

monitoring within 1 month of starting the study. However, the mean time required to implement direct observation of hand hygiene practices was 24.7 ( $\pm 19.1$ ) months. There was a significant increase in ABHR consumption in large and middle-to-small-scale acute-care facilities ( $P < .0001$ ) after implementing the direct observation. However, there was not a significant increase for ABHR consumption in non-acute-care facilities ( $P = .14$ ). Multivariable regression analysis showed that the hospital ward type, duration of ABHR consumption monitoring, and duration of direct observation of hand hygiene practices were independently associated with ABHR consumption. **Conclusions:** ABHR consumption increased in all facilities that implemented direct observation, but the change was not statistically significant in non-acute-care facilities. The generalized linear mixed model analysis showed significant associations between ABHR consumption and hospital ward type and time to monitoring of ABHR consumption and direct observation of hand hygiene practices. Direct observation of hand hygiene practices should be implemented more widely. The effect of intervention intensity should be evaluated in future studies.

**Disclosures:** None

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#### Presentation Type:

Poster Presentation - Poster Presentation

**Subject Category:** Implementation Science

**Factors associated with high influenza vaccination among healthcare workers in Tennessee acute-care hospitals, 2014–2022**

Ashley Gambrell; Raquel Villegas; Christopher Wilson and Simone Godwin

**Background:** Healthcare workers (HCWs) are at increased risk of influenza exposure and represent a potential transmission source. The Department of Health and Human Services (HHS) set a goal for 2020 to have 90% of all HCWs in acute-care hospitals (ACHs) vaccinated. Vaccination against influenza decreases symptomatic illness and absenteeism and protects HCWs and their contacts. We assessed characteristics of facility intervention programs based on their success in meeting this benchmark. **Methods:** Data from the NHSN were utilized, including answers to the Annual Flu Survey for 2014–2022 and the rate of vaccine compliance by facility. Flu surveys detail facility-specific programs implemented for each influenza season, from October to March. We used SAS version 9.4 software for univariate analyses to determine factors significantly associated with meeting the HHS benchmark target of  $\geq 90\%$  vaccination among all HCWs, split into categories for employees, students or volunteers, and licensed independent practitioners. Facilities were excluded if they were not ACHs or Critical Access Hospitals (CAH), did not complete the Annual Flu Survey for at least 1 year, or required vaccination as a condition of employment. **Results:** From 2014 to 2022, 745 surveys were completed. Overall, 48.58% of respondents succeeded in meeting the HHS benchmark. Also, 306 surveys completed noted that their facility did not require influenza vaccination. Among those, only 19.93% respondents succeeded. Moreover, 80.33% of successful respondents for all HCWs required personal protective equipment (PPE) upon vaccination refusal compared to 34.29% of unsuccessful respondents ( $P < .0001$ ). Furthermore, 98.36% successful respondents required documentation of offsite vaccination, compared to 89.39% of unsuccessful respondents ( $P = .027$ ). For employees, 64.56% of successful respondents tracked vaccination rates in some or all units compared to 45.81% of unsuccessful respondents ( $P = .004$ ). Also, 63.29% successful respondents had visible vaccination of leadership, compared to 43.61% of unsuccessful respondents ( $P = .003$ ). Furthermore, 86.08% of successful respondents had mobile vaccination carts, compared to 73.57% unsuccessful respondents

( $P = .023$ ). For the student- or volunteer-specific benchmark, 24.59% of successful respondents provided vaccination incentives compared to 14.63% of unsuccessful respondents ( $P = .035$ ). **Conclusions:** Facilities with  $\geq 90\%$  vaccination among HCWs were more likely to require PPE after vaccination refusal and documentation for offsite vaccination. Other strategies for vaccination were differentially associated by employee type for Tennessee facilities. For future outreach, a multipronged approach is more likely to be successful in addressing vaccine uptake among employees with lagging rates. Strategies for influenza vaccine uptake could also improve other occupational vaccinations. More research is needed on the barriers to vaccination among HCWs specifically.

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#### Presentation Type:

Poster Presentation - Poster Presentation

**Subject Category:** Implementation Science

**Exploring the relationship between the reduction of floor microbial burden and the impact on healthcare-associated infections**

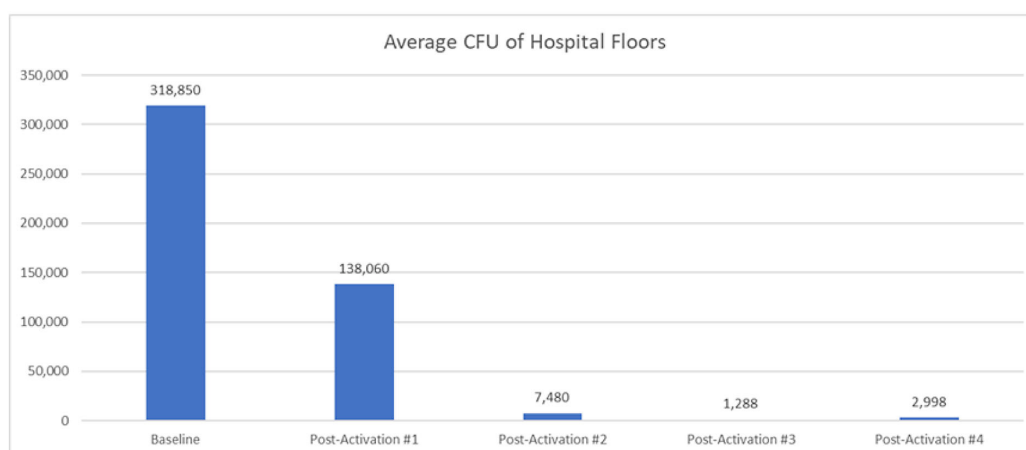
Caitlin Crews-Stowe; Elizabeth Lambert; Lori Berthelot and Katherine Baumgarten

**Background:** Healthcare floors are a vehicle and/or source for potential pathogens that cause healthcare associated infections, and hospital floors are often heavily contaminated with pathogens such as *Clostridioides difficile* and methicillin-resistant *Staphylococcus aureus*. However, definitive research linking reductions in floor burden to reductions in HAIs has not yet been established. We sought to evaluate emerging technology for continuous disinfection and its potential impact on HAIs. This study was designed to explore the potential relationship between the reduction of microbial burden of floors and healthcare associated infections. **Methods:** A prospective study was conducted in a 22-bed medical-surgical intensive care unit in a 180-bed suburban hospital near New Orleans, Louisiana, from November 2021 to June 2022. Using sterile, premoistened sponges, samples were collected from the floors of 10 areas throughout the unit including 2 nurses' stations, the physician charting area, and 7 patient rooms. The advanced photocatalytic oxidation (aPCO) equipment was then installed in the HVAC ductwork throughout the ICU and activated. Environmental surface sampling of the same floor surfaces was then repeated every 4 weeks for the first 5 months of the study. HAIs were also tracked throughout the entire study period. The facility's normal cleaning floor protocols using a neutralizing floor cleaner were unchanged and followed during the study. Changes in surface burden were calculated using a repeated-methods ANOVA with post hoc analyses as appropriate. Rates of healthcare associated infections were compared using  $\chi^2$  analyses. **Results:** Overall, there was a 99.6% statistically significant decrease in floor environmental surface burden from the baseline to the final postactivation test (Fig. 1). The average colony forming unit count (CFU) decreased from 318,850 CFU per 100 cm<sup>2</sup> to just 2,988 CFU per 100 cm<sup>2</sup>. The unit also saw a statistically significant decrease in publicly reported healthcare associated infections (HO-MRSA, CLABSI, HO-CDI) during the study period compared to the same period a year prior and in the 6 months immediately prior to the beginning of the study (Fig. 2). **Conclusions:** Advanced photocatalytic oxidation technology resulted in a reduction of microbial burden on the floors of a high-traffic intensive care unit. Statistically significant decreases in healthcare-associated infections was also seen. This study highlights a novel aPCO technology and its efficacy at reducing microbial burden and healthcare-associated infections despite no change in practice.

**Disclosures:** None

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	Baseline Periods			Study Period							
	11/2019 - 02/2020	11/2020 - 02/2021	05/2021 - 10/2021	21-Dec	Jan - 22	22-Feb	22-Mar	22-Apr	22-May	22-Jun	Total Trial Period
Patient Days	1,368	1,676	2,891	459	567	464	382	406	392	353	3,023
MRSA Infections	1	8	8	0	0	0	0	0	0	0	0
MRSA Infection Rate	0.08	0.67	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. diff Infections	1	5	4	0	0	0	0	0	0	0	0
C. diff Infection Rates	0.09	0.46	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CLABSI Infections	0	0	2	0	0	0	0	0	0	0	0
CLABSI Infection Rate	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Presentation Type:**

Poster Presentation - Poster Presentation

**Subject Category:** Implementation Science**Comparison of a standard environmental surface sampling method and a composite approach for select healthcare pathogens**

Monica Chan; Judith Noble-Wang and Laura Rose

**Background:** Hospital surfaces are known to contribute to the spread of healthcare-associated infections (HAIs). Environmental sampling is often performed to locate a reservoir or to evaluate intervention strategies in healthcare facilities. Composite sampling is commonly practiced in other fields of environmental sampling and involves collection of multiple samples combined entirely or partially to form a new sample. We compared a standard CDC surface whole-tool sampling method with a composite sampling approach. **Methods:** *Acinetobacter baumannii* (AB), *Klebsiella pneumoniae* that produce *K. pneumoniae* carbapenemase (KPC), vancomycin-resistant *Enterococcus faecalis* (VRE), methicillin-resistant *Staphylococcus aureus* (MRSA), and *Clostridioides difficile* spores were suspended in an artificial soil and deposited as 40  $\mu$ L droplets (~104 CFU total) onto steel coupons of surface areas 323 cm<sup>2</sup>, 645 cm<sup>2</sup>, or 1,290 cm<sup>2</sup> and dried for 2 hours. The surfaces were sampled with a single pass of a cellulose sponge—either the larger side of the sponge (face) or the smaller side of the sponge (edge)—and the optimal surface area was determined. Recovery from the optimal surface area with a single pass sampling was compared to the recovery using a standard CDC method in which all sides were used (ie, whole-tool method) to sample a standard area (645 cm<sup>2</sup>). Recovery was determined by culture and total CFU were determined for each optimal surface area. Theoretical composites were constructed using the mean total CFU of optimal surface area;  $2 \times ((\text{face}) + (\text{edge}))$ . Significance was set at  $P \leq .05$ . **Results:** Total CFU recovery using the whole-tool method was significantly greater than the single pass sample recovery for MRSA (18,300 vs 16,600 CFU) and VRE (27,600 vs 26,400 CFU) ( $P < .05$ ). When comparing the theoretical composite method to the standard whole-tool area (625 cm<sup>2</sup>), the theoretical composite total CFU was significantly greater than the whole-tool method for all organisms. For example, VRE recovery with the standard CDC whole-tool method was 27,600 CFU from 625 cm<sup>2</sup>, yet a

theoretical composite approach recovered 79,800 CFU from an area of 1,290 cm<sup>2</sup>. **Conclusions:** Many factors influence recovery when sampling the environment, and composite sampling is a promising approach when sampling large surface areas. Using a theoretical composite of single-pass samples, the potential for improved detection with composite sampling was demonstrated. A composite sampling approach will reduce time and resources for sampling and sample processing, allowing larger surface areas to be investigated which will improve infection control strategies.

**Disclosures:** None

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**Presentation Type:**

Poster Presentation - Poster Presentation

**Subject Category:** Infection prevention and control perspective and practices among healthcare workers in Bangladesh: A multicenter cross section

Md. Golam Dostogir Harun; Shariful Amin Sumon; Aninda Rahman; Md Mahabub Ul Anwar and Md. Saiful Islam

**Background:** Infection prevention and control (IPC) is a critical feature of preventing the spread of healthcare-associated infections (HAIs) in hospitals. IPC practices are particularly important in resource-constrained and crowded hospital settings. The successful implementation of infection prevention measures depends on healthcare worker (HCW) knowledge of, attitude toward, and practice (KAP) of IPC. In this project, we assessed the KAP of HCWs and identified factors associated with IPC compliance at tertiary-care hospitals in Bangladesh. **Methods:** From September 2020 to January 2021, we conducted this hospital-based cross-sectional assessment at 11 tertiary-care hospitals. A semistructured questionnaire was used to conduct face-to-face interviews with physicians, nurses, and cleaning staff who were directly involved in patient care. Based on >75% of the total score, each KAP component was divided into adequate knowledge, favorable attitude, and safe practice. We performed descriptive analysis and multivariate logistic regression to determine the KAP score and associated