



## Strengthen Systems with Human Factors Engineering

Human factors engineering seeks to identify and address circumstances that hamper a person's ability to perform his or her responsibilities within a system fully. Any event can and most likely does involve human factors components.

The [Human Factors Analysis and Classification System \(HFACS\)](#) (*login required*) categorizes events into four buckets: unsafe acts, preconditions for unsafe acts, supervision, and organizational influences. [ECRI Institute PSO has seen many events](#) (*login required*) that underscore the need to use human factors and systems thinking to better identify an event's underlying causes. Without this approach, organizations are missing opportunities to prevent similar events from recurring.

### **Unsafe acts**

This category is comprised of errors and violations. Examples include performing a task at the wrong time, ignoring a warning, taking a shortcut, or deviating from the rules. ECRI Institute PSO has seen instances of such events resulting from time pressures. Another event type that falls within this category is the "routine violation," which is often seen in the form of workarounds.

### **Preconditions for unsafe acts**

Preconditions for unsafe acts include environmental factors, operator condition, and personnel factors. This category focuses on circumstances that can create the potential for an adverse event. ECRI Institute PSO has seen such events related to the effects of mental fatigue, task overload, environmental factors, and inadequate communication.

### **Supervision**

Supervisory factors include inadequate supervision, planned inappropriate operations, failure to address known problems, and supervisory violations. ECRI Institute PSO has seen these factors in events related to insufficient staffing.

### **Organizational influences**

This category includes some of the broadest, most overarching circumstances that can lead to an adverse event, such as organizational climate, processes, and resource management. ECRI Institute PSO has seen such factors in cases in which a lack of formal processes led to an adverse event.

### **Contact us for help**

Do you need help reviewing, analyzing, or learning from an unsafe condition, near miss, or adverse event at your organization? [Contact us](#), and let us demonstrate how we can help you.

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