

Antimicrobial Stewardship at St James's Hospital

A Four Year Retrospective Audit

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INTRODUCTION

- Antimicrobial resistance (AMR) is an evolving healthcare emergency.¹
- Antimicrobial stewardship (AMS) is a focused package of interventions designed to mitigate AMR.²
- Key performance indicators (KPIs) serve as process measures to monitor antimicrobial prescribing quality, and as targets for quality improvement.³
- AMS literature has highlighted the impacts of clinical speciality⁴ and electronic healthcare⁵ on antimicrobial prescribing quality in hospitals.

AIMS

- To audit the quality of antimicrobial prescribing at St James's Hospital from 2016-2019 against national AMS KPIs.⁶
- To compare these KPIs between surgical and non-surgical prescribers.
- To investigate the effect of electronic prescribing on these KPIs.

METHODS

- Retrospective clinical audit of 1929 antimicrobial prescriptions.
- Data was collated on Microsoft Excel[®] and analyzed using SPSS v25.
- Chi-squared tests were used to determine relationships between categorical variables; odds ratios used to measure these associations.

Non-surgical specialities performed better at documentation and selecting optimal therapies



Documentation and optimal therapy selection improved after electronic prescribing implementation



This work was conducted as part of a larger social science orientated investigation of AMS in acute care; scan here for further details



References available on request. Contact: j.g.hughes@rgu.ac.uk

RESULTS

Antimicrobial prescribing prevalence was relatively high at 44%. Except for optimal duration of therapy, KPIs did not meet the requirements set by national standards.

Table 1: Comparison between medical and surgical prescribing

KPI	n	Directorate		χ^2	p	OR	95% CI
		Surgical	Medical				
Documentation of indication	1395	73.97%	89.48%	49.823	<0.001	2.99	2.19 – 4.1
Optimal agent choice	1869	69.63%	77.27%	13.785	<0.001	1.49	1.2 – 1.82
Optimal duration	1355	91.54%	89.36%	1.856	0.173	0.78	0.54 – 1.12
IVOST	603	11.57%	15.42%	1.878	0.171	1.393	0.87 – 2.26

IVOST: intravenous to oral switch; n: number antimicrobial prescriptions; OR: odds ratio (medical/surgical); χ^2 : Chi square test; CI: confidence interval

Table 2: Comparison before and after electronic prescribing implementation

KPI	n	EPR		χ^2	p	OR	95% CI
		Before	After				
Documentation of indication	1409	79.41%	89.8%	6.183	0.013	2.27	1.18 – 4.35
Optimal agent choice	1883	71.22%	77.93%	9.233	0.002	1.43	1.13 – 1.80
Optimal duration	1368	91.32%	89.01%	1.878	0.171	0.77	0.53 – 1.12
IVOST	612	13.35%	12.26%	0.121	0.728	0.91	0.52 – 1.57

EPR: electronic prescribing record; IVOST: intravenous to oral switch; n: number antimicrobial prescriptions; OR: odds ratio (after EPR/before EPR); χ^2 : Chi square test; CI: confidence interval

DISCUSSION

Electronic prescribing platforms can positively impact AMS endeavors. AMS interventions should account for antimicrobial prescribing variances between surgical and non-surgical specialities.