Joint Commission Taxonomy Implementation for Trauma Performance Improvement

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Traditional trauma quality improvement programs have employed a peer review process in the evaluation of deaths and other adverse outcomes. Inherent in that process has been the classification of deaths and complications as "preventable", "possibly preventable", or "non-preventable". This approach, however, does not ensure that performance is improved as much as it tends to focus on the attribution of blame. In addition, 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, and many opportunities for improvement (OFIs) were not investigated.

The analysis of deaths (and other complications) must seek to find or develop solutions that prevent future similar adverse events. This is often performed using a root cause analysis. A standardized process for performing root cause analysis in health care has been developed by the Joint Commission. The process was developed in response to a 2003 Institute of Medicine report "Patient Safety: Achieving a New Standard of Care"[1] that recommended standardization and better management of information on patient safety—including near misses and adverse events—in order to develop strategies that reduce the risk of preventable medical incidents. One major problem with the existing body of knowledge regarding patient safety was that the relevant patient safety incident reporting systems differed in design and therefore in their ability to define, count, and track adverse events. In order to facilitate the development of a more effective process for performance improvement purposes, a classification system, or taxonomy, was developed to categorize the various attributes of sentinel events.[2]

The Commission has developed a taxonomy, or classification system, to characterize the operative factors involved in a sentinel or adverse event, known as the JCAHO Taxonomy.[2] The taxonomy groups the various aspects of critical events into 5 primary classifications: Impact, Type, Domain, Cause, and Prevention and Mitigation (*see text box)*. These categories and their subcategories can be used to identify the pertinent operative aspects for every sentinel event. Using this classification scheme, the problem areas or conditions associated with such events can be identified, especially if those areas or conditions are associated with multiple similar events. Such identification should then lead to efforts designed to alter the areas or conditions such that similar events are less likely.
In 2006, National Quality Forum (NQF) endorsed JCAHO taxonomy from 11 candidate comprehensive patient safety taxonomies.   There is a growing library of manuscripts citing the taxonomy, now numbered at over 130. There have been two publications in trauma literature that evaluated the JCAHO taxonomy in identifying opportunities for improvement in their trauma centers.[3,4]

Implementation of JCAHO Taxonomy into the trauma performance improvement process will help trauma programs focus on the identification of opportunities for improvement. The strategy for implementation has involved several steps.

First, specific elements for the taxonomy unique to trauma care have been identified, such as the use of the NTDS complications listing for the identification of specific sentinel events. Others may be added as experience grows.

JCAHO Taxonomy

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

As proof of concept, a Microsoft® Access™ database has been developed for data entry and analysis purposes. The software provides look-up capabilities for consistent and rapid classification of the characteristics associated with a sentinel event, such as identification of the event type:
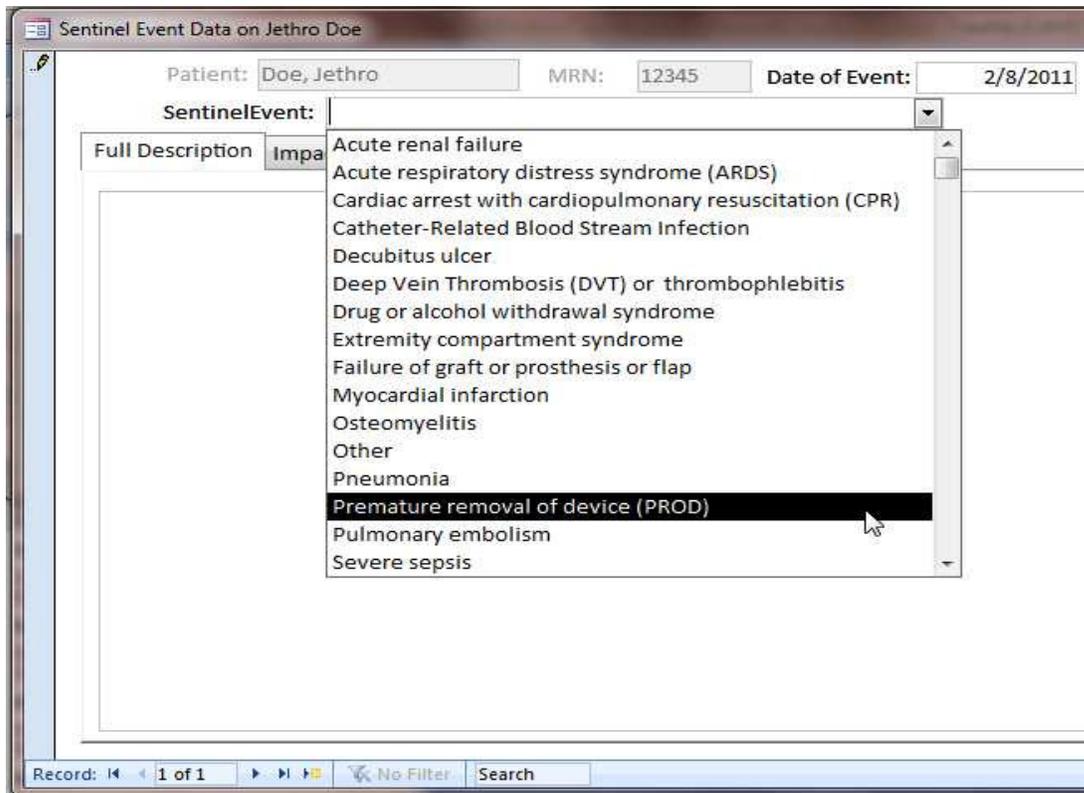
And the impact of the event:

Followed by the type:

Then the domain:

The system factors:

And the human factors:

Once data are entered, it can be queried to identify aggregates of problem areas:

Clinical Performance: Interventional

Interventional Clinical Performance	# of Cases
Omission of Essential Procedure	4
Procedure Contraindicated	2
Correct Procedure but Untimely	2
Correct Procedure Incorrectly Performed	2
Correct Procedure with Complication	2
Procedure Not Indicated	1

Specialty

Specialty	Number of Cases
General Surgery	13
Cardiac surgery	8
Critical care (intensivists)	4
Emergency medicine	3
Otolaryngology	2
Pathology	1
Internal Medicine	1

Discipline

Discipline	Number of Cases
Physician	32
Physician Extender	4
Pharmacist	2
Nurse	1

Current plans are to distribute this software application to a limited number of trauma centers for testing. The expectation will be that these trauma centers will classify their sentinel events using the taxonomy software concurrently with their current standard registry/PI data entry and evaluation process. Feedback will be sought regarding improvements in functionality and concepts so that the final version will be an effective tool for Trauma Medical Directors and registrars.

 Once the basic functionality has been adequately tested, the software could either be:

1. Offered to third-party trauma registry vendors for incorporation into their systems,
2. Converted into an industrial web-based database (i.e., SQL Server, Oracle, etc.) for use as a centralized server hosting the application and enabling password-protected encrypted access by trauma centers, or
3. Distributed to trauma centers in its Access™ version for use in their individual facilities.

Simultaneous with the above software developments, other processes must be undertaken to integrate the JCAHO taxonomy into Trauma PI:

1. Educational materials should be developed for trauma programs.
2. The Performance Improvement and Patient Safety chapter in the Resources document should be edited to include information regarding the taxonomy.
3. Changes will need to be developed by the Verification Review Committee to reflect the incorporation of the JCAHO taxonomy in the peer review process.

REFERENCES

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