

Clarity PSO Learning Series

Topic: Handoffs – Old Topic, New Perspective

Before we dive into this issue of the PSO Learning Series on handoffs, we want to share with you a different perspective on safety in order to give you a new way to think about this old topic.

Processes, along with a culture of safety, are part of the foundation of any high-functioning unit, department or organization. Healthcare processes are extremely complex and patient safety risks come from both human factors and system operations. To improve patient safety outcomes in this area, some healthcare providers have been looking to innovative approaches and sources outside of healthcare. One such source is resilience engineering, "the intrinsic ability of a system to adjust its functioning prior to, during, or following changes and disturbances, so that it can sustain required operations under both expected and unexpected conditions" (Hollnagel, 2016).

In a workshop dedicated to uncovering the value and potential of resiliency engineering for healthcare, Dr. David Woods and Dr. Erik Hollnagel clearly explained the connection that so often exists throughout all patient safety events (Baker, 2013):

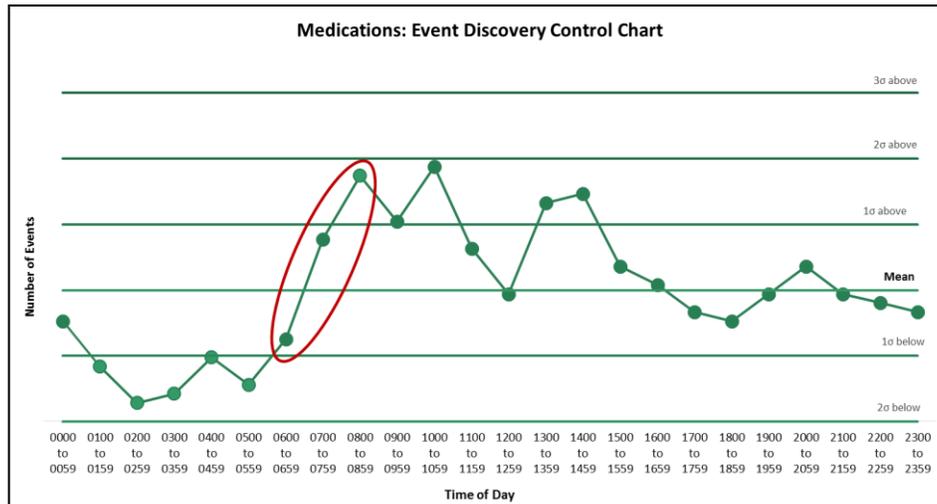
- Dr. Woods proposed that problems arise from the complexity and brittleness of systems rather than from the erratic behavior of the people who operate them. Complexity in a system results from extensive and often hidden interdependencies, and systems are increasingly brittle due to short-term pressure on them to work faster, better and cheaper.
- Dr. Hollnagel explained that there are two fundamental interpretations of safety: safety-I and safety-II. Safety-I is defined by the absence of things that can lead to a negative outcome, such as accidents, incidents and near misses. Under this interpretation, safety can be improved by identifying and addressing the factors that contribute to adverse outcomes. On the other hand, safety-II is defined by the ability to succeed in both expected and unexpected situations; with this interpretation, safety can be improved by understanding and strengthening the everyday performance of systems. In safety-I, we learn from what went wrong after an adverse event; in safety-II, we learn from what went right in any event with a positive outcome.

In the meeting summary, [*Ideas to Innovation: Stimulating Collaborations in the Application of Resilience Engineering to Healthcare*](#), you will find more insight from Dr. Woods and Dr. Hollnagel on resilience engineering. We hope this information sparks new thoughts and ideas on handoffs as you read this issue of the PSO Learning Series.

What We Learned

Each quarter, Clarity PSO reviews medication events submitted by our clients to identify trends and areas for improvement. In our latest analysis, we found an interesting correlation between medication errors and the time of day these events were discovered by staff members.

As the graph depicts, there was a rapid increase in the volume of events discovered between 6am and 9am. In other words, the number of errors noticed by staff increased rapidly over these three hours. The clinical significance of this data is due to the concurrent nursing shift change that occurs during this time period. This information is important because it supports the notion that handoffs or shift changes create vulnerability for our patients and the likelihood for error is higher during this time.



By the numbers, 16% of medication events in which time of discovery was known occurred between 6am and 9am. During these hours, nurses are, generally, preparing to change shift, changing shift or organizing their recently given workload.

Data also showed that the majority of these events involved:

- Administration of **incorrect doses**
- Medications administered at the **incorrect time**
- **Lack of monitoring** of specific drugs (i.e. trough levels for Vancomycin)
- **Lack of clear medication orders**

68% of the events between 6am and 9am were designated as “preventable.”

Insight and Investigation

Without intervention, the likelihood for patient safety errors during handoffs remains high. It is important to recognize, though, that the handoff process itself is not always the sole root cause or sole contributing factor to the development of these errors. Often times, the handoff process is not even overtly recognized as a catalyst for the mistake/error. Consider the sheer volume of activities that are converging during these hours. For example, all levels of staff are changing shift (from residents and physicians to nursing and housekeeping), physicians are starting their patient rounds, patients are beginning their days, visiting hours begin, patients are being admitted and discharged, and patients are being prepared for activities, tests and procedures.

Of course, this is not a complete list of activities that occur during handoff hours; it is a broad overview of the complexity of this time. As we know, everything is happening at once; the new shift is attempting to learn the issues and the “to dos” of the previous shift and attempting to pick up where the last shift left off. Yet, while the new shift is trying to stay fluid with the last shift, it is vital to realize that **the interacting variables have changed** (the providers are different, the status of a patient on night shift may quickly alter during the day shift and vice versa, new tests will be run, etc.). Thus, it is of utmost importance to have seamless, efficient protocols and procedures in place to assist staff in performing a fluid transition. It becomes very challenging to focus solely on communication failures during handoffs without considering the various other factors that may be dividing a provider’s attention. We may need to attempt to solve the problem and dismantle the root cause within the context of the issue. This is why a culture of safety, communication, standardization, and well-oiled processes are instrumental to an organization seeking to promote patient safety. As Atul Gawande (2009) said, “We’re obsessed in medicine with having great components—the best drugs, the best devices, the best specialists—but pay little attention to how to make them fit together well” (p. 184).

Resources

The call to action here is to be proactive about re-defining how handoffs occur at all levels of our organizations and thereby diminishing the number of patient safety events associated with handoffs. To do this, we need to expand our perspective on handoffs and the complexity that influences that process. We must examine the current processes that help or hinder it. In a complex organization, we often see departments conducting handoffs in their own way, and as such, there are different methods of communication across departments. But, this begs the question, **what processes or tasks can be standardized** to reduce the amount of variation between providers and thus the likelihood of an error?

To answer this question and to help you develop your proactive approach to patient safety and handoffs, here are a few resources on the topic:

- [Targeted Solutions Tool for Hand-Off Communications](#) – This document briefly discusses the Joint Commission Center for Transforming Healthcare’s tool on diminishing communication errors during the handoff process.
- [Shift-to-Shift Handoff Research: Where Do We Go from Here?](#) – This article discusses the future of handoffs.
- [Failure Modes and Effects Analysis \(FMEA\) Based on *In Situ* Simulations](#) – This document explains how to perform an FMEA on current processes through the use of simulation.
- [Joint Commission Failure Mode, Effect, and Criticality Analysis Worksheet](#) – This worksheet provides you with a template to perform an FMEA with an addition of criticality.
- [Using Six Sigma® Methodology to Improve Handoff Communication in High-Risk Patients](#) – This study shows how through the use of Six Sigma® and simulation, the handoff process for postoperative pediatric patients with heart disease was improved and the likelihood of treatment delays decreased.
- [Human Factors Engineering](#) – This resource comes from AHRQ’s Patient Safety Network and provides an overview of the commonly used human factors approaches to addressing patient safety.
- [MedStar Health’s Resilience Engineering in Healthcare Website](#) – This website offers presentations and slides related to resilience engineering and how this concept can be applied in healthcare.

References

- Baker, K. (Ed.) (2013). *Ideas to innovation: stimulating collaborations in the application of resilience engineering to healthcare* (Publication). Retrieved from <http://www.educause.edu/ir/library/pdf/ERM0813.pdf>
- Gawande, A. (2009). *The checklist manifesto: How to get things right*. New York, NY: Picador.
- Hollnagel, E., Ph.D. (2016). Resilience Engineering. Retrieved March 1, 2016, from <http://erikhollnagel.com/ideas/resilience-engineering.html>