Table 1. Multivariable logistic regression analysis for factors associated with inappropriate initial antibiotic regimen.

Characteristic	Odds Ratio	Confidence Interval	p value
Age (per decade)	1.1911	(1.1592, 1.2238)	<.0001
Summer	1.3487	(1.1737, 1.5497)	<.0001
End Stage Renal Disease	0.6868	(0.4733, 0.9966)	0.0479

Table 2. Multivariable logistic regression for factors associated with inappropriate antibiotic prescription 3-5 days after therapy initiation.

Characteristic	Odds Ratio	Confidence Interval	p value
Age (per decade)	1.1803	(1.1327, 1.2299)	<.0001
Transplant	0.2094	(0.0586, 0.7484)	0.0161
Surgical Procedure	0.5878	(0.4201, 0.8225)	0.0019
Cefepime	1.8347	(1.3056, 2.5783)	0.0005
Piperacillin-Tazobactam	1.383	(1.1152, 1.7152)	0.0032

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.785

Presentation Type:
Poster Presentation

Feasibility of Developing Traditional Facility-Specific Nursing Home Antibiograms

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Background: An antibiogram is a tool for tracking and reporting antimicrobial resistance; the CDC has endorsed as part of a comprehensive antimicrobial stewardship program in nursing homes. We have previously shown that antibiogram utilization has increased in nursing homes, but most facilities employ tools that are not based on facility-specific data. In this study, we investigate the feasibility to develop antibiograms using facility-specific data and compare these results with antibiograms developed using data from multiple facilities that share the same lab and geographic region. **Methods:** Raw, de-identified culture results from January 1 through December 31st, 2018 were collected from participating nursing homes and their consulting microbiology laboratories under an IRB-exempt protocol. Culture results were entered and stored in REDCap. Number of isolates per species was examined based on nursing home, nursing home laboratory network, and region. Percentage sensitivities of the most frequently isolated species to commonly used antibiotics were calculated at the nursing home and regional level and compared. *T* tests of the absolute difference between nursing home- and regional level percentage sensitivities were performed. All data analyses were performed in R software. **Results:** The mean annual cultures per nursing home was 23.5 (SE, ±3.29). Grouping cultures by lab and region increased the mean culture count 6-fold and 12-fold, respectively. The most commonly isolated species were *Escherichia coli* (29.7%), *Enterococcus* spp (11.6%), *Proteus* spp (10%), *Klebsiella* spp (8.5%). None of the nursing homes had >30 isolates of a single species (Fig. 1). *Escherichia coli* was the only species that exceeded the 30-isolate threshold when aggregated at the laboratory network level (Fig. 2). Grouping nursing home cultures by region provided the greatest average isolate count across the most common species. The greatest differences in percentage sensitivity between nursing homes and their region were noted for *Escherichia coli* and *Proteus* spp to fluoroquinolones (>20% difference; $P < .01$). The difference in sensitivity was <5% for *Escherichia coli* to nitrofurantoin. **Conclusions:** Nursing homes do not generate enough annual isolates to create antibiograms compliant with Clinical Laboratory Standard Institute guidelines. Grouping isolates from multiple nursing homes at the regional level does reliably exceed the 30-isolate threshold for multiple bacterial species but leads to susceptibility estimates that may vary substantially from those observed at the facility level. Alternative tools for tracking antibiotic resistance and guiding antibiotic prescribing decisions at the local level are needed.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.786

Presentation Type:
Poster Presentation

Financial and Labor Benefits of the Individual TB Risk Assessment Model for Annual TB Screening

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Background: Since 1991, US tuberculosis (TB) rates have declined, including among health care personnel (HCP). Non–US born persons accounted for approximately two-thirds of cases. Serial TB testing has limitations in populations at low risk; it is expensive and labor intensive. **Method:** We moved a large hospital system from facility-level risk stratification to an individual risk model to guide TB screening based on "Tuberculosis Screening, Testing, and Treatment of US Health Care Personnel: Recommendations from the National Tuberculosis Controllers Association and CDC, 2019." This process included individual TB risk assessment, symptom evaluation, TB testing for *M. tuberculosis* infection (by either IGRA or TST) for HCP without documented evidence of prior LTBI or TB disease, with an additional workup for TB disease for HCP with positive test results or symptoms compatible with TB disease. In addition, employees with specific job codes deemed high risk were required to undergo TB screening. **Result:** In 2018, this hospital system of ~10,000 employees screened 7,556 HCP for TB at a cost of $348,625. In 2019, the cost of the T Spot test increased from $45 to $100 and the cost of screening 5,754 HCP through October 31, 2019, was $543,057. In 2020, it is anticipated that 755 HCP will be screened, saving the hospital an estimated minimum of $467,557. The labor burden associated with employee health personnel will fall from ~629.66 hours to 62.91 hours. The labor burden associated with pulling HCPs from the bedside to be screened will be reduced from 629.66 hours to 62.91 hours as well. **Conclusion:** Adoption of the individual risk assessment model for TB screening based on "Tuberculosis Screening, Testing, and Treatment of US Health Care Personnel: Recommendations from the National Tuberculosis Controllers Association and CDC, 2019" will greatly reduce financial and labor burdens in healthcare settings when implemented.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.787