aeruginosa group, all 12 patients had *P. aeruginosa* detectable by 16S sequencing, with elevated admission *P. aeruginosa* proportional abundance (median, 0.97; IQR, 0.33–1). Among the suspected *P. aeruginosa* group, all 22 patients had *P. aeruginosa* detectable by 16S sequencing, with a wide range of admission *P. aeruginosa* proportional abundance (median, 0.0088; IQR, 0.00012–0.31). Of the 49 patients in the unknown group, 47 also had detectable respiratory *Psa*, and many had high *P. aeruginosa* proportional abundance at admission (median, 0.014; IQR, 0.00025–0.52). Incident *P. aeruginosa* VAP was observed within 30 days in 4 of the known *P. aeruginosa* patients (33.3%), 5 of the suspected *P. aeruginosa* patients (22.7%), and 8 of the unknown *P. aeruginosa* patients (16.3%). VAE was observed within 30 days in 1 of the known *P. aeruginosa* patients (8.3%), 2 of the suspected *P. aeruginosa* patients (9.1%), and 1 of the unknown *P. aeruginosa* patients (2%). Admission *P. aeruginosa* abundance was positively associated with VAP and VAE risk in all groups, but the association only achieved statistical significance in the unknown group (type S error <0.002 for 30-day VAP and <0.011 for 30-day VAE). **Conclusions:** We identified a high prevalence of unrecognized respiratory *P. aeruginosa* colonization among patients admitted to LTACH for weaning from mechanical ventilation. The admission *P. aeruginosa* proportional abundance was strongly associated with increased risk of incident *P. aeruginosa* VAP among these patients.

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Poster Presentation

Impact of Each Component of a Ventilator Bundle on Preventing Ventilator-Associated Pneumonia and Lower Respiratory Infection

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Background: Ventilator-associated lower respiratory infections (LRIs) and pneumonia (VAP) are important healthcare-associated infections and are among the leading causes of death worldwide. Prevention of these infections are often based on care bundles. We investigated the incidence of VAP+LRI and the preventive efficacy of each component of our ventilator bundle. **Methods:** Our ventilator bundle includes 6 components that are daily checked by an infection control practitioner. These 6 evidence-based practices were implemented in 3 ICUs from a general tertiary-care private hospital in Belo Horizonte City (Brazil): (1) daily oral care with chlorhexidine; (2) elevate the head of the bed to between 30° and 45°; (3) avoid scheduled ventilator circuit change; (4) monitor cuff pressure; (5) use subglottic secretion drainage; and (6) daily "sedation interruption" and daily assessment of readiness to extubate. VAP and ventilator-LRI definitions were obtained from the CDC NHSN. The impact of adherence rate to items in the ventilator bundle (%) on the incidence rate of VAP+LRI was assessed using linear regression and scatterplot analyses. **Results:** Between January 2018 and April 2019, 1,888 ventilator days were observed in the 3 ICUs, with 42 VAP and LRI events, an overall incidence rate of 22.2 cases per 1,000 ventilator days. After September 2018, the infection control service started a campaign to increase the ventilator bundle compliance (Fig. 1). Adherence rates to all 6 bundle components increased between January–August 2018 and September 2018–April 2019 from 25% to 55% for daily oral care, from 34% to 79% for elevating the head of the bed, 28% to 86% for avoiding scheduled ventilator circuit change, from 32% to 83% for cuff pressure monitoring, from 32% to 83% for subglottic secretion drainage, and from 33% to 85% for daily sedation interruption. PAV and LRI incidence decreased from

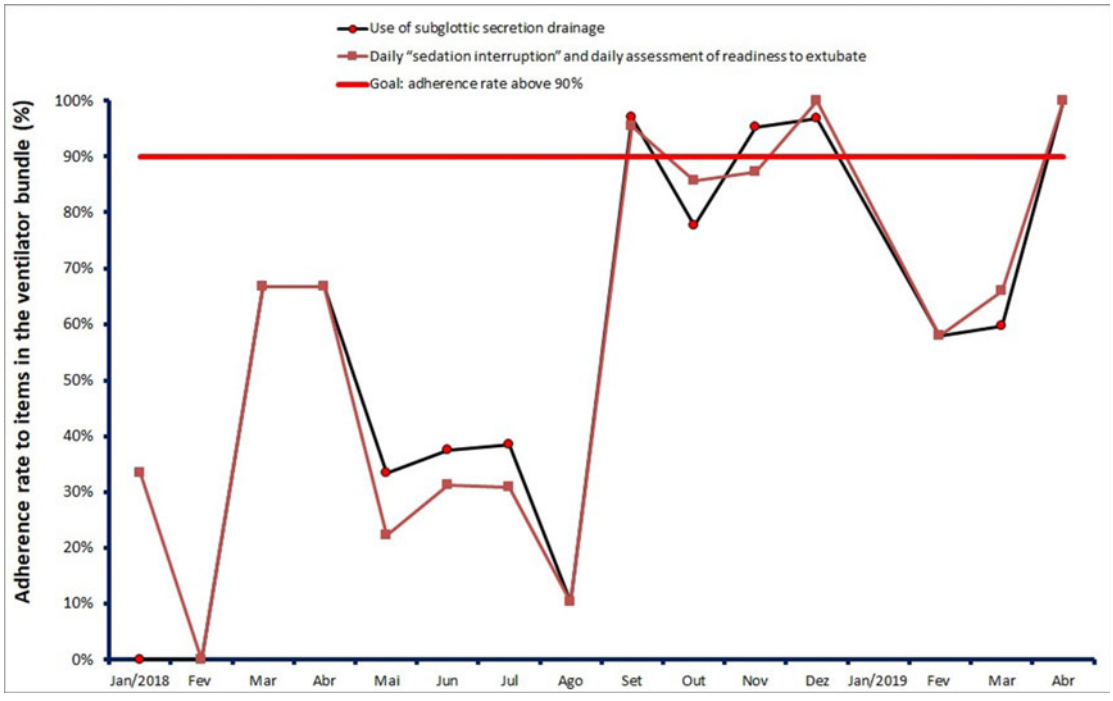

Fig. 1.

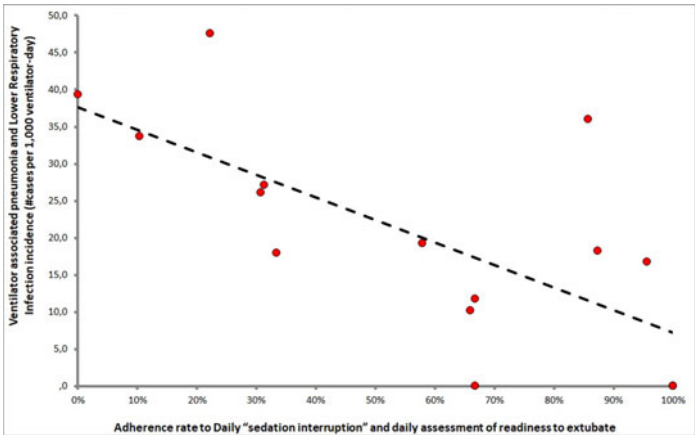

Fig. 2.

41 to 16 in ICU A, from 22 to 14 in ICU B and from 24 to 18 in ICU C. The impact of each bundle component was identified by linear regression, calculating the percentage of PAV+LRI incidence rate that is "explained" by bundle item adherence (r^2) and correlation coefficient (r): daily "sedation interruption" ($r^2 = 48\%$; $r = -0.69$; $P = .004$) (Fig. 2), cuff pressure monitorization ($r^2 = 0.3721$; $r = -0.61$; $P = .016$), subglottic secretion drainage ($r^2 = 36\%$; $r = -0.60$; $P = .017$), avoidance of scheduled ventilator circuit change ($r^2 = 34\%$; $r = -0.58$; $P = .023$), daily oral care ($r^2 = 25\%$; $r = -0.50$; $P = .050$), and elevate the head of the bed ($r^2 = 25\%$; $r = -0.48$; $P = .067$). **Conclusions:** The impact of each bundle component on preventing PAV+LRI was identified by the study. An educational intervention performed by the infection control service increased the adherence to the ventilator bundle, and the PAV and LRI incidence decreased.

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Impact of Expansion of Vascular Access Team on Central-line–Associated Bloodstream Infections

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Background: Through participation in a system-wide healthcare-associated infection-reduction task force, we leveraged our ability to standardize best practices across hospitals in a university-owned healthcare system to reduce central-line–associated bloodstream infection (CLABSI) rates. **Methods:** Our multidisciplinary team had representation from all hospitals in our healthcare system. The team benchmarked practices in place and compared CLABSI standardized infection ratios (SIRs). One hospital had a robust vascular access team (VAT) and consistently low CLABSI SIRs; expanding and standardizing VAT across the hospitals in the system became the primary goal of the team. We developed a business case to justify VAT expansion that considered savings from decreasing CLABSIs and benefits to interventional radiology revenue by decreasing PICC insertion and comparing costs for added full-time equivalents (FTEs). CLABSI rates before and after VAT team expansion at 2 large hospitals were compared to the hospital with existing robust VAT. Other process improvement activities were implemented across all hospitals. The expanded VAT assumed responsibility for central-line maintenance, promoted removal of unneeded lines, expanded education efforts, and enhanced capacity for insertions. **Results:** The VAT expansion from 5.4 FTEs to 15.9 FTEs at 2 large hospitals (1,100 total beds) began in April 2017 and was phased over ~6 months. CLABSI SIRs for the 15 months preceding expansion were compared to the SIRs for the 15-month period after expansion for the 2 hospitals with expanded VAT (hospitals A and B) and for hospital C with preexisting robust VAT (Table 1). We observed a 33% decrease in PICC insertions in interventional radiology department in hospitals A and B. Overall return on investment (ROI) estimates using lower and upper cost per CLABSI ranged from a loss of $156,000 to a net gain of $623,000. **Conclusions:** A significant decrease in CLABSI rates temporally related to expansion of VAT occurred in 2 hospitals, whereas the hospital with existing robust VAT demonstrated a modest decrease in CLABSI rates. We were able to demonstrate a favorable ROI from the VAT expansion without an impact on HAC penalties. Using the model of standardizing best practices across a system and creative ROIs may help justify the addition of scarce resources.

	SIR Pre-expansion 1/2016–3/2017	SIR Post-expansion 1/2018-3/2019	Difference	p-value
Hospital A	1.33	0.56	↓58%	0.003
Hospital B	1.34	0.79	↓41%	0.005
Hospital C*	0.74	0.60	↓19%	0.68

* no VAT expansion

Fig. 1.

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Impact of FilmArray Pneumonia Panel on Early Targeted Antibiotic Therapy

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Background: Patients with pneumonia are frequently recipients of broad-spectrum antibiotics while awaiting maturation