model showed that post-clean + PX-UV ABC counts for Soap and water were 8.6 times higher than post-clean ABC counts for sodium hypochlorite 10% solution, holding all other factors constant, \( P = 0.001 \). Post-clean ABC counts for QAC + UV were 6 times higher than post-clean ABC counts for sodium hypochlorite 10% solution, holding all other factors constant, \( P = 0.004 \). A Kruskal–Wallis test indicated there was no statistically significant difference in MRSA counts between cleaning chemicals at post-clean (\( P = 0.1563 \)) or post-clean + UV (\( P = 0.337 \)), indicating that the cleaning chemicals performed equally well at each stage. UV further statistically significantly lowered MRSA counts beyond the post-clean level only for the quaternary ammonium compound group (\( P = 0.0073 \)).

Conclusion. The addition of PX-UV significantly improves disinfection for soap and water, hydrogen peroxide, and quaternary ammonium compound, but not for sodium hypochlorite 10%. This improvement does not bring microbial levels to those seen when using sodium hypochlorite 10% alone.

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499. National Survey of Environmental Cleaning Among Thai Hospitals Anucha Apsurattharanak, MD;1 David Ratiz, MS;2 Sanjay Saint, MD, MPH;3 Thanha Khawcharoenporn, MD, MSc;2 David J. Weber, MD, MPH, FIDSA, FSHEA4 and M. Todd Greene, PhD, MPH;5 Department of Medicine, Faculty of Medicine, Thammasat University, Pathumthani, Thailand, 6Center for Clinical Management Research, Veterans Affairs Ann Arbor Healthcare System, Ann Arbor, Michigan, 7Rush University Medical Center, Chicago, Illinois, 8Medicine, Pediatrics, Epidemiology, University of North Carolina, School of Public Health, Chapel Hill, North Carolina, 9Department of Internal Medicine, Division of General Medicine, University of Michigan Medical School, Ann Arbor, Michigan

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Background. We evaluated the practices used by Thai hospitals to clean/disinfect the hospital environment and identified factors associated with adherence to environmental cleaning/disinfection (ECD) practices.

Methods. From 1 January 2014 to 30 November 2014, we surveyed all Thai hospitals with >250 beds and an intensive care unit. We assessed whether hospitals had implemented protocols and checklists for ECD within patient care areas, the use of ECD audits, and the adherence of ECD checklists and protocols (high adherence defined as ≥75%). Multivariable regression was used to examine associations between hospital characteristics and existence of ECD protocols and checklists together with adherence levels.

Results. A total of 212 (86.5%) of 245 eligible hospitals responded. Overall, 90.6% (192/212 hospitals) implemented an ECD protocol, 55.2% (117/212) implemented an ECD checklist, and 43.4% (92/212) audited ECD adherence. Where implemented, high adherence to ECD protocols and checklists was documented in 57.1% (109/192) and 57.3% (67/117), respectively. The presence of a hospital epidemiologist was associated with implementing an ECD checklist (OR = 2.4; \( P = 0.01 \)) and conducting ECD audits (OR = 3.2; \( P = 0.001 \)). Strong hospital administration support for the infection control program was associated with high adherence to implemented ECD protocols (OR = 5.4; \( P < 0.001 \)) and checklists (OR = 3.7; \( P = 0.005 \)).

Conclusion. While most Thai hospitals have implemented ECD protocols and checklists, adherence to ECD protocols and checklists, and conducting ECD audits remain suboptimal. Our study supports the role of a hospital epidemiologist and administrative support to enhance the ECD practices in this middle income country.

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501. Infection Prevention and Control Education for Environmental Services Workers (ESW): "Cleaner is Safer – ESW on the Front-line of Infection Prevention" Elena Martin, BS;1 Elizabeth Salzgiver, MPH1; Matthew S. Simon, MD, MS2; William Greendyke, MD3; James Gramstad, MBA;4 Angel Tejeda, BA;5 Roy Weeks, BA;6 Timothy Woodward, BS;7 Lisa Saman, MD, MPH8; E. Yoko Furuya, MD, MS2;9 and David Call, MD, MS10 Weill Cornell Medicine, New York, New York, 1New York-Presbyterian Hospital, New York, New York, 2Columbia University Medical Center, New York, New York, 3Columbia Presbyterian Medical Center, New York, New York

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Background. Studies suggest that improving environmental cleaning and disinfection reduces pathogen transmission and prevents healthcare-associated infections (HAIs). We designed and administered an educational program for hospital ESW based on findings from a 2015 knowledge, attitudes, and practices survey.

Methods. An interactive 5-part educational program was given to front-line ESW at 5 acute care hospitals from 7/16 to 3/17 using principles of adult learning theory. Audience response system (ARS), videos, demonstrations, role-playing, and graphic were used to illustrate concepts and emphasize the rationale for HAI prevention strategies. Topics included HAIs, hand hygiene, isolation precautions, personal protective equipment, daily and discharge cleaning, and strategies to overcome common cleaning barriers. Evaluation included ARS questions, written evaluations, and assessment of daily cleaning before and after education using the 3M™ Clean-Trace™ Hygiene Management System. Clean surfaces were those with <250 relative light units detected. Chi-square tests were performed, where appropriate.

Results. On average, 357 (range: 303-391) ESW attended each of the 5 program components. Most participants rated the presentations as ‘excellent’ or ‘very good’ (93%) and agreed they were useful (95%). Among the program, participants indicated they were more comfortable donning/doffing PPE (91%), performing hand hygiene (96%), and better understood the importance of disinfecting high-touch surfaces.