

## **SYSTEMIC AND HUMAN FACTORS THAT CONTRIBUTE TO MEDICAL ERROR: A STUDY OF HIGHER RELIABILITY**

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**Category:** Patient Safety

### **Background**

Despite a focus on improving patient safety and quality of care since the publication of the 2000 report, To Error is Human, there has not been much progress toward preventing adverse medical errors. Many health care organizations are beginning to apply high reliability principles, such as human factors engineering, to help address safety problems. A use of these methods and principles has proven successful in high- risk, complex industries, such as aviation. Like aviation, the health care industry is complex and error prone. Therefore, the experiences cultivated from highly reliable industries might be useful in improving work processes and systems in health care.

### **Objectives**

The purpose of this study was to explore the lessons learned from highly reliable industries, such as aviation, by investigating systemic and human factors that led to medical errors in one health care facility. Using the Human Factors Analysis and Classification System (HFACS) to analyze and categorize causal factors from 108 root cause analyses, the study site was able to determine if an association existed between systemic and human factors. Determining what causal factors were most problematic allowed leaders to precisely focus efforts to specific interventions that would alleviate recurrence of the errors.

### **Methods**

This quantitative exploratory study used descriptive statistics to organize the data alongside higher reliability principles in order to meaningfully evaluate the medical errors.

### **Results**

The data analysis resulted in seven major findings, which yielded two overall indicators of focus: (1) attention to efforts that realize zero harm and (2) managing processes that effectively reduce systemic issues.

### **Discussion**

Leadership's attention to these major focus areas gives insight as to how patient care can be efficiently provided. Likewise, applying human factors engineering principles to medical errors can help improve patient safety, provide empirical knowledge to health care professionals, and increase reliability in the health care industry.