Background

In September 2014, the President’s Council of Advisors on Science and Technology (PCAST) prepared a report providing recommendations on combating antimicrobial resistance in the United States. One of these key recommendations focused on improving the stewardship of existing antibiotics and proposed that by 2017 the Centers for Medicare and Medicaid Services (CMS) should require hospitals and long-term care facilities “to develop and implement robust antibiotic stewardship programs that adhere to best practices.”

While the current Infectious Diseases Society of America (IDSA) and the Society for Healthcare Epidemiology of America (SHEA) Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship recommend that a clinical pharmacist with infectious diseases (ID) training be included as a core member of a multidisciplinary antimicrobial stewardship team (A-II), advanced certification in infectious diseases is not a requirement to lead a successful stewardship program.1,2 Additionally, not all institutions are capable of implementing comprehensive stewardship programs due to resource barriers such as limitations in staffing and inadequate funding.3

Based on recent literature supporting the ability of general clinical pharmacists to improve the quality of antibiotic management, a new approach was undertaken by the antimicrobial stewardship program (ASP) at our institution to engage these clinicians in antimicrobial stewardship activities. Particularly, in December 2014, a new pharmacy procedure was implemented for documentation of antimicrobial stewardship (AS) interventions that all pharmacists could utilize. This review was conducted to provide a baseline characterization of AS interventions and to compare interventions between general clinical pharmacists and an ID-trained pharmacist in order to target future educational efforts.

Methods

Study Population

This retrospective-cohort study included all antimicrobial stewardship (AS) interventions from January 1, 2015-April 30, 2015 meeting the following criteria:

- Intervention entered into pharmacy intervention tool (PIT) during specified time frame
- Entered as an “Antimicrobial Stewardship” intervention
- Recommendation made by a pharmacist
- Intervention contained no information other than “Antimicrobial Stewardship” category
- Entry had an un-finalized follow-up status
- Intervention was not a pharmacy communication entry or reinforced ID consultation recommendations

Data Collected

Data extracted from all interventions included: pharmacist characteristics such as ID-trained, general clinical pharmacist, or pharmacy resident; Intervention characteristics such as general intervention type (antimicrobial selection, antimicrobial dosing, antimicrobial monitoring, general stewardship) and specific type; anti-infective characteristics such as anti-infective type (antibiotic, antifungal, antiretroviral) and antibiogram; physician/acceptance characteristics

Analysis

Categorical variables were compared via χ² test. Continuous variables were compared via Student’s t test or Mann-Whitney, as appropriate. A p<0.05 was considered statistically significant for all comparisons.

Results

- Interventions Scanned
  - ID-trained RPh: n = 322 (71.3%)
  - Non-ID-trained RPh: n = 126 (28.1%)
- Pharmacy Resident
  - n = 61 (15%)
- Other Pharmacists
  - n = 63 (15.3%)

Conclusions and Future Directions

Interventions made by the ID-trained pharmacist were often more complex in nature, particularly involving pharmacokinetic/pharmacodynamic (PK/PD) dose adjustments and non-drug related recommendations. Review of restricted antimicrobials was also only performed by the ID-trained pharmacist. In order to improve already high acceptance rates, new processes will be put in place allowing for initiation of ID consultation by the stewardship pharmacist on more complicated patient cases. Additional education and resources are also being developed to enhance general clinical pharmacist abilities in performing antimicrobial stewardship interventions.

References