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Patient safety Program

POLICY:

Mountain West Surgical Center will institute and administer a comprehensive and continuous Patient Safety Program for all patients to improve patient safety and reduce risk to patients through an environment that encourages:

- Recognition of risks to patient safety and medical/health care errors
- Actions to reduce these risks
- Internal reporting of incidents and potential incidents and actions taken
- Focus on processes and systems rather than individual blame

PURPOSE:

The Patient Safety Program provides a systematic, coordinated and continuous approach to maintenance and improvement of patient safety by using established mechanisms to support responses to actual occurrences, have an ongoing proactive plan to reduce medical/health errors, and integrate patient safety as a high priority in all relevant organizational processes and services.

RESPONSIBILITY:

As with patient care, it is a coordinated and collaborative effort of the entire organization to maintain and improve patient safety.

The Governing Body approves the data-driven Patient Safety Program and ensures the program reflects the complexity of the facility's organization and services, including those services furnished under contract or arrangement and focuses on the prevention and reduction of medical/health errors and adverse effects.

The Clinical Director is responsible for the management of the Patient Safety Program by:

- Coordinating all patient safety activities
- Facilitating assessment and appropriate responses to reportable events
- Monitoring Root Cause Analysis and resulting action plans

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- Serving as a liaison among the departments to assure facility wide integration of the Patient Safety Program.

Each individual employee within the organization acts as a patient advocate for safety and is responsible to report patient safety occurrences and potential occurrences to the QAPI Coordinator and the Clinical Director, who will aggregate the occurrence information and report to the Governing Body.

PROGRAM:

The scope of the Patient Safety Program includes an ongoing assessment to prevent error occurrence, maintain and improve patient safety.

Patient Safety occurrence information from aggregated data reports and individual incident occurrence reports will be reviewed to prioritize organizational patient safety efforts.

Types Of Patient Safety Or Medical/Health Care Errors:

- No Harm Errors – those unintended acts, either of omission or commission, or acts that do not achieve their intended outcome, that do not result in a physical or psychological negative outcome, or the potential for a negative outcome, for the patient.

- Mild-Moderate Adverse Outcome Errors – those unintended acts, either of omission or commission, or acts that do not achieve their intended outcome, that result in an identified mild to moderate physical or psychological adverse outcome for the patient.

- Any Medication Error

- Any Adverse Drug Reaction

- Any Transfusion Reaction

- Hazardous Condition – any set of circumstances, exclusive of the disease or condition for which the patient is being treated, which significantly increases the likelihood of a serious physical or psychological adverse patient outcome.

- Sentinel Event – an unexpected occurrence involving death or serious physical or psychological injury or the risk thereof, including any process variation for which a recurrence would carry a significant chance of serious adverse outcome. Serious injury specifically includes loss of limb or function. Sentinel event criteria includes:

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- The event has resulted in an unanticipated death or major permanent loss of function, not related to the natural course of the patient's illness or underlying condition.
- The event is one of the following (even if the outcome was not death or major permanent loss of function):
  - Suicide of a patient.
  - The sexual assault of a patient during treatment or while the patient was on the premises of the facility.
  - A hemolytic transfusion reaction involving administration of blood or blood products having major blood group incompatibilities.
  - Medication error resulting in a patient's unanticipated death or major permanent loss of bodily function in circumstances unrelated to the natural course of the illness or underlying condition of the patient.
  - A surgical procedure on the wrong patient or on the wrong body part of a patient.
  - A foreign object accidentally left in a patient during a procedure.
  - A patient death or serious disability associated with the use or function of a device designed for patient care that is used or functions other than as intended.
  - Near Miss – any process variation which did not affect the outcome, but for which a recurrence carries a significant chance of a serious adverse outcome.

What To Do When A Patient Safety Error Occurs

Upon identification of a medical/health care error, the patient care provider will immediately:

- Perform necessary healthcare interventions to protect and support the patient's clinical condition.

- As appropriate to the occurrence, perform necessary healthcare interventions to contain the risk to others – example: immediate removal of contaminated IV fluids from supply should it be discovered a contaminated lot of fluid solutions was delivered and stocked.

- Contact the patient's attending physician and other physicians, as appropriate, to report the error, carrying out any physician orders as necessary.

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- Preserve any information related to the error (including physical information). Examples of preservation of physical information are: Removal and preservation of blood unit for a suspected transfusion reaction; preservation of IV tubing, piggyback fluid for a patient with a severe drug reaction from IV medication; preservation of medication label for medications administered to the incorrect patient. Preservation of information includes documenting the facts regarding the error on an occurrence report, and in the medical record as appropriate to organizational policy and procedure.

- Report the medical/health care error to the staff member's immediate supervisor.

- Submit the incident occurrence report to the QAPI Committee per organizational policy.

Internal Reporting Of The Error/Event

Staff response to medical/health care errors is dependent upon the type of error identified:

- **No Harm Errors** – (including "no harm medication errors), staff will document appropriately in the medical record according to organizational policy, document the circumstances regarding the no harm error on an incident occurrence report form, submit the form to the QAPI Committee and notify their immediate supervisor.

- **Mild-Moderate Adverse Outcome Errors** (including medication errors), staff will perform any necessary clinical interventions to support and protect the patient and notify the physician responsible for the patient, carrying out any necessary physician orders. Staff will then preserve any physical evidence as appropriate, notify their immediate supervisor, document facts in the medical record and on an incident occurrence report, submitting the report to the QAPI Committee per policy.

- **Adverse Drug Reaction** – staff will perform any necessary clinical interventions to support and protect the patient and notify the physician responsible for the patient, carrying out any necessary physician orders. Staff will then preserve any physical evidence as appropriate, notify their immediate supervisor, document facts appropriately in the medical record and on an incident occurrence report, submitting the report to QAPI Committee per organizational policy.

- **Transfusion Reaction** – staff will perform any necessary clinical interventions to support and protect the patient and notify the physician responsible for the patient, carrying out any necessary orders. Staff will then follow the organization policy and procedure for this event.

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- **Hazardous Condition/Patient Safety Issue** - as appropriate, and if possible, staff will contain the hazardous condition or patient safety issue. Staff identifying a hazardous condition or potential patient safety issue will immediately notify their supervisor and document the findings on an incident occurrence report which is then submitted to QAPI Committee

- **Sentinel Event** – staff will perform any necessary clinical interventions to support and protect the patient and notify the physician responsible for the patient, carrying out any necessary physician orders. Staff will then follow the organizational Sentinel Event Policy and Procedure, which includes a root cause analysis and action plan.

- **Near Miss** – staff will report the near miss event to their immediate supervisor, describe the facts of the near miss on an occurrence report and submit the report to QAPI Committee.

- It is the intent of this facility to adopt a non-punitive approach in its management of errors and occurrences. All personnel are required to report suspected and identified medical/health care errors, and should do so without the fear of reprisal in relationship to, their employment. This organization supports the concept that errors occur due to a breakdown in systems and processes, and will focus on improving systems and processes, rather than disciplining those responsible for errors and occurrences. A focus will be placed on remedial actions to assist rather than punish staff members, with the individual staff member's supervisor determining the appropriate course of action to prevent error recurrence.

Root Cause Analysis

- All sentinel events and near miss occurrences will have a root cause analysis conducted to examine the cause and effect of the event through an impartial process

- A Root Cause Analysis is an interdisciplinary review process for identifying the basic or contributing causal factors that underlie a variation in performance associated with an adverse event or reportable patient safety event. It focuses primarily on systems and processes, includes an analysis of underlying cause and effect, progresses from special causes in clinical processes to common causes in organizational processes, and identifies potential improvements in processes or systems.

- The QAPI Committee is responsible for conducting the root cause analysis. It will be completed within 45 days of becoming aware of one of the reportable events. They will encourage the staff members' involvement in the root cause analysis and action plan processes, to allow the staff member an active role in process resolution.

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A written Root Cause Analysis and "Action Plan" will be created which includes specific measures to correctly identify problems or areas of concern, identify strategies for implementing system improvements; and also includes outcome measures to indicate the effectiveness of system improvements in reducing, controlling or eliminating identified problem areas. The action plan must specifically address responsibility for implementation and oversight, time frames for implementation, and the strategy for measuring the effectiveness of the actions.

- The Joint Commission recommended "A Framework for a Root Cause Analysis and Action Plan In Response to a Sentinel Event" format may be used. See attached.

- Results of the entire Root Cause Analysis will be presented to the Governing Body for evaluation.

Communication of Action Plans and Root Cause Analysis

- Action Plans related to a Root Cause Analysis will be shared with the entire staff upon Completion by the QAPI Committee. Possible recommendations to update or change policy and procedures may be presented to the staff, management and Governing Body to improve patient safety.

- Staff will educate patients and their families about their role in helping to facilitate the safe delivery of care. There will be a random record review verifying compliance with this educational process.

- Root Cause Analysis and Action Plans will be made available to the state health department representatives during onsite reviews.

Reporting Obligations

- Medical/Health care errors and occurrences, including sentinel events, will be reported internally and externally, through the channels established by this plan. External reporting will be performed in accordance with all state, federal and regulatory body rules, laws and requirements.

Patient Safety Program Staff Education/Training

- Staff will receive education and training during their initial orientation process and on an ongoing basis regarding job-related aspects of patient safety, including the need and method to report medical/health care errors. And, because the optimal provision of healthcare is provided in an interdisciplinary manner, staff will be educated and trained on the provision of an interdisciplinary approach to patient care.

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- Medical errors results from multiple factors. Flawed systems or processed can combine with active failures by caregivers in the clinical setting to produce accidents and errors. Some contributing factors are:
  - Inadequate communication among team members
  - Incomplete review of patient health records and diagnostic studies
  - Traditional hierarchical and autocratic cultures
  - Patient – related decisions made only by physicians
  - Unclear instructions
  - Confusing packaging of medications and supplies
  - Time pressures and constraints, Multi-tasking
  - Failure to include the patient and family members in assessment and decision-making

- Staff will be trained about error reduction, which requires the commitment of all members of the health care team. Besides correcting the identified factors above, the following individual and facility changes will be focused on:
  - Reduce reliance on memory by using checklists and protocols.
  - Standardize processes as much as possible for procedures and other activities.
  - Focus on the safety aspects of products during the selection and evaluation process.
  - Promote safety related clinical competency.
  - Educate employees about the potential for errors and how to avoid them.
  - Creating a "Culture of Safety" whereby there is a change of environment from blaming individuals for errors to one in which errors are treated as opportunities to improve systems. This is accomplished by:
    - establishing a sense of trust among team members;
    - dissemination and verifying receipt of information to all levels of staff and management;
    - developing and supporting a proactive approach rather than a reactive approach;
    - making a sincere commitment to affirming safety as the first priority.

- Quarterly Patient Safety Program meetings will be incorporated into the QAPI Program and conducted to review any incident occurrence reports and review any new patient safety recommendations or alerts.

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FRAMEWORK FOR ROOT CAUSE ANALYSIS AND CORRECTIVE ACTIONS*

The Joint Commission's Framework for Root Cause Analysis and Action Plan provides an example of a comprehensive systematic analysis. The framework and its 24 analysis questions are intended to provide a template for analyzing an event and an aid in organizing the steps and information in a root cause analysis.

An organization can use this template to conduct a root cause analysis or even as a worksheet in preparation of submitting an analysis through the online form on its *Joint Commission Connect*™ extranet site. Fully consider all possibilities and questions in seeking "root cause(s)" and opportunities for corrective actions. Be sure to enter a response in the "Analysis Findings" column for each item. Unexpected findings may emerge during the course of the analysis, or there may be some questions that do not apply in every situation. For each finding continue to ask "Why?" and drill down further to uncover why parts of the process occurred or didn't occur when they should have. Significant findings that are not identified as root causes themselves have "roots." "Corrective Actions" should be developed for every identified root cause.

While the online form provides drop-down menus for many of the form's cells, the options for these columns are provided here in the following tables:

The following are in the Root Cause Analysis section:
Root Cause Types: Table A-1 (column 1)
Causal Factors/Root Cause Details: Table A-1 (column 2)

In the Corrective Actions section, the following are added:
Action Strength: Table A-2
Measure of Success: Table A-3
Sample Size: Table A-4

*Disclaimer: The framework found on *Joint Commission Connect*™ will show the most current iteration of this form.

EVENT DESCRIPTION

When did the event occur?

Date:	Day of the week:	Time:

Detailed Event Description Including Timeline:

Diagnosis:

Medications:

Autopsy Results:

Past Medical/Psychiatric History:

ROOT CAUSE ANALYSIS - QUESTIONS

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
1	What was the intended process flow?	List the relevant process steps as defined by the policy, procedure, protocol, or guidelines in effect at the time of the event. You may need to include multiple processes. Examples of defined process steps may include, but are not limited to: • Site verification protocol • Instrument, sponge, sharps count procedures • Patient identification protocol • Assessment (pain, suicide risk, physical, and psychological) procedures • Fall risk/fall prevention guidelines ***Note:*** The process steps *as they occurred in the event* will be entered in the next question.			
2	Were there any steps in the process that did not occur as intended?	Explain in detail any deviation from the intended processes listed in Analysis Question #1 above.			
3	What human factors were relevant to the outcome?	Discuss staff-related human performance factors that contributed to the event. Examples may include, but are not limited to: • Boredom • Failure to follow established policies/procedures			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
		• Fatigue • Inability to focus on task • Inattentional blindness/confirmation bias • Personal problems • Lack of complex critical thinking skills • Rushing to complete task • Substance abuse • Trust			
4	How did the equipment performance affect the outcome?	Consider all medical equipment and devices used in the course of patient care, including automated external defibrillator (AED) devices, crash carts, suction, oxygen, instruments, monitors, infusion equipment, etc. In your discussion, provide information on the following, as applicable: • Descriptions of biomedical checks • Availability and condition of equipment • Descriptions of equipment with multiple or removable pieces • Location of equipment and its accessibility to staff and patients • Staff knowledge of or education on equipment, including applicable competencies • Correct calibration, setting, operation of alarms, displays, and controls			
5	What controllable environmental	What environmental factors within the organization's control affected the			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
	factors affected the outcome?	outcome? Examples may include, but are not limited to: • Overhead paging that cannot be heard in physician offices • Safety or security risks • Risks involving activities of visitors • Lighting or space issues The response to this question may be addressed more globally in Question #17. This response should be specific to this event.			
6	What uncontrollable external factors influenced the outcome?	Identify any factors the health care organization cannot change that contributed to a breakdown in the internal process, for example natural disasters.			
7	Were there any other factors that directly influenced this outcome?	List any other factors not yet discussed.			
8	What are the other areas in the health care organization where this could happen?	List all other areas in which the potential exists for similar circumstances. For example: • Inpatient surgery/outpatient surgery • Inpatient psychiatric care/outpatient psychiatric care • Identification of other areas within the organization that have the potential to impact patient safety in a similar manner. This information will help drive the scope of your action			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
		plan.			
9	Was staff properly qualified and currently competent for their responsibilities?	Include information on the following for all staff and providers involved in the event. Comment on the processes in place to ensure staff is competent and qualified. Examples may include but are not limited to: • Orientation/training • Competency assessment (What competencies do the staff have and how do you evaluate them?) • Provider and/or staff scope of practice concerns • Whether the provider was credentialed and privileged for the care and services he or she rendered • The credentialing and privileging policy and procedures • Provider and/or staff performance issues			
10	How did actual staffing compare with ideal level?	Include ideal staffing ratios and actual staffing ratios along with unit census at the time of the event. Note any unusual circumstance that occurred at this time. What process is used to determine the care area's staffing ratio, experience level, and skill mix?			
11	What is the plan for dealing with staffing contingencies?	Include information on what the health care organization does during a staffing crisis, such as call-ins, bad weather, or increased patient acuity. Describe the			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
		health care organization's use of alternative staffing. Examples may include, but are not limited to: • Agency nurses • Cross training • Float pool • Mandatory overtime • PRN pool			
12	Were such contingencies a factor in this event?	If alternative staff were used, describe their orientation to the area, verification of competency, and environmental familiarity.			
13	Did staff performance during the event meet expectations?	Describe whether staff performed as expected within or outside of the processes. To what extent was leadership aware of any performance deviations at the time? What proactive surveillance processes are in place for leadership to identify deviations from expected processes? Include omissions in critical thinking and/or performance variance(s) from defined policy, procedure, protocol, and guidelines in effect at the time.			
14	To what degree was all the necessary information available when needed? Accurate? Complete?	Discuss whether patient assessments were completed, shared, and accessed by members of the treatment team, to include providers, according to the organizational processes. Identify the information systems used during patient care. Discuss to what extent the available patient information (e.g., radiology			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
	Unambiguous?	studies, lab results, or medical record) was clear and sufficient to provide an adequate summary of the patient's condition, treatment, and response to treatment. Describe staff utilization and adequacy of policy, procedure, protocol, and guidelines specific to the patient care provided.			
15	To what degree is communication among participants adequate?	Analysis of factors related to communication should include evaluation of verbal, written, electronic communication or the lack thereof. Consider the following in your response, as appropriate: • The timing of communication of key information • Misunderstandings related to language/cultural barriers, abbreviations, terminology, etc. • Proper completion of internal and external hand-off communication • Involvement of patient, family, and/or significant other			
16	Was this the appropriate physical environment for the processes being carried out?	Consider processes that proactively manage the patient care environment. This response may correlate to the response in Question #6 on a more global scale. What evaluation tool or method is in place to evaluate process needs and mitigate physical and patient care environmental risks? How are these process needs addressed organizationwide? Examples may include,			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
		but are not limited to: • Alarm audibility testing • Evaluation of egress points • Patient acuity level and setting of care managed across the continuum • Preparation of medication outside of pharmacy			
17	What systems are in place to identify environmental risks?	Identify environmental risk assessments. Does the current environment meet codes, specifications, regulations? Does staff know how to report environmental risks? Was there an environmental risk involved in the event that was not previously identified?			
18	What emergency and failure-mode responses have been planned and tested?	Describe variances in expected process due to an actual emergency or failure mode response in connection to the event. Related to this event, what safety evaluations and drills have been conducted and at what frequency (e.g. mock code blue, rapid response, behavioral emergencies, patient abduction or patient elopement)? Emergency responses may include, but are not limited to: • Fire • External disaster • Mass casualty • Medical emergency Failure mode responses may include, but are not limited to: • Computer down time • Diversion planning			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
		• Facility construction • Power loss • Utility issues			
19	How does the organization's culture support risk reduction?	How does the overall culture encourage change, suggestions, and warnings from staff regarding risky situations or problematic areas? • How does leadership demonstrate the organization's culture and safety values? • How does the organization measure culture and safety? • How does leadership address disruptive behavior? • How does leadership establish methods to identify areas of risk or access employee suggestions for change? • How are changes implemented?			
20	What are the barriers to communication of potential risk factors?	Describe specific barriers to effective communication among caregivers that have been identified by the organization. For example, residual intimidation or reluctance to report co-worker activity. Identify the measures being taken to break down barriers (e.g. use of SBAR). If there are no barriers to communication discuss how this is known.			
21	How does leadership address the continuum of patient safety events, including	Does leadership demonstrate accountability for implementing measures to reduce risk for patient harm? Has leadership provided for required resources or training? Does leadership			

#	Analysis Questions	Prompts	Analysis Findings	Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)
	close calls, adverse events, and unsafe, hazardous conditions?	communicate corrective actions stemming from any analysis following reported risks?			
22	How can orientation and in-service training be improved?	Describe how orientation and ongoing education needs of the staff are evaluated and discuss its relevance to event. (e.g., competencies, critical thinking skills, use of simulation labs, evidence based practice, etc.)			
23	Was available technology used as intended?	Describe variances in the expected process due to education, training, competency, impact of human factors, functionality of equipment, and so on: • Was the technology designed to minimize use errors or easy-to-catch mistakes? • Did the technology work well with the workflow and environment? • Was the technology used outside of its specifications?			
24	How might technology be introduced or redesigned to reduce risks in the future?	Describe any future plans for implementation or redesign. Describe the ideal technology system that can help mitigate potential adverse events in the future.			

CORRECTIVE ACTIONS

Root Cause Types (Table A-1)	Causal Factors/Root Cause Details (Table A-1)	Corrective Actions	Action Strength (Table A-2)	Measure of Success (Numerator / Denominator) (Table A-3)	Sample Size (Table A-4)
		Action Item #1:			
		Action Item #2:			
		Action Item #3:			
		Action Item #4:			
		Action Item #5:			
		Action Item #6:			
		Action Item #7:			
		Action Item #8:			

BIBLIOGRAPHY

Cite all books and journal articles that were considered in developing this root cause analysis and action plan.

TABLE A-1. ROOT CAUSES

Root Cause Types	Causal Factors / Root Cause Details
Communication factors	• Communication breakdowns between and among teams, staff, and providers • Communication during handoff, transition of care • Language or literacy • Availability of information • Misinterpretation of information • Presentation of information
Environmental factors	• Noise, lighting, flooring condition, etc. • Space availability, design, locations, storage • Maintenance, housekeeping
Equipment/device/ supply/ healthcare IT factors	• Equipment, device, or product supplies problems or availability • Health information technology issues such as display/interface issues (including display of information), system interoperability • Availability of information • Malfunction, incorrect selection, misconnection • Labeling instructions, missing • Alarms silenced, disabled, overridden
Task/process factors	• Lack of process redundancies, interruptions, or lack of decision support • Lack of error recovery • Workflow inefficient or complex
Staff performance factors	• Fatigue, inattention, distraction or workload • Staff knowledge deficit or competency • Criminal or intentionally unsafe act
Team factors	• Speaking up, disruptive behavior, lack of shared mental model • Lack of empowerment • Failure to engage patient

Management/ supervisory/ workforce factors	• Disruptive or intimidating behaviors • Staff training • Appropriate rules/policies/procedure or lack thereof • Failure to provide appropriate staffing or correct a known problem • Failure to provide necessary information
Organizational culture/leadership	• Organizational-level failure to correct a known problem and/or provide resource support including staffing • Workplace climate/institutional culture • Leadership commitment to patient safety

Adapted from: Department of Defense, Patient Safety Program. *PSR Contributing Factors List – Cognitive Aid, Version 2.0.* May 2013.

TABLE A-2. ACTION STRENGTH

Action Strength	Action Category	Example
Stronger Actions (These tasks require less reliance on humans to remember to perform the task correctly)	Architectural/physical plant changes	Replace revolving doors at the main patient entrance into the building with powered sliding or swinging doors to reduce patient falls.
	New devices with usability testing	Perform heuristic tests of outpatient blood glucose meters and test strips and select the most appropriate for the patient population being served.
	Engineering control (forcing function)	Eliminate the use of universal adaptors and peripheral devices for medical equipment and use tubing/fittings that can only be connected the correct way (e.g., IV tubing and connectors that cannot physically be connected to sequential compression devices [SCDs]).
	Simplify process	Remove unnecessary steps in a process.
	Standardize on equipment or process	Standardize the make and model of medication pumps used throughout the institution. Use bar coding for medication administration.
	Tangible involvement by leadership	Participate in unit patient safety evaluations and interact with staff; support the RCA[2] process (root cause analysis and action); purchase needed equipment; ensure staffing and workload are balanced.
Intermediate Actions	Redundancy	Use two registered nurses to independently calculate high-risk medication dosages.
	Increase in staffing/decrease in workload	Make float staff available to assist when workloads peak during the day.
	Software enhancements, modifications	Use computer alerts for drug–drug interactions.
	Eliminate/reduce distractions	Provide quiet rooms for programming patient-controlled analgesia (PCA) pumps; remove distractions for nurses when programming medication pumps.
	Education using simulation-based training, with periodic refresher sessions and observations	Conduct patient handoffs in a simulation lab/environment, with after-action critiques and debriefing.
	Checklist/cognitive aids	Use pre-induction and pre-incision checklists in operating rooms. Use a checklist when reprocessing flexible fiber optic endoscopes.
	Eliminate look- and sound-alikes	Do not store look-alikes next to one another in the unit medication room.
	Standardized communication	Use read-back for all critical lab values. Use read-back or repeat-back for all verbal

	tools	medication orders. Use a standardized patient handoff format.
	Enhanced documentation, communication	Highlight medication name and dose on IV bags.
Weaker Actions (These tasks rely more on humans to remember to perform the task correctly)	Double checks	One person calculates dosage, another person reviews their calculation.
	Warnings	Add audible alarms or caution labels.
	New procedure/ memorandum/policy	Remember to check IV sites every 2 hours.
	Training	Demonstrate correct usage of hard-to-use medical equipment.

Reference: Action Hierarchy levels and categories are based on *Root Cause Analysis Tools*, VA National Center for Patient Safety, http://www.patientsafety.va.gov/docs/joe/rca_tools_2_15.pdf. Examples are provided here.

Source: National Patient Safety Foundation. *RCA² Improving Root Cause Analyses and Actions to Prevent Harm.* Boston, MA: National Patient Safety Foundation; 2015. Reproduced with permission.

TABLE A-3. MEASURE OF SUCCESS

Fraction Part	Defined	Identified	Example
Numerator	The number of events being measured	Ask a specific question—what are you measuring?	Falls that resulted in hip fractures in diabetic patients over 70 years of age
Denominator	All the opportunities in which the event could have occurred	Identify the patient population from which to collect the information.	The number of diabetic patients on a unit who are older than 70 years of age

TABLE A-4. SAMPLE SIZE*

Population Size	Sample
Fewer than 30 cases	100% of cases
30 to 100 cases	30 cases
101 to 500 cases	50 cases
Greater than 500 cases	70 cases

*The sampling methodology was determined using quality assurance sampling methods which determines the sample size needed to be able to say from a sample of cases that the "defect" rate is less than a specified amount (here we used 10%) with 95% confidence if no "defects" are found in the sample.