

# I N F O C U S

STRATEGIC APPROACHES to DESIGN CHALLENGES



**T**HE EMERGING DATA on burnout among front-line workers during the COVID-19 pandemic suggest a troubling future. For example, studies show half of healthcare providers report having considered retiring, quitting their jobs, or even changing careers altogether. The same number say that their mental health has deteriorated, according to the article “Survey of Healthcare Workers Reveals High Levels of Burnout, Stress, & Thoughts of Leaving Their Jobs,” from Berxi, a part of Berkshire Hathaway Specialty Insurance.

While the pandemic has undeniably caused extraordinary stress and frustration, research on levels of attrition among resident physicians in the U.S. suggests that burnout was a problem long before the pandemic began—and it will continue to be a problem long after the pandemic is behind us. High levels of depression and career regret among residents have led researchers to anticipate a shortage of more than 100,000 physicians by 2032, according to the *JAMA* study “Association of Clinical Specialty With Symptoms of Burnout and Career Choice Regret Among US Resident Physicians.” This shortage in frontline workers will likely increase the feelings of burnout among those who remain.

These findings indicate that unless healthcare leaders start to address the key drivers of burnout, the U.S. health system will face challenges in delivering necessary care.

## DIGGING INTO THE RESEARCH

Best practices and policies have evolved over the past several decades to address the issue of burnout in the form of nurse-to-patient ratios, maximum shift lengths, and counseling services; however, the healthcare environment remains a blind spot among decision-makers due to siloing of facilities and real estate from human resources and hospital management. When healthy design practices, such as access to daylight, views of nature, and ergonomic furniture, are implemented, it's often for patients and guests rather than staff.

Yet the effect of the workplace on staff well-being has been well documented. Scientists have known for decades that ergonomics, noise,

## RESEARCH

# ILLUMINATING RESULTS

Frontline workers are burnt out. Studies show the environment can help *By Usha Satish, Anjali Joseph, and Dr. Kaushal Nanavati*

thermal conditions, and other environmental factors are closely related to occupant wellness. Exposure to daylight, in particular, plays an outsized role in our overall well-being and mental health. Like almost all animals, humans have a circadian cycle that regulates sleep, metabolism, heart rate, and body temperature on a 24-hour cycle. Daylight is the main environmental stimulus that syncs the body's internal clock with the external world. When sleep schedules are altered to accommodate shift schedules, the rhythm of the rest of these bodily functions are disrupted with clear neurocognitive consequences. In fact, night shift work has been associated with anxiety, depression, and cardiovascular disease and has been labeled "probably carcinogenic to humans" by the International Agency for Research on Cancer.

Studies have shown that daylight access can reduce stress, lower blood pressure, and even improve a person's cognitive function. For example, the Texas Tech University study "Exploring the Relationships Between Perceived Visual Access to Nature and Nurse Burnout" examined the connection between views of nature and burnout among 51 nurses in six intensive care units at a large hospital. When their break rooms had no windows, the nurses reported being 18 percent more stressed at the end of their shift compared to the beginning. But when they had access to break rooms with daylight and views of the outdoors, they left their shift no more stressed than when they started. In addition, their emotional exhaustion, a state of feeling emotionally drained as a result of accumulated stress, decreased by 26 percent, and their depersonalization, a condition that causes people to feel like a robot, decreased by 40 percent.

Results of another recent study out of SUNY Upstate Medical University (by two of the authors of this article), "The Impact of Daylight on Healthcare Provider Burnout and Performance," provided further corroboration. Researchers measured the burnout of 20 medical professionals working a three-hour shift in the same room on two separate mornings. During one morning, the blinds on the windows were fully open; during the other, the blinds were pulled down completely. Researchers found that when the participants worked with the blinds up, their emotional exhaustion decreased by 25 percent and their depersonalization decreased by 33 percent.

Additionally, when the participants worked with the blinds up, their patient outcomes were better. On both days, participants' cognitive function was assessed using MedThinker, a virtual, interactive training tool that placed participants into a mock intensive care unit. For 45 minutes, the participants had to provide appropriate care to a series of hypothetical patients. Then, they were scored on their positive and negative outcomes. On the day they worked with the blinds up, the participants' MedThinker scores improved dramatically, resulting in a 69 percent increase in safety and 79 percent decrease in errors compared to when they worked with the blinds pulled down. Overall, participants managed patients more effectively, made fewer errors, demonstrated safer behaviors, and were able to manage multiple concurrent tasks.

Burnout, and the concomitant detriments to performance, presents a major challenge to delivering quality care to patients, as well, as demonstrated in two surveys of more than 7,000 U.S. surgeons by the Mayo Clinic. The effort found that burnout was an independent predictor of reporting

a recent medical error and being involved in a malpractice suit. Another study, "Nurse Staffing, Burnout, and Health Care-Associated Infection," published in the *American Journal of Infection Control*, found that burnout among hospital nurses was linked with increased urinary tract and surgical site infections in patients. On top of health risks for patients, the legal costs of medical malpractice can be significant, amounting to \$55.6 billion annually in the U.S.

## DESIGN SOLUTIONS

Simple behavioral and design changes can provide respite for medical workers. For example, in existing facilities, providing staff with break time and space can allow them to decompress and recharge. Many facilities are using outdoor space or break rooms to provide access to daylight for circadian health and connection to nature for mental health. When designing new facilities, consider the access, clarity, and content of views for staff by asking questions such as, Do staff have access to daylight and views during their shift or are they stuck off-stage in the core of a unit? Are windows clear or obstructed by blinds? Are views of something restorative or something stressful?

Research indicates that simple changes to the work environment can have a huge effect on staff morale and well-being. Whether it's considering how the orientation and layout of a site impact daylight and view access during schematic design or simply opening the blinds in an existing facility, healthcare designers and organizations are in a position to positively influence the well-being of staff at every step of the process. ❧

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