Positive Impact of an Antiviral Stewardship Program at a Large Academic Veterans Affairs Medical Center

Tomasz Z. Jodlowski, PharmD, BCPS-AQ ID[1]; Jordan Chiasson, PharmD[1]; Michael Kent, PharmD[1]; Jessica M. Guastadisegni, PharmD[1]; Marcus Kouma PharmD, BCPS[1]; James B. Cutrell, MD[2,3]

[1]Pharmacy Service, VA North Texas Health Care System; Dallas, TX; [2]Medical Service, VA North Texas Health Care System, Dallas ,TX; [3]Assistant Professor, Department of Medicine, UT Southwestern; Dallas, TX

BACKGROUND

- Patients on antivirals for chronic infections such as HIV or viral hepatitis are frequently affected by medication prescribing errors when admitted to acute or long-term care facilities[1]
- These errors are multifactorial including a lack of familiarity with these medications among frontline providers and pharmacists[1–3]
- Our antimicrobial stewardship program (ASP) instituted targeted audit and feedback of these antivirals during daily antimicrobial stewardship activities

STUDY DESIGN & OBJECTIVES

Study Objective

- To determine the impact of the implementation of a focused antiviral antimicrobial stewardship intervention in a large academic Veterans Affairs Medical Center

Study Design

- Retrospective quality improvement project conducted at a single Veteran Affairs (VA) medical center during the review period of January 1, 2017 through December 17, 2018
- Potential interventions were identified by an Infectious Diseases clinical pharmacist using TheraDoc® clinical support software, which draws data from the Computerized Patient Record System (CPRS)
- Alert categories were built to identify all patients who were admitted to the medical center or satellite inpatient facilities that were receiving HIV, Hepatitis C (HCV) or Hepatitis B (HBV) antiviral agents
- In addition to standard daily prospective audit and feedback interventions, ASP and HCV pharmacists reviewed these patients' regimens to ensure safety and correctness of orders
- Recommendations for medication changes were communicated to the Clinical Pharmacy Specialist (CPS) or the ordering provider to make the necessary change. Interventions were documented in TheraDoc® noting the type of clinical activity, outcome/action taken, any comments for further follow up, and an estimated cost savings by the software

Primary Endpoint

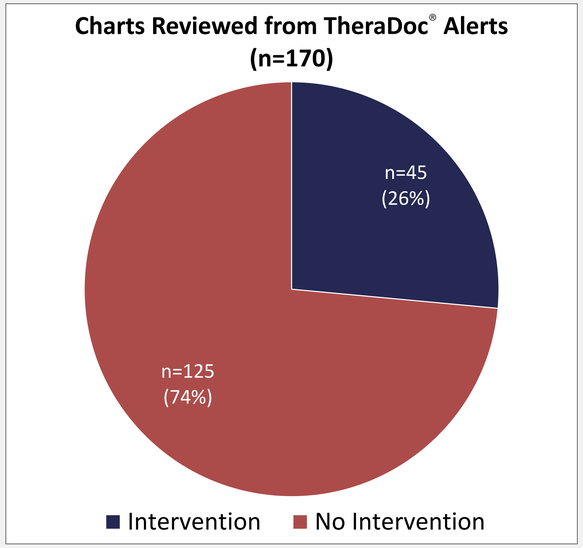
- Total number of interventions

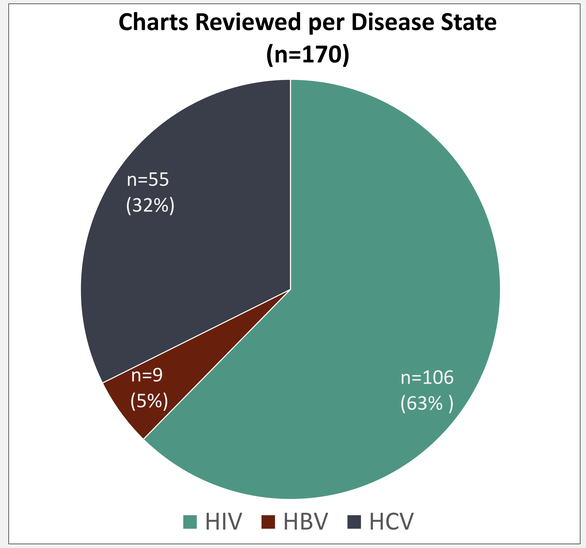
Secondary Endpoints

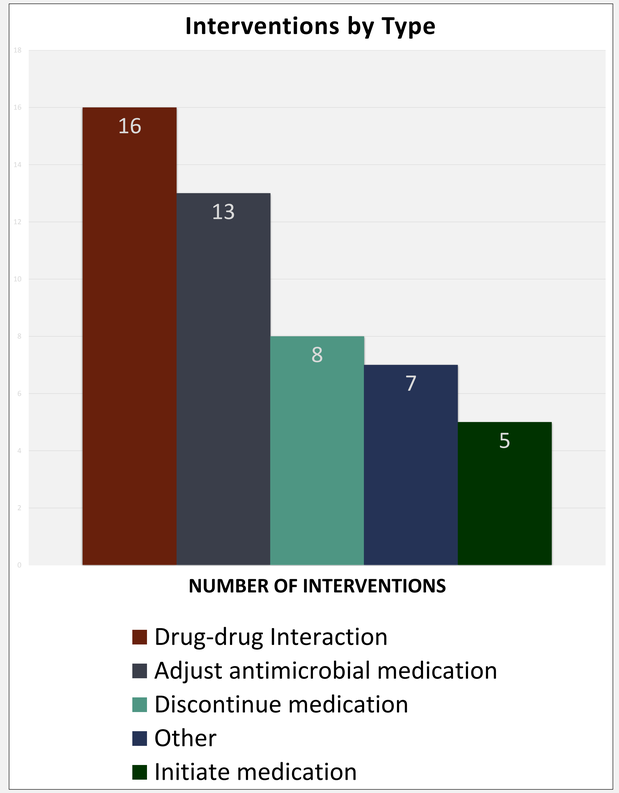
- Intervention acceptance rate
- Total estimated cost savings
- Estimated cost savings per intervention

RESULTS

- From January 1, 2017 through December 17, 2018, **170** patients were documented as reviewed by the ASP team for a total estimated savings of $83,791
- Of the reviewed patients, 26% (45/170) had clinically-important interventions documented, with a 93% (42/45) acceptance rate. Major intervention categories included renal dose adjustments, avoidance or mitigation of drug-drug interactions, or correction of home medication regimens







Estimated Cost Savings*	
Total Savings	$83,791
Savings per Intervention	$492.89

* All interventions had cost savings estimates assigned by Theradoc®

Examples of Interventions:

- Patient re-initiated on ledipasvir/sofosbuvir on admission as still on outpatient profile, but had completed therapy and achieved SVR. Contacted CPS to discontinue medication
- Hemodialysis patient started on lamivudine 50 mg Q6H after transferring floors, provider contacted to recommend appropriate dose

DISCUSSION

- Identified high rate (26%) of potential medication errors in this population receiving antiviral treatment for HIV, HCV and HBV which confirms a high risk group that requires additional audit during hospitalization
- Automatic electronic identification of patients allowed for rapid and real time identification of patients on antivirals
- Having Clinical Pharmacists with Infectious Diseases training review patients increased the identification and subsequent correction of errors versus standard of care with non-infectious diseases trained healthcare providers

LIMITATIONS

- Outcomes are be limited due to lack of weekend and holiday coverage
- Projection of cost savings is difficult to estimate due to "potential" savings (prevention of inappropriate prescribing, significant drug–drug interaction, etc.)

References:

1. Li EH, Foisy MM. Ann Pharmacother. 2014;48:998–1010
2. Jodlowski TZ, Sym D, Conry J et al. J Pharm Pract. 2010;23:507–10
3. Arshad S, Rothberg M, Rastegar DA et al. J Int AIDS Soc. 2009;12:1

CONCLUSION

- Medication errors involving patients on antiviral agents are a frequent concern, affecting over one-quarter of inpatients on antiviral agents, and require patient level reviews throughout hospitalization
- Despite more favorable interaction profiles compared to early agents, drug–drug interactions remain the most common source of errors identified
- Targeted antiviral stewardship interventions have potential to have significant positive impacts on patient care and health care savings and should be included in all Antimicrobial Stewardship Programs

Disclosures:
Jodlowski, Tomasz. Independent contractor. IPRO. IPRO Antibiotic Stewardship Project. August 2017- present