use of intact samples; (2) a statistical analysis on the profile of the hospitals collected; and (3) an assessment of the predictive power of 5 types of MLP (ie, backpropagation standard, momentum, resilient propagation, weight decay, and quick propagation). MLPs were tested with 3, 5, 7, and 10 hidden-layer neurons and a database split for the resampling process (65% or 75% for testing, 35% or 25% for validation). They were compared by measuring area under the curve (AUC; range, 0–1) presented for each of the configurations. **Results:** From 1,166 records collected, only 665 records were enabled for analysis. Regarding statistical data: the average duration of surgery was 100 minutes (range, 31–180); patients were aged 41–49 years; the SSI rate was low (only 10 cases); the average length of stay was 2 days; and there were no deaths among the cases. Moreover, 29% of the operative sites were contaminated and 57% were potentially contaminated, revealing a high rate of potential contamination in the operative sites. The prediction process achieved 0.995. **Conclusions:** Despite the noise in the database, it was possible to obtain a relevant sampling to evaluate the profile of hospitals in Belo Horizonte. In addition, for the predictive process, although some settings achieved AUC results of 0.5, others achieved and AUC of 0.995, indicating the promise of the automated SSI monitoring framework for abdominal hysterectomy surgery (available in www.sacihweb.com). To optimize data collection and to enable other hospitals to use the SSI prediction tool, a mobile application was developed.

Presentation Type:
Poster Presentation
Patterns and Predictors of UTI Treatment Practices in Nursing Homes

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Background: Suspicion of urinary tract infection (UTI) is the most common justification for prescribing antibiotics in nursing homes. More than half of antibiotic prescriptions for treatment of UTI in nursing homes are either unnecessary or inappropriate. Achieving a better understanding of the factors that underlie UTI treatment decisions is necessary to improve the quality of antibiotic prescribing in nursing homes. An ongoing hybrid type 2 effectiveness-implementation cluster randomized trial of a recently developed nursing home UTI recognition and management tool kit provided us with an opportunity to explore the influence of organizational, clinical, and staff attributes on UTI antibiotic prescribing practices in nursing homes. **Methods:** Data on antibiotic starts for suspected UTIs were collected in 29 nursing homes over a 9-month period. Antibiotic practices evaluated included total antibiotic starts per 1,000 resident days, % antibiotic starts with treatment duration >7 days, % antibiotic starts in which the initial antibiotic choice was a fluoroquinolone, and % antibiotic starts meeting UTI toolkit criteria of appropriateness. Prior research and bivariate analyses were used to select clinical and organizational attributes as well as individual nursing staff-level retention rates for inclusion in a stepwise linear regression model for each antibiotic practice outcome. **Results:** In total, 602 UTI antibiotic events were evaluated. Four associations were identified for antibiotic starts including nursing home urine culture rate, ICP status, nonprofit and part-time LPN retention. Nursing homes with higher full-time LPN retention had a lower rate of antibiotic treatment duration >7 days. Full-time CNAs and part-time LPNs retention and for-profit status was associated with the proportion of fluoroquinolone antibiotic starts. No attributes influenced the proportion of antibiotic starts meeting appropriateness criteria (Fig. 1). Urine culture rates are driving overall nursing home antibiotic prescribing. **Conclusions:** Urine culture practices was strongly associated with UTI treatment rates in nursing homes. A variety of organizational characteristics were also associated with UTI treatment rates as well as other UTI antibiotic prescribing practices. Some of these associations appear paradoxical but may reflect increasing resident acuity and increased capacity to standardize practices through organizational centralization.

Predictors	UTI Prescribing Practices			
	Total AS per 1,000 resident days	% AS with treatment duration > 7 days	% AS where initial antibiotic was a fluoroquinolone	% AS meeting appropriateness criteria
Facility Urine Culture Rate	OR = 2.20 (p < 0.001)	---	---	---
ICP Full Time Equivalent	OR = 1.21 (p = 0.015)	---	---	---
Non Profit Status	OR = 0.82 (p = 0.019)	---	---	---
For Profit NHs	---	---	OR = 0.82 (p = 0.009)	---
Full-time LPN retention rate[i]	---	OR = 0.76 (p = 0.002)	---	---
Part-time LPN retention rate[i]	OR = 0.84 (p = 0.032)	---	OR = 1.13 (p = 0.045)	---
Full time CNA retention rate[i]	---	---	OR = 0.81 (p = 0.001)	---

[i] Staff retention rates for full and part-time staff is above the average for all reporting nursing homes (1=Yes, 0 = No)

Fig. 1.

Presentation Type:
Poster Presentation
Peer Comparison Intervention to Improve Antibiotic Prescribing in Dentistry

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Background: Dentists prescribe an estimated 13% of outpatient antibiotic courses, many of which may be unnecessary. Health departments are in a unique position to support implementation of antibiotic stewardship across healthcare facilities, including in dental offices. A customized peer comparison message with feedback regarding prescribing frequencies was effective in reducing inappropriate prescribing among primary care physicians in Massachusetts and California. We tested the effect of a peer comparison message for antibiotic prescribing on dentists in the Massachusetts Medicaid program. **Methods:** We analyzed data from September 2018 to July 2019 for prescriptions of antibiotic courses by dentists to identify the highest prescribing dentists. We used their national provider identifier (NPI) to deduplicate