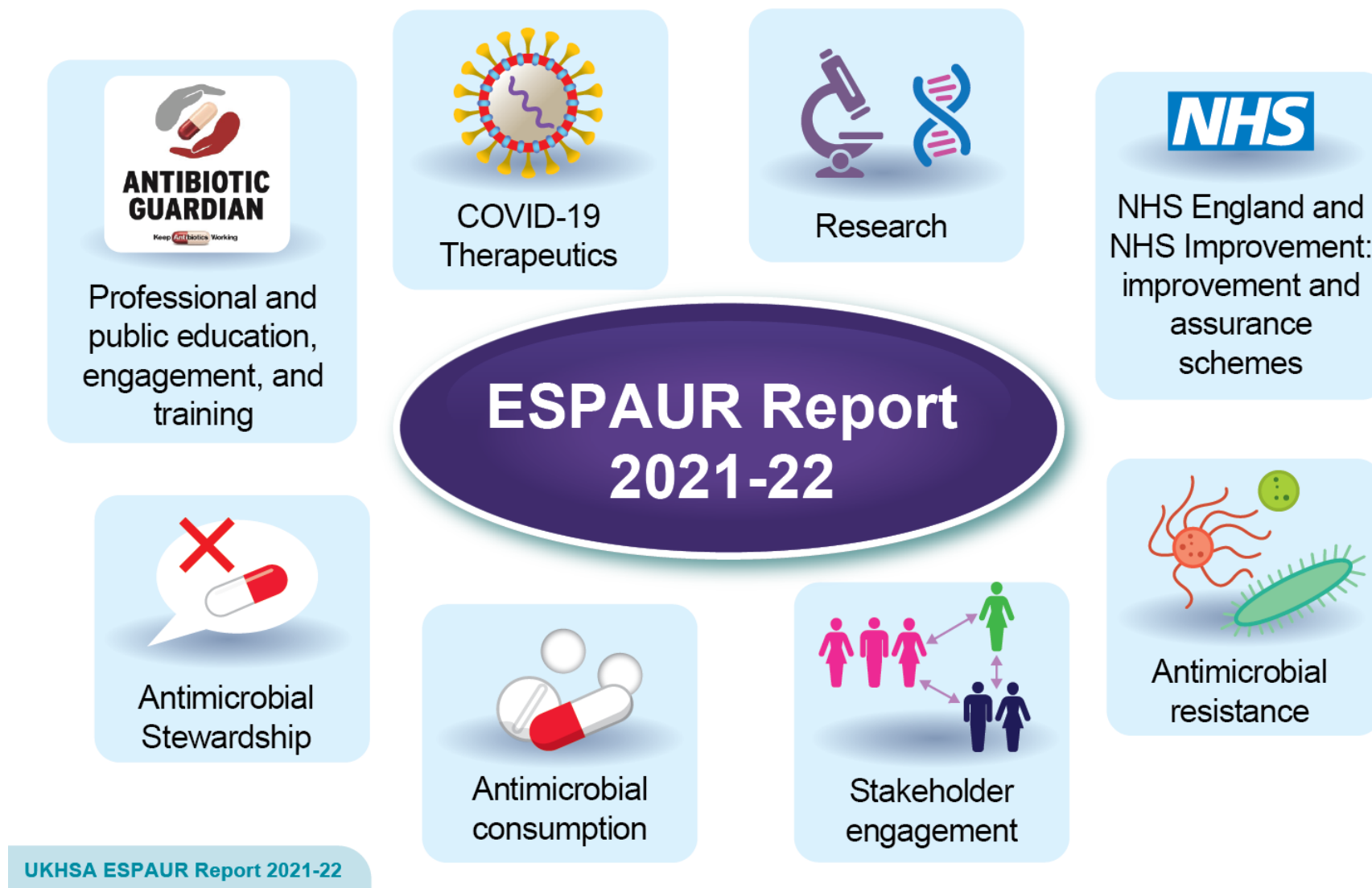


This document contains 30 infographics for the 2021 to 2022 English surveillance programme for antimicrobial utilisation and resistance (ESPAUR) report. An [accessible text transcription of all the infographics](#) is available on the report's web page.

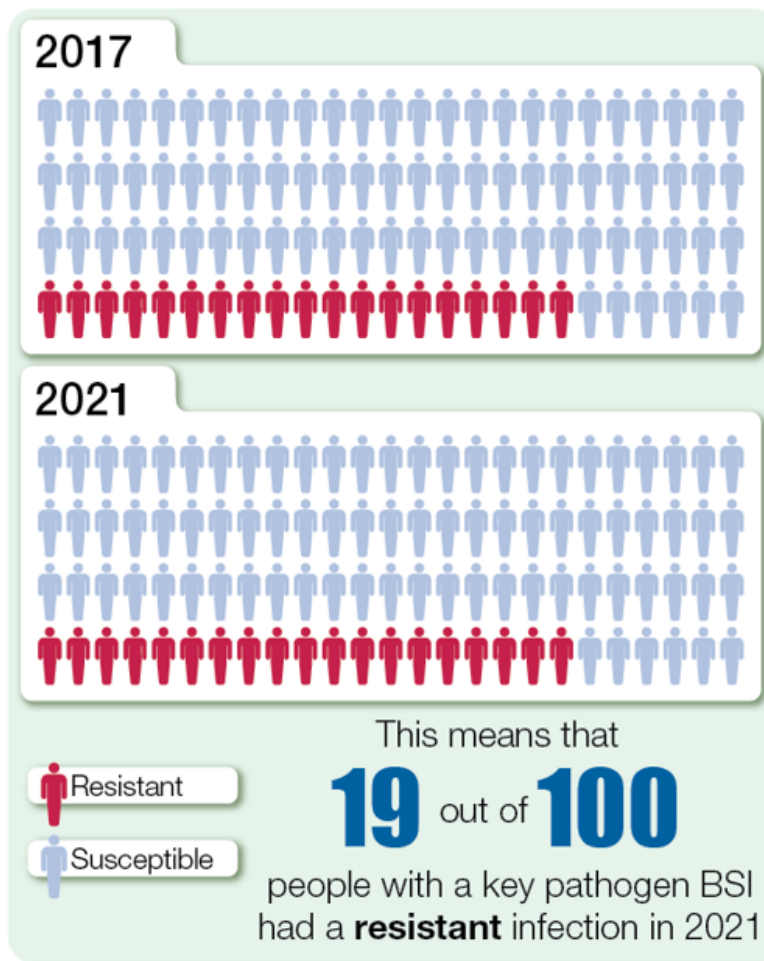
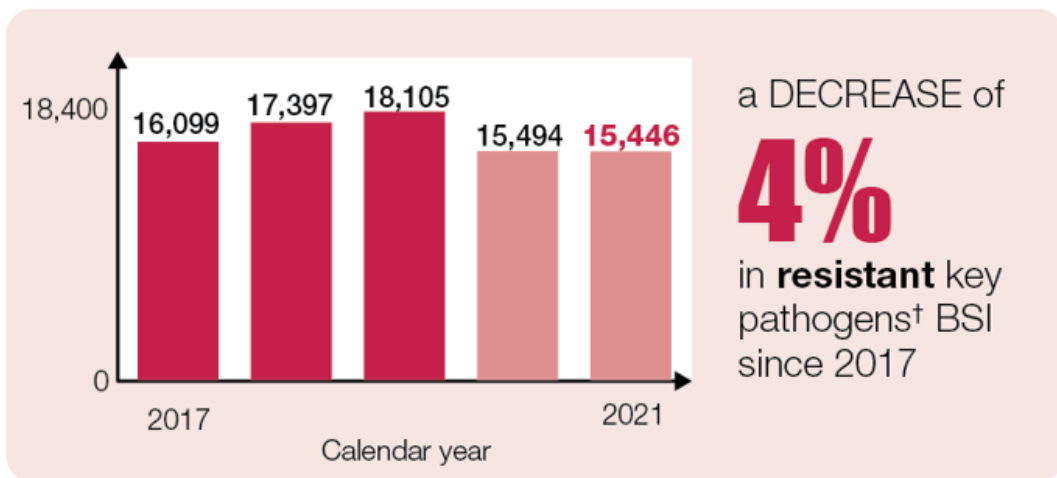
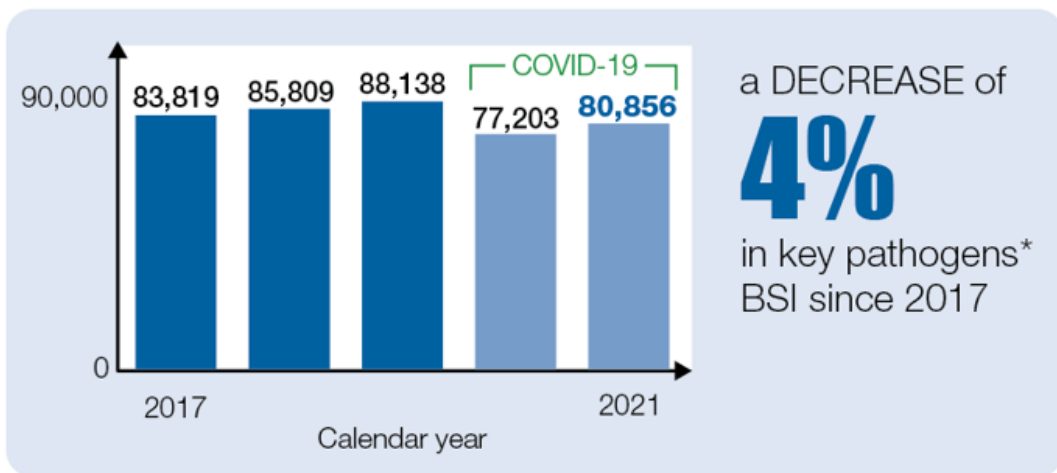
Infographic 1. ESPAUR report 2021 to 2022



Infographic 2. ESPAUR oversight group

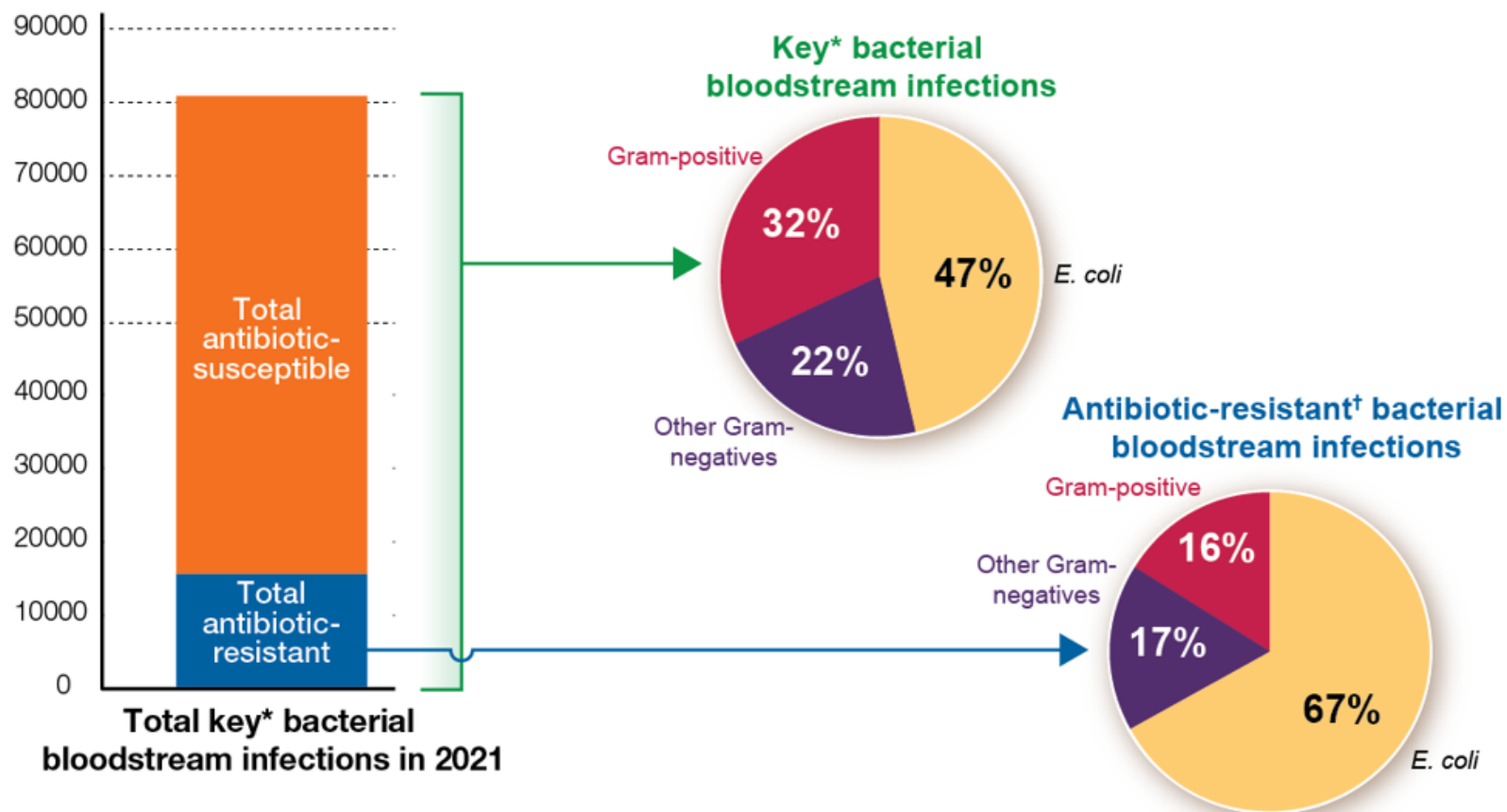


Infographic 3. The burden of bloodstream infections (BSIs) and resistant BSIs



* key pathogens include: *E. coli*, *K. pneumoniae*, *K. oxytoca*, *Acinetobacter* spp. *Pseudomonas* spp., *Enterococcus* spp., *S. aureus* and *S. pneumoniae*.
 † *E. coli*, *K pneumoniae* and *K. oxytoca*: resistant to any of: carbapenems, third-generation cephalosporin, aminoglycosides or fluoroquinolones; *Acinetobacter* spp: resistant to aminoglycosides and fluoroquinolones, or carbapenems; *Pseudomonas* spp. resistant to three or more antimicrobial groups, or carbapenems; *Enterococcus* spp. resistant to glycopeptides; *S. aureus* resistant to meticillin; *S. pneumoniae* resistant to penicillin and macrolides, or penicillin.

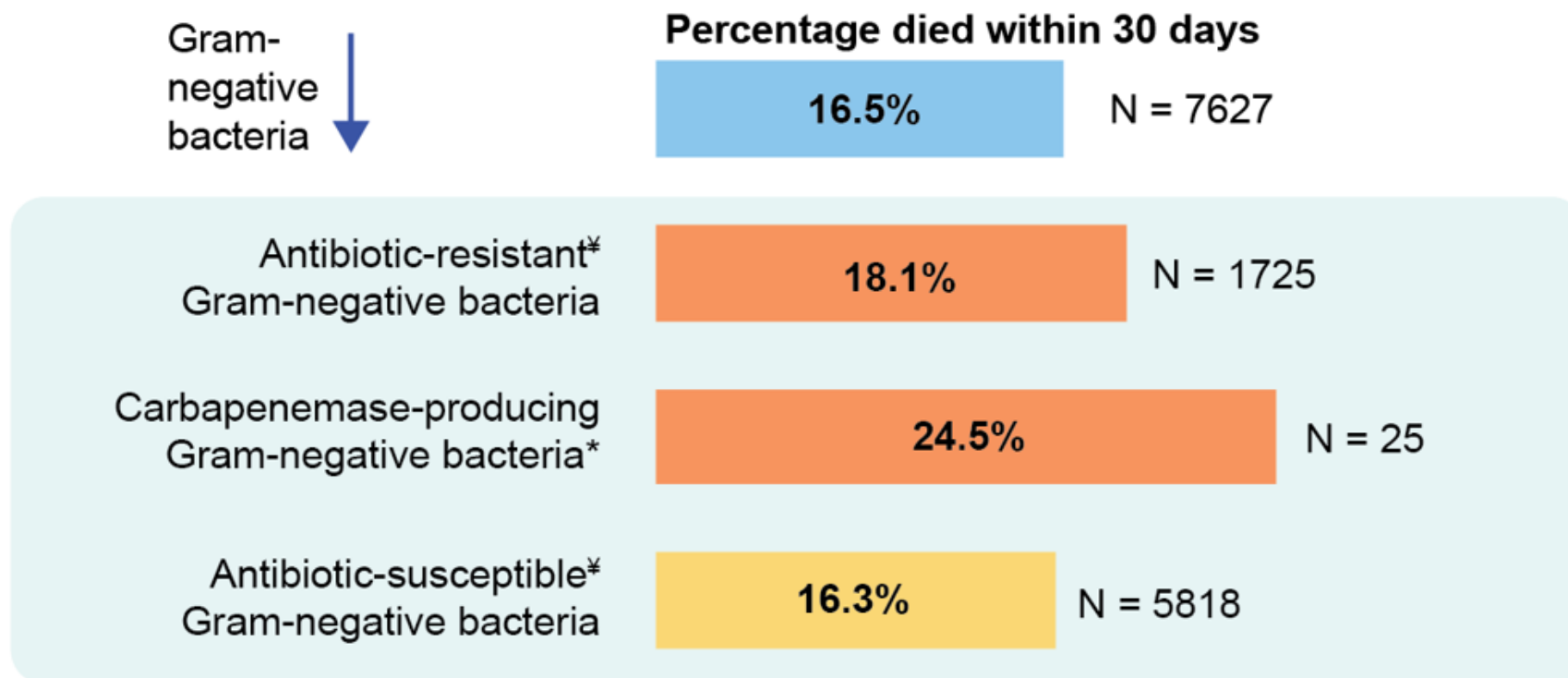
Infographic 4. The burden of key bacterial bloodstream infections and resistance to clinically important antibiotics



* key pathogens include: *E. coli*, *K. pneumoniae*, *K. oxytoca*, *Acinetobacter* spp. *Pseudomonas* spp., *Enterococcus* spp., *S. aureus* and *S. pneumoniae*.

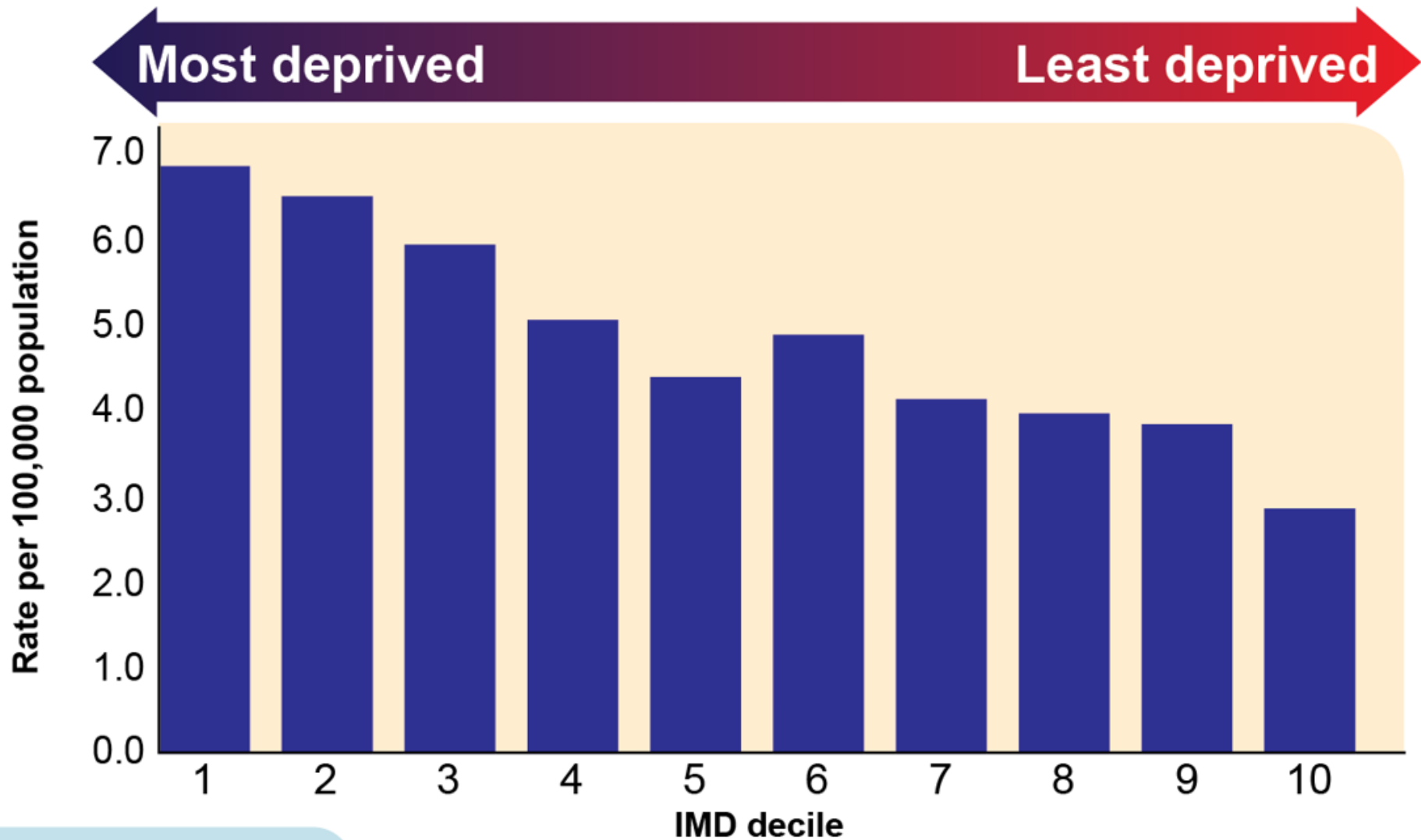
† *E. coli*, *K pneumoniae* and *K. oxytoca*: resistant to any of: carbapenems, third-generation cephalosporin, aminoglycosides or fluoroquinolones; *Acinetobacter* spp: resistant to aminoglycosides and fluoroquinolones, or carbapenems; *Pseudomonas* spp. resistant to three or more antimicrobial groups, or carbapenems; *Enterococcus* spp. resistant to glycopeptides; *S. aureus* resistant to methicillin; *S. pneumoniae* resistant to penicillin and macrolides, or penicillin.

Infographic 5. 30-day all-cause mortality of patients with Gram-negative bloodstream infections in 2021

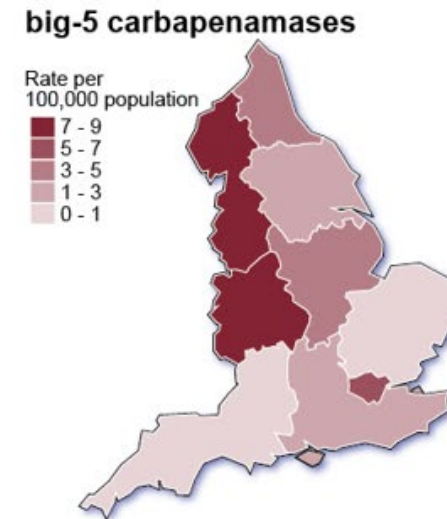
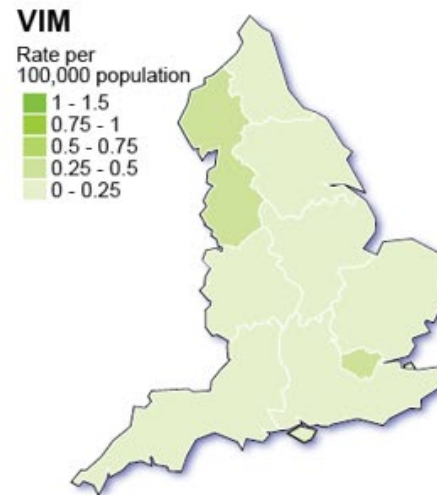
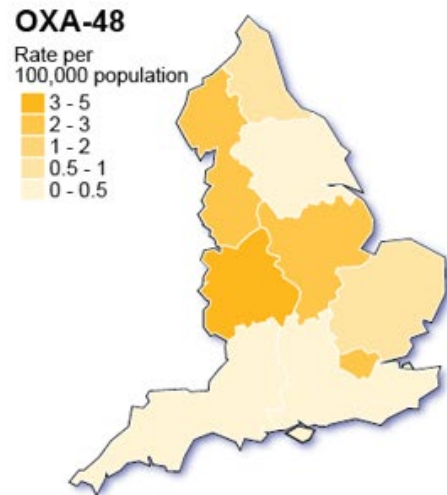
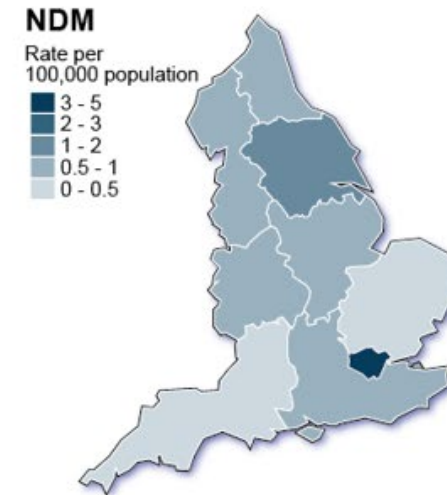
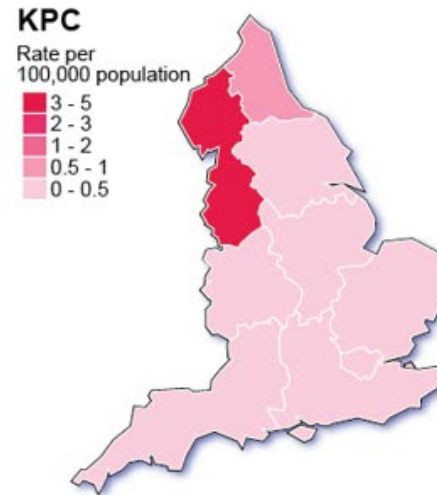
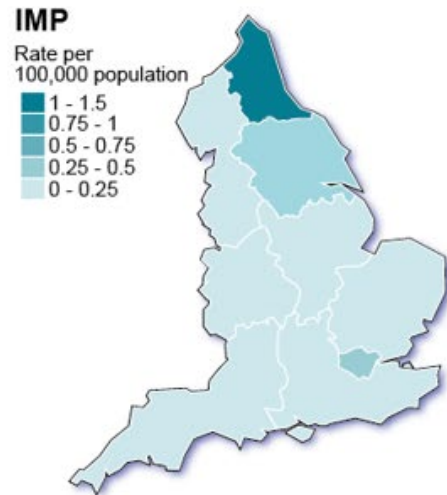


*invasive infections; *AMR burden combinations

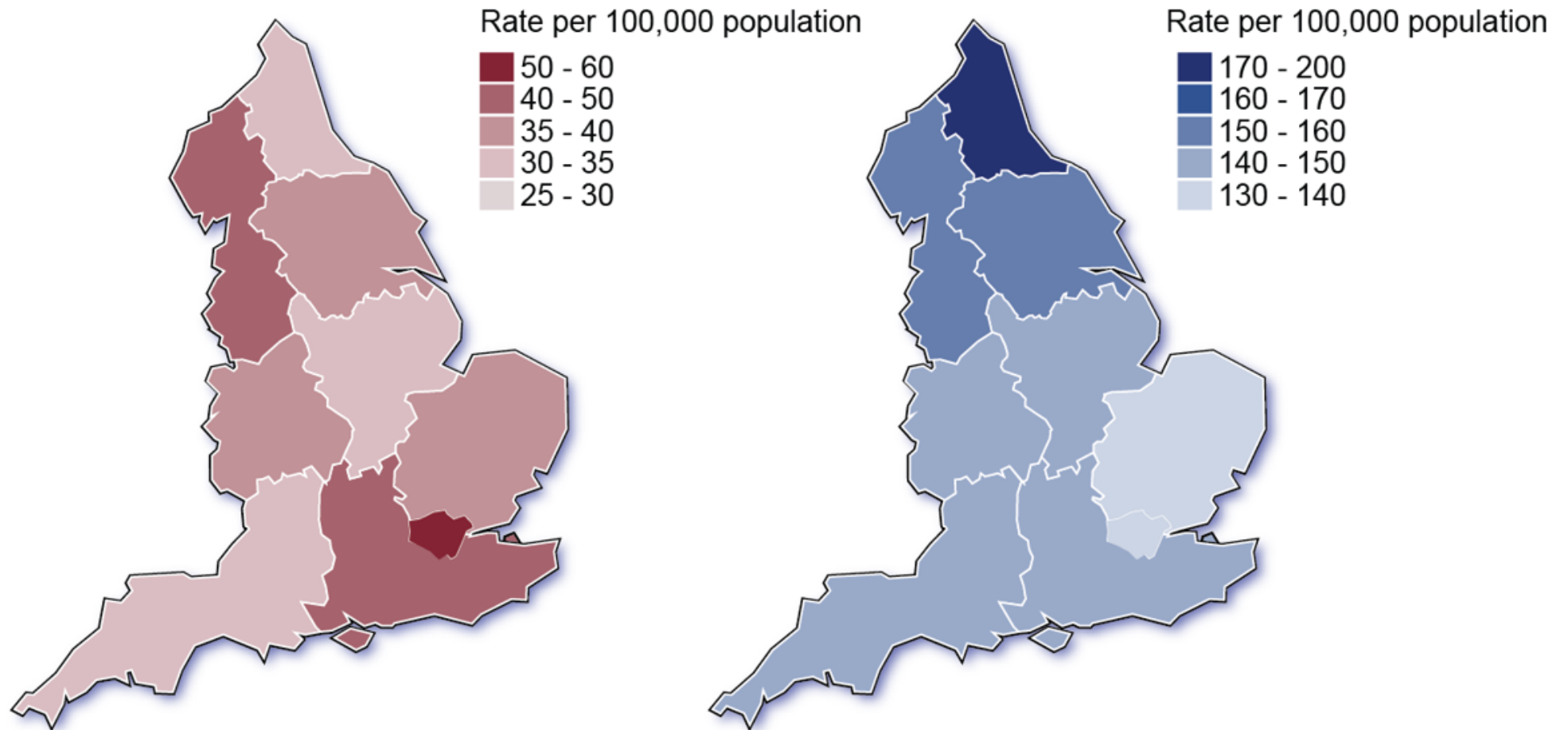
Infographic 6. Carbapenemase-producing Gram-negative bacterial notification rate per 100,000 population in 2021



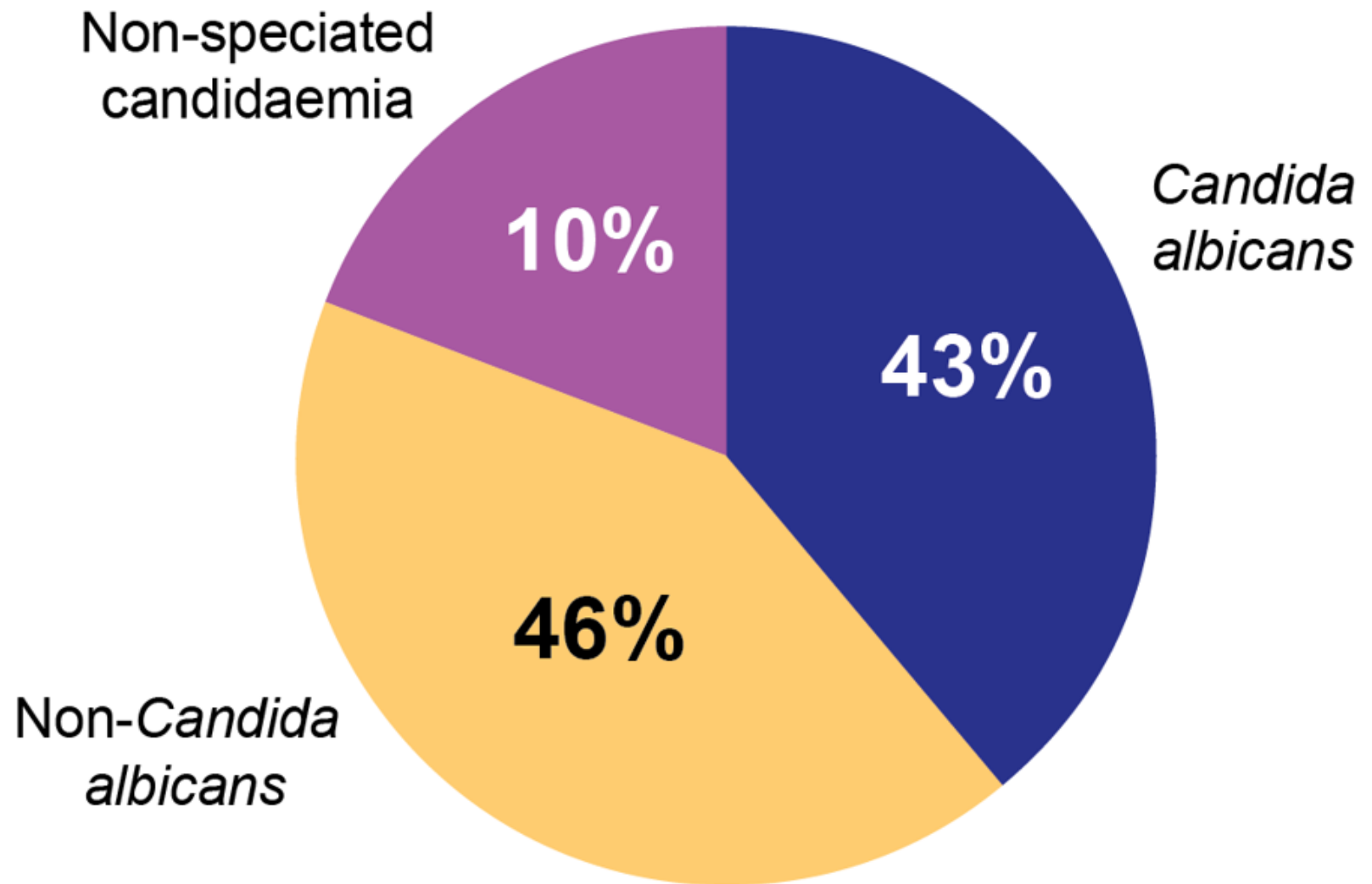
Infographic 7. Regional notifications per 100,000 population of acquired carbapenemase-producing Gram-negative bacteria by big-5 carbapenemase family in England, 2021



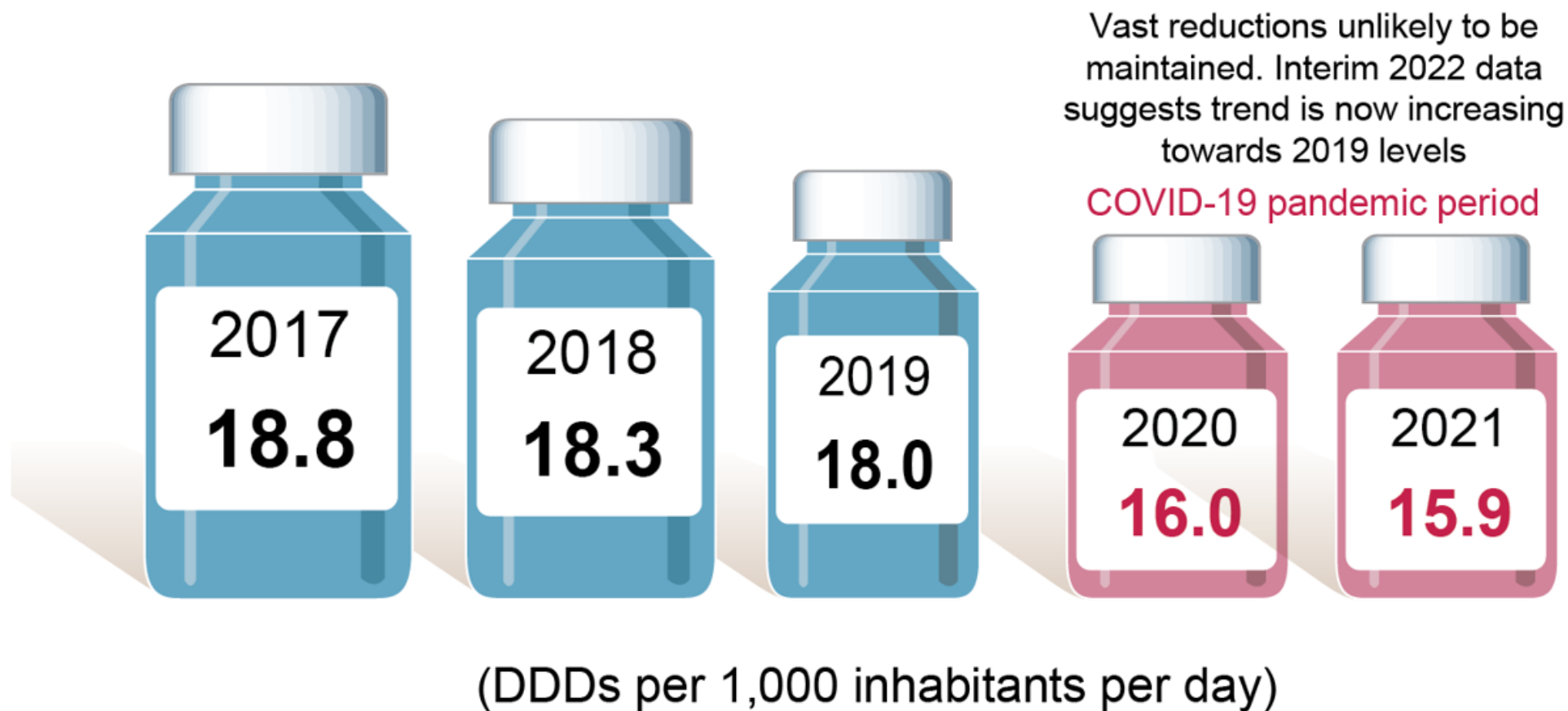
Infographic 8. Regional variation in rate per 100,000 population of a) the estimated burden of resistant bloodstream infections (AMR) and b) the estimated numbers of bloodstream infections (BSI) in England in 2021



Infographic 9. Candida species from bloodstream infections in 2021

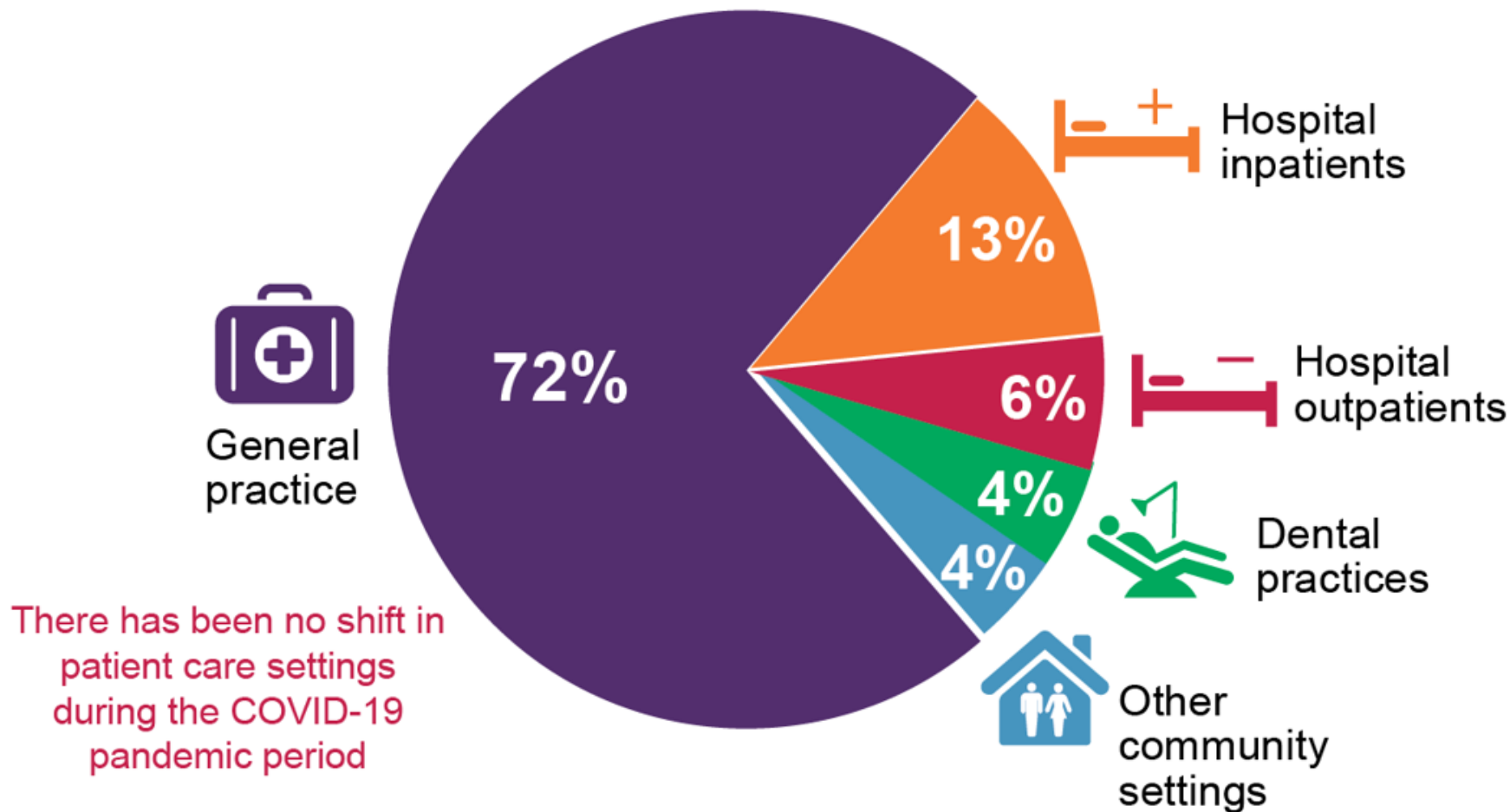


Infographic 10. Total consumption of antibiotics continued to decline

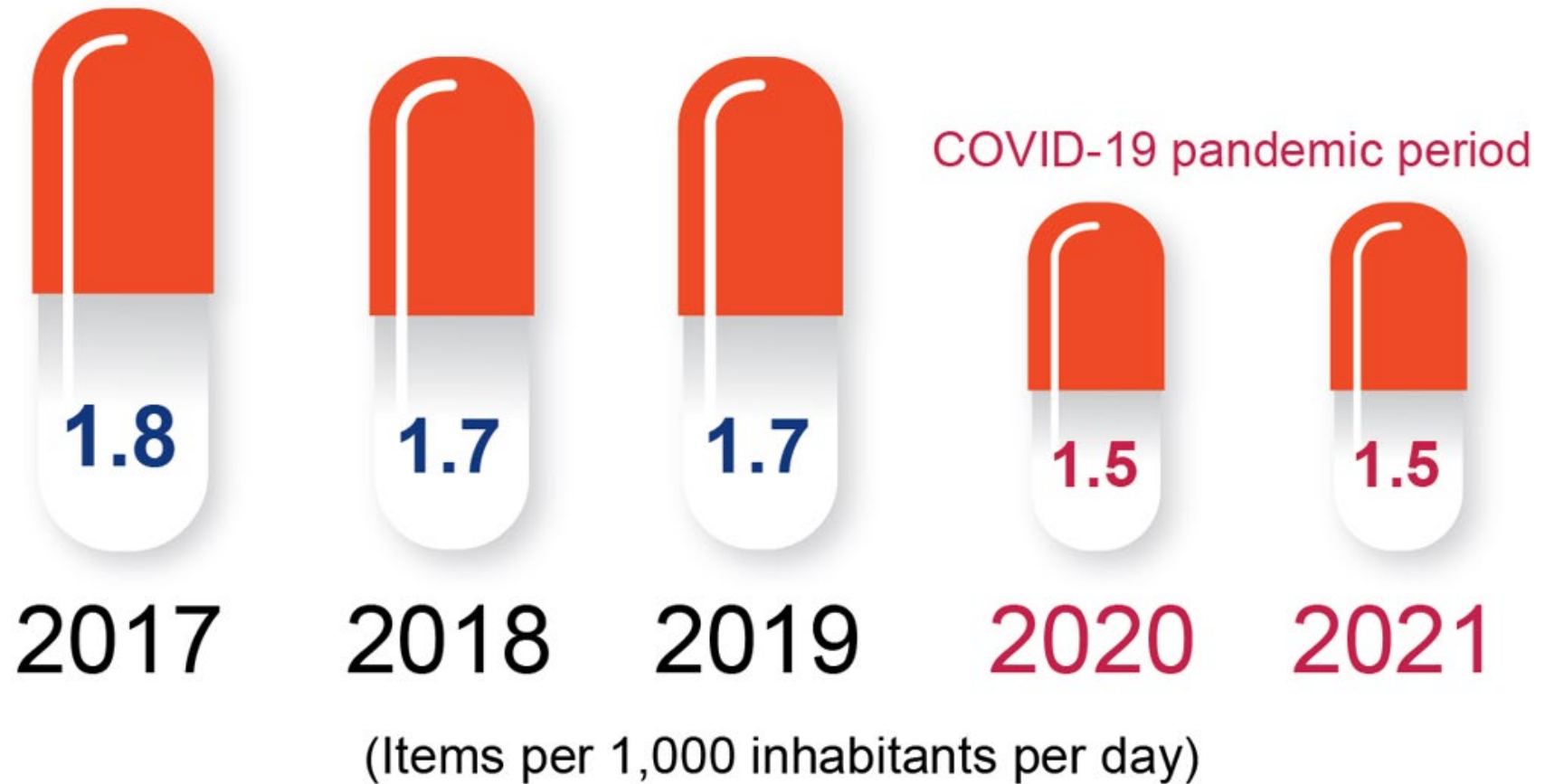


Infographic 11. Total antibiotic consumption by prescriber setting as proportion of overall prescribing, England 2020

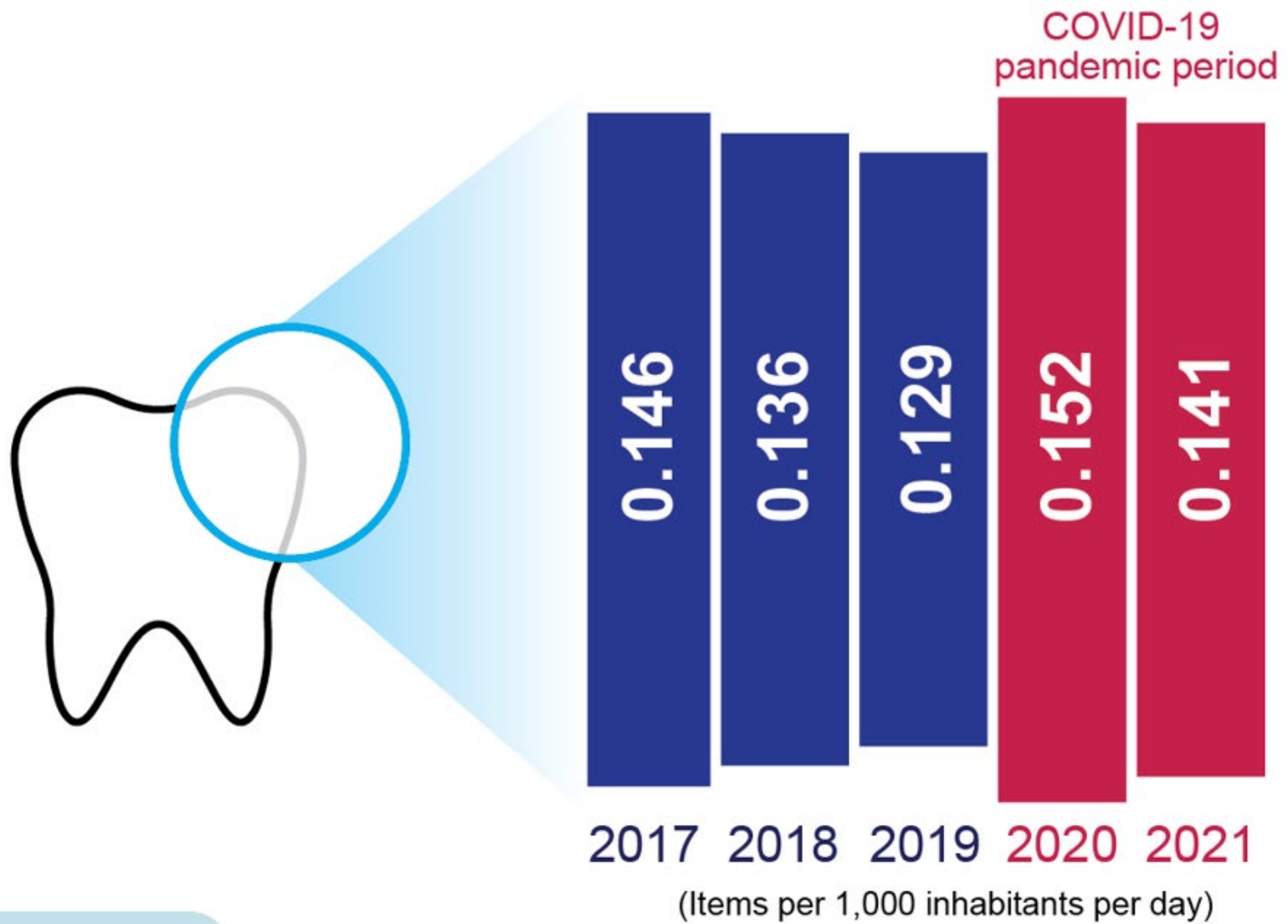
Who is prescribing?



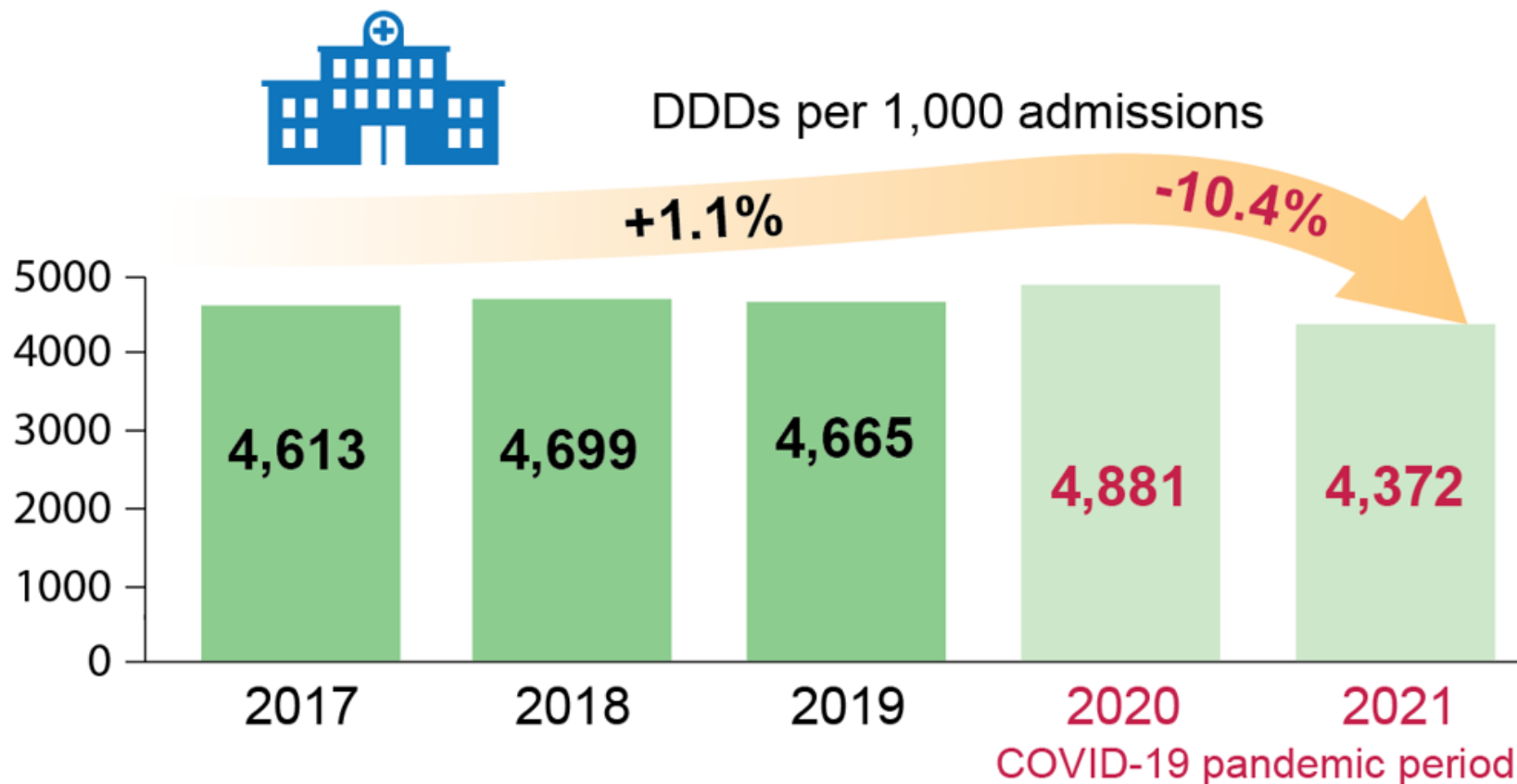
Infographic 12. Antibiotic items prescribed in primary care remain lower than pre-pandemic levels



Infographic 13. Antibiotic items prescribed in dental care have reduced since 2020 increase



Infographic 14. Antibiotic prescribing decreased in secondary care



2021 DDDs per 1,000 admissions has decreased from 2020. However, DDDs per 1,000 inhabitants per day remain at similar levels, suggesting change seen here is reflective of increase in admissions since 2020.

Infographic 15. Being AWaRe

Access



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

Includes: amoxicillin for pneumonia and penicillin for Streptococcal sore throat

Watch



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

Includes: ciprofloxacin in the treatment of complicated UTI

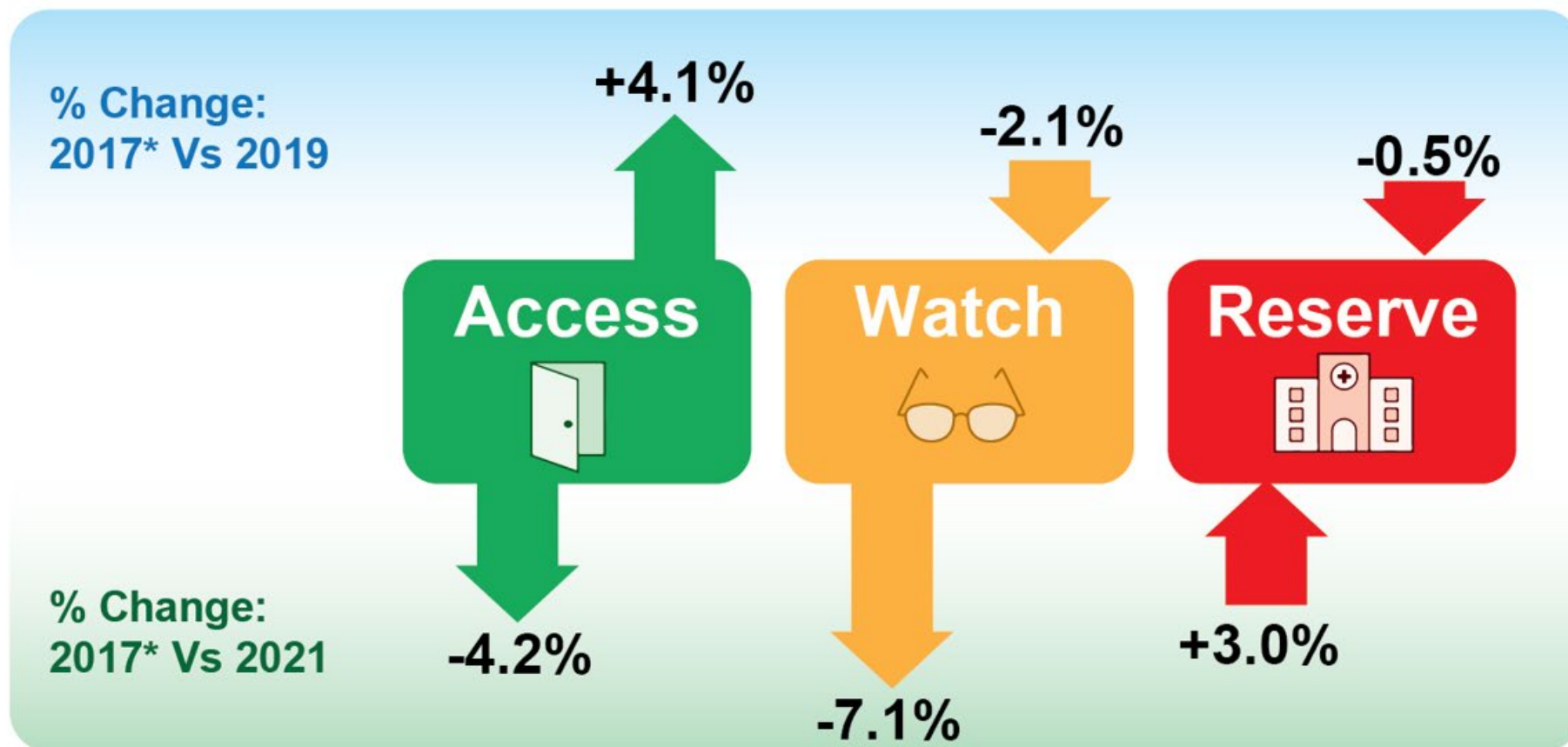
Reserve



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

Includes: colistin and IV parenteral fosfomycin

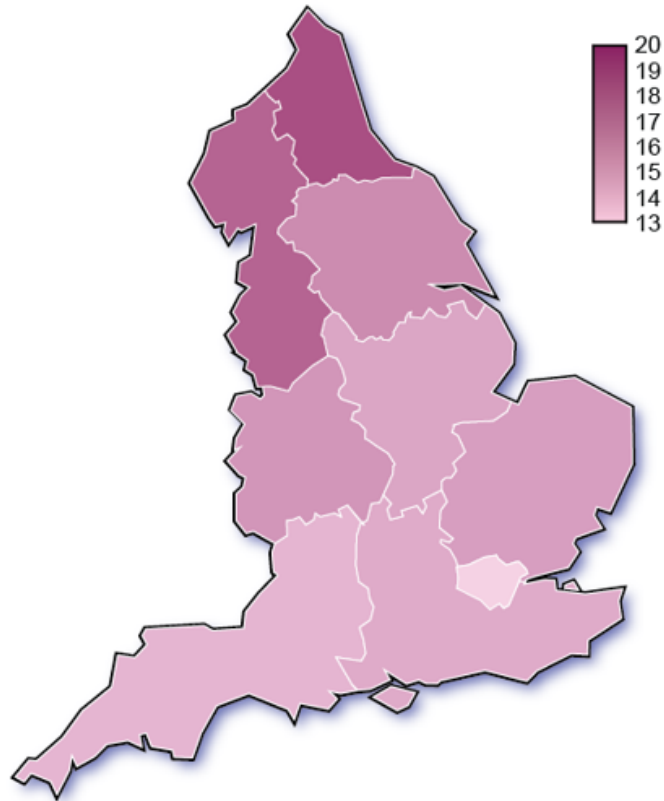
Infographic 16. Change in AWaRe consumption: 2017 versus 2019 compared to 2017 versus 2021 (percentage change in DDDs per 1,000 admissions)



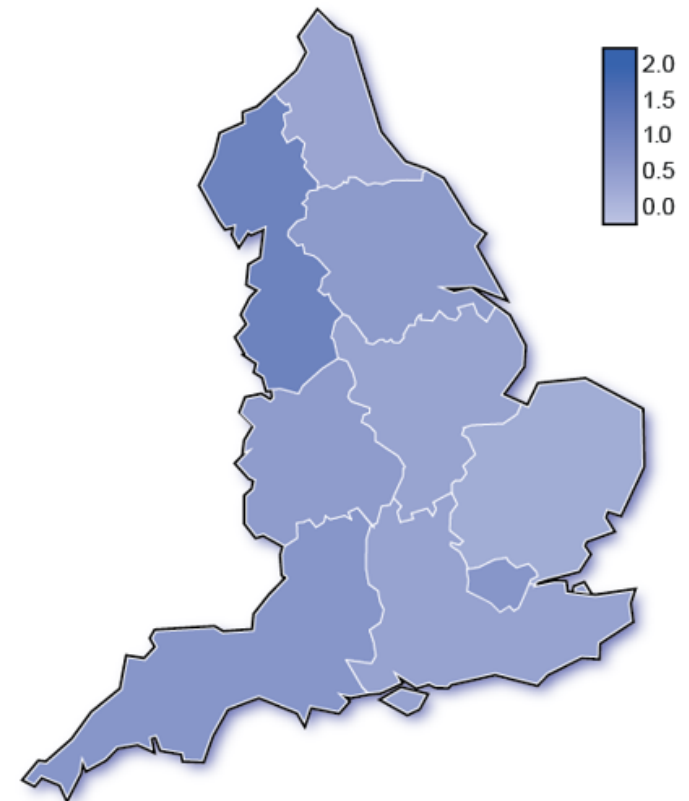
*National Action Plan (NAP) baseline year
Denominator used here differs to NAP measure, which uses population

Infographic 17. Total consumption of systemic antibiotics and antifungals across UKHSA centres, 2021

Antibiotic consumption
(DDD per 1,000 inhabitants per day)



Antifungal consumption
(DDD per 1,000 inhabitants per day)



Infographic 18. Secondary care consumption of antifungals has been increasing



(DDDs per 1,000 inhabitants per day)

Infographic 19. TARGET antibiotics toolkit activities 2021 to 2022



Redesign of the TARGET website – check it out!



Hosted two webinars with RCGP with 244 attendees



Developed online accessible patient information leaflets for remote consultations



Worked with healthcare communications services to provide free SMS text messages and digital leaflets through GP systems



Published resources on approaches to discussing antibiotics with patients during consultations



Ran two promotional campaigns with the RCGP to promote UTI resources and WAAW

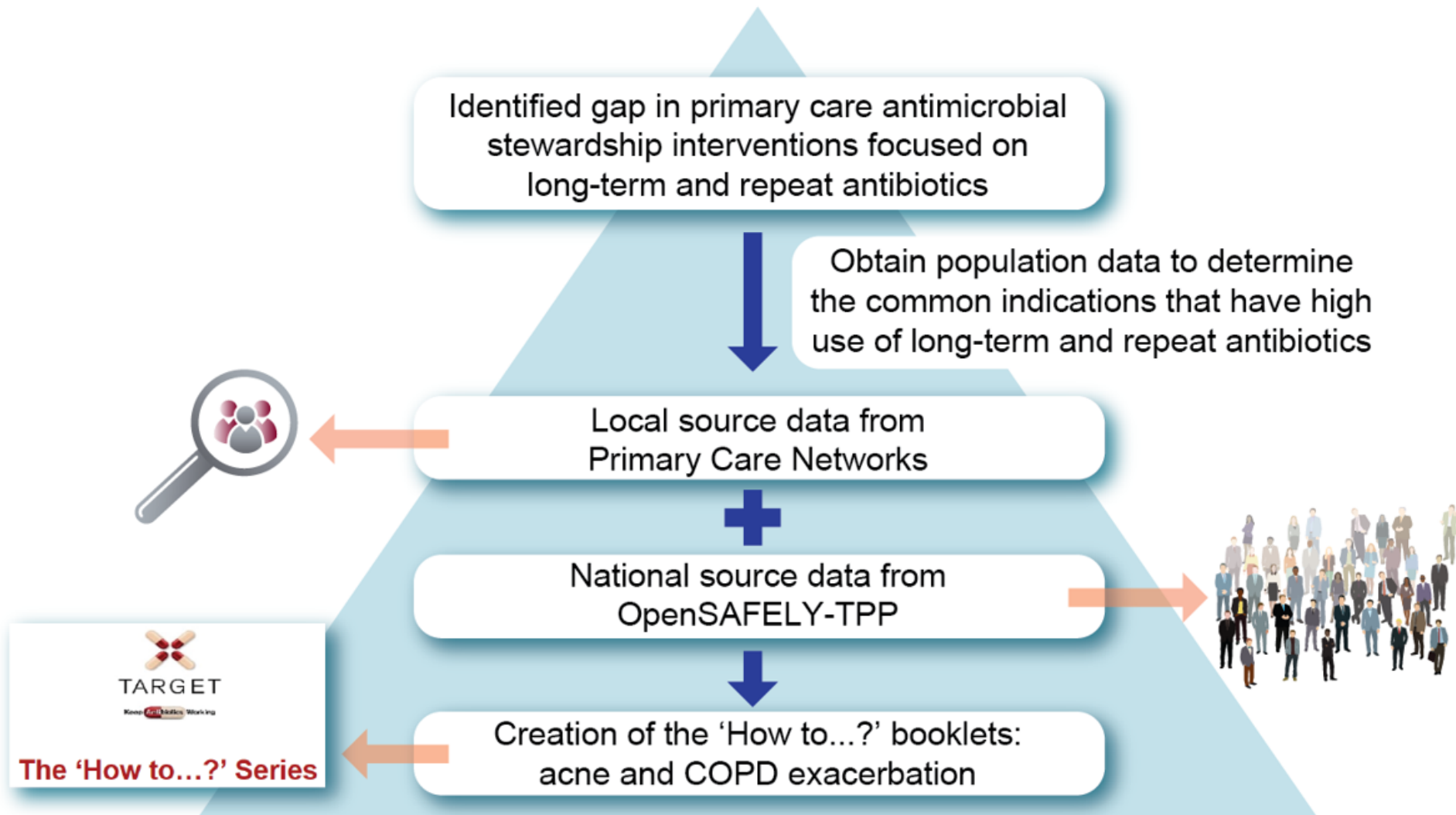
Infographic 20. The TARGET Antibiotics Toolkit*



*Treat **A**ntibiotics **R**esponsibly, **G**uidance, **E**ducation and **T**ools

www.rcgp.org.uk/targetantibiotics

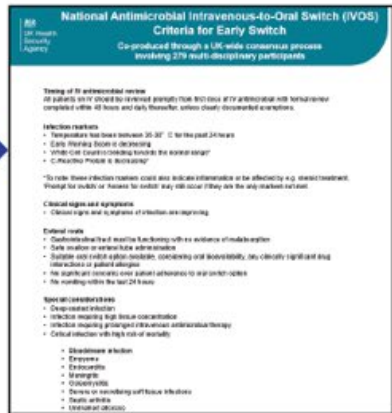
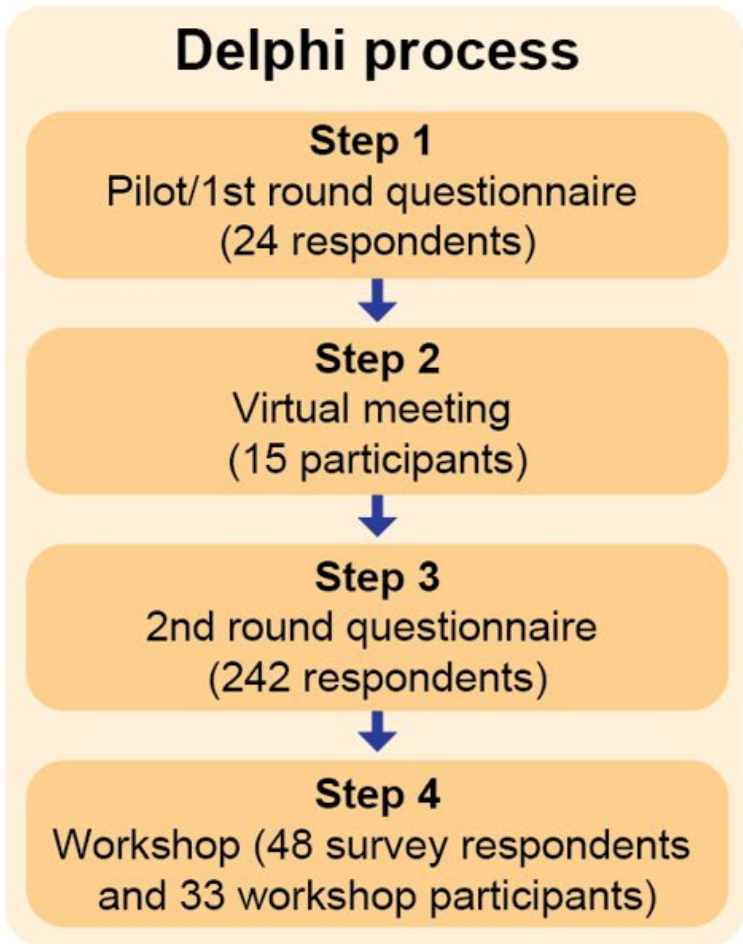
Infographic 21. The 'How to...?' series: development of booklets



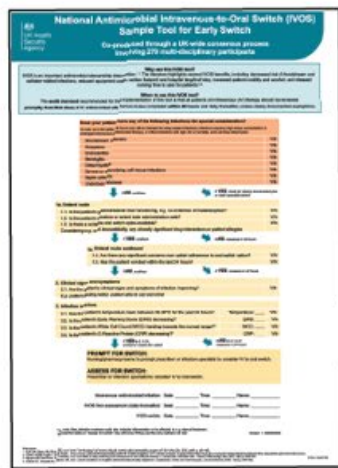
Infographic 22. IV to oral switch: development of national antimicrobial intravenous-to-oral switch (IVOS) criteria

Trust data:
Stratified sampling of 45 IVOS policies

Literature data:
Rapid review of 16 out of 477 papers

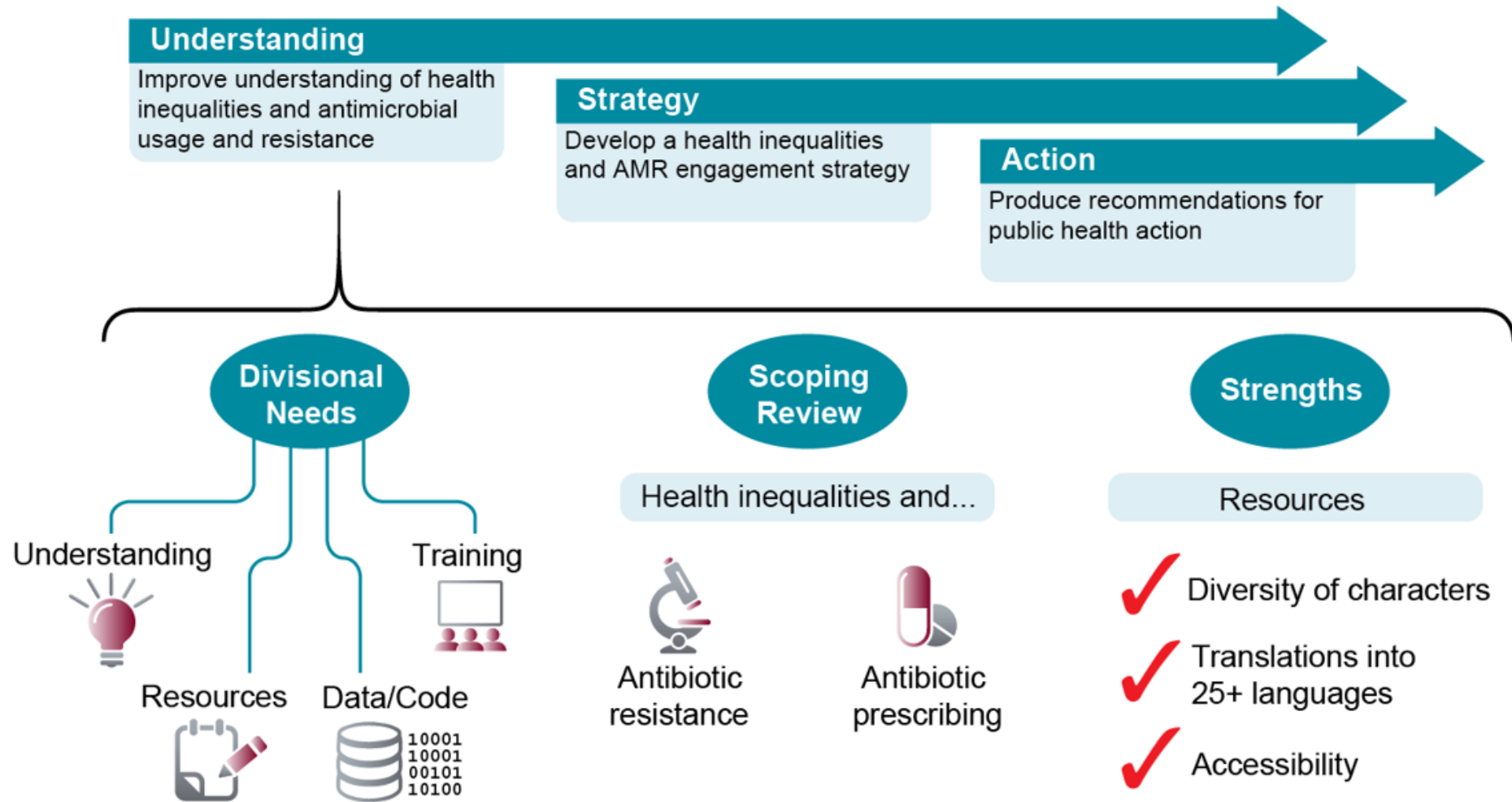


Draft criteria

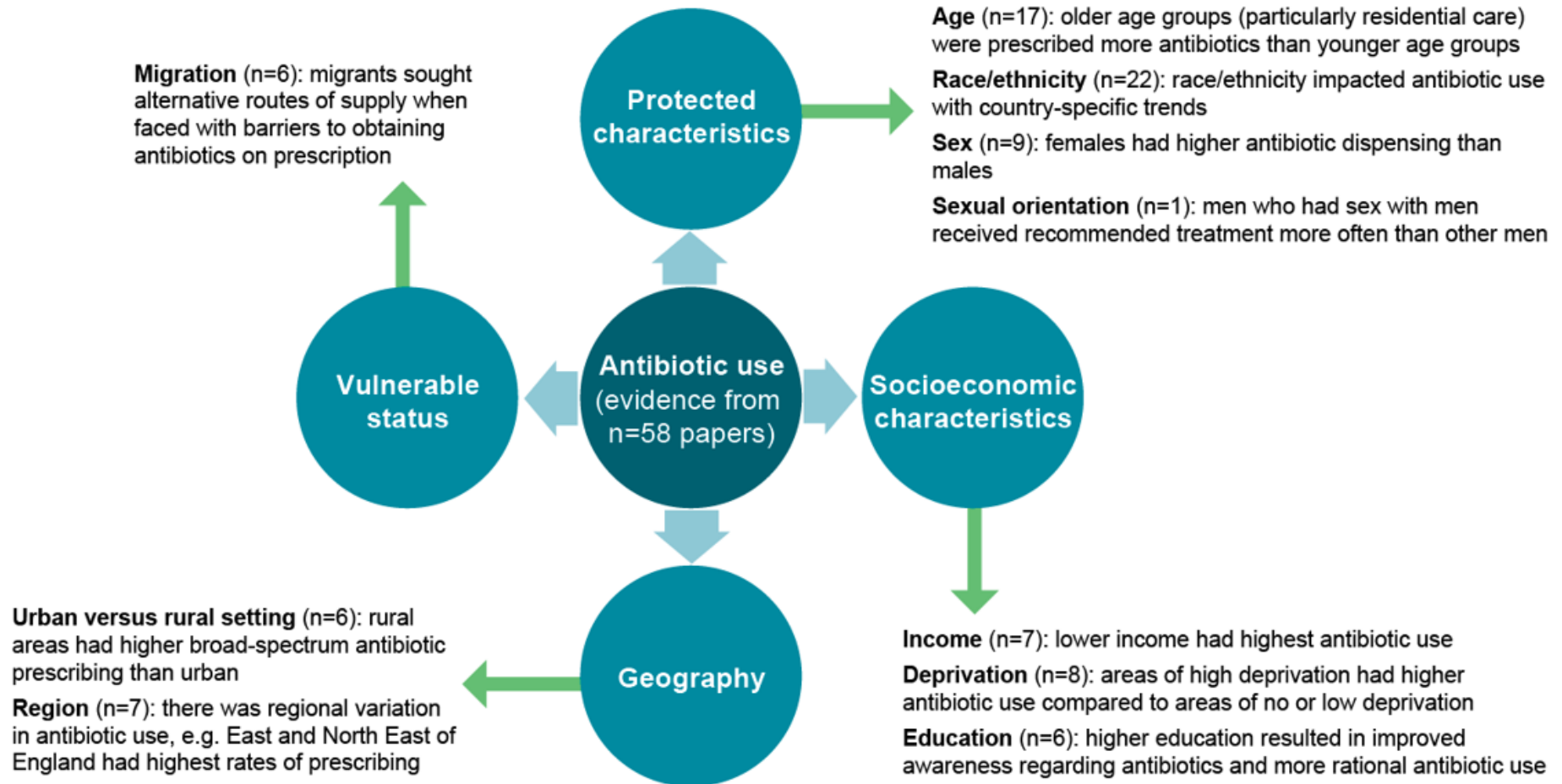


Sample decision aid

Infographic 23. Addressing health inequalities across the work of the UKHSA healthcare-associated Infection, Fungal, Antimicrobial Resistance, Antimicrobial Usage and Sepsis Division



Infographic 24. Influence of factors commonly known to be associated with health inequalities on antibiotic use in high income countries: a systematic scoping review



Infographic 25. Evidence for elements of health inequalities associated with methicillin-resistant *Staphylococcus aureus* (MRSA) infections

Ethnicity

Black patients, African-Americans and Hispanic patients had higher rates of MRSA

Asian patients had lower MRSA rates

Deprivation

Paediatric cystic fibrosis patients in areas of high deprivation were 2x as likely to contract MRSA



Age

Increase in MRSA most pronounced in persons aged 18 to <50 years

Immigration status

Immigrants had lower rates of MRSA infection (though not statistically significantly lower) but significantly higher rates of Methicillin-susceptible *S. aureus* (MSSA)

Income inequality

Income inequality was strongly associated with MRSA infection

Evidence from 5 papers

UKHSA ESPAUR Report 2021-22

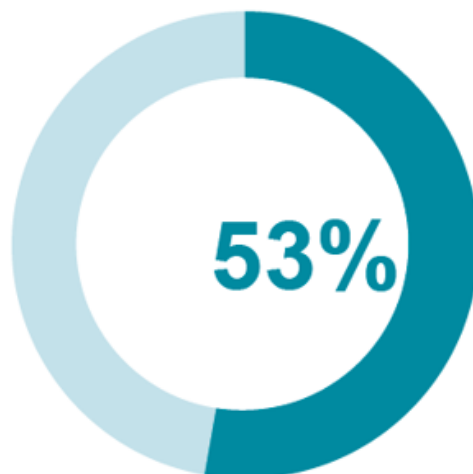
Evidence for an association between elements of health inequalities and the risk of antibiotic-resistant infections in high-income countries: a scoping review

Infographic 26. NHS Business Services Authority (NHSBSA) E pact2 antimicrobial stewardship children's dashboard

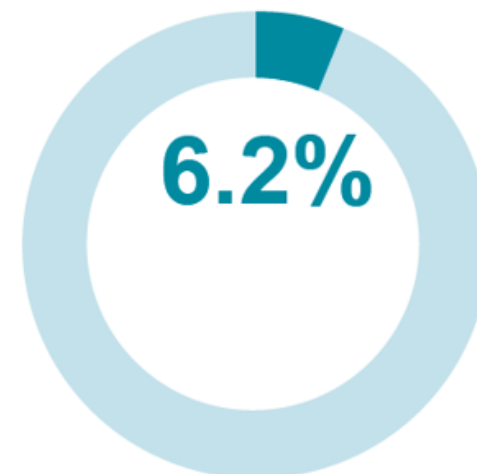
400,000



Antibiotic prescriptions for children aged 0-14y in England in November 2021



Proportion of paediatric antibiotic prescriptions that are for children aged 0-4y



Proportion of all children aged 0-4y in England prescribed an antibiotic in November 2021

Infographic 27. e-Bug achievements



From 2021 to 22, the e-Bug programme has:



Developed educational resources with teachers and scientists for ages 3-16. These are mapped to the National Curriculum and accredited by the Association for Science Education



Disseminated educational resources to **20,318** primary and secondary schools across England



Launched an interim website (www.e-bug.eu) to share the resources, receiving **520,914** page views from **214** countries



Raised awareness amongst the public. Shared **175** tweets creating **156,381** impressions, and presented at **4** conferences to over **6000** attendees



Collaborated with **17** countries to highlight the importance of including education of children and young people in AMR strategies

Infographic 28. e-Bug: supporting children and young people



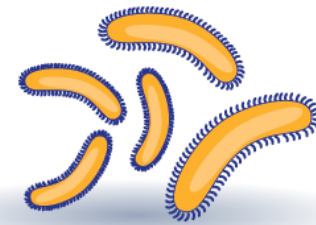
**Across the e-Bug resources,
children and young people
are supported to:**



Embed hygiene practices
to prevent the spread of
infection



Adopt safe preparation and
cooking practices to avoid
food-borne illness



Understand what microbes
are and that antibiotics only
work for bacteria



Adopt self-care methods
when appropriate



Only take antimicrobials as
and when prescribed



Grow up as
antimicrobial stewards

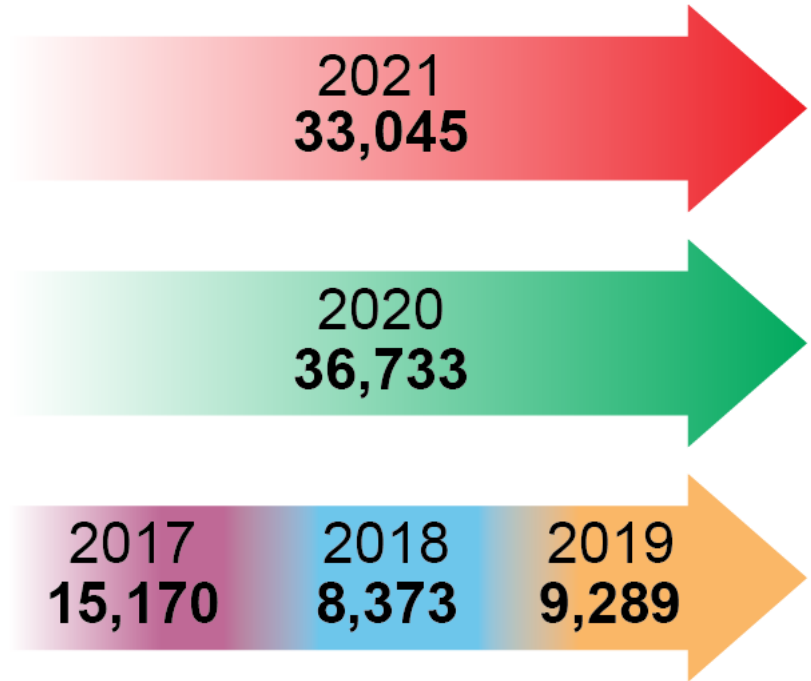
Infographic 29. Antibiotic Guardian pledges

144,446
Antibiotic Guardian pledges from inception (2014) to end of 2021

94
Organisations registering AMS activity through Antibiotic Guardian in 2021

407
Entries to the Antibiotic Guardian Shared Learning & Awards event between inception (2016) and 2020

215
Antibiotic Guardian Schools Ambassador registrants in first three years



2021 AG pledges sustained increases demonstrated in 2020

783

Pharmacy Worker Antibiotic Guardians survey responses

68%

of respondents acknowledged an AMS action plan in their workplace

62%

agreed that they had access to local antibiotic prescribing guidance

10

members of public engaged in focussed interviews on their AG pledge in 2021

“It gave me that feeling that, you know, I was doing something good and being part of something that was big”.

Infographic 30. COVID-19 therapeutic Blueteq treatment requests by week (1 October 2021 to 31 March 2022) and a timeline of events

