



# 13 PRINCIPLES TO REDUCE MEDICAL ERRORS IN HOSPITALS

**W**hile the airline industry celebrates no loss of life in the past year due to accidents, the medical profession continues to wrestle with medical errors. For example, analyzing the medical death rate data during an eight-year period, by Johns Hopkins patient safety experts found more than 250,000 deaths per year in the U.S. that were attributed to medical errors.

Many, if not most, hospitals in the U.S. continue to make great strides in improving patient safety, but more can be done.

One way of improving patient safety is to take a human factors engineering approach, which is a way of looking at the problem from a “systems” perspective. That is, medical errors are not just the result of human error, but also the result of the systems in which humans work and interact. Thus, any improvement in reducing medical errors must come from looking at the systems and processes as a whole, not just at the individual level. The airline industry has been particularly effective in this approach, reducing errors by looking at all of the various elements that make up the whole and building in preventable measures, redundancies, and protocols. So how can a systems approach be applied to a hospital?



In the book, *Error Reduction in Health Care: A Systems Approach to Improving Patient Safety*, author and editor Patrice Spath spells out **13 principles** that hospitals can apply to reduce medical error using a systems approach.

Those 13 principles are:

1. Simplify the process; reduce hand-offs
2. Standardize
3. Reduce reliance on memory
4. Improve information access
5. Use constraints and forcing functions
6. Design for errors
7. Adjust work schedules
8. Adjust the environment
9. Improve communication
10. Decrease reliance on vigilance
11. Provide adequate training
12. Choose the right staff for the job
13. Engage patients and family members

## 13 PRINCIPLES TO REDUCE MEDICAL ERRORS

### 1. SIMPLIFY THE PROCESS; REDUCE HAND-OFFS

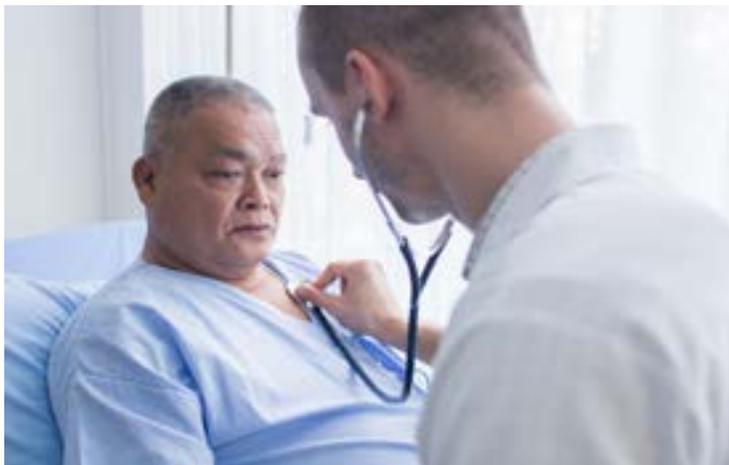
Many errors come from simple slips in transfers of materials, information, people, instructions or supplies. Therefore, anything that can simplify processes that are easier for people to understand and errors are easier to recognized will help reduce errors.

### 2. STANDARDIZE

If a task is done the same way ever time – by everyone – there is less chance for error.

### 3. REDUCE RELIANCE ON MEMORY

Despite its incredible potential, human memory can fail us. As a result, any system that can help reduce errors caused by memory overload is a welcome addition to any system.



### 4. IMPROVE INFORMATION ACCESS

Good decisions require good information. Thus, people must have ready access to relevant and complete information or faulty decisions can and will occur.

### 5. USE CONSTRAINTS AND FORCING FUNCTIONS

The prompt after hitting the delete key — “Are you sure” — is an example of a constraint that makes it more difficult to commit errors. Meanwhile, forcing functions, which are a “form of physical constraint in which the actions are constrained so that failure at one stage prevents the next step from happening” is another way to prevent errors.

### 6. DESIGN FOR ERRORS

Design systems that encourage error detection and correction before an accident occurs are invaluable to hospitals. Independent double checks are also a way to add a fresh perspective by having one practitioner cross-check the work of another. Research has shown that people find approximately 95% of mistakes when check the work of others.

### 7. ADJUST WORK SCHEDULES

Practices such as failing to provide a sufficient number of staff members for the job (increasing workload) and frequently altering work shifts of employees (increasing fatigue) may ultimately lead to errors in human performance. Researchers, for example, found that nurses who work overtime were three times as likely to make an error if they worked shifts lasting 12.5 hours or more.

## 8. ADJUST THE ENVIRONMENT

Human factors engineers have long recognized the error-producing factors in work environments, such as noise, poor lighting, heat, and clutter. Anything that can improve a working environment will help reduce errors.

## 9. IMPROVE COMMUNICATION

To reduce mistakes, avoid indirect communication among the work team and cut down on the number of communications per task. For example, when discussing patients with same name or last name, a nurse and



physician may be talking about care for two different people. Anything that mitigates that scenario, such as patient assignment automation, will reduce potentially life-threatening errors.

## 10. DECREASE RELIANCE ON VIGILANCE

Relying on caregiver vigilance as the primary strategy for preventing mishaps is problematic. For example, when people are expected to devote too much of their attention to a problem or situation, they are apt to devote too much of their attention to a problem or situation, they are apt to become forgetful or complacent in their vigilance.

## 11. PROVIDE ADEQUATE SAFETY TRAINING

If faced with an unsafe situation, staff members need to know what steps they need to take and they must be given the power to act. For example, staff at Virginia Mason Medical Center are taught to “stop the line” and make an immediate report to a patient safety specialist when faced with a situation like to cause patient harm.

## 12. CHOOSE THE RIGHT STAFF FOR THE JOB

For any job or task, it is important to identify people the abilities necessary to perform the job safely. Staff members should be adequately trained in the competencies that are necessary for their job and have both the skill and knowledge to recognize a potentially medical error.

## 13. ENGAGE PATIENTS AND FAMILY MEMBERS

Training patients to be more assertive and involved in the medical encounter has shown to be effective in increasing patient involvement in their own care and producing better health outcomes. Patients can be one more safeguard against untoward events by paying attention to the care being provided to them.

Medical errors are a fixable problem in healthcare, but to do so requires a dedication and commitment towards finding workable, viable solutions. Looking at medical errors from a systems perspective is a good first step.

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