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light wand devices should only be used as an add-on technique after thorough cleaning and requires a prolonged application time for some bacterial species. No experiment showed a reduction >5 log₁₀ units defining disinfection. However, after cleaning, a low-level reduction may be acceptable because fewer CFU can be expected on the surface than in our experiment. The light wand device can also be used as an extra disinfection after terminal cleaning and disinfection for complex surfaces (eg, buttons of the endotracheal suction system), as shown by Wendel et al.⁶ Additional material degradation testing is needed before air worthiness approval in an air ambulance. Occupational safety regulations regarding UV-C use need to be observed with manual application procedures.

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References

- Kanamori H, Rutala WA, Gergen MF, Weber DJ. Patient room decontamination against carbapenem-resistant Enterobacteriaceae and methicillin-resistant Staphylococcus aureus using a fixed cycle-time ultraviolet-C device and two different radiation designs. Infect Control Hosp Epidemiol 2016;37:994–996.
- Rock C, Curless MS, Nowakowski E, et al. UV-C light disinfection of carbapenem-resistant Enterobacteriaceae from high-touch surfaces in a patient room and bathroom. Infect Control Hosp Epidemiol 2016; 37:996–997
- Petersson LP, Albrecht UV, Sedlacek L, Gemein S, Gebel J, Vonberg RP. Portable UV light as an alternative for decontamination. Am J Infect Control 2014;42:1334–1336.
- Cadnum JL, Jencson AL, Gestrich SA, et al. A comparison of the efficacy of multiple ultraviolet light room decontamination devices in a radiology procedure room. Infect Control Hosp Epidemiol 2019;40: 158–163.
- Health Quality Ontario. Portable ultraviolet light surface-disinfecting devices for prevention of hospital-acquired infections: a health technology assessment. Ont Health Technol Assess Ser 2018;18:1–73.
- 6. Wendel AF, Malecki M, Otchwemah R, Tellez-Castillo CJ, Sakka SG, Mattner F. One-year molecular surveillance of carbapenem-susceptible A. baumannii on a German intensive care unit: diversity or clonality. Antimicrob Resist Infect Control 2018;7:145.

'Chemical-free' cleaning—Need for a closer look

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To the Editor—I read with interest the letter "Smarter cleaning is safer for health" by EE Gillespie¹ in this journal. Although the motive behind 'chemical-free' cleaning is laudable, the approach needs a closer look. Repeated laundering of microfiber-based fabrics (MFBFs) will add chemicals to the liquid waste stream. Such laundering will also increase water consumption, potentially negating the water saved in cleaning. In addition, proper decontamination of MFBFs is more difficult due to their microstructure.² The use of disposable microfiber fabrics may be an option, but their routine disposal will contribute to the load of nonbiodegradable materials in the solid-waste stream.

Assumedly, municipally treated tap water was used in the reported 'chemical-free' process. Although the primary objective of adding disinfectant chemicals (eg, chlorine or monochloramine) to tap water is to make it potable, residues of such chemicals may contribute to the pathogen reductions recorded. This factor could be checked using distilled water or tap water with no disinfectant residual, though the use of such water may compromise the field relevance of the regular surface decontamination process.

Undoubtedly, the physical action of wiping environmental surfaces can enhance their decontamination.³ However, wiping with

no or an ineffective disinfectant also runs the risk of spreading localized pathogen contamination over a wider area. Therefore, proper wiping using an effective, safe, and compatible disinfectant may be more desirable. Formulations based on oxidizers (with or without halogens) can be fast acting, broad spectrum, surface compatible, and residue free while being safe for humans and the environment. Combining the use of such chemicals with biodegradable or compostable wipes would further enhance their sustainability and overall acceptance.

Recognition of high-touch environmental surfaces (HITES) as vehicles of healthcare-associated pathogens is increasing, and subsequently, the emphasis on their proper decontamination for infection prevention and control is also increasing. Despite the recent advances in environmental decontamination (eg, no-touch technologies), wiping remains an essential and universal means of reducing the risk of spread of HITES-carried pathogens. Therefore, our focus must be on efficient and sustainable ways of achieving HITES decontamination using wiping with properly formulated oxidizers and biodegradable applicators.

References

 Gillespie, EE. Smarter cleaning is safer for health. Infect Control Hosp Epidemiol 2019;40:947.

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- Wiencek M. Beyond the naked eye: biofilms and microbial diversity in re-laundered mops and towels used in healthcare facilities. Am J Infect Control 2019;47:S4.
- Sattar SA. Promises and pitfalls of recent advances in chemical means of preventing the spread of nosocomial infections by environmental surfaces. Am J Infect Control 2010;38:S34–S40.
- 4. Sattar SA, Maillard J-Y. The crucial role of wiping in decontamination of high-touch environmental surfaces: review of current status and directions for the future. *Am J Infect Control* 2013;41:S97–S104.
- Sattar SA, Bradley C, Kibbee R, Wesgate R, Wilkinson MAC, Sharpe T, Maillard, J.-Y. Disinfectant wipes are appropriate to control microbial bioburden from surfaces—the use of a new ASTM standard test protocol to demonstrate efficacy. J Hosp Infect 2015;91:319–325.
- Weber DJ, Anderson D, Rutala WA. The role of the surface environment in healthcare-associated infections. Curr Opin Infect Dis 2013;26:338–344.

Improving antibiotic use through antimicrobial stewardship interventions upon discharge

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To the Editor—Employing antimicrobial stewardship principles at every phase of patient care is crucial. Although much of the antimicrobial stewardship literature is focused among inpatients, Dyer et al¹ have identified an important opportunity to measure and reduce antimicrobial exposure postdischarge. Excessive outpatient antibiotic therapy for treatment of pneumonia is associated with increased risk for adverse effects.² As such, we wanted to share additional outcomes related to our multicenter evaluation of an antimicrobial stewardship initiative focused on duration of therapy (DOT) for >600 patients with community-acquired pneumonia (CAP),³ which is consistent with the findings by Dyer et al³ and highlights the widespread need to focus on stewardship practices across phases of care.

This initiative employed a multifaceted intervention including institutional guideline update, provider education using educational sessions and pocket cards, and prospective audit with feedback and intervention. Prospective audit with feedback and intervention was performed by infectious diseases pharmacists Monday through Friday. Interventions were made to recommend durations of therapy consistent with the 2007 IDSA and American Thoracic Society (IDSA/ATS) CAP guidelines, including a focus on postdischarge prescriptions. Following this intervention, we observed a reduction in the median total DOT (6 vs 9 days; P < .001). Importantly, this change was attributed to a significant reduction in postdischarge DOT (3 vs 5 days; P < .001). The inpatient DOT (3 vs 3 days; P = .217) and hospital length of stay (3 vs 4 days; P = .060) remained similar before and after the inter-

vention. Consequently, the percentage of postdischarge days accounting for overall antimicrobial exposure for CAP was reduced from 64% to 50% (P < .001). Our findings support the call for antimicrobial stewardships programs to target antimicrobial prescribing at transitions of care and demonstrate that interventions upon discharge can reduce overall antimicrobial exposure.

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References

- Dyer AP, Dodds Ashley E, Anderson DJ, et al. Total duration of antimicrobial therapy resulting from inpatient hospitalization. Infect Control Hosp Epidemiol 2019;40:847–854.
- Vaughn VM, Flanders SA, Snyder A, et al. Excess antibiotic treatment duration and adverse events in patients hospitalized with pneumonia: a multihospital cohort study. Ann Intern Med 2019;171:153–163.
- Foolad F, Huang AM, Nguyen CT, et al. A multicentre stewardship initiative to decrease excessive duration of antibiotic therapy for the treatment of community-acquired pneumonia. J Antimicrob Chemother 2018;73:1402–1407.
- 4. Mandell LA, Wunderink RG, Anzueto A, et al. Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults. Clin Infect Dis 2007;44 suppl 2:S27–S72.

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