

laboratories confirmed carbapenemase gene(s) using a molecular method. If an MBL gene was confirmed, aztreonam-avibactam minimum inhibitory concentrations (MICs) were reported back to submitters within 3 working days of receipt. Findings were reported to CDC using a REDCap database. **Results:** From March through August 2019, aztreonam-avibactam AST was requested for 32 clinical isolates across 16 states. These isolates included 15 *Escherichia coli*, 12 *Klebsiella pneumoniae*, 4 *Enterobacter cloacae* complex, and 1 *Proteus mirabilis*. Molecular detection identified 27 *bla*NDM-positive isolates, 2 *bla*OXA-48-like-positive isolates, and 3 *bla*OXA-48/*bla*NDM-positive isolates. Aztreonam-avibactam results were reported for 30 isolates; 5 displayed elevated aztreonam-avibactam MICs of 8/4 µg/mL (n = 4) or 16/4 µg/mL (n = 1). Results for 2 isolates were not reported because the isolates were MBL negative. Aztreonam-avibactam MICs ranged from 0.06/4 µg/mL to 16/4 µg/mL. The MIC₅₀/MIC₉₀ were 0.5/4 µg/mL and 8/4 µg/mL. **Conclusions:** In the absence of effective FDA-approved treatments and lack of available AST for novel antibiotic combinations, CDC's provision of AST for aztreonam-avibactam among MBL-producing CPE, offered through the AR Lab Network, helps fill a critical gap to inform patient treatment decisions. To date, our in vitro data suggest that aztreonam-avibactam could be a promising drug combination for use against infections caused by MBL-producing Enterobacteriaceae.

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Presentation Type:

Top Rated Posters

Population Standardized Infection Ratio (pSIR): A More Meaningful Reflection of Performance With Reduction in Device Use

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Background: Interventions to reduce unnecessary device use may select a higher-risk population, leading to a paradoxical increase in SIR for some high-performing facilities. The standardized utilization ratio (SUR) adjusts for device use for different units and facilities. We evaluated the performance of a population SIR (pSIR) metric compared to device SIR (dSIR) in the situations of increased, decreased, and no change in SUR for a large system. **Methods:** We evaluated hospitals that had a reduction, increase, and no substantial change ($\pm 5\%$ relative change) in their SUR in FY2019 (July 2018–June 2019) compared to baseline FY2017 (July 2016–June 2017). The dSIR (defined as Σ observed events divided by Σ predicted events based on actual device days) and pSIR (defined as Σ observed events divided by Σ predicted events based on predicted device days). We calculated the cumulative attributable difference (CAD) for catheter-associated urinary tract infections (CAUTIs) for the same facilities based on dSIR and pSIR. **Results:** Overall, the system SUR dropped from 0.92 in 2017 to 0.85 in 2019 (7.3% decrease). Of the 48 hospitals included, 25 (52%) exhibited a drop, 13 (27%) exhibited an increase, and 10 (21%) had no change in SUR during 2019. For hospitals in which

Table 1. The Effect on dSIR, and pSIR in the Setting of Changes in SUR Over the 2 Periods

Change In	SUR	SUR			dSIR			Observed Events		pSIR		
		FY17	FY19	% Change	FY17	FY19	% Change	FY17	FY19	FY17	FY19	% Change
Decrease	25	0.971	0.781	-19.5%	0.879	0.739	-15.9%	251	161	0.853	0.577	-32.3%
Increase	13	0.820	0.911	11.1%	0.902	0.712	-21.1%	131	104	0.740	0.649	-12.3%
No change	10	0.955	0.955	0.0%	0.789	0.627	-20.5%	66	58	0.753	0.599	-20.5%
System	48	0.920	0.852	-7.3%	0.871	0.708	-18.7%	448	323	0.801	0.603	-24.7%

SUR decreased, the dSIR decreased by 15.9% from 0.88 to 0.74, and the pSIR decreased by 32.3% from 0.85 to 0.58 (Table 1). In 2019, the CAD for CAUTI to a target SIR of 1 was 133 for the dSIR compared to 181 for the pSIR, and 36% more events were avoided. **Conclusions:** The traditional SIR (dSIR) underestimated improvements in infection rates compared to the pSIR because it failed to account for reduced device utilization associated with infection prevention interventions. The pSIR accounts for overall risk of infection associated with device exposure in a population and better reflects the efficacy of prevention efforts compared to dSIR. The pSIR should be considered in situations in which interventions have led to substantial reductions in device use.

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Top Rated Posters

Postdischarge Decolonization of Patients Harboring MRSA USA300 Strains: Secondary Analysis of the CLEAR Trial

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Background: The Changing Lives by Eradicating Antibiotic Resistance (CLEAR) Trial was a trial of 2,121 recently discharged methicillin-resistant *Staphylococcus aureus* (MRSA) carriers randomized to MRSA education plus a 5-day decolonization regimen repeated twice monthly for the 6 months following discharge versus MRSA education alone. Decolonization resulted in a 30% reduction in MRSA infection and a 17% reduction in all-cause infection (Huang SS et al, *NEJM*, 2019) in the year following discharge. We pursued an evaluation of USA300 carriers to determine whether the decolonization benefit differed for this strain type. **Methods:** A secondary analysis of the CLEAR randomized controlled trial (RCT) was performed, limiting the cohort to participants known to harbor USA300 at or within 30 days of enrollment and who attended all follow-up visits in the year following discharge. Within this subset, we conducted a time-to-event analysis using unadjusted and adjusted Cox proportional-hazard models. Variables in adjusted analyses included demographic data,

insurance type, presence of coexisting conditions or medical devices at enrollment, hospitalization or residence in a nursing home in the year before enrollment, receipt of anti-MRSA antibiotics, protocol adherence, and randomization strata. **Results:** USA300 was identified in 420 of the 783 participants who attended all visits and had strains genetically tested. MRSA infections occurred in 27 of 207 education group participants (0.149 per person year) and in 19 of 213 decolonization group participants (0.099 per-person year). Point estimates from the unadjusted hazard ratios of infection reduction were similar (0.59; 95% CI, 0.32–1.09) to the full trial population (0.61; 95% CI, 0.44–0.85), suggesting nondifferential benefit for the USA300 strain type. Adjusted models were highly similar. **Conclusions:** The reduction in MRSA infection associated with postdischarge decolonization in the subgroup of participants who harbored the USA300 strain-type was consistent with overall trial findings. Although the original trial was not powered for the evaluation of a USA300 subset, this RCT provides a valuable design for assessing the magnitude of strain-specific responsiveness to decolonization during a time when national rates of MRSA invasive disease have plateaued and USA300 is responsible for an increasing proportion of infections. These data suggest that postdischarge decolonization should be similarly effective in carriers of either USA300 or healthcare-associated MRSA strains.

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Top Rated Posters

Prevalence of Healthcare-Associated Infections and Antimicrobial Resistance in Rural Alberta Acute-Care Facilities
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Background: Antibiotic-resistant organisms (AROs) are associated with greater disease severity and poor outcomes. Previous studies have investigated AROs and healthcare-associated infections (HAIs) within larger urban acute-care settings, but similar data for rural settings are scarce. In this study, we aimed to fill this gap. **Methods:** Data on antimicrobial resistance (AMR), additional precautions and HAI were collected from 8 rural Alberta acute-care facilities over a 24-hour period from February 4–28, 2019. Data were gathered as part of the national Canadian, Rural, and Northern Acute Care Point Prevalence (CNAPP) survey. All inpatients on included units were reviewed. CNAPP protocol surveillance definitions were used. **Results:** In total, 961 patients were surveyed, of whom 94 of 961 (9.8%) were on additional precautions. Contact precautions only were most common (54 of 94, 57.4%) and were

predominantly in place for MRSA (30 of 94, 31.9%). Of 961 patients, 100 (~10%) met the surveillance definitions for any infection. The most common infections were skin and soft-tissue infections (29 of 100, 29.0%) and bloodstream infections (28 of 100, 28.0%). An HAI occurred in 30 of 961 patients (3.1%); the most common HAIs were surgical site infections (8 of 30, 26.7%) and urinary tract infections (8 of 30, 26.7%). An antimicrobial was prescribed to 333 of 961 patients (34.6%) at the time of the survey, with ceftriaxone the most commonly prescribed (68 of 333, 20.4%). Most patients receiving an antimicrobial (237 of 333, 71.2%) did not meet the surveillance definition for any infection. The most common reason for any antimicrobial administration was empiric therapy (167 of 333, 50.1%). **Conclusions:** Investigations into antimicrobial use and the burden of HAIs in rural acute-care settings have been limited. In this study, we (1) established provincial baseline data for burden of disease in these facilities due to HAIs and (2) demonstrated that antimicrobial use is common, though most patients who were prescribed an antimicrobial did not meet study definitions for infection. It will be important to continue this type of surveillance in this understudied population to monitor the burden of HAIs over time, to establish antimicrobial utilization trends, and to continue to identify potential antimicrobial stewardship initiatives.

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Public Health Oversight of Interfacility Transfers During a *Candida auris* Outbreak—Orange County, California, 2019

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Background: In February 2019, the Orange County Health Care Agency (OCHCA) identified an outbreak of *Candida auris*, an emerging fungus that spreads rapidly in healthcare facilities. Patients in long-term acute-care hospitals (LTACHs) and skilled nursing facilities that provide ventilator care (vSNFs) are at highest risk for *C. auris* colonization. With assistance from the California Department of Public Health and the Centers for Disease Control and Prevention, OCHCA instituted enhanced surveillance, communication, and screening processes for patients colonized with or exposed to *C. auris*. **Method:** OCHCA implemented enhanced surveillance by conducting point-prevalence surveys (PPSs) at all 3 LTACHs and all 14 vSNFs in the county. Colonized patients were identified through axilla/groin skin swabbing with *C. auris* detected by PCR and/or culture. In facilities where >1 *C. auris* colonized patient was found, PPSs were repeated every 2 weeks to identify ongoing transmission. Retrospective case finding was instituted at 2 LTACHs with a high burden of colonized patients; OCHCA contacted patients discharged after January 1, 2019, and offered *C. auris* screening. OCHCA tracked the admission or discharge of all colonized patients, and facilities with ongoing transmission were required to report transfers of any patient, regardless of colonization status. OCHCA tracked all patients discharged from facilities with ongoing transmission to ensure that accepting facilities conducted admission