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# An Evaluation of Multi-Disciplinary Antimicrobial Stewardship Paediatric Ward Rounds

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## Introduction

The importance of antimicrobial stewardship is becoming increasingly accepted by other members of the MDT as a way of stemming antimicrobial resistance.[1,2] However, there is very little published literature about the impact of antimicrobial stewardship ward rounds on paediatric patients.[3] Antimicrobial stewardship within paediatrics at University Hospitals of Leicester was identified as requiring improvement in the July 2016 Trust-wide antimicrobial prescribing and review audit. To address these issues a joint decision made by the antimicrobial pharmacist team and the paediatricians to commence weekly multi-disciplinary ward rounds designed to improve antimicrobial stewardship and patient care.

## Method

Weekly ward rounds on a 25 bedded paediatric medicine ward were conducted by a paediatrician (registrar +/- consultant), a consultant microbiologist and an antimicrobial pharmacist. All patients receiving systemic antimicrobial treatment were reviewed by the team.

Documentation was reviewed to make sure an indication and duration were appropriately written on the drug chart and in the medical notes. The appropriateness of the antimicrobial was reviewed by checking allergies, previous antibiotic treatment, evidence of infection and severity, route and dose. Patient's observation results, microbiology results and medical notes were used to help assess the antimicrobial appropriateness. These clinical details were recorded, along with the interventions made.

## Results

Fifty seven patients and 83 prescriptions were reviewed over 13 weeks (visits were not during consecutive weeks due to staff availability). During the ward round, 20 different antimicrobials were encountered with ceftriaxone (20%), co-amoxiclav (19%), cefuroxime (11%) and clarithromycin (10%) being the four most prescribed antibiotics.

Prior to the ward round, 54 prescriptions out of 83 (65%) were for the IV route and 27 (32.5%) prescriptions were for the oral route. Two prescriptions were for nebulised colomycin. Forty four (53%) prescriptions did not have a documented duration prior to the ward round. One prescription had a longer duration than stated in hospital guidelines. Eleven (13%) prescriptions did not have a documented indication on the drug chart prior to the ward round. Twenty (24%) prescriptions were not in line with hospital guidelines. Six prescriptions out of 83 (7%) required no intervention.

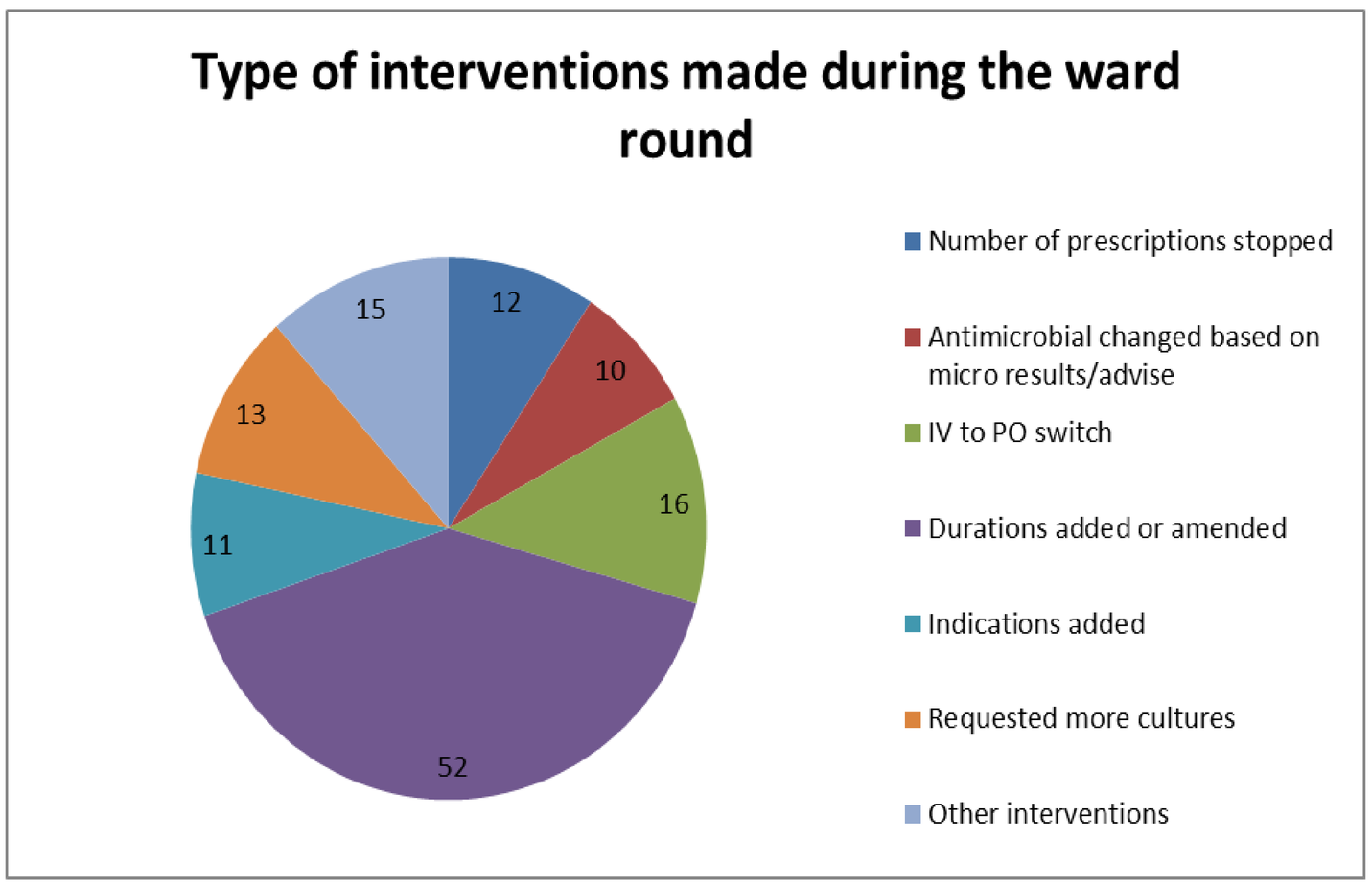


Figure 1: Type of interventions made during the ward round

## Conclusion

Many different types of interventions can be made during paediatric ward rounds and ensuring that a multi-disciplinary approach is taken will guarantee that all aspects of antimicrobial stewardship are covered when making interventions. The results show that this approach to undertaking ward rounds is successful in improving stewardship in the short term whilst ward rounds occur. Further data is needed to determine if these results are long lasting and whether or not stewardship on the ward has improved overtime. Plans are in place to conduct a stewardship audit following a period of time without ward rounds taking place to determine the long term impact the ward rounds have had on stewardship.

**References**
[1]: Van den Bosch, C. Hulscher, M. Akkermans, R. Wille, J. Geerlings, S. Prins, J. Appropriate antibiotic use reduces length of hospital stay. Journal of Antimicrobial Chemotherapy, 2016, 1-10.
[2] Doron, S. Davidson, L. Antimicrobial Stewardship. Mayo Clinic Proceedings, 2011, **86**(11): 1113-1123.
[3] Smith, M. Gerber, J. Hersh, A. Inpatient Antimicrobial Stewardship in Pediatrics: A Systematic Review. Journal of Pediatric Infectious Diseases Society, 2015, **4**(4):e127-35.

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