

# Improving empirical antibiotic prescribing within secondary care

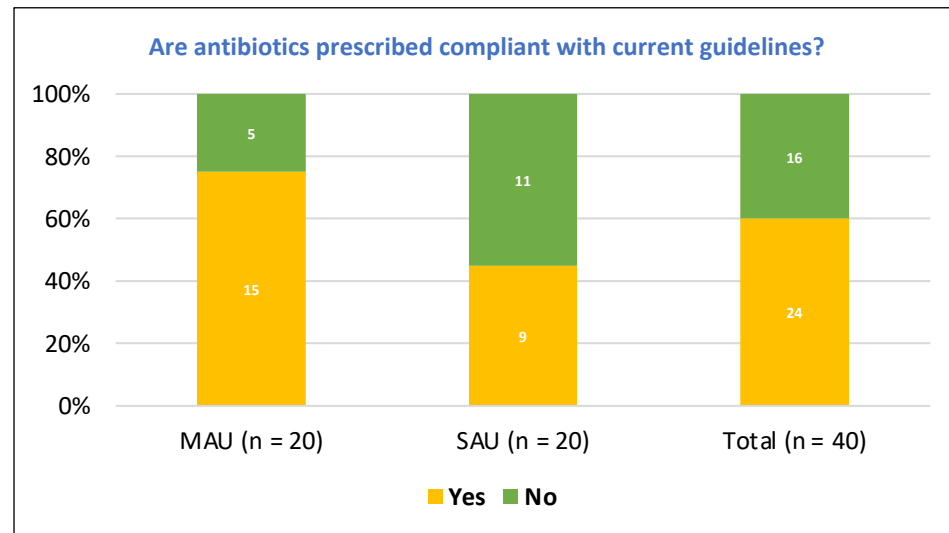
Dr M Mistry, Dr E Pyke, Dr S Irvine

## Aims

1. To determine whether current antibiotic prescribing is in line with the current secondary care antibiotic guidelines.
2. To look at antibiotic resistance data locally and update the current empirical antibiotic prescribing guidelines to reflect this.
3. To increase use of WHO Access list antibiotic prescribing in NHS Dumfries and Galloway.

## Current antibiotic prescribing audit

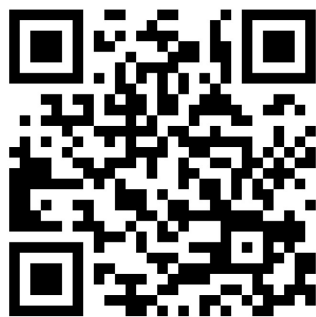
- An audit was carried out to determine how compliant current antibiotic prescribing is with the current antibiotic guidance.
- Data was collected over a 1 month period in the Medical Assessment Unit (MAU) and Surgical Assessment Unit (SAU).
- 20 patients that were prescribed antibiotics on admission were randomly selected from each area over this 1 month period.
- Data regarding the indication, antibiotics prescribed, route of administration, missed doses and stop dates were collected from HEPMA and clinical notes.
- The graph below shows the results of antibiotic compliance: 75% in the MAU; 45% in the SAU; 60% overall.



- Another important finding was regarding the documentation of stop dates and durations in the prescription.
- For oral antibiotic prescriptions, stop dates or durations were documented in 60% of prescriptions in the MAU, 75% of prescriptions in the SAU and 67% of prescriptions overall.
- The results of this audit show that antibiotic prescribing compliance are not great and can be improved.
- The sample is small and the data was collected over a short period of time and this does affect the validity of the results.
- We plan to carry out a second round of audit after the new antibiotic poster has been published to see if there has been any change.

## Results and interventions

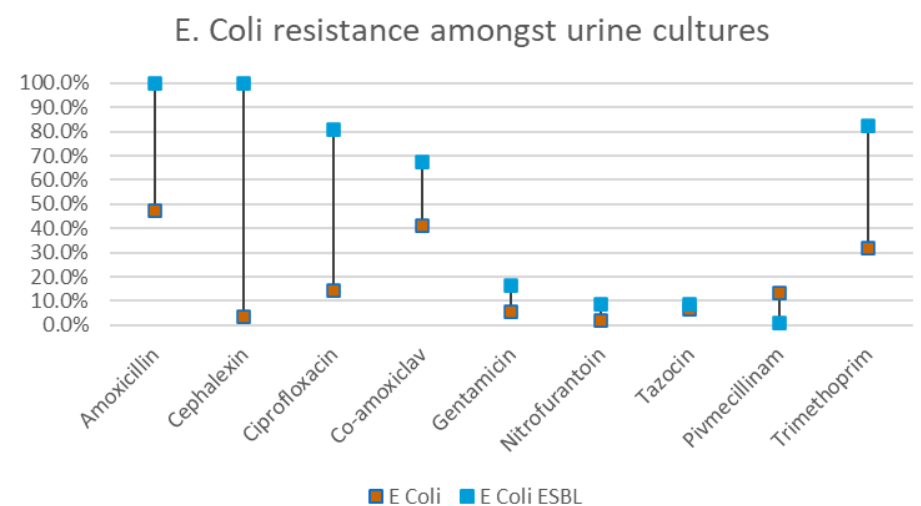
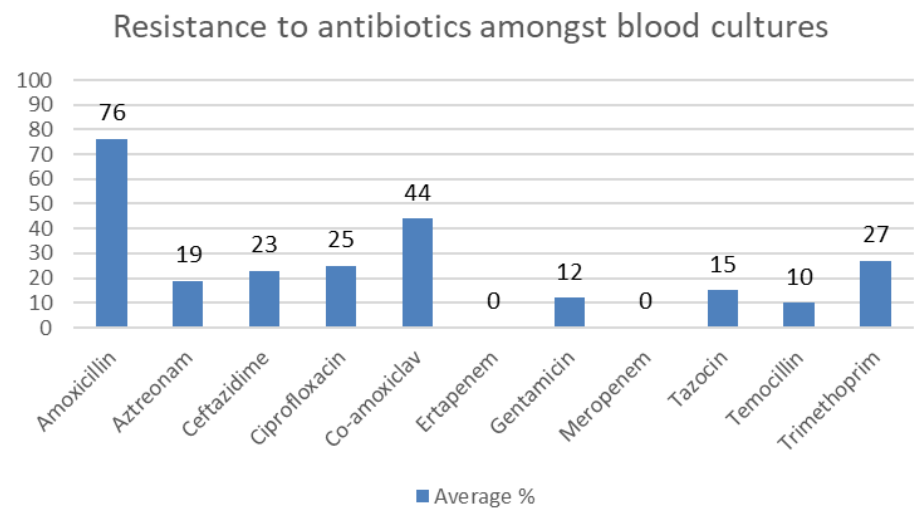
- After approval from clinical leads and the NHS Dumfries and Galloway antimicrobial team, the empirical secondary care antibiotic prescribing guidelines have been updated.
- We created a new NHS Dumfries and Galloway antibiotic prescribing poster for secondary care based on the resistance data and that was released in May 2021 (see QR code).
- We have updated the antibiotic prescribing handbook and included a new section on Sepsis to raise awareness of this.
- A copy of the poster will be available online via the DGRI Handbook and in print in the wards, MAU, SAU and ED.
- We have increased awareness of the launch of these new guidelines and that rationale for the change by sending out an internal communication e-mail to all NHS Dumfries and Galloway staff.



SCAN FOR THE NEW ANTIBIOTIC POSTER

## Blood and urine culture resistance data

- Blood and urine cultures from October 2019 to September 2020 were obtained.
- Cultures with Gram-negative isolates and respective sensitivity data were analysed for the year.
- 80% of all urine and blood cultures in the region for the year grew E. coli as an isolate.
- E. coli sensitivity against antibiotics were charted cumulatively for the year and this showed that:
  - E. coli carries a 48% resistance to amoxicillin and 40.3% resistance to co-amoxiclav locally.
  - E. coli carries a 6.6% resistance to piperacillin-tazobactam, 31.8% to trimethoprim, 5.8% to gentamicin and 2.0% to nitrofurantoin.



- From this data analysis we were able to successfully update local empirical antibiotic prescribing guidelines, using these and other charts to illustrate local antibiotic resistance trends.
- We updated the local antibiotic prescribing guidelines, taking the HCAI standards and targets into account; namely increasing use of WHO Access list antibiotics, where a target exists to have >60% of all acute hospital prescribing of antibiotics from this list by 2022.

## Discussion and future plans

1. We aim to re-audit antibiotic prescribing compliance with the new poster/handbook guidelines to see if this has improved and to see if we are prescribing >60% acute antibiotics from the WHO Access list.
2. We aim to produce a similar poster for antibiotic prescribing within primary care and paediatrics, taking local resistance data into account.