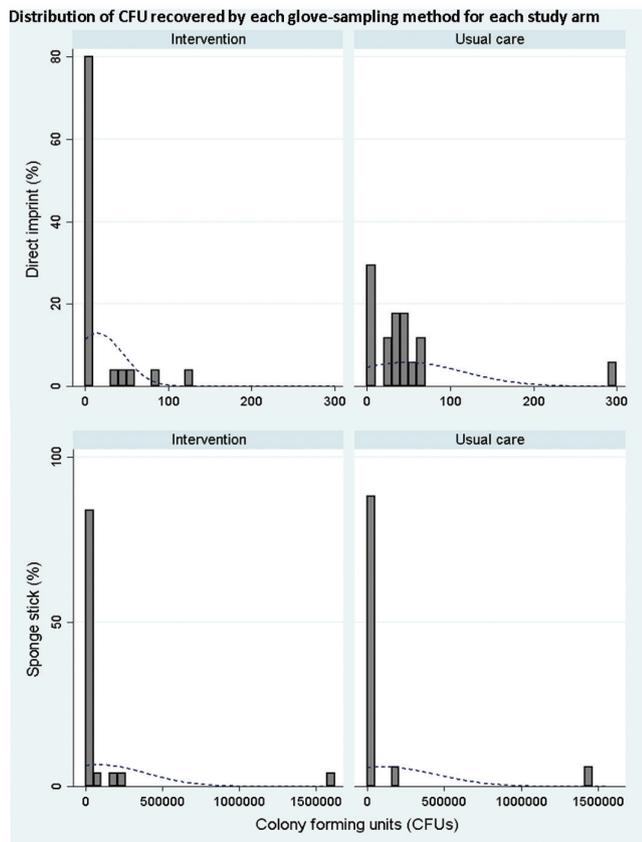


Figure 3.



**Disclosures.** A. D. Harris, CDC Epicenter Program: Grant Investigator, Grant recipient; K. A. Thom, AHRQ: Grant Investigator, Grant recipient

### 1332. An Appeal to Incorporate Hand Hygiene Education into Standard Elementary School Curriculum

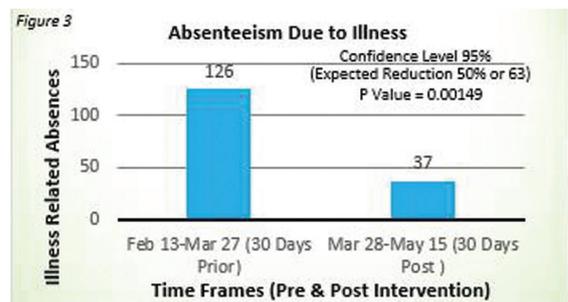
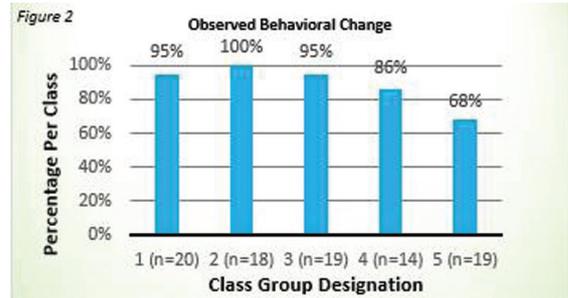
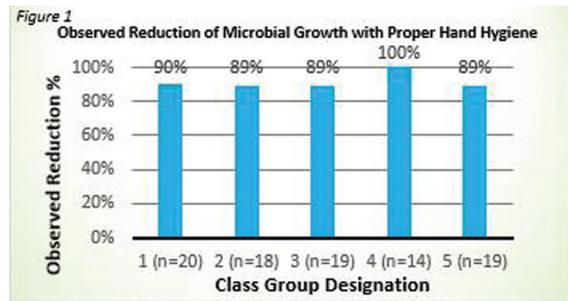
Jasmine Watson, BS, MPH<sup>1</sup>; Alexandria Owens, BS, CTBS<sup>1</sup>; Kavita Imrit-Thomas, DO<sup>1</sup>; Miranda Malone, BS<sup>1</sup>; Andy Tobias, AAS<sup>1</sup> and Lakshmi Goudar, MD<sup>2</sup>; <sup>1</sup>Lifenet Health, Virginia Beach, VA, <sup>2</sup>Sentara Medical Group, Virginia Beach, Virginia

**Session:** 151. HAI: Hand Hygiene  
Friday, October 6, 2017: 12:30 PM

**Background.** The Center for Disease Control and Prevention reports that 160 million school days are lost each year due to infectious illnesses. Hand hygiene is one of the most effective ways to prevent illness that can lead to absenteeism among school-aged children, yet few schools have a formal education program as a preventative strategy.

**Methods.** A Pilot Hand Hygiene experiment was initiated for 90 second grade students at a Virginia Beach Public School. The experiment was designed to bring awareness and to satisfy a scientific module requirement. Students cultured their hands on general purpose agar plates with the assistance of physicians and a microbiologist. The proper hand washing technique was demonstrated. Students were equally divided into two groups: hand washing group and sanitizer group. They were instructed to re-culture hands after intervention. Students observed cultures for five days and documented results.

**Results.** Overall, student observation of decreased microbial growth was an average of 91% (Figure 1). Education improved compliance, which resulted in a favorable behavioral change on average of 89% (Figure 2). There was a 71% decrease in incidence of illness-related absences 30 days after the hand hygiene intervention (Figure 3). In three out of five classes, hand sanitizer was more effective when compared with hand washing. In addition, a random sample of cultures were incubated in a microbiology lab to identify the common microbes among the second-grade elementary school population. It revealed both resident and transient flora. Post-intervention, there was a rise in coagulase-negative Staphylococci resident flora. This indicated a successful decrease in transient flora, which is most likely to cause illness.



**Conclusion.** Hand Hygiene education is remarkably beneficial, especially in children who are at greater risk of illness. It is clearly effective in decreasing infectious disease risk, while teaching a life-long skill. For the impact as a preventative strategy to be felt, its implementation into elementary school curriculum is warranted.

**Disclosures.** All authors: No reported disclosures.

### 1333. The Use of Instructional Technology to Increase Independent Patient Hand Hygiene Practice of Hospitalized Adults in an Acute Care Setting

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**Session:** 151. HAI: Hand Hygiene  
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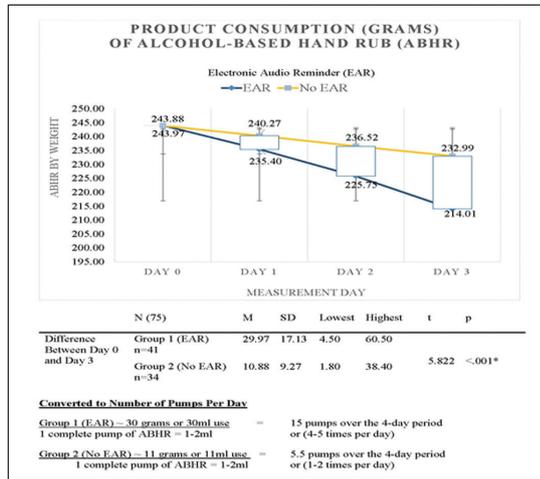
**Background.** Despite recognition that hospitalized patients carry pathogens on their hands and demonstrate poor hand hygiene practice, little attention has been given to interventions that increase hand hygiene practices. Studies that have attempted to improve patient hand hygiene practice lack sustainability due to dependability on healthcare staff, and no prior studies have tested ways to improve independent patient hand hygiene practice. One such approach is using a patient-centered multi-modal educational intervention and electronic voice-recorded reminder cue to promote self-management of hand hygiene.

**Methods.** This comparative effectiveness study tested two educationally-based approaches to improve patient hand hygiene in older adults hospitalized for 4 days for elective lower extremity orthopedic or podiatry surgery at a veterans' hospital. Group 1 ( $n = 41$ ) received an educational video, an educational handout and a voice-recorded electronic audio reminder (EAR) an active cue, which verbally reminded the participant to clean their hands 3 times a day (7am, 12 pm, 5pm). Group 2 ( $n = 34$ ) received the educational video and handout without the EAR. There were no significant differences between the two randomly assigned groups in terms of age, ethnicity and sex.

**Results.** Figure 1 shows the daily difference in product consumption Day 0 to Day 3. The average product consumption of ABHR (alcohol-based hand rub) in Group 1 (EAR) was 29.97 grams (SD 17.13). Group 2 (No EAR) averaged 10.88 grams (9.27) ( $P < 0.0001$ ). Comparing post-operative day (POD) 0 to POD 3, and controlling for covariates (Disability of Arm, Shoulder, and Hand [QuickDASH], Hand Grip Strength, Surgical Pain, MRSA in Nares, and Education), multivariate analyses indicated that the electronic audio reminder was a significant predictor ( $\beta = .468$ ) of ABHR consumption,  $R^2 = .39$ ,  $R^2_{adj} = .34$ ,  $F(6, 68) = 7.265$ ,  $P < .001$ .

**Conclusion.** This study demonstrated that a short educational intervention that included a video, a handout, and a verbal audio reminder has the potential to increase patient-centered infection prevention in the acute care settings without increasing the workload of healthcare workers. Findings can be used for future infection prevention studies in institutionalized patients to improve self-managed care.

Figure 1 Product Consumption Per Group



Disclosures. **All authors:** No reported disclosures.

### 1334. Hand hygiene: Knowledge and Practices of Clinical Teachers in Selected Teaching Hospitals in Kenya

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Session: 151. HAI: Hand Hygiene

Friday, October 6, 2017: 12:30 PM

**Background.** Healthcare-associated infections lead to substantial morbidity and mortality worldwide, and adequate hand hygiene (HH) in the clinical setting is essential for prevention. Clinical teachers are central to the training of healthcare workers (HCW) as they teach and model safe practices in the clinical environment. However, there is limited research on the knowledge and practices of clinical teachers related to HH in teaching hospitals, particularly in African settings. We describe the knowledge and practices of HH amongst clinical teachers in selected teaching hospitals in Kenya.

**Methods.** Data were collected through self-administered standardized questionnaires with basic demographic, knowledge and practices about HH from clinical teachers employed at two teaching hospitals. Participating clinical teachers were anonymously audited for HH practices using an adapted World Health Organization tool. The audits consisted of 20–30 minutes observations in each ward

**Results.** Among 57 participants overall, 42 (73.7%) were nurses, 8 (14.0%) clinicians, and 5 (8.8%) therapists. Twenty-one (36.8%) of the participants had knowledge regarding the minimum time needed to practice HH using alcohol based hand rub, 14 (24.6%) knew that hand washing and hand rubbing should be performed in sequence. The combined knowledge score for each individual ranged from 0% to 94.1% with a mean of 50.1% (SD=20.1, CI 95% 44.7- 55.4%). Hand hygiene compliance significantly varied by clinical instructor's type; nurses (42.7%) and therapists (38.0%) had the highest adherence and clinicians had the lowest 33.7% ( $P = 0.0001$ ).

**Conclusion.** Clinical teachers in this study demonstrated knowledge gaps and poor practices related to HH. Since they serve as role models for future generations of healthcare workers, clinical teachers must recognize the importance of HH in preventing hospital-acquired infections, including when and how HH should be performed while following recommended practices.

**Disclosures.** **All authors:** No reported disclosures.

### 1335. Painting the Gown Red: Using a Colored Paint Quality Improvement Process to Evaluate Healthcare Worker Personal Protective Equipment for Highly Pathogenic Infections

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Session: 151. HAI: Hand Hygiene

Friday, October 6, 2017: 12:30 PM

**Background.** Personal protective equipment (PPE) and strict infection control techniques are the primary methods by which healthcare workers (HCW) can avoid exposure during the treatment of patients with highly pathogenic infections such as Ebola Virus Disease (EVD) or the Middle East Respiratory Syndrome coronavirus (MERS-CoV). There is currently no consensus for the types of PPE that are recommended to be worn by HCWs, nor is there a universal process for the donning and doffing of PPE.

**Methods.** HCWs from Bellevue Hospital participate in quarterly PPE trainings as part of the Special Pathogens Program (SPP), which consist of didactic sessions as well as an evaluation of donning and doffing techniques. A total of 50 HCWs completed the training curriculum in 2017. During the doffing process, PPE trainers applied corn start powder paint (Chameleon Colors; American Fork, UT) to the participants' gloved hands between multiple steps of PPE removal. At the end of the process, the areas where paint was found on was documented including the outer surgical gown, the powered air purifying respirator (PAPR) helmet and shroud, the inner impermeable suit, the knee-high boots and boot covers, and the extended-cuff gloves.

**Results.** The areas of PPE that were most marked with paint were the lower shoulders and upper arms of the surgical gowns, the top sides of the PAPR shroud, the front upper chest area, and the center back of the inner impermeable suits. In a majority of cases no powder paint was noted on the knee-high boots. In a minority of cases, paint was observed on the inside upper chest area of the surgical gown. These paint markings were used to discuss potential breaches in PPE doffing technique in real-time, as well as identify areas to target in future PPE trainings.

**Conclusion.** The powdered paint quality improvement process for donning and doffing PPE is a method to evaluate the complex PPE dressing procedure. It is particularly useful given the fact that it is incumbent on each hospital or healthcare system to develop its own processes and procedures for PPE, as well as maintain readiness through periodic trainings. Powdered paint can identify vulnerabilities in their process as well as areas that require further education.

**Disclosures.** **All authors:** No reported disclosures.

### 1336. Patients' Family Empowering to Increase Hand Hygiene (HH) Compliance in Health-Care Workers (HCW) from a Hematology-Oncology Ward in Mexico City

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Session: 151. HAI: Hand Hygiene

Friday, October 6, 2017: 12:30 PM

**Background.** HH is a key component to decrease infections in hospitals, but compliance in HCW remains low. We present a six-month strategy to empower patients' caregivers on HCW HH compliance.

**Methods.** HH compliance in HCWs was evaluated between June 1 and August 31, 2017 as recommended by WHO. Between September 1, 2016 and March 31, 2017 we undertook the empowering in the hematology-oncology ward (50 beds) from Instituto Nacional de Cancerología, a cancer referral, teaching hospital in Mexico. To empower patients and their caregivers, a member of the team visited the patient and their relatives during the first 24h of hospital admission. Standardized information on HH and the importance of HCW compliance was given, along with a printed cartoon on HH opportunities (5 moments from WHO). Patients and their caregivers were trained to observe and record HH opportunities, an were invited to remind HCWs if HH omissions were observed. Data on HH compliance was collected monthly during the empowerment and 1 month after. Data was compared with the HH compliance from the 6 previous. We compared overall compliance and for each 5 HH moments before and after the empowering (chi<sup>2</sup> test).

**Results.** We empowered 82 caregivers (M: 25.6% and F: 74.4%), mean age 44 years. 24.4% had completed primary education, and 13.1% had higher education. Mothers and spouses were the primary caregivers (28.1% and 36.6%). HH compliance increased in all 5 moments: Before touching a patient (M1) (B: 9.5%, A: 57.6%,  $P = 0.005$ ); before a clean or aseptic procedure (M2) (B: 7.9%, A: 48%,  $P = 0.002$ ); after body fluid exposure (M3) (B: 10%, A: 59%,  $P = 0.0005$ ), after touching a patient (M4) (B: 7.4%, A: 57.9%,  $P = 0.0005$ ), and after touching patient surroundings (M5) (B: 2.4%, A: 77.4%,  $P = 0.0008$ ). Nurses achieved a higher increase on compliance compared with physicians. Caregivers recognition on HH increased for each opportunity, being more notorious for M2 (B:31.7%, A: 61.5%); M3 (B: 7.3%, A: 31.5%), and M4, (B: 36.5%, A: 68.7%). Perception on the importance of preventing health-care-related infections increased from 80.5% to 90.3%.

**Conclusion.** Empowering patients' primary caregivers was an effective intervention to increase HCWs HH compliance at a hematology-oncology ward. The effect of this intervention remains to be evaluated on the long-term basis, but demonstrate the importance of involving patients and their relatives on health-care delivery.

**Disclosures.** **All authors:** No reported disclosures.

### 1337. Performance of Zoster Vaccine Live (Zostavax): A Systematic Review of 12 years of Experimental and Observational Evidence

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Session: 152. Herpes Zoster Vaccine

Friday, October 6, 2017: 12:30 PM

**Background.** One in three people in the U.S. will develop herpes zoster during their life. Zoster Vaccine Live (ZVL or Zostavax™), has been licensed in the U.S. since 2006 to prevent herpes zoster. ZVL protection has been shown to wane with time and estimates of effect can be imprecise. We performed a systematic review of the duration of efficacy and effectiveness of ZVL against herpes zoster (HZ).

**Methods.** We systematically searched PubMed, Embase, Cochrane, and clinicaltrials.gov for vaccine efficacy or effectiveness (VE) studies of ZVL. Two authors independently screened each title and abstract, and potential VE studies were reviewed in-depth. Eligibility criteria included original data on ZVL prevention of HZ in a general population of