Nursing & Health Sciences | BSN | Assessment 2

Free NURS-FPX4020 Assessment 2: Root-Cause Analysis and Safety Improvement Plan

Complete Distinguished-Level Model Sample

Course code	NURS-FPX4020
Course	Improving Quality of Care and Patient Safety
Deliverable	4-6 page root-cause analysis and evidence-based safety improvement plan
Quality-improvement focus	Closed-Loop Insulin Medication Safety Bundle
Author metadata	Flexpath assignment help

Model scenario notice. The patient, clinical unit, baseline data, event details, and performance results in this sample are fictional. They are used to demonstrate complete academic analysis without representing an actual patient or organization.

How to use this sample. Study the organization, evidence integration, clinical reasoning, and alignment between the root-cause analysis and the improvement plan. Do not submit this file as your own work. Replace the hypothetical details with your own course-approved scenario and original analysis.

Canonical sample page

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Root-Cause Analysis and Safety Improvement Plan: Wrong-Patient Insulin Administration

Purpose. This root-cause analysis examines a fictional wrong-patient insulin event on an adult medical-surgical unit and develops a feasible safety improvement plan. The analysis uses a systems approach. It does not assume the event resulted from one careless action. It asks what conditions allowed the action to reach the patient and what defenses should be redesigned.

Event Description and Impact

Mr. R., a fictional 68-year-old patient with type 2 diabetes and pneumonia, was scheduled to receive correctional rapid-acting insulin. During a busy evening pass, a float nurse prepared insulin for two patients. The bedside barcode scanner failed to connect. The nurse was interrupted by a telephone call and a non-urgent monitor alarm, then used a manual override and printed worksheet to continue. Ten units of rapid-acting insulin intended for another patient were administered to Mr. R. Approximately one hour later, he became confused and diaphoretic. His glucose was 42 mg/dL. He received intravenous dextrose and frequent glucose monitoring and remained hospitalized for additional observation.

The immediate patient impact was severe hypoglycemia and exposure to possible neurological, cardiac, and fall-related harm. The family experienced anxiety and loss of confidence. The nurse experienced emotional distress. The unit incurred additional treatment, monitoring, investigation, and staffing costs. The event also signaled that the existing BCMA process could be bypassed when equipment failed.

Chronology of the Event

Time	Event	Safety defense status
18:40	Nurse reviews eMAR and prepares two patients' medications.	Multiple high-alert doses handled in the same preparation period.
18:46	Scanner fails to connect at Mr. R.'s bedside.	Primary electronic match unavailable; no immediate spare device.
18:48	Nurse receives call and responds to non-urgent alarm.	Task interrupted; no protected medication process or restart check.
18:51	Manual override is selected using printed worksheet.	Override not independently reviewed; patient-medication match bypassed.
18:53	Ten units rapid-acting insulin administered to Mr. R.	No targeted independent double check.
19:48	Patient develops symptoms; glucose is 42 mg/dL.	Harm detected through clinical change, not preventive defense.
19:52	IV dextrose given; provider and pharmacist notified.	Rescue process works, but only after harm reaches patient.

Root-Cause Analysis

Method. The analysis combines a five-whys sequence with a fishbone structure. The aim is to move from the visible error to latent conditions. A root cause is not simply the last action before harm. It is a controllable system weakness that, if corrected, reduces the likelihood of recurrence.

Five-Whys Analysis

Question	Finding
1. Why did Mr. R. receive the wrong insulin dose?	The nurse administered insulin prepared for another patient.
2. Why was the mismatch not detected?	The nurse bypassed bedside barcode verification and no independent high-alert check occurred.
3. Why was barcode verification bypassed?	The scanner failed, there was no immediately available replacement, and the override process allowed work to continue without equivalent safeguards.
4. Why did the nurse continue under unsafe conditions?	The medication pass was interrupted, workload was high, float orientation did not cover the unit downtime process, and staff believed delays would be criticized.
5. Why had these conditions not been corrected?	Scanner failures and override patterns were not jointly reviewed by nursing, pharmacy, IT, and quality; near-miss feedback was weak; and insulin safeguards were not standardized.

Contributing Causes by System Domain

People. Float nurse unfamiliar with unit-specific downtime expectations; cognitive overload; interrupted task; second nurse not assigned for targeted verification.

Process. No standardized pause-restart method after interruption; manual override lacked a compensating identity and dose check; two patients' insulin prepared within the same work sequence.

Technology. Unreliable scanner connectivity; no rapid replacement route; override reason codes not analyzed; printed worksheet did not provide real-time decision support.

Environment. Peak evening workload, alarms, calls, and competing demands; medication preparation area exposed to interruptions.

Communication. Scanner failure not escalated to charge nurse or IT; expectations for delays were unclear; near-miss learning was not returned to staff.

Leadership and culture. Productivity pressure was stronger than stop-the-line language; competency validation and audit feedback were inconsistent; responsibility was divided across departments.

Root Causes

- **Unsafe exception design:** scanner failure converted a protected process into an unprotected manual process.
- **Inadequate high-alert defenses:** insulin administration did not require a meaningful independent check when barcode verification was unavailable.
- **Weak interruption management:** the unit lacked a reliable way to defer non-urgent demands and restart safely after an interruption.
- **Fragmented governance:** nursing, pharmacy, IT, education, and quality did not jointly monitor equipment failures, overrides, competencies, and events.

- **Insufficient learning culture:** staff reported limited feedback from near misses and did not consistently stop work when conditions were unsafe.

Application of Evidence-Based Strategies

BCMA reliability and workflow fit. BCMA can reduce wrong-patient and wrong-medication risk, but its benefit depends on consistent bedside use and on how the system handles exceptions. Mulac et al. (2021) documented real-world deviations from BCMA policy, while Grailey et al. (2023) identified organizational and behavioral barriers that influence use. For this unit, the evidence supports maintaining functional devices, defining a rapid replacement route, simplifying legitimate workflow, and auditing overrides by reason and location.

Layered safeguards for insulin. The Institute for Safe Medication Practices (2024) supports multiple defenses for high-alert medications. A targeted independent double check should be used when barcode verification is unavailable or when dose, timing, product, glucose, or meal status creates elevated risk. The process must be independent: the second nurse reviews the order, patient, product, dose, and relevant clinical data before hearing the first nurse's answer. Standardized storage and labeling reduce selection risk.

Interruption control and human factors. Alteren et al. (2021) showed that nurses actively develop strategies to handle interruptions, which indicates that a useful intervention should be designed with nurses rather than imposed as a slogan. A protected medication cue, coverage rule, and restart checklist can lower non-urgent interruptions while preserving immediate response to emergencies.

Education and teamwork. Jaam et al. (2021) found that pharmacist-led education can reduce medication errors. Grimes and Guinan (2023) also support interprofessional medication-safety education. The plan therefore combines brief online preparation, live demonstration, and scenario-based competency involving nurses, pharmacists, educators, and IT support.

Just culture and feedback. Event and near-miss reporting should be used for learning. Staff need visible evidence that reports lead to equipment repair, policy clarification, and workflow redesign. Monthly unit feedback should describe patterns and actions without publicly identifying individual clinicians. Accountability remains necessary for deliberate unsafe choices, but ordinary human error should prompt support and system improvement.

Safety Improvement Plan

Action	Owner and timing	Measure and target	Resources
Inspect all scanners, assign device locations, keep charged spare, and establish 10-minute escalation/replacement route.	Nurse manager, IT, biomedical support; weeks 1-2	>= 98% daily functionality; median replacement time <= 10 minutes	Existing devices, help desk, asset log, charge-nurse phone
Launch bedside patient-and-medication scanning with a compensating downtime algorithm.	Nursing, pharmacy, IT; pilot weeks 3-4, spread weeks 5-8	>= 95% complete scan compliance; 100% overrides have valid reason	eMAR/BCMA reports, downtime cards, audit support
Introduce targeted independent insulin double check and standardized restart after interruption.	Nurse educator and medication-safety pharmacist; weeks 3-5	>= 90% eligible checks documented; >= 90% staff demonstrate restart skill	Checklist, simulation room, educators, super-users
Use protected medication cue and triage rule for non-urgent interruptions.	Unit council and charge nurses; pilot weeks 3-6	30% reduction in non-urgent interruptions; no increase in delayed urgent response	Visual cue, huddle script, coverage plan
Create just-culture dashboard and monthly PDSA review.	Quality, risk, pharmacy, unit leadership; start week 2, monthly	50% reduction in insulin errors/near misses by day 90; staff feedback score improves	Incident system, analytics support, quality committee time

Organizational Resources

Existing human resources. The organization already has bedside nurses, charge nurses, a nurse educator, pharmacists, IT analysts, biomedical support, quality specialists, risk management staff, and a shared-governance council. The plan assigns clear responsibilities instead of creating a separate new department. Unit super-users can provide peer coaching during the first month.

Existing technical and data resources. BCMA and the eMAR already produce scan and override data. The incident reporting system can capture near misses and harm. The learning management system can document education completion. Help-desk logs can identify repeat device and connectivity problems. These sources should be combined in one small dashboard rather than requiring duplicate manual documentation.

Existing governance resources. The medication-safety committee can approve the high-alert workflow. The nursing practice council can review feasibility and staff feedback. The quality committee can support PDSA methods, while risk management can ensure disclosure and reporting requirements are followed. Finance can estimate avoided harm and equipment replacement costs.

Potential gaps. Protected time is needed for training, device testing, and audit review. If existing analytics staff cannot build the dashboard, a temporary manual sample audit may be used. Additional scanners should be purchased only after the team confirms whether the problem is device quantity, battery management, wireless coverage, maintenance, or workflow. This prevents a costly technology purchase that does not address the actual cause.

Implementation, Evaluation, and Sustainability

Plan-Do-Study-Act testing. The team will begin with one eight-bed pod. In the Plan stage, staff will map the current process and agree on definitions. In the Do stage, they will test the scanner escalation route, interruption cue, downtime check, and education scenario. In the Study stage, the team will compare process and outcome measures and gather nurse and patient feedback. In the Act stage, the team will modify the workflow before spreading it. Small testing protects patients and improves staff ownership.

Evaluation design. Weekly process data will include full bedside scan compliance, manual overrides, eligible double checks, scanner downtime, staff competency, and observed interruptions. Monthly outcomes will include insulin administration errors, near misses, severe hypoglycemia, rescue treatment, and related length-of-stay effects. Balancing measures will include medication-pass duration, delayed urgent care, duplicate documentation, and staff workload. Data will be displayed as simple run charts so the team can distinguish sustained improvement from one favorable week.

Sustainability. Successful steps will be embedded in orientation, annual competency, device maintenance, and the insulin policy. Super-users will coach new staff and float nurses. Monthly audits can decrease to quarterly after six months of stable performance, but severe events and override spikes will trigger immediate review. Leadership will report both improvements and unresolved barriers. Sustained safety depends on continued learning, not on declaring the project complete after the first target is reached.

Conclusion

The wrong-patient insulin event was enabled by an unsafe technology exception, interruption, absent high-alert verification, incomplete orientation, and fragmented oversight. The root-cause analysis therefore leads to a layered plan rather than one corrective action. Reliable BCMA, a safe downtime process, targeted independent checks, interruption management, interdisciplinary education, just-culture feedback, and PDSA measurement directly address the causes identified. The plan is feasible because it uses existing staff, systems, and governance while requesting focused resources where the current process is weak.

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APA note. URLs and DOIs are included as live links for research verification. Confirm your institution's current APA 7 requirements before submission.

Distinguished-Criteria Alignment

Expected performance area	Evidence in this sample
Analysis of root cause	Chronology, five-whys analysis, six system domains, and five explicit root causes.
Evidence and best practices	Current evidence is applied directly to each causal pathway instead of being listed separately.
Feasible improvement plan	Actions include owners, timing, targets, and required resources, plus PDSA spread and balancing measures.
Organizational resources	Human, technical, data, governance, and potential resource gaps are identified and justified.
Professional communication	The report is structured as a complete RCA with precise language, tables, APA references, and live research links.