# Primary Analysis and Categorization (PAC) Glossary Keyword Categories and Rules for Applying Them

**NCPS+**
VA National Center for Patient Safety
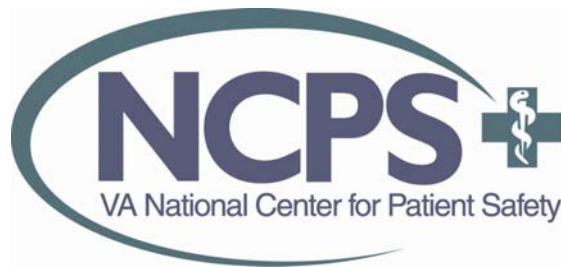
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Primary Analysis and Categorization Background:

In researching and developing a taxonomy for classifying RCA information, the choice of categories and keywords needed to reflect the goal of the RCA system were: learning and spread of that learning on how to prevent harm to patients, i.e., action-oriented, not simple statistics on various types of "bad events." The development of the taxonomy (from 2000 to today) involved usability testing of template categorization schemes performed with patient safety personnel. Needs-assessments were conducted; end-user analyses were performed that involved listening to risk managers in the VA system describe adverse event clusters and shorthand ways of describing events. From this background information NCPS developed an initial taxonomy comprising four categories and 30 keywords with operational definitions.

Major changes and additions occurred during the next two years of "simulated" and "operational" testing. Four sequential sets of inter-rater reliability tests were done with NCPS program managers and program analysts. More recent versions have been reviewed by VISN patient safety personnel. The taxonomy has now evolved into five categories and 164 keywords. The numerical coding system is hierarchical, meaning more decimal places indicate a more imbedded/specified category.
 Facility-based patient safety and VA personnel complete the root cause contributing factor categorization during the RCA process using the "NCPS Triage Cards" questions.
 For references used in the development of, or for more information regarding the National Center for Patient Safety's Primary Analysis and Categorization taxonomy for classifying patient safety adverse event root cause analyses, please contact us at: (734) 930-5890.

In 2010, additional changes were made and are shown in the following document: PAC Glossary Changes (4/2010).

Acknowledgements:
The Primary Analysis and Categorization project is led by John Gosbee, M.D., and Scott McKnight, Ph.D.
The core team members contributing to the development of the keyword glossary are Lesley Taylor, Kathleen Dropp, Carol Samples and Dana Patterson.
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## 1.0 Location

*Location* is the domain of keywords that indicate where the RCA event occurred and also locations determined by the reviewer to be important to understanding the event.  Coding *location involves* two levels of priority classification (A, B):

- Level A is used to indicate the exact or closest determinable location(s) where the precipitating process failures occurred or where the patient was when harmed.
- Level B is used to indicate other locations thought to be important to the event by the reviewer/coder.

It is not intended, nor desired, that the *location* category captures all of the physical areas mentioned or implied in the RCA.  Capturing all locations mentioned or implied would be a burdensome task returning little value to end-users.

### 1.1 *Hospital* (inpatients or outpatients in the hospital)

#### 1.1.1 Acute Care Unit:
  Acute care unit/ward or acute medical, surgical or med/surg, unit/ward, general surgery unit, etc.

##### 1.1.1.1 Patient Hospital Room:
   Patient's room or circumstances imply that the event occurred in the patient's room, the room contents are cited such as hospital bed, side rails, and nightstand, etc.

##### 1.1.1.2 Shower/Bath/Toilet Area:
   Showering, bathing, or toileting activity.

#### 1.1.2 Admitting:
  Admitting department, patient registration area, or admission of the patient to the facility.

#### 1.1.3 Alcohol/Drug Rehabilitation:
  Substance abuse or detoxification area.

#### 1.1.4 Blood Bank:
  Blood bank area.

#### 1.1.5 Construction Area:
 Areas of the facility under renovation or new areas being constructed.

#### 1.1.6 Diagnostic and Treatment Area:
  Areas used for diagnosis or medical treatment (e.g., colonoscopy, endoscopy, radiation therapy, dialysis and hearing test rooms, echo, vascular, sleep, cardiac catheterization or other testing labs).

## 1.0 Location

### 1.1.7 Emergency Department:
Area where emergency patients are admitted/treated (e.g. urgent care).

### 1.1.8 Facility Grounds:
Areas or buildings not considered hospital buildings, (e.g. outside grounds, garden, parking areas, parking structure, street, gazebo, golf course, baseball field, cemetery, dumpsters, grease barrels, sewers, river, courtyard, etc.).

### 1.1.9 Food Prep Area:
Dietician, dietary services, food services or kitchen area.

### 1.1.10 Hospital Hallway/Walkway Area/Stairs/Elevator:
Hallway, walkway, corridor, stairs, balcony, roof or elevator.

### 1.1.11 Intensive Care Units:
Designated area for advanced levels of care (e.g., ICU, SICU, CCU). Also, mention of telemetry or step-down unit.

### 1.1.12 Long-term Care:
Facility for long term care of patients (e.g., nursing home, skilled care facility, foster care, hospice, community living center (CLC), Alzheimer's, geriatric, palliative, extended, GECU [geriatric extended care unit], life support/ventilator unit, TCU [Transitional Care Unit], respite care, etc.).

### 1.1.13 Motor Vehicle:
Motorized vehicle, including ambulances and vehicles used for hospital transport.

### 1.1.14 Non-Direct Care Areas:
Areas within the facility that are not directly involved in providing patient health care services (e.g., canteen, gift shop, atrium, lobby, patient common area, public bathrooms, smoking area, lounge, day room, basement, mechanical rooms, maintenance area, administrative areas, etc.).

### 1.1.15 Nursing & Ward Clerk Station:
Nurse/ward clerk station, medication nursing supply rooms, or other designated nursing areas.

#### *1.1.15.1 Med Mixing Room*
A location proximal to or at the nursing station where nurses (not pharmacy) mix/prepare medications to be administered to patients.

### 1.1.16 Operating Room:
Area where surgery was being performed. *(If mention of 'same day surgery' or 'outpatient surgery', then double code with 1.2 Outpatient).*

## 1.0 Location

### 1.1.17 Pathology:
Activities involving the laboratory, pathology, histology, or the morgue or any reference to a pathologist or laboratory technician. Includes an examination of tissue, biopsy or autopsy specimens. Include also any references to the laboratory, or examination of fluid, urine, and blood slides or specimens.

### 1.1.18 Pharmacy (Inpatient):
An inpatient facility area for the preparation or dispensing of medications, or the mention of a pharmacist or pharmacy technician.

### 1.1.19 Therapy Area:
Area used by Physical Therapists, Kinesiology, Occupational Therapy, Recreation Therapy (e.g., PT, KT, OT, RT).

### 1.1.20 Psychiatry Area:
Area designated for psychiatric treatment/assessment (i.e. psychiatric ward, locked areas, seclusion rooms, behavioral health units (BHU), etc.).

### 1.1.21 Radiology Area:
Area where any aspect of radiology occurs (e.g., reading room, angiography, nuclear medicine, MRI, etc.).

### 1.1.22 Recovery Room/PACU/RR:
Recovery Room or Post-Anesthesia/Surgery Care Unit.

### 1.1.23 Rehabilitation Area:
Area where long-term physical or cognitive rehabilitation occurs.

### 1.1.24 Spinal Cord Injury Unit (SCI):
Specialized area for treatment of spinal cord injuries.

### 1.1.25 Waiting Area:
Waiting area, or an inference that the patient is waiting to be seen in a clinical location.

## 1.0 Location

### *1.2 Outpatient* (patients not admitted for traditional overnight care)

#### 1.2.1 23 hour/Short Stay:
23-hour stay or short stay (e.g. SSU).

#### 1.2.2 Clinic Area:
"Clinic area" or mention of an outpatient clinic (e.g., dermatology, diabetes, ENT, nuclear medicine, dental, psychiatry, surgical, ophthalmology, podiatry, or neurology, etc).

#### 1.2.2.1 CBOC (Community–Based Outpatient Clinic):
CBOC.

#### 1.2.3 CMOP (Consolidated Mail Outpatient Pharmacy):
CMOP. Current locations are: Leavenworth KS, North Charleston SC, Dallas TX, Hines IL, Murfreesboro TN, Los Angeles CA, Bedford MA.

#### 1.2.4 CWT (Compensated Work Therapy):
Sheltered workshop environment where patient is being paid.

#### 1.2.5 Diagnostic Procedures and Treatment Areas:
Designated area equipped for diagnosis or treatment of outpatients (e.g., endoscopy suite, eye testing room, chemotherapy/oncology infusion clinic, dialysis unit).

#### 1.2.6 Domiciliary:
A domicile, where care and living space is provided for disabled veterans.

#### 1.2.7 Lodger/Board and Care:
An overnight stay at the hospital as a non-patient guest. A lodging courtesy sometimes referred to as hop-tel.

#### 1.2.8 Pharmacy (Outpatient):
A dedicated outpatient area where medicine is prepared and dispensed to outpatients.

# 1.0 Location

## 1.3 Contractual Care (care contracted to non-VA personnel)

### 1.3.1 Adult Foster Care:
Patient residing in a long-term adult foster care facility.

### 1.3.2 Community Nursing Home:
Patient residing in a non-VA nursing care facility for elderly patients.

### 1.3.3 Non-VA Hospital:
Patient residing or being treated in a hospital that is not in the Veterans Health Administration system.

### 1.3.4 State Home:
Patient residing in a State Veterans Home operated by the State.

## 1.4 Home-based Care Sites

### 1.4.1 Community Home:
Patient being housed in a community home, group home, half-way house, VA Patient Rehab Residential Program.

### 1.4.2 CRBC (Community Residential Board & Care):
Patient being housed in a community residential facility with room/board and care.

### 1.4.3 Patient's Home or Outside of Care Facility:
Patient's home or some area other than a VA facility.

## 1.5 Not Reported:
No determination of location indicated.

## 2.0 Selected Events

The domain of *selected events* contains keywords to describe the outcome resulting from activity surrounding the event.  It is beyond the current scope of the PAC project to exhaustively categorize each RCA as a "type" of event.  Instead, the list of keywords in this domain is meant to capture events that have high visibility and high frequency in the population of VA patients.

### 2.1 Alcohol/Substance Abuse:
Patient's misuse/abuse of alcohol and/or drugs in a VHA facility or on facility grounds, or specific/implied indication of substance contraband.

### 2.2 Air/Oxygen and Other Gas Mix-ups:
Events that mention medical gas misconnections such as medical air for life sustaining oxygen.

### 2.3 Assault:
Patient-on-patient, or patient-on-staff altercation.

### 2.4 Communication of Abnormal Results:
Timeliness or inaccuracy in reporting abnormal results between providers and/or patients.  (Often double coded with "2.6 Delay in Treatment/Diagnosis/Surgery".)

#### 2.4.1 Radiology/Imaging/x-ray involvement:
Results from radiology, imaging, x-rays, were not reported or communicated effectively.

#### 2.4.2 Laboratory/Pathology involvement:
Results from laboratory or pathology were not reported or communicated effectively.

### 2.5 Incorrect Surgery:
Surgery or invasive procedure done on the wrong side, wrong site, wrong patient, or procedure was done incorrectly or unnecessarily.

### 2.6 Delay:
Delay in some aspect of the patient's care.

#### 2.6.1 Delay in Treatment/Surgery
Delay in patient care involving treatment or surgery where delay in treatment exacerbates the condition requiring additional treatment, increased length of stay or increased level of care.

#### 2.6.2 Delay in Diagnosis
Delay in patient care involving diagnosis or obtaining consultations, ordering and monitoring test results, etc.

### 2.7 Fall:
Sudden, unintentional downward displacement of body to the floor or other object, excluding those resulting from violence or other purposeful act.

## 2.0 Selected Events

### 2.8 Fire:
Mention of a fire occurring; smell or sight of smoke; or, mention of issues with or activation of the fire alarm or suppression systems (i.e., sprinklers).  If oxygen is involved, double code with oxygen 2.17.

### 2.9 High Alert ADEs:
Drugs that bear a heightened risk of causing significant harm with more devastating consequences to patients.  Refer to ISMP and JCAHO listings.

   (http://www.ismp.org/MSAarticles/HighAlertPrint.htm)

### 2.10 Hospital Acquired Infections:
Encompasses infections that do not originate from patient's original admitting diagnosis such as VRE, MRSA, *Legionella*, *Clostridium difficile, surgical infection,* or the spread of disease via patients, staff or visitors.

### 2.11 Intubations:
Placement of a tube into a patient's trachea or the intubation process itself.

### 2.12 IV Pump / PCA Pump:
Use of IV pumps or medication related events that resulted from the use of IV pumps, including Patient-controlled analgesia (PCA) pumps.

### 2.13 Misidentification:
Patient receives treatment or procedure (therapeutic, diagnostic, or medication) intended for another patient because they were not accurately identified.  Includes the misidentification of laboratory or other specimens.

### 2.14 Missing Patient:
Patient is absent from a patient care area without the knowledge and permission of staff for any length of time, even if patient is found or returns on his own.

### 2.15 Selecting/Mixing /Packaging/Distribution of Medications:
Mixing, selecting, packaging or distribution of medications in the pharmacy or medication mixing area on a nursing unit.

### 2.16 MRI:
Use of MRI equipment.

### 2.17 Oxygen:
Use of $O_2$ that led to an adverse event, such as $O_2$ tank running out, $O_2$ fires (often double coded with category 2.8 Fire). See category 2.2 for Air/Oxygen Mix-Up.

### 2.18 Pain Management:
Pain as an element of the patient's condition, with or without treatment.

## 2.0 Selected Events

### 2.19 Para-Suicide:
Any suicidal behavior with or without physical injury and short of death, including the full-range of known or reported attempts, gestures, and threats.

#### *2.19.1 Inpatient:*
Para-suicide with patient currently residing in/ admitted to an inpatient facility.

#### *2.19.2 Outpatient:*
Para-suicide where patient is currently an outpatient.

### 2.20 Retained Objects During Surgery/Procedures:
Items left on/in patients during surgery or procedures, such as sponges, needles, instruments, tourniquets, PICC lines, heparin locks, guide wires, etc.

### 2.21 Suicide:
A patient suicide or the act of taking one's life.

#### *2.21.1 Inpatient:*
A patient suicide, or the taking of one's life, while currently residing in an inpatient facility.

#### *2.21.2 Outpatient:*
An outpatient suicide, or the act of taking one's life outside a facility when the enrolled patient has received hospital or clinic care services from the VA.

### 2.22 Transplants:
An event in which the patient has received (or failed to receive) a transplant at a VA or other transplant facility

### 2.23 Unexpected Death:
A patient death where the clinical picture did not reflect the imminent death of the patient.

### 2.24 Wrong Tube / Wrong Hole:
An incorrect tube or connector being placed on a patient, or tubing systems that were incorrectly connected or placed.

### 2.25 Wrong Route Medication:
Medications (or other treatments) administered via incorrect route, e.g. IV versus epidural, oral versus IV, etc.

### 2.26 Other:
All RCA cases not defined above.

## 3.0 Activity or Process

*Activity or process* is the domain of keywords associated with activities or processes that are closely connected with the event; as well as activities or processes determined by the reviewer to have an important relationship to the event.  Coding a*ctivity* or *process* involves two levels of priority classification (A, B):

- Level A is used to indicate the activity or process most closely connected with the event.
- Level B is used to indicate activities or process mentioned or implied in the RCA that are determined by the reviewer to have an important relationship with the event.

Level A is meant to capture one, or possibly two, activity or process codes, but is not meant to be over-coded by the reviewer/coder.  For Level B, the reviewer/coder is allowed more discretion to over-code activities or processes that are closely related, but not primary to the event.

### 3.1 ADL-Activities of Daily Life:
Eating, washing, showering, bathing, teeth brushing, dressing, sleeping in bed, toileting, locomotion, mobility, smoking, etc.

#### 3.1.1 First Aid Care:
Care to treat minor cuts, scrapes, burns, scalding, bruises, etc.

### 3.2 Computer Systems:
The involvement of computer systems, BCMA, CPRS, PCs, software, hardware, data entry, etc.

### 3.3 Care Management:
Team management of patient care (e.g., coordination of referrals/consultations for incorporation into the patient care plan, or coordination and resolution of plans which may appear in conflict with the goals of different specialty services) or team panel approach to the patient's care.  There may also be reference to interdisciplinary transitions of care among a number of caregivers, disciplines, or entities. Also if Patient Care Management/Case Management is explicitly mentioned.

### 3.4 Diagnosis/Assessment:
A process related to defining the illness or condition, and proceeding with the prescription, assessment, or treatment plan.

#### 3.4.1 Admitting Activities:
Patient admitting processes (i.e. patient searches for contraband, patient assessments for falls, suicide risk, or elopement, application of patient wristbands upon admission, patient assessment for potentially violent behavior, locating a bed, etc.)

### 3.5 Diagnostic Activity:
Diagnostic activity pertaining to non-invasive procedures (e.g., EKG, EEG, Echocardiogram, hearing tests, treadmill, vision test). *For invasive, non-surgical procedures, code as 3.14*

## 3.0 Activity or Process

### 3.6 Radiology/Imaging and X-Rays:
Medical imaging or x-ray activity, mammograms, nuclear medicine, ultrasounds, Computerized Tomography (CT scan), Magnetic Resonance Imaging (MRI scan), PET scan; or related information such as a written requisition or physician order for these studies.  Also, mention of a radiologist or technician specialist performing in any of these studies.

### 3.7 Laboratory/Pathology Activity:
Laboratory activity pertaining to specimens, tissues or organs; also the chemical assay of body fluid.

### 3.8 Medical Device:
Device or object used to diagnose, deliver or electronically monitor patient care (e.g. telemetry, ventilators, IV pumps, AEDs; and, single use devices, such as catheters, oxygen tubing, syringes; or, other patient care devices such as, restraints, hip pads, special beds, etc.).

### 3.9 Medication Use Process:
The process of ordering, preparing, dispensing, delivering or administering of medication(s) and/or the monitoring of the effects.

### 3.10 Monitoring Process:
An arrangement for observing a patient, including the visual one-to-one observations. Also, equipment that detects or records the patient's condition or systems over time, (e.g., monitoring patients with devices such as a EKG, EEG, Pulse Oximeter, Wander Guard, bed/chair alarms, mention of sitter, monitoring patients peri-operatively or inter-operatively, etc.).

### 3.11 CWT (Compensated Work Therapy):
Compensated work therapy (CWT).

### 3.12 Patient Follow-up/Discharge:
Discharge procedures or follow-up systems including any steps that are taken to increase the likelihood of patient compliance with follow-up, understanding discharge instructions, returning for further evaluation/treatment as needed (e.g., effective monitoring of a patient's activities or follow-up care of medications, appointments, and consultation).

### 3.13 Patient Record Documentation:
Documenting patient data on paper or computer.

### 3.14 Procedures/Treatments (invasive non-surgical medical):
A medical procedure affecting patient, but not surgery (bronchoscopy, colonoscopy, heart catheterization, uteroscopy, dental procedures including teeth extraction), also including chemo/radiation therapy as cancer treatment or nuclear medicine as other medical (non-cancer) treatment.  This includes mention of requisition or physician orders for these procedures and reference to medical staff performing these procedures or treatments.

### 3.15 Recreation/Crafts:
Participation in recreation activity (e.g., swimming, golf, gymnasium).

## 3.0 Activity or Process

### 3.16 Rehabilitation:
Patient rehabilitation or therapy (e.g., audiology, kinesics, physical recreation, respiratory, speech, occupational therapy, etc.).

### 3.17 Supply Service Activities:
Supply service activities (e.g., Supply Procurement Distribution (SPD), sterilization, central supply).

### 3.18 Support Activity:
Involvement of engineers, facility grounds personnel, chaplain, social work services, security/police, safety & industrial hygiene (IH), telephone operator, human resources, VSO (Veterans Service Organizations) or VBO (Veterans Benefits Organizations), volunteers, etc.; or the mention of the malfunction of utility systems or services.

### 3.19 Surgeries:
A procedure performed in an operating room.

### 3.20 Training/Apprenticeship:
Caregivers in training or students (e.g., residents, nursing students, interns, apprentices).

### 3.21 Transfusions:
Blood, blood products, transfusion, blood administration or any steps involved/leading up to transfusion (e.g., blood sample collection, labeling, and transport).

### 3.22 Transport:
Activity of transporting patient or patient supplies, such as blood or pathology specimen via personnel ambulance, gurney, motor vehicle, elevator, VSO van, etc.  Mention of volunteer may indicate that transport was involved.

### 3.23 Waiting:
A patient waiting to be seen by care provider, (e.g., in the emergency department, clinic, or outpatient surgery).

### 3.24 Code:
A situation where a patient's care is/was regimented by a team or individual using an established set of procedures implemented as a result of a code alert; or the use of ACLS protocols.

### 3.999 Not Classifiable:
Does not meet criteria for any keyword in the Activity/Process category.

## 4.0 Actions

The *actions* domain contains keywords associated with changes to be implemented by medical facilities that are designed to reduce or eliminate future occurrences of similar RCA events. The structure of the RCA form provides for multiple actions per root cause/contributing factor of the event; in which case each action is to be coded and linked to the specific root cause/contributing factor. Multiple coding of a singular action is left to the discretion of the reviewer/coder; as some singular actions may be ambitiously written and require multiple codes to fully categorize their scope.

### 4.1 Analyze:
   The need to do analysis or further research. Collecting more information to analyze, or form a team, task group or task force, create a subcommittee or oversight committee to monitor processes, or call a formal meeting, or notify NCPS, FDA, ISMP, ECRI, or OI&T (eg REMEDY ticket, national service request (NSR)). Follow-up is implicitly or vaguely assigned to a team, group, individual and usually involves the submission of reports, findings, recommendations or focused review.

#### *4.1.1 FMEA:*
   FMEA or Failure Mode and Effects Analysis.

#### *4.1.2 Reenactment of Event:*
   Reenacting or reconstructing an event as a way to further study, determine causation or provide insight into appropriate actions and interventions. May include attempting to repeat a device or system failure.

#### *4.1.3 Survey/Inspections:*
   Survey as method of collecting information to measure and assess or audit; or conducting pilot project. Including regularly scheduled preventive maintenance inspections of an environment or equipment; or inspection of any designated hospital area or facility campus/grounds, utilization of NCPS PSAT.

### 4.2 Architectural/Physical Plant Changes:
   Changes to architecture or physical plant. Includes major construction projects, renovations, or additions, etc. Mention of involvement of physical or architectural engineer (e.g., planting shrubs or trees proximal to facility grounds, replacing revolving doors with sliding doors, or moving or constructing walls, doors, hallways, corridors, etc).

### 4.3 CQI (Continuous Quality Improvement):
   Implementing continuous quality improvement techniques to monitor and improve process.

### 4.4 New Device:
   Adding a new device, obtaining additional devices, or replacing an existing device/model.
   Ex1:  Purchase new catheter valves from ABC Manufacturer, model xyz123 to replace current types/models used on the unit or service area.
   Ex2:  Additional Automated External Defibrillators will be purchased.

#### *4.4.1 Medical:*
   A device directly involved in patient care (e.g., BP cuff, pulse oximeter, Automated External Defibrillators (AEDs). Tubing (IV, oxygen, feeding, ventilator) high/low beds, hip pads, Posey restraints, code carts, Omni cell, Pyxis, etc.).

## 4.0 Actions

### 4.4.2 Non-Medical:

A device not directly involved in patient care (e.g. breakaway bars in psychiatric ward closets, covers for food and trash carts, surgical markers, specimen containers, patient surveillance systems such as a 'Wander guard' system, security mirrors, security cameras, telephones, pagers, speakers, color-coded armbands, etc.).

## 4.5 Eliminate or Substitute System or Device:

Eliminating fully or partially a system, process, procedure, or device without the implementation of an engineering change. (See 4.9).

### 4.5.1 Eliminate Device:

Eliminating fully or partially a device without mention of replacement. (See 4.4)

### 4.5.2 Eliminate or Substitute System:

Eliminating fully or partially a system, process, or procedure. Reduce distractions, eliminate look alike/sound alike, in general, create an unpolluted medical environment.  (i.e. implement a zone of silence during medication administration, eliminate multiple syringe concentrations for same medication).

## 4.6 Enhanced Documentation/Communication:

Improving documentation of patient information, patient records, assessments, medical record flags, alerts, or informed consent documents, progress notes, consult forms, administrative rounds sheets, and nursing forms.

### 4.6.1 Manuals/Contracts/Personnel Files:

Utilization of and/or updating equipment manuals, or other "how to manuals." Includes changing/renewing of contracts with outside vendors, such as nursing vendors, manufacturers, clinicians or other outside entities. May also include personnel files, credentialing files, employee handbook, MSDS, etc.

### 4.6.2 Communication

Use of a standard communication model (eg SBAR, read back, repeat back).

## 4.7 Enhanced Information Display:

Using display boards, bulletin boards, memory aids, checklists, videos and other cognitive aids to reduce reliance on memory or further clarify a process.

### 4.7.1 Patients/Visitors:

Development of cognitive aid for patients/families/visitors such as identifying the signs and symptoms of suicide risk, depression, fall risk, etc., patient pre-surgical/pre-procedural checklist

## 4.8 Incentives:

Increased incentives to staff or patients or implementing motivational tools or methods.

## 4.0 Actions

### 4.9 Engineering Control/Change:
   An engineering change or added control to a device or mention of implementing an environmental control to a physical area.

#### 4.9.1 Device or Interlock:
   An improvement, change, redesign to an existing device, or addition of an interlock; can be a hardware or software change/control of a device

   Ex1 – software change:   All Automated External Defibrillators model number xyz123 will be sent back to the manufacturer to have a "save" function added.
   Ex2 - hardware change:  Modify IV pole clamps to become adjustable with the addition of Part # 123 from current supplier.
   Ex3 – interlock (hardware): A keyed lock box for the patient bed adjustment controls will be installed to prevent improper use.
   Ex4 – interlock (device): 1) System stays on, unless several things are done in sequence -- IV pump that cannot be turned off without flipping a hidden switch in the back.
   2) System stays off, unless several things are done in sequence – auto-injection system for medication cannot be activated until cap is removed from one end.

#### 4.9.2 Environmental:
   An environmental engineering control or change implemented to reduce or eliminate factors such as:  extreme temperatures, noise, vibration, air quality/ventilation issues, low lighting/glare, etc.

   Ex1:  The television volume in the pharmacy waiting area will be reduced & maintained at a low volume level at all times to ensure communication between workers and patients can be understood.

   Ex2:  Install antiscald device to reduce the risk of scalding.

   Ex3:  Filters will be placed on wall air vents in patient rooms to control drafts and falling debris.

#### 4.9.3 Work Area Redesign
   Relocation of small equipment, medical supplies, or workstation aids, or rearrangement of work areas including patient rooms, installing improved lighting, emergency lighting systems, modifying doors or doorways, etc.  Purpose of this type of action is also to address ergonomic issues and to help increase usability and promote efficiency, and/or monitor patient activity.

### 4.10 Leadership Culture Change:
Tangible involvement and action by leadership in support of patient safety.

## 4.0 Actions

### 4.11 Policy/Procedure:
Implementing, changing, re-circulating, developing, clarifying, enforcing, or reviewing a procedure, process, policy (e.g. MCM, compliance with VA Directive).

### 4.12 Redundancy/Double Check:

#### *4.12.1 Redundancy*
Adding redundancies that are independent/non-reliant of each other, to a process or system as a re-examination.

#### *4.12.2 Double Checks*
Adding a double check to a process or system as a non-independent re-examination. (For independent re-examination see 4.12) Example: Double check of admitting process for patient home medications, check of high alert medication dosage, PCA pump programming double check

### 4.13 Simplify:
Simplifying or streamlining an established process by removal of components or steps to improve the process.

### 4.14 Software/Hardware:
Installing software or hardware or modifying or adding new features to current software/hardware includes mention of CPRS, VISTA, and BCMA; or adding printers. (See 4.9.1 for medical device software/hardware actions).

### 4.15 Staffing/Scheduling/Assignments:
Changing staff number, the type of staff, or the redesign or alignment of schedules or changes to schedules or tasks. May also be the mention of ensuring availability of appropriated/licensed staff, or requiring physical exams for staff or volunteers.

#### *4.15.1 Patient Scheduling:*
Scheduling patient care or procedures.

### 4.16 Standardization:
A process, piece of equipment, or care coordination that contains a mechanism/method that forces compliance to a regular, consistent, and routine action beyond written policy/procedure.

#### *4.16.1 Process (protocols, clinical guidelines, order sets):*
Implied standardization of process, protocols, SOP, clinical guidelines, care maps, order sets, adding to or modifying the drug formulary, assessment or reassessment tool, algorithm, decision tree, consistent mechanism, systematic method.

#### *4.16.2 Equipment:*
Mention of equipment standardization (e.g., same model of equipment used throughout the facility; or, supplies/medication stored in the same location (e.g the third drawer of all facility code carts or in the labeled yellow bin in all medication storage rooms)).

## 4.0 Actions

### 4.16.3 Coordination of Care:
Standardizing patient care across disciplines or between inpatient and outpatient care, because of inefficiencies or failures in the transition, continuity, or coordination of patient care or conducting patient care rounds. Examples: Hand-off or consult, 'standard reporting format' or 'transfer of care', interdisciplinary / multidisciplinary team, multidisciplinary patient care rounds, method of transfer responsibility, 'ticket to ride', standardized reporting format, reconciliation of medications, implementation of MTT or CRM programs.

## 4.17 Supervision:
Adjusting supervision, or increasing responsibilities of supervisor/manager towards teaching, enforcement of policy, etc.

## 4.18 Training/Education:
Implementing new additional or different training education.  Mention of reviewing and/or distributing current standards to staff.  This includes the publishing of a training manual or orientation book, distributing publications, newsletters, emails used for education purposes, or conducting a staff in-service.  Also includes the conducting annual practice / competency station check offs and skills fairs that do not meet requirements in 4.18.2 and 4.18.3.

### 4.18.1 Patient and Family:
Training or education given to patient or family member.

### 4.18.2 Simulation:
Using low, medium or high fidelity simulation as a training modality at specified intervals (annually or more frequent).  Includes examples such as role plays, simulated ACLS events ("mock codes"), grid search missing patient drills, fire drills.

### 4.18.3 High Reliability Training:
Implementation of a robust training program that includes **all of the following elements**:
1. Both an initial training event and perpetual, recurrent training events at specified intervals (annually or more often).
2. Formal face-to-face, classroom-style, didactic training which occurs on a calendar day that staff are not scheduled for patient care duties and are completely removed from the patient care environment.
    a. To reduce classroom requirements a portion of the training (no greater than one third of the didactic) can be delivered via independent study with computer-based learning modules
3. The use of low, medium, or high fidelity simulation for skills practice. Includes examples such as role plays, simulated ACLS events ("mock codes"), grid search missing patient drills, fire drills.
4. A formal competency assessment / evaluation of participants.
5. A formal sanction from facility leadership (member of the Quadrad and Service Line leader at a minimum).

## 4.19 Warning Indicators:
Visual or auditory indicator that (1) grasps attention and (2) provides data as to what it is warning against.

## 4.0 Actions

### *4.19.1 Auditory Warning:*
An alarm or sound device, built into electronic mechanism or computer software.

### *4.19.2 Visual Warning:*
A labeling that gives warning (i.e. sign or sticker, color coding).

### 4.997 "NA" or "None":
Explicit documentation of "NA" or "None"; or no new action noted in Table # 19.

### 4.998 Not Classifiable
Does not meet the criteria for any keyword in the Action Category.

### 4.999 No Entry/Entry Error:
Action is obviously filled incorrectly with improper information (e.g., date, name of person).

## 5.0 Outcome Measures

Outcome measures indicate how well a stated action might eliminate or reduce the adverse events, root causes, or close calls. At least one outcome measure code must be matched with each action code. There are four types of outcome measures listed below to measure the effect an action has on the RCA event. In addition to the four outcome-types, outcome measures are differentiated by the specific and quantitative details given for determining success or failure of the implemented action.

**Implementation of an action does not measure effectiveness of the action, only its completion. Therefore, it is important to also develop an outcome measure with a numerator/denominator and threshold to measure the action effectiveness and its impact on the root cause.**

### 5.1 Non-Outcome

#### *5.1.1 No Entry/Entry Error*
No outcome measure entered, field is blank, or the input is non-sensible (gibberish). This may also represent a possible software formatting issue/error.

#### *5.1.2 NA/None*
Outcome measure for action is explicitly entered as not applying, or as none, (e.g., N/A, NA, or none).

#### *5.1.3 Restatement of, or New Action*
Outcome statement restates an action, expands on an action, or states new action.

### 5.2 – 0 Action/Process Outcome – Non-quantifiable
Outcome is statement about implementing the action or statement about measuring whether action was implemented. No actual measurement of the effectiveness of the action is documented.

### 5.2 – 1 Action/Process Outcome – Quantifiable
Outcomes are categorized as quantifiable when performance thresholds are set; or numerators, denominators and performance thresholds and timeframes for monitoring the effectiveness of the outcome measure identified.

### 5.3 – 0 Root Cause Outcome – Non-quantifiable
Indicates that the action will control or eliminate the root cause/contributing factor.

### 5.3 – 1 Root Cause Outcome – Quantifiable
Outcomes are categorized as quantifiable when performance thresholds are set; or numerators and denominators, and performance thresholds, and timeframes for monitoring the effectiveness of the outcome measure identified.
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### 5.4 – 0 Adverse Event Outcome – Non-quantifiable
Indicates the action will control or eliminate the adverse event.

### 5.4 – 1 Adverse Event Outcome – Quantifiable
Outcomes are categorized as quantifiable when performance thresholds are set; or numerators, denominators, and performance thresholds and timeframes for monitoring the effectiveness of the outcome measure identified.

# Examples of Outcome Measures

*The examples listed below illustrate various types of outcome measures and are based on the following Root Cause and Action:*

*Root Cause* – Due to the lack of an established violence prevention training program, staff on the Behavioral Health unit were not aware of procedures that could have been used to prevent the patient from striking the care provider.

*Action* – Training module on procedures used to prevent patient violence will be developed and provided to staff on the Behavioral Health unit.

1. <u>**Non-Outcome:**</u> **Outcome measure restates an action, expands on an action, or states a new action.**

   *Non-outcome measure (states a new action)* – Staff will assess patients on their potential for aggressive or violent behavior upon admission to the Behavioral Health unit.

2. <u>**Action/Process Outcome:**</u> **Outcome measure implements an action.**

   *Non-quantifiable measure* – Training sessions on procedures used to prevent patient violence will be held for staff on the Behavioral Health unit.

   *Quantifiable measure* – Training sessions on procedures used to prevent patient violence were held for staff on the Behavioral Health unit. Ninety-five percent of staff on the Behavioral Health unit completed the training by the first week in July.

3. <u>**Root Cause Outcome:**</u> **Outcome statement measures impact on the root cause.**

   *Non-quantifiable measure* – Staff knowledge of procedures used in preventing patient violence will be measured as part of the annual staff assessment.

   *Quantifiable measure* – Staff knowledge of procedures used in preventing patient violence will be measured as part of the annual staff assessment. The goal is that all staff on the Behavioral Health unit will complete the training and achieve greater than 90% on the competency exam. The numerator will be the number of staff on the Behavioral Health unit receiving greater than 90% on the competency exam; the denominator will be the total number of staff on the unit. Training will be completed by the end of the fiscal year.
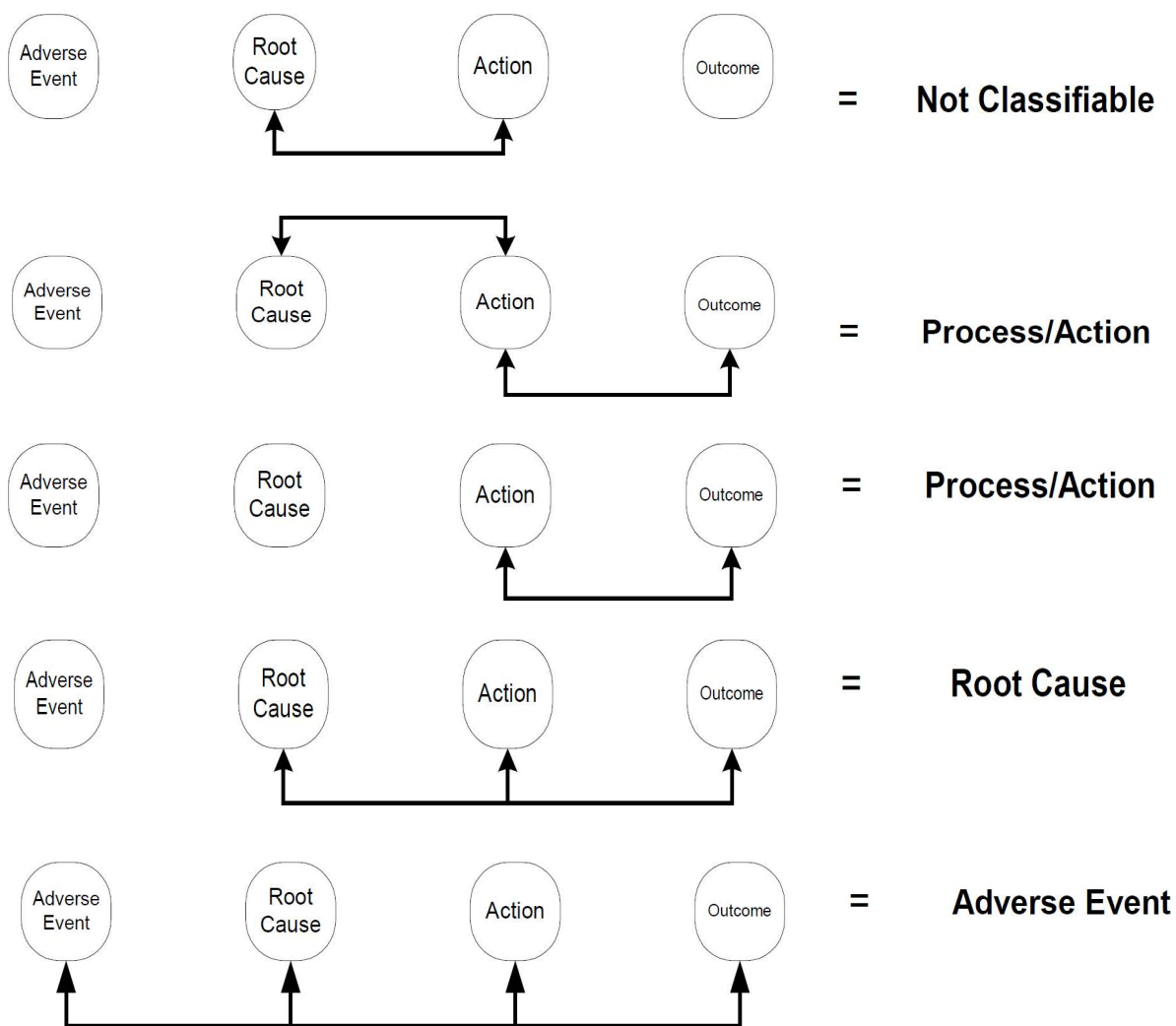
4. <u>**Adverse Event Outcome:**</u> **Outcome statement measures impact on the adverse event.**

   *Non-quantifiable measure* – Three months following staff training, the number of incidents of patient violence on the Behavioral Health unit resulting in injury to staff or patients will be measured.

   *Quantifiable measure* – Three months following staff training, the number of incidents of patient violence on the Behavioral Health unit resulting in injury to staff or patients will be reduced by 50%. The numerator will be the number of incidents of patient violence on the Behavioral

Health unit resulting in injury to staff or patients; the denominator will be the total number of incidents of patient violence on the unit.

**Scenarios of possible relationships between root cause, action, and outcome** (arrows indicate an established connection between root causes, actions, and outcome measures):



Adverse Event    Root Cause ← → Action    Outcome    =    **Not Classifiable**

Adverse Event    Root Cause ← ↓→ Action ← → Outcome    =    **Process/Action**

Adverse Event    Root Cause    Action ← → Outcome    =    **Process/Action**

Adverse Event    Root Cause ← Action ← Outcome    =    **Root Cause**

Adverse Event ← Root Cause ← Action ← Outcome    =    **Adverse Event**

# PAC Glossary Changes (4/2010 and 11/2013)

# 2010:

## Location

1. **Location 1.5- format to match other headings. New definition: No determination of location indicated**

## Selected Event

2. **Selected Event 2.6:  Delay in Treatment/Diagnosis/Surgery- Add two new subcategories: 2.6.1 and 2.6.2**

   **2.6.1 Delay in Treatment/Surgery**
   > Delay in patient care involving treatment or surgery where delay in treatment exacerbates the condition requiring additional treatment, increased length of stay or increased level of care.

   **2.6.2 Delay in Diagnosis**
   > Delay in patient care involving diagnosis or obtaining consultations, ordering, and monitoring test results, etc.

3. **Selected Event 2.12 : add 'including Patient-controlled Analgesia (PCA) pumps**

4. **Selected Event 2.19: remove 'Denoted in question five of the RCA.'**

5. **Selected Event 2.19.1: change to 'Para-suicide with patient currently residing in/admitted to an inpatient facility.'**

6. **Selected Event 2.19.2: change to 'Para-suicide where patient is currently an outpatient.'**

## Activity or Process

7. **Activity or Process 3.1.1 First Aid Care- remove 'from items such as heating pads, coffee, etc.'**

8. **Activity or Process 3.5 Diagnostic Activity- add 'for invasive, non-surgical procedures, code as 3.14'**

9. **Activity or Process 3.8 Medical Device: remove 'tourniquet', add 'syringes'**

10. **Activity or Process 3.9 Medication Use Process: remove 'Denoted in question 5 of RCA'. Add 'and/or the monitoring of the effects.'**

11. **Activity or Process 3.12 Patient Follow-up/Discharge: add 'with follow-up, understanding discharge instructions, returning for further evaluation/treatment as needed'**

12. **Activity or Process 3.18- Support Activity: add 'or the mention of the malfunction of utility systems or services.'**

## Actions

13. **Action 4.1:Analyze-**
    **Add 'or OI&T (eg REMEDY ticket)**

    The need to do analysis or further research. Collecting more information to analyze, or form a team, task group or task force, create a subcommittee or oversight committee to monitor processes, or call a formal meeting, or notify NCPS, FDA, ISMP, ECRI, or OI&T (eg REMEDY ticket). Follow-up is implicitly or vaguely assigned to a team, group, individual and usually involves the submission of reports, findings, recommendations or focused review.

14. **Action 4.1.2 Simulation: Add 'attempt to repeat a device failure'**

15. **Action 4.4.1 Medical: Add 'tubing (IV, oxygen, feeding, ventilator)'**

16. **Action 4.5: Eliminate or Substitute System or Device-**
    **Add 'without the implementation of an engineering change. (See 4.9)'**
    **Add two new subcategories:**
    **4.5.1 and 4.5.2**

    **4.5 Eliminate or Substitute System or Device:**
    Eliminating fully or partially a system, process, procedure, or device without the implementation of an engineering change. (See 4.9).
    **4.5.1 Eliminate Device:**
    Eliminating fully or partially a device without mention of replacement. (See 4.4)
    **4.5.2 Eliminate or Substitute System:**
    Eliminating fully or partially a system, process, or procedure. Reduce distractions, eliminate look alike/sound alike, in general, create an unpolluted medical environment. (i.e. implement a zone of silence during medication administration, eliminate multiple syringe concentrations for same medication).

17. **Action 4.6: Enhanced Documentation/Communication-**

**Add 'Communication' to heading and new subcategory 4.6.2 which includes reference to SBAR.**

*4.6.2 Communication*
  Use of a standard communication model (eg SBAR, repeat back, read back).

18. **Action 4.7: Enhanced Information Display:**
    **Add 'checklists' and remove 'Including signage (e.g. labels, placards, posting of policy and procedure, posting of lists, such as telephone numbers, etc.)'**
    **Remove 'using safety warnings on patient equipment such as wheelchairs, walkers, etc.' from subcategory**

    **4.7 Enhanced Information Display:**
      Using display boards, bulletin boards, memory aids, checklists, videos and other cognitive aids to reduce reliance on memory or further clarify a process.
      *4.7.1 Patients/Visitors:*
        Development of cognitive aid for patients/families/visitors such as identifying the signs and symptoms of suicide risk, depression, fall risk, etc., patient pre-surgical/pre-procedural checklist

19. **Action 4.9.1 Device or Interlock: remove 'add padding to safety bars in bathroom or Geri chairs, etc.'**

20. **Action 4.9.2 Environmental: add 'low lighting/glare'. Add new example 2: Install antiscald device to reduce the risk of scalding**

21. **Action 4.10 Leadership/Culture Change :**
    **Change to 'Tangible involvement and action by leadership in support of patient safety.'**

    **4.10 Leadership/Culture Change:**
    Tangible involvement and action by leadership in support of patient safety.

22. **Action 4.11 Policy/Procedure: add 'compliance with VA Directive'**

23. **Action 4.12: Redundancy/Double Checks**
    **Add 'that are independent/ nonreliant of each other,', add two new subcategories**

    **4.12.1 Redundancy:**
      Adding redundancies that are independent/non-reliant of each other, to a process or system as a re-examination.

**4.12.2 Double Checks:**

Adding a double check to a process or system as a non-independent re-examination. (For independent re-examination see 4.12) Example: Double check of admitting process for patient home medications, check of high alert medication dosage, PCA pump programming double check

## 24. Action 4.13: Simplify
## Add 'established' and 'to improve the process'

**4.13 Simplify:**

Simplifying or streamlining an established process by removal of components or steps to improve the process.

## 25. Action 4.16 Standardization: add 'contains a mechanism/method that forces compliance to a regular,consistent,and routine action beyond a written policy/procedure.'

## 26. Action 4.16.1 Process (protocols, clinical guidelines, order sets)
## Remove 'checklists' from heading and description. Added 'clinical guidelines' and 'order sets' to heading.

4.16.1 Process (protocols,clinical guidelines, order sets):
Implied standardization of process, protocols, clinical guidelines, SOP, care maps, order sets, adding to or modifying the drug formulary, assessment or reassessment tool, algorithm, decision tree, consistent mechanism, systematic method.

## 27.Action 4.16.2 Equipment: add '(e.g., same model of equipment used throughout the facility; or, supplies/medication stored in the same location (e.g. the third drawer of all facility code carts or in the labeled yellow bin in all medication storage rooms)).

## 28. Action 4.16.3: Coordination of Care
## Add 'multidisciplinary patient care rounds' ,'implementation of MTT or CRM programs' and 'Ticket to Ride'.  Removed 'Use of SBAR'

**4.16.3 Coordination of Care:**
Multidisciplinary patent care rounds, standardizing patient care across disciplines or between inpatient and outpatient care, because of inefficiencies or failures in the transition, continuity, or coordination of patient care or conducting patient rounds. Hand-off or consult, 'standard reporting format' or 'transfer of care', interdisciplinary / multidisciplinary team, method of transfer responsibility, ticket to ride, standardized reporting format, reconciliation of medications, implementation of MTT or CRM programs.

# Outcomes

29. Outcome Measures Description: add 'Implementation of an action does not measure effectiveness of the action, only its completion. Therfore, it is important to also develop an outcome measure with a numerator/denominator and threshold to measure the action effectiveness and its impact on the root cause.

30. Outcome Measure 5.2 -0 Action/Process Outcome- Non-quantifiable: add 'No actual measurement of the effectiveness of the action is documented.'

# 2013:
## Actions:

4.1.2 Simulation changed to 4.1.2 Reenactment of Event

Training: Two additional categories added to training category.

4.18.2 Simulation: (Intermediate)

4.18.3 High Reliability Training (Stronger)