



RESEARCH IN A SNAP

OVERVIEW


We're keeping you updated on citations added to The Center's Knowledge Repository.

The Knowledge Repository is a collaborative effort with our partners

Academy of Architecture for Health
an AIA Knowledge Community




AAHF
ACADEMY OF ARCHITECTURE FOR HEALTH FOUNDATION




ASHE
American Society for Healthcare Engineering
A personal membership group of the



Design for Aging
an AIA Knowledge Community



Additional key point summaries provided by



NIHD Nursing Institute for Healthcare Design
INSPIRING AND EDUCATING NURSES



Knowledge Repository News

The past two months brings you 40 more entries into the Knowledge Repository spanning a range of topics. In these new entries, several papers are related to infection prevention and control. The articles highlight the role of the built environment, and specifically, the use of antimicrobial materials, innovative air flow and ventilation systems, and use of different light systems to kill bacteria and prevent the spread of infection.

In two newer studies, Cadnum and colleagues (2019) looked at the effect of UV light decontamination devices in a radiology procedure room, and found that the devices could be an effective and efficient counterpart to existing cleaning protocol. Murrell and colleagues looked at the impact of a different type of light system in an operating room: a “visible light continuous environmental disinfection” system. Like the Cadnum study, Murrell and colleagues (2019) found that the light reduced surface contamination when used in conjunction with manual cleaning. As the healthcare industry continues to work towards more efficient and effective infection prevention control through procedures and protocol, research on these environmental design solutions is a welcome and much needed complement to improving safety. See all the latest infection prevention additions in the Safety section.

(Papers published ahead of print “in press” will be updated as volume and page information becomes available.)

January – February 2019

Experience

Perceived Quality of Care (Noise, Communication, Waiting, etc.)

1. Tang, H., Ding, J., Li, C., & Li, J. (2019). A Field Study on Indoor Environment Quality of Chinese Inpatient Buildings in a Hot and Humid Region. *Building and Environment*, 151, 156–167. <https://doi.org/10.1016/j.buildenv.2019.01.046>
2. Zamani, Z., & Harper, E. C. (2019). Exploring the Effects of Clinical Exam Room Design on Communication, Technology Interaction, and Satisfaction. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586719826055>



Supportive Design (Social Support, Distractions, Nature, etc.)

3. Bosch, S. J., & Lorusso, L. N. (2019). Promoting Patient and Family Engagement through Healthcare Facility Design: A Systematic Literature Review. *Journal of Environmental Psychology*, in press. <https://doi.org/10.1016/j.jenvp.2019.02.002>
4. Cusack, L., Wiechula, R., Schultz, T., Dollard, J., & Maben, J. (2019). Anticipated Advantages and Disadvantages of a move to 100% Single Room Hospital in Australia: A Case Study. *Journal of Nursing Management*, in press. <https://doi.org/10.1111/jonm.12753>
5. Hadi, K., Du Bose, J. R., & Choi, Y. S. (2019). The Effect of Light on Sleep and Sleep-Related Physiological Factors Among Patients in Healthcare Facilities: A Systematic Review. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586719827946>
6. Scrivener, K., Pocovi, N., Jones, T., Dean, B., Gallagher, S., Henrisson, W., ... Dean, C. (2019). Observations of Activity Levels in a Purpose-Built, Inpatient, Rehabilitation Facility. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718823519>

Safety

Infection Prevention/Control

7. Aganovic, A., & Cao, G. (2019). Evaluation of Airborne Contaminant Exposure in a Single-Bed Isolation Ward Equipped with a Protected Occupied Zone Ventilation System. *Indoor and Built Environment*, in press. <https://doi.org/10.1177/1420326X18823048>
8. Cadnum, J. L., Jencson, A. L., Gestrich, S. A., Livingston, S. H., Karaman, B. A., Benner, K. J., ... Donskey, C. J. (2019). A Comparison of the Efficacy of Multiple Ultraviolet Light Room Decontamination Devices in a Radiology Procedure Room. *Infection Control & Hospital Epidemiology*, 40(2), 158–163. <https://doi.org/10.1017/ice.2018.296>
9. Cloutman-Green, E., Barbosa, V. L., Jimenez, D., Wong, D., Dunn, H., Needham, B., ... Hartley, J. C. (2019). Controlling Legionella Pneumophila in Water Systems at Reduced Hot Water Temperatures with Copper and Silver Ionization. *American Journal of Infection Control*, in press. <https://doi.org/10.1016/j.ajic.2018.12.005>
10. Escombe, A. R., Ticona, E., Chávez-Pérez, V., Espinoza, M., & Moore, D. A. J. (2019). Improving Natural Ventilation in Hospital Waiting and Consulting Rooms to Reduce Nosocomial Tuberculosis Transmission Risk in a Low Resource Setting. *BMC Infectious Diseases*, 19(1), 88. <https://doi.org/10.1186/s12879-019-3717-9>
11. Iwasaki, M., Kanda, J., Hishizawa, M., Kitano, T., Kondo, T., Yamashita, K., & Takaori-Kondo, A. (2019). Effect of Laminar Air Flow and Building Construction on Aspergillosis in Acute Leukemia Patients: A Retrospective Cohort Study. *BMC Infectious Diseases*, 19(1), 38. <https://doi.org/10.1186/s12879-018-3665-9>



12. Kassir, R., & Nawas, T. (2018). Elevator Buttons: An Unrealized Potential Health Hazard. *International Journal of Academic Health and Medical Research (IJAHMR)*, 2(5), 1–6.
13. Luk, S., Chow, V. C. Y., Yu, K. C. H., Hsu, E. K., Tsang, N. C., Chuang, V. W. M., ... Wong, A. T. Y. (2019). Effectiveness of Antimicrobial Hospital Curtains on Reducing Bacterial Contamination—A Multicenter Study. *Infection Control & Hospital Epidemiology*, 40(2), 164–170. <https://doi.org/10.1017/ice.2018.315>
14. Mousavi, E. S., & Grosskopf, K. R. (2018). Renovation in Hospitals: A Case Study of Source Control Ventilation in Work Zones. *Advances in Building Energy Research*, in press. <https://doi.org/10.1080/17512549.2018.1502683>
15. Murrell, L. J., Hamilton, E. K., Johnson, H. B., & Spencer, M. (2019). Influence of a Visible-Light Continuous Environmental Disinfection System on Microbial Contamination and Surgical Site Infections in an Orthopedic Operating Room. *American Journal of Infection Control*, in press. <https://doi.org/10.1016/j.ajic.2018.12.002>
16. Palmieri, T. L. (2019). Infection Prevention: Unique Aspects of Burn Units. *Surgical Infections*, in press. <https://doi.org/10.1089/sur.2018.301>
17. Shajahan, A., Culp, C. H., & Williamson, B. (2018). Effects of Indoor Environmental Parameters related to Building HVAC Systems on Patients' Medical Outcomes: A Review of Scientific Research on Hospital Buildings. *Indoor Air*; in press. <https://doi.org/10.1111/ina.12531>
18. Sherif, A. H. (2013). Finish Materials of Hospital Operating Rooms of the USA and Egypt: Selection and Actual Performance-in-Use. In *AEI 2013* (pp. 145–154). State College, PA: American Society of Civil Engineers (ASCE). <https://doi.org/10.1061/9780784412909.015>
19. Talento, A. F., Fitzgerald, M., Redington, B., O'Sullivan, N., Fenelon, L., & Rogers, T. R. (2019). Prevention of Healthcare-Associated Invasive Aspergillosis during Hospital Construction/Renovation Works. *Journal of Hospital Infection*, in press. <https://doi.org/10.1016/j.jhin.2018.12.020>
20. Zargar, B., Sattar, S. A., Rubino, J. R., & Ijaz, M. K. (2018). A Quantitative Method to Assess the Role of Indoor Air Decontamination to Simultaneously Reduce Contamination of Environmental Surfaces: Testing with Vegetative and Spore-Forming Bacteria. *Letters in Applied Microbiology*, in press. <https://doi.org/10.1111/lam.13109>

Patient Handling/Mobility

21. Kucera, K. L., Schoenfisch, A. L., McIlvaine, J., Becherer, L., James, T., Yeung, Y. L., ... Lipscomb, H. J. (2019). Factors Associated with Lift Equipment Use During Patient Lifts and Transfers by Hospital Nurses and Nursing Care Assistants: A Prospective Observational Cohort Study. *International Journal of Nursing Studies*, 91, 35–46. <https://doi.org/10.1016/j.ijnurstu.2018.11.006>



Care across the Lifespan

Pediatric

22. Robson, K., MacMillan-York, E., & Dunn, M. S. (2016). Celebration in the Face of Trauma: Supporting NICU Families through Compassionate Facility Design. *Newborn and Infant Nursing Reviews*, 16(4), 225–229. <https://doi.org/10.1053/j.nainr.2016.09.007>

Maternity Care

23. Setola, N., Naldi, E., Cocina, G. G., Eide, L. B., Iannuzzi, L., & Daly, D. (2019). The Impact of the Physical Environment on Intrapartum Maternity Care: Identification of Eight Crucial Building Spaces. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586719826058>

Elders/Aging

Aging in Place

24. Leung, M. Y., Liang, Q., & Pynoos, J. (2019). The Effect of Facilities Management of Common Areas on the Environment Domain of Quality of Life of Older People in Private Buildings. *Facilities*, in press. <https://doi.org/10.1108/F-03-2017-0030>

Cognitive Impairment & Dementia

25. Bowes, A., & Dawson, A. (2019). Designing Environments for People with Dementia. In *Designing Environments for People with Dementia* (pp. 1–92). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-78769-971-720191004>
26. Hung, L., Phinney, A., Chaudhury, H., Rodney, P., Tabamo, J., & Bohl, D. (2017). “Little Things Matter!” Exploring the Perspectives of Patients with Dementia about the Hospital Environment. *International Journal of Older People Nursing*, 12(3), e12153. <https://doi.org/10.1111/opn.12153>
27. Shannon, M. M., Lipson-Smith, R., Elf, M., Olver, J., Kramer, S., & Bernhardt, J. (2018). Bringing the single versus multi-patient room debate to vulnerable patient populations: a systematic review of the impact of room types on hospitalized older people and people with neurological disorders. *Intelligent Buildings International*, in press. <https://doi.org/10.1080/17508975.2018.1548339>

Technology

28. Özcan, E., Birdja, D., Simonsen, L., & Struijs, A. (2019). Alarm in the ICU! Envisioning Patient Monitoring and Alarm Management in Future Intensive Care Units. In M. Pfannstiel & C. Rasche (Eds.), *Service Design and Service Thinking in Healthcare and Hospital Management: Theory, Concepts, Practice* (pp. 421–446). Springer International Publishing. https://doi.org/10.1007/978-3-030-00749-2_24



29. Yu, J., An, N., Hassan, T., & Kong, Q. (2019). A Pilot Study on a Smart Home for Elders Based on Continuous In-Home Unobtrusive Monitoring Technology. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586719826059>

Design & Evaluation (e.g., Process, Methods, Simulation Modeling)

30. Altizer, Z., Canar, W. J., Redemske, D., Fullam, F., & Lamont, M. (2019). Utilization of a Standardized Post-Occupancy Evaluation to Assess the Guiding Principles of a Major Academic Medical Center. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718820712>
31. Brambilla, A., Rebecchi, A., & Capolongo, S. (2019). Evidence Based Hospital Design. A Literature Review of the Recent Publications about the EBD Impact of Built Environment on Hospital Occupants' and Organizational Outcomes. *Annali Di Igiene: Medicina Preventiva e Di Comunita*, 31(2), 165–180. <https://doi.org/10.7416/ai.2019.2269>
32. Ceresoli, J. D., & Kuhl, M. E. (2018). A Simulation Framework for the Design and Analysis of Healthcare Clinics. In *2018 Winter Simulation Conference (WSC)* (pp. 2636–2645). Gothenburg, Sweden: IEEE Xplore. <https://doi.org/10.1109/WSC.2018.8632461>
33. Elf, M., Lindahl, G., & Anåker, A. (2018). A Study of Relationships Between Content in Documents From Health Service Operational Plans and Documents From the Planning of New Healthcare Environments. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718796643>
34. Lather, J. I., & Messner, J. I. (2018). Framework for a Hybrid Simulation Approach for an Integrated Decision Support System in Healthcare Facilities. In *2018 Winter Simulation Conference (WSC)* (pp. 1406–1417). Gothenburg, Sweden: IEEE Xplore. <https://doi.org/10.1109/WSC.2018.8632194>
35. Menke, S., Jenkinson, B., Foureur, M., & Kildea, S. (2018). Is the Birthing Unit Design Spatial Evaluation Tool valid for diverse groups? *Women and Birth*, in press. <https://doi.org/10.1016/j.wombi.2018.09.009>

Other (Staff- and Organizational-Related)

36. Cai, H., Lu, Y., & Sheward, H. (2019). A Historical Study of Chinese Nursing Unit Design Evolution Since 1989. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718820682>
37. Dixit, M. K., Garcia, J. A., & Lavy, S. (2010). Establishment of KPIs for Facility Performance Measurement: Review of Literature. *Facilities*, 28(9/10), 440–464. <https://doi.org/10.1108/02632771011057189>
38. Dixit, M. K., Singh, S., Lavy, S., Yan, W., Pariafsai, F., & Ostadalimakhmalbaf, M. (2019). Floor Finish Selection in the Design of Healthcare Facilities: A Survey of Facility Managers. *Facilities*. <https://doi.org/10.1108/F-04-2018-0047>



39. Freihoefer, K., Lindval, S., Bayramzadeh, S., & Hanson, L. (2019). Implications of a Decentralized Postpartum Unit Design and Clinical Operations. *HERD: Health Environments Research & Design Journal*, in press.
<https://doi.org/10.1177/1937586718822065>
40. VanHeuvelen, J. S. (2019). Isolation or Interaction: Healthcare Provider Experience of Design Change. *Sociology of Health & Illness*, in press.
<https://doi.org/10.1111/1467-9566.12850>