

Learning System: Reliability

by Capella Healthcare



WHAT'S COVERED

In this lesson, you will learn about the second component of learning systems: reliability. Specifically, this lesson will cover:

1. Definition
2. Principles

1. Definition

Reliability is the ability of a system to repeatedly, successfully produce a product to specification; in healthcare, safe, efficient, person-centered care is that product. Reliability can be challenging in healthcare because it includes many complex systems and processes that are dependent on ways that humans interact with each other. Vigilance and persuasion are inadequate to overcome human error, and sometimes good people make mistakes that can have dire consequences. Great organizations design systems using human factors engineering to take advantage of people's strengths and support their inherent weaknesses, thereby increasing the likelihood of reliable performance.

To realize high levels of reliability system-wide, organizations must employ best evidence and minimize clinical variation—with the goal of defect-free operation over time. This is reliability science.



TERM TO KNOW

Reliability

Applying best evidence and minimizing non-patient-specific variation, with the goal of failure-free operation over time

2. Principles

These are the four main principles for making systems and processes more reliable.

Principle	Description
Standardize	Design systems and processes in which everyone follows the same steps, completing a task the same way every time. Standardization makes it easier to train people on the process, and

	makes it readily visible when and where a process has failed. This enables the organization to target improvement efforts.
Simplify	The more complex a process is the more apt people are to forget the steps and make mistakes, or not to follow the process in the first place because it is too difficult or time-consuming. A rule to live by is KISS—Keep it simple, stupid.
Reduce autonomy	Physicians have historically been autonomous, making decisions based on personal preference or belief in their point of view. However, this can lead to clinical variation and inconsistent outcomes. By using evidence-based standards and clinical protocols, we can achieve higher reliability, except in cases in which standard protocols are contraindicated for specific patients.
Highlight deviation from practice	Physicians sometimes have good rationale for deviating from standardized processes. Healthcare organizations need to create an environment for physicians to use their clinical judgment and deviate from protocols as appropriate. The key is to capture the deviation for analysis to determine if there is a need to modify the protocol. This will result in higher reliability.

Any deviation from protocols or evidence-based practice should be documented in the medical record with the reason for the deviation. This documentation allows for continuity of care and allows the next clinician to understand the rationale. It also aids in reviewing the current standard, especially in the case of a common occurrence.

Reliability principles should be applied to each system or process that requires improvement. Initially, a high-level flow chart should be created so the team can visualize the current process or system. Then the team can quickly identify issues with the current process. It's best to identify a subset of the population and work to improve the reliability of their care. Once reliability is achieved in this population, expand it to other populations.

Organizations should strive for the highest level of reliability for each process. Processes with potential catastrophic outcomes should have 100 percent reliability (for example, wrong-site surgery or blood administration). However, for other processes referred to as non-catastrophic—ones in which patients will not experience harm within the next few hours—95 percent reliability is acceptable: the remaining 5 percent would take substantial resources to achieve, so the cost-benefit makes it not feasible. In these cases, other processes should be in place to identify and correct these defects.

The team should continuously monitor the process to determine if it is producing the expected outcome and it is in line with goals. If it is not producing the desired results, or the performance begins to slip, the team should revisit the process and identify and address any root causes.

Visual management boards (VMB) can be used daily by senior leaders and staff on clinical units to review performance on key process metrics in real-time. Run charts are easy to use and display in the VMB but need to be updated on a regular basis. Quality personnel can become part of the team to assist with the monitoring and continued learning from the process improvement. The Institute for Healthcare Improvement has a toolkit for VMBs on their website (see the additional resources in the Course Summary lesson).

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Support

If you are struggling with a concept or terminology in the course, you may contact **RiskManagementSupport@capella.edu** for assistance.

If you are having technical issues, please contact **learningcoach@sophia.org**.



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