

HUMAN FACTORS ENGINEERING ASSESSMENT OF MEDICAL
EMERGENCY DEPARTMENTS

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Thesis under the direction of Professor Daniel J. France

The purpose of this research is to study and quantify the effects of system and human factors on objective workload, subjective workload and physiological stress in residents and attending physicians working in an emergency department (ED) at a Level I trauma center.

The study design is a time-motion task analysis that incorporates objective, subjective, and physiological measures of stress and workload. Several procedural methods and workload assessment techniques were developed, integrated and used to dissect the dynamic ED work environment.

Descriptive statistics characterizing this environment are calculated and compared to previous studies. Methodologies developed for measuring workload continuously are implemented and discussed. The study demonstrates the applicability of human factors engineering to describe a medical work environment and identify potential shortcomings in system and provider-level care.

Approved _____ Date _____