

Does Positive Reporting Affect the Multidisciplinary Approach to Antimicrobial Stewardship?

Isaac R^{1,2}, Cope A^{1,2}, Chan A^{1,2}, Fox S², Jones A², Price K², Plunkett A²

Pharmacy Department ¹, Paediatric Intensive Care Unit ²
Birmingham Women's and Children's NHS Foundation Trust, Birmingham, UK



Introduction

Learning from Excellence¹ (LFE) is a positive event reporting initiative with two main aims: to capture and learn from episodes of excellent practice and to boost morale through positive feedback. As part of the multidisciplinary team, pharmacists share responsibility for ensuring good antimicrobial stewardship and are a resource for prescribers to direct best antimicrobial therapy in a population with altered pharmacokinetics.

The pharmacist can help re-enforce the principles of good antimicrobial stewardship including adherence to antibiotic guidelines from antibiotic choice to length of therapy, appropriate IV or oral switches and complete documentation of antimicrobial prescribing.

Method

Within the context of the PRAISE Project², 31 prescription charts were screened weekly by the PICU research team. Positive reports were generated for excellent work related to antimicrobial stewardship during the intervention phase. The PICU research team recorded frequency of pharmacist interventions that improved prescriptions and the PICU pharmacists recorded the nature of their input e.g. dosing advice. The PICU Pharmacists interventions were split into proactive or reactive: proactive involving confirmation that prescriptions were individualised to best therapy for patients and reactive if a prescription was incorrectly written or no clarification was sought from the pharmacist during ward round.

Date started	Route	Antimicrobial (Approved Name)	Indication	Review/Stop date/Special Instructions
6/9	IV	FLUCLOXACILIN	Post pacemaker insertion	Stop After 5 days
Morning 08:00		250 mg		
Midday 09:00		250 mg		
Evening 18:00		250 mg		
Bedtime 21:00		250 mg		

Fig 1: Actual example of gold standard prescription that would generate a positive report.

From the appreciative inquiry two working practices for the PICU pharmacists were added to the daily role.

- 1.) RAG rating antimicrobials prescriptions by highlighting the antibiotic prescription red, amber or green as decided by the microbiology team.
- 2.) listing the antimicrobials prescribed for each PICU patient at the daily microbiology round, attending the round and provision of decisions of the microbiology round to be kept with the culture results on PICU.

PRAISE Paediatric Sepsis 6	
Red Please consider de-escalation ASAP	Meropenem Piptazobactam Vancomycin Gentamicin (outside neonatal setting)
Amber	Cefuroxime Cefotaxime Aciclovir Co-amoxiclav
Green	Flucloxacillin Metronidazole Amoxicillin Gentamicin (in neonates) Benzylpenicillin All topical antimicrobials and antiseptics for "skin eradication"

Fig 2: RAG rating table introduced following AI interview with prescriber who received positive report for gold standard prescription.

Results

The PICU research team recorded 453 interventions to the prescriptions and the PICU pharmacists recorded a further 604 different interventions. Proactive interventions increased during the intervention phase and continued after positive reports for excellent antimicrobial stewardship stopped as shown in table 1 below.

	Pre intervention phase, weeks 1-13	Intervention phase, weeks 14-40	Post intervention phase weeks 41-52
Total PICU pharmacist recorded interventions	138	340	135
Proactive interventions by pharmacists	68 (49.2%)	183 (53.8%)	84 (62.2%)
Total PICU research team recorded interventions	98	275	80

Table 1: Interventions recorded by PICU research team and PICU pharmacists. Increasing proactive interventions made during and post intervention phases.

It was anecdotally noted by the PICU pharmacists that following introduction of RAG rating of the antimicrobial prescriptions both prescribers and nursing staff would request highlighting of the antimicrobials that could be de-escalated.

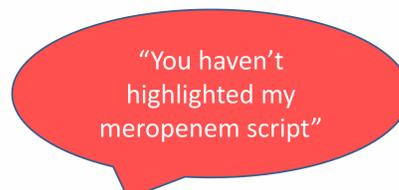


Fig 3: Quote from a member of nursing staff following prescribing of an antibiotic that should be considered at earliest chance for de-escalation.

During and post the intervention phases prescribers would increasingly ask the PICU pharmacist for advice pre-prescribing in patients with pharmacokinetic challenges to ensure that the prescription was the best for the patient- "optimising stewardship through better pharmacokinetic-pharmacodynamics"

Broad categories were given to the pharmacists interventions for analysis.

- Advice: e.g. therapeutic drug monitoring, IV to oral switch
- Antibiotic choice: e.g. guideline deviation, escalation/de-escalation needed
- Consumption: not stopping at course length, negative cultures not acted on
- Documentation/ other: e.g missing indication, missing review or stop date
- Dosing regimen: e.g dosing for altered PK/PD, method of administration

Intervention type	Advice	Antibiotic choice	Consumption	Documentation / other	Dosing regimen
Number of interventions	188	81	89	29	234

Table 2: Interventions by type suggested by PICU pharmacists during all phases of PRAISE project.

38 interventions suggested made by the PICU pharmacists were rejected with almost two thirds (25) being reactive interventions.

Conclusions, lessons learned and further work

It appears that providing clinicians with positive feedback about their good prescribing habits encourages them to proactively seek pharmacy input to ensure best directed therapy for antimicrobials. This contributes to the overall quality of antimicrobial stewardship and patient care on the unit.

References

- 1 Kelly N *et al* Learning from excellence in healthcare: a new approach to incident reporting. <http://adc.bmi.com/content/101/9/788>
- 2 Jones A *et al* Positive Reporting and Appreciative Inquiry in Sepsis (PRAISE) – a quality improvement protocol. Poster; Patient Safety Congress 2018 39



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