

# Antimicrobial Prescribing: Lessons from a Stroke/Care of the Elderly Ward in a District General Hospital

M. Sawaryn<sup>1</sup> and J. Moore<sup>2</sup>

<sup>1</sup> Foundation Trainee, <sup>2</sup> Consultant Microbiologist, Gateshead Health NHS Foundation Trust

## Background

- National CQUIN targets have committed to improve 'antimicrobial stewardship' by encouraging the prudent use of broad-spectrum agents and improving timely antibiotic review, in order to reduce antimicrobial resistance.
- We performed an audit to quantify improvements in antibiotic prescribing practices in accordance with recommendations made by the updated CQUIN guidance in 2017 and our Health Trust Antimicrobial Prescribing guidelines.
- Furthermore, we asked the major antibiotic prescribers in our hospital—Foundation doctors—for their thoughts on changing practice in antibiotic review.

## Materials & Methods

- Data was retrospectively collected from patient notes on a Stroke/Care of the Elderly ward at the Queen Elizabeth Hospital, Gateshead of those who were, or had been, on IV antibiotics during that admission for clinically confirmed/suspected infection. The collection period was April and July 2017 (Group 1) and January and April 2018 (Group 2).
- 'Appropriateness of IV antibiotic prescribing' (i.e. in accordance with Trust Antimicrobial Guidelines, or with otherwise appropriate justification) and 'Review within 72 hours' data were collected in all cases.
- 'Initial review date' and 'Seniority of antibiotic review' (i.e. ST3 registrar or above, or infection pharmacists) were also included for Group 2.
- Finally, a qualitative survey establishing opinion on current antibiotic review practices was carried out, asking Foundation Doctors in an open-floor session 1) why antibiotics are not reviewed; and 2) what could be done to improve antibiotic reviews.

## Results

- n=15 cases were collected for Group 1, and n=16 for Group 2.
- 86.7% (Group 1) and 81.3% (Group 2) of IV antibiotics were prescribed in accordance with Trust Antimicrobial guidance, or had clearly documented justification for going against guidance.
- 80% (Group 1) and 93.8% (Group 2) of antibiotic prescriptions were reviewed within 72 hours. However for Group 2 patients, only 81.3% of IV antibiotic reviews were performed by senior medical staff.
- 12.5% of Group 2 patients had an initial review date documented at the point of prescribing.
- n=25 Foundation Doctors responded to the poll. The group generally felt that the lack of prompting by the electronic prescribing system was the most significant reason IV antibiotics were not reviewed. 92% were favourable to this being implemented. 52% felt 'sticker summaries' for patient notes would be also be a helpful measure.

Fig 1: % Patients with Appropriate IV Antibiotic Prescriptions



Gateshead Health   
NHS Foundation Trust

Fig 2: % Patients with IV Antibiotic therapy reviewed within 72 hours of prescribing



Table 1: Group poll of Foundation Year Doctors—ideas to improve IV antibiotic reviewing practice

	Inform only	JAC reminder	Sticker summary	JAC reminder/Sticker summary Combo
FY1	0	6	1	6
FY2	1	5	0	6
Total	1	11	1	12

Table 1. Inform only – encouraging medical staff to regularly perform antibiotic reviews. JAC reminder – Pop-up notification on e-prescribing system (JAC) to remind prescriber to review antibiotics. Sticker summary – to be placed in notes, detailing IV antibiotic(s) prescribed; indication and review date.

## Discussion

- IV antibiotic prescriptions were generally appropriate or justified, but improvement is required.
- The majority of prescriptions were reviewed in 72 hours, with an apparent increase in review rate between Group 1 and Group 2. This may be due to updated Trust Antimicrobial Prescribing guidelines in Oct 2017, as well as a hospital-wide education programme to improve the quality of antibiotic prescribing. Statistical significance was not calculated due to low case numbers, however.
- Antibiotic review was poorer when accounting for seniority of review. As these rates generally reflect rates achieved by the Trust as a whole, this highlights the need for system-wide changes to antibiotic prescribing and review.
- Initial review date of IV antibiotics is poorly documented.
- The move from paper 'drug kardexes' to electronic prescribing make visual prompts for antibiotic review more challenging. Implementing a timed prompt on the prescribing system was the most popular suggested means of improving IV antibiotic review.

## Recommendations

- A target of 95% appropriate prescriptions. Antimicrobial prescribing teaching sessions, especially for trainees, may help achieving this target.
- In order to achieve the CQUIN target of 90% IV antibiotics reviewed by senior medical staff within 24-72 hours, we recommend that:
  - Juniors ensure that their seniors agree with their medical decision making regarding antibiotic de-escalation, etc.
  - IT and electronic prescribing systems are developed to allow for antibiotic review prompts.
  - Encourage medical staff to document initial review dates in patient notes at point of prescribing, possibly in the form of 'sticker summaries'.
  - Health trusts consider employing infection pharmacists to reduce burden on medical staff, especially during weekends where reviews are more challenging.

## Bibliography

- NHS England. Technical guidance for refreshing NHS Plans 2018/19 annex A: Commissioning for Quality and Innovation (CQUIN) indicator specification 2017-2019. July 2017.
- J Moore, G Horne, H Coutinho, M Young. NHS Gateshead Foundation Trust Adult Antimicrobial Guidelines. 2017.