



# 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 between The Center for Health Design and our partners

Academy of  
Architecture for Health  
an AIA Knowledge Community



Additional key point summaries provided by



RESEARCH-DESIGN  
connections

## Knowledge Repository News

Among the 93 new entries in the Knowledge Repository, several papers focus on light. These studies include patient-centered lighting in the ICU, the effect of light at night in critical care, and beneficial healthcare outcomes associated with natural light. You will notice citations that span the last few years in this Snap! Sometimes research on a particular topic will lead us to an author who is frequently cited for foundational research that has informed the newer studies. Check the citations listed in the Experience: Supportive Design category.

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

## September – October 2020

### COVID-19

1. Bharati, J., Ramachandran, R., Kumar, R., Prakash, S., & Kohli, H. S. (2020). Challenges in setting up point-of-care hemodialysis in a COVID-19 care facility: Lessons from a limited-resource setting. *Kidney International Reports*, in press. <https://doi.org/10.1016/j.ekir.2020.08.010>
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8. Li, S., Xu, Y., Cai, J., Hu, D., & He, Q. (2020). Integrated environment-occupant-pathogen information modeling to assess and communicate room-level outbreak risks of infectious diseases. *Building and Environment*, in press. <https://doi.org/10.1016/j.buildenv.2020.107394>
9. Löhner, R., Antil, H., Idelsohn, S., & Oñate, E. (2020). Detailed simulation of viral propagation in the built environment. *Computational Mechanics*, in press. <https://doi.org/10.1007/s00466-020-01881-7>
10. Marinelli, M. (2020). Emergency healthcare facilities: Managing design in a post COVID-19 world. *IEEE Engineering Management Review*, in press. <https://doi.org/10.1109/EMR.2020.3029850>
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12. Megahed, N. A., & Ghoneim, E. M. (2020). Antivirus-built environment: Lessons learned from Covid-19 pandemic. *Sustainable Cities and Society*, 61. <https://doi.org/10.1016/j.scs.2020.102350>
13. Mousavi, E., Kananizadeh, N., Martinello, R., & Sherman, J. (2020). COVID-19 outbreak and hospital air quality: A systematic review of evidence on air filtration and recirculation. *Environmental Science & Technology*, in press. <https://doi.org/10.1021/acs.est.0c03247>
14. Narayan, S., Setlur, R., Jahan, N., Chatterjee, K., & Kanitkar, M. (2020). Planning a modular intensive care unit for patients of the COVID-19 pandemic. *Journal of Marine Medical Society*, in press. [https://doi.org/10.4103/jmms.imms\\_91\\_20](https://doi.org/10.4103/jmms.imms_91_20)
15. Ong, S. W. X., Lee, P. H., Tan, Y. K., Ling, L. M., Ho, B. C. H., Ng, C. G., Wang, D. L., Tan, B. H., Leo, Y.-S., Ng, O.-T., Wong, M. S. Y., & Marimuthu, K. (2020). Environmental contamination in a COVID-19 intensive care unit (ICU) – what is the risk? *Infection Control & Hospital Epidemiology*, in press. <https://doi.org/10.1017/ice.2020.1278>
16. Sopeyin, A., Hornsey, E., Okwor, T., Alimi, Y., Raji, T., Mohammed, A., Moges, H., Onwuekwe, E. V. C., Minja, F. J., Gon, G., Ogbuagu, O., Ogunsola, F., & Paintsil, E. (2020). Transmission risk of respiratory viruses in natural and mechanical ventilation environments: Implications for SARS-CoV-2 transmission in Africa. *BMJ Global Health*, 5(8), e003522. <https://doi.org/10.1136/bmjgh-2020-003522>



17. Voo, T. C., Senguttuvan, M., & Tam, C. C. (2020). Family presence for patients and separated relatives during COVID-19: Physical, virtual, and surrogate. *Journal of Bioethical Inquiry*, in press. <https://doi.org/10.1007/s11673-020-10009-8>
18. Wang, Z. (2020). Use the environment to prevent and control COVID-19 in senior-living facilities: An analysis of the guidelines used in China. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586720953519>

## Experience

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

19. Tronstad, O., Flaws, D., Lye, I., Fraser, J. F., & Patterson, S. (2020). The intensive care unit environment from the perspective of medical, allied health and nursing clinicians: A qualitative study to inform design of the 'ideal' bedspace. *Australian Critical Care*. <https://doi.org/10.1016/j.aucc.2020.06.003>
20. Wiltshire, G., Pullen, E., Brown, F. F., Osborn, M., Wexler, S., Beresford, M., Tooley, M., & Turner, J. E. (2020). The experiences of cancer patients within the material hospital environment: Three ways that materiality is affective. *Social Science & Medicine*, 264, in press. <https://doi.org/10.1016/j.socscimed.2020.113402>

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

21. Aljunid, S. S., Shukri, N. N. H. M., Taib, M. Z. M., & Samah, Z. A. (2020). Determinants of patient satisfaction on interior design quality of public hospitals in Malaysia. *Malaysian Journal of Public Health Medicine*, 20(2), 233–241. <https://doi.org/10.37268/mjphm/vol.20/no.2/art.800>
22. Brambilla, A., Morganti, A., Lindahl, G., Riva, A., & Capolongo, S. (2020). Complex projects assessment. The impact of built environment on healthcare staff wellbeing. In O. Gervasi, B. Murgante, S. Misra, C. Garau, I. Blečić, D. Taniar, B. O. Apduhan, A. M. A. C. Rocha, E. Tarantino, C. M. Torre, & Y. Karaca (Eds.), *Computational Science and Its Applications - ICCSA 2020* (pp. 345–354). Springer International Publishing. [https://doi.org/10.1007/978-3-030-58814-4\\_24](https://doi.org/10.1007/978-3-030-58814-4_24)
23. Delaney, L. J., Currie, M. J., Huang, H.-C. C., Lopez, V., & Van Haren, F. (2018). "They can rest at home": An observational study of patients' quality of sleep in an Australian hospital. *BMC Health Services Research*, 18(1), 524. <https://doi.org/10.1186/s12913-018-3201-z>
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25. Kaup, M. L., Poey, J. L., Corneilson, L., & Doll, G. (2020). Environmental attributes of person-centered care. *Journal of Aging and Environment*, 34(1), 48–69. <https://doi.org/10.1080/02763893.2019.1627266>



26. Larsen, E. P. (2020). Optimizing radiology reading room design: The eudaimonia radiology machine. *Journal of the American College of Radiology*, in press.
27. Lee, J., Lee, H., & Shepley, M. M. (2020). Exploring the spatial arrangement of patient rooms for minimum nurse travel in hospital nursing units in Korea. *Frontiers of Architectural Research*, in press. <https://doi.org/10.1016/j.foar.2020.06.003>
28. Lim, L., Kanfer, R., Stroebel, R. J., & Zimring, C. M. (2020). The representational function of clinic design: Staff and patient perceptions of teamwork. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586720957074>
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35. Shepley, M. M., & Sachs, N. A. (2020). Physical environments that support the mental health of staff and families in the NICU. *Journal of Perinatology*, 40(1), 16–21. <https://doi.org/10.1038/s41372-020-0750-x>
36. West, A., Simonsen, S. A., Zielinski, A., Cyril, N., Schønsted, M., Jennum, P., Sander, B., & Iversen, H. K. (2019). An exploratory investigation of the effect of naturalistic light on depression, anxiety, and cognitive outcomes in stroke patients during admission for rehabilitation: A randomized controlled trial. *NeuroRehabilitation*, 44(3), 341–351. <https://doi.org/10.3233/NRE-182565>
37. Zijlstra, E., Hagedoorn, M., van der Schans, C. P., & Mobach, M. P. (2020). The patient journey in a hospital environment. *Companion Proceedings of the European Facility Management International Conference 2020*, 59–66.



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### Safety

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41. Mills, P. D., Soncrant, C., & Gunnar, W. (2020). Retrospective analysis of reported suicide deaths and attempts on veterans health administration campuses and inpatient units. *BMJ Quality & Safety*, in press. <https://doi.org/10.1136/bmjqs-2020-011312>
42. Omidvari, F., Jahangiri, M., Mehryar, R., Alimohammadlou, M., & Kamalinia, M. (2020). Fire risk assessment in healthcare settings: Application of FMEA combined with multi-criteria decision making methods. *Mathematical Problems in Engineering*, 2020, 1–12. <https://doi.org/10.1155/2020/8913497>

### Infection Prevention/Control

43. Albarqouni, L., Byambasuren, O., Clark, J., Scott, A. M., Looke, D., & Glasziou, P. (2020). Does copper treating of commonly touched surfaces reduce healthcare acquired infections? A systematic review and meta-analysis. *Journal of Hospital Infection*, in press. <https://doi.org/10.1016/j.jhin.2020.09.005>
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45. Durant, D. J. (2020). Can patient-reported room cleanliness measures predict hospital-acquired *C. difficile* infection? A study of acute care facilities in New York State. *American Journal of Infection Control*, in press. <https://doi.org/10.1016/j.ajic.2020.08.024>
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47. Kamar, H. M., Wong, K. Y., & Kamsah, N. (2020). The effects of medical staff turning movements on airflow distribution and particle concentration in an operating room. *Journal of Building Performance Simulation*, 13(6), 684–706. <https://doi.org/10.1080/19401493.2020.1812722>



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### Falls

51. Valipoor, S., Pati, D., Kazem-Zadeh, M., Mihandoust, S., & Mohammadigorji, S. (2020). Falls in older adults: A systematic review of literature on interior-scale elements of the built environment. *Journal of Aging and Environment*, in press. <https://doi.org/10.1080/02763893.2019.1683672>

### Security

52. Jia, H., Chen, R., Wei, L., Zhang, G., Jiao, M., Liu, C., Sha, Z., Zhou, S., Wang, Y., Li, J., Jia, X., Ismael, O. Y., Mao, J., & Wu, Q. (2020). What is the impact of restricted access policy on workplace violence in general hospital? A before-after study in a Chinese tertiary hospital. *BMC Health Services Research*, 20(1), 936. <https://doi.org/10.1186/s12913-020-05757-7>

## Care across the Lifespan

### Therapeutic Environments: Behavioral/Mental Health

53. Gbyl, K., Østergaard Madsen, H., Dunker Svendsen, S., Petersen, P. M., Hageman, I., Volf, C., & Martiny, K. (2016). Depressed patients hospitalized in southeast-facing rooms are discharged earlier than patients in northwest-facing rooms. *Neuropsychobiology*, 74(4), 193–201. <https://doi.org/10.1159/000477249>
54. Holmes, S., Baumhover, M., & Lockwood, J. (2020). Safety unseen: Leveraging design to improve inpatient mental health-care practices. *Creative Nursing*, 26(3), e48–e55. <https://doi.org/10.1891/CRNR-D-20-00030>
55. Sneathen, G., Jeffries, V., Thomas, E., & Salzer, M. (2020). Welcoming places: Perspectives of individuals with mental illnesses. *American Journal of Orthopsychiatry*, in press. <https://doi.org/10.1037/ort0000519>

### Pediatric

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#### Labor & Delivery

59. Ban, Q., Chen, B., Kang, J., Zhang, Y., Li, J., & Yao, J. (2020). Noise in maternity wards: A research on its contributors and sources. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586720961311>
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#### Elders/Aging

63. Chan, E.-Y., Samsudin, S. A., & Lim, Y. J. (2020). Older patients' perception of engagement in functional self-care during hospitalization: A qualitative study. *Geriatric Nursing*, *41*(3), 297–304. <https://doi.org/10.1016/j.gerinurse.2019.11.009>
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65. King, B., Bodden, J., Steege, L., & Brown, C. J. (2020). Older adults experiences with ambulation during a hospital stay: A qualitative study. *Geriatric Nursing*, in press. <https://doi.org/10.1016/j.gerinurse.2020.08.005>
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### *Cognitive Impairment & Dementia*

67. Toubøl, A., Moestrup, L., Ryg, J., Thomsen, K., & Nielsen, D. S. (2020). Stakeholder perspectives of the dementia-friendly hospital: A qualitative descriptive focus group study. *Dementia*, in press. <https://doi.org/10.1177/1471301220947848>

### *Aging in Place/Healthcare at Home*

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## Building Systems & Technology

69. Cesari, S., Valdiserri, P., Coccagna, M., & Mazzacane, S. (2018). Energy savings in hospital patient rooms: The role of windows size and glazing properties. *Energy Procedia*, 148, 1151–1158. <https://doi.org/10.1016/j.egypro.2018.08.027>
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## Design & Evaluation (e.g., Process, Methods, Simulation Modeling)

75. Bergman, L., Chaboyer, W., Pettersson, M., & Ringdal, M. (2020). Development and initial psychometric testing of the Intrahospital Transport Safety Scale in intensive care. *BMJ Open*, 10(10), e038424. <https://doi.org/10.1136/bmjopen-2020-038424>





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77. Bubric, K., Harvey, G., & Pitamber, T. (2020). A user-centered approach to evaluating wayfinding systems in healthcare. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586720959074>
78. Cao, L., Li, Y., Zhang, J., Jiang, Y., Han, Y., & Wei, J. (2020). Electrical load prediction of healthcare buildings through single and ensemble learning. *Energy Reports*, 6, 2751–2767. <https://doi.org/10.1016/j.egyr.2020.10.005>
79. Carthey, J. (2020). Participatory design, project clients, and healthcare user groups. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586720948462>
80. Dell'Ovo, M., Oppio, A., & Capolongo, S. (2020a). Modelling the spatial decision problem. Bridging the gap between theory and practice: SitHealth Evaluation Tool. In M. Dell'Ovo, A. Oppio, & S. Capolongo (Eds.), *Decision Support System for the Location of Healthcare Facilities: SitHealth Evaluation Tool* (pp. 81–112). Springer International Publishing. [https://doi.org/10.1007/978-3-030-50173-0\\_4](https://doi.org/10.1007/978-3-030-50173-0_4)
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82. Dleikan, C. T., Lakissian, Z., Hani, S., & Sharara-Chami, R. (2020). Designing a simulation center: An experiential guide. *Journal of Facilities Management*, in press. <https://doi.org/10.1108/JFM-02-2020-0011>
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