

## **NURS-FPX4035 Assessment 2 Root-Cause Analysis and Safety Improvement Plan**

Student Name

Capella University

NURS-FPX4035: Coordinating Patient-Centered Care

Professor Name

Month, Year

## **Root-Cause Analysis and Safety Improvement Plan**

Root-cause analysis (RCA) is a structured method for investigating adverse events to identify their underlying causes and prevent recurrence. By looking beyond immediate, surface-level explanations to uncover systemic factors, RCA enables meaningful, lasting safety improvements. This paper applies root-cause analysis to a medication administration error and develops an evidence-based safety improvement plan, demonstrating how systematic investigation leads to effective prevention.

### **Description of the Adverse Event**

The adverse event under analysis involves a patient who received a double dose of an anticoagulant medication, resulting in a bleeding complication that required intervention. The error occurred during a busy shift when the administering nurse was interrupted multiple times and the barcode scanning system was bypassed due to a malfunctioning scanner. The patient required additional monitoring and treatment as a result of the error.

This event provides a clear example for root-cause analysis because it involves both individual actions and systemic failures that can be examined and addressed. The error did not result from a single cause but from a combination of factors that aligned to permit harm. Analyzing these factors reveals the systemic weaknesses that contributed to the error and identifies opportunities for improvement.

Anticoagulants are high-risk medications, meaning that errors involving them are particularly likely to cause serious harm. This characteristic makes the event especially significant and underscores the importance of robust safety measures for high-risk medications.

The analysis of this event therefore has implications not only for preventing similar errors but for improving the safety of high-risk medication administration more broadly.

### **Root-Cause Analysis**

Root-cause analysis examines the event by asking what happened, why it happened, and what systemic factors contributed. This structured inquiry moves beyond the immediate cause to uncover the underlying conditions that allowed the error to occur. In this case, several root causes emerge from the analysis.

First, frequent interruptions during medication administration disrupted the nurse's focus, increasing the likelihood of error. Second, the malfunctioning barcode scanner removed a critical safety check that would otherwise have caught the error. Third, inadequate staffing increased workload and time pressure, contributing to the conditions in which the error occurred. Fourth, the absence of a mandatory double-check for high-risk medications allowed the error to reach the patient without an additional safeguard.

The analysis reveals that the error was not simply a matter of individual fault but the result of multiple latent system weaknesses that aligned to permit harm (Charles et al., 2016). This finding is consistent with the understanding that adverse events typically result from systemic factors rather than individual negligence. By identifying these root causes, the analysis provides the foundation for a targeted safety improvement plan that addresses the underlying conditions that produced the error.

### **Safety Improvement Plan**

Based on the root-cause analysis, the safety improvement plan addresses each identified cause. To reduce interruptions, the plan implements a 'no interruption zone' and visible signage during medication administration, helping nurses maintain focus during this critical task. This measure directly addresses one of the key contributing factors identified in the analysis.

To address technology failures, the plan establishes routine equipment maintenance and a clear protocol for when scanners malfunction, ensuring that safety checks are maintained even when equipment fails. To mitigate workload pressures, the plan advocates for safe staffing levels that allow nurses adequate time for safe medication administration. To prevent dosing errors, the plan mandates an independent double-check for all high-risk medications such as anticoagulants, adding a crucial safeguard for the medications most likely to cause harm.

The plan also includes staff education and a timeline for implementation, with clearly assigned responsibilities to ensure accountability. Educating staff about the new protocols and the rationale behind them is essential to successful implementation. By assigning responsibilities and establishing a timeline, the plan ensures that the improvements are implemented systematically and that progress can be monitored.

### **Evaluation and Sustainability**

The effectiveness of the plan will be evaluated through ongoing monitoring of medication error rates, adherence to the new protocols, and staff feedback. This evaluation determines whether the plan achieves its goal of reducing errors and whether the new protocols are being followed. Monitoring adherence and gathering staff feedback also help identify any challenges in implementation that need to be addressed.

Regular review allows the team to refine the interventions and sustain improvements over time. Safety improvement is not a one-time effort but an ongoing process that requires continual attention and adjustment. By reviewing outcomes regularly and refining the interventions as needed, the team can ensure that the improvements are maintained and that the plan continues to be effective.

Embedding the changes into policy, orientation, and workflow ensures they endure beyond the initial implementation. By integrating the new protocols into the organization's policies, incorporating them into staff orientation, and embedding them in routine workflows, the plan ensures that the improvements become a permanent part of practice. This integration is essential to sustaining the safety improvements and preventing the recurrence of similar errors.

### **Conclusion**

Root-cause analysis transforms an adverse event into an opportunity for learning and improvement. By identifying the systemic causes of a medication error and developing a targeted safety improvement plan, healthcare teams can prevent similar events and enhance patient safety. The analysis reveals that errors typically result from multiple systemic factors rather than individual negligence, directing attention to the changes needed to prevent recurrence.

This systematic, evidence-based approach—grounded in a culture of safety rather than blame—is essential to reducing harm and improving the quality of care. By addressing the root causes of errors and embedding improvements into policy and practice, healthcare organizations can create safer systems that protect patients. The root-cause analysis and safety improvement plan exemplify the proactive, systematic approach to safety that defines high-quality healthcare. By treating each adverse event as an opportunity to strengthen the system rather than to assign

blame, healthcare organizations build the resilient, learning-oriented culture that is essential to continuously improving patient safety.

MyNursingAssignment.com

## References

Charles, R., Hood, B., Derosier, J. M., Gosbee, J. W., Li, Y., Caird, M. S., Biermann, J. S., & Hake, M. E. (2016). How to perform a root cause analysis for workup and future prevention of medical errors: A review. *Patient Safety in Surgery*, 10, 20. <https://doi.org/10.1186/s13037-016-0107-8>

Hammoudi, B. M., Ismaile, S., & Abu Yahya, O. (2018). Factors associated with medication administration errors and why nurses fail to report them. *Scandinavian Journal of Caring Sciences*, 32(3), 1038–1046. <https://doi.org/10.1111/scs.12546>

Institute for Safe Medication Practices. (2020). Targeted medication safety best practices for hospitals. ISMP. <https://www.ismp.org/guidelines/best-practices-hospitals>