

What's New in the Patient Safety World

October 2020

Common Cause Analysis

We learn a great deal from performing root cause analyses (RCA's) after various incidents. But one thing many organizations fail to do is to learn to identify themes that are common to multiple incidents. One process to identify such themes is called **common cause analysis**.

Basically, a common cause analysis involves aggregation of RCA's and identification of themes common to events found in RCA's done after the individual events. It often better brings into focus system vulnerabilities that might be downplayed in individual RCA's. For example, you might identify one or more factors in multiple RCA's on seemingly unrelated events.

A recent paper showed how one pediatric hospital used common cause analysis of hospital safety events that involve radiology to identify opportunities to improve quality of care and patient safety ([Khalatbari 2020](#)). The authors reviewed all RCA's of incidents involving diagnostic or interventional radiology over a 5+ year period.

From 19 safety events, they identified 64 sequential interactions that were attributed to the radiology department. Of these 19 events, 9 were classified as a serious safety event, 9 as a precursor safety event, and 1 as a known complication. The 9 serious safety events included a delay in diagnosis or treatment (6) or other procedural errors (3). The 9 precursor safety events included a wrong or unnecessary procedure (3), procedural errors (3), delay in diagnosis or treatment (2) and loss of patient data (1). Overall, five diagnostic errors occurred. The two most common system failure modes identified for all 64 sequential interactions were culture (32.8%) and process (21.9%).

Common cause analysis uses Pareto charts to prioritize those factors that occur most often in untoward incidents. It also uses identification of "key processes" (specific sequences of distinct tasks that are essential to the delivery of care and service in the hospital) and "key activities" (distinct tasks that are part of a key process and which may be components of multiple key processes). Some of you may recognize those concepts as being similar to some of the important elements of LEAN.

The authors conclude that common cause analyses of safety events allow for a more robust understanding of system failures and have the potential to generate more specific process improvement strategies to prevent the reoccurrence of similar errors.

We cite this study not so much to highlight their specific findings, especially since the paper is somewhat difficult to read and uses a lot of technical jargon and taxonomies not often used by most of us. Rather, we wish to draw your attention to the potential utility of common cause analysis.

In another paper that may be a bit more clinically relevant to most, Clapper and Crea ([Clapper 2010](#)) used common cause analysis to investigate medication errors throughout the system in a large health organization, identify solutions, and reduce adverse events in high-risk medications by 50%.

And, in our September 10, 2013 Patient Safety Tip of the Week “[Informed Consent and Wrong Site Surgery](#)” we discussed a paper that performed a common cause analysis after a series of wrong-site surgical events in a US hospital ([Mallett 2012](#)). One of the themes they identified was related to documents used in verification. They found that the consents were not always placed in the correct location in the medical record, were not available to be reconciled, did not specify laterality, and were not obtained by the practitioner performing or involved in the procedure. One of their solutions was revision of the consent form to include a legend (right, left, and bilateral) next to where the practitioner writes the name of the procedure to be performed. That provides a visual cue to the practitioner to ensure laterality during the informed consent procedure. Secondly, they implemented a policy that informed consent must be only obtained by the physician/practitioner performing the procedure or by the resident/fellow who will be performing or assisting with the procedure.

Common Cause Analysis (CCA) is another tool to add to your armamentarium for identifying system factors contributing to adverse events. It’s particularly good for identifying factors whose importance you might otherwise underattribute as significant vulnerabilities in your organization.

Some of our prior columns on RCA’s, FMEA’s, response to serious incidents, etc:

July 24, 2007	“ Serious Incident Response Checklist ”
March 30, 2010	“ Publicly Released RCA’s: Everyone Learns from Them ”
April 2010	“ RCA: Epidural Solution Infused Intravenously ”
March 27, 2012	“ Action Plan Strength in RCA’s ”
March 2014	“ FMEA to Avoid Breastmilk Mixups ”
July 14, 2015	“ NPSF’s RCA2 Guidelines ”
July 12, 2016	“ Forget Brexit – Brits Bash the RCA! ”
May 23, 2017	“ Trolling the RCA ”
October 2019	“ Human Error in Surgical Adverse Events ”
January 2020	“ ISMP Canada: Change Management to Prevent Recurrences ”

References:

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Clapper C, Crea K. Common Cause Analysis. *Patient Safety & Quality Healthcare* 2010; May/June 2010
<https://www.psqh.com/analysis/common-cause-analysis/>

Mallett R, Conroy M, Saslaw LZ, Moffatt-Bruce S. Preventing Wrong Site, Procedure, and Patient Events Using a Common Cause Analysis. *American Journal of Medical Quality* 2012; 27: 21-29
<https://journals.sagepub.com/doi/pdf/10.1177/1062860611412066>

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