Antimicrobial Stewardship - Do It Right!

A multidisciplinary clinical awareness-based Quality Improvement Project

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Background

- The 'Start Smart - then Focus' toolkit was introduced by Public Health England (PHE) in 2015, to provide a guide for English hospitals to monitor, improve and uphold the standards of antimicrobial use[1].
- Various antimicrobial stewardship (AMS) initiatives have since been actively implemented in trusts nationwide to optimise patient care and contribute to reductions in the emergence and spread of antimicrobial resistance (AMR).
- Based on a trust-wide AMS audit in October 2020, three specific criteria with lowest compliance were highlighted for improvement:
  1. Appropriate sample collection before starting antibiotics
  2. Timely antibiotic reviews and documentation
  3. Microbiology discussions for restricted antibiotics.

Aims & Objectives

- To improve the outcomes of three AMS criteria within the trust.
- To assess the efficacy of education initiatives in supporting AMS practice.
- To assess barriers towards AMS practice among ward staff.
- To analyse and adapt future AMS initiatives for routine implementation.

Methodology

- **Plan/Do:** Local and regional usage data, together with performance data from the audit were summarised into teaching presentations organised for various clinical staff over several months. Education materials via posters for prescribers, nurses and pharmacists (Figure 1, 2) were distributed trust-wide in relevant clinical areas (24 wards), alongside on-site teaching and barrier analysis.
- **Study:** Weekly run-chart data of baseline compliance (6 weeks) and during the project (10 weeks) for the three AMS criteria were collected and analysed for any trends from a representative sample of two inpatient wards (General Medicine and General Surgery).
- **Act:** Data collected was fed back to the microbiology team to identify key areas of adaptation in approaching AMS education within the trust, as well as to target allocation of microbiology resources.

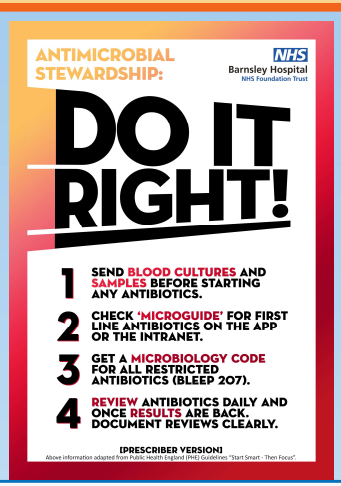

Figure 1: QI Project Poster (Prescriber Version).
Figure 2: QI Project Poster (Nurse and Pharmacist Version).

Figure 3: Appropriate sample collection compliance showed an increase of 5-10% from an estimated baseline of 60%.

Figure 4: Timely antibiotic reviews and documentation compliance showed an increase of 20-25% from an estimated baseline of 65%.

Figure 5: Microbiology discussions of restricted antibiotics compliance showed an increase of 20-25% from an estimated baseline of 50%.

Results & Conclusions

- From the project, baseline AMS compliance achieved an increase of (Fig 3-5):
  - 5-10% for appropriate sample collection
  - 20-25% for timely antibiotic reviews and documentation
  - 20-25% for microbiology discussions of restricted antibiotics
- Barrier analysis done with relevant clinical staff identified several factors for AMS non-compliance, including:
  - Lack of AMS awareness and understanding
  - Workload concerns and lack of electronic prescribing
  - Difficulty from pharmacists approaching doctors during ward round
  - A-synchronisation across systems used for handovers
- Further data breakdown identified surgical specialities requiring additional AMS support, allowing for better allocation of microbiology resources, including a trial of weekly surgical rounds.

Learning Points

- AMS in everyone's responsibility, and clinical awareness remain one of the key challenges in AMS compliance.
- Sustained involvement with staff via education initiatives is necessary to uphold practice, and a multi-pronged approach involving different specialties is required.
- Modifications to AMS initiatives by targeting relevant barriers and regular monitoring is essential for better resource allocation and staff participation.

Moving Forward

- A trust-wide 'AMS Awareness Week' in November 2021 re-emphasised the messages within the project posters,
- On-going plans to set up a simplified version of ward-based audits to monitor AMS criteria performance.

Limitations

- Due to limited manpower, only two wards within the trust were audited to assess improvement, which may affect the sample size and power of the data collected.

No conflicts of interest were involved in the project.

References: 1) Public Health England (PHE) - Start smart then focus: antimicrobial stewardship toolkit for English Hospitals, Ref: PHE publications gateway number: 2014828