



# A qualitative survey of Antimicrobial Stewardship Practice across secondary care in London

Stephen Hughes (1), Preet Panesar (2) on behalf of the London AMS Pharmacy Group

1. Chelsea and Westminster NHS Foundation Trust, UK 2. University College London Hospitals NHS Foundation Trust, London.

## Background

Antimicrobial stewardship (AMS) focuses on optimisation of antimicrobial prescribing to improve patient outcomes, whilst minimising the development of antimicrobial resistance (AMR) for our patients and wider society. An emergent AMS strategy has developed rapidly in response to national incentives, historically focusing upon *C. difficile* infection (CDI) rates in secondary care and more recently incentive schemes to reduce antimicrobial usage in primary and secondary care. This has resulted in a huge variation in AMS activities with minimal overlap in services. A mixed methods survey was conducted amongst infection specialist pharmacists to map and identify current AMS service provisions across London.

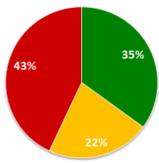
## Method

An electronic survey based upon existing literature, including the Cochrane review on AMS interventions was used to measure the frequency with which different AMS interventions were being undertaken. The 12-question closed response survey was circulated in February 2018 via the Chief Pharmacist group to all acute NHS Trust providers in London requesting local service feedback from the responsible antimicrobial pharmacist.

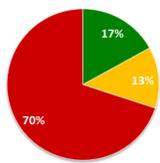
### AMS Strategies applied within acute trusts

■ Yes (all areas) ■ Some areas only ■ No (n/a)

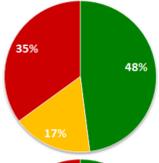
Restricted / reserve ABX needing authorisation before 1st dose (outside guideline indications)



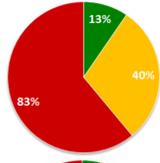
Automatic stop dates on prescriptions



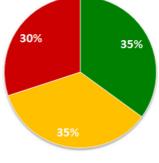
Restricted / reserve ABX needing authorisation before 2nd/3rd dose (outside guideline indications)



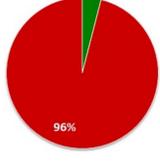
Automatic IV – to – PO switch policy / protocol



Review of all restricted / reserve ABX once started by clinical team (outside guideline indications)



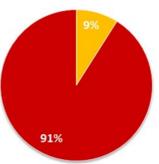
A programme of cycling 1st line antimicrobials at ward / trust level



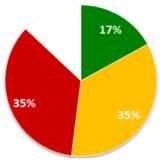
■ Yes (all areas) ■ Some areas only ■ No (n/a)

### Novel diagnostic marker use / allergy testing

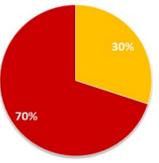
Procalcitonin use to guide initial ABX usage



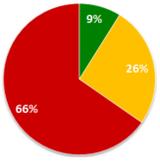
Routine fungal antigen testing (Galactomannan / B-D-glucan) testing for broad-spectrum antifungals [13% of responds unknown]



Procalcitonin to stop / shorten therapy



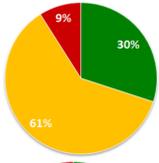
Local penicillin allergy testing / de-labelling of allergy program available for patients



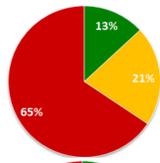
■ Yes (all areas) ■ Some areas only ■ No (n/a)

### Ward rounds activity

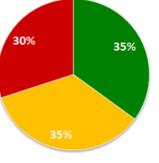
Adult AMS ward rounds [Note: some AMS rounds without pharmacist may not be included here]



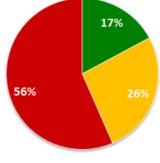
Antifungal ward rounds [Note: some AMS rounds without pharmacist may not be included here]



Paediatric AMS ward rounds [Note: some AMS rounds without pharmacist may not be included here]



Bacteraemia ward rounds



## Results

Responses were received from all 23 acute NHS trusts (100% return rate) with a 100% completion rate.

AMS strategy to restricting availability of certain antimicrobials for 1<sup>st</sup> or subsequent doses was commonly reported in 65% of Trusts. Most services (70%) use dispensing records and/or electronic prescribing systems to monitor appropriate use of 'protected' antimicrobials following supply. Multi-disciplinary AMS ward round reviews are part of daily AMS activity, ranging from targeted wards to hospital-wide practice (adult wards 91%, paediatric wards 70%, bacteraemia review rounds 42%). However, antifungal ward rounds are only conducted in 35% of Trusts regularly.

Novel diagnostic markers used to guide antimicrobial therapy were infrequently used in practice. Procalcitonin use to guide initiation (9%) and duration (30%) of therapy was not common. Antifungal antigens were more frequently utilised (52%).

Where electronic prescribing (EP) was available to an AMS team (16 trusts), it was used in 88% of these organisations for retrospective patient surveillance and in 38% for real-time patient review.

Antimicrobial usage (in Defined Daily Doses) was reported in 91% of trusts. Pharmacy dispensing records are most commonly used (75%) to pull data from, with DEFINE<sup>®</sup> (10%), FingerTips<sup>®</sup> (5%) and electronic prescribing systems (5%) used less frequently. Feedback of antimicrobial usage varies across Trusts in terms of the frequency and breadth of reporting.

The audit and feedback of antimicrobial prescribing practice varies in detail and frequency across the surveyed trusts in London (see table 2). Audit results are disseminated to the trust Infection Prevention and Control committee monthly (18%), quarterly (55%) or annually (14%) in the 23 trusts surveyed. These results are frequently distributed to local Medicine Committee groups (or equivalent) monthly (14%), quarterly (36%) or annually (18%) with 23% of responding trust having no formal reporting. Data is disseminated to clinical divisions within the trust in only 23% of trusts (18% quarterly and 5% annually). Feedback to CCG and/or STP occurs in 41% of trusts (32% quarterly and 9% annually).

Collaboration between AMS services across care boundaries was evident but wide variations were reported. Specialist pharmacist contribution to primary-care guidelines was common [83%]; activity related to mapping local resistance trends (44%), education and training (9%), and attendance to local primary care AMS meetings (30%) was variably reported

## Conclusions

The emergent strategies of local teams to firstly act against the CDI burden and more recent aligning to national priorities, including CQUIN targets, results in an extensive variation in AMS practices of acute Trusts even in small geographical area like London.

Harmonisation of activities across the area should perhaps in the first instance focus on integration across care boundaries, understand how novel diagnostic markers can be integrated into AMS practice, and how to optimise utilisation of e-Prescribing for AMS where it is available.

Author contact: Stephen.hughes2@chelwest.nhs.uk  
The authors would like to thank the London AMS Pharmacy Group

Table 1. What measures of AMS outcomes do monitor / measure within your AMS committee / trust?

	Formal Feedback to trust	Informal AMS committee feedback	Planned	No
DDD/1,000 admission (or equivalent)				
reported at trust level	60%	30%	9%	-
at divisional level	13%	30%	22%	35%
at prescriber / consultant level	-	13%	22%	65%
<i>C. difficile</i> (hospital acquired) infections				
reported at trust level	96%	-	-	4%
at divisional level	74%	8%	-	17%
at prescriber / consultant level	35%	13%	-	52%
Antimicrobial resistance trends				
reported at trust level	39%	35%	9%	17%
at divisional level	13%	30%	9%	48%
at prescriber / consultant level	4%	13%	13%	69%
Patient level outcome measures (mortality / re-admissions / LOS / ITU admissions)	4%	4%	17%	74%

Table 2. What AMS audits do you do?

	Monthly or less	Quarterly	Biannual	Yearly	As per resource availability	Never
Time to 1st dose in Sepsis	26%	48%	-	-	26%	-
Compliance of drug choice with guidelines / micro advice	9%	22%	22%	26%	22%	-
Documentation of antimicrobial indication (notes or drug chart)	17%	30%	13%	22%	17%	-
Surgical prophylaxis ABX compliance	-	4%	4%	35%	57%	-
Cultures taken before starting ABX	4%	17%	4%	4%	39%	30%
Duration or review dates on ABX prescriptions	13%	30%	17%	17%	17%	4%
Outcomes of 48/72 hour review	17%	35%	13%	4%	26%	4%
TDM of ABXs	-	4%	-	4%	74%	17%