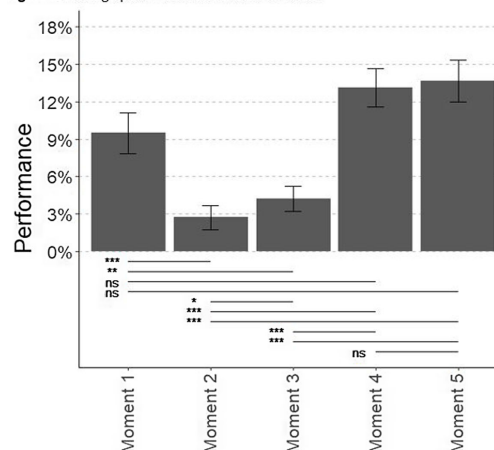


	qPCR Positive N(%)	Culture Positive
Overall	44 (53)	0 (0)
Air (N=24)	4 (17)	7 (29)
Bathroom Floor (N=15)	10 (67)	4 (27)
Bed Rails (N=15)	10 (67)	4 (27)
HVAC Export (N=24)	16 (67)	20 (83)
Clean Linen Storage (N=3)	2 (67)	2 (67)
Soiled Linen Storage (N=3)	2 (67)	2 (67)
Respiratory/Medical ICU		
Air (N=8)	2 (25)	0 (0)
Bathroom Floor (N=5)	4 (80)	2 (40)
Bed Rails (N=5)	3 (60)	0 (0)
HVAC Export (N=8)	5 (63)	7 (88)
Clean Linen Storage (N=1)	1 (1)	0 (0)
Soiled Linen Storage (N=1)	0 (0)	1 (100)
Neurological ICU		
Air (N=8)	2 (25)	0 (0)
Bathroom Floor (N=5)	2 (40)	2 (40)
Bed Rails (N=5)	4 (80)	2 (40)
HVAC Export (N=8)	5 (63)	5 (63)
Clean Linen Storage (N=1)	1 (1)	0 (0)
Soiled Linen Storage (N=1)	0 (0)	0 (0)
Heme/Oncology		
Air (N=8)	0 (0)	0 (0)
Bathroom Floor (N=5)	4 (80)	3 (60)
Bed Rails (N=5)	3 (60)	2 (40)
HVAC Export (N=8)	6 (75)	8 (100)
Clean Linen Storage (N=1)	0 (0)	1 (100)
Soiled Linen Storage (N=1)	1 (100)	1 (100)

Figure 1. Average performance of the 5 moments.



Note. The black horizontal lines below the bars represent the pairwise comparisons between moments with the asterisks reflecting statistical significance. n.s. = not significant ($p > .05$). * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1. Linear regression coefficients and confident intervals for transmission outcomes and hand hygiene performance.

	Moment 1 Performance		Moment 2 Performance		Moment 3 Performance		Moment 4 Performance		Moment 5 Performance	
	B	95% CI	B	95% CI	B	95% CI	B	95% CI	B	95% CI
Nurse Contamination	-0.01	-0.04 – 0.03	-0.02	-0.06 – 0.05	-0.004	-0.07 – 0.04	0.04	-0.02 – 0.13	-0.02	-0.09 – 0.03
Patient Critical Site(s)	0.03	-0.01 – 0.06	-0.03	-0.06 – -0.01	-0.001	-0.04 – 0.05	0.02	-0.04 – 0.07	-0.02	-0.07 – 0.03
High Touch Between Room	0.01	-0.03 – 0.04	-0.01	-0.06 – 0.08	0.01	-0.05 – 0.08	0.01	-0.06 – 0.06	-0.03	-0.08 – 0.03
High Touch Within Room	-0.01	-0.07 – 0.07	-0.02	-0.09 – 0.05	0.02	-0.08 – 0.09	-0.03	-0.12 – 0.06	0.01	-0.06 – 0.08

species in both air and surface samples across inpatient units. Higher sensitivity was noted utilizing qPCR, however, identified genera and species were markedly different between qPCR and culture methods. Larger studies are needed to assess the efficacy of qPCR for fungal detection in the healthcare environment.

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Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Hand Hygiene

Connecting Pathogen Transmission and Performance of the WHO's 'My 5 Moments of Hand Hygiene' in a High-Fidelity Simulation

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Background: The World Health Organization launched 'Your 5 moments for hand hygiene' to identify when healthcare workers should perform hand hygiene to reduce healthcare-associated infections (HAIs). Performing hand hygiene correctly is necessary to decrease pathogen transfer, though little research has assessed the effectiveness of all 5 moments. **Methods:** Registered nurses (n=42) participated in a

standardized, one-hour high-fidelity patient care simulation that were recorded via a head-mounted camera. The simulation involved two patients, each requiring four clinical care tasks (e.g., indwelling Foley catheter insertion, stool sample collection). Transmission data was obtained from the simulations using four genetic variants of bacteriophage λ . Before each simulation, variants were applied to unique locations on two manikins: patient A's wound, patient A's stool, patient B's groin, and patient B's stool. After each simulation, we sampled the patients, nurse, and high-touch environmental surfaces to determine bacteriophage identity of positive samples. For each moment, hand hygiene performance was the total time the nurse practiced hand hygiene across opportunities over the total recommended time (15 seconds per opportunity). Positive samples were categorized as 1) nurse contamination, 2) patient critical site(s) contamination, 3) high touch surface contamination from the same patient, or 4) high touch surface contamination from the other patient. To compare nurse's performance of each of the 5 moments, we used a Friedman test and then a Wilcoxon test for pairwise comparisons. To assess the relationship between the four types of transmission outcomes and hand hygiene performance of the 5 moments, we performed linear regressions and calculated 95% confidence intervals by bootstrapping the original cases. **Results:** Performance of moments 1 (Before patient contact: 9.49%), 4 (After patient contact: 13.11%), and 5 (After contact with patient's surroundings: 13.66%) were significantly higher than moments 2 (Before clean or aseptic task: 2.72%) and 3 (After bodily fluid exposure: 4.22%; $p < 0.05$). Moment 2 performance, furthermore, was significantly lower than moment 3 (Figure 1). Only moment 2's performance was significantly related to transmission; specifically, performance was negatively related to critical site contamination ($B = -0.03$, CI 95%: -0.06 – -0.01); Table 1. **Conclusions:** Moment 2 performance was the lowest of all 5 moments and was the only moment that demonstrated evidence of

relationship with pathogen transmission, specifically critical site contamination. Of all the 5 moments, this moment is most directly related to HAIs. Further research should investigate why moment 2 performance is so low.

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Subject Category: Hand Hygiene

Staff Perspectives on Barriers & Facilitators to Meeting Hand Hygiene Goals in a Multicenter Academic Hospital System

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Background: Proper hand hygiene is the most important practice to reduce the transmission of infections in healthcare settings. Despite this, healthcare institutions continue to struggle to achieve and maintain high rates of hand hygiene compliance among healthcare workers with some studies estimating national healthcare worker hand hygiene compliance to be approximately 50%. **Methods:** We conducted an anonymous one-time survey of our Lifespan Hospital System employees to evaluate barriers and facilitators to performing hand hygiene as well as interventions to improve hand hygiene compliance. The survey was designed with guidance from the Consolidated Framework for Implementation Research and input from Lifespan infection prevention staff. **Result:** Over four weeks 985 (6%) Lifespan employees completed the survey. Figure 1 shows the aggregate results of the first 4 survey questions which focused on hand hygiene infrastructure at Lifespan, including availability of sanitizer, staff to manage hand hygiene supplies, and educational materials/reminders. One significant finding was >70% of respondents reported that they either did not know if their unit/department has a person assigned to replace/monitor hand hygiene supplies, or if so, who that person is. We also asked

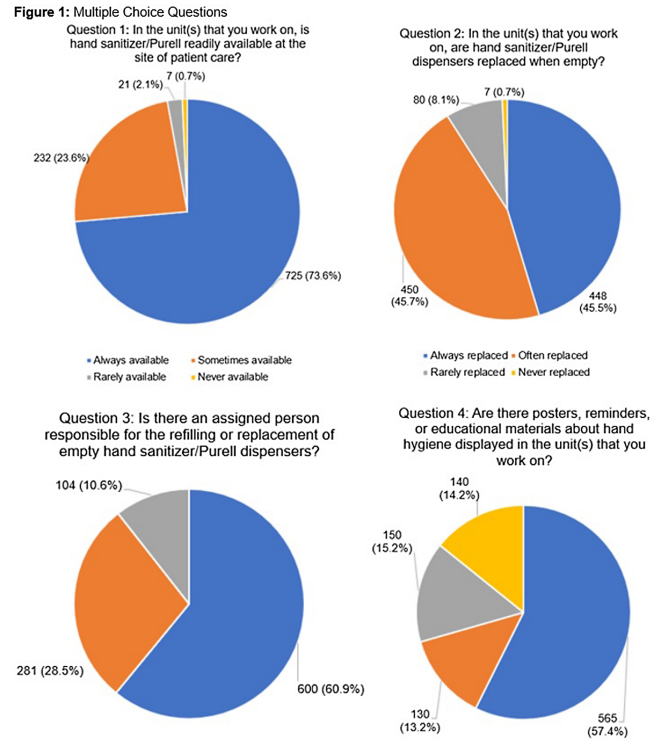
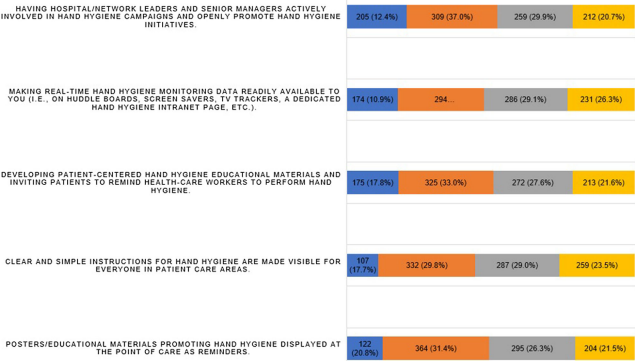


Figure 2: Perceived Effectiveness of Hand Hygiene Interventions



employees to rate how effective different interventions would be at improving hand hygiene compliance. Figure 2 shows of five proposed interventions, three were rated as either “moderately effective” or “very effective” by >50% of respondents. These included displaying hand hygiene instructions, making hand hygiene data available to employees, and displaying materials/reminders promoting hand hygiene. There were also 977 free-text responses regarding “barriers or facilitators to proper hand hygiene”. Major barriers identified were a lack of staff to monitor and refill supplies, slow replacement of hand hygiene products, lack of sanitizer dispensers and sinks, inconsistency of sink location and dispenser placement, lack of hand hygiene reminders/educational materials, time constraints, skin irritation from sanitizer, and an inability to have dispensers in behavioral health units. Survey responses led us to enhance the following: educational materials and reminders in work areas; staff education; leadership involvement in hand hygiene initiatives; routine auditing and feedback; conveniently placed sanitizer dispensers and sinks at the point of care; and making hand hygiene compliance data readily available to staff. **Conclusion:** This survey identifies important barriers and facilitators to achieving high rates of hand hygiene compliance among healthcare workers and provides the basis for interventions aimed at improving hand hygiene compliance in a large multicenter academic hospital system.

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Subject Category: Hand Hygiene

Improving Data Quality from a Hematology Unit Hand Hygiene Observation Program

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Background: For United States healthcare programs to be fully compliant with Joint Commission National Patient Safety Goal (NPSG) #7, organizations must implement and maintain a hand hygiene (HH) program that follows either the current Centers for Disease Control and Prevention (CDC) or the current World Health Organization (WHO) HH guidelines. Joint Commission standard IC.03.01.01 requires these organizations to provide metrics that evaluate the effectiveness of their program and program goals. Our center utilizes the direct observation method with the use of over 550 Hand Hygiene Observers (HHO) to collect our HH compliance. HHO are trained with a computer-based course that requires passing a post-education test. During fiscal year 2023 (FY23), Infection Control