

## Near Miss Root Cause Analysis Reflection

As a medical student, my education has largely been divided into two different schools of teaching: didactic classroom instruction and hands-on apprenticeship. The balance between these two components has shifted towards the latter as I have progressed in my education. For example, we first learn about the anatomy and physiology of the heart, then progress to learn about the textbook presentation and patho-physiology as well as treatments of processes such as congestive heart failure. Then as upper years we encounter patients who are faced with these conditions and are tasked with using our knowledge base to provide appropriate care and treatment. In my experience, it is this last component that truly solidifies a student's knowledge and competency in a particular topic. However, this system doesn't exist for root cause analysis and other similar systems of recognizing and fixing the underlying causes of medical errors.

Winston Churchill once said, "All men make mistakes, but only wise men learn from their mistakes." In the field of healthcare, it is especially important to recognize this concept. In 1999, The Institute of Medicine publicized the high death rates that were occurring due to medical error in *"To Err Is Human: Building a Safer Health System"*. One important method that has emerged to help investigate mistakes is the Root Cause Analysis (RCA). It involves analyzing a situation to assess underlying factors that resulted in any adverse event with the goal to identify possible targets for intervention (Patient Safety Network, 2016).

My initial experience with the RCA method was during a summer internship in Quality Improvement and Safety at a local hospital. During this experience, I had the opportunity to sit in on multiple root cause analysis presentations. From this, I learned the basic structure of a RCA, how the proceedings occurred, and the overall template for event review. However, I remained largely an observer during this experience. In a way, this reflected the didactic classroom

component of my RCA teaching. The experience was enlightening and provided a necessary foundation for understanding the larger role of RCAs within an institution.

My understanding of the analysis and investigation was not truly solidified until I experienced the hands-on apprenticeship element through the Near Miss Root Cause Analysis (NMRCA) curriculum at Thomas Jefferson University. It was here that I truly learned what was involved in a RCA investigation. Our interprofessional team consisted of two medicine residents, one medical student, and one nurse practitioner student. The diversity of professions and educational levels helped provide a variety of views, opinions, and approaches to the investigation. In particular, the unique interprofessional structure of the curriculum helped improve teamwork competencies, and challenged our members to think outside of their own professional roles.

While in this role, I became an active participant in the RCA investigation. The first challenge we faced was how to best communicate amongst individuals with varying and demanding schedules. The NMRCA takes advantage of an online learning platform designed for team collaboration. This was utilized to facilitate asynchronous group work. We interviewed the various staff members involved with the case directly, speaking with nurses, physicians, housestaff, and other teams about their knowledge of policy and practice. Potential systemic factors such as hospital policy, scheduling and documentation were also evaluated. At this point, I recognized for the first time the depth and breadth of work that is necessary to conduct a thorough RCA investigation, and the complexity of coordinating this work amongst multiple team members. Initially, it seemed simple enough to divide the tasks evenly among team members. As we proceeded, tasks quickly were redistributed based on level of access to staff members and documents, as well as level of clinical knowledge.

The medical residents were able to provide personal insight into the application of hospital policy and procedures, as well as attest to everyday communication amongst the hospital staff. They work on the floors regularly and thus were best able to comment on the environment of the hospital. As housestaff, they were able to easily access the other faculty and staff for interviews. Furthermore, they were able to discuss which interventions they thought would be most practically implemented and accepted by the residents and other medicine staff.

The nurse practitioner student provided information in regards to specific nursing policies and procedures. She helped show the difference in electronic records that nurses had access to versus the medical staff's view. She pointed out and facilitated discussion of which profession should maintain responsibility for different tasks.

As a medical student recently starting clinical rotations, my hospital experience has been minimal; however, this enabled me to provide an outside perspective to the analysis. I was not previously involved in daily implementations of hospital policy; thus I was able to question why certain steps occurred. This helped elucidate that certain procedures were not documented policies, but rather were performed out of routine, which led to a discussion of routine procedures. Subsequently, I was able to provide outside research and studies to further educate the group on the prevalence of and solutions to the adverse event outside of our hospital.

After completing the investigation, we worked together to create a presentation summarizing our findings. We presented our investigation at a conference to interested parties, similar to the conferences I attended during my summer internship. We facilitated discussion and analysis amongst

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the participants, who were members from a variety of health professions. Our goals were to enable participants to recognize the error and risk, identify the contributing causes, and generate systems-level solutions through interprofessional problem solving.

My experience with the investigation of near miss events confirmed my belief that a hands-on approach is necessary to truly become proficient in an educational competency. In my prior summer internship experience, all of the research had already been completed and was presented in a clean and organized presentation. Had I not participated in the NMRCA curriculum, I would not have learned the true importance of having an interprofessional team when performing the investigation.

Overall, the hands-on, interprofessional setup of the team helped make the near

miss RCA investigation successful. This approach allows participants to be fully immersed in the process and learn the intricacies involved in completing an investigation. The diversity of team members led to an in-depth investigation that looked at the error from a variety of perspectives. The interprofessional approach was further strengthened through the conference at the end of the curriculum. This event provided a greater breadth of perspectives by incorporating an even larger number of professions. The NMRCA curriculum will be strengthened by the incorporation of other interprofessional team members such as occupational therapy, physical therapy, pharmacy, and others in future analyses. By including multiple professions in the discussion of the case and development of potential solutions, it increases the likelihood that these action plans will be effective in the future. From this experience I

learned it is important to continue to create interprofessional teams for any future root cause analysis programs.

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### REFERENCES

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