

# Common Cause Analysis: Focus on Institutional Change

Anne Marie Browne, MSN, RN; Robert Mullen, PharmD; Jeanette Teets, MSN, CRNP, RN;  
Annette Bollig, MSN, RN; James Steven, MD, SM

## Abstract

The Children's Hospital of Philadelphia has created a mechanism for sharing root cause analysis (RCA) findings with senior leaders through annual common cause analysis (CCA). As each RCA is completed, reports are shared with senior leaders and discussed each month at the Patient Safety Advisory Committee meeting. We have found it helpful to summarize these findings each year by organizing the action items into themes. This practice was initiated 2 years ago, and as a result, several high-scoring items have been included on the organizational operating plan for the upcoming fiscal year. Given that endorsement by senior leadership is key to initiating change, these data have proven beneficial to gain this endorsement.

In a year, an average of 25 events, including serious events and near misses, are evaluated. Of those 25 events, about 16 undergo a formal RCA, yielding approximately 10 action items each. These are sorted according to various headings, such as by department and by National Center for Patient Safety Triage Card™ categories (human factors communication, training, fatigue and scheduling, barriers, rules/policies/procedures, and environment). Once themes are identified, action items are listed under the appropriate theme. Themes are then prioritized by scoring for severity, occurrence, and detectability. Findings presented to senior leaders and other appropriate groups provide objective data for departments. Staff members who conduct RCAs are included in discussions to provide details of the findings and recommendations. They are also included whenever possible in efforts to make changes. This process closes the loop for those conducting the RCA. Once items are added to the organizational operating plan, multiple issues can be addressed through one effort, raising the level of commitment to address the items.

## Introduction

Root cause analysis (RCA) is a widely recognized tool utilized by high-risk industries to identify underlying causes upon retrospective analyses of events. RCA has been systematically introduced into health care as a part of the patient safety movement. Typically, RCA in health care is performed in response to a single patient safety event or a cluster of similar events with the goal of identifying causal factors. These factors necessitate a detailed plan for improvement in response to the event. Organizations in which numerous RCAs are conducted can easily become overwhelmed with the list of improvement actions. In addition, this process may not reveal deeper themes and more common causes of patient safety events. Necessary improvement actions may be broader in scope than a particular case may reveal. In some cases, the findings from a single case may cause an organization to take action, only to learn that the action was only a partial solution, or worse yet, the action produced unintended negative consequences.

At The Children’s Hospital of Philadelphia, a less well-known approach—common cause analysis (CCA)—is utilized. CCA helps us analyze data from RCAs, which in turn allows us to recognize trends and establish themes in patient safety. CCA ultimately allows us to gain support for leveraging change by prioritizing and incorporating the identified themes into an annual organization-wide operating plan.

Conducted annually, CCA consists of a review of all RCA findings from the previous year. The process includes:

- Assessing all identified action plans based on identified vulnerabilities.
- Determining the extent to which action plans were completed.
- Sorting and analysis of data to identify common themes.
- Assigning risk priority numbers (RPNs) to themes, in a manner similar to the risk prioritization used in failure modes and effects analysis (FMEA).
- Discussing and reviewing CCA findings with key stakeholders and ultimately senior administrative and medical leadership.
- Using the themes, once they are validated, to shape institutional priorities.

Senior leaders at our institution convene annually to create an organizational operating plan, which defines priorities and goals for the coming year. The plan is organized according to a “five-pillar model”:

1. Quality and patient safety.
2. Service.
3. People.
4. Growth.
5. Finance.

Each pillar identifies the highest priority projects for the coming year and defines key measures that are carefully tracked and reported regularly across the institution.<sup>1</sup>

For the past 2 years, vulnerabilities identified through the CCA process have been incorporated into the development of the annual organizational “Quality and Patient Safety” pillar. This course of action assures that appropriate resources and attention are devoted to the most important patient safety vulnerabilities. The outcome of this process also inspires an increased level of commitment and investment for staff members who participate in RCA teams, as their efforts are validated by institutional response to RCA findings. In this way, staff members and physicians are able to appreciate the importance that the organization places on patient safety.

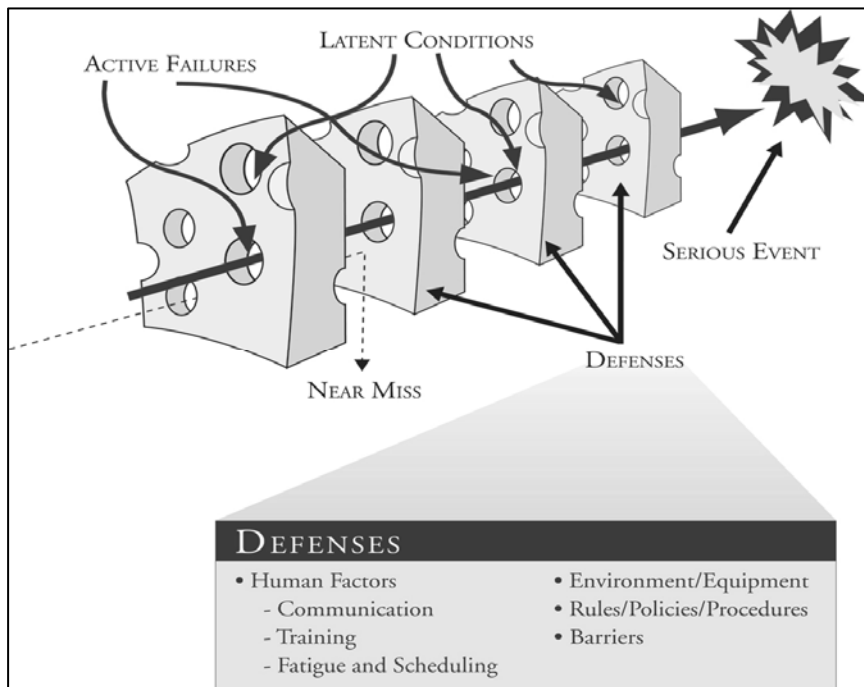
## **Background**

In recent years, improving patient safety has been identified as one of the key challenges in health care. Professional and consumer literature constantly draws attention to human error and the frailties of our health care system. One of the critical transforming concepts of safety science

is that a “system,” not an individual acting alone, predominates in establishing safety. The patient safety movement seeks to build a culture in which systems mitigate human error and prevent harm to patients.<sup>2</sup>

The basic premise of the systems approach is that humans are fallible, and errors are to be expected, even in the best people and organizations. When an error results in harm to a patient, it should be regarded as a consequence rather than cause, having its origins in upstream systemic factors.<sup>3</sup> In other words, systems should be designed to mitigate human error. The system becomes the focus in creating an environment that is safe for patients and employees.

Reason’s “Swiss Cheese Model” (Figure 1) is often used to depict the way systems place barriers designed to prevent harm and create safe processes.<sup>4</sup> Yet, every barrier has weaknesses. “Active failures” are unsafe acts committed by people who are in direct contact with the patient or system. They include slips, lapses, mistakes, etc. “Latent conditions” are the inevitable systems failures, that relate to design—such as alarms that are not trustworthy, understaffing, or poor product design.



**Figure 1.** The “Swiss Cheese Model” depicting the way systems place barriers designed to prevent harm and create safe processes. Source: Adapted from Reason 2002 and US Department of Veterans’ Affairs NCPS Triggering and Triage Cards™

Individually, one active failure or latent condition may not threaten patients, but they can align to allow a human error to result in a harmful serious event. Left unchanged, a system can only be expected to continue to achieve the same results. To achieve a different level of performance, it is essential to change the system in ways that improve its ability to intercept errors.<sup>5</sup>

The medical model has traditionally been one of looking at human error and assigning blame to the error. However, failure to recognize and address the system context in which clinicians provide patient care will doom subsequent clinicians to initiate the same chain of events, resulting in an injury to future patients. Identifying system deficiencies and vulnerabilities requires specifically designed analytic tools. RCA is one such tool.





















