Culture of Safety PI Taxonomy

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STN TOPIC Committee
ATS Board of Directors

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PI Taxonomy Objectives

- Discuss Implementation of a common terminology and classification for collecting and organizing trauma performance improvement data
- Review various methods for implementing taxonomy while on clinical rounds
- Explain the benefits of using the PI taxonomy concurrently
“The Joint Commission Taxonomy has been recommended by the ACS COT PIPS Committee and the ACS COT VRC as best practice and should be implemented in trauma performance improvement programs. This taxonomy should be implemented now and will be a criterion (required) in the next version of the Resources for Optimal Care of the Injured.”

ACS COT  December 2013

Industry Status – Performance Improvement Taxonomy

- World Health Organization has developed ‘Guidelines for trauma quality improvement programmers’
- Concepts taught in TOPIC™ Course
- No past Industry ‘mandate’ or ‘guidance’
- Taxonomy ‘data dictionary’ is being defined by the ACS COT
- DI has developed software ‘structure’ for the new PI Taxonomy
Traumafying
The Joint Commission Taxonomy

- Do PI the way you have always done PI
- Events act as triggers for case review:
  - Deaths
  - Other non-discretionary events (specific complications, NTDB)
  - Classify the relevant factors for the event using the TJC taxonomy
  - Define cut offs for Primary, Secondary and Tertiary Review
- Develop computerized application to enhance ease of use
  - Import NTDS complications as baseline sentinel events
  - Allow users to add additional sentinel event types

Background

- Traditional trauma PI programs have employed a peer review process in the evaluation of deaths and other adverse outcomes which have been classified as “preventable”, “possibly preventable”, or “non-preventable”.
- This does not ensure that performance is improved as much as it tends to focus on the attribution of blame.
- Some states have started to open the peer review process to discoverability with the result that hospitals will restrict the determination of preventability by peer review committees.
- Most importantly, determining that a death was “non-preventable” often led to no further evaluation of the case
- Many opportunities for improvement (OFIs) were not investigated.
Reference: ‘Chang’ Paper

- The results suggest that the TJC Patient Safety Event Taxonomy could facilitate a common approach for patient safety information systems.

- Having access to standardized data would make it easier to file patient safety event reports and to conduct root cause analyses in a consistent fashion.

Classifying PI Events

- **What: (Event)**
  - Events identification
    - Audit Filters
    - Complication/Occurrence
    - Practice Guideline Variation

- **Who: (Domain)**
  - Patient demographics
  - Provider information
  - Source of reported event

- **Where: (Domain)**
  - Location/Setting
  - Phase/Target

- **When:**
  - Date identified and/or Occurred
  - Date of loop closure

- **Why: (Cause, Impact, Type)**
  - Impact (Harm)
  - Type (Communication, Management, Performance)
  - Factors (System or Human)

- **How (to fix it): (Mitigation/Prevention)**
  - Corrective Actions
  - Levels of Review
  - Mitigation/Prevention
  - Scope
  - Loop Closure
Classifying PI Events

Domain: *Who, Where and When*
- the characteristics of the setting in which an incident occurred and the type of individuals involved.

Impact: *How Much*
- the outcomes or effects of medical error and systems failure, commonly referred to as harm to the patient.

Type: *What*
- the implied or visible processes that were faulty or failed.

Factors: *Why*
- the contributing reasons and agents that led to an incident.

Prevention and Mitigation: *How to Fix*
- the corrective actions/measures taken or proposed to reduce the incidence and effects of adverse occurrences.
WHY: Harm of Event (IMPACT)

95% IMPACT

Psychological

I. No Harm and No Undetectable Harm
Software information plan to determine that no harm occurred

II. No Detectable Harm
Insufficient information or unable to determine any harm

III. Minimal-Permanent Harm
Requires initial but not prolonged intervention

IV. Mild-Permanent Harm
Requires initial but not prolonged intervention

V. Moderate-Permanent Harm
Requires initial but not prolonged intervention

VI. Severe-Permanent Harm
Requires initial but not prolonged intervention

VII. Severe-Permanent Harm
Requires intervention necessary to sustain life but not prolonged hospitalization

VIII. Severe-Permanent Harm
Requires intervention necessary to sustain life but not prolonged hospitalization

IX. Profound Mental Harm

Physical

I. No Harm and No Undetectable Harm
Software information plan to determine that no harm occurred

II. No Detectable Harm
Insufficient information or unable to determine any harm

III. Minimal-Temporary Harm
Requires initial but not prolonged intervention

IV. Mild-Permanent Harm
Requires initial but not prolonged intervention

V. Moderate-Permanent Harm
Requires initial but not prolonged intervention

VI. Severe-Temporary Harm
Requires intervention necessary to sustain life but not prolonged hospitalization

VII. Severe-Permanent Harm
Requires intervention necessary to sustain life but not prolonged hospitalization

VIII. Severe-Permanent Harm
Requires intervention necessary to sustain life but not prolonged hospitalization

IX. Death

WHY: Communication, Patient Management, Clinical Performance (TYPE)

TYPE

Communication

- Intercontinental & Incomparable Information
- Questionable Advice, Information
- Questionable Consent Process
- Questionable Decision Process
- Questionable Documentation

Patient Management

- Questionable Diagnosis
- Questionable Treatment
- Questionable Referral
- Questionable Follow-up

Clinical Performance

Pre-Intervention

- Incorrect Diagnosis
- Incorrect Intervention
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis

Intervention

- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures
- Incorrect Procedures

Post-Intervention

- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis
- Incorrect Diagnosis

VIII. Wrong Patient
WHY: System or Human (FACTORS)

SYSTEMS
(Structure/Process)

Organizational
Management
1. Maintenance of Organizational Resources
   - Training
   - Policies
2. Organizational Culture
   - Clinical Climate
   - Delegation of Authority and Responsibility
   - Formal Accountability
   - Culture of Safety
   - Protocols/Processes
     1. Policies
       - Procedures
       - Guidelines
     2. Protocols
       - Reference Standards
       - Checklists
   - Oversight
     - Risk Management

Technical
Facilities
1. Equipment/Design
   - Construction
   - Operations
2. Equipment/Environment
   - Optimum
   - Availability
3. Equipment/Workplace

External
Technical failures that are beyond the control and responsibility of the organization

HUMAN

Error
Avoidable & Necessary

Patient
Patient Factors
Failures related to patient characteristics or systems that are beyond the control of the practitioner

Practitioner

External
Human failures that are beyond the control and responsibility of the organization

 HOW (to fix it): Actions
 (MITIGATION/PREVENTION)

PREVENTION (P)
MITIGATION (M)

UNIVERSAL

SELECTIVE
Eliminate wrong-site,
wrong-patient, wrong-
procedure surgery. (M)

INDICATED

Improve the accuracy of
patient identification (P)

Improve the safety of using high-alert medications (P)
Traumafying
The Joint Commission Taxonomy

- Do PI the way you have always done PI
- Events act as triggers for case review:
  - Deaths
  - Other non-discretionary events (specific complications, NTDB)
  - Classify the relevant factors for the event using the TJC taxonomy
  - Define cut offs for Primary, Secondary and Tertiary Review
- Develop computerized application to enhance ease of use
  - Import NTDS complications as baseline sentinel events
  - Allow users to add additional sentinel event types

‘Issue Evaluation Screen’
The Joint Commission Culture of Safety “Taxonomy”

- Terminology
  - Science of classification

- Identification and classification of things that:
  - go wrong in trauma care
  - reasons why they occur
  - preventative strategies to minimize future occurrences

Taxonomy Building Blocks and Scope

- Building blocks
  - Common definitions and classifications
  - Unambiguous and translatable terminology

- Scope
  - Comprehensive classification tool
  - Applicable to all health care delivery settings
  - Includes multiple levels of patient harm
  - Addresses sentinel or serious events, adverse events, no-harm events, near misses or close calls, and potential events
Integrating Culture of Safety Taxonomy in Trauma Performance Improvement Software

**Benefits**
- Ease of Use
- Familiar format
- Consistent data dictionary
- Enhanced data collection
- Classification will better target actions

**Risks**
- ‘Traumafying’ data dictionary
- Software Development cycle
- Distribution
- Steep learning curve for users
- Training and Support

Implement PI Taxonomy for Discretionary Events

<table>
<thead>
<tr>
<th>Events</th>
<th>Triage Events: Based on Impact (Degree of Harm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths</td>
<td>1° review and close</td>
</tr>
<tr>
<td>Sentinel events</td>
<td>2° review</td>
</tr>
<tr>
<td>NTDB complications</td>
<td>◦ Review, close or triage to 3° review</td>
</tr>
<tr>
<td>User defined filters</td>
<td>◦ Classify impact, type, and factors</td>
</tr>
<tr>
<td></td>
<td>◦ Develop corrective actions</td>
</tr>
<tr>
<td></td>
<td>3° review</td>
</tr>
<tr>
<td></td>
<td>◦ Review</td>
</tr>
<tr>
<td></td>
<td>◦ Classify impact, type, and factors</td>
</tr>
<tr>
<td></td>
<td>◦ Develop corrective actions</td>
</tr>
<tr>
<td></td>
<td>4° review</td>
</tr>
<tr>
<td></td>
<td>◦ External</td>
</tr>
<tr>
<td></td>
<td>◦ Hospital Quality</td>
</tr>
</tbody>
</table>
List your audit filters—adult filters, pediatric filters, CPG tracking filters and complications

Each audit filter, complication, event should be graded with a degree of harm

Based upon you plan, certain items are ‘triaged’ to a higher level of review

PI plan should include guidance on
- Levels of review
- Who can close the loop at which level of review
- Definition of type of events that can be handled at lowest level of review
- Definition of type of events that must be taken to the highest level of review
- Which corrective actions are ‘mitigation’ versus ‘preventive’
Trauma Performance Improvement Process Reports

- Trauma PI Process should be able to identify
  - Highest incidence/rate of complications/events (top 5) in the program
  - Factors which contributed to those events
  - Highest (top 5) outlier (benchmarking report) complications/events
• Domain is simply:
  • Event setting in the hospital, pre-hospital, radiology
  • Service or staff member involved
  • Patient information is already captured in the trauma registry in other areas
  • Phase of care or Target in which the event occurred such as resuscitative, operative, acute care
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.

1. **None** – Event occurred but did not reach patient
2. **None Detected** – Patient outcome is not symptomatic or no symptoms detected and no treatment is required
3. **Mild Temporary** – Patient outcome is symptomatic, symptoms are mild, loss of function or harm is minimal or intermediate but short term, and no or minimal intervention (e.g., extra observation, investigation, review or minor treatment) is required
4. **Mild Permanent** – Requires initial but not prolonged intervention
5. **Moderate Temporary** – Patient outcome is symptomatic, requiring intervention (e.g., additional operative procedure; additional therapeutic treatment), an increased length of stay, or causing permanent or long term harm or loss of function
6. **Moderate Permanent** – Requires intensive but not prolonged hospitalization
7. **Severe Temporary** – Requires intervention necessary to sustain life but not prolonged hospitalization
8. **Severe Permanent** – Patient outcome is symptomatic, requiring life-saving intervention or major surgical/medical intervention, shortening life expectancy or causing major permanent or long term harm or loss of function
9. **Death** – On balance of probabilities, death was caused or brought forward in the short term by the incident
Impact: Degree of Harm

Mild

- Any unexpected or unintended incident that required extra observation or minor treatment and caused minimal harm to one or more persons.

Examples

- Perforation of the bowel during surgery, that was repaired at the time and the area was appropriately washed out. Only antibiotic treatment is required.

- A patient is given someone else's medication. The medication is the same as they normally take, but at a slightly higher dose, and they need to go to bed earlier due to drowsiness.

- Continuing treatment with warfarin without monitoring clotting levels, which results in prolonged clotting times, and in turn causes bruising.

- An ambulance crew are called to a patient at home who has fallen and is SOB. On arrival they decide to administer oxygen, and are then told the patient has had a laryngectomy. There are no laryngectomy masks on the vehicle so the crew have to attempt to oxygenate the patient using a face mask over the stoma. On arrival in ED the patient's oxygen saturation levels have dropped from 92% to 85%.

- Blood is given to the wrong patient and causes a minor rash and temporary rise in temperature.

WHY: Impact (Harm) of Event

![DIAGRAM]
Impact: Degree of Harm

Moderate

- Any unexpected or unintended incident that resulted in further treatment, possible surgical intervention, cancelling of treatment, or transfer to another area, and which caused short-term harm to one or more persons.

Examples

- Perforation of the bowel during surgery was not picked up at the time. It results in septicemia and a return to OR for repair.

- A patient is given someone else’s medication. The medication is stronger than their own and they suffer prolonged drowsiness for a week. The patient needs frequent observation of their respiratory rate.

- Continuing treatment with warfarin without monitoring clotting levels, which results in an overdose and bleeding problems.

- An ambulance crew are conveying a patient from the ambulance to ED on stretcher. The patient is left unattended for a short period and the stretcher bed tips over. The patient suffers short-term loss of consciousness and needs to be admitted to hospital for observation. There is no longer-term head injury.

- Wrong blood is given to a patient, resulting in temporary renal failure.

WHY: Impact (Harm) of Event

![Impact (Harm) of Event Diagram]
Impact: Degree of Harm
Severe

› Any unexpected or unintended incident that caused permanent or long-term harm to one or more persons.

› Examples
Perforation of the bowel during surgery, requiring a temporary colostomy and subsequent major operations.

A patient is given someone else's medication. They have an allergic reaction to it, have a cardiac arrest and suffer brain damage as a result of receiving the medication.

Continuing treatment with warfarin without monitoring clotting levels, which results in a brain hemorrhage and brain damage.

An ambulance is called to a patient who has fallen from scaffolding. On arrival the patient is conscious but lying awkwardly, with a leg that is clearly fractured and twisted. Before carrying out a full assessment or immobilizing the cervical spine, the crew reposition the patient to straighten the leg. After repositioning, the patient is unable to move any of their limbs, and later investigations identify that they have a cervical fracture and spinal cord damage. The spinal cord was, however, immobilized immediately after repositioning. The patient is left with long-term paralysis from the neck down.

Wrong blood is given to a young woman, who then develops anti-D antibodies that will affect any future pregnancy.

WHY: Impact (Harm) of Event
Impact: Degree of Harm

Death

- Any unexpected or unintended event that caused the death of one or more persons.

- Examples
  - Death as a direct consequence of perforation of the bowel during surgery.
  - A patient is given someone else's medication. They have an allergic reaction to it, have a cardiac arrest and die as a result of receiving the medication.
  - Continuing treatment with warfarin without monitoring clotting levels, which results in a brain hemorrhage and death.
  - An ambulance responding to an emergency call on blue lights goes through red traffic lights at an intersection. A car approaching the intersection has a green light, does not see the ambulance and attempts to cross. The ambulance is unable to stop and hits the car on the driver's side. The driver of the car suffers multiple injuries and later dies in hospital.
  - Wrong blood is given to a patient resulting in multi-organ failure and death.

Degree: Example

- **Mild**: short term antibiotic therapy required
- **Moderate**: increase in oxygen requirement, prolongation of hospital stay, transfer to higher level of care, central line for longer term IV antibiotics needed, MRSA or other multi-drug resistant organism
- **Severe**: intubation, death, invasive procedure needed (chest tube, thoracentesis, VATS)

Examples: Impact: Degree of Harm

Pneumonia ($22,097)
### Examples: Impact: Degree of Harm

#### Deep Vein Thrombosis ($10,804)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>incidental diagnosis, line related/provoked</td>
</tr>
<tr>
<td>Moderate</td>
<td>symptomatic (pain, swelling), prolongs hospital stay, mid-term treatment duration</td>
</tr>
<tr>
<td>Severe</td>
<td>causes escalation of care, results in invasive procedure (including IVC filter placement), results in complication of anticoagulation, results in PE</td>
</tr>
</tbody>
</table>

### Examples: Impact: Degree of Harm

#### ARDS ($26,218)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>N/A</td>
</tr>
<tr>
<td>Moderate</td>
<td>increased oxygen requirement, non–invasive ventilation strategies (CPAP, BiPAP), prolongs hospital stay, admission to higher level of care, non–ICU (stepdown or progressive care unit)</td>
</tr>
<tr>
<td>Severe</td>
<td>increased oxygen requirement, non–invasive ventilation strategies (CPAP, BiPAP), prolongs hospital stay, admission to higher level of care, non–ICU (stepdown or progressive care unit)</td>
</tr>
</tbody>
</table>
### Examples: Impact: Degree of Harm

#### Decubitus Ulcer ($37,800)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>N/A (NTDB requires decubitus ulcers – pressure sores – reported at a minimum of stage 2. At stage 2 a decubitus ulcer has gone past the mild definition</td>
</tr>
<tr>
<td>Moderate</td>
<td>requires specialized wound management that increases hospital stay but does not require transfer to a higher level of care</td>
</tr>
<tr>
<td>Severe</td>
<td>systemic complications from wound including sepsis which requires transfer to a higher level of care. May include complication of sepsis which may lead to death.</td>
</tr>
</tbody>
</table>

### Examples: Impact: Degree of Harm

#### UTI ($1,007)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>mild or asymptomatic, does not prolong hospitalization</td>
</tr>
<tr>
<td>Moderate</td>
<td>results in complex urinary infection (pyleonephritis), prolongs hospital stay, catheter associated</td>
</tr>
<tr>
<td>Severe</td>
<td>urosepsis, change in level of care required, death</td>
</tr>
</tbody>
</table>
Examples: Impact: Degree of Harm
PE ($16,644)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>incidental finding, asymptomatic, no change in status required</td>
</tr>
<tr>
<td>Moderate</td>
<td>increased oxygen requirement, prolongs hospital stay</td>
</tr>
<tr>
<td>Severe</td>
<td>associated with severe DVT, requires intervention (filter, embolectomy) or change in level of care, intubation, death</td>
</tr>
</tbody>
</table>

Examples: Impact: Degree of Harm
Acute Kidney Injury/Acute Renal Failure ($28,359)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>asymptomatic elevation in creatinine, oliguria requiring IV fluid bolus, does not prolong hospital stay</td>
</tr>
<tr>
<td>Moderate</td>
<td>consultation with nephrology, close/serial monitoring of electrolytes, modification of medication dosing, dietary changes needed</td>
</tr>
<tr>
<td>Severe</td>
<td>escalation of care to ICU level, dialysis needed, treatment for hyperkalemia or uremia needed, associated with liver failure, death</td>
</tr>
</tbody>
</table>
### Examples: Impact: Degree of Harm

**Myocardial Infarction ($5,463)**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>Uncomplicated clinical course with resolution of symptoms with minimal therapy leading to full recovery and limited lifestyle changes.</td>
</tr>
<tr>
<td>Moderate</td>
<td>NSTEMI or other symptoms that require non-invasive intervention or invasive intervention but leads to good recovery with minimal lifestyle changes and return to previous functional status</td>
</tr>
<tr>
<td>Severe</td>
<td>STEMI that requires invasive intervention, results in cardiac arrest or other complications (i.e. stroke, anoxic brain injury, CHF, cardiogenic shock, etc…), or leads to long term debilitation or inability to return previous functional status.</td>
</tr>
</tbody>
</table>

### Examples: Impact: Degree of Harm

**Cardiac Arrest ($15,079)**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>N/A</td>
</tr>
<tr>
<td>Moderate</td>
<td>Were pulseless (PEA) requiring CPR or received defibrillation or other electrical/chemical intervention.</td>
</tr>
<tr>
<td>Severe</td>
<td>Required pacing to restore circulation or leads to death or other permanent complications (anoxic brain injury, stroke, etc…)</td>
</tr>
</tbody>
</table>
Examples: Impact: Degree of Harm
Unplanned Intubation ($21,025)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>N/A</td>
</tr>
<tr>
<td>Moderate</td>
<td>event occurs &gt;24 hours after admission or &gt;72 hours after extubation</td>
</tr>
<tr>
<td>Severe</td>
<td>event occurs after initial trauma resuscitation but &lt;24 hours from admission, results in mechanical ventilation &gt;72 hours, requires tracheostomy</td>
</tr>
</tbody>
</table>

Examples: Impact: Degree of Harm
Unplanned Return to OR

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>minimal procedure unrelated to primary operation (trach, PEG, line) or minimal procedure due to minimal complication (SSI superficial or deep), does not prolong hospitalization, no change in level of care</td>
</tr>
<tr>
<td>Moderate</td>
<td>extends length of hospital stay, organ space infection, opening of organ space due to bleeding without major change in post-operative plan of care or course, no change in level of care</td>
</tr>
<tr>
<td>Severe</td>
<td>major operation related to shock, missed injury, major alteration in post-operative care plan, change in level of care</td>
</tr>
</tbody>
</table>
### Examples: Impact: Degree of Harm
#### Unplanned Return to ICU

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>upgrade to ‘step down’ or ‘progressive care’ type unit, event occurs &gt;72 hours after ICU discharge, not requiring Clavien Grade 4 interventions</td>
</tr>
<tr>
<td>Moderate</td>
<td>event occurs &lt;72 hours after ICU discharge, requires Clavien Grade 4 intervention, prolongs hospitalization</td>
</tr>
</tbody>
</table>

### Examples: Impact: Degree of Harm
#### Acute Alcohol Withdrawal

<table>
<thead>
<tr>
<th>Degree</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>symptoms such as shaking, anxiety that require only oral medication (including alcoholic beverages) for management. Does not prolong hospital stay.</td>
</tr>
<tr>
<td>Moderate</td>
<td>requires IV medications for symptom management. Prolongs hospital stay.</td>
</tr>
<tr>
<td>Severe</td>
<td>Requires ICU management for conditions such as acute delirium tremens, electrolyte imbalance, seizures, death.</td>
</tr>
</tbody>
</table>
Payer Pay-For-Performance

- As payers implement pay-for-performance programs and deny reimbursement for preventable complications and readmissions, these costs often fall on the hospital.
- Preventing just 15 complications a year covers the full cost of participation in ACS NSQIP.
- For most hospitals, this can be achieved in just one month.

**WHY: Type—Communication, Patient Management, Clinical Performance**

![Diagram showing communication, patient management, and clinical performance types]

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC402</td>
<td>Pre-Intervention</td>
<td>Clinical Performance: Pre-Intervention</td>
</tr>
<tr>
<td>TC502</td>
<td>Interventions</td>
<td>Clinical Performance: Interventions</td>
</tr>
<tr>
<td></td>
<td>Incorrect Procedure</td>
<td>Incorrect Procedure</td>
</tr>
<tr>
<td></td>
<td>Incorrectly Pre</td>
<td>Incorrectly Pre</td>
</tr>
</tbody>
</table>
On clinical rounds ‘active listening’
Forum for event identification
Primary Review of PI events
Audit Filters, Complications
Track compliance with CPGs
What: Event Identification

- Plan of care discussed
- Capture events using laptop/tablet
- Summary of discussions
- System issues tackled immediately

When: Date Identified and/or Date Occurred
WHERE: Location/Setting (DOMAIN)

- Domain is simply:
  - Event setting in the hospital, pre-hospital, radiology
  - Service or staff member involved
  - Patient information is already captured in the trauma registry in other areas
  - Phase of care or Target in which the event occurred such as resuscitative, operative, acute care

- The characteristics of the setting in which an event occurred
  - May be between to services
  - May be between to settings
  - May be between multiple providers

- Create queries to get the data out
  - All events in ED
  - All events with Radiology
  - All events on weekends or nights
Who: Patient and Source of Event Identification (DOMAIN)

- Patient: You have entered the patient into your registry
- Unique identifiers in ‘Demographics’ sets the patient apart
- Source: who reported the event to you?

WHY: Impact (Harm) of Event

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Moderate Temp Harm</td>
</tr>
<tr>
<td>Psychological</td>
<td>No Harm</td>
</tr>
<tr>
<td>Social</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Economic</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Legal</td>
<td>Referred To Risk Management</td>
</tr>
</tbody>
</table>
WHY: Type—Communication, Patient Management, Clinical Performance

WHY: Factors
System or Human [patient or practitioner]
How (to fix it): Levels of Review

- Primary
  - TPM or designee
  - May give feedback and close
- Secondary
  - TMD or designee
  - May give feedback and close
- Tertiary
  - Must be multidisciplinary, Must be peer review
  - Review efficacy, efficiency and safety of care
- Quaternary
  - Hospital Quality
  - External Peer Review

How (to fix it): Corrective Actions
How (to fix it): Corrective Actions

• Continuous cycle of action
• Actions noted in minutes must have evidence of implementation and evaluation for efficacy
• Date of action must be noted
• Create report to view the ‘status’
  • Active
  • Pending
  • Closed Tagged for follow up
  • Closed
• The report will keep you up to date
• Review at a weekly Secondary Review meeting
HOW (to fix it): Actions (Mitigation/Prevention)

### ACTIONS

<table>
<thead>
<tr>
<th>Collective Action</th>
<th>Prevention/Mitigation</th>
<th>Scope</th>
<th>Status</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Policy or Practice Guideline Develop</td>
<td>1 Prevention</td>
<td>Universal Action Designed for All Patients</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action Details</td>
<td>Loop Closure Status</td>
<td>Loop Closure Date</td>
<td></td>
<td>Add Reminder to Calendar</td>
</tr>
</tbody>
</table>

HOW (to fix it): Loop Closure and Follow up
DI Report Writer
Insert Taxonomy Fields into User Reports

- Add taxonomy fields to data table reports
- Use ‘impact’ (degree of harm) as a Query to find moderate to severe impact events

Let’s practice
CASE #1

- Elderly male with multiple medical problems and prolonged time in OR for fixation of fractures
- 78-year-old-male who fell down stairs at home. History of atrial fib, on Coumadin, and COPD. Sustained fractures of radius and ulna, shoulder, and hip. Also had change in mental status with cerebral edema on CT. Admitted to general surgery service. Taken by orthopedics to OR on night of admission. Had 5 hours in OR for multiple orthopaedic procedures. Intermittently unstable in OR. High blood loss, coagulopathic, required transfusions in OR. Postoperatively, developed pneumonia, sepsis and expired on post-operative day 5.

Event:___________

- DOMAIN:
  - Setting:
  - Service:
  - Phase of Care:
  - Target of Care:
  - Provider/Practitioner

- IMPACT:
  - Impact–Physical:
  - Impact–Psychological:
  - Impact Social:
  - Impact Economic:
  - Impact Legal:

- TYPE:
  - Communication:
  - Patient Management:
  - Clinical Performance:

- FACTORS:
  - MEETING/LEVEL OF REVIEW:
    - Determination:
    - Acceptability:
    - Grade:

- ACTIONS:
  - Corrective Action:
  - Prevention/Mitigation:
  - Scope:
  - Status:
Case #2

- Multi-system organ failure after head and abdominal injury
- 56-year-old male. Motor vehicle crash. Approximately 45 minutes between event and arrival at ED. Arrival BP: 80/60; GCS 5. This patient was intubated in the ED upon arrival. He was administered crystalloid and blood for a systolic blood pressure of 60. A FAST was positive at approximately 20 minutes into his time in the ED. CT of the head showed subarachnoid hemorrhage. He underwent a laparotomy 11 hours after arrival in the ED. This revealed 300 cc of blood. He underwent a splenectomy and placement of a chest tube. There was also note of a pelvic haematoma. In the ICU, he subsequently developed liver failure, renal failure and ARDS. He expired on day 15. An autopsy revealed 400 cc of serous pericardial effusion.

Event: ____________

- DOMAIN:
- Setting:
- Service:
- Phase of Care:
- Target of Care:
- Provider/Practitioner
- IMPACT:
- Impact–Physical:
- Impact–Psychological:
- Impact Social:
- Impact Economic:
- Impact Legal:

- TYPE:
- ACTIONS:
- Communication:
- Corrective Action:
- Patient Management:
- Prevention/Mitigation:
- Clinical Performance:
- FACTORS:
- MEETING/LEVEL OF REVIEW:
- Determination:
- Acceptability:
- Grade:
Clinical Science

Classifying errors in preventable and potentially preventable trauma deaths: a 9-year review using the Joint Commission’s standardized methodology

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Abstract

BACKGROUND: Benchmarking and classification of avoidable errors in trauma care are difficult as most reports classify errors using variable locally derived schemes. We sought to classify errors in a large trauma population using standardized Joint Commission taxonomy.

METHODS: All preventable/potentially preventable deaths identified at an urban, level-1 trauma center (January 2002 to December 2010) were abstracted from the trauma registry. Errors deemed avoidable were classified within the 5-node (impact, type, domain, cause, and prevent) Joint Commission taxonomy.

RESULTS: Of the 377 deaths in 11,100 trauma contacts, 106 (7.7%) were preventable/potentially preventable deaths related to 142 avoidable errors. Most common error types were in clinical performance (inaccurate diagnosis). Error domain involved primarily the emergency department (therapeutic interventions), caused mostly by knowledge deficits. Communication improvement was the most common mitigation strategy.

CONCLUSION: Standardized classification of errors in preventable trauma deaths most often involve clinical performance in the early phases of care and can be mitigated with universal strategies.

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References


Summary

- Do PI the way you have always done PI
- Events act as triggers for case review:
  - Deaths
  - Other non–discretionary events (specific complications NTDB)
  - Classify the relevant factors for the event using the TJC taxonomy
  - Define cut offs for Primary, Secondary and Tertiary Review
- Develop computerized application to enhance ease of use
  - Import NTDS complications as baseline sentinel events
  - Allow users to add additional sentinel event types