Implementing Human Factors Principles to Utilize Healthcare Workers as an Essential Source of Safety and Resilience to Impact Wellbeing & Burnout

The Collaborative for Human Factors, Cognitive Load, and Well-being

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Problem

Healthcare is at a critical inflection point. Clinicians are questioning whether they can remain in a profession where so much is expected of them, yet policies, resources, and infrastructure are not aligned to allow optimal, safe, and sustainable work. Clinicians must constantly adapt to complex information systems and cumbersome workflows to provide patient care. W**e need systems designed for human capacity and limitations designed by multidisciplinary teams**.

Vision

We propose that integrating **human factors science** (incorporating understanding of behaviors, proficiency, and limitations in system design) and a **Safety II framework** is essential to the future of healthcare safety and the sustainability of the workforce. Rather than attempting to eliminate all errors, we should focus on creating systems that can anticipate and avoid error, but also adapt and recover from errors in a way that supports and leverages human capacity.

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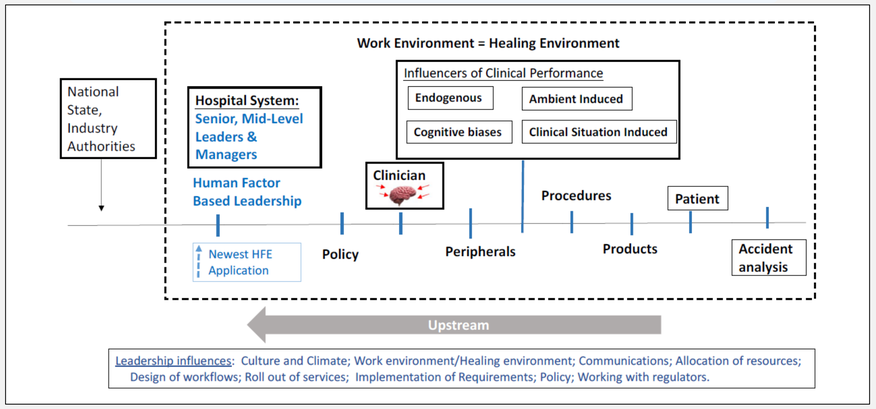
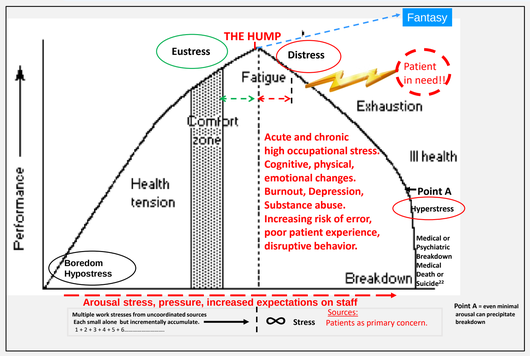
Matching Resources to Workload

Increasing Leadership Awareness of Cognitive Overload



Performance vs. Stress, Pressure, Expectations



Adapted from: Nixon PGF. The Practitioner. (217):765-770. 1976[23]

Interventions:

- Awareness: Danger of excessive well-meaning requirements
- Process/metrics re-evaluation
- Standardization
- Consolidation
- Redundancy
- Prioritize design
- Collaborate: Administrators and clinicians.

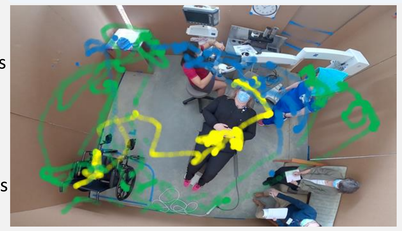
Workshop: Workplace Change Collaborative: Boston MA 3/15/23
Michael R Privitera MD MS

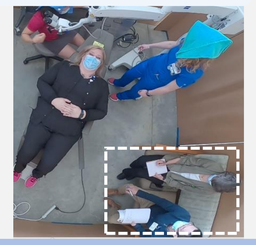
Equipment/Room Layout

Low fidelity mockups:

- Early input into design is critical
- Front line staff must be included
- Full sized mockups
- Scenario based activities
- Video analysis

No single intervention alone will fix burnout



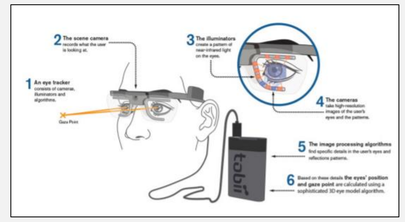


Cognitive Load in Family Medicine Physicians

Project Aims:

- Identify range and frequency of each type of cognitive load experienced by practicing physicians
- Determine effect of cognitive load on clinician wellbeing
- Future: remove extraneous load through redesigning areas associated with high cognitive load

Academy GE Fellows Action Project (April 2023)
Heather Farley, MD, MHCDS, ChristianaCare
Funded by AMA Practice Transformation Innovation Research Grant



Collaborative for Human Factors, Cognitive Load, and Well-being

In 2022, a group of like-minded human factors engineers and physicians began meeting monthly to discuss healthcare system design, patient safety, and healthcare worker well-being. This diverse group of engineers, scientists, and clinicians brought together a breadth of experience in Human Factors research and implementation. The purposes of this group were to:

- Develop a framework to advocate for Human Factors principles with organizational leaders, with focus areas:
  - Healthcare worker cognitive load
  - Advocating for system design approach
  - Proactive system safety (Safety II)
- Share past and current Human Factors research and implementation
- Develop concepts to encourage future work, research, and collaboration

Affiliations

1. Christiana Care and the Sidney Kimmel Medical College at Thomas Jefferson University
2. UCHealth and the University of Colorado School of Medicine
3. University of Rochester Medical Center
4. The American Medical Association
5. Carilion Clinic and the Virginia Tech – Carilion School of Medicine