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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			

Table 3. Pre- and Post-Intervention Group Outcomes

	Pre-intervention n= 100 (%)*	Post intervention n = 100 (%)*	p-value
Anti-staphylococcal antibiotic use	82 (82.0)	82 (82.0)	-
Timing of anti-staphylococcal antibiotic initiation			0.55
Never started	18 (18.0)	18 (18.0)	
After blood cultures collected	64 (63.0)	69 (69.0)	
Before blood cultures collected	18 (18.0)	13 (13.0)	
Agent used			-
Vancomycin	56 (56.0)	59 (59.0)	
Daptomycin	0 (0.0)	0 (0.0)	
Linezolid	1 (1.0)	0 (0.0)	
Oxacillin	0 (0.0)	0 (0.0)	
Cefazolin	0 (0.0)	2 (2.0)	
TMP-SMX	1 (1.0)	0 (0.0)	
Doxycycline	2 (2.0)	0 (0.0)	
Multiple agents	22 (22.0)	21 (21.0)	
Ceftaroline	0 (0.0)	0 (0.0)	
None	18 (18.0)	18 (18.0)	
Antibiotic duration, median (IQ)	4.5(2,12.75)	3 (1,9)	0.39
Antibiotic duration (48 hours)			0.86
<48 hours	21 (21.0)	20 (20.0)	
>48 hours	79 (79.0)	80 (80.0)	
Antibiotic duration (72 hours)			0.17
<72 hours	26 (26.0)	35 (35.0)	
>72 hours	74 (74.0)	65 (65.0)	
Bacteremia by criteria	45 (45.0)	38 (38.0)	0.32
Bacteremia by clinical diagnosis	28 (28.0)	25 (25.0)	0.63
Bacteremia definition			0.095
Bacteremia by clinical diagnosis only	3	10	
Bacteremia by definition only	20	23	
Contaminant by both	52	52	
Length of stay, median (IQ)	8.5 (5,27)	13 (5,29)	0.39
Mortality	21 (21.0)	21 (21.0)	-

*Frequencies unless otherwise specified

91.9%, and positive PV of 55.2%. **Conclusions:** Species-level identification of CoNS positive blood cultures did not impact antibiotic utilization, diagnosis of true bacteremia, length of hospital stay, or mortality. Further studies with larger cohorts and prospective designs are needed to validate these findings and assess the long-term implications in patients.

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Organizational Readiness for Change Depends on Facility Complexity When Developing a National Stewardship Intervention

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Introduction: The organizational readiness for change assessment survey (ORCA) is a tool to assess a site's readiness for implementation and identify barriers to change. As the "Kicking CAUTI" antibiotic stewardship intervention rolled out on a national scale, we administered ORCA surveys to participating sites to capture baseline actionable information about differences among sites, to inform implementation. **Methods:** ORCA surveys were distributed by email to prescribing providers, nurses, pharmacists, infection preventionists, and quality managers at 40 participating VA Hospitals. VA hospital sites who submitted three or more surveys and their complexity level (measured as Level 1 (highest)-3) were included in the analysis. The highest complexity level facilities are those with the largest patient volume/risk, teaching and research, along with the largest number of physician specialists and contain at least five ICUs. Mean Likert scores were calculated for each of the 7 ORCA subscales on a scale of 1-5 (5 highest), and the mean of the 7 subscales was the overall ORCA

Figure 1. Overall ORCA and subscales between higher complexity (Level 1&2) and lower complexity (Level 3) sites

	All Sites Mean (SD)	Higher Complexity Sites Mean (SD)	Lower Complexity Sites Mean (SD)	P value*
Overall ORCA	3.71 (0.66)	**3.74 (0.65)**	**3.41 (0.67)**	**0.02**
Evidence¥	4.22 (0.67)	**4.28 (0.63)**	**3.70 (0.79)**	**<0.01**
Culture leadership§	3.68 (0.90)	3.72 (0.89)	3.35 (0.95)	0.11
Culture staff¶	3.81 (0.75)	3.83 (0.74)	3.59 (0.75)	0.17
Leadership£	3.59 (0.94)	**3.64 (0.93)**	**3.23 (0.93)**	**0.05**
Measurement¥	3.48 (0.90)	3.52 (0.89)	3.15 (0.92)	**0.06**
Readiness for change€	3.86 (0.79)	3.87 (0.78)	3.80 (0.87)	0.952
Resources‡	3.33 (0.88)	**3.37 (0.89)**	**3.05 (0.76)**	**0.07**

* P values refer to Mann Whitney U tests; bolded when significant or borderline significant
¥ Perceived strength of the evidence for the proposed change
§ Culture of leaders who reward clinical innovation and creativity, solicit opinions of clinical staff regarding decisions about patient care, and seek ways to improve patient education and increase patient participation in treatment
¶ Culture of staff who have a sense of personal responsibility, are cooperative, are willing to innovate, and are receptive to change
£ Leadership are the factors that are set out by the leader to have a successful program
¥ Measurement are the leadership factors associated with having the information of the facility performance measures and guidelines and allow for clear goals and outcomes to be set
€ Readiness for change refers to opinion leaders in the organization have a belief that current practices can be improved and are will to try new initiatives
‡ Resources refer to the support provided financially, for training, facilities, and staffing

score for a site. Non-parametric testing was performed comparing overall ORCA and each subscale based on complexity. **Results:** Among the participating sites, 30/40 (75%) completed at least three surveys, with a total of 202 surveys included for analysis, with 82% of surveys coming from higher complexity centers (Level 1). The highest ranked ORCA domain was the evidence subscale (measures perceived strength of evidence), mean 4.2, (SD 0.7). The lowest ranked ORCA domain across sites was resources (available to facilitate implementation), mean 3.3 (SD 0.9). Higher complexity centers had a significantly higher overall ORCA score than lower complexity centers (Level 1 or 2 vs. Level 3, p= 0.02). This difference was driven by the subscales evidence ($p < 0.01$), leadership ($p = 0.05$), measurement (p= 0.06), and resources (p=0.07) all being higher in the higher complexity facilities (Figure 1). Two of the categories (leadership and measurement) pertain to an organization's leaders ability to create an environment for change to occur as well as promoting team building. **Conclusions:** The lowest scoring ORCA domain across all sites was the respondents' perception of resources (staff, training) available for achieving change. Perceived resources were also lower in lower complexity sites, implying that medical centers of lower complexity may have higher barriers when implementing an antimicrobial stewardship intervention. This finding highlights the benefit of a national stewardship campaign that provides support to lower complexity medical centers that may not otherwise receive targeted training and support for their efforts.

Disclosure: Barbara Trautner: Stock: Abbvie–sold in December 2023; Abbott Laboratories–sold in December 2023; -Bristol Myers Squibb–sold in December 2023; Pfizer–sold in December 2023; Consultant–Phiogen–consultant. Contracted research through NIAID for STRIVE trial, currently testing Shionogi product; Contracted research–Peptilogics; Contracted research—Genentech

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Improving antibiotic use for community acquired pneumonia in hospitalized children through electronic feedback reports

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