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 not 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.

Disclosures. C. Jinadatha, Xenex Healthcare Services: CRADA, Research support

499. National Survey of Environmental Cleaning Among Thai Hospitals Anucha Apsara-Thanarak, MD 1; David Ratzi, MS 2; Sanjay Saint, MD, MPH 3; Thana Khawcharoenporn, MD, MSc 4; David J. Weber, MD, MPH, FIDSA, FSHEA 4 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

Session: 58. HAI: The Environment
Thursday, October 5, 2017: 12:30 PM

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) of 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) of hospitals implementing an ECD protocol, 55.2% (117/212) implementing an ECD checklist, and 43.4% (92/212) auditing ECD adherence. Where implemented, a high adherence to ECD protocols and checklists was documented in 57.1% (109/192) of hospitals implementing an ECD protocol, 55.2% (117/212) implementing an ECD checklist, and 43.4% (92/212) auditing ECD adherence.

Conclusions. 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.

Disclosures. All authors: No reported disclosures.

500. Investigation of Mycobacterium Pseudo-outbreak Malak Elsheikh, MD 1; Monica E. Sikka, MD 2; Susan Lee, MT, CIC 2; Leanne O’Connell, RN, BSN, MPH, CIC 2 and Susan C. Blesdale, MD 2; 1Division of Infectious Diseases, University of Illinois at Chicago, Chicago, Illinois, 2University of Illinois Hospital and Health Sciences System, Chicago, Illinois

Session: 58. HAI: The Environment
Thursday, October 5, 2017: 12:30 PM

Background. A cluster of 8 Mycobacterium avium Complex (MAC) clinical acid-fast bacilli (AFB) cultures were identified in a 2-week period at an urban public university hospital system. A review of AFB cultures from the past year showed a surge of cases during the months of October to November from the typical 1-3 cases per month.

Methods. An internal evaluation demonstrated that the number of cultures growing MAC from 9/30/16-11/30/16 was considerably greater than it had been in preceding months. Chart review was performed to determine the clinical relevance of the MAC cultures. Of 8 initial patients identified 6 had no clinical syndrome consistent with MAC infection. Additional evaluation identified no common collection locations to suggest contamination at collection. Microbiology laboratory practices were reviewed and no changes were identified. A retrospective review identified no common collection sites to suggest contamination at collection. A review of laboratory practices revealed opportunities for cross contamination when tasks were batched and alternated while awaiting incubation or amplification as all AFB processing took place under one hood.

Conclusion. Increased MAC cultures above baseline incidence identified a contamination of laboratory reagent causing a pseudo-outbreak of M. chimenas. The pseudo-outbreak did not have clinical implications as patients lacked clinical signs and were not treated. Separation of amplification and culture preparation tasks both spatially and temporally are recommended to decrease cross contamination.

Disclosures. All authors: No reported disclosures.
(96%). The frequency of effective cleaning of high-touch surfaces in occupied patient rooms significantly improved following education (Table).

**Conclusion.** A novel educational program, designed using adult learning theory, that addressed ESW’s self-identified challenges was well-received and appears to have resulted in learning, behavior change, and improved daily cleaning. Future research will assess program sustainability and long-term impact on hospital cleanliness and patient outcomes.

| Surface          | Pre-intervention | Post-intervention | Absolute % change |
|------------------|------------------|-------------------|-------------------|
| Toilet seat      | 85               | 88                | 3                 |
| Toilet flush     | 60               | 82                | 22                |
| Overbed table    | 29               | 87                | 58                |
| Bed rail         | 8                | 50                | 42*               |
| Call box         | 5                | 65                | 60*               |
| Visitor chair    | 0                | 59                | 59*               |

* P < 0.05.

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

**502. Sphingomonas Infections Arising from Hospital Plumbing Fixtures**

Caroline J. Zellmer, B.S.; Angela V. Michelin, M.P.H.;1 Ryan C. Johnson, Ph.D.;1 John P. Dekker, MD, PhD;2 Karen M. Frank, MD, PhD;3 David K. Henderson, MD;1 Anna F. Lau, PhD;1 Julia A. Segre, PhD;4 and Tara N. Palmore, MD;5 1Hospital Epidemiology Service, NIH Clinical Center, NIH, Bethesda, Maryland; 2National Human Genome Research Institute, NIH, Bethesda, Maryland; 3Department of Laboratory Medicine, National Institutes of Health Clinical Center, Bethesda, Maryland; 4Department of Laboratory Medicine, NIH Clinical Center, NIH, Bethesda, Maryland

**Session:** 58. HAI: The Environment  
**Thursday, October 5, 2017: 12:30 PM**

**Background.** Following a rise in nosocomial infections due to *Sphingomonas*, a waterborne Gram-negative organism, we undertook an epidemiological investigation to identify possible sources and develop a remediation strategy.

**Methods.** We analyzed *Sphingomonas* isolates from 30 inpatients in the past 11 years, and we reviewed each patient’s chart. We collected swabs of faucets, water samples, and free and total chlorine levels from rooms of *Sphingomonas* patients from 2016, using unrelaxed rooms as controls. Water samples and chlorine levels were collected from hospital pipes. Swabs were placed into 1 mL TSB and cultured to sheep blood agar. Isolates were identified by MALDI-TOF MS. Water samples were tested via membrane filtration (500 mL) and spread plate method (1 mL). Patient and environmental *Sphingomonas* isolates underwent whole genome sequencing, and were analyzed with Mash and Snippy for overall genomic sequence and single-nucleotide polymorphisms comparisons, respectively, to assess relatedness.

**Results.** Of 27 faucets examined, 59% grew *Sphingomonas* spp., and 33% grew highly-resistant *S. koreensis*. Of 21 water samples, 76% grew *Sphingomonas* spp., and 48% grew *S. koreensis*. Sequence analysis demonstrated strong genetic similarity among *S. koreensis* clinical isolates from the past 11 years and recent faucet and water isolates. One patient’s *S. koreensis* isolate was genetically related to isolates from faucets in his room. *Sphingomonas* did not grow from samples collected from municipal water or some of the far upstream water pipes within the hospital.

Free chlorine levels were extremely low in hot water, leading to a program of flushing in order to restore and maintain adequate levels. Among 7 contaminated faucets that were replaced, 3 became recolonized within 4 weeks, and continued to grow *Sphingomonas* from water.

**Conclusion.** Investigation and genome sequencing suggest long-standing *S. koreensis* colonization within the hospital plumbing system that has served as a reservoir for sporadic infections among immunosuppressed patients. Remediation of *Sphingomonas* plumbing contamination is an ongoing challenge guided by few published data. Hospital water must be rendered safe for even the most immunosuppressed patients.

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

**503. Implementation of Cleaning Process for Mobile Patient Equipment**

Sara Reece, PhD, CIC; FAPIC;1 Christy Lequire, BSN;2 Tina Van Winks, BSN, CIC;3 and Heather Young, MD;4 1Patient Safety and Quality, Denver Health Medical Center, Denver, Colorado; 2Department of Nursing, Denver Health Medical Center, Denver, Colorado; 3Nursing Services Medical/Surgical, Denver Health Medical Center, Denver, Colorado; 4Infectious Diseases, Denver Health Medical Center, Denver, Colorado

**Session:** 58. HAI: The Environment  
**Thursday, October 5, 2017: 12:30 PM**

**Background.** Mobile patient equipment (MPE) such as Dynapalm machines (i.e., blood pressure monitoring devices, thermometer and pulse-oximeter), ultrasound machines, electrocardiogram (EKG) bladder scanners and language line translator phones may be significant fomites for the transfer of infections between patients in acute inpatient settings. Baseline adenosine triphosphate (ATP) data from a Level I Trauma Center suggested that MPE are not cleaned regularly between patients. The objective of this quality improvement project was to implement a standardized, effective cleaning process for MPE and monitor success of implementation through the use of ATP monitoring and real-time data feedback.

**Methods.** A detailed cleaning process and schedule was developed MPE. Education was provided to staff on between use cleaning and an extensive cleaning process to be performed once daily. Cleanliness of MPE was tested through weekly ATP monitoring and the results were provided to floor educators and managers. Median ATP and passing rate were assessed. ATP pass/fail cut-off was set according to manufacturer’s recommendations. Passing ATP level was ≤250 relative light units (RLU), intermediate level was 250–500 RLU and failing level was >500 RLU.

**Results.** The overall median ATP level of all MPE decreased from 755 RLU (N = 102) to 236 RLU (N = 425) 16 weeks post-intervention (Figure 1). The pass rate increased from 19.6% to 52.0%. The blood pressure cuff ATP level demonstrated a 78% decrease from 569.5 RLU (N = 12) to 219 RLU (N = 84). The pulse-ox ATP level also decreased by 78% from 1884 RLU (N = 9) to 407 RLU (N = 86) post-intervention. An 84% reduction in ATP level was identified in the language line translator phone (1,284 RLU to 198 RLU).

**Conclusion.** Sixteen weeks post implementation of this quality improvement project demonstrated that patient equipment is consistently being cleaned and the ATP levels are being maintained at a low level. Future directions include broadening the type of equipment that are assessed through ATP, expanding this project to outpatient settings and exploring the sustainability in the absence of ATP data feedback. The improvement of the cleanliness of the equipment potentially has the impact of decreasing infections throughout the hospital.