



OR was 2.77 (95% CI, 1.22–6.32) (Fig. 1). The OR of MRSA hand contamination in the partially dependent category was 1.38 (95% CI, 0.27–7.07) compared to the independent group, and for any MDRO the OR was 0.86 (95% CI, 0.24–3.10) (Fig. 1). Feeding dependence had the highest single association with hand contamination (OR, 3.79, 95% CI, 1.26–11.43), with dressing dependence having the second highest association with hand contamination (OR, 2.82; 95% CI, 1.31–6.05) (Fig. 2). **Conclusions:** Patients with more functional dependencies were more likely to have MDRO hand contamination. This finding suggests a need for targeted PHH interventions in patients with functional disabilities to help prevent the spread of MDROs in the acute-care setting.

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Presentation Type:

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Subject Category: Hand Hygiene

Addressing frontline healthcare worker perspectives on hand-hygiene monitoring badges

Tucker Smith; Olivia Hess; Rachel Pryor; Michelle Doll and Gonzalo Bearman

Background: Hand-hygiene technology (HHT) intends to monitor and promote hand washing by healthcare workers, a critical measure of infection control. Healthcare worker noncompliance with HHT is a major limitation to its implementation and utility in clinical settings. We assessed perspectives on HHT in an academic hospital system. **Methods:** Hand-hygiene team members created an anonymous, 37-question, Likert-scale survey to assess healthcare worker attitudes toward HHT. Surveys targeted nursing staff, advanced practice providers, care partners, and internal medicine physicians. Clinical coordinators from 5 distinct nursing units and 1 physician department emailed surveys to eligible employees. Research coordinators and clinical coordinators also posted a QR code for survey fliers at nursing stations. **Results:** Overall, 120 surveys were completed. Most surveys were completed by nurses and physicians (66.4% and 14.0%). Most respondents (67.5%) do not find HHT useful. Additionally, 78.3% of respondents believe that HHT does not accurately record hand-washing events. Most (78.3%) do not like using HHT, and 75.8% find it annoying. Only 10.8% believe that patient care suffers because of HHT. **Conclusions:** Most healthcare workers dislike the HHT badges, primarily due to perceived inaccuracies, lack of utility, burden of use, and pressure to comply. Distrust and effect on patient care do not appear to be substantial factors contributing to negative perceptions of HHT. Weaknesses of the study include overrepresentation of nursing staff and

Table 1. Survey Responses

Question	Responses		
	Agree	Disagree	Neither agree nor disagree
1. I find HHT useful in my job	13% (16/120)	67% (81/120)	20% (24/120)
2. I belong to a socially cohesive team, capable of holding one another accountable for proper hand hygiene regardless of HHT use.	80% (96/120)	13% (16/120)	8% (9/120)
3. The HHT adequately records hand-washing events within their necessary clinical context (i.e. before and after a patient encounter)	10% (12/120)	78% (94/120)	12% (12/120)
4. Patient care in my unit suffers because of HHT use	11% (13/120)	52% (62/120)	38% (46/120)
5. I like using HHT	8% (10/120)	78% (94/120)	14% (17/120)
6. HHT annoys me	76% (91/120)	10% (12/120)	15% (18/120)
7. I have felt pressured to utilize HHT devices	57% (68/120)	25% (30/120)	19% (23/120)
8. I can trust the HHT	11% (13/120)	24% (28/120)	65% (78/120)
9. I can trust those who utilize and interpret HHT data (i.e. the infection prevention team and hospital epidemiologists)	42% (50/120)	28% (33/120)	32% (38/120)
10. I am worried that someone may use the HHT data against me.	38% (46/120)	17% (20/120)	46% (55/120)

potential bias because respondents may have provided exceptionally negative responses believing it could lead to the removal of HHT.

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Longitudinal effects of direct observation of hand hygiene practices and monitoring of alcohol-based handrub consumption

Retsu Fujita; Rika Yoshida and Satoshi Hori

Background: In healthcare facilities, hand hygiene is important for infection control. The WHO recommends monitoring the consumption of alcohol-based handrub (ABHR) and direct observation of hand hygiene practices to ensure compliance with hand hygiene practices. Monitoring of ABHR is widely used, but direct observation is not widely performed, particularly in small facilities and non-acute-care facilities. We evaluated the effects of direct observation of hand hygiene practices and monitoring of ABHR consumption, with feedback to staff, on ABHR consumption and hand hygiene compliance. **Methods:** We conducted a prospective intervention study over a 4-year period. Monitoring of ABHR consumption and direct observation of hand hygiene practices, with periodic feedback to staff, was implemented in 17 facilities of varying types: 5 large-scale acute-care facilities, 6 middle-to-small-scale acute-care facilities, and 6 non-acute-care facilities. Statistics for ABHR consumption were calculated before and after the implementation of direct observation of hand hygiene practices, and the change in ABHR consumption was calculated. The paired *t* test was used to assess the statistical significance of changes. A generalized linear mixed model analysis was performed to assess factors associated with ABHR consumption. **Results:** The total observation time was 1,225 months (625 months before direct observation, 600 months after direct observation), and the average observation time per facility was 36.0 months (\pm 27.5). All facilities implemented ABHR consumption

monitoring within 1 month of starting the study. However, the mean time required to implement direct observation of hand hygiene practices was 24.7 (± 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.

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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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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 χ^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 cm² to just 2,988 CFU per 100 cm². 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.

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