

Fig. 3.

included webinars, gap analyses, and interactive coaching calls, a cohort of 11 hospitals was able to induce rapid improvements to adherence of evidence-based practices resulting in a rapid, sustained, statistically significant improvement for both the cohort hospitals and the healthcare system.

\*2018 American community survey, US Census.

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#### Presentation Type:

Poster Presentation

#### A Successful Bundled Intervention to Reduce Hospital-Acquired Pneumonia: Sustainability Still an Issue

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**Background:** Hospital-acquired pneumonia (HAP) is one of the most common healthcare-associated infections (HAIs). Interventions based on the identification of patients at risk for aspiration with subsequent application of multidisciplinary measures, such as speech therapy follow-up, head elevation, oral hygiene, and patient and family education can be effective in reducing the incidence of HAP. In 2016, the step-down unit of our institution experienced an increase in the incidence of HAP with 21 cases. A root-cause analysis showed that most of them were related to comorbidities that increased aspiration risk. We conducted an study

to decrease the incidence of HAP through a multidisciplinary bundled intervention. **Methods:** We conducted a quasi-experimental study in a 45-bed step-down unit from January 2016 to June 2019. In January 2017, we conducted an educational intervention with all the unit team, reinforcing practices of bed head elevation and oral hygiene. In June 2018, we observed inconsistencies in practice and conducted a second intervention with another round of educational training and a bundled intervention consisting of the following elements: identification of patients at risk for aspiration at admission by a speech therapy evaluation, bed-head elevation, oral hygiene, feeding guidance individualized to each patient by a nutritionist and a speech therapist, patient and family education with a printed material, signaling of aspiration risk in a care plan board within the room and development of a sialorrhea treatment protocol. HAP surveillance was conducted in accordance to CDC definitions and was reported as number of HAP cases per 1,000 patient days. **Results:** Our first intervention decreased the incidence of HAP in the first semester of 2017 from 1.03 to 0.29 (graph) but was not sustained. The incidence started to increase in the second semester of 2017 and reached a high incidence of 1.87 HAP per 1,000 patient days in the first semester of 2018. The second bundled intervention succeeded in decreasing HAP incidence to 0.57 in the second semester of 2018 and 0.23 in the first semester of 2019. **Conclusions:** An educational intervention combined with a bundled intervention focused on strategies to reduce the risk of aspiration succeeded in decreasing the incidence of HAP in a step-down unit. However, the sustainability of improvements remains challenging.

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## HAP incidence in a step-down unit (Number of HAP/1000 patient-days) from 2016 to 2019

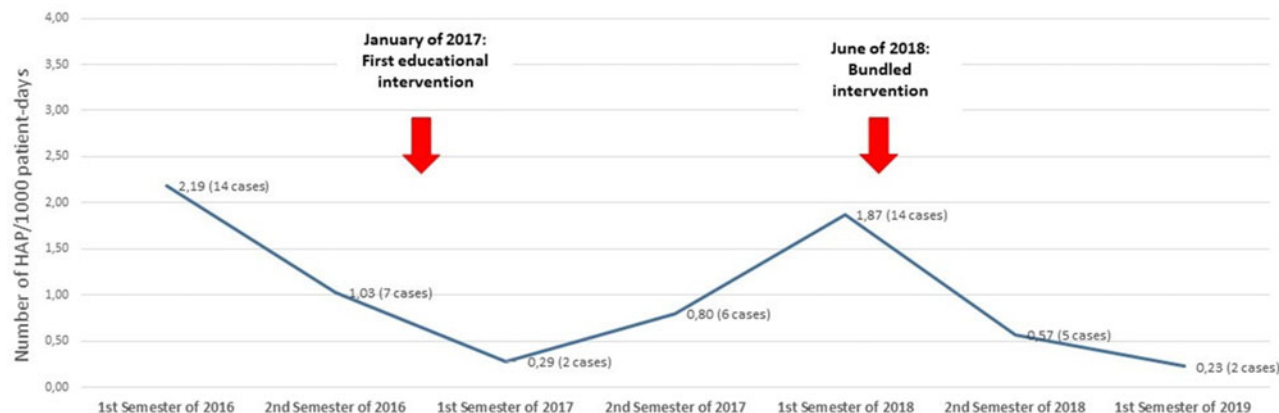


Fig. 1.

**Presentation Type:**

Poster Presentation

**A Survey of Antibiotic-Resistant Microorganisms in Hospital Sink Drains**

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**Background:** Handwashing sinks in healthcare environments are reservoirs for healthcare pathogens and antibiotic-resistant microorganisms (ARO). We investigated the distribution of HCP and ARO within and among handwashing sinks in healthcare settings. To do this, we determined the differences in the number of ARO between samples within a sink (biofilm vs planktonic samples), between sink types (healthcare worker [HCW] vs patient room sinks), and between hospitals in the same city. **Methods:** Tap water, sink surface, drain cover, tail pipe, p-trap water and p-trap samples were collected from 2 patient room sinks and 2 HCW sinks over 11 months in 2 acute-care hospitals. Suspected pathogens were isolated from selective media (Pseudosel, Chromagar KPC, and MacConkey with 2 mg/L cefotaxime) and identified via MALDI-ToF. Isolates confirmed to be healthcare pathogens were characterized via disk diffusion to determine their antibiotic susceptibility according to CLSI guidelines. Isolates not susceptible to carbapenems (meropenem or ertapenem) were tested further via the modified carbapenem inactivation method to detect carbapenemase production. **Results:** *Pseudomonas aeruginosa* and Enterobacteriaceae (*Enterobacter* spp, *Klebsiella* spp, and *Citrobacter* spp) were the most frequently isolated pathogens. Among these isolates (195 *P. aeruginosa* and 42 Enterobacteriaceae isolates), 28.5% of *P. aeruginosa* and 85.7% of Enterobacteriaceae were nonsusceptible to 1 or more of the antibiotics tested. Of the isolates that were nonsusceptible to a carbapenem (46 of 237; 19%), none displayed phenotypic carbapenemase production. Other mechanisms of resistance have not been confirmed. There was no significant difference in the percentage of nonsusceptible HCP isolated from biofilm samples (from p-trap and tail pipe) compared to planktonic (p-trap water) samples ( $P > .05$  for *P. aeruginosa* and Enterobacteriaceae). A

greater percentage of resistant or intermediate isolates was recovered from patient room sinks than from HCW sinks ( $P < .05$ ) for both *P. aeruginosa* and Enterobacteriaceae isolates (76.4 vs 32.9% for Enterobacteriaceae, 25.6 vs 0.3% for *P. aeruginosa*). We detected no significant difference in percentage of nonsusceptible isolates between the 2 hospitals sampled ( $P > .05$ ). **Conclusions:** This survey of healthcare sinks supports previous work citing that they are reservoirs for HCP and ARO. This work further examines the distribution of HCP and ARO within and among sinks in these environments. Our findings thus far in the 2 hospitals studied reveal a higher percentage of ARO in patient sinks than in HCW sinks. This finding may suggest a higher input of ARO from patient use or greater selective pressure in patient room sinks.

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**Achieving a Sustained Decrease in Facility-wide *C. difficile* Incidence in an Acute-Care Hospital in New York City**

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**Background:** Mount Sinai Beth Israel is a 350-bed, acute-care hospital located on Manhattan's Lower East Side. In 2014, the hospital had reached a high (9.8 cases per 10,000 patient days) hospital-onset (HO) *C. difficile* rate. By 2015, this rate had decreased to 5.6 cases per 10,000 patient days because of compliance with established *C. difficile* bundle practices performed by nursing and environmental services. Despite these interventions, HO *C. difficile* events continued to occur. We realized that more had to be done to gain control over our rates. To determine areas for further improvement, infection prevention held an RCA meeting for every positive hospital-onset result. We discovered from these RCAs that many *C. difficile* tests were ordered without a valid indication. We believed that measures