Evaluating Appropriateness of Antibiotics Prescribed at Discharge

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Background

- The Joint Commission Antimicrobial Stewardship Standard, emphasizes tracking, reporting, education, and action as core antimicrobial stewardship elements.[1]
- Relevant staff should receive periodic feedback about antibiotic use, education regarding optimal prescribing practices, and actionable outcomes as a result of data.[1]
- Tracking antibiotics at transitions of care is imperative, as treatment regimens are often completed after discharge and literature demonstrates this area is often neglected.

Objective

Compare the change in proportion of appropriate antibiotic prescriptions prescribed at discharge before (October 2017 - November 2017) and after (May 2018 - June 2018) an interdisciplinary, provider educational session (April 2018).

Defining Antibiotic Appropriateness

Appropriateness determined by hospital & national guidelines

- **Choice**
  - In vitro activity and penetrates site of infection
  - In accordance with patient's organ function, allergies, drug interactions, adverse effects
- **Dose**
  - In accordance with patient's diagnosis, age, weight, organ function, and drug interactions
- **Duration**
  - Within 2 days of recommended total prescribed duration of therapy

Methods

Inclusion Criteria	Exclusion Criteria
• Age ≥ 18 years • Discharged from Internal or Hospital Medicine • Prescribed at least 1 antibiotic at discharge	• Followed by Transplant or Infectious Diseases (ID) • Antibiotics for prophylaxis or suppression, and topical, ophthalmic, or otic antibiotics

Primary Endpoint

Composite of appropriate antibiotic choice, dose, and duration at discharge.

Intervention

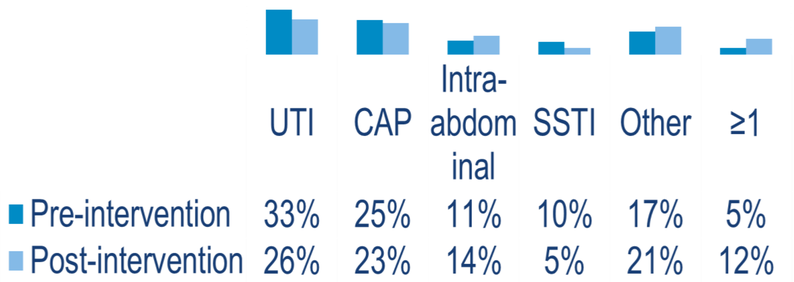
Report baseline data → Present patient cases → Provide education on guidelines

Baseline Characteristics

Patient Characteristics

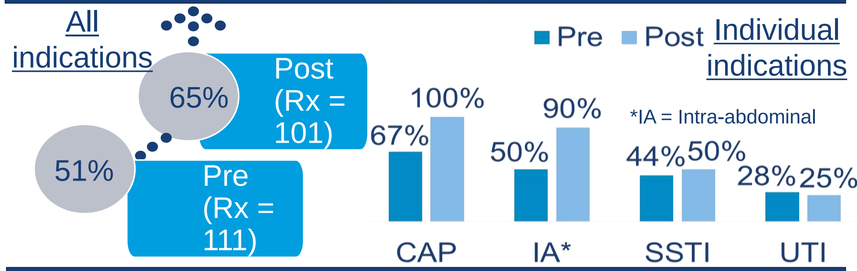
	Pre (n = 95)	Post (n = 78)
Age, mean (+/- SD)	69.7 (± 15.6)	71.9 (± 18.3)
Male, n (%)	46 (48.4)	43 (55.1)
Length of stay – days, mean (+/-SD)	4.9 (± 2.1)	4.6 (± 2.4)
ICU admission, n (%)	5 (5.3)	3 (3.8)
Resident teaching team	30 (31.6)	14 (17.9)
Hospitalization within 90 days, n (%)	26 (27.4)	22 (28.2)
Antibiotic use within 6 months, n (%)	46 (48.4)	39 (50.0)

Antibiotic Indications



1. CDC. Core Elements of Hospital Antibiotic Stewardship Programs. Atlanta, GA: US Department of HHS, CDC; 2014. Available at http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html.

Primary Endpoint



Secondary Endpoints

	Pre (n = 95)	Post (n = 78)
Within 30 days discharge, n (%)		
Incidence *C. difficile*	1 (1%)	1 (1.3%)
All-cause readmission	19 (20%)	14 (17.9%)
Infectious-related	10 (52.6%)	8 (57.1%)
Treatment failure	5 (5.2%)	8 (10.3%)

Limitations

- Study population limited to two units at single center.
- Data collection depended on chart review.
- Unable to confirm if filled or completed antibiotic(s).
- Not all providers attended the educational session.

Conclusions

- Feedback to providers about prescribing practices and education about guidelines appeared to improve antibiotic prescribing at discharge from 51% to 65%.
- Antibiotic prescribing for skin and urinary tract infections remain areas of focus for provider feedback.
- Antibiotic therapy in 30-day infectious-related readmissions will be assessed for opportunities to optimize antibiotic prescribing.