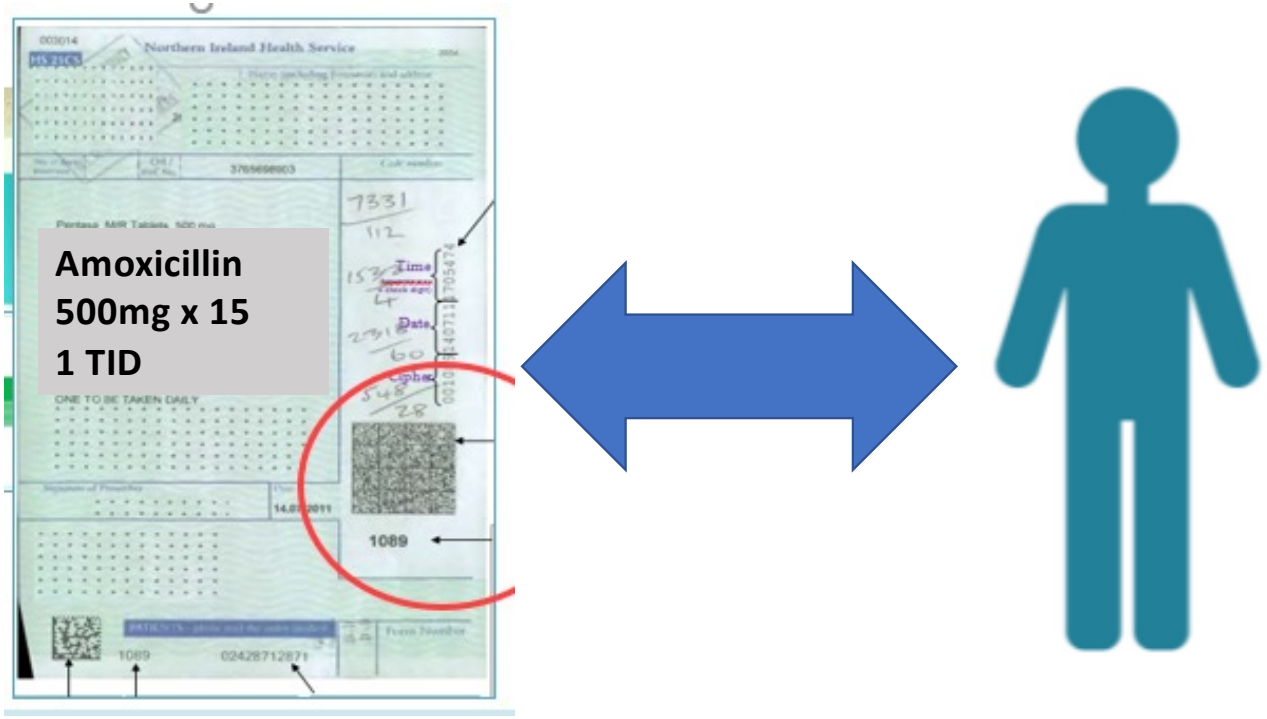
Antibiotic stewardship: What's happened/what's happening

Matthew Dolan | Pharmacy Co-ordinator | Directorate of Primary Care | Strategic Planning & Performance Group



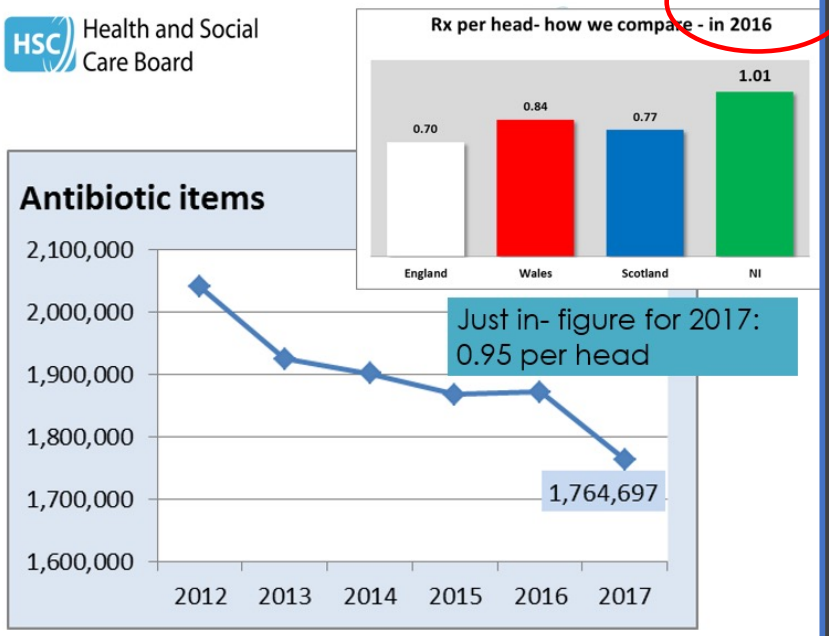

THE TIMES
Butter! Meat! Eggs! Cheese!
Superbugs threaten return to dark ages
Worldwide scramble to erase legacy of Harris
By 2050, Superbugs Could Kill
10 Millio
People a Year
sky news
The Telegraph
Chief medical officer urges public to buy organic meat
relation or from an
point of view.
Superbug
bacteria
resistant to
of antibiotics
What can we do about this global threat to public health?
Alarm as superbug hits British hospital
The tender trap
GPs say 'highly contagious' superbug hitting UK is resistant to antibiotics
New alert after infections increase as NHS officials release information on what to do if you get it
SHARE
By Ben Hurst 03:34, 15 NOV 2024
Bookmark

HS21 primary care prescriptions issued for antibiotics in 2023: **1,878,366** **(BSO data)**



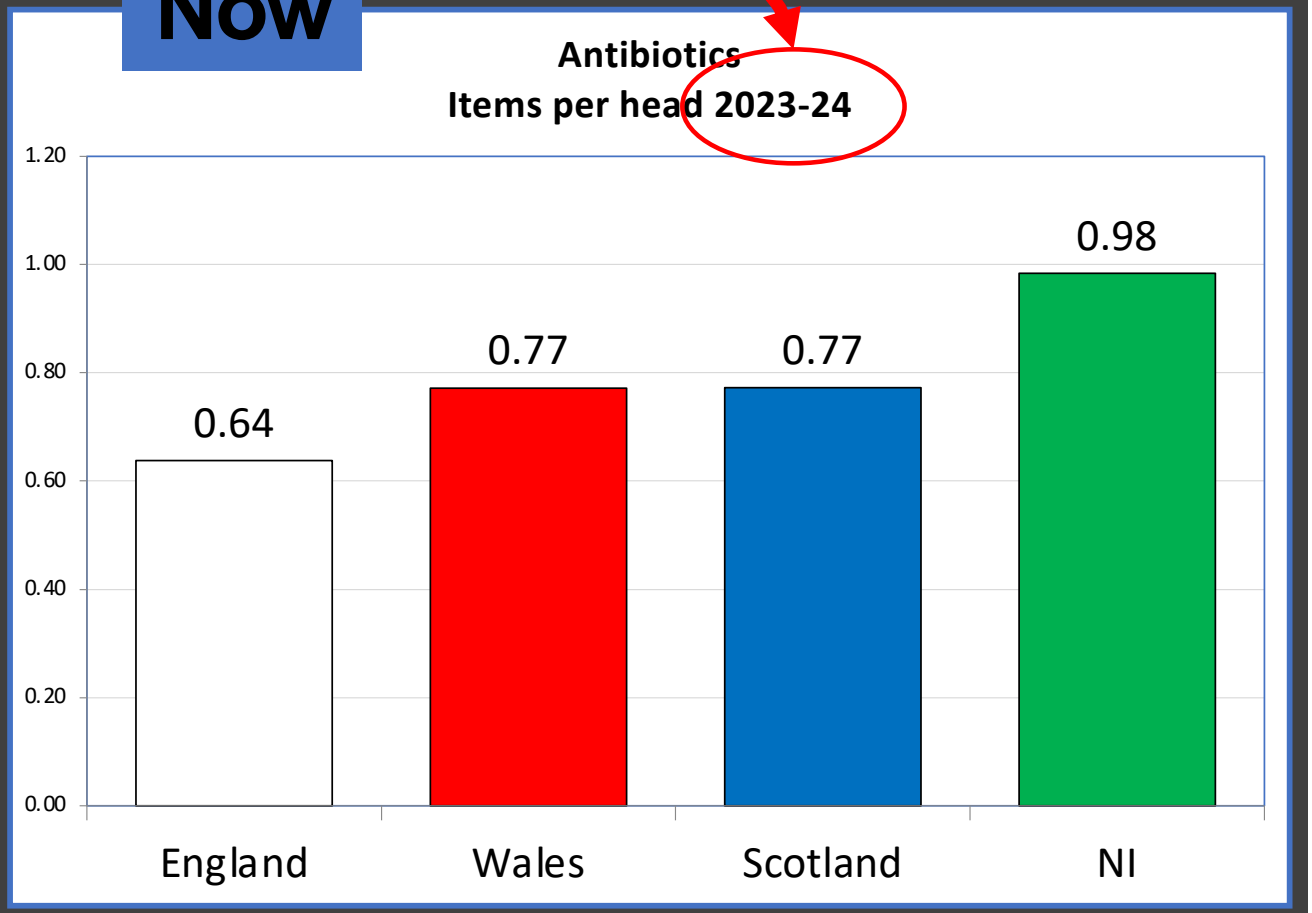
Pop of Northern Ireland on census day, 21 March 2021: **1,903,175** **(NISRA)**

Health and Social Care Board

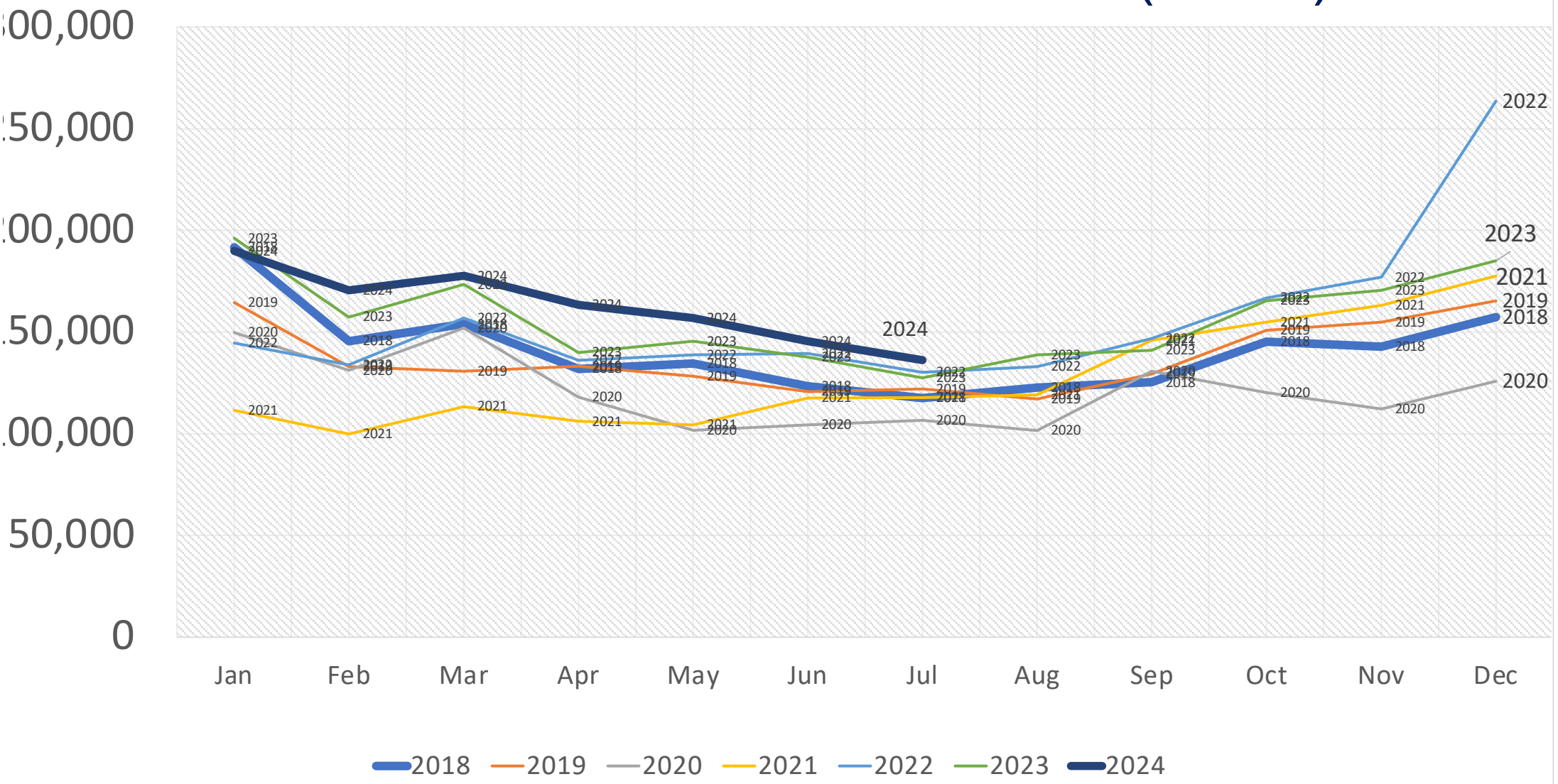


Then- presented in 2018

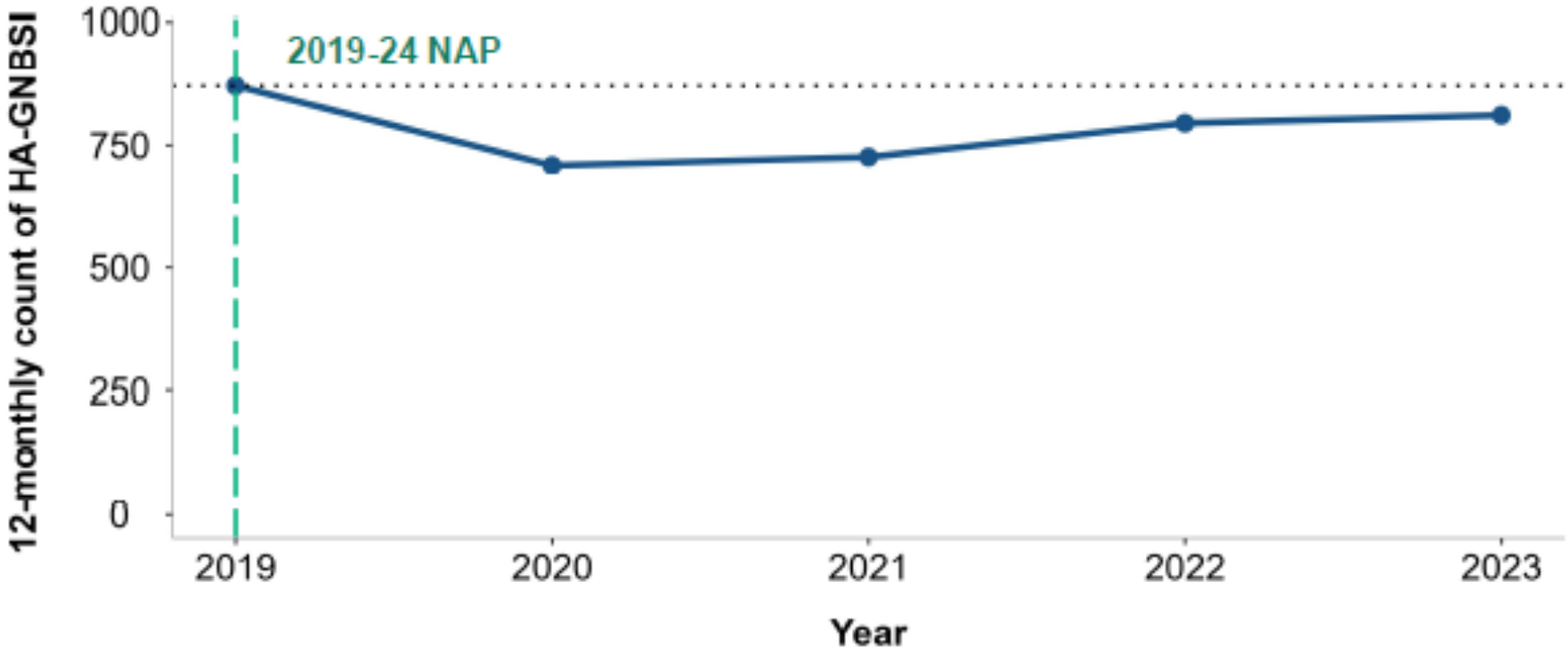
Now

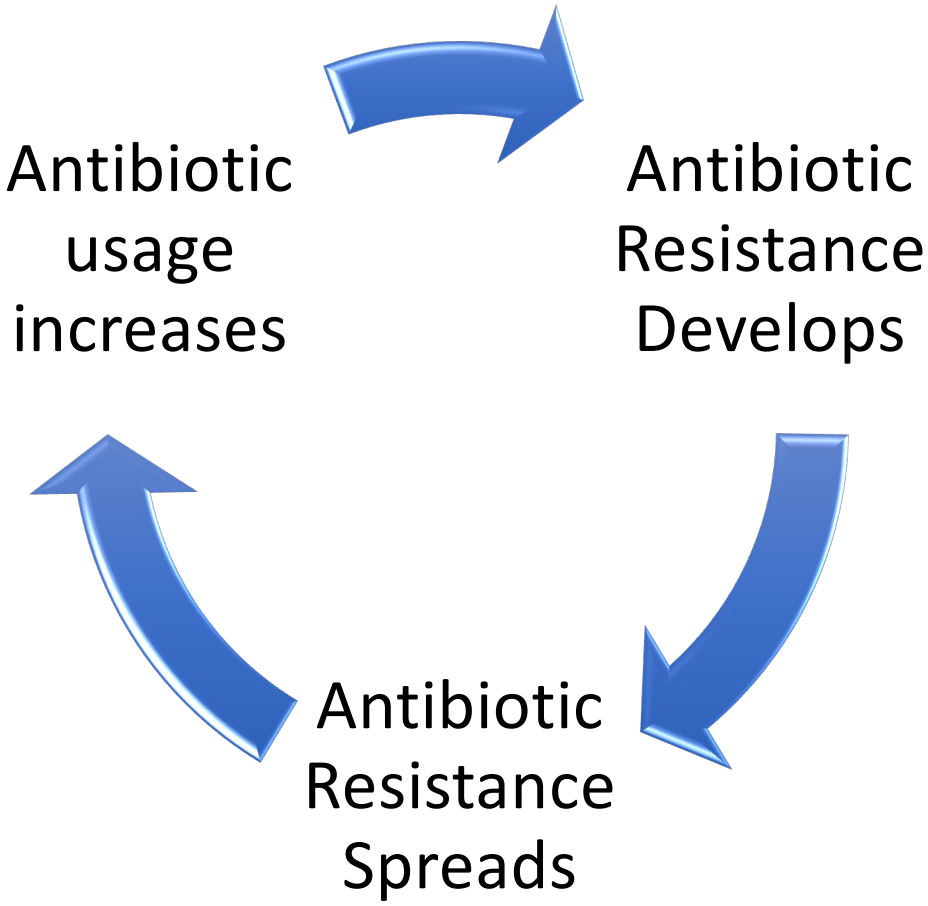


Total Antibiotic Items Per Month (All NI)

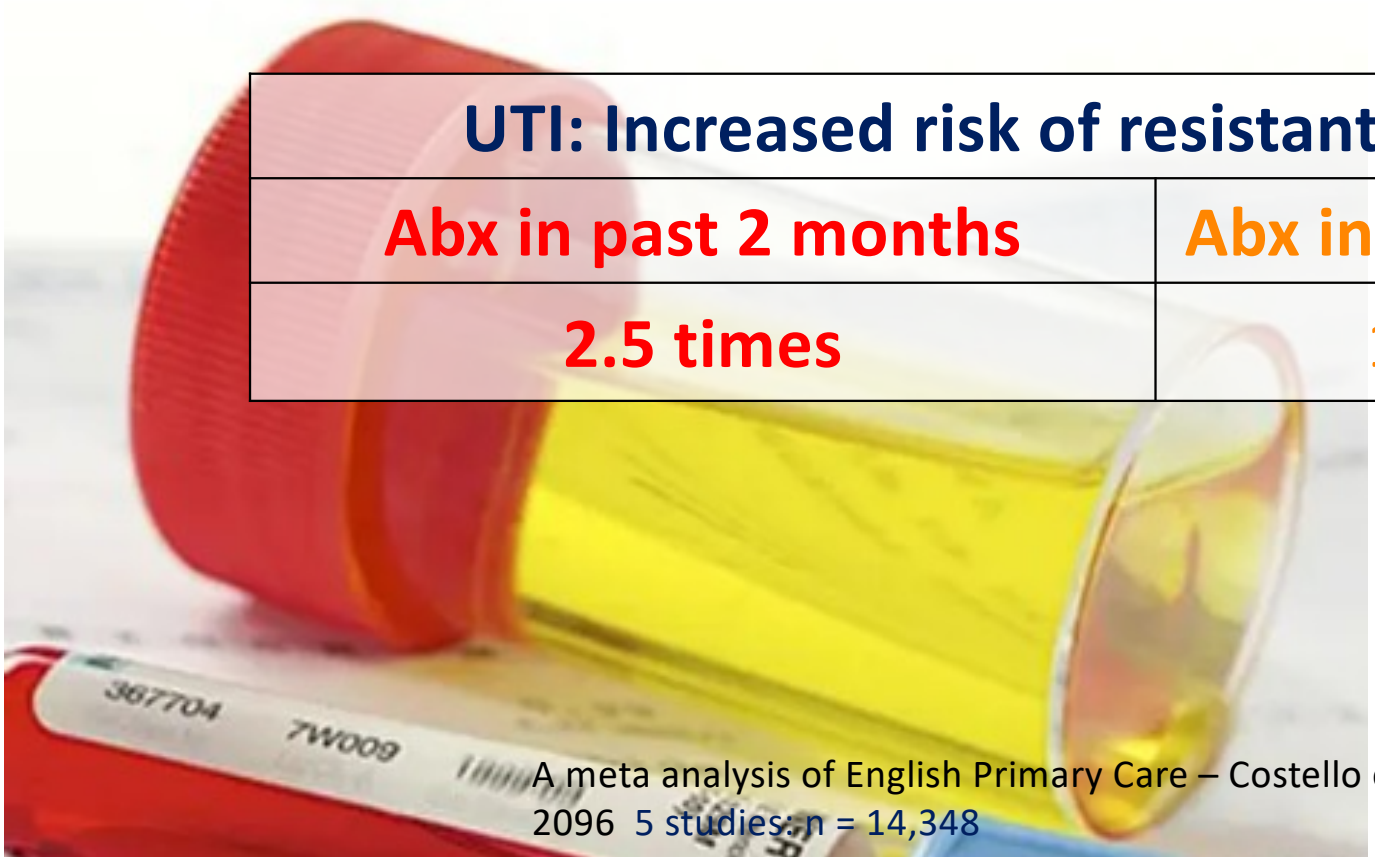


Healthcare Associated Gram-negative Bloodstream Infections




Antibiotic usage increases
Antibiotic Resistance Develops
Antibiotic Resistance Spreads

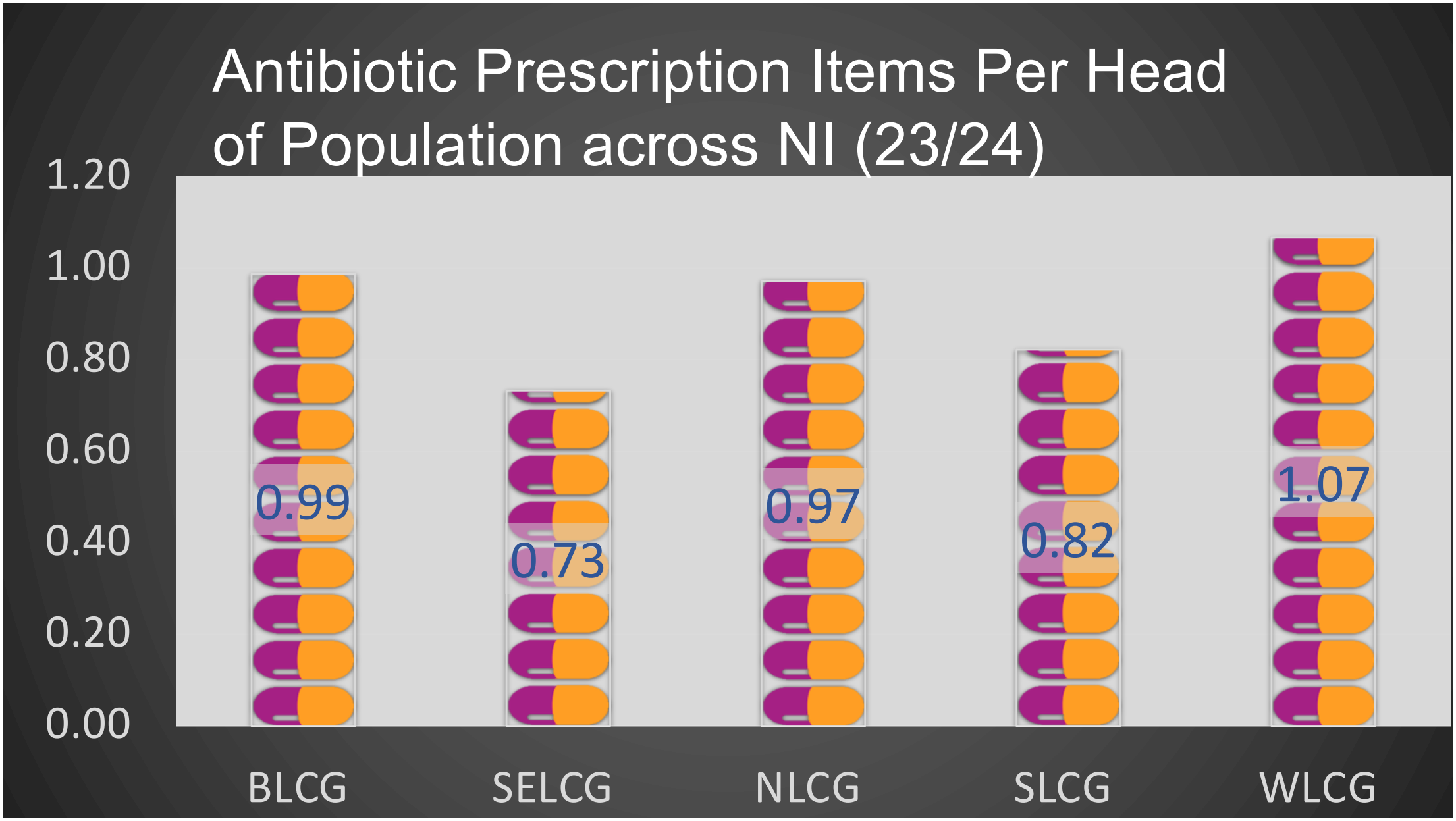
Antibiotic Resistance Lasts



UTI: Increased risk of resistant organism	
Abx in past 2 months	**Abx in past 12 months**
2.5 times	1.33 times

A meta analysis of English Primary Care – Costello et al. *BMJ*. (2010) 340:c 2096 5 studies: n = 14,348

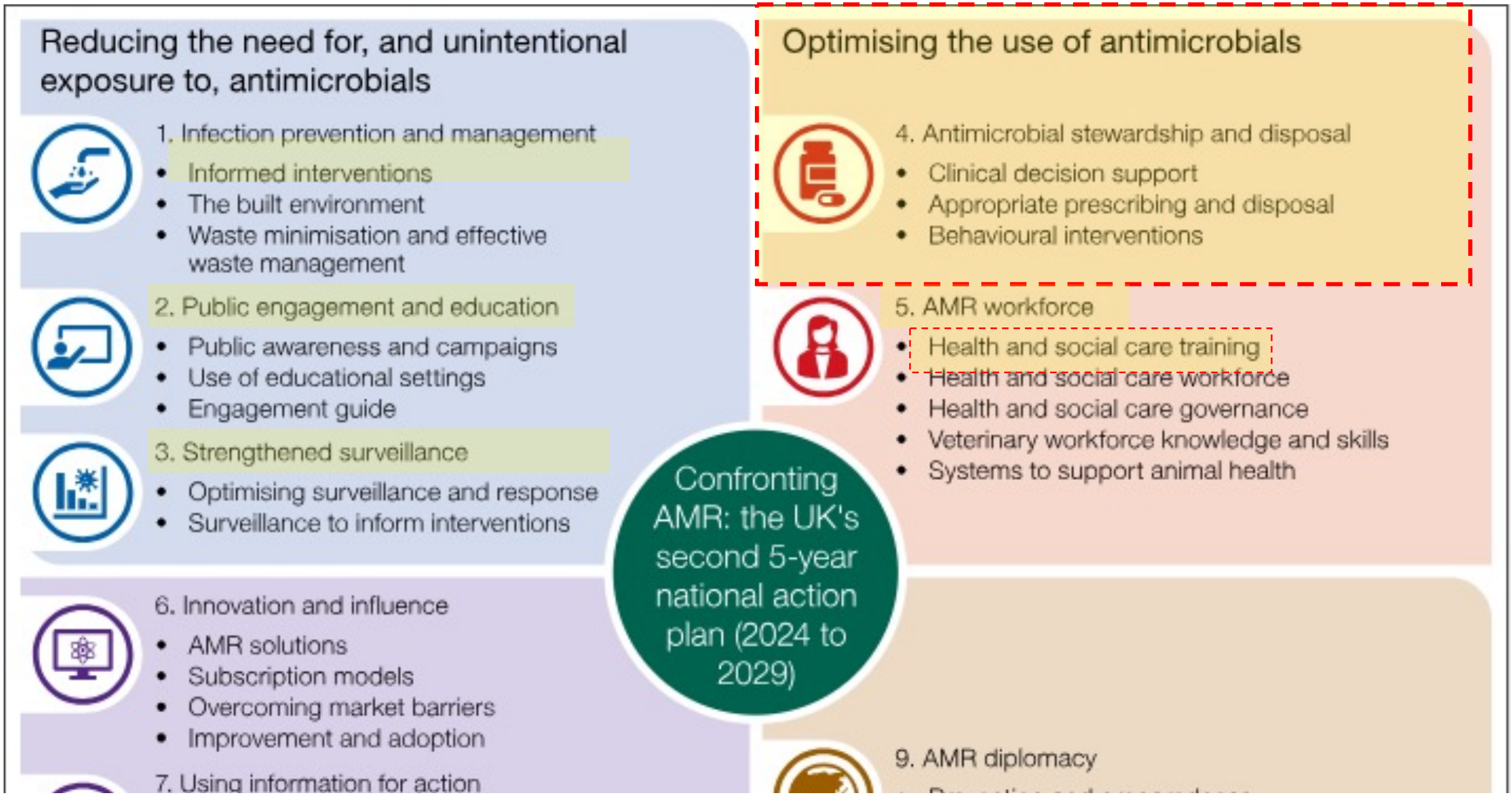

Antibiotic Resistance Spreads
Adults under same roof share 12% of gut microbiome strains with each other


Antibiotic Prescription Items Per Head of Population across NI (23/24)
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0.99
0.73
0.97
0.82
1.07
BLCG
SELCG
NLCG
SLCG
WLCG

5 year UK-wide National Action Plan (NAP) 2024-2029



[Confronting antimicrobial resistance 2024 to 2029 - GOV.UK]


Reducing the need for, and unintentional exposure to, antimicrobials
1. Infection prevention and management
• Informed interventions
• The built environment
• Waste minimisation and effective waste management
2. Public engagement and education
• Public awareness and campaigns
• Use of educational settings
• Engagement guide
3. Strengthened surveillance
• Optimising surveillance and response
• Surveillance to inform interventions
Optimising the use of antimicrobials
4. Antimicrobial stewardship and disposal
• Clinical decision support
• Appropriate prescribing and disposal
• Behavioural interventions
5. AMR workforce
• Health and social care training
• Health and social care workforce
• Health and social care governance
• Veterinary workforce knowledge and skills
• Systems to support animal health
Confronting AMR: the UK's second 5-year national action plan (2024 to 2029)
6. Innovation and influence
• AMR solutions
• Subscription models
• Overcoming market barriers
• Improvement and adoption
7. Using information for action
9. AMR diplomacy

Target 1a: by 2029, we aim to prevent any increase in a specified set of drug-resistant infections in humans from the 2019 to 2020 financial year (FY) baseline

Target 1b: by 2029, we aim to prevent any increase in Gram-negative bloodstream infections in humans from the 2019 to 2020 financial year baseline

Target 4a: by 2029, we aim to reduce total antibiotic use in human populations by 5% from the 2019 baseline

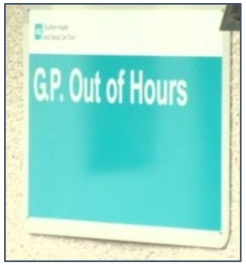
Target 4b: by 2029, we aim to achieve 70% of total use of antibiotics from the Access category (new UK category) across the human healthcare system.

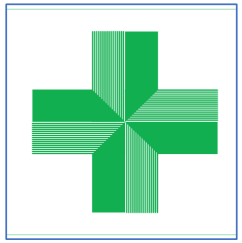
Use Less - Use Better

Primary Care Antimicrobial Stewardship Group



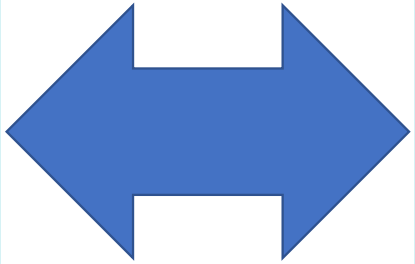






Clinical areas e.g

- UTI COPD
- Skin
  - Acne
  - Cellulitis
  - Bites
- Winter illness
  - Otitis Media
  - Sore throat
- Diabetic Foot
- Palliative Care



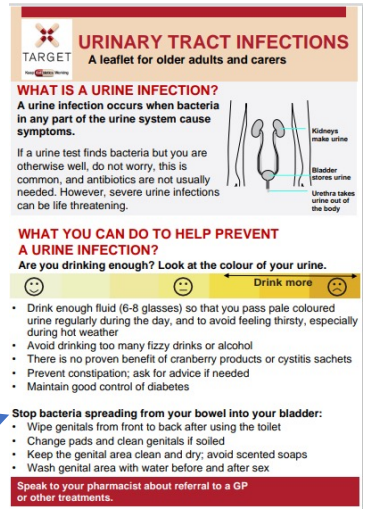
- Systems e.g.
  - Back-up prescribing
  - Reduced durations ("5-day“)
  - Point of Care Tests
    - procalcitonin-guided treatment
    - CRP
    - PCR style tests
  - OOH
  - Community Pharmacy
- Supports e.g.
  - Dashboards
  - Prescribing reports
  - Prescribing Decision Software
  - Formulary changes
- Behavioural change interventions
  - Red/Green approach to antibiotics
  - “Skip the Dip”
  - shared decision making

For example: UTI

NORTHERN IRELAND Formulary

FDB OptimiseRx®





HSC Public Health Agency

Back-up Prescription

Take this to a pharmacy if you have not improved by:

GP NI

SKIP THE DIP

for urinary tract infections in over 65s

Any Answers ?

Which clinical/therapeutic area do you think would benefit most from a focused AMRS approach in primary care?

Within your practice what would have the most impact on reducing inappropriate antibiotic use?

Health and Social Care Board | Public Health Agency

SAFETY AND QUALITY
REMINDER OF BEST PRACTICE GUIDANCE

Subject	Prescribing short courses of clarithromycin or erythromycin to patients on tacrolimus requires specialist involvement
HSCB reference number	SQR-SAI-2021-085 (PHC / AS)
Programme of care	Primary Health Care (PHC) / Acute Services (AS)

LEARNING SOURCE			
SAI/Early Alert/Adverse incident	✓	Complaint	
Audit or other review		Coroner's inquest	
Other (Please specify)			

SUMMARY OF EVENT

A number of incidents have occurred in primary care where an acute course of the antibiotic clarithromycin has been prescribed to patients who are taking the medication tacrolimus.

A shared theme in the incidents is that at least one prescriber or pharmacist in the medication supply sequence reported being made aware of a potential interaction, either prompted by the IT system or simply through their own professional knowledge, however continued with their particular component of the supply process.

In one case a community pharmacist discussed the interaction with the patient however continued to supply, due to the patient relaying an assurance given by the prescriber that this was the correct antibiotic to take.

Macrolide antibiotics such as clarithromycin and erythromycin are potent inhibitors of enzymes which metabolise tacrolimus and concomitant administration of both can result in severe elevation of blood levels of tacrolimus to toxic levels. Tacrolimus levels several times higher than normal were seen after standard 5 to 7 day short courses of the antibiotic in a number of the cases.

The two antibiotics also have an extensive list of other interactions ranging from the minor theoretical to major clinical. As such, 'warning overload' may have been a contributory factor, decreasing the effectiveness of computer alerts that would have indicated this was a significant interaction.

Prescribing short courses of clarithromycin or erythromycin to patients on tacrolimus requires specialist involvement

SQR-SAI-2021-085 (PHC / AS)

The Northern Ireland Shared Care Guidelines for tacrolimus state that clarithromycin and erythromycin increase tacrolimus levels and should not be initiated by GP unless discussed with specialist.

The British National Formulary (BNF) interaction section states:

"**Clarithromycin** is predicted to increase the concentration of **tacrolimus.** Monitor and adjust dose. Severe (study)"

Therefore prescribing the combination of tacrolimus and clarithromycin (or erythromycin) should not be undertaken by GPs or in any setting where the patient will remain ostensibly under primary care.

