

criteria and completed the test per protocol. Administration of the test utilized a stewardship pharmacist-driven, nursing administered, protocol that has three phases: puncture, intradermal, and oral challenge (optional phase). The primary outcome assessed was change made to antimicrobial regimen directly related to PST. A secondary outcome assessed was cost savings associated with PST.

Results. Over 13 months, 116 patients were consulted for PST with 100 patients completing PST per protocol. Self-reported allergies consisted of IgE-mediated and unknown in 52% and 30% of patients respectively. Seventy-one of 98 patients who tested negative (73%) had changes directly made to their antimicrobial regimens related to PST after intervention from the stewardship pharmacist. Thirty-four patients who had received carbapenems were changed directly to a penicillin or cephalosporin. A previous evaluation at our institution showed an average total antimicrobial acquisition cost savings per patient to be \$314.75, which would result in \$22,347.25 in direct savings for all patients evaluated.

Conclusion. PST led to immediate antimicrobial de-escalation in the majority of patients who tested negative. Most of these patients were transitioned to optimal therapy or de-escalated from carbapenem therapy. A total direct cost savings for the institution over the course of 13 months exceeded \$20,000. Our study confirmed the overall utility of PST as a cost effective antimicrobial stewardship tool, especially as a carbapenem-sparing strategy.

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1572. Elimination of Aerosol Ribavirin Use in Immunocompromised Patients with Metapneumovirus and Parainfluenza Virus Infections

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Background. Administration of ribavirin by aerosol (AR) is often used in attempted treatment of respiratory virus infections in severely immunocompromised patients and was the standard of care at Stanford Health Care (SHC) in the management of metapneumovirus (MPV), parainfluenza virus (PIV), as well as respiratory syncytial virus infections, in hematopoietic stem cell (HCT) and lung transplant (LT) recipients.

Methods. A literature review by the transplant ID team in November 2014 failed to provide evidence of benefit of AR for treatment of MPV and PIV infections and, also taking into account its extraordinary cost, it was decided by the transplant ID group that AR should not be used for these infections. Meetings with HCT and LT MDs, however, failed to achieve their concurrence. All evidence was posted online for easy access. An independent expert panel of HCT and pulmonary MDs was asked to review the evidence and they concurred with the conclusion of ID. A meeting was held with all stakeholders together with the P&T committee at which all opinions were heard. All were invited to a subsequent P&T meeting at which it was decided to ban the use of AR for MPV and PIV infections, although oral ribavirin was allowed. The decision was confirmed by the SHC Medical Executive Committee and implemented Dec 2015 after removal of the option from the EHR orders and creation of an escalation pathway for appeals.

Results. AR DOT for MPV and PIV infections decreased from 119 (23 patients) in the previous 12 months to 2 (2 patients) in the subsequent 12 months. The drug acquisition cost was reduced from \$2,777,222 to \$46,676 – a recurring annual saving of \$2,730,546. Additional savings accrued from reduced hospital days, freeing of airborne isolation rooms, reduced housekeeping costs, and reduced exposure of women of childbearing age to the potential teratogenic effects of ribavirin. There were no observable adverse effects from the restriction of AR use.

Conclusion. Careful examination of clinical practice together with relentless efforts in changing prescriber behavior can result in elimination of ineffective therapy with large associated cost savings and without adverse clinical effects.

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1573. Antipseudomonal Drug Exposure Associated with MDR Organisms in the Liver and Lung Transplant Population

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Background. Multi-drug resistant (MDR) Gram-negative bacteria (GNB) are an emerging complication in transplant recipients. This study describes the prevalence of and risk factors for MDR-GNB infection/colonization in the liver and lung transplant population.

Methods. Cross-sectional study with nested case-case-control included adult liver or lung transplant candidates/recipients from 1/10-7/16. Patients with a positive GNB culture were classified as MDR- or Susceptible (S)-cases; MDR was defined as *in*

vitro resistance to ≥ 3 antibiotic classes. Patients without a positive GNB culture were controls. Primary variable of interest: antibiotic days of therapy (DOT) during time at risk. Patient and isolate characteristics were collected and compared.

Results. We included 150 patients: 110 (73%) liver, 40 (27%) lung. Median (IQR) patient age and Charlson comorbidity index were 59 years (52–63) and 5 points (3–6). Isolated organisms: 31 (34%) *E. coli*, 28 (31%) *K. pneumoniae*, 33 (36%) others. Resistance to ceftazidime, piperacillin/tazobactam, and ertapenem: 38%, 27%, and 14%. 61 (41%) MDR-GNB, 21 (14%) S-GNB, 68 (45%) controls. Median (IQR) cumulative antibiotic DOT was: MDR-case – 24.5 days (6–46.5), S-case – 5 days (2–24, $P = 0.017$ vs. MDR), controls – 0 days (0–10, $P < 0.001$ vs. MDR). Median (IQR) antipseudomonal (AP) DOT was: MDR-case – 7 days (1–16), S-case – 1 day (0–8, $P = 0.055$ vs. MDR), controls – 0 days (0–1, $P < 0.001$ vs. MDR); AP exposure was independently associated with MDR-GNB infection/colonization after correcting for severity of disease pre-transplant (adjOR: 2.9, 95% CI: 1.6–5.3) (Table 1).

Conclusion. MDR-GNB represent a significant burden to the liver and lung transplant population. A detailed antibiotic history, including AP DOT, may help with risk assessment to guide empiric therapy selection.

Table 1. Variables associated with MDR-GNB infection/colonization during time at risk (AdjOR, 95% CI)

	MDR-cases vs. S-cases, (n = 82)	MDR-cases vs. controls, (n = 129)	MDR-cases vs. combined comparator, (n = 150)
High MELD (> 30) or LAS (>50)	1.1 (0.6–1.9)	1.3 (0.7–2.3)	1.5 (0.8–2.6)
AP drug exposure	1.1 (0.6–2.0)	3.5 (1.9–6.3)	2.9 (1.6–5.3)
Prior hospitalization	–	0.9 (0.7–1.0)	–

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1574. An Antimicrobial Stewardship Initiative within a for-profit hospital: Impact of Criteria for Appropriate Use on Utilization

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Background. Antimicrobial Stewardship Programs (ASP) have shown improved patient outcomes, reduced adverse events, improved antibiotic susceptibilities, and optimized resource utilization. With the re-introduction of a formal ASP at our for-profit, non-teaching, community hospital in early 2016 in response to both legislative and corporate requirements, we sought to evaluate the impact of one of our ASP initiatives, Criteria for Appropriate Use, on utilization of three specific antimicrobial agents: Daptomycin (DAP), Tigecycline (TIG) and Ertapenem (ERT). The results of this investigation will help characterize various shifts in prescribing practices facilitated by an ASP initiative as well as quantify resultant trends in utilization.

Methods. This single-center, retrospective cohort study included patients who received DAP, TIG, or ERT in matched time periods: July – Sept 2015 (pre-ASP) and July – Sept 2016 (post-ASP). Patients were analyzed based on demographics, antibiotic use, days of therapy (DOT), indication (criteria for use), prescriber, infection type, and antibiotic course. Cost data and adjusted patient-days (APD) were extracted from hospital records.

Results. 644 cases were included. There were 555 pre-ASP cases per 31,884 APD: 128 (DAP), 368 (ERT), and 59 (TIG). In the post-ASP group, there were 89 cases per 30,960 APD: 40 (DAP), 39 (ERT), and 10 (TIG). Significant decreases were realized in the post-ASP period in: restricted antibiotic utilization (17.4 vs. 2.9 cases/1000 APD, $P < 0.0001$), duration (58.2 vs. 14.3 DOT/1000 APD, $P < 0.0001$), off-criteria use (3.6 vs. 0.65 cases/1000 APD, $P < 0.0001$), and cost (\$12.92 vs. \$2.88/APD, $P < 0.0001$).

Conclusion. The results of this study show that introduction of ASP, specifically Criteria for Appropriate Use implementation, was associated with not only significant decreases in utilization rates and antimicrobial cost, but significant shifts in prescriber behavior.

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1575. Enhancing Antibiotic Stewardship Team (AST) Efforts in Decreasing Inappropriate Vancomycin Usage in Neutropenic Fever (NF) Patients through Unit Based Pharmacist Intervention

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Background. The Infectious Diseases Society of America and the National Comprehensive Cancer Network guidelines recommend adding vancomycin to the