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## Introduction

Antimicrobial stewardship programs (AMS) are multidisciplinary initiatives aiming to optimise antibiotic use. Therefore, we established Antimicrobial Stewardship Team (AMST) led by a microbiologist/infectious diseases physician, supported by antimicrobial pharmacists and other members from other specialities. This multidisciplinary ASP team try to act across several sites, including acute medical wards, to oversee and monitor the AMS activities. Furthermore, the input of AMST in assessing the severity of the infection and the management of antibiotics is essential for the quality of care and cost containment..

## Objectives

1. The primary objective was to assess patients being treated for infection with antibiotics in the hospital
2. To judge whether they were receiving the most appropriate antibiotic based on the antimicrobial stewardship principles (using the correct selection, right dose, the most appropriate route and whether they were suitable for completing their treatment out of the hospital through iv to oral switch).
3. Used the AMST ward round to improve compliance with the Trust formulary and utilise ACCESS group antimicrobials. .

## Methods and results

We established a ward round by AMST in the medical assessment units supported by an audit tool. Data were collected prospectively during routine ward rounds. Antibiotic management decisions were made then and acted on immediately by the AMST or communicated directly to the regular medical team.

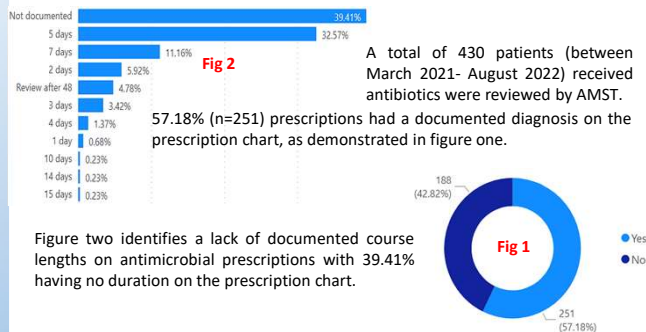
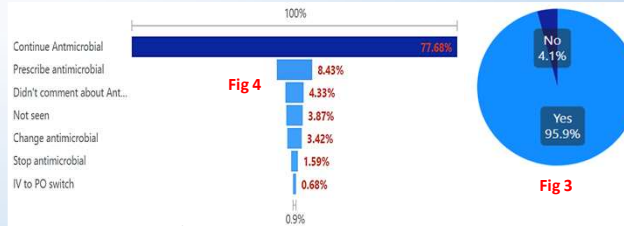
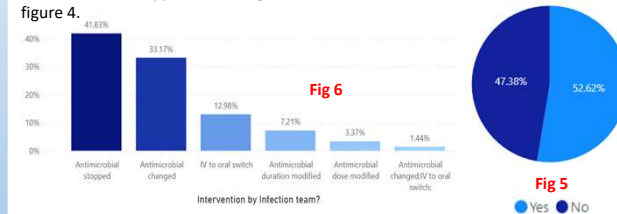


Figure two identifies a lack of documented course lengths on antimicrobial prescriptions with 39.41% having no duration on the prescription chart.

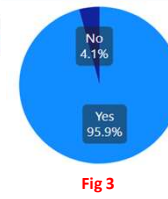
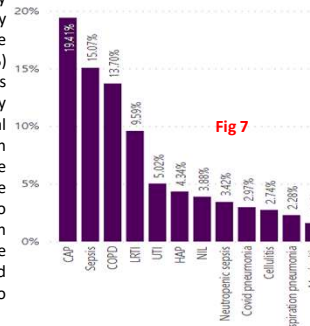


Due to the acuity of the ward, there is a large consultant presence which is highlighted in figure three where 95.9% of the patients reviewed by the AMST had been seen by a medical consultant or registrar. The plan to continue antimicrobials was the outcome of 77.68% of the reviews and only 1.59% of patients had their antimicrobials stopped following the medical senior review, as demonstrated in figure 4.

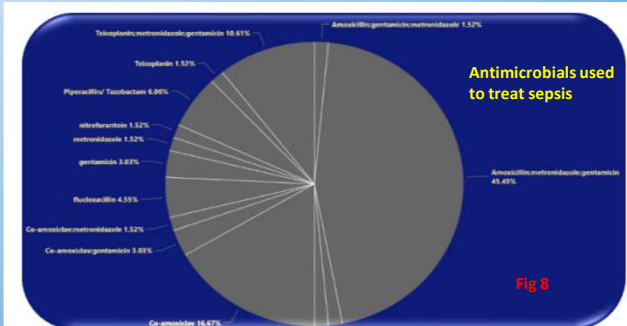


The AMST disagreed with 47.38% of prescriptions as per figure 5 with the team believing 41.83% of antimicrobials should be stopped, as per figure 6.

The most frequent organ system involved with antimicrobial therapy is respiratory (nearly 50% of prescriptions). Community acquired pneumonia accounted for the largest proportion of diagnoses (19.41%) with 'sepsis' closely behind (15.07%) as shown in figure 7. The AMST regularly interpreted chest X-rays and other clinical parameters to de-escalate treatment in chest infections when the acute medicine team had originally intended to continue IV treatment. Furthermore, the AMST also reviewed 15.07% patients with an indication of sepsis to ensure investigations had been requested and appropriate treatment prescribed to improve mortality.



## Antimicrobials used to treat sepsis



The AMST promoted use of the WHO's ACCESS antimicrobial classification when treating sepsis to minimise risk of AMR in the population. The prescribing of AMG/TMG for patients with sepsis was 57.58% (figure 8) which is consistent with Trust formulary and provides sufficient antimicrobial cover whilst investigations occur. Only 6.06% patients had sepsis treated with a WATCH antimicrobial which demonstrates effective stewardship techniques at ELHT.

## Discussion and future work

1. The specialist AMST has a role in acute medicine to ensure effective documentation of indications and to appraise whether the indication is a true reflection of clinical condition. Accurate indications will impact the selection of antimicrobial treatment and ensure effective stewardship.
2. The AMST are promoting a 48/72 hours review which will help implement the requirement to follow the 'Smart Start-Then Focus' initiative when patients are transferred to medical wards, particularly as 39.41% of patients had no course length planned which is not in accord with Trust Medicines Policy.
3. Most patients reviewed by the AMST resulted in cessation of antimicrobial treatment whereas the senior clinician had planned to continue antimicrobials. Having a specialist AMST in acute medicine will offer confidence in stopping antimicrobials and could reduce 'bed days' by switching to enteral antimicrobials earlier into the admission. This highlights the need for specialist AMST in the acute area. Future audits could appraise the decision-making rationale to understand the reluctance to de-escalate treatment if it is indicated.
4. The implementation of an electronic prescribing record (EPR) could lead to a positive impact on antimicrobial stewardship. Additionally, adopting a similar approach to surgical admissions unit would support the aim to improve the quality of antimicrobial prescribing across the surgical directorate