

The Culture of Safety Event Taxonomy: Overview

The Patient Safety Taxonomy

Discloser:

- This presentation is based on the work of Donald Jenkins, MD & Carol Immermann, RN
- Content from the TOPIC program is being utilized with permission.

The National Quality Forum Taxonomy

- Recommended as best practice
 - ACS COT PIPS committee
 - ACS VRC leadership
- Inclusion next Optimal Resource book.

The Problem (Analogy)

Registry
Data Quality



Poor interrater reliability

PI Program
Preventable
Pot preventable
Non preventable



Poor interrater reliability

Taxonomy is the Fix

- **Building blocks**
 - Common definitions
 - Clear terminology
- **Scope**
 - Comprehensive tool
 - Applicable to all settings
 - Includes multiple levels of patient harm
- **Addresses:**
 - Sentinel events
 - Adverse events
 - No harm events
 - Near misses
 - Close calls
 - Potential events

Taxonomy Implementation

- PI process like you normally do
- Examine the “bad case”
- Classify factors according to taxonomy
- Develop computerized application
 - NTDS complications as baseline sentinel events
 - Allow users to add additional sentinel event types

2008 Ivatury 764 deaths reviewed

The Journal of TRAUMA® Injury, Infection, and Critical Care

Patient Safety in Trauma: Maximal Impact Management Errors at a Level I Trauma Center

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Background: The Division of Research at JCAHO developed a taxonomy (common terminology and classification schema) to promote consistency in reporting and facilitate root cause analysis. We undertook a review of trauma management errors at our institution with maximal impact (death). The analysis was based on the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) taxonomy.

Methods: Trauma deaths between 2001 and 2006 at our Level I trauma center were peer-reviewed to identify errors in

management. The errors are classified according to type, domain, and cause.

Results: Seventy-six (9.9%) of 764 deaths had management errors contributing to potentially preventable deaths in 60

in the resuscitative phase. Human errors predominated.

Conclusions: Management errors in the basics of trauma care continue even in established trauma centers, despite guidelines, protocols, and continuous performance improvement. Standardized reporting such as the taxonomy may result in progressive collection of patient safety data and lead to innovations to minimize these errors.

Key Words: Preventable deaths, Patient safety, Adverse events.

J Trauma. 2008;64:265-272.

Errors:

ED

OR

Resuscitative Phase

The past 2 decades have witnessed significant accomplishments in the delivery of trauma care in the United

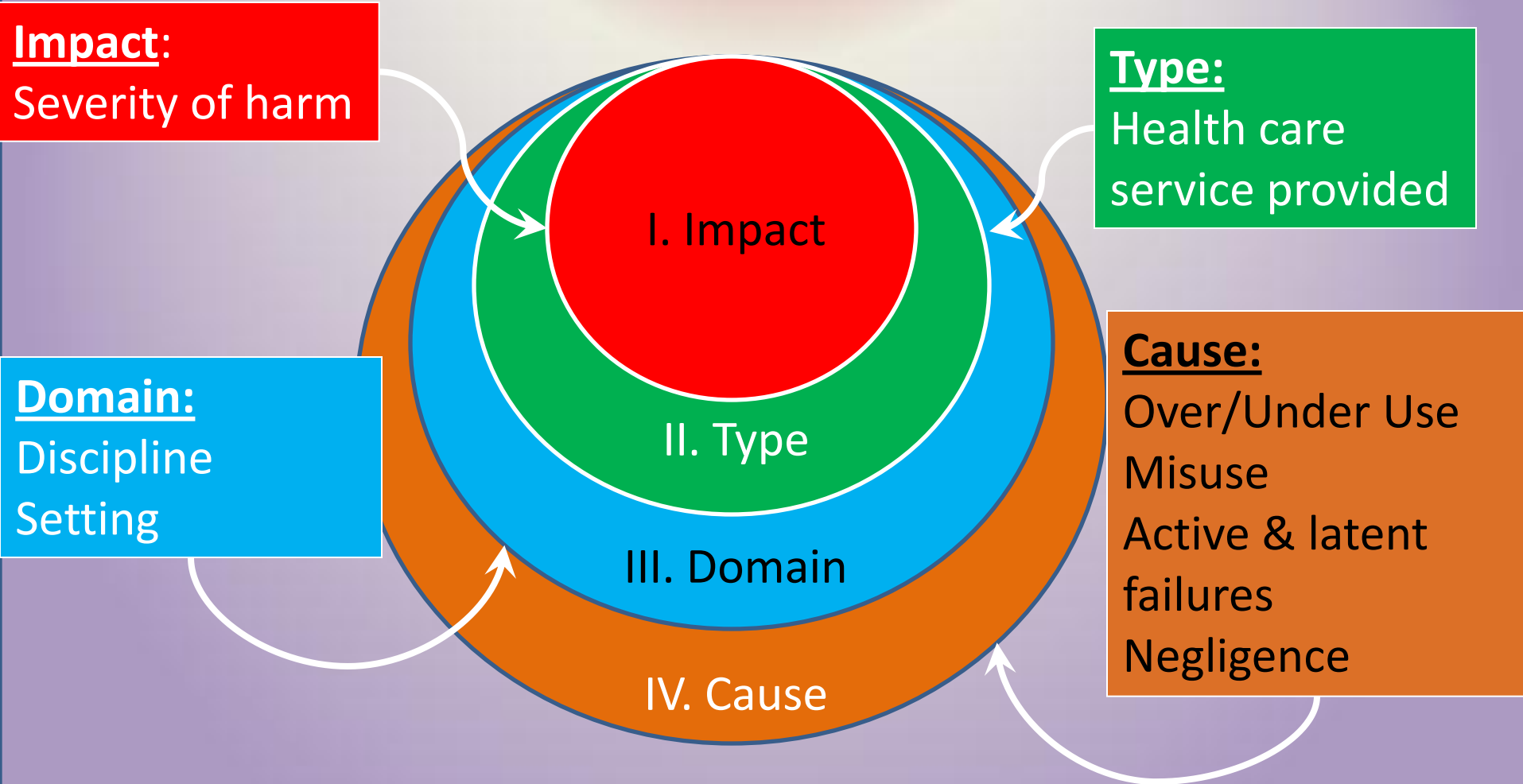
nology and classification schema) to promote consistency in reporting and to facilitate root cause analysis.³ The National

Taxonomy

(Ivatury et al. JT, Feb 2008)

- **Impact:** Outcome or effect of event
- **Type:** Processes that were faulty
- **Domain:** Setting or phase of care
- **Cause/Factors:** Factors leading to incident
- **Prevention Mitigation:** Universal, selected, action plan

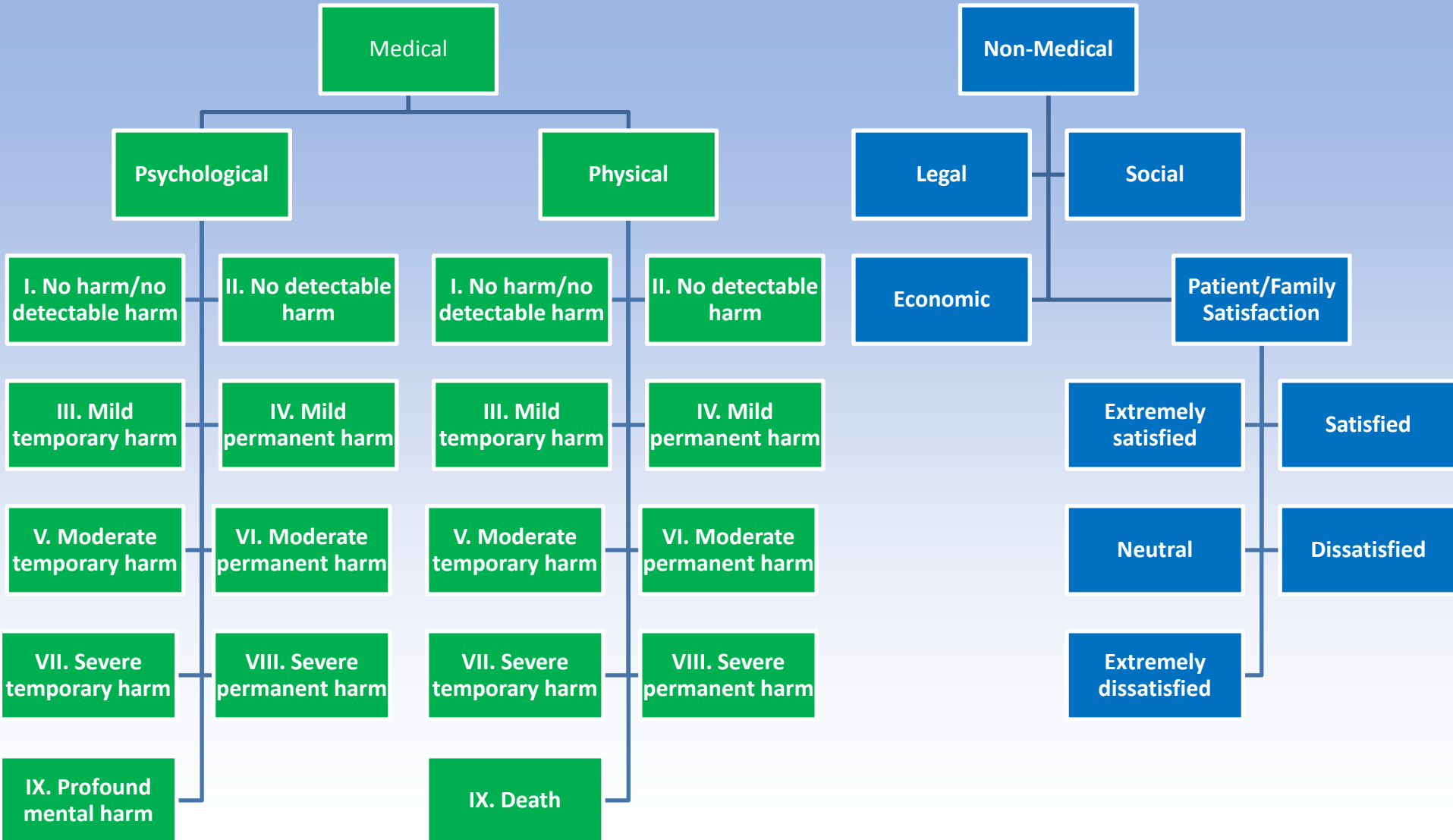
Framework of the Taxonomy



Primary Classifications Further Defined

1. **Impact**: the outcomes or effects of medical error and systems failure, commonly referred to as harm to the patient.
2. **Type**: the implied or visible processes that were faulty or failed.
3. **Domain**: the characteristics of the setting in which an incident occurred and the type of individuals involved.
4. **Cause**: the factors and agents that led to an incident.
5. **Prevention and Mitigation**: the measures taken or proposed to reduce the incidence and effects of adverse occurrences.

Classification: Impact



Differentiating Levels of Harm

- **None** – patient outcome is not symptomatic or no symptoms detected and no treatment is required (*I. & II. Impact*)
- **Mild** – 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 (*III. & IV. Impact*)
- **Moderate** – 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 (*V. & VI. Impact*)

Differentiating Levels of Harm

- **Severe** – 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 (*VII. & VIII. Impact*)
- **Death** – on balance of probabilities, death was caused or brought forward in the short term by the incident (*IX. Impact*)

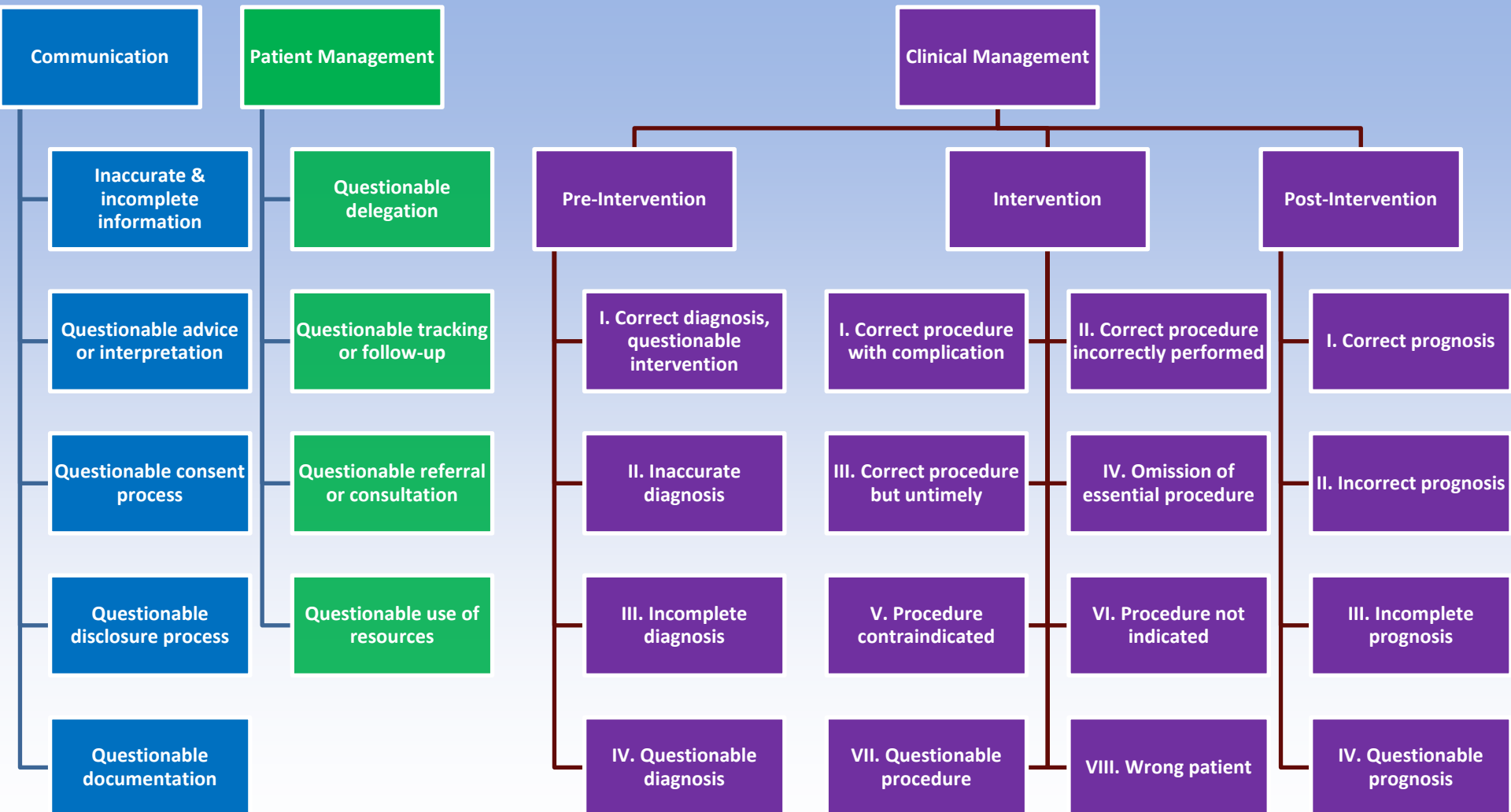
IMPACT

Level of Harm to Patient

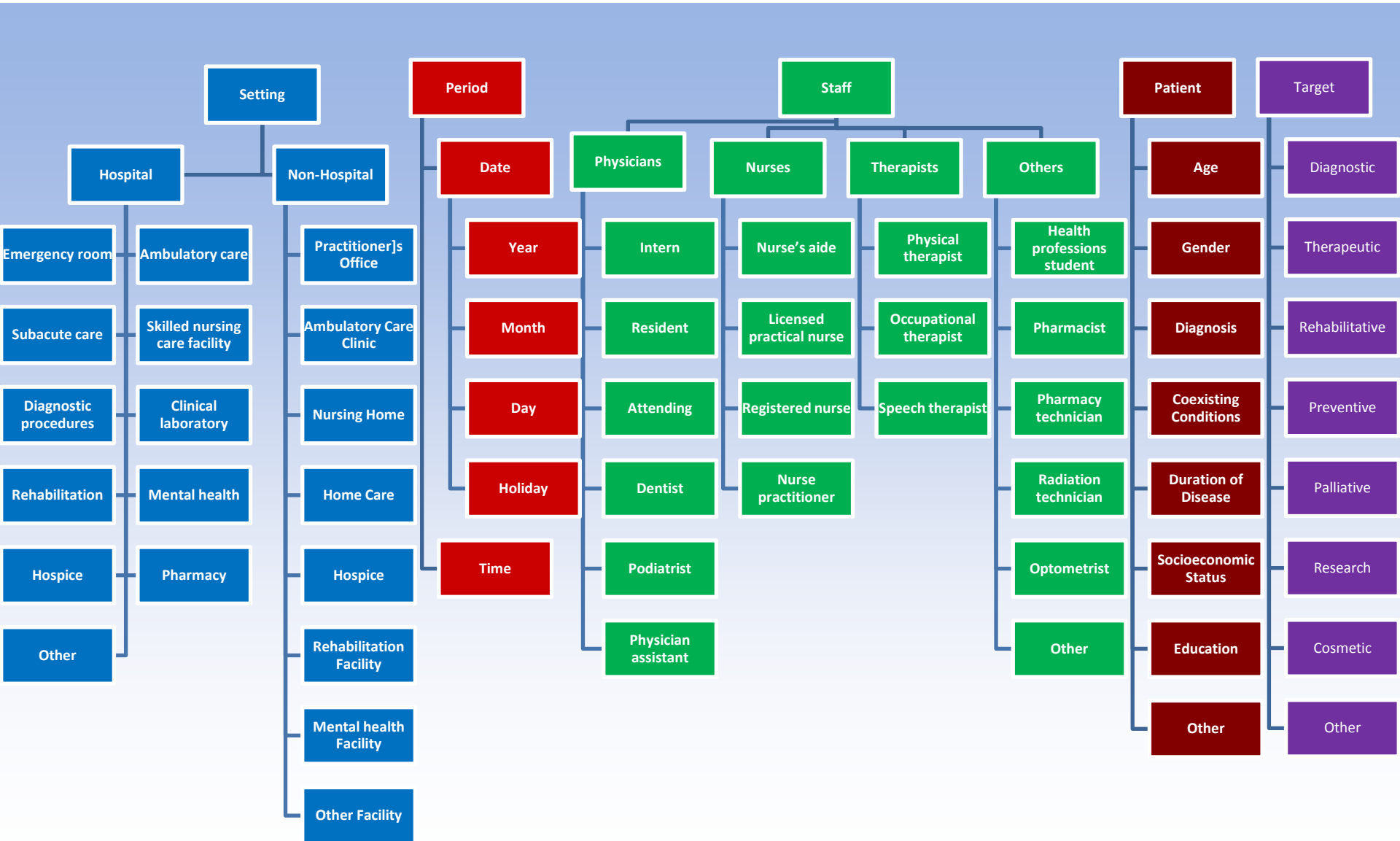
Physical

1. No Harm & No Undetectable Harm-Sufficient information determines no harm occurred
2. No Detectable Harm-Insufficient information or unable to determine any harm
3. Minimal-Temporary Harm- Requires little or no intervention
4. Minimal Permanent Harm-Requires initial but not prolonged intervention
5. Moderate-Temporary Harm- Requires initial but not prolonged hospitalization
6. Moderate-Permanent-Harm-Requires intensive but not prolonged hospitalization
7. Severe-Temporary Harm-Requires tx to sustain life but not prolonged hospitalization
8. Severe-Permanent Harm- Requires tx to sustain life and prolonged hospitalization, long-term care, or hospice
9. Death

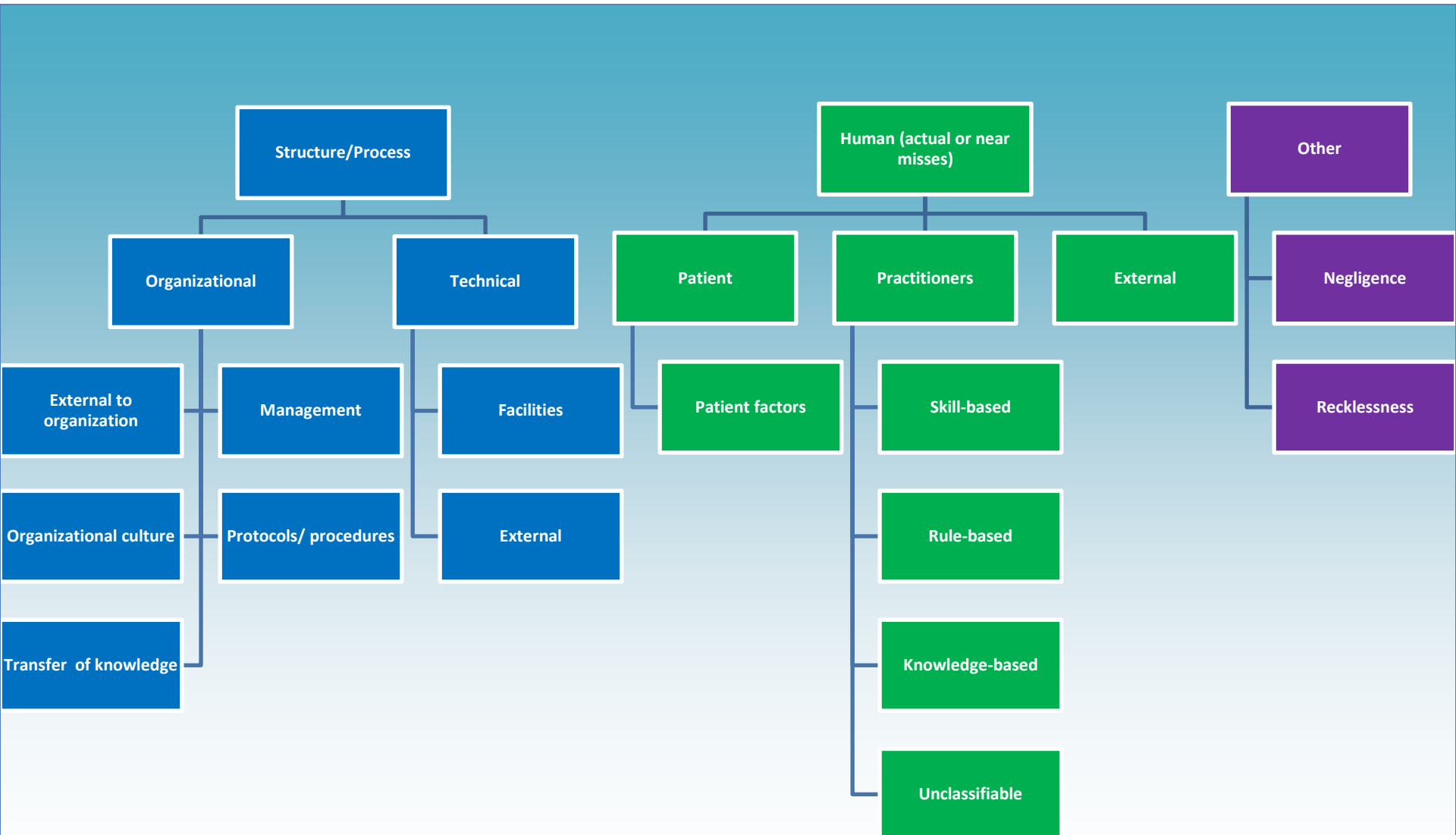
Classification: Type



Classification: Domain

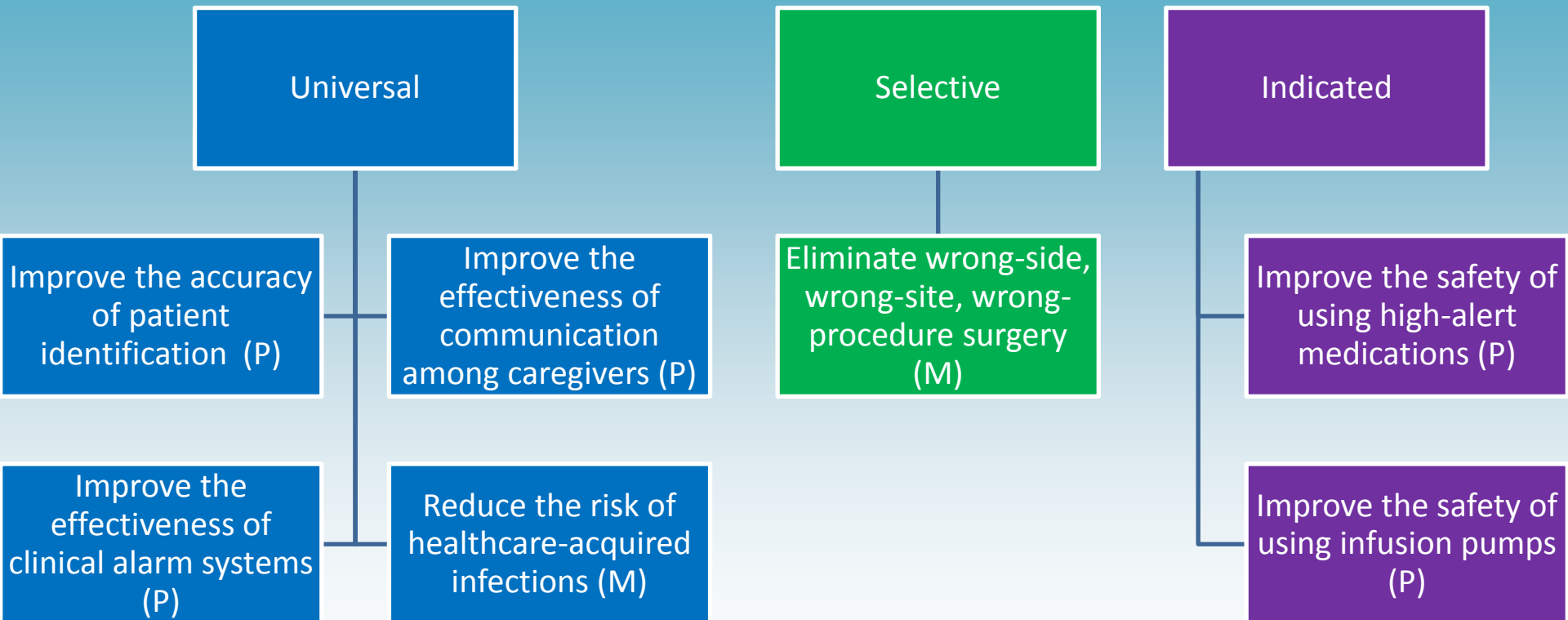


Classification: Cause



Classification:

Prevention (P) & Mitigation (M) [Action Plan]



Case Study

- 24 y/o male MVC Transfer
- Level III to Level I Center
- Transferred in the evening
- 10 hours post injury
- At request of family

Level III

- Initially hypotensive
- 5 units PRBCs
- 6 L crystalloid in first 8 hours
- Stable vital signs prior to transfer

Case Study cont.

Level I

- Arrives intubated with known pulmonary contusions, rib fractures, open tib/fib fracture, GCS 8, moving all 4 extremities
- Secondary survey & adjunctive studies negative except for suspicion of lower T-spine fracture on CT

Case Study cont.

- Ortho consult for open tib/fib fracture
 - Requests neuro clearance
- Neuro consult recommends MRI to evaluate T-spine
 - Goes for MRI at 2 am
- During MRI
 - Nurse notes patient cyanotic despite good rhythm on monitor
 - Patient pulled out of scanner- asystole on regular monitor
- CPR, Resuscitated- severe anoxic brain damage
- Support withdrawn 5 days later
- PI review of case found patient had severe base deficit on arrival and collapsed inferior vena cava

Example Case Taxonomy

- Impact:
 - Medical: Death
 - Non-Medical: Family dissatisfied
 - Non-Medical: Potential litigation
- Type:
 - Communication: Questionable advice
 - Patient Management: Questionable delegation
 - Clinical Management (Intervention): Correct procedure/untimely
- Domain:
 - Setting: Diagnostic procedures
 - Staff: Resident
 - Target: Diagnostic
- Cause:
 - Organizational: Organizational culture
 - Human: Practitioner knowledge

Figure 3. Sample Sentinel Event Tracking Form for Root Cause Analysis

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Demographics			
Date of report:	Medical record No.:	Trauma registry No.:	Event date & time:
Nature of event:			
Patient Name:	Age:	Gender:	
Diagnoses:			
Duration of Disease:			
Coexisting Conditions:			
Socioeconomic Status:			
Education:			
Other Pertinent Information:		Report completed by:	
Source of information (✓)			
<input type="checkbox"/> Trauma nurse coordinator	<input type="checkbox"/> PIPS coordinator	<input type="checkbox"/> Conference	
<input type="checkbox"/> Nurse management	<input type="checkbox"/> Patient Relations	<input type="checkbox"/> Registry	
<input type="checkbox"/> Case manager	<input type="checkbox"/> Rounds	<input type="checkbox"/> Other:	
Impact (✓)			
Physical <input type="checkbox"/> No harm <input type="checkbox"/> No detectable harm <input type="checkbox"/> Mild temporary harm <input type="checkbox"/> Mild permanent harm <input type="checkbox"/> Moderate temporary harm <input type="checkbox"/> Moderate permanent harm <input type="checkbox"/> Severe temporary harm <input type="checkbox"/> Severe permanent harm <input type="checkbox"/> Death	Psychological <input type="checkbox"/> No harm <input type="checkbox"/> No detectable harm <input type="checkbox"/> Mild temporary harm <input type="checkbox"/> Mild permanent harm <input type="checkbox"/> Moderate temporary harm <input type="checkbox"/> Moderate permanent harm <input type="checkbox"/> Severe temporary harm <input type="checkbox"/> Severe permanent harm <input type="checkbox"/> Profound mental harm	Legal <input type="checkbox"/> Risk management contacted <input type="checkbox"/> Complaint registered <input type="checkbox"/> Suit filed <input type="checkbox"/> Case dropped <input type="checkbox"/> Case dismissed <input type="checkbox"/> Settled <input type="checkbox"/> Defense Verdict <input type="checkbox"/> Plaintiff Verdict	
Patient/family satisfaction. <input type="checkbox"/> Extremely satisfied <input type="checkbox"/> Satisfied <input type="checkbox"/> Neutral <input type="checkbox"/> Dissatisfied <input type="checkbox"/> Extremely dissatisfied	Social <input type="checkbox"/> Unable to socialize <input type="checkbox"/> Homebound, able to socialize <input type="checkbox"/> No social impediments, not socially active <input type="checkbox"/> Socially active <input type="checkbox"/> Economic	Employment <input type="checkbox"/> Employed <input type="checkbox"/> Seeking employment <input type="checkbox"/> Part-time employment <input type="checkbox"/> Unemployed <input type="checkbox"/> Not employable	

TJC Taxonomy Via Software

- **Advantages**

- Ease of use
- Improved data collection
- Improved data collation

- **Disadvantages**

- Development time
- Distribution
- Training

Why Do This?

- Will be able to PI our PI
- Benchmark our PI
- Incorporate into TQIP

ACSCOT Update

- Connect PIPS with NTDS, NTDB, VRC and TQIP
- Definitions of NQF taxonomy are being 'traumatized'
- NTDB and TQIP input (worked on at EAST)
- Many NTDB and TQIP adverse events have elements that are not defined in the NQF taxonomy (Worked on at EAST)
- Evaluate best practices
- Advise low performing centers on these

Benchmark Comparison with NTDB

Compare your trauma hospital data with national data

Examples:

- Patient Demographics
- Hospital demographics
- Survivors vs. non-survivors:
 - LOS
 - mean ISS & ICU days
 - Age

Examples:

- Blunt vs. penetrating
- ISS by age group
- Mortality rates
- Mortality by ISS
- ED disposition
- Hospital disposition
- ISS and hospital charge
- Mechanism of injury and restraint usage
- ISS with LOS

Benchmarks and Measurements: Outcome Data

Report Examples:

- Functional status on discharge (FIM Scores)
- Results of patient satisfaction surveys
- Complication rates
- Compliance with practice management guidelines
- Mortality and morbidity
- Severity-adjusted mortality and morbidity
- Unplanned return to OR
- Unplanned upgrade to an intensive care unit
- Unplanned hospital readmission
- Surgical wound infections
- Organ donation activity

MTQIP: Proposal

- Request X centers to beta test the process for the COT
- Request COT to assist with costs for MTQIP analysis, software for pulling data over
- Assist registry vendors to providing electronic version
- Provide training to beta test sites

MTQIP

- Opportunity to be on the front end of what will become the standard
- Opportunity for input on refining definitions or categories for PI

