

# CHN Brief | Designing Systems to Prevent Physician & Nurse Burnout

Terri Menser, PhD, MBA; Bitu Kash, PhD, MBA; Christof Karmonik, PhD; Farzan Sasangohar, PhD; Ohbet Cheon, PhD; Robert Phillips, MD, PhD

## Background

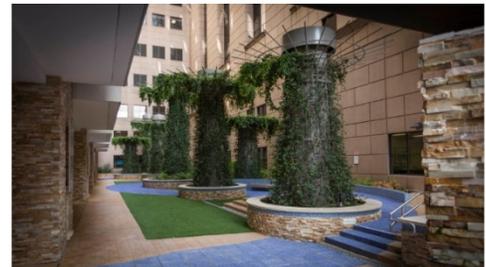
The prevalence of burnout in health services is well-documented and is estimated to affect more than half of practicing physicians nationwide. Burnout has been linked to a number of undesirable outcomes, including medical errors. The cost of burnout has been estimated to be hundreds of millions of dollars due to turnover, reduced hours, and early retirement. Burnout among physicians results from conflict in one or more of these factors: workload, control, reward, community, fairness, and values. **The epidemic of burnout among physicians is widely acknowledged; however, there is still little knowledge regarding practical interventions to prevent and reduce physician burnout.**

## Purpose

Building resiliency into the system through environmental elements is an innovative approach that could affect providers' well-being without demanding additional time/work of physicians. The main focus of this study is nature's effect on the decay in acute stress. Functional 3T MRIs are uniquely designed to understand psychological reactions to stimuli. The 3T MRI will be used to conduct a three part study in order to determine the effect of nature on work stress. First, clinicians' level of burnout and empathy will be assessed. Second, participants will see images of pain while undergoing a functional MRI to capture their reaction to the stimuli. Third, following exposure to pain, participants will be shown either a blank screen or images of nature, depending on random pre-assignment to either the treatment or control group. The initial stress experienced by clinicians will be measured, as well as, the decay of stress over a set time period. This research will allow us to test if exposure to nature significantly accelerates the decay of work stress overtime.

## Impact

The results from this study will provide system leadership with evidence based interventions, such as exposure to nature in the workplace that will significantly and effectively *reduce* stress and burnout among physicians. Interventions will be designed that can be built into the physician environment. **There is the opportunity to design a system that promotes physician and nurse wellness without adding on additional tasks or resiliency training on the already overworked clinician.** Future research will focus on how workforce wellness can be built into the environment taking a systems approach.



### Relevant Publications:

Gregory, S., **Menser, T.** (2015). Burnout among primary care physicians: a test of the areas of worklife model. *Journal of Healthcare Management*, 60(2), 133-148.

Tei, S., Becker, C., Kawada, R., Fujino, J., Jankowski, K. F., Sugihara, G., Murai, T., ... Takahashi, H. (June 03, 2014). Can we predict burnout severity from empathy-related brain activity? *Translational Psychiatry*, 4, e393. doi:10.1038/tp.2014.34