Trauma Performance Improvement: Simple Steps to Improve Outcomes

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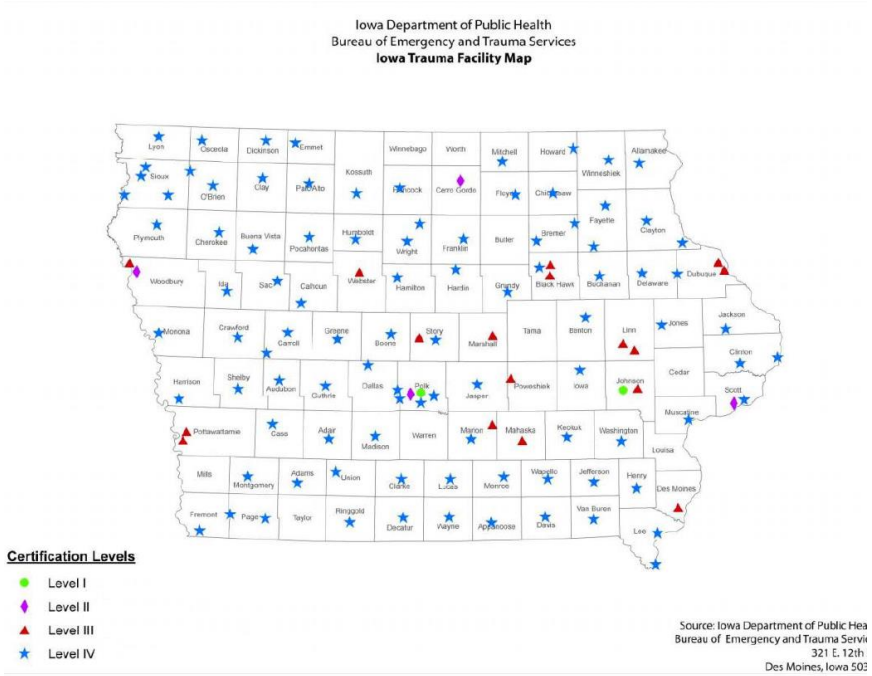

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Objectives

1. Be able to define the components of an Optimal Trauma PI Plan and implement the plan in their trauma center to attain successful verification/accreditation.
2. Integrate the new taxonomy classification system as it related to PI Events in Iowa trauma centers
3. Develop targeted corrective action plans which will result in successful resolution Events or identified opportunities for improvement while enhancing patient outcomes.

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Outline

1. Components of an Optimal PI Plan
2. Process of identifying Performance Improvement Events and developing corrective action plans.
3. Categorizing Performance Improvement Events in order to target improvements
4. Process to decrease complications and unplanned Events.

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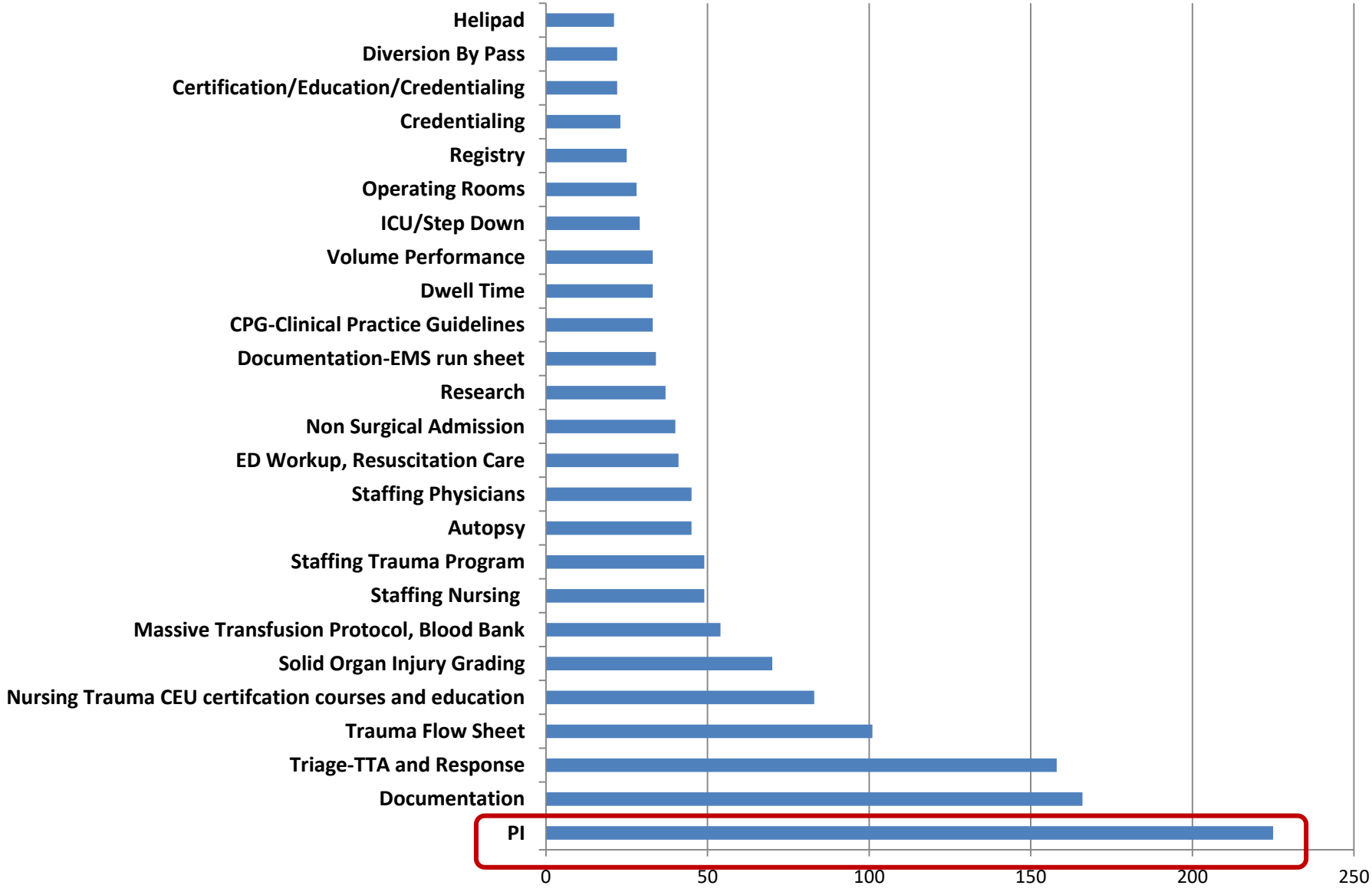
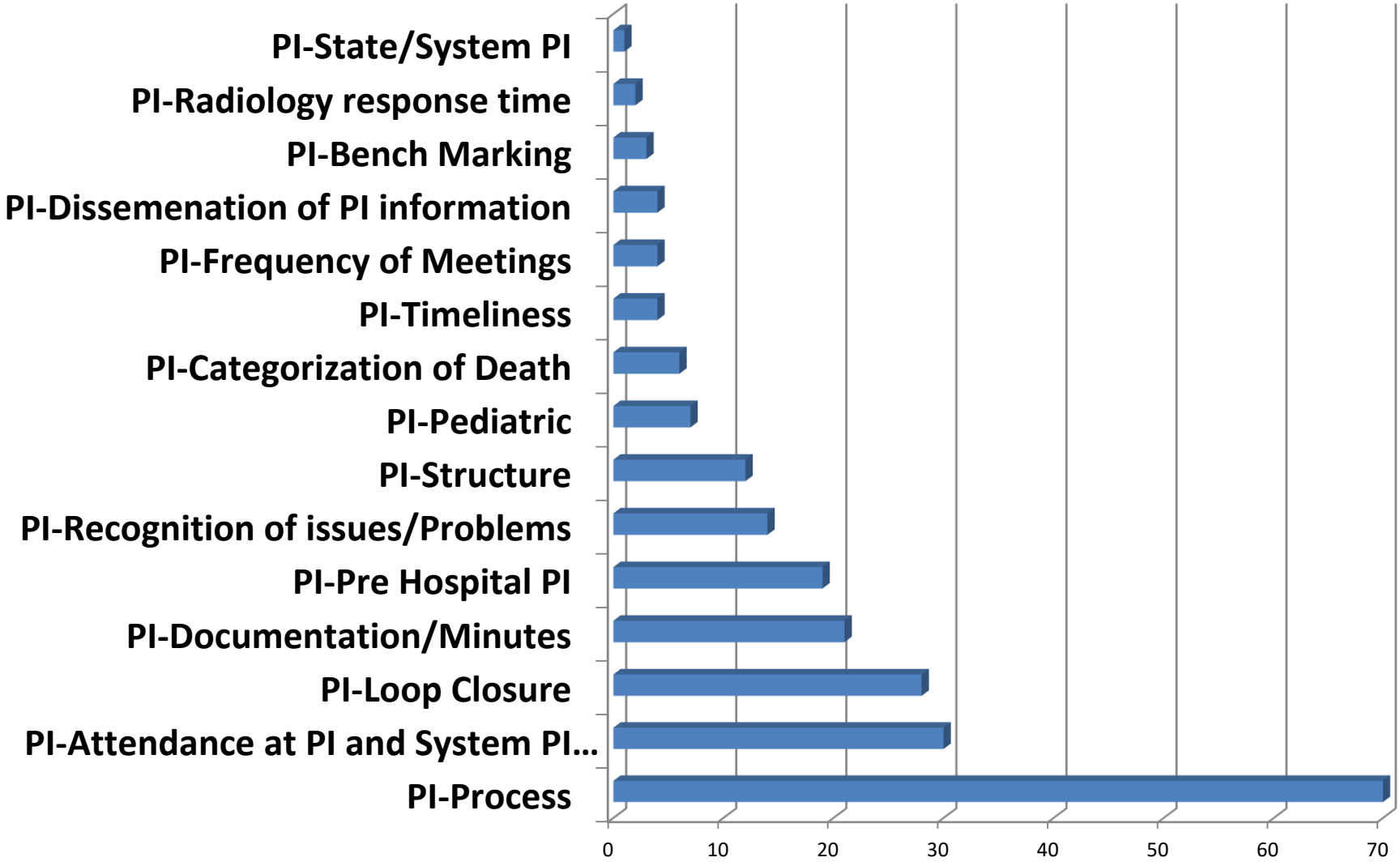
Top 25 Weaknesses



PIPS


PI-State/System PI
PI-Radiology response time
PI-Bench Marking
PI-Dissemenation of PI information
PI-Frequency of Meetings
PI-Timeliness
PI-Categorization of Death
PI-Pediatric
PI-Structure
PI-Recognition of issues/Problems
PI-Pre Hospital PI
PI-Documentation/Minutes
PI-Loop Closure
PI-Attendance at PI and System PI...
PI-Process
0
10
20
30
40
50
60
70

Trauma Outcomes and Performance Improvement Course

Components of an Optimal PI Plan

The Committee on Trauma

OPTIMAL
PERFORMANCE IMPROVEMENT
PLAN

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Components of Plan

1. Goals
2. Mission, Vision, Scope, Authority
3. Trauma Team Credentialing
4. PI Team Members
5. Identification of Trauma Patients
6. Data Collection
7. Sources
8. Data Analysis
9. Data Management
10. Data Validation
11. Interrater Reliability
12. Concurrent & Retrospective Review

OPTIMAL PERFORMANCE IMPROVEMENT PLAN

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Components of Plan

14. Levels of Review
15. Corrective Action Plan
16. Event Resolution/Loop Closure
17. Multidisciplinary Peer Review Comm
18. Trauma Systems/Operations Comm
19. Trauma M&M Committee
20. References
21. Glossary Terms
22. Appendix: NTDB Inclusion Criteria
23. Appendix: Trauma PI Event Review Form
24. Appendix: Level of Review/Determination of Harm
25. Appendix: Information Flow and Integration into Hospital PI

OPTIMAL PERFORMANCE IMPROVEMENT PLAN

Overview of Trauma PIPS Process

What:

- Events identification
  - Audit Filter/Audit Question
  - Complication/Occurrence
  - Practice Guideline Variances

Who: (Domain)

- Patient demographics
- Source of reported Event

Where: (Domain)

- Location/Setting
- Phase/Target

When:

- Date identified and/or Occurred
- Date of loop closure

Why: (Cause, Impact, Type)

- Factors
- Impact (Harm)
- Type

How (to fix it): (Mitigation/Prevention)

- Corrective Actions
- Levels of Review
- Mitigation/Prevention
- Loop Closure

Process of Identifying Trauma Performance Improvement and Patient Safety Events

- Pre-Hospital referrals
- Transfer Center
- EMR
- Hallway communication
- Email referrals
- Morning report
- Daily rounds
- Concurrent abstraction
- Registry data trends
- Incident reports
- Hospital Quality Department
- Autopsies/ME/Coroner
- Patient/Family Feedback
- Region/state forums
- State or National Designating authority
- TQIP reports

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Effective Concurrent Trauma PIPS Process

Impacts Patient Outcomes at the Point of Care

21st century

Concurrent Point of Care PI

Ideally a paperless system

Standard terminology

Store, review, request data at fingertips

Effective user interface and design

Laptop wireless entry decreases duplication of efforts

Process for Monitoring Compliance

Complications: NTDB defined complications which occur in the trauma patient, are recorded in the Trauma Registry. The Trauma PI Program will review complications for injury or treatment that significantly affect patient outcome. The Trauma PI Committee makes appropriate referrals and recommendations and will be monitored for trend analysis

Audit Filters/Systems Events: All identified Events that are not provider related are reviewed in the Trauma Performance Improvement Committees

“Event”

Any type of error, mistake, incident, accident, deviation, non compliance, regardless of whether or not it resulted in patient harm.

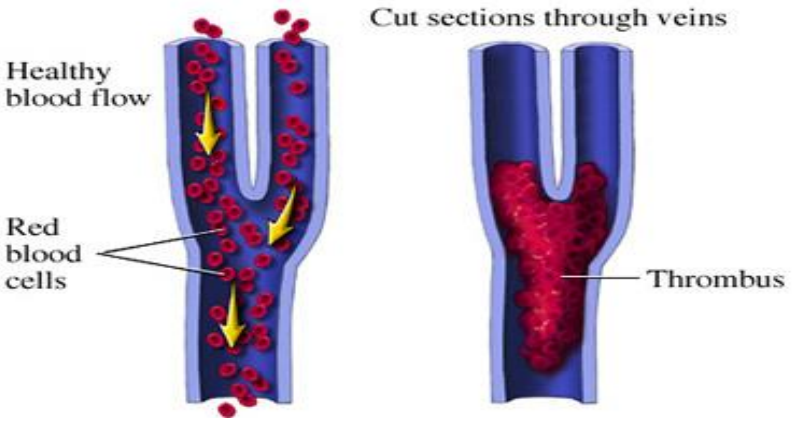
The goal of the PI process is to identify problems in the care delivery system that could potentially result in harm to a patient and resolve them before they actually result in harm to a patient.

Complications

Complications are patient specific

Defined across the continu

- Deep Vein Thrombosis
- Myocardial Infarction
- Pulmonary Embolus
- Sepsis
- Ventilator Associated Event
- Wound infections



Audit Filters

- Tools that beg the question
  - Not in-and-of-itself evidence that care was sub-optimal
  - A **Red Flag** that requires you to answer the question "Why was the standard not met?" and "Is there an opportunity for improvement here?"
  - Deviation is either acceptable or unacceptable

Filters should make sense for your facility. They should represent circumstances that are likely to be encountered at your hospital and they should represent Events you know or suspect exist and would like to improve.

Trauma System Events

- Absence of EMS record
- Inadequate pre-hospital airway
- No documentation of FAST exam
- Inaccurate FAST exam results
- Missing Trauma Flowsheet/H&P
- ED LOS >2 hours at referring hospital
- ED dwell time > 180 minutes
- Timely initiation of Massive Transfusion Protocol
- Clinical practice guideline variation (identify guideline)
- Tertiary Survey not documented

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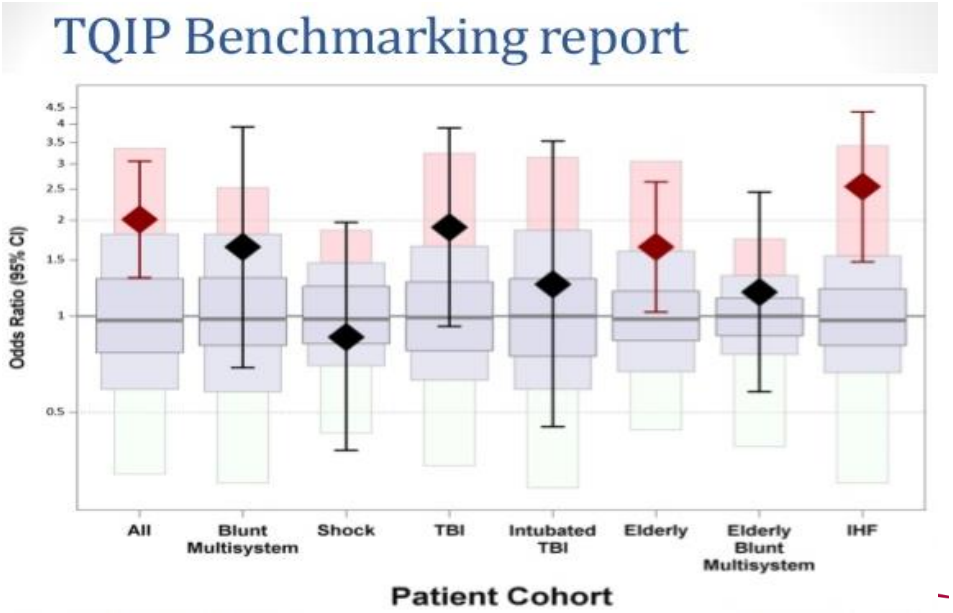
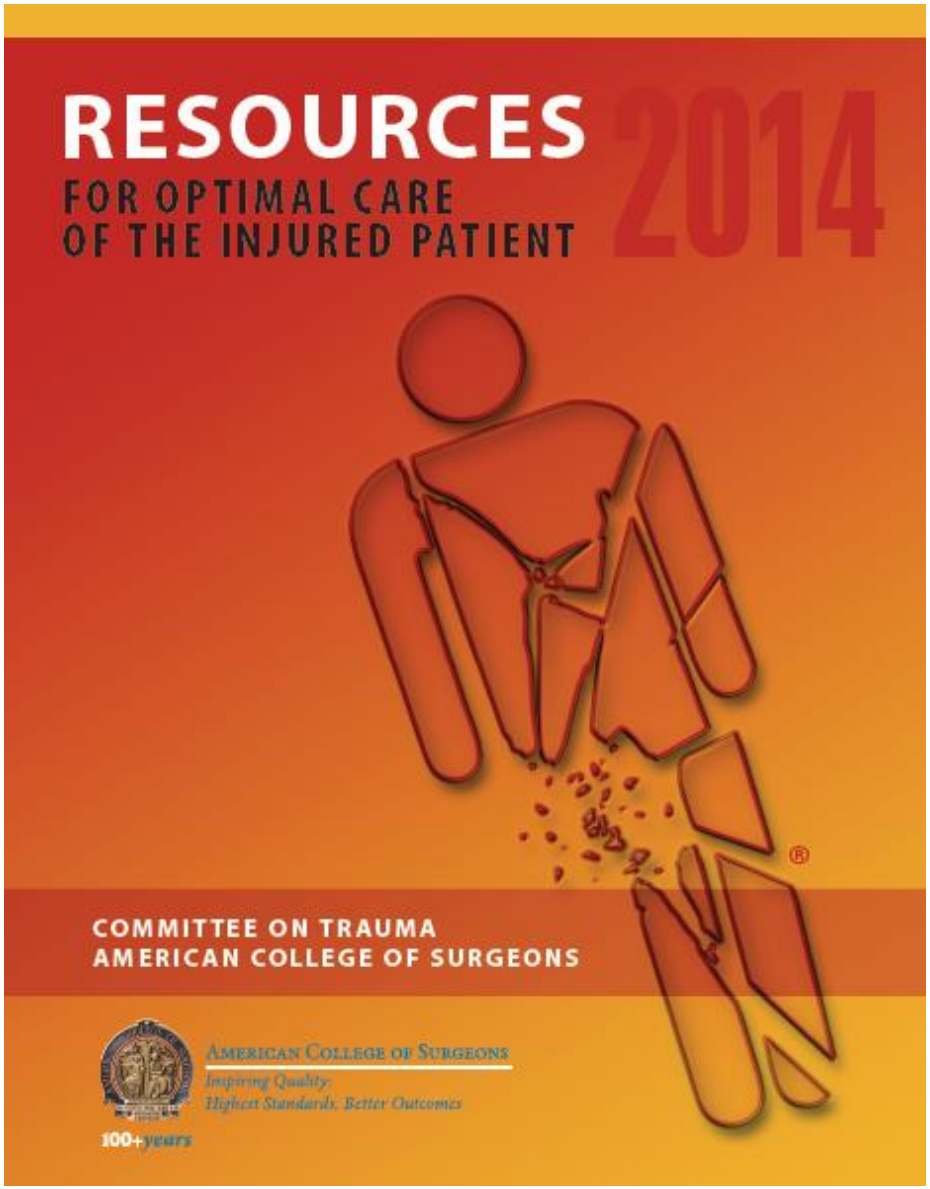
Trauma System Events

- Craniotomy >4 hours of ED arrival for acute/expanding EDH/SDH
- Administration of antibiotics for an open fracture greater than 1 hour after arrival
- * Positive head CT of patient on anti-coagulation, anti-platelets or aspirin without reversal within 2 hours of arrival
- Reintubation within 48 hours of extubation
  - (excludes planned return trips to the OR)
- Unplanned return to the OR
- Unplanned admission to ICU
- Delay in Diagnosis
- Missed Injury
- Complications



* hospital defined

Orange Book: Chapter 16



Trauma Center Events: Orange Book Core Measures

- Mortality Review (CD16-6)
- Trauma surgeon response to the emergency department (CD 2-9)
- Trauma team activation (TTA) criteria (CD 5-13)
- All TTAs must be categorized by the level of response and quantified by number or percentage (CD 5-14, 5-15)
- **Response times, ideally from trauma registry data, for imaging and procedures, arrival of critical personnel must be monitored. Potential overtriage and undertriage cases should be identified and reviewed monthly** (CD 16-7)
- **Trauma patient admissions (NTDS definition) to nonsurgical service should be no higher than 10 percent and must be reviewed monthly** (CD 5-18)
- **Direct admission of trauma patients with no trauma consult.**
- Acute transfers out
- Multidisciplinary trauma peer review committee attendance (CD16-15)

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Trauma Center Events: Orange Book Core Measures

- Trauma center diversion-bypass hours must be routinely monitored, documented and reported, including the reason for initiating the diversion policy, and must not exceed 5 percent (CD3-6)
- **Availability of the anesthesia service** (CD 11-4, 11-7, 11-16, 11-18)
- Delay in operating room availability must be monitored (CD 11-16, 11-18)
- **Rate of change in interpretation of radiologic studies should be categorized by RADPEER or similar criteria (describe the process/scoring system used)** (CD 11-32, 11-37)
- Transfers to a higher level of care within the institution (CD 16-8)
- Solid organ donation rate (defined as number of organ donations divided by number of potential donors)(CD 16-9)
- Trauma registry- percentage of completed registry records within 2 months of discharge should be determined (the threshold is 80 percent).(CD15-6)

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Trauma Center Events: Orange Book CPG Tracking

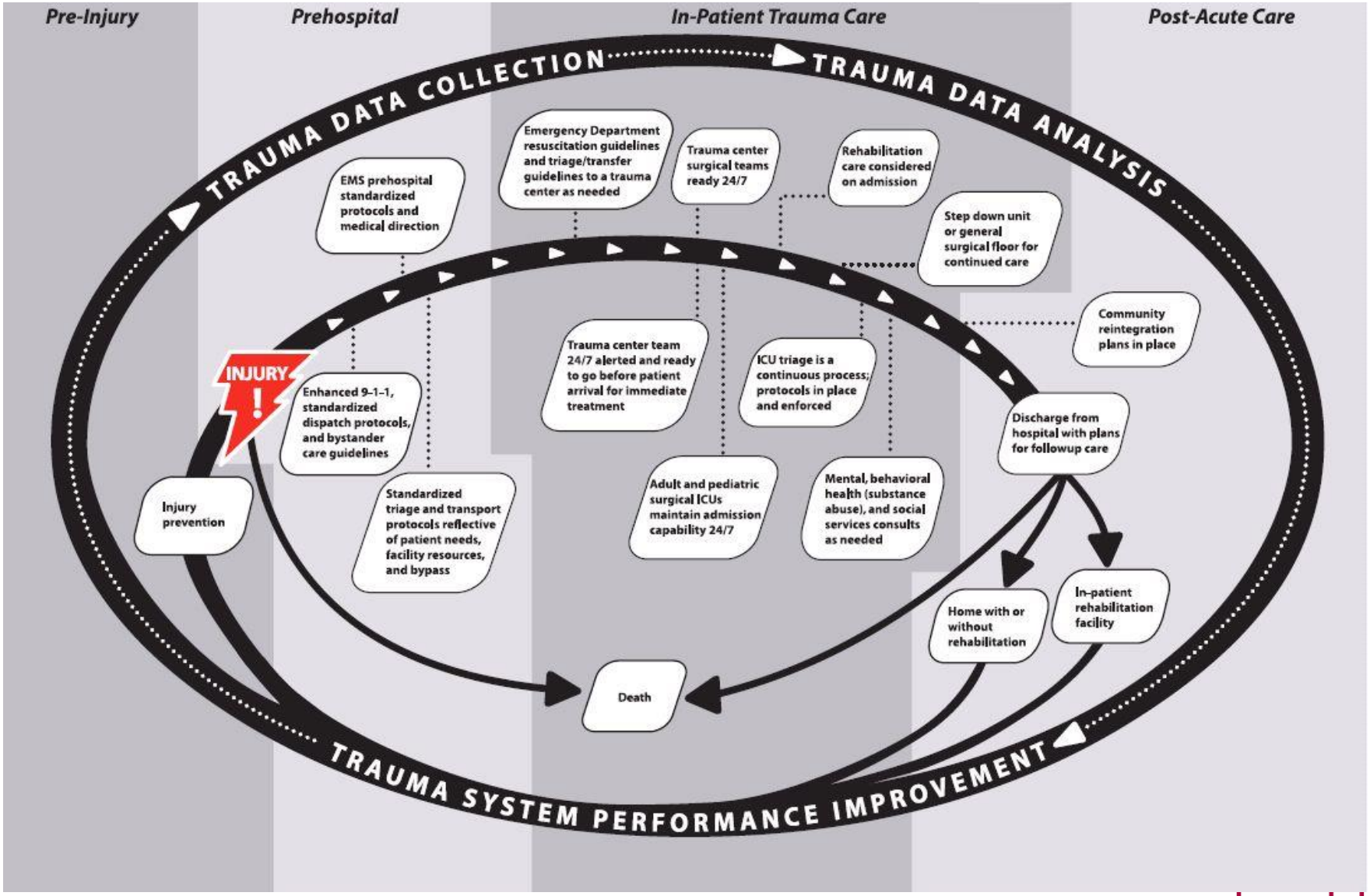
Clinical Practice Guidelines, Protocols, and Algorithms

Trauma programs should seek to reduce unnecessary variation in the care they provide. To achieve this goal, a trauma program must use clinical practice guidelines, protocols, and algorithms derived from evidenced-based validated resources (CD 16–4). In areas where there is an absence of such resources, consensus-based institutional guidelines should be established according to the most current available peer-reviewed literature and clinical experience and acumen. Once implemented, trauma programs should track compliance with their clinical practice guidelines, protocols, and/or algorithms and ultimately monitor them for effects on outcome. Examples of such activities include the following:

- The use of massive transfusion protocols in patients with exsanguinating hemorrhage.
- Assessment and clearance of the cervical spine.
- The management of severe traumatic brain injury.
- The reversal of oral anticoagulants, the timing of antibiotic administration, and time to the operating room for open fracture management.
- The use of venous thromboembolism prophylaxis.
- Deep vein thrombosis or pulmonary embolism events.

A current list of online resources can be found at *www.facs.org/quality-programs/trauma/vrc/resources.*

Trauma System Performance Improvement



Trauma System Performance Improvement

A System Performance Improvement Plan in an organized trauma care system consists of internal and external monitoring and evaluation of care provided through the phases of care and continuum of care.

The goal of monitoring is to identify opportunities to reduce inappropriate variations in care and to develop corrective action strategies. The effectiveness of the corrective action is monitored and measured through progressive review cycles.

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Trauma System Performance Improvement: Opportunities for Improvement (OFI)

- ***Identify cases for closer review***
- ***Meant to be helpful***
- ***Not a judgment of care***

- Regional or State metrics
- Undertriage
- Time at facility prior to transfer
- Communication between referring and accepting facilities
- Need for intubation enroute or on arrival at receiving facility
- Need for chest tube at receiving facility
- Missed injuries at referring facility
- Inappropriate splinting or C-spine stabilization
- Communication back to referring facility

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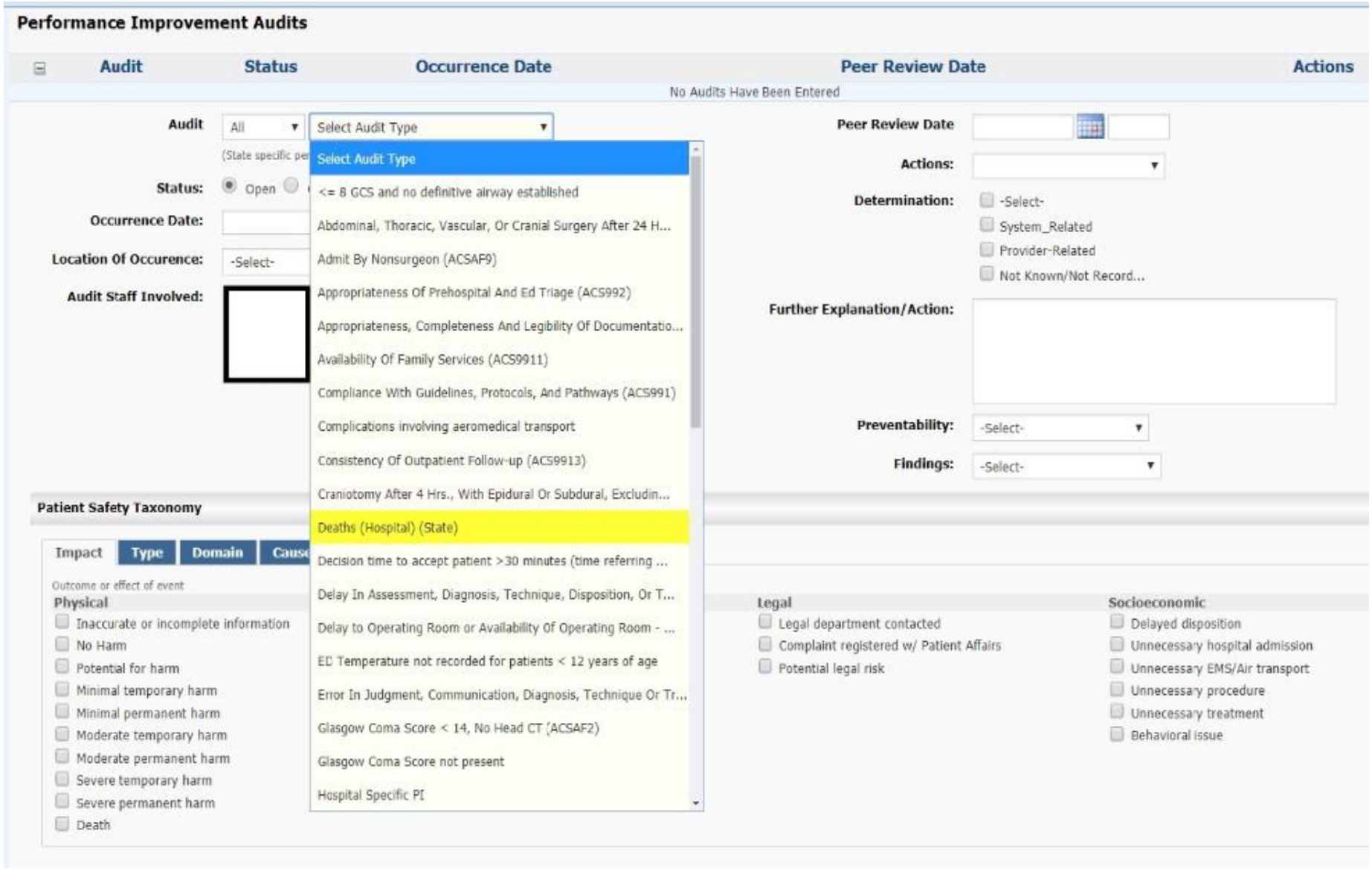
Performance Improvement Audits



Levels of Review

Levels of review can be determined by degree of harm to the patient

A few general definitions to be taken into consideration when choosing the highest level of review needed for an Event include:

Missed injury - An injury discovered after the patient is discharged or after death (includes those found on autopsy).

Delayed diagnosis - An injury found after completion of the first trauma tertiary survey, but before the patient leaves the hospital.

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Impact (Degree of Harm) of Event

Harm is defined as *injury, suffering, disability or death*.

The patient safety incident can have an impact on the patient at various levels, from **Mild** right through to the **Death** of one or more patients.

https://www.eforms.nrls.nhs.uk/staffreport/help/ALL/Dataset_Question_References/Patient_details/Individual_patient/Impact_on_patient/PD09.htm

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Impact/Degree of Harm

Temporary - Condition resolves prior to discharge from the trauma admission or there is an expectation that it will resolve within 6 months of the Event

Permanent - Condition is present at discharge and does not resolve within 6 months of the complication or Event, is not expected to resolve, and may or may not be lifelong.

Degree of Harm

No Harm – Standard of care provided with some deviations with no impact to the patient

No Detectable Harm – Event occurred but did not reach or impact patient; no treatment

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Degree of Harm

Minimal Harm – Impact to patient, is **symptomatic, symptoms are mild, loss of function is minimal or intermediate** but short term, and **no or minimal intervention** (extra observation, investigation review, minor treatment) is required

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Degree of Harm

Moderate Harm – Patient outcome is **symptomatic, requiring an intervention (e.g. operative intervention,** therapeutic treatment), and increase in the length of stay, or **causing long term loss of function; requires high level of care**; expected to resolve prior to discharge

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Degree of Harm

Severe Harm – Patient is symptomatic, requiring **life-saving intervention** or major **surgical/medical critical care intervention**, shortening life expectancy or causing major permanent or long term harm or loss of function; error in judgment, deviation from practice, system delays; impact quality of care; quality of life

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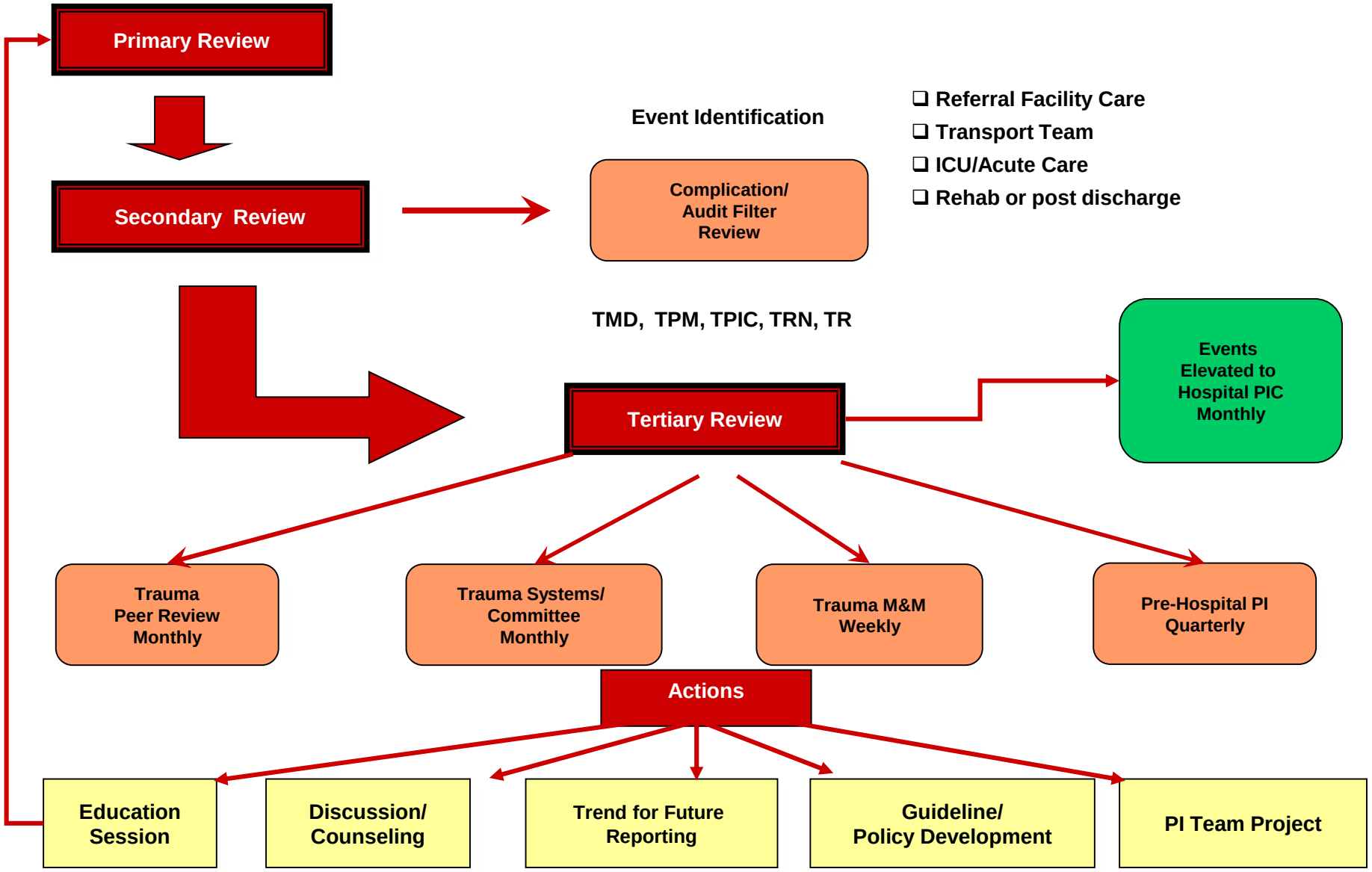
Degree of Harm

Death – death was caused or brought forward by the Event

Trauma Performance Improvement



Levels of Review

Primary Review

- Event identification
- Validation of Event
- Drill down on contributing factors
- System Event or patient Event
- Degree of harm
- Immediate resolution
- Feedback to those involved
- Management Process Written in PIPS Plan
  - System Events with No Harm to Patient-TPM Manages
  - Patient Impact with Harm–TMD Must Address
  - Physician Events–TMD Must Address

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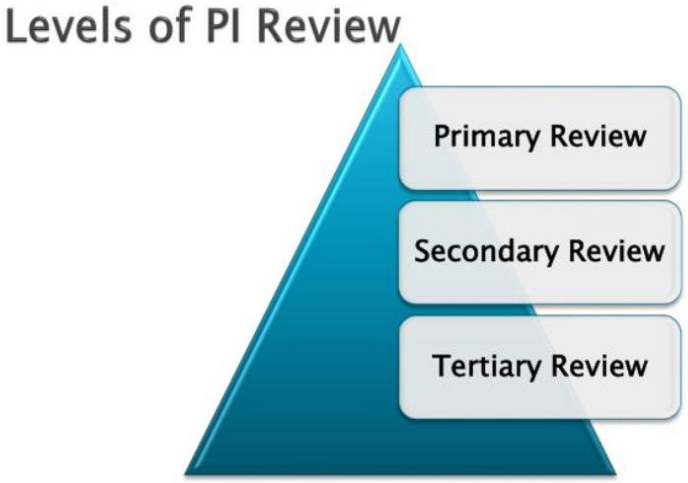
Levels of Review

Secondary Level of Review

- TMD Screening – Triage
- Review Impact, Level of Harm, Type of Event, Domain
- TMD confirms level of harm
- Triage Events for review
- Referrals
- PI Workgroup
- Request additional data
- Close

ALWAYS SCREENED BY TMD



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Levels of Performance Review

Secondary Review

- Review by TPD or TPM/PI Coordinator concurrently
  - (weekly or biweekly)
- Triage Events to the next level:
  - Refer to Trauma Multidisciplinary Review
  - Refer to Trauma M & M (clinical non-death)
  - Refer to Trauma Mortality Review (death)
  - Refer to Hospital PI Committee(s)

Trauma PI can set the tone for PI in the entire health care facility

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Levels of Review

Tertiary Level of Review

- Trauma Multidisciplinary Peer Review
- Trauma M & M
- Clinical Management Guidelines
  - Compliance tracking
  - Concurrent tracking in registry
  - Variance analysis reports
  - Provider specific
- Financial Outcome Review with Hospital Finance

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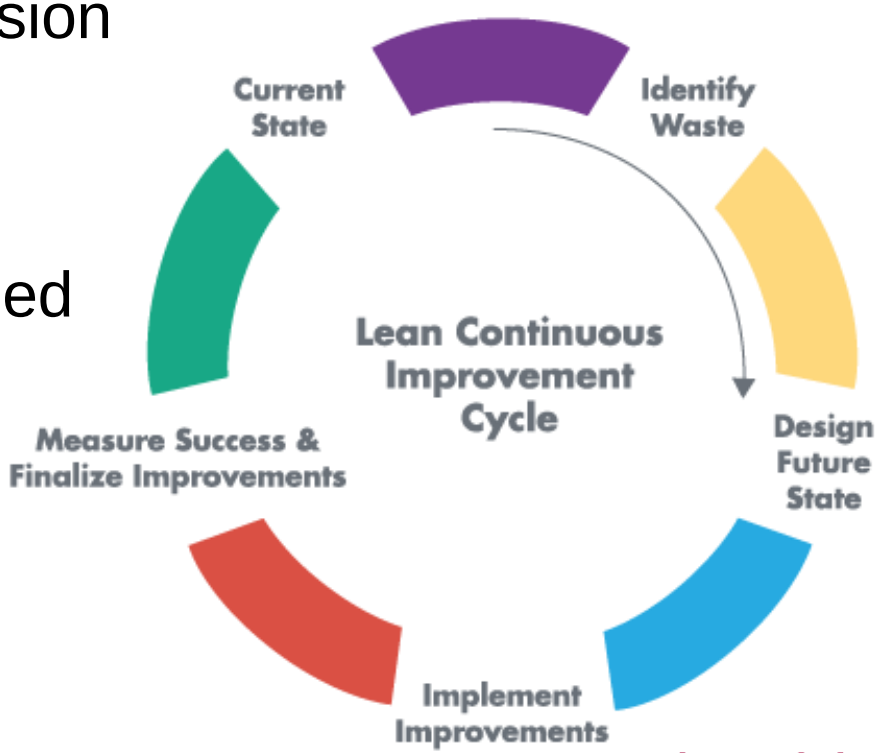
Levels of Review

Tertiary Review

- Provider peer discussion
- Reason for event referral – Capture in minutes
- Capture essence of the discussion
- Discussion of how to prevent
- Contributing factors
- Corrective actions recommended
- Review with TMD
- Implement action plan



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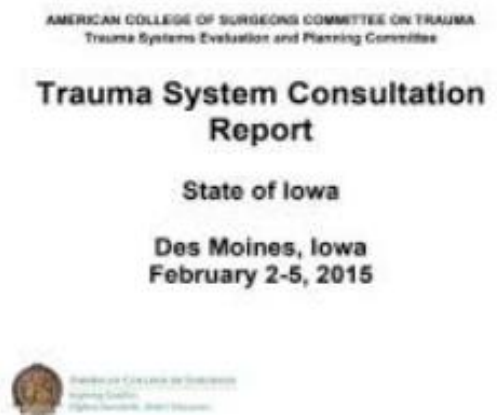
Levels of Review

Quaternary Review

- External Care
- Forums
  - External Peer Review
    - Region, State, Expert
  - Hospital Medical Staff Peer Review
  - Other Hospital Review
  - Affiliate Hospital Review
- Mock Site Surveys by subject matter experts

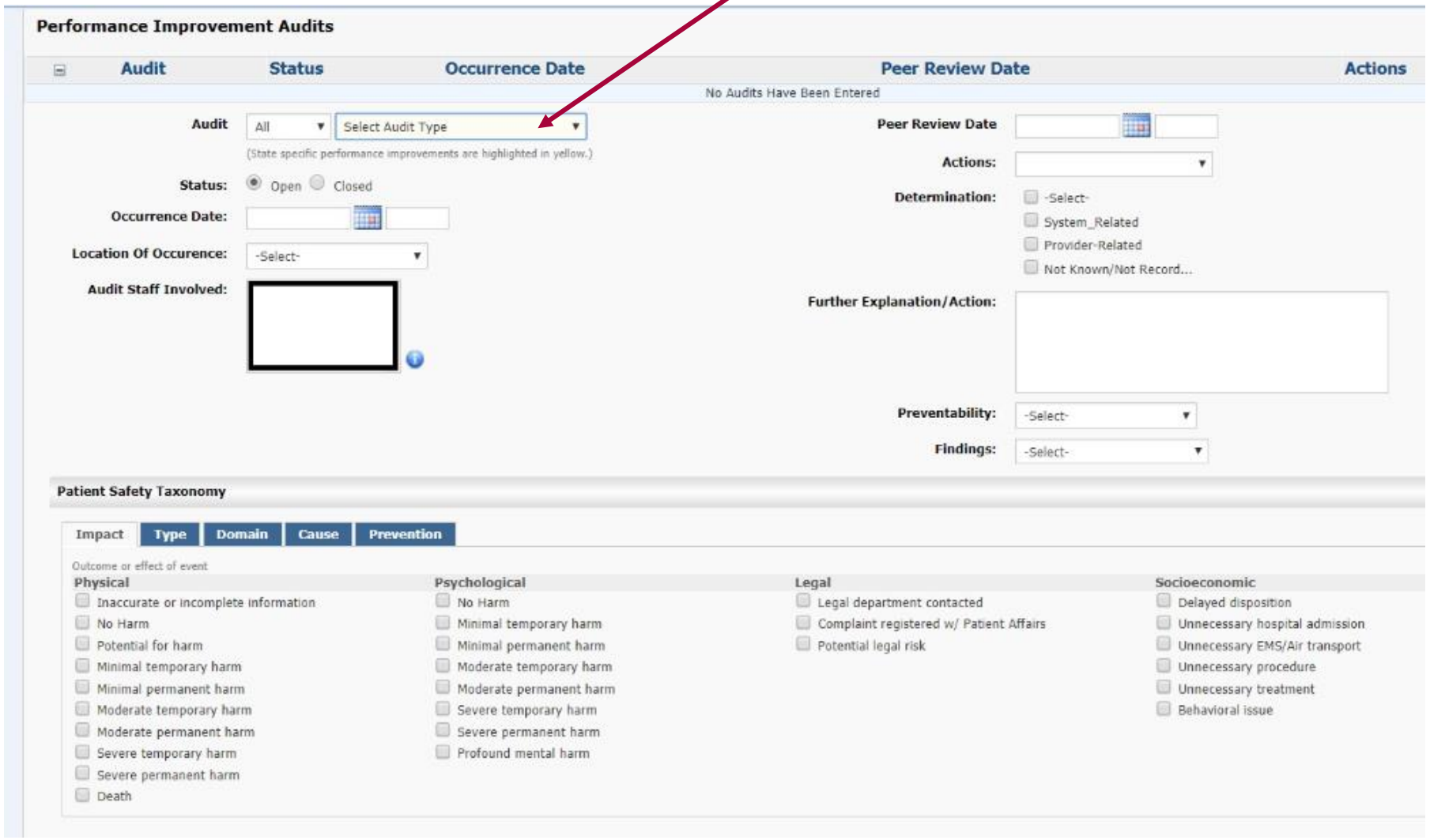

AMERICAN COLLEGE OF SURGEONS COMMITTEE ON TRAUMA
Trauma Systems Evaluation and Planning Committee

Trauma System Consultation Report

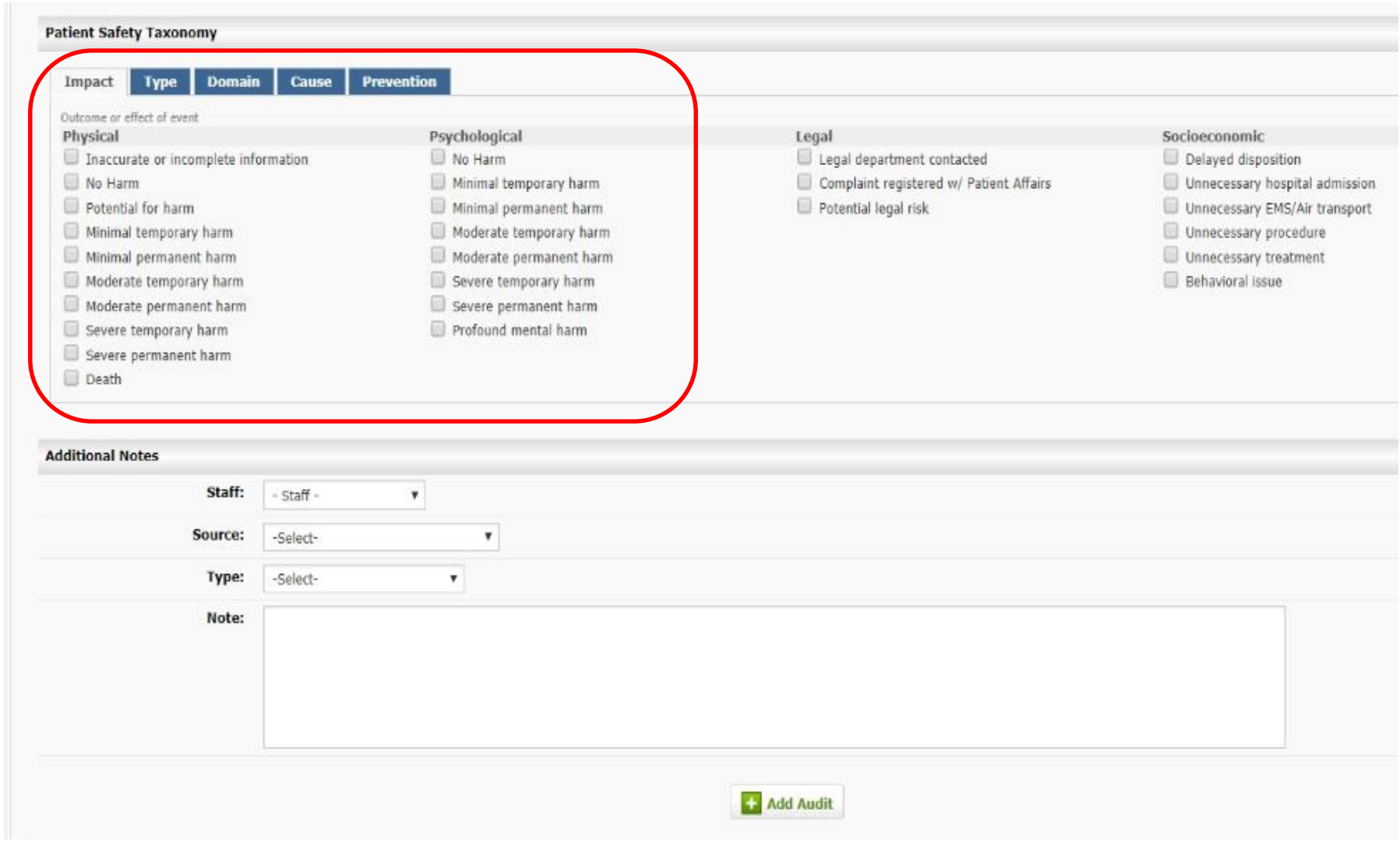
State of Iowa

Des Moines, Iowa
February 2-5, 2015

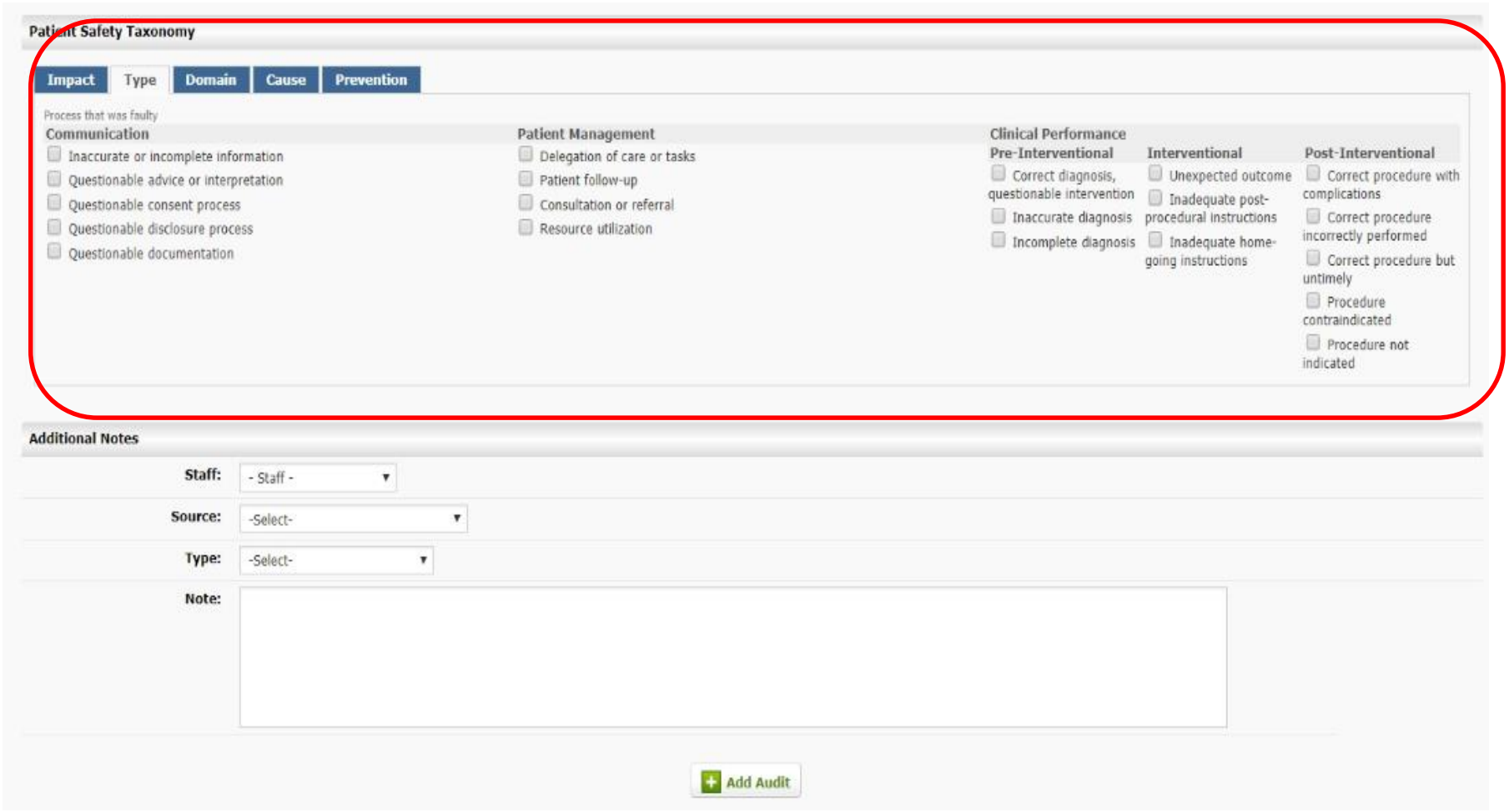
Performance Improvement Audits



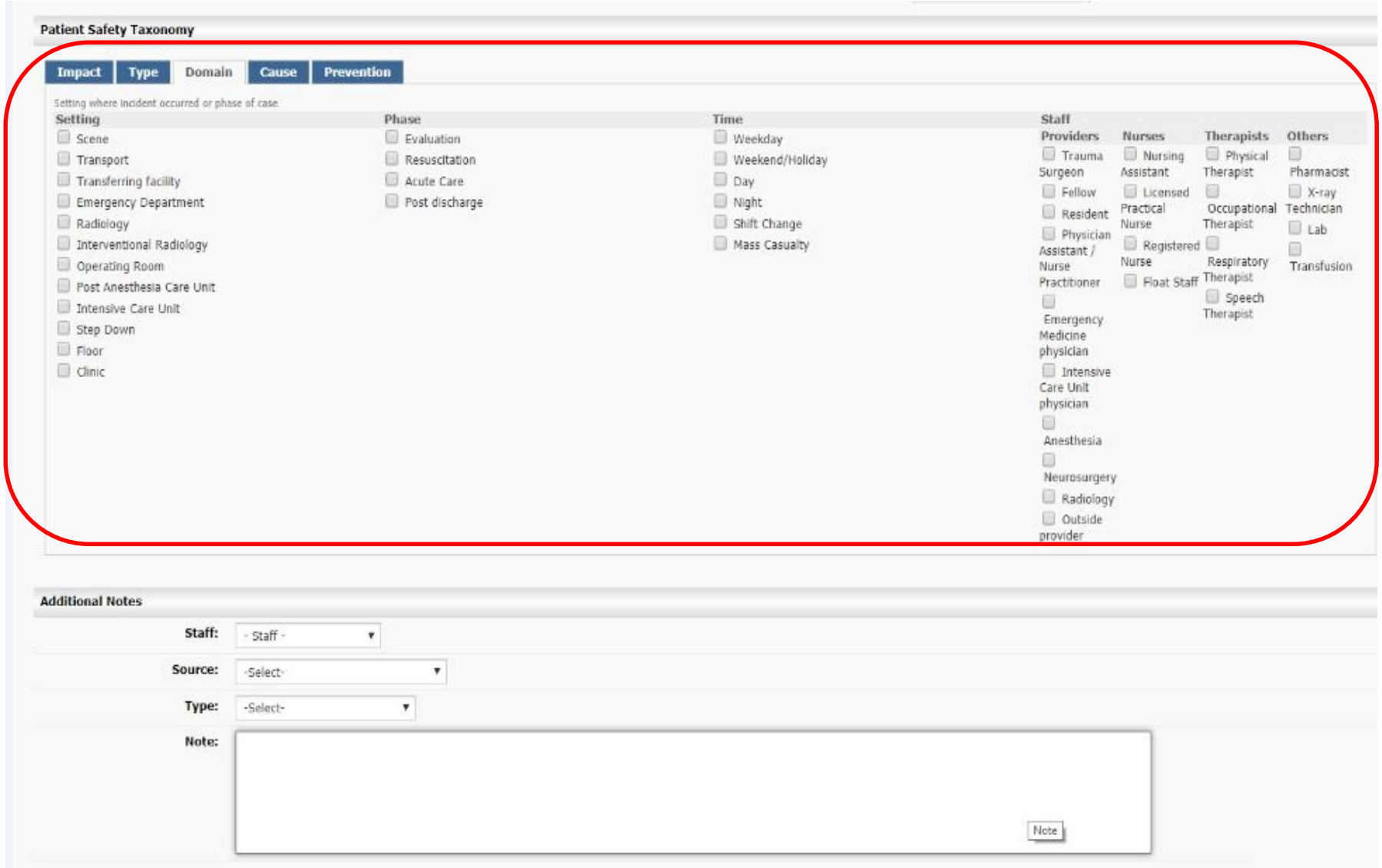
Patient Safety Taxonomy: Impact/Degree of Harm



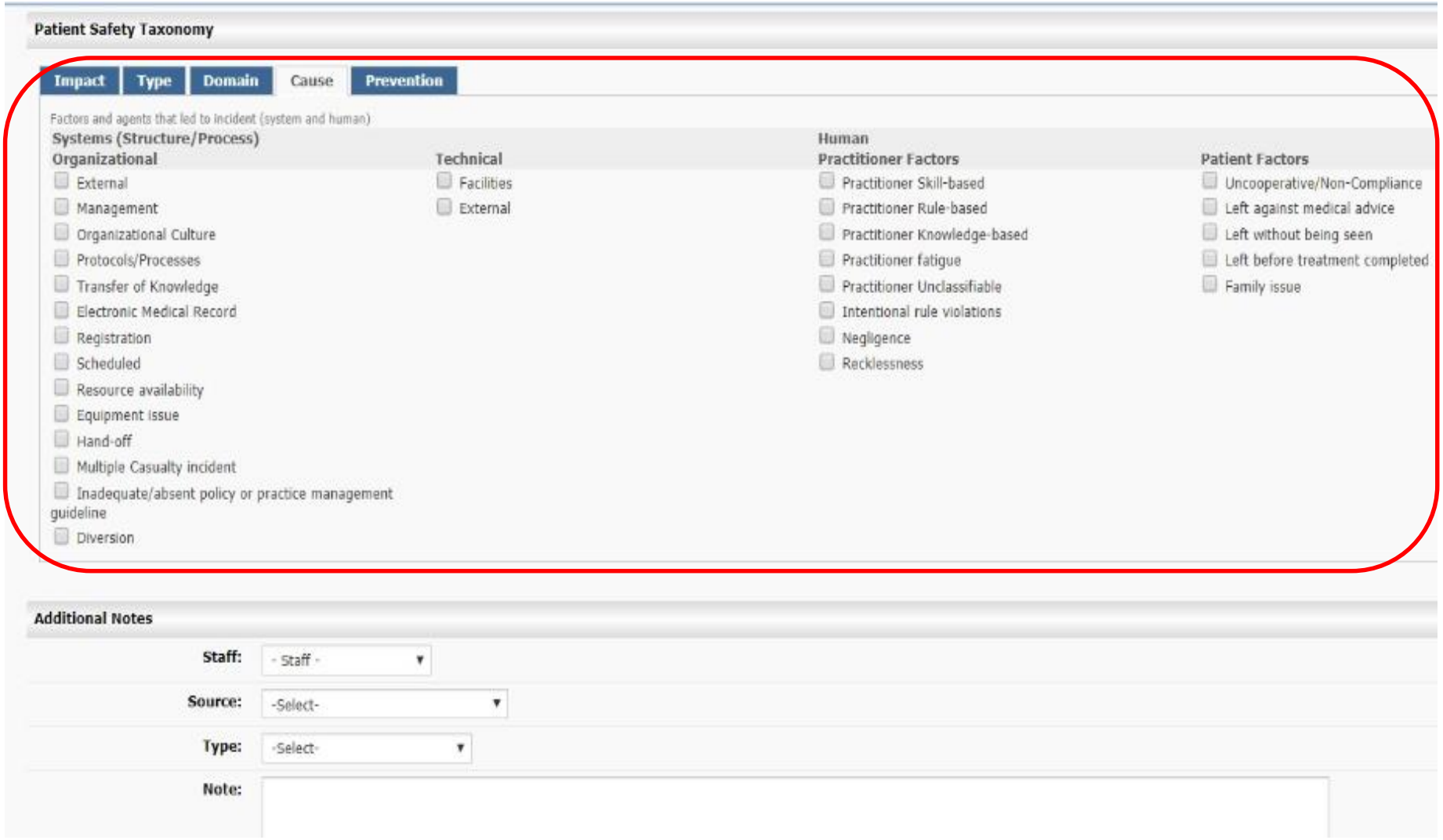
Patient Safety Taxonomy: Type



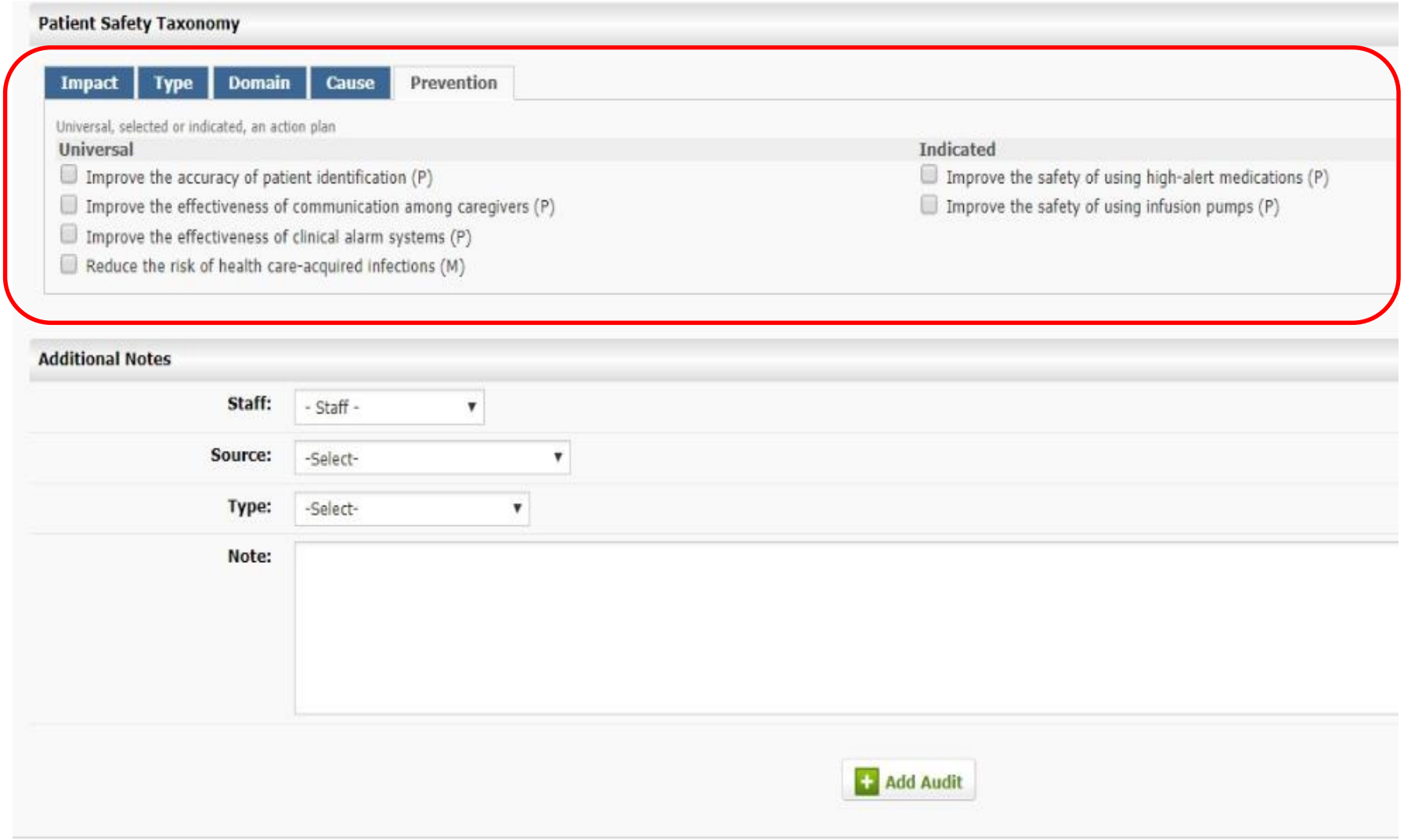
Patient Safety Taxonomy: Domain



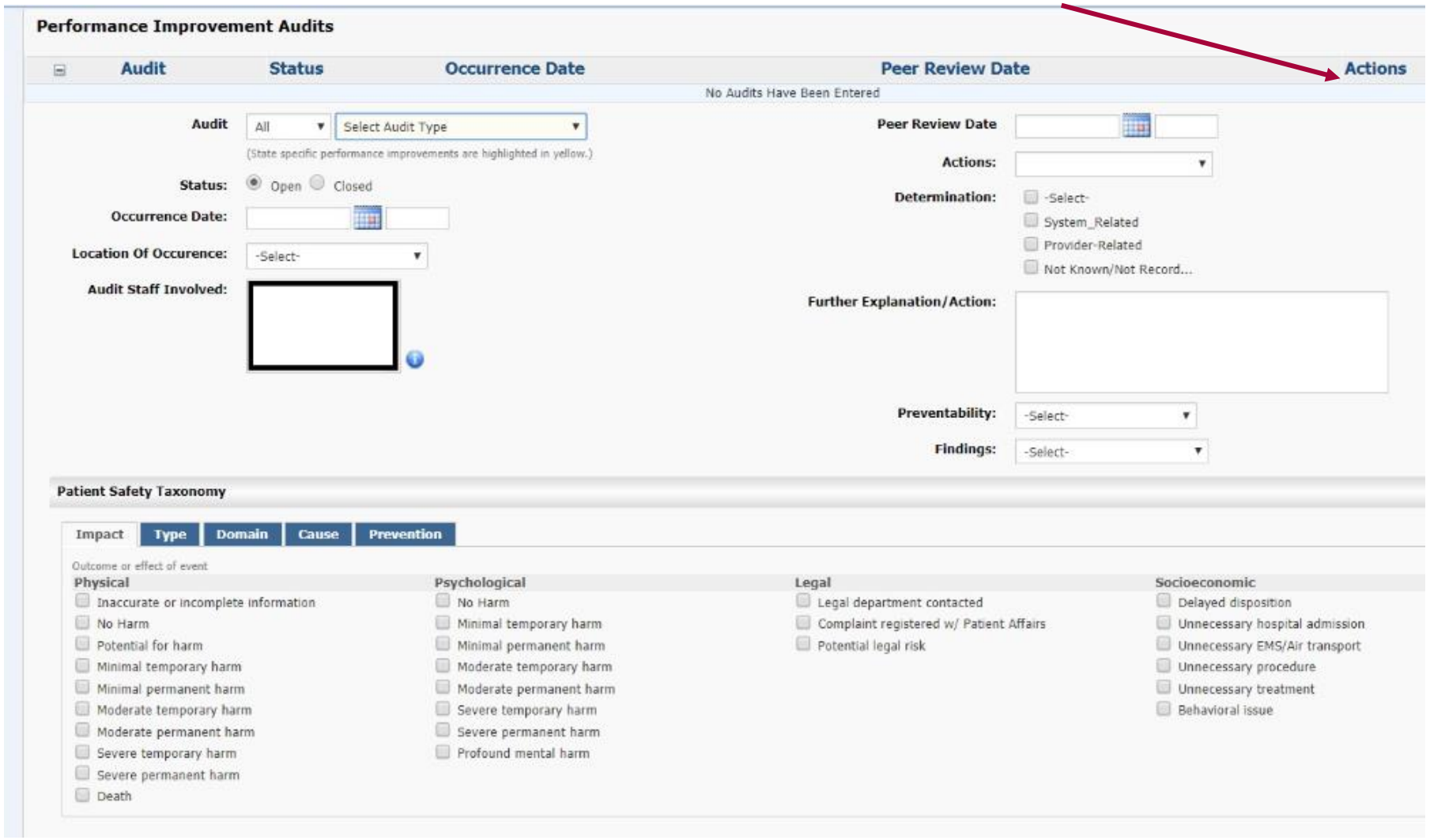
Patient Safety Taxonomy:Cause/Contributing Factors



Patient Safety Taxonomy: Prevention Strategy



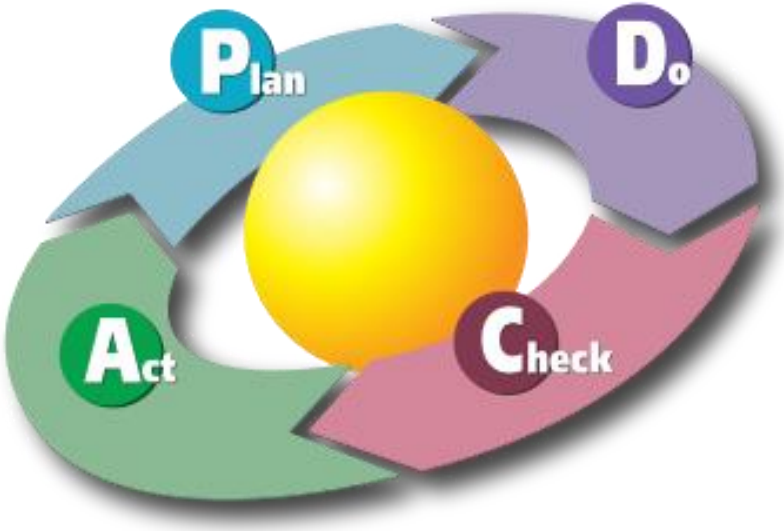
Performance Improvement Audits



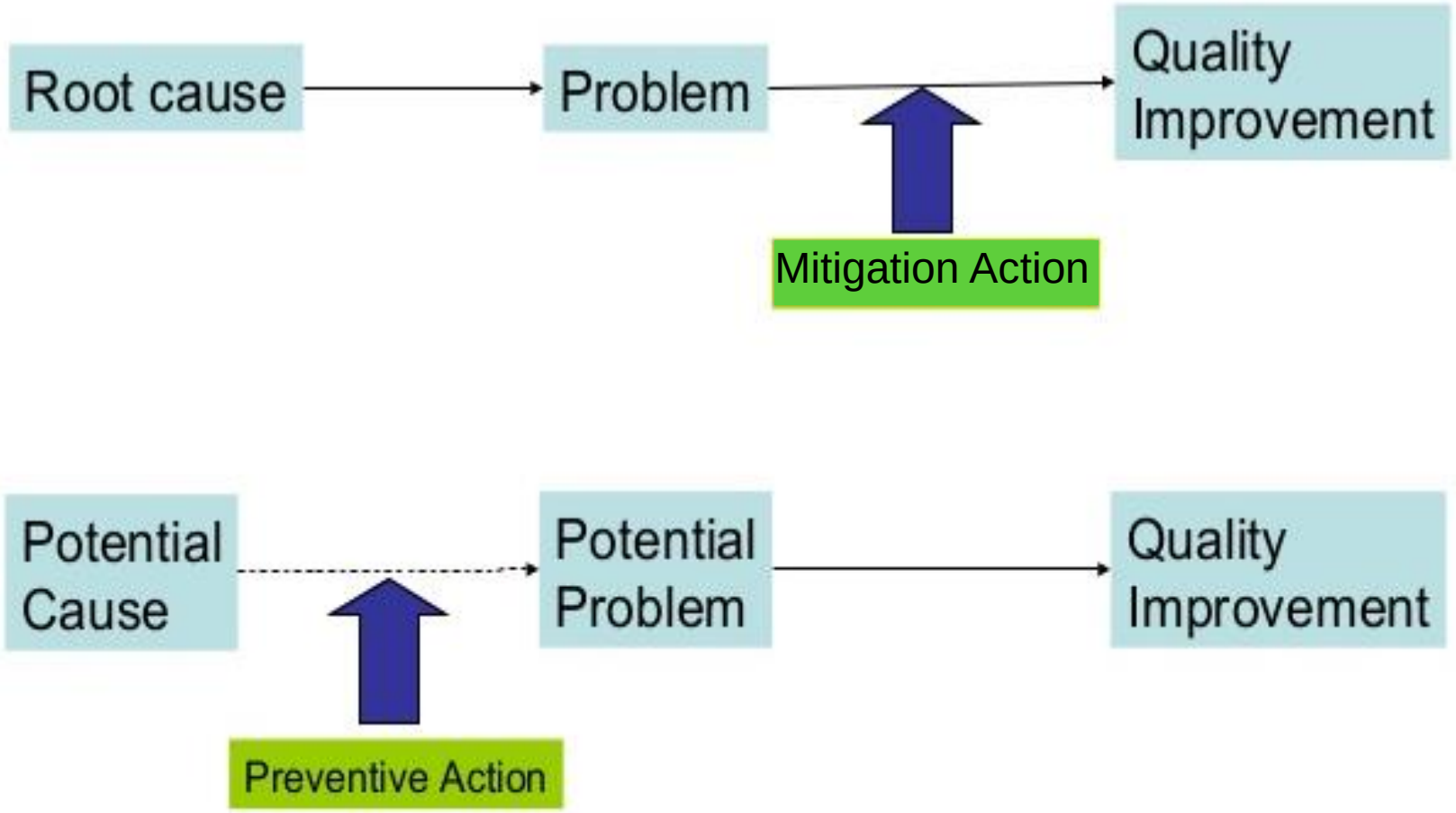
Developing Corrective Action Plans

- Provider-related Events actions:
  - Education
  - Counseling
  - Change in privileges

- System-related Events actions:
  - Guidelines & protocols
  - Education
  - Enhanced resources ($)



Mitigation Action VS Preventive Action



Corrective Action Mitigation
5 Step Process

IDENTIFY
- Identify the Opportunity for Improvement and enter into ***PI tracking system***
- Associate system related Event to a patient; link the Corrective Actions to future patients

ANALYZE
- Document and analyze the current state of the 'Event' using registry data, benchmarks
- Identify contributing factors: System, Provider, Patient

ACTION
- Appoint a PI Team (≤5) and SME to brainstorm corrective actions & mitigation strategies
- Document PI Team Charge (goals) and present recommendation on specific trouble areas

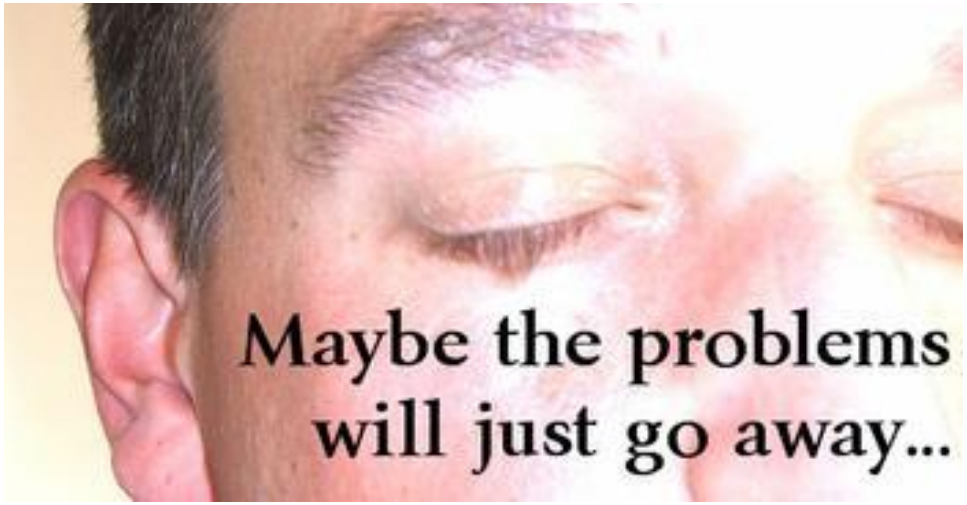
IMPLEMENT
- Design a roadmap to support implementation with timeline for improvement
- Mange the implementation across the continuum

EVALUATE
- Evaluate loop closure with metric driven criteria
- Monitor for set time (really depends on how often the Event occurs: 1x/day, month, year

DOCUMENT
- Enter ALL follow up actions in the Corrective Action area, with date of completion
- Attach all Emails, letters, draft or completed CPGs, copies of Evidence Base Practice

Failed Corrective Action

- Did the corrective action address only the symptoms of a problem and fail to address the root cause?
- Was a corrective action for a known deficiency not implemented or disregarded? (Inaction when addressing safety is not acceptable)
- Did management decide to implement lower cost or otherwise different corrective actions that didn't adequately fix the previously discovered Event?



Opportunities for Improvement

- ED Nursing Documentation
- Integration of Trauma PI into Hospital PI
- Physician Attendance at Peer Review
- Undertriage
- Geriatric Trauma
- OB Trauma Activation
- Pediatric Trauma Activation (adult trauma center)
- Inter-rater Trauma Registry validation
- F.A.S.T. ultrasound validation process
- Simulated Trauma Activation Training
- PTSD training
- Decrease direct admits from referring facilities

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Corrective Action Mitigation
5 Step Process

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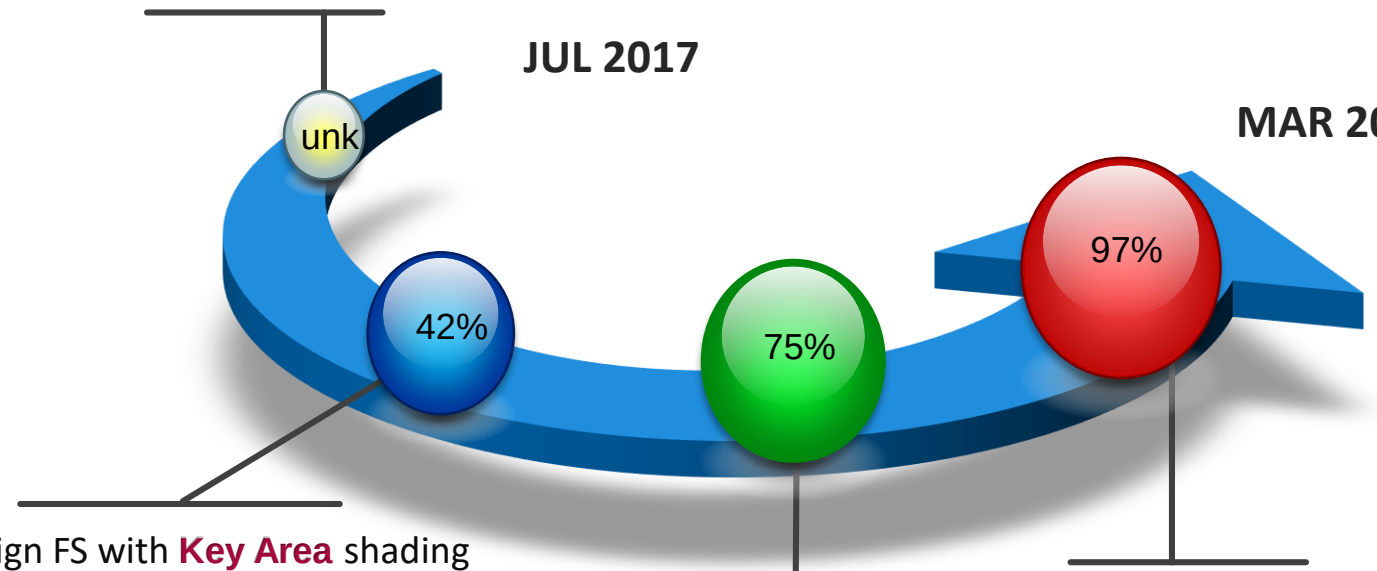
Nursing Documentation on Trauma Flowsheet

Goal Statement: Improved Trauma Flowsheet Documentation Compliance will be at 95% within 6 months

- Analyze each areas of weakness
  - Vital Signs
  - Physical Assessment
  - Response to Interventions

Trauma Flowsheet Focus Group



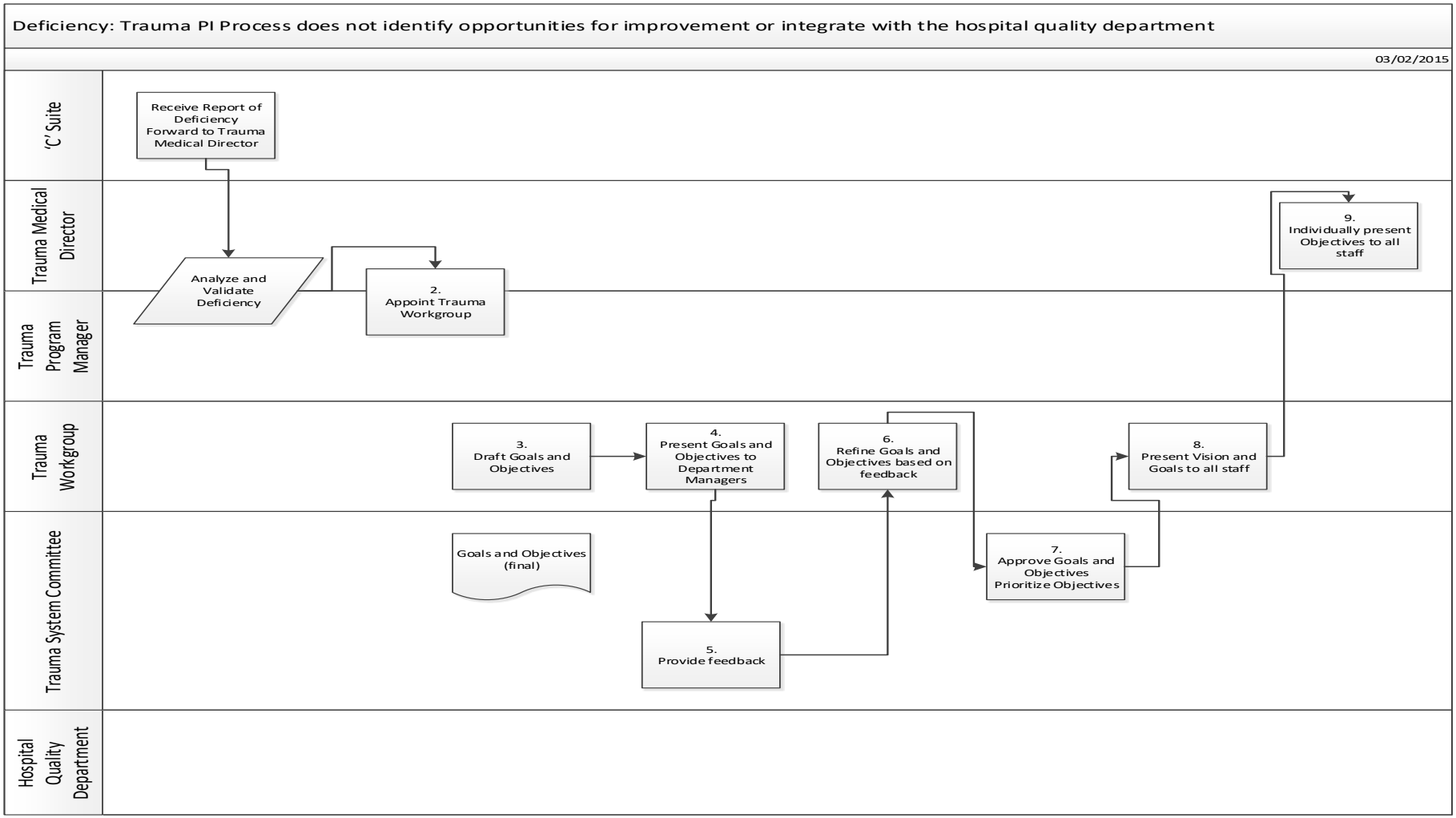
- Redesign FS with **Key Area** shading
- Physical Assessment Checkboxes
- Response to Intervention Checkboxes
- Education/Train the Trainer/Training

Implement Real Time Audit (end of each shift)

Audit tied to Staff Evaluations
>95% compliance with key metrics

Roadmap for Corrective Action

Nov 2017	Jan 20158	Feb 2018	March 2018	April 2018
Corrective Action Plan Developed	Policy, Education Prevention	Implement Policy after Training	Tracking Metric to Measure Compliance	Analyze Metric data and report to Committee



Corrective Action: Physician Attendance <50%

IDENTIFY

- Physician attendance at Peer Review Committee or Systems Meeting was noted as deficiency/weakness at verification review
- Review the attendance logs; validate it is not a sign in issue; assess if alternate attended

ANALYZE

- Query liaisons for rationale; If attendance is a Medical Staff Bylaw; official appointment letters
- Assess the suitability of the Liaison and commitment to trauma program; Committee appointment letter from COS, Chair, CEO

ACTION

- Change the meeting time; combine Peer and System back to back; Serve lunch/breakfast/pizza
- Set up reminders in Outlook for all attendees; call/text cell on the day of the meeting; offer CME!!

IMPLEMENT

- Increase Participation: Establish roles for each participant, reporting calendar for each department, and hold accountable
- Provide education to all Committee participants and liaisons as to the changes and strategies
- Sign in sheets monitored on entrance and exit; ‘Read Receipt’ when minutes are E-distributed

EVALUATE

- Evaluate compliance with attendance; 50% minimum goal; 100% expectation
- Disseminate minutes with signature of review when there is absence
- Monitor for set time; loop closure with metric driven criteria; show integration into Hospital PI process/Bylaws Process

Over and Under Triage Report

March 2017

Arrival Year-Month: 2013-03	ISS 1 to 9	ISS 10 to 14	ISS 15 to 24	ISS >= 25	Total with ISS	Not Valued ISS
Highest	3	2	1	0	6	0
Second Level	0	0	0	0	0	0
Consult	0	0	0	0	0	0
No Alert	17	0	2	3	22	9
Total	20	2	3	3	28	
Over Triaged	Number of Patients: 5 Percentage: 83.33%					
Under Triaged	Number of Patients: 5 Percentage: 22.73%					

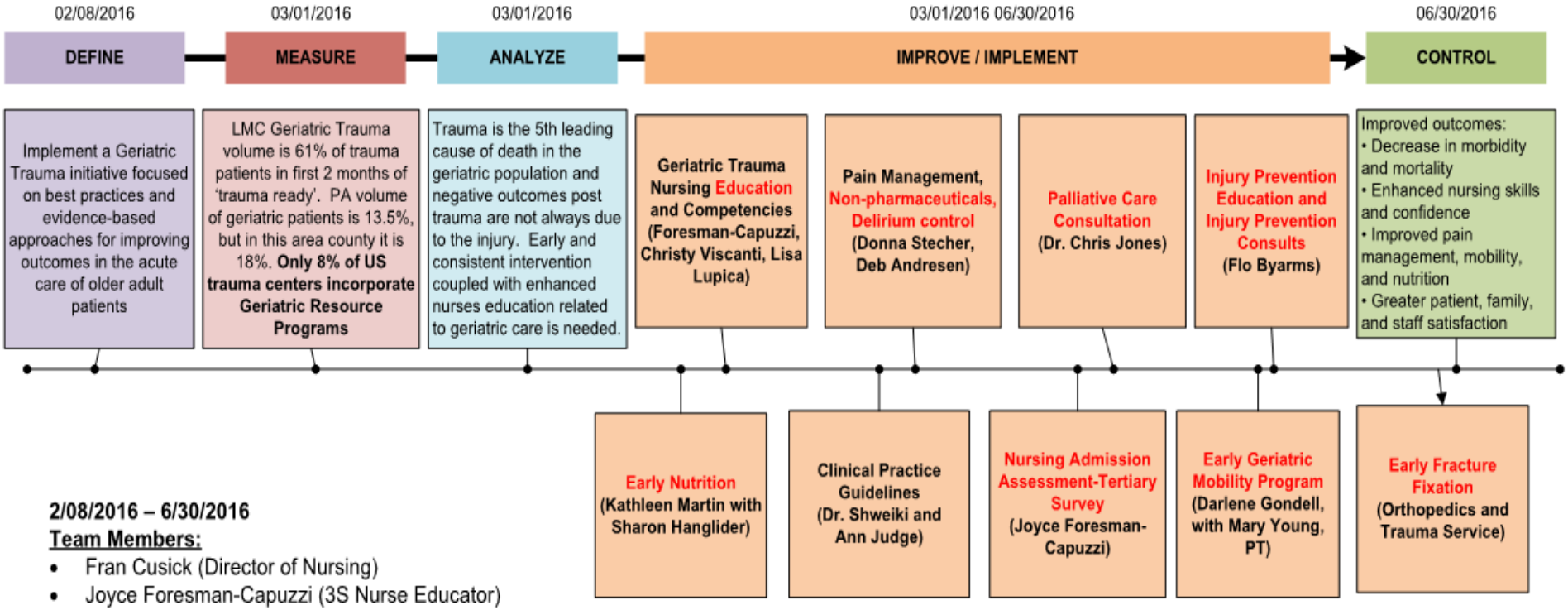
Over and Under Triage Report

July 2017

Arrival Year-Month: 2013-07	ISS 1 to 9	ISS 10 to 14	ISS 15 to 24	ISS >= 25	Total with ISS	Not Valued ISS
Highest	3	0	0	2	5	0
Second Level	1	0	0	0	1	0
Consult	3	0	0	0	3	0
No Alert	14	0	0	0	14	5
Total	21	0	0	2	23	
Over Triaged	Number of Patients: 3 Percentage: 60.00%					
Under Triaged	Number of Patients: 0 Percentage: 0.00%					

Geriatric Trauma NICHE Initiative: Project Time Line

Goal: implement a multidisciplinary approach to geriatric trauma, minimizing polypharmacy, delirium prevention, pain control, early definitive OR repairs, and rapid preoperative risk evaluations



2/08/2016 – 6/30/2016

Team Members:

- Fran Cusick (Director of Nursing)
- Joyce Foresman-Capuzzi (3S Nurse Educator)
- Christie Viscanti, (Trauma/ICU Educator)
- Lisa Lupica (NICHE Coordinator)
- Mary Canan (Nurse Manager 3S)
- Deborah Andresen (3S Clinical Coordinator)
- Donna Stecher (Clinical Pharmacist)
- Darlene Gondell (Trauma PI Coordinator)
- Kathleen Martin (Trauma Program Manager)
- Sharon Hanglider (Nutrition)
- Mary Young (PT)
- Anne Judge (Trauma CRNP)
- Dr. Chris Jones (Palliative Care)
- Flo Byarms (Injury Prevention Coordinator)

Let's Talk……..

What are the biggest Events in your trauma system?

- Communication
- Regulation
- Documentation
- Triage
- Transfers/Transport
- Delays
- Complications

1.

2.

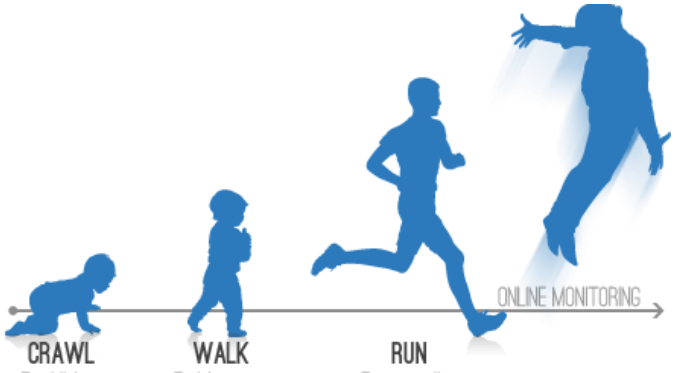
3.

4.

5.

What data do you need to analyze the Event?

Summary



- Don’t try to run before you can walk
- What is the significance of the event?
- Take Events through Levels of Review
- Triage Events based upon Degree of Harm
- Delay to OR with a poor outcome: Severe
- Poor compliance with ED Nursing documentation: Minimal

- ***Document each step of the process in your Trauma PIPS Plan!***

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Thank you!

Questions?

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