

# NHS England Antimicrobial Prescribing & Medicines Optimisation (APMO) strategy and vision

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NHS England and NHS Specialist Pharmacy Services Mini-Conference: Antimicrobial Stewardship – unlocking the potential

Tuesday 07 March 2023

# The GRAM study – Lancet ID

## Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis



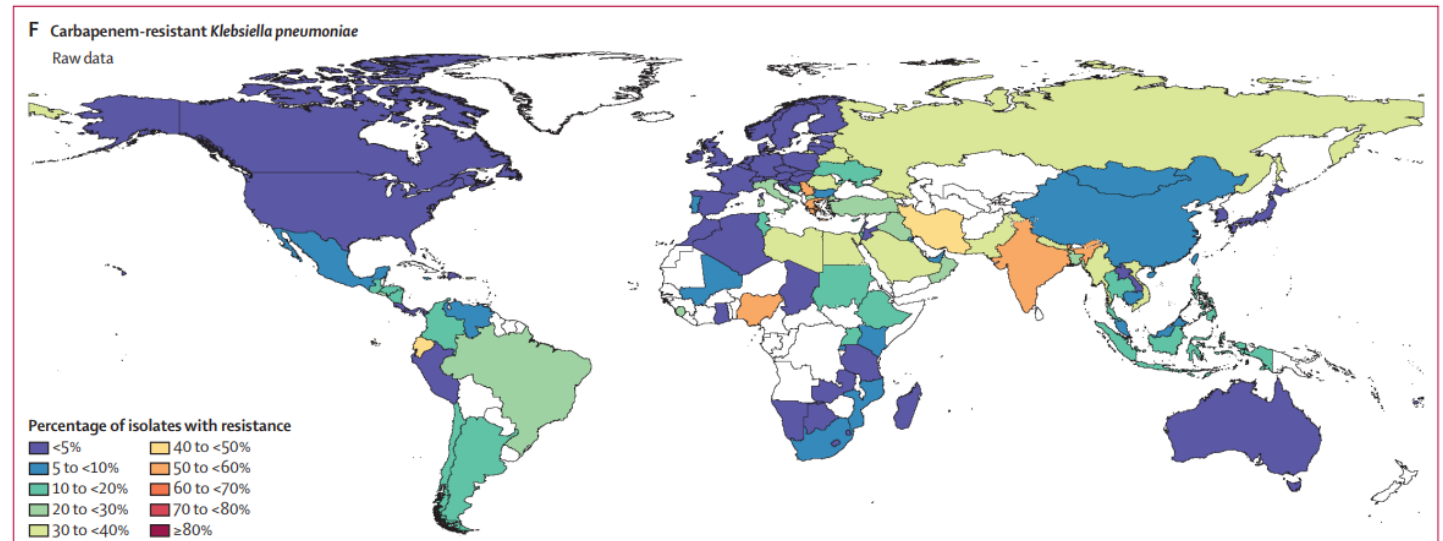
Antimicrobial Resistance Collaborators\*

### Summary

**Background** Antimicrobial resistance (AMR) poses a major threat to human health around the world. Previous publications have estimated the effect of AMR on incidence, deaths, hospital length of stay, and health-care costs for specific pathogen–drug combinations in select locations. To our knowledge, this study presents the most comprehensive estimates of AMR burden to date.

Published Online  
 January 20, 2022  
[https://doi.org/10.1016/S0140-6736\(21\)02724-0](https://doi.org/10.1016/S0140-6736(21)02724-0)  
 See Online/Comment

***On the basis of our predictive statistical models, there were an estimated 4.95 million (3.62–6.57) deaths associated with bacterial AMR in 2019, including 1.27 million (95% UI 0.911–1.71) deaths attributable to bacterial AMR.***



# Policy Mandate (i)

## UK AMR NATIONAL ACTION PLAN



HM Government

### Tackling antimicrobial resistance 2019–2024

The UK's five-year national action plan

Published 24 January 2019

## KEY TARGETS FOR ANTIMICROBIAL PRESCRIBING

### MEASURING SUCCESS

**Target:** to reduce UK antimicrobial use in humans by 15% by 2024, including:

- a 25% reduction in antibiotic use in the community from the 2013 baseline;
- a 10% reduction in use of 'reserve' and 'watch' antibiotics in hospitals from the 2017 baseline



### ACCESS



First and second choice antibiotics for treating the most common infections.

### WATCH



Antibiotics with higher resistance potential, that should only be prescribed for specific indications.

### RESERVE



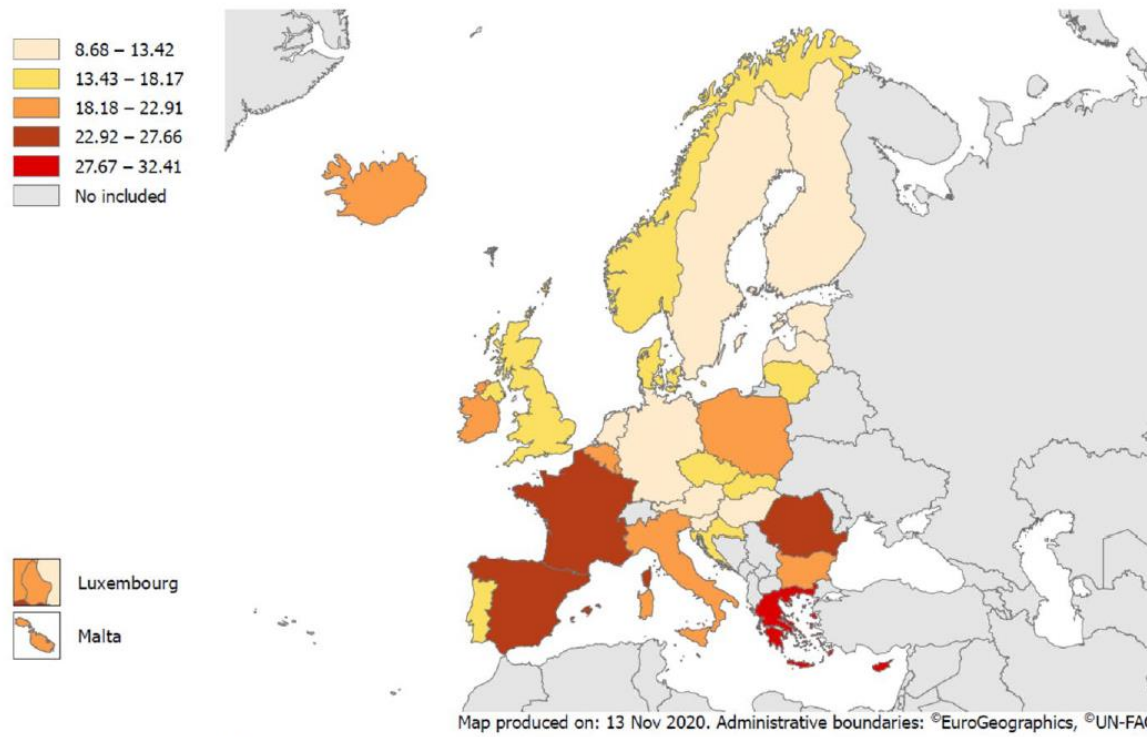
Antibiotics that are last-resort options that should only be used in severe circumstances, when other options have failed.

# Antibiotic prescribing & resistance: variation by nation

Antimicrobial consumption in the EU/EEA – AER 2019

SURVEILLANCE REPORT

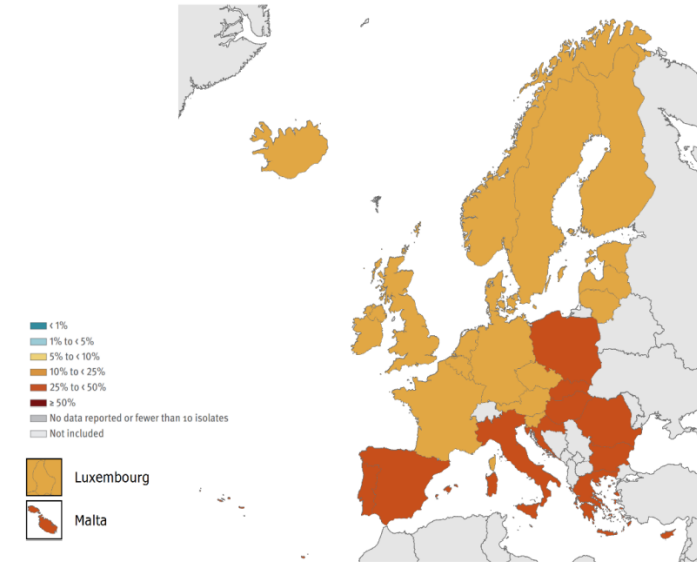
**Figure 1.** Consumption of antibacterials for systemic use (ATC group J01) in the community, EU/EEA countries, 2019 (expressed as DDD per 1 000 inhabitants per day)



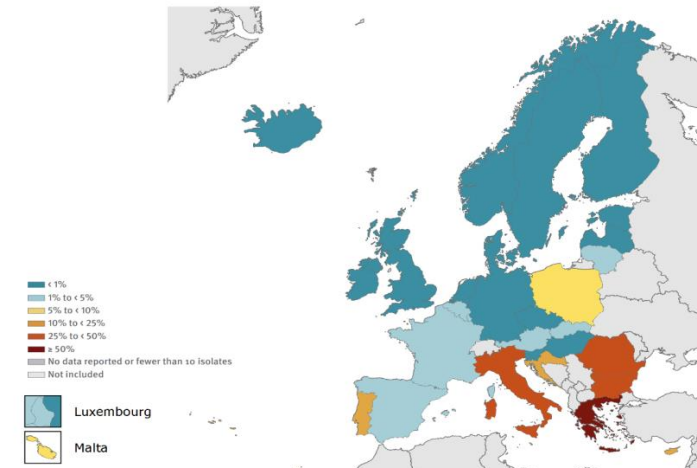
Cyprus and Czechia provided total care data (i.e. including the hospital sector).  
The UK contributed 2019 data from England, Northern Ireland and Scotland only.

**Primary care AM consumption in the UK higher than e.g. Germany, Netherlands, Finland Sweden, Austria**

**Figure 1.** *Escherichia coli*. Percentage of invasive isolates resistant to fluoroquinolones (ciprofloxacin or/and levofloxacin or/and ofloxacin), by country, EU/EEA, 2019



**Figure 5.** *Klebsiella pneumoniae*. Percentage of invasive isolates resistant to carbapenems (imipenem or/and meropenem), by country, EU/EEA, 2019



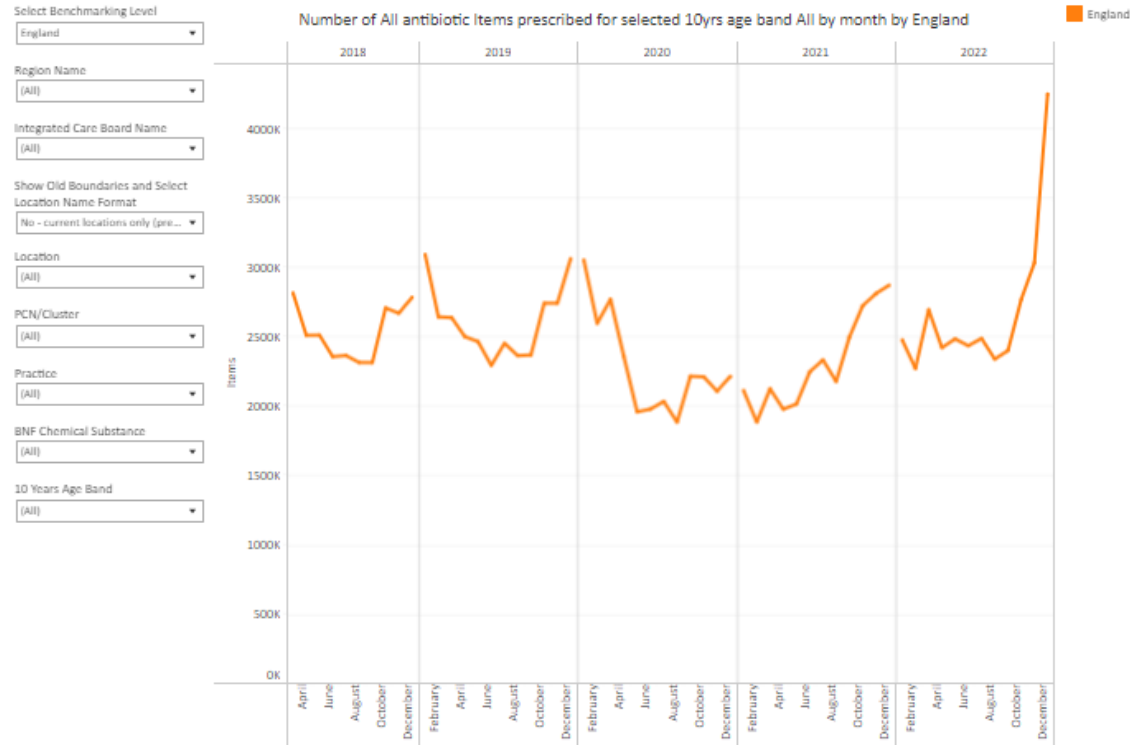
# Primary Care Antibiotic Prescribing for England



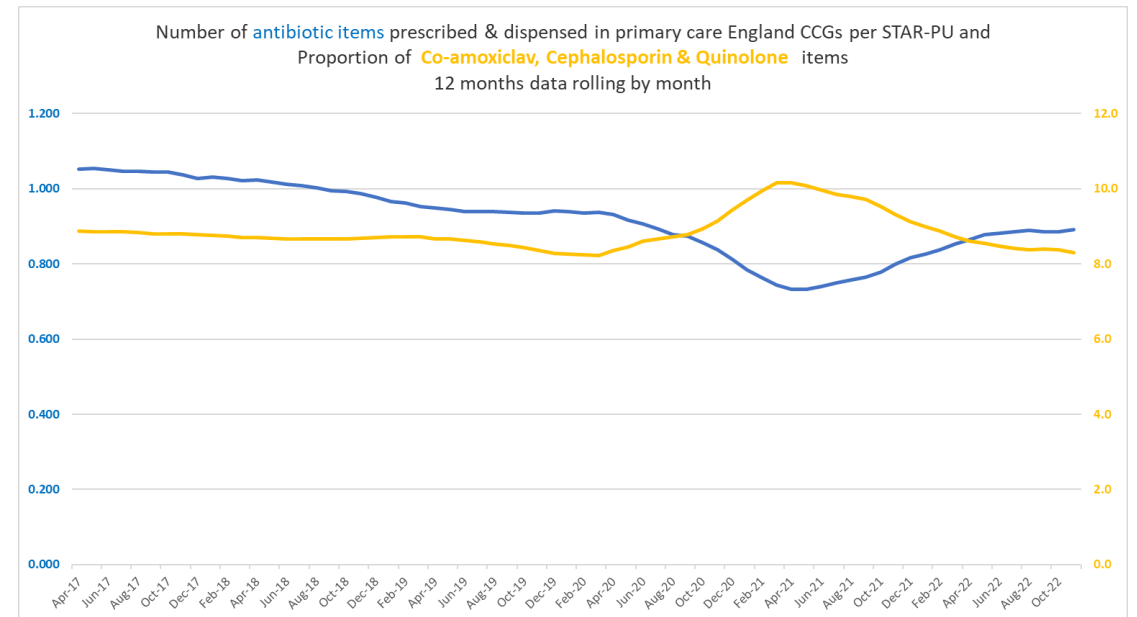
Introduction | All items by organisation | All items by 10yrs age band | Amoxicillin items in children ag... | Antibiotics used to treat UTI in ... | Antibiotics used to treat lowe >



## Antimicrobial Stewardship data reporting NHS antimicrobial activity during COVID-19 pandemic



Target	Prescription items	Performance
Baseline 2013	1.161 items / STAR-PU	0%
November 2022	0.891 items / STAR-PU	-23%
December 2022	0.929* items / STAR-PU	-20%
<b>NAP target (12 months to March 2024)</b>	<b>0.871 items / STAR-PU or below</b>	<b>-25%</b>
*Provisional data (subject to change)		



# Performance by country: “Watch” + “Reserve” prescribing in hospitals as DDDs per admission/OBD



## ENGLAND FINGERTIPS REPORT

### AMR local indicators - produced by the UKHSA

Data view Trends

Geography: Portsmouth Hospitals University NHS Trust, Acute Trusts in South East NHS Region

Topic: Antibiotic Prescribing

Indicator: Antibiotic prescribing from the “Watch” and “Reserve” categories of the WHO essential Medicines List AWaRe index; DDDs per 1000 admissions by quarter and trust

Crude rate - per 1,000

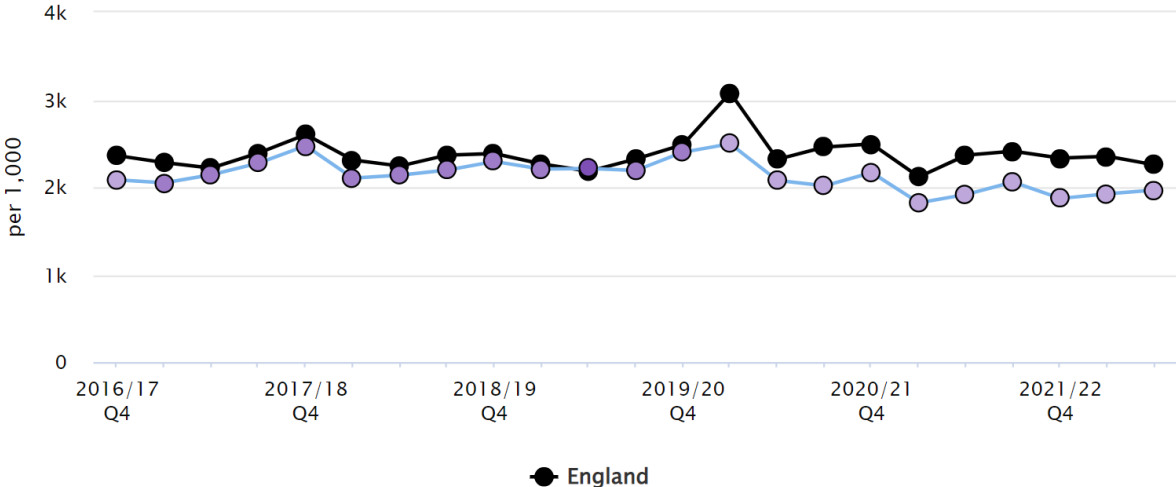
Legend Benchmark

Trends for: Portsmouth Hospitals University NHS Trust, All in South East NHS Region

Display: Selected indicator, All indicators

Antibiotic prescribing from the “Watch” and “Reserve” categories of the WHO essential Medicines List AWaRe index; DDDs per 1000 admissions by quarter and trust

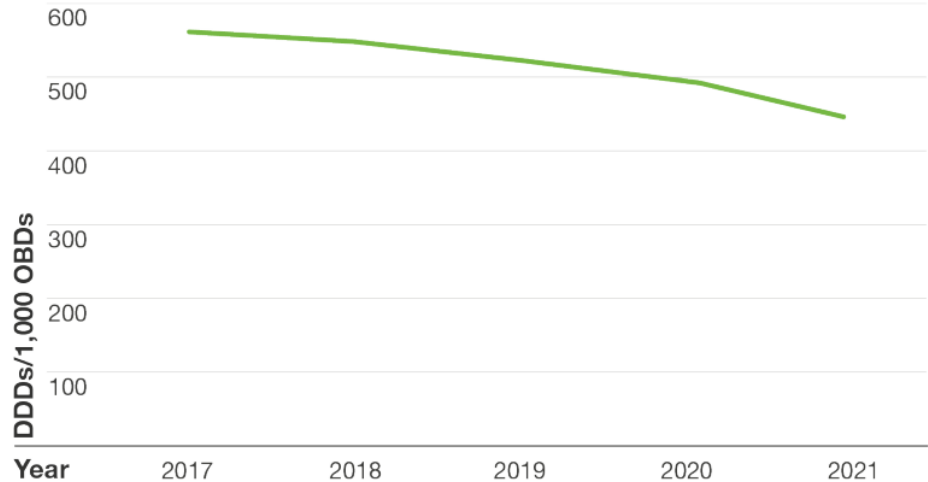
Show confidence intervals Show 99.8% CI values More options



## SCOTLAND SONAR REPORT 2021

### ARHAI Scotland

Figure 11: 'Watch' and 'Reserve' group antibiotic prescribing in acute hospitals in Scotland (defined daily doses per 1,000 Occupied Bed Days; DDDs/1,000 OBDs), 2017 to 2021, by year.



[Data Source: Hospital Medicines Utilisation Database (HMUD) and Information Services Division (ISD(S1))]

UK AMR National Action Plan goal to reduce “Watch” and “Reserve” in hospitals by 10% from 2017.  
 Current performance for UK hospitals: England -2%; Scotland -21%

# NHS England AMR Programme & APMO Team



**National Pharmacy & Prescribing Clinical Lead**  
*Dr Kieran Hand*

Previous role:  
Chief Pharmacist, Portsmouth Hospitals  
University NHS Trust



**Research Translation Lead**  
*Sabina Khanom*

Previous role:  
Patient Safety Policy Lead (Primary Care),  
Improvement Manager (System Safety),  
National Patient Safety Team, NHSE



**APMO National Project Manager**  
*Fiona Marshall*

Previous role:  
Project Manager – NHSEI  
Temporary Staffing Team



**Clinical Fellow**  
*Chao Wang*

Previous role:  
Teacher Practitioner, UCL

**South West**  
*Elizabeth Beech MBE*



Previous role:  
National Project Lead for AMR,  
NHS England & NHS Improvement

# The APMO team [est. 2021]



**North East & Yorkshire**  
*Prof Philip Howard OBE*

Previous role:  
Consultant Antimicrobial Pharmacist,  
Leeds Teaching Hospitals



**Midlands**  
*Dr Conor Jamieson*

Previous role:  
Team Leader for Antimicrobial Therapy,  
Sandwell & West Birmingham NHS Trust



**East of England**  
*Dr Naomi Fleming*

Previous role:  
Senior Clinical Pharmacist,  
Brackley and Towcester PCN



**London**  
*Laura Whitney*

Previous role:  
Senior Lead ID Pharmacist,  
Imperial College Hospitals



**South East**  
*Preeti (Emlata) Ramdut*

Previous role:  
Lead Medicines Optimisation Pharmacist,  
Kent & Medway CCG



**CPHo Business Office Support**  
*Cleo Gurbuz*

**North West**  
*Gillian Damant*



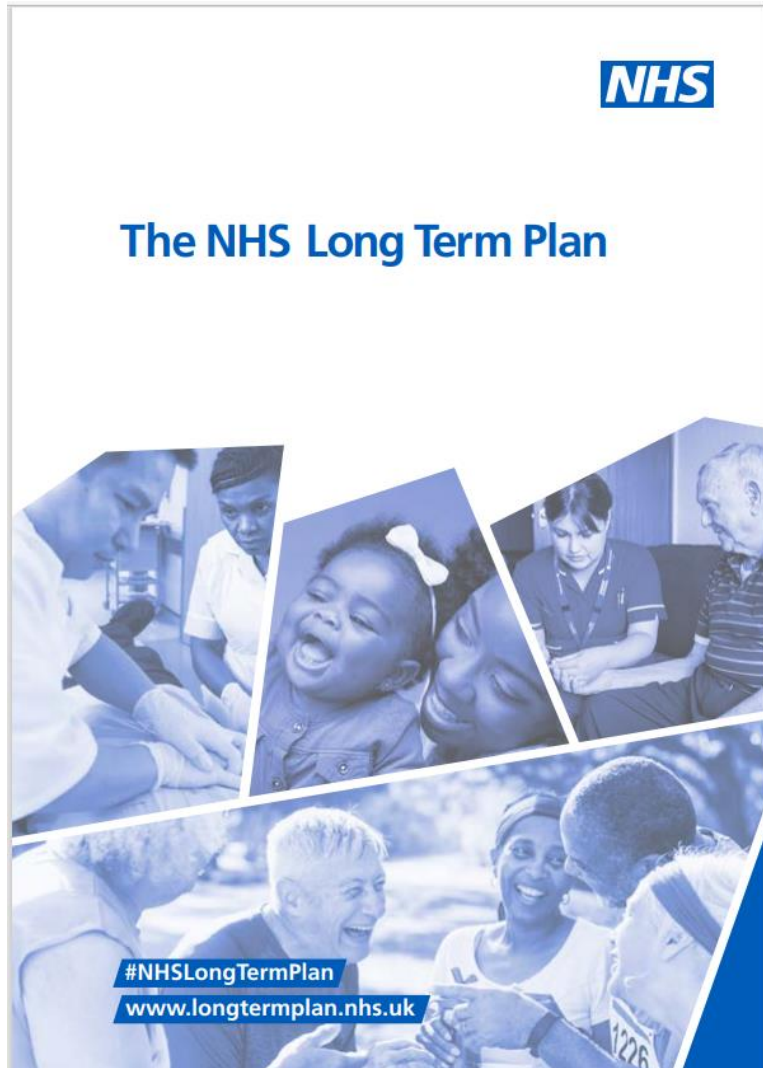
Previous role:  
Principal Antimicrobial  
Pharmacist, Stockport NHS  
Foundation Trust



# Policy Mandate (ii)

## NHS Long-Term Plan: CHAPTER 2: MORE NHS ACTION ON PREVENTION AND HEALTH INEQUALITIES

### ANTIMICROBIAL RESISTANCE



- The health service will continue to support implementation and delivery of the government's new five-year action plan on Antimicrobial Resistance.
- We will continue to optimise use, reduce the need for and unintentional exposure to antibiotics.
- We will ensure access to old and new treatments and preventative measures (including vaccines).
- We will ensure access to appropriate tools (including diagnostics and electronic prescribing).
- We will continue to support system-wide improvement, surveillance, infection prevention and control practice, and antimicrobial stewardship
- And we will ensure resources are available for clinical expertise and senior leadership at all levels

# Strategic Aims – Antimicrobial Prescribing & Medicines Optimisation (APMO):

to improve patient outcomes, safely reduce human exposure to antimicrobials, reduce antimicrobial resistance and reduce environmental impact and waste



## 1. Optimise infection management

Investigation, diagnosis & source control

Immediate or deferred treatment

Effective drug choice, route, dose

Timely review & revise prescription

e.g. with evidence-based guidelines supported by digital and medical technology, ensuring equitable access and quality of care

## 2. Reduce demand

Reduce clinical need by prevention

Reduce patient expectation

e.g. with vaccination, public health, IPC, patient empowerment

## 3. Reduce exposure


Safely reduce overprescribing

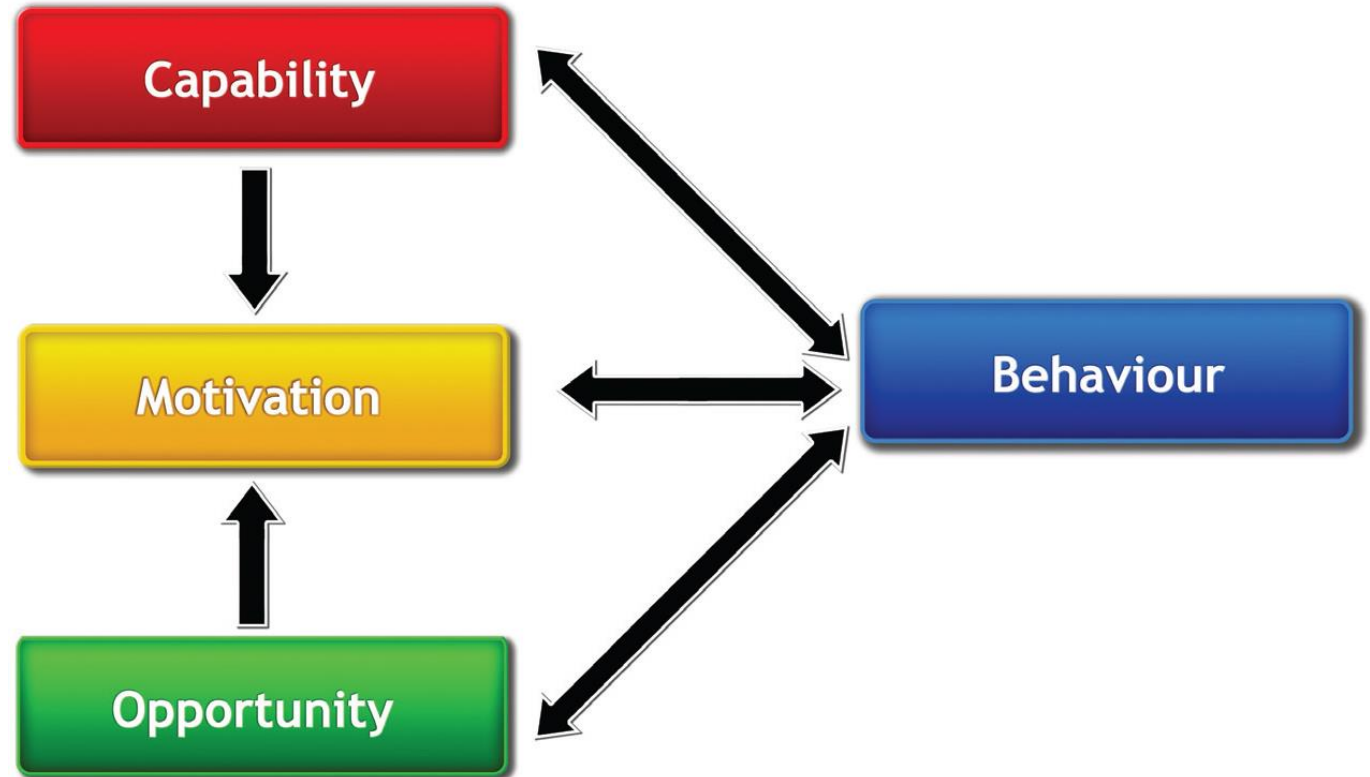
Shortest effective course length

Narrowest effective spectrum

e.g. with patient risk assessment and decision aids including diagnostic tests

# Applying behaviour science principles to antimicrobial stewardship policy: Seven key enablers

-  1. PUBLIC & PATIENT EMPOWERMENT
-  2. WORKFORCE CAPACITY & CAPABILITY
-  3. POLICY & COMMISSIONING
-  4. GOVERNANCE
-  5. KNOWLEDGE MOBILISATION
-  6. DATA-DRIVEN IMPROVEMENT
-  7. DIGITAL & MEDICAL TECHNOLOGY



# APMO workstream priorities (underway Feb 23)

## CAPABILITY



### PUBLIC & PATIENT EMPOWERMENT

- Pharmacy Quality Scheme for community pharmacy (with UKHSA & primary care team)
  1. Antibiotic Checklist
  2. TARGET treat-your-infection decision aids
- Recurrent infection resources for PCNs (with UKHSA)



### WORKFORCE CAPACITY & CAPABILITY

- AMS Workforce Survey
- TARGET resources train-the-trainer events (with UKHSA)
- Pharmacy undergraduate curriculum review (with HEE)

## OPPORTUNITY



### KNOWLEDGE MOBILISATION

- AMS evidence bulletin monthly
- IV-to-oral switch consensus criteria (with UKHSA)
- Pen. allergy evidence bundle



### DATA-DRIVEN IMPROVEMENT

- NHSE AMR data dashboard
- PrescQIPP duration dashboard
- Model Health System RightCare



### DIGITAL & MEDICAL TECHNOLOGY

- Digital Vision – system user focus groups and survey
- Community pharmacy RCT inc. POC tests for infection

## MOTIVATION



### POLICY & COMMISSIONING

- NHS Oversight Framework (PCNs)
- NHS Standard Contract (hospitals)
- UTI CQUIN (hospitals)
- Pharmacy Quality Scheme
- New antibiotics – de-linked payment model stewardship
- OPAT commissioning model
- IV switch CQUIN application



### EFFECTIVE GOVERNANCE

- Regional AMR and AMS governance groups
- Regional AMS & IPC data packs

# Antimicrobial Resistance Programme

## Our areas of work



Antimicrobial Prescribing & Medicines Optimisation (APMO)



New Drugs



Data



Urinary Tract Infections



Diagnostics



Improvement and Assurance schemes



Infection, Prevention & Control

- [\\* NHS Oversight Framework](#)
- [\\* NHS Standard Contract](#)
- [\\* CQUINs \(UTI 2022-23 and IVOS 2023-24\)](#)



Regional Folders - click here for regional specific information and updates



Useful Resources



AMR Events Calendar 2023



Our next event is a mini-conference : AMS Unlocking the Potential on 7th March 2023

This interactive session from the NHS England AMR Programme Team will explore the strategy and vision for antimicrobial prescribing and medicines optimisation; data dashboards and standard reports to support AMS teams; prompt IVOS CQUIN, and shared learning for improvement. Click here for more details.



2022-23 CCG2: Appropriate antibiotic prescribing for UTI in adults aged 16+ CQUIN

This CQUIN scheme aims to improve the diagnosis and management of acute Urinary Tract Infection (UTI) in adults in NHS hospitals providing acute care. Resources to support this scheme have been sited in this workspace.

[Click to access...](#)



2023-24 CQUIN03: Prompt IVOS as soon as patients meet switch criteria

Prompt switching of intravenous antimicrobial treatment to the oral route of administration, as soon as patients meet switch criteria, aligns with a commitment in NHS England's 2022-23 Priorities and Operational Planning Guidance.

[Click to access...](#)



NHS Standard Contract FY 2021-22 Requirement to reduce antibiotic consumption

The Standard Contract requires Trusts to make a 2% reduction in antibiotic consumption against a 2018 baseline. Trust performance is reported quarterly on the AMR Fingertips portal. Baseline data and latest 4 quarters performance data is also published here.



NHS Standard Contract FY 2022-23 Requirement to reduce antibiotic consumption

The Standard Contract requires Trusts to make a 4.5% reduction in broad spectrum antibiotic consumption against a 2018 baseline. Trust baseline, reduction targets and performance will be reported here



NHS Oversight Framework (NOF)

The NHS Oversight Framework (NOF) includes metrics that support Antimicrobial Resistance: appropriate prescribing of antibiotics and broad-spectrum antibiotics in primary care. Integrated Care Board (ICB) and sub-ICB level (formerly CCG) organisational performance is reported monthly in the NHS England Oversight Framework dashboard, provided by NHS Business Services Authority, reporting Antimicrobial Resistance metrics 44a and 44b.



Pharmacy Quality Scheme

# Summary

- Solid progress but more work to do to address AMR threat
- NHSE AMR Programme appointed APMO team
- Strategic aims and key enablers identified
- APMO programme of work underway
- FutureNHS AMR Workspace hosting resources
- Stakeholder feedback welcome via [england.amrprescribingworkstream@nhs.net](mailto:england.amrprescribingworkstream@nhs.net)