



# Antibiotic Assessment at Hospital Discharge – Room for Stewardship Intervention



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## Synopsis

- The Antimicrobial Stewardship Team (AST) evaluated the appropriateness of antibiotics prescribed at discharge.
- 705 patients over a 15 month period were evaluated.
- Antibiotic prescribing was “inappropriate” in 70 patients or 1 in every 10 cases reviewed.
- COPD, pneumonia, and urinary tract infections (UTI) were the most common conditions where antibiotics were prescribed inappropriately.
- Azithromycin, cefpodoxime and cephalixin were antibiotics that were frequently prescribed inappropriately.
- Scrutiny at discharge is a tool that ASTs can use to identify inappropriate antibiotic prescriptions.

## Background

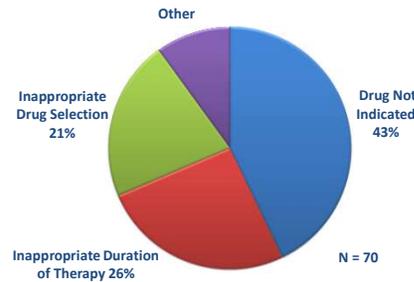
- Literature on AST review of antibiotic prescribing in scarce.
- Recent retrospective cohort studies looking at discharge antibiotics found 53-70% were inappropriately prescribed.<sup>1,2</sup>
- Monitoring discharge antibiotics has the potential to:
  - Ensure appropriate coverage and duration of therapy
  - Decrease community antimicrobial resistance
  - Decrease side effects due to antibiotics
  - Decrease healthcare costs
- Here we report our experience with regards to the utility of the AST assessing the appropriateness of antibiotic prescribing at discharge.

## Methods

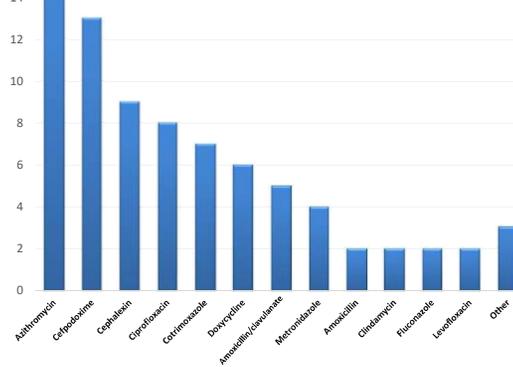
- Between June 2017 and September 2018 (collection dates modified), the AST reviewed the electronic health record (EHR) of patients discharged from the hospital on oral antibiotics for appropriateness.
- Parameters of assessment included:
  - Need for antibiotic
  - Choice of antibiotic
  - Dosing of antibiotic
  - Duration of therapy
- Reviews occurred biweekly (Tuesdays and Thursdays) and included patients discharged in the previous 3-4 days.
- Patients with recommendations from the Infectious Disease consult service were excluded.
- If antibiotic prescribing was felt to be inappropriate, the case was discussed with the prescribing service and/or team pharmacist.
- Recommendations were documented in the EHR with an emphasis on education.
- Inpatient providers, the AST, and the patient’s primary care provider shared the responsibility of alerting the patient of any changes in antibiotic prescriptions.
- The data was logged using Microsoft Access Database and descriptive statistics were performed using Microsoft Excel.
- For the purposes of data analysis, when one intervention included a combination of antibiotics, these were included separately.

## Results

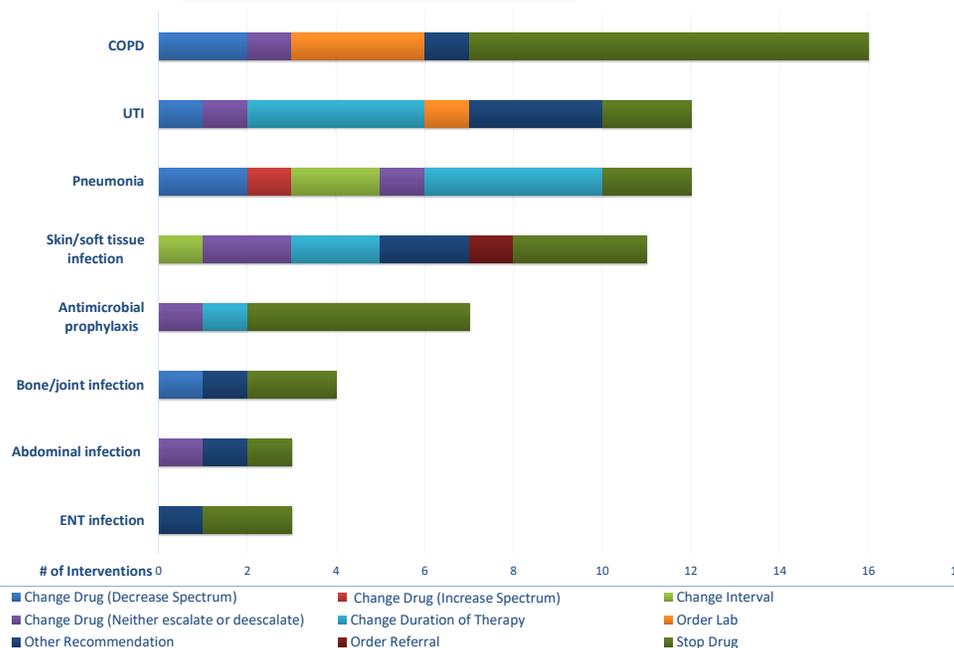
REASON FOR INTERVENTION



ANTIBIOTICS INTERVENED ON



INFECTION TYPE BY AREA OF INTERVENTION



## Results continued

- Over 15 months, records of 705 patients discharged on oral antibiotics were reviewed. This covered discharges over 259 hospital days.
- Antibiotics were deemed to be “inappropriate” in 70 of these patients.
- 70 interventions were logged on a total of 78 antibiotic prescriptions. The majority (44) of these interventions were primarily educational, and no response to the intervention was assessed.
  - Of the remaining 26 interventions, the recommendation made by the AST was accepted in 52%.
- COPD (22%), Pneumonia (17%), UTI (17%), and skin and soft tissue infections (16%) were the most common disease states intervened on.
- Azithromycin, Cefpodoxime, and Cephalixin were the most common antibiotics intervened on.
  - 80% (n = 15) of Azithromycin interventions were prescribed for COPD. Common reasons for intervention were: drug not indicated (47%), and inappropriate drug selection (40%).

## Conclusions

- Assessing antibiotic prescribing at discharge with feedback to prescribers is an additional area where Stewardship programs can focus in order to better optimize usage of antimicrobials.
- Educational campaigns on the following may improve antibiotic prescribing at discharge within our institution:
  - Determination to treat and antibiotic choice for COPD
  - Appropriate duration of therapy for pneumonia, urinary tract infections, and skin and soft tissue infections
- Limitations of our study:
  - Bi-weekly rounding limited the effectiveness of the intervention.
  - Many patients were evaluated 3-4 days after discharge, which was often too late to intervene on the prescriptions as the course had many times been completed.
- Future directions:
  - More consistent rounding schedules (i.e. Monday/Wednesday/Friday) on discharged patients would allow for earlier intervention.
  - Evaluate decision support tools to consider how modification can improve antibiotic prescribing at the point of discharge.

## References

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