Table 1. VAST 12-Month Operating Cost for Staffing Summary and Statistics

Site	Annual operating cost	Sessions	Clinical encounters	Average cost per session	Average cost per clinical encounter	Clinical encounters needed to break even
A	$28,922.32	61	109	$474.14	$265.34	56
B	$41,484.74	18	72	$2304.71	$576.18	81
C	$65,707.38	38	48	$1729.14	$1,368.90	127

characteristics combined with private-sector and Medicare reimbursements to evaluate the cost of implementation and number of clinical encounters needed to offset those costs (breakeven) for each site. **Results:** Three VASTs recorded 229 clinical encounters during 117 sessions (Table 1). Based on CPT codes, the approximate revenue per patient was $516.46. Site A, the only site to break even, had the most sessions and clinical encounters as well as the lowest operating costs. For Site B, a slight increase in the clinical encounters, which might be achieved by 3 additional VAST sessions, would help achieve breakeven. For Site C, increasing the number of clinical encounters to 3-4 per session would have helped their VAST break even without requiring a decrease in operating costs. **Conclusions:** The frequency of VAST sessions, volume of clinical encounters, and low operating costs all contributed the VAST at Site A achieving a financial break-even point within 12 months. Consideration of the potential number of clinical encounters and sessions will help other VASTs achieve financial sustainment, independent of cost-savings related to potential decreases in expenditures for antibiotics and antibiotic-related adverse events. These results also provide insight into possible adoption and diffusion of VAST-like programs in the Medicare hospital setting.

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Impact of an intervention that decreased aztreonam DOT on Enterobacterales' susceptibility to aztreonam

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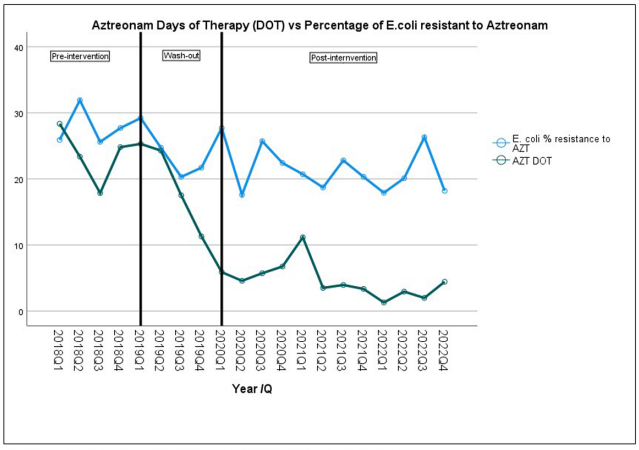
Background: Aztreonam (AZT) is frequently used for the treatment of Enterobacterales-related infections, particularly for patients with penicillin allergy. We aimed to analyze the impact over time of changes in AZT Days of therapy (DOTs) on AZT susceptibility from some Enterobacterales after a multifaceted intervention to improve antibiotic management at a



DOT= Days of therapy; AZT= AZTREONAM; Q= Quarter

Table 1. Changes in AZT DOT and E. coli resistance

	Pre Intervention Mean (SD)	Wash-out Mean (SD)	Post-Intervention Mean (SD)	Overall Mean (SD)	Change Before/after
AZT DOT	23.6 (4.4)	19.6 (6.5)	4.6 (2.6)	11.4 (9.3)	80% ↓
E. coli R to AZT (%)	26.6 (1.4)	23.9 (3.9)	21.5 (3.3)	23.3 (4.1)	19% ↓
Key: AZT= aztreonam; DOT= Days of therapy; SD= standard deviation					

Table 2. Linear regression for aztreonam days of therapy and selected Enterobacterales susceptibility to aztreonam

Simple linear regression					
Aztreonam DOT Independent variable					
				95.0% Confidence Interval for B	
	B	t	p-Value	Lower Bound	Upper Bound
E. cloacae resistant (%) to AZT	0.037	0.155	0.879	-0.46	0.533
E. coli resistant (%) to AZT	0.276	3.418	0.003*	0.106	0.446
K. aerogenes resistant (%) to AZT	-0.185	-0.492	0.628	-0.973	0.604
K. oxytoca resistant (%) to AZT	0.153	0.428	0.674	-0.597	0.902
K. pneumoniae resistant (%) to AZT	0.005	0.032	0.974	-0.296	0.306
M. morganii resistant (%) to AZT	0.02	0.09	0.929	-0.442	0.482
P. mirabilis resistant (%) to AZT	-0.016	-0.173	0.865	-0.205	0.174
S. marcescens resistant (%) to AZT	-0.162	-0.903	0.379	-0.537	0.214

Key: DOT= Days of therapy; AZT= aztreonam; B=slope

University Hospital in Florida. **Methods:** The study took place at a 560-lbed academic hospital in Miami, FL. A multifaceted intervention was implemented in this hospital to improve antibiotic management of patients with reported allergies to penicillin. The intervention included use of algorithm-based guidance, education, and feedback to providers. The analysis period spans from 2018 (pre-intervention) through 2022 (post intervention); 2019 was considered the wash-out period (Figure 1). Quarterly data for AZT-DOT and percentage of resistance to AZT for Enterobacterales were collected as part of the normal operations of the antimicrobial stewardship program (ASP) using the infection control module integrated in the electronic medical record (Epic Bugsy). DOT and Enterobacterales antibiotic resistance to AZT was analyzed using linear regression in SPSS. **Results:** We identified a decrease in DOT AZT and percentage of AZT resistance from E. coli during the study period (Table 1). This intervention led to AZT DOT's decrease from a quarterly average of 24 DOTs in 2018 levels to a sustained quarterly average of 4.3 DOTs for 2020 to Q2 2023 (decrease 80%) Antibiotic resistance to E. coli AZT changed from a 26.6% to 21.5% (19% decrease) (Table1). Simple linear regression identified a decrease in percentage of E. coli resistance to AZT associated with a decrease on AZT DOT (P-value 0.003), there was no association for other Enterobacterales. For each unit of decrease in AZT DOT there was 0.3% decrease in percentage of E. coli resistance to AZT (Table 2.) **Conclusions:** A decrease in AZT DOT during the observation period was associated with a decrease in E. coli resistance to AZT. Interventions aimed to decrease inappropriate antibiotic use are pivotal part of the fight against antimicrobial resistance; in our study we report a decrease in E. coli resistance to aztreonam related to decrease in the use of this antibiotic using education, guidance, and feedback to providers.

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Barriers and Facilitators to Optimal Antibiotic Prescribing on Discharge from the Hospital to Nursing Homes

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Background: Up to half of antibiotics used in nursing homes (NHs) are initiated in acute care hospitals prior to nursing home admission. Optimizing antibiotic prescribing on hospital discharge presents an opportunity to improve NH antibiotic use. We aimed to identify barriers and facilitators to optimal antibiotic prescribing on discharge from the hospital to NHs. **Methods:** This was a qualitative thread of a convergent parallel mixed methods study to identify high-value targets to optimize antibiotic prescribing on discharge from the hospital to NHs. We conducted 32 qualitative interviews: 16 with prescribers (9), pharmacists (6), and a care manager (1) from 3 acute care hospitals and 16 with advanced practice providers (12) and registered nurses/nurse managers (4) from 7 NHs in Oregon and Wisconsin. Interview participants were asked to describe their typical practice for prescribing antibiotics on discharge to NHs or admitting patients with antibiotic prescriptions from hospitals, and about barriers and facilitators for optimal antibiotic prescribing during these transitions. Interviews were audio recorded, transcribed verbatim, and analyzed by 3 investigators using the qualitative descriptive analysis **Results:** Hospital healthcare workers described that there are different practice flows for oral and intravenous (IV) antibiotic prescribing. IV antibiotic orders are typically routed to the infectious diseases (ID) specialists and ID pharmacists to review and verify appropriateness. There were minimal established workflows to review and verify oral antibiotic orders. Pharmacists appeared integral to optimal antibiotic prescribin; however, the high frequency of oral prescriptions and short turnaround times from discharge orders to transportation limited pharmacists' abilities to review these orders. With limited pharmacist involvement, the quality of oral antibiotic prescription relied on the prescribers' knowledge, and there was no systematic oversight for inexperienced prescribers or specialists who may not be familiar with the adequacy of antibiotic use for NH residents. NH participants perceived that most antibiotics prescribed from hospitals were appropriate. Yet, some commented that they occasionally observe inadequate or unusual prescriptions from newer prescribers or specialists. NH participants most common concern related to antibiotic prescriptions was missing information including unclear or lack of antibiotic indications or stop dates. NH participants also stated that the frequent need to contact the hospital to obtain missing information is challenging and burdensome. **Conclusions:** Qualitative interviews identified several barriers and facilitators to optimal antibiotic prescribing on discharge to NHs. These results will be used to develop an intervention to improve antibiotic prescribing during these transitions.

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Evaluating the Clinical Impact of Species-Level Identification in Coagulase-Negative Staphylococci Positive Blood Cultures

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Background: Coagulase-negative staphylococci (CoNS) are often considered contaminants when isolated from blood cultures. While criteria exist to distinguish true bacteremia from contamination (Table 1), clinical judgement is often necessary. Clinical microbiology laboratories have traditionally identified CoNS to the species level only if present in multiple cultures. There have been concerns that blood cultures positive for rare or less familiar CoNS species might be misinterpreted as true bacteremia. Tufts Medical Center (TMC) clinical microbiology laboratory started reporting all CoNS to the species level in January 2023. We studied the impact of species-level identification of CoNS on clinically relevant outcomes following this change. **Methods:** The study evaluated inpatients at TMC aged ≥ 18 years with CoNS isolated from blood cultures between July 2022 and June 2023. The primary outcome was the difference in anti-staphylococcal antibiotic utilization between the pre- and post-intervention groups. Secondary outcomes included differences in true bacteremia diagnosis, length of hospital stay, and mortality between the two groups. We also compared the performance of Souvenir's criteria with clinical judgement at distinguishing contamination from true bacteremia. A total of 100 patients were included in the pre- and post-intervention groups to detect an estimated effect size of 15% with a power of 81%. **Results:** Most patients were male, White, and English speaking (Table 2). No differences were found between the two groups in terms of infectious disease consultation frequency, blood culture collection department, or the presence of central venous catheters (Table 2). Staphylococcus epidermidis was the predominant CoNS in the post-intervention group. Blood cultures were repeated before and after starting antibiotics in 24% and 74% (pre-intervention) and 18% and 84% (post-intervention) of cases, respectively. Anti-staphylococcus antibiotic use was the same in both groups (82%). The median antibiotic therapy duration was 4.5 days pre- vs 3 days post-intervention (p =0.39). There were no differences in hospital length of stay or mortality between the two groups (Table 3). The clinical diagnosis of true bacteremia was established in 28% of cases in the pre- vs 25% in the post-intervention group (p= 0.63). Compared to clinical judgement, Souvenir's true bacteremia criteria demonstrated a sensitivity of 80.3%, negative PV of

Table 1. Souvenir's True Bacteremia Criteria

One or more of the following:	prolonged temperature (≥38°C), hypotension (<90 mm Hg), leukocytosis, or neutropenia
PLUS	
One or more risk factor for potential infection caused by skin flora:	long-term intravascular catheterization or peritoneal dialysis, or hemodialysis patients

Table 2. The Characteristics of the Pre- and Post-Intervention Populations

	Pre-intervention n=100 (%)*	Post-intervention n=100 (%)*	p-value
Male	60 (60.0)	69 (69.0)	0.18
White	75 (75.0)	66 (66.0)	0.16
Non-Hispanic	87 (87.0)	88 (88.0)	0.36
English speaking	89 (89.0)	80 (80.0)	0.08
ID consult	79 (79.0)	71 (71.0)	0.19
Presence of a central line at time of positive culture collection	39 (39.0)	39 (39.0)	-
Dialysis			
Hemodialysis at the time of culture collection	15 (15.0)	10 (10.0)	-
Peritoneal dialyses at the time of culture collection	0 (0)	1 (1.0)	-
Specimen Source			
PIV	90 (90.0)	99 (99.0)	-
CVC	9 (9.0)	1 (1.0)	-
Both	1 (1.0)	0 (0.0)	-
Blood culture repeat before antibiotic initiation or in general if no antibiotics used	24 (24.0)	18 (18.0)	0.3
Blood culture repeat after antibiotic initiation	74 (74.0)	84 (84.0)	0.08
Number of positive sets during admission, median (IQ)	1 (1,2)	1 (1,1)	0.022
Number of positive culture sets on first draw, median (IQ)	1 (1,1)	1 (1,1)	0.51
Number of days with positive cultures, median (IQ)	1 (1,1)	1 (1,1)	0.34
*Frequencies unless otherwise specified			