

Emergency Department Layout and Nursing Physical Fatigue

Nurse physical fatigue is a critical issue that may lead to degradation of care delivery and ultimately medical errors.

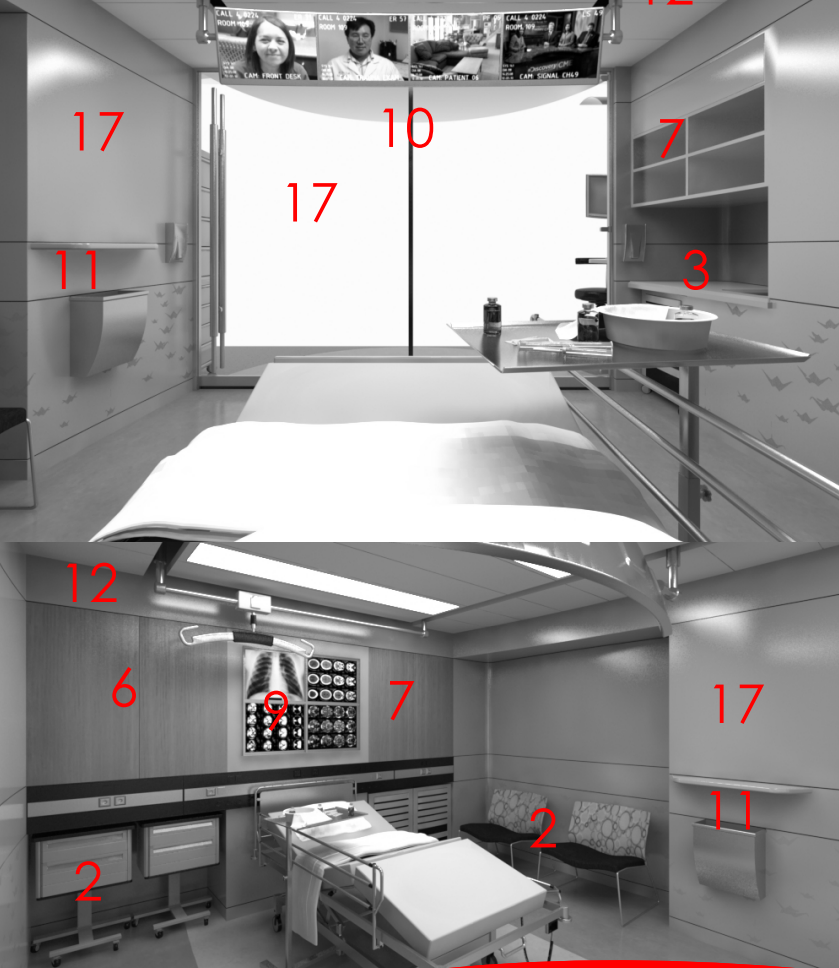
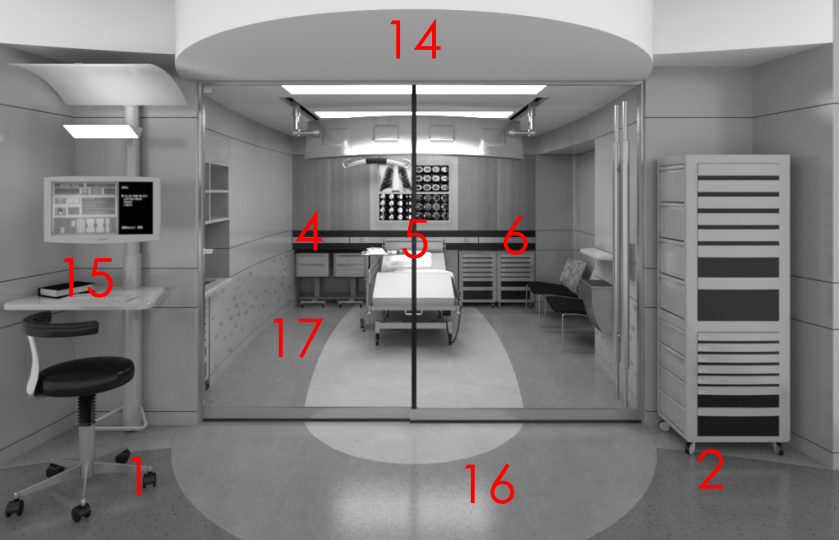
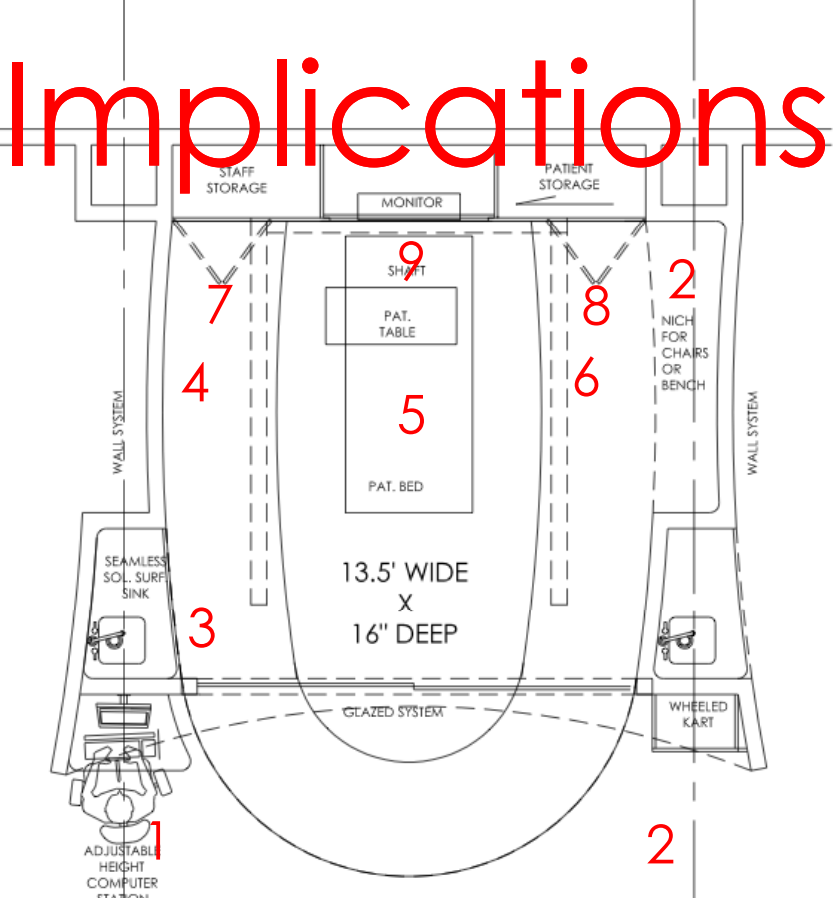
This issue is relevant due to the looming shortage of nurses, which has been linked to the physical demands and potential hazards intrinsic to the profession; as well as because of the graying of the nursing workforce, which faces gradual physical challenges as time in the career advances.

Walking distances play a major role on nurses' physical fatigue and, if reduced, could be translated into less physical activity expenditure and more time spent on patient-care delivery.

In the context of Emergency Departments, the level of physical fatigue can potentially reach its threshold in light of the workloads demanded from nurses in this type of environments.

While in other safety-sensitive industries such as aviation, similar concerns have been the object of systematic research and addressed with consequent standards and regulations, **just now the healthcare sector has been engaged in further investigations.**

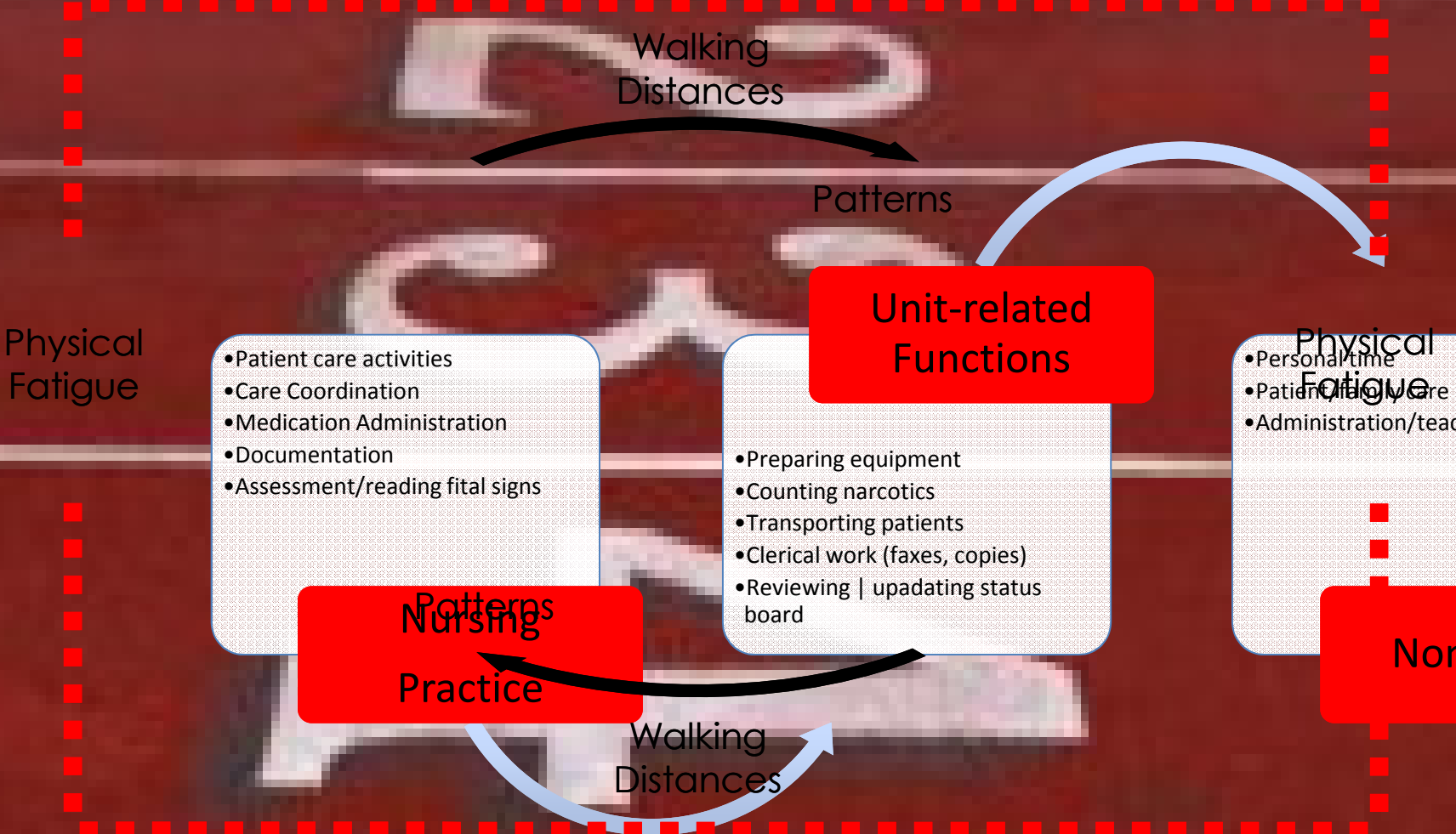
Future Implications



Ed Treatment Room Prototype

1. Nurse station
2. Niche for carts, chairs, bench, equipment
3. Hand wash sink
4. Staff zone
5. Patient zone
6. Family zone
7. Staff storage zone
8. Patient/family storage zone
9. Staff Integrated Information panel
10. Multimedia panel (access to home, nurse, doctor, lab, TV)
11. Perimeter magnetic band for accessories support
12. Slots with tracks for ceiling-hung equipment/devices (light fixtures, monitors, lifts, curtains, etc...)
13. Niches for carts, chairs and sink
14. Pre-manufactured acoustical ceiling tile
15. Demountable, flexible and ergonomic furniture systems
16. Elevated floor with cushioned floor finish
17. Demountable, modular wall/glazed system

Problem



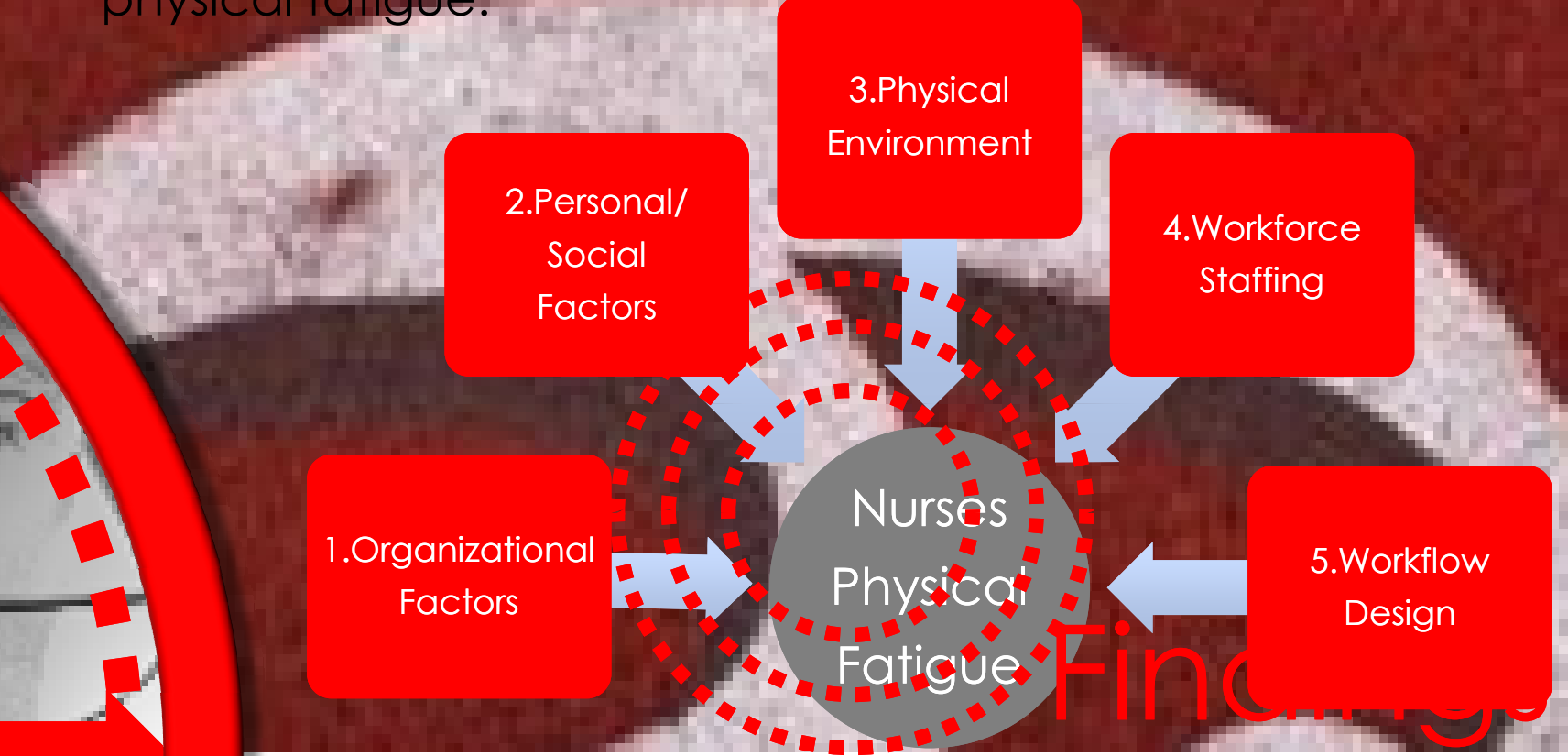
Research Questions

- What is the relationship between the design/layout and physical fatigue of emergency department nurses?
- What is the relationship between walking distances and emergency department nurse physical fatigue?

Methodology To be used

Research Design: Mixed | Exploratory

1. Literature Review
2. Time and motion study to provide evidence-based understanding of how emergency department nurses spend their time, of how much they walk and of the influence of layout on physical fatigue
3. Online Survey to measure the level of nurses perception of physical fatigue.



Expected Results

