Central Ohio Trauma System

An affiliate of the Columbus Medical Association

TRAUMA CARE PERFORMANCE IMPROVEMENT (PI) PROGRAM

GOAL

This plan provides a framework to ensure there is planning, implementation, and support to achieve the goals of the trauma care performance improvement (PI) program for the Central Ohio Trauma System (COTS). Performance improvement involves issues that are internal (within a hospital, EMS, or private agency) or external (within a system). This PI plan will monitor the entire continuum, but refer internal issues to the appropriate internal agency and address external issues through this plan with the exception of quaternary reviews upon request of a COTS member hospital. The goals of this PI program are to improve trauma care and assure the delivery of appropriate and optimal care to all injured patients served by COTS member healthcare providers through:

1. Assessing trauma care trends based on data from the COTS Trauma Registry;
1. Identifying and describing issues that may contribute to trauma morbidity and mortality;
2. Identifying opportunities for improvement;
3. Providing education to COTS stakeholders;
4. Recommending modifications to COTS guidelines and practices as necessary or appropriate;
5. Providing reports and/or data to COTS stakeholder institutions.

MISSION AND VISION

Our mission is to improve patient outcomes related to trauma, emergency services, and disaster preparedness. Our vision is better care, better outcomes through collaboration, education, and prevention.

AUTHORITY AND SCOPE

As a regional trauma system, COTS follows the American College of Surgeons (ACS) guidelines in conducting PI. COTS authority is non-statutory and stakeholder participation in COTS initiatives is voluntary. The COTS trauma PI program is overseen by the Trauma Advisory Board (TAB)/Clinical Trauma Committee (CTC) and the Medical Review Executive Committee (MREC). These committees function under the authority of the COTS Board of Trustees (***Addendum A***). Ohio Hospitals are mandated by Ohio Law to submit trauma data to the Ohio Trauma Registry (OTR). The Ohio Revised Code (ORC) allows hospitals to submit data to the OTR via regional registries such as COTS. Central Ohio hospitals have the option of authorizing the COTS Trauma Registry personnel to deliver their trauma data to the OTR.

Hospitals who submit data to COTS shall sign/submit the following to COTS that denotes their authorization:

- Business Associate and Data Use Agreement (BAA)
- Provider and Data Use Agreement. (P/DUA)

These agreements define the parameters for data release to the appropriate entities and committees based upon their identified role and responsibilities. As outlined in COTS Bylaws or committee Charters, the Chief Executive Officer (CEO), or designee of each hospital or healthcare system will approve their agency's involvement in the COTS PI program and the COTS Emergency Services Committee will designate EMS Agency representative(s).

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The COTS Trauma Registry personnel are not responsible to the State for data not provided by individual hospitals. COTS member hospitals are responsible to provide data to the COTS registry according the the established guidelines to meet the State requirements. The COTS Trauma Registry incorporates all data elements of the OTR as required by ORC 4765.06. Health consortiums are allowed to conduct protected peer review PI activities (ORC Sec. 2305.252). Therefore, trauma PI activities undertaken by COTS are permitted and protected by law.

COTS TRAUMA REGISTRY INCLUSION/EXCLUSION CRITERIA ICD-10 – 2019

TRAUMA PATIENT DEFINITION

In order to ensure consistent data collection across Central Ohio and the State of Ohio and following the National Trauma Data Standard, a trauma patient is defined as a patient sustaining a traumatic injury and meeting the patient inclusion criteria described below.

PATIENT INCLUSION CRITERIA

To be included in the COTS Trauma Registry:

1. The patient must have incurred, no more than 30 days prior to presentation for initial treatment, at least one of the injury diagnostic codes defined in the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM):
    - **J70.5 with 7th character modified of A ONLY** (Respiratory conditions due to smoke inhalation - initial encounter)
    - **S00-S99 with 7th character modifier of A, B or C ONLY** (injuries to specific body parts – initial encounter);
    - **T07** (Unspecified multiple injuries);
    - **T14** (Injury of unspecified body region);
    - **T20-T28 with 7th character modifier of A ONLY** (Burns by specified body part – initial encounter);
    - **T30-T32** (Burn by TBSA percentage);
    - **T33 with 7th character modified of A ONLY** (superficial frostbite - initial encounter)
    - **T34 with 7th character modified of A ONLY** (Frostbite with tissue necrosis - initial encounter)
    - **T67 with 7th character modified of A ONLY** (Effects of heat and light - initial encounter)
    - **T68 with 7th character modified of A ONLY** (Hypothermia - initial encounter)
    - **T69 with 7th character modified of A ONLY** (Other effects of reduced temperature - initial encounter)
    - **T70.4 with 7th character modified of A ONLY** (Effects of high-pressure fluids - initial encounter)
    - **T70.8 with 7th character modified of A ONLY** (Other effects of air pressure and water pressure - initial encounter)
    - **T70.9 with 7th character modified of A ONLY** (Effects of air pressure and water pressure, unspecified - initial encounter)
    - **T71 with 7th character modified of A ONLY** (Asphyxiation - initial encounter)
    - **T74.1 with 7th character modified of A ONLY** (Physical abuse, confirmed - initial encounter)
    - **T74.4 with 7th character modified of A ONLY** (Shaken infant syndrome - initial encounter)
    - **T75.0 with 7th character modified of A ONLY** (Effects of lightening - initial encounter)
    - **T75.1 with 7th character modified of A ONLY** (Unspecified effects of drowning and nonfatal submersion - initial encounter)
    - **T75.4 with 7th character modified of A ONLY** (Electrocution - initial encounter)

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- **T79.A1-T79.A9 with 7th character modifier of A ONLY** (Traumatic compartment syndrome – initial encounter)

2. The patient MUST ALSO:
   - On initial presentation for treatment of an injury, be admitted to a hospital or hospital observation unit, as defined by a physician order regardless of the length of stay; **AND/OR**
   - Be transferred via EMS transport (including air ambulance) from one hospital or free standing emergency department (FSED) or emergency department (ED) to another hospital regardless of the patient's hospital length of stay or admission status; **AND/OR**
   - Have an outcome of death resulting from the traumatic injury (independent of hospital admission or hospital transfer status).

PATIENT EXCLUSION CRITERIA

Patients with the following isolated ICD-10-CM codes are **EXCLUDED** from the COTS Registry:

- **S72.00-S72.14 fracture of head/neck of femur** ***ONLY*** *in patients* ***≥ 70 years of age AND*** *which result from slipping, tripping, stumbling or a same level fall (****W01.0, W18.30,W18.31,W18.39****);*
- **S00, S10, S20, S30, S40, S50, S60, S70, S80, S90**(Abrasions or Contusion injuries. Patients with abrasion or contusion injuries that were transferred in/out for treatment injuries or died because of injuries would be included in the registry); **AND/OR**
- **7th character modifiers of D through S** (Late effects of injury)

See the Flow chart of Trauma Registry Inclusion/Exclusion Criteria (Addendum B).

DATA COLLECTION AND ANALYSIS

REPORTING DATA TO COTS
Patient data shall be reported to the COTS Trauma Registry based on the date of the patient's *discharge* from the hospital, FSED, or ED. Data is submitted to the Registry by COTS secure website.

TIMELINE FOR REPORTING: WHEN IS DATA DUE
The COTS Trauma Registry should receive compatible hospital data within 60 days after the patient's death, discharge, or transfer from a hospital. Data is needed within this timeframe in order to prepare it for export to the OTR. Data is due to the OTR within 90 days after the patient's death, discharge, or transfer from a hospital. COTS downloads to the OTR are quarterly per state-mandated deadlines or more often as needed.

PROCESS FOR MONITORING COMPLIANCE

Performance improvement activities are the responsibility of TAB/CTC and MREC using various methods of data collection and review. These methods include but are not limited to review of data in the following manner with appropriate BAA and P/DUAs:

- Hospital identified data: MREC only
- Limited Data Set (LDS) (***Addendum C***): Providers of trauma data, researchers, EMS (adult only)
- Aggregate data: Providers reporting trauma data, researchers, and general public

This data may be shared with the committees as scorecard/dashboards, benchmarking standards, or metric reports. The TAB/CTC will review aggregate and LDS of adults only patients. The MREC will review aggregate, LDS, and hospital specific data in their review process. COTS committees will reference the standards of the ACS Performance Improvement Patient Safety (PIPS) and the model of the Society of Trauma Nurses (STN) Trauma Outcomes and Performance Improvement Course (TOPIC) to monitor and review trauma data.

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The TAB/CTC/MREC shall review trauma metrics (***Addendum D***) on an annual basis, and as needed according to committee charters and board/advisory board bylaws. Established metrics should remain dynamic and address current issues and targets. Thresholds and parameters for monitoring will be established for each metric. Benchmarking reports are available upon request in accordance with this PI Plan.

REVIEW PROCESS/DETERMINATION/DOCUMENTATION

The MREC/TAB/CTC will review the PI reports to enable an occurrence to be analyzed. Age identifiers may only utilize the following descriptors:

1. ≤ 15 years;
2. individual age; sets or subsets for 16 years – 89 years;
3. ≥90 years.

The following reviews may be requested/completed as part of the COTS Trauma PI Program:

- Primary review: is conducted by the COTS PI Coordinator to identify compliance, variation, or opportunities for PI. Assistance may be obtained from the COTS Regional Trauma Data Systems Analyst.
- Secondary review: is conducted by the COTS PI coordinator with the TAB/CTC/MREC chairperson. Further review and determination will be based upon the issues identified.
- Tertiary review: is conducted during the TAB/CTC or MREC committee. PI scorecard/dashboard and an activity report with variance/issue, action, and resolution date will be presented for discussion, determination of action, and event resolution via the appropriate committee. The resolution may require delegation, anecdotal narratives, review of current reporting structures, agency/institutional requests, and/or development of best practice standards.
- Quaternary: may be requested by any COTS member hospital and may involve a review of extraordinary cases, or serve to validate the PIPS process for the hospital or region. (Examples may include but are not limited to a review of ACS Trauma Quality Improvement Program (TQIP) data, death review, or complex case review). This review may occur at the MREC committee or in another manner at the request of the individual hospital and in accordance with this PI Plan.

DETERMINATION

TAB/CTC/MREC

The PI Coordinator will work with TAB/CTC/MREC leadership to assign trauma PI issues to the appropriate committee, workgroup, taskforce in order to choose the best method, model, and format to implement change. They will utilize the System Taxonomy (***Addendum E***) to address the regional system issues and they may involve various strategies that address:

- Structure
- Process
- Outcome

The TAB/CTC/MREC will conduct an annual review of the PI Scorecard for metrics with unmet thresholds. The unmet metrics will be closed, trended, or updated.

The TAB/CTC will address thresholds that may utilize one or more of the following (event resolution) actions:

1. Re-evaluation is conclusive;
2. Continue to monitor metric;
3. Develop an action plan;
4. Delegate the PI issue to another COTS committee for discussion and further action planning;
5. Develop regional guidelines, strategies, protocols, and/or pathways by the TAB/CTC or other COTS Committee;
6. Develop education forums such as regional trauma grand rounds, conferences, and/or in-services;

7. Develop benchmarking reports for hospital leadership.

The MREC will resolve more specific detailed issues by one of the following:

1. Review system guidelines, strategies, protocols, and/or pathways by the TAB/CTC or other COTS Committee;
2. Recommend the issue be addressed through the EMS/hospital's internal PI system through a referral to the agency representative.
3. Recommend educational forums such as regional trauma grand rounds, conferences, and/or in services;
4. Delegate the PI issue to another COTS committee for discussion and further action planning;
5. Re-request follow-up from appropriate hospital or EMS agency to determine the appropriate resolution in all above referral cases.

Note: Per ORC Sec. 3727.09, *all* hospitals are required to have "peer review and quality assurance procedures for adult and pediatric trauma care provided in or by the hospital." Institutions and agencies overly represented in an unmet COTS data filter threshold are expected, at minimum, to address the issue via internal peer review and quality assurance procedures.

All resolutions, policy changes, programs, and practices for TAB/CTC and MREC require COTS Board approval. Re-evaluation is conducted to determine the effectiveness of change following implementation of any new or revised practice or policy. Event resolution occurs when re-evaluation is conclusive, improvement is reached and sustained, and the issue or metric outlier is resolved per the MREC review.

DOCUMENTATION OF ANALYSIS AND EVALUATION and ACTION PLANNING

TAB/CTC – The Trauma Advisory Board (TAB) is the advisory body to the COTS Board of Trustees for all issues relating to trauma care. TAB membership is outlined in its Bylaws. The Clinical Trauma Committee (CTC) is the forum that provides direction for optimizing patient care through collaboration and integration of best practice principles affecting thhe healthcare continuum from prehospital to rehabilitation. CTC membership is outlined in its Charter.
The TAB/CTC convene jointly 4-6 times a year or more often at the discretion of TAB/CTC membership. Meeting minutes, aggregate reports, and activity reports will be recorded for TAB/CTC meetings and reflect current regional PI activities and status.

MREC DOCUMENTATION

MREC is the forum for Trauma/Burn Medical Directors to identify issues or discuss topics related to medical management, best practice, standard of care, and review metrics that address PI and patient care issues in the COTS region. MREC works to provide a detailed review of metrics that fail to meet established thresholds and identify issues requiring follow-up or a documented plan of action.
Patient identifiers are never disclosed.
MREC membership is outlined in its Charter.
An activity report will be kept in lieu of meeting minutes.
Any print documents or copies reflecting PI will be numbered, secured, and collected at the close of each meeting.
PI activities will be conducted in compliance with COTS HIPAA guidelines and the business associate agreements and provider/data use agreements.
The MREC Chair may provide an activity report to the TAB/CTC (or other interested COTS committee as deemed appropriate by the MREC Chair) via the metric report. The report will include:

a. Data analysis, results, or conclusions;
b. Summary of actions to address/correct/improve findings;
c. Committee recommendations and any further needed action.
d. Date of event resolution and closure

Approved by COTS Board 12/02*; Updated 2/*2012; 11/15/2016; 08/28/18

COTS TRAUMA PIPS COMMITTEE STRUCTURE and REFERRAL PROCESS FOR INVESTIGATION AND REVIEW

According to the Board/Advisory Board member Job Descrption - 50% meeting attendance is expected for TAB.

MREC Attendance - All MREC meetings are in person and closed due to the discussion of protected health information (PHI). At the discretion of the MREC Chair:

- guest(s) may be invited to attend the meeting for a specific discussion, but will be dimissed after his/her interests are discussed;
- a meeting or a portion of a meeting may utilize a conference call in line for special circumstances.

TAB/CTC Attendance – meetings are held jointly.
The TAB/CTC meetings are open and other parties interested in improving trauma outcomes may attend as non-voting members. The COTS Executive Director ensures a quorum is met for TAB for voting purposes.

OPERATIONAL STAFF RESPONSIBILITY FOR THE TRAUMA PIPS PROGRAM

The following COTS staff will provide support for the PIPS program. Their individual job descriptions identify their PIPS responsibilities:

- COTS Trauma Performance Improvement Coordinator
- COTS Trauma Data System Analyst

CONFIDENTIALITY PROTECTION

Documentation related to COTS PI must be imprinted with the verbiage
Confidential: Do Not Re-disclose per ORC Sec. 2305.252.

- All TAB/CTC/MREC committee members and alternates will sign annual confidentiality statements and a meeting attendance record.
- PI activities will be conducted in compliance with COTS HIPAA guidelines and the business associate agreements and provider/data use agreements.
- All documentation and electronic records will be maintained by the COTS PI Coordinator and is considered confidential and protected under peer review statutes of the Ohio Revised Code (ORC Sec 2305.252).

INTEGRATION INTO REGIONAL STRUCTURE (HOSPITALS/EMS/CORONER)

The PI Annual Activity Metrics will include:

1. Regional PI Scorecard/Dashboards: Activity report with event resolution
2. A summary of correspondence between agencies, if any.
3. Clinical issues that remain unresolved for 12 months
4. Event resolution activities to include the development of protocols/pathways, strategies, action plans and education forums
5. Metrics developed for the next review cycle.

Benchmarking reports are available upon request in aggregate form for TAB/CTC or with hospital identifiers for MREC and the individual requesting COTS hospital as outlined in the BAA, P/DUA, and HIPAA policies.

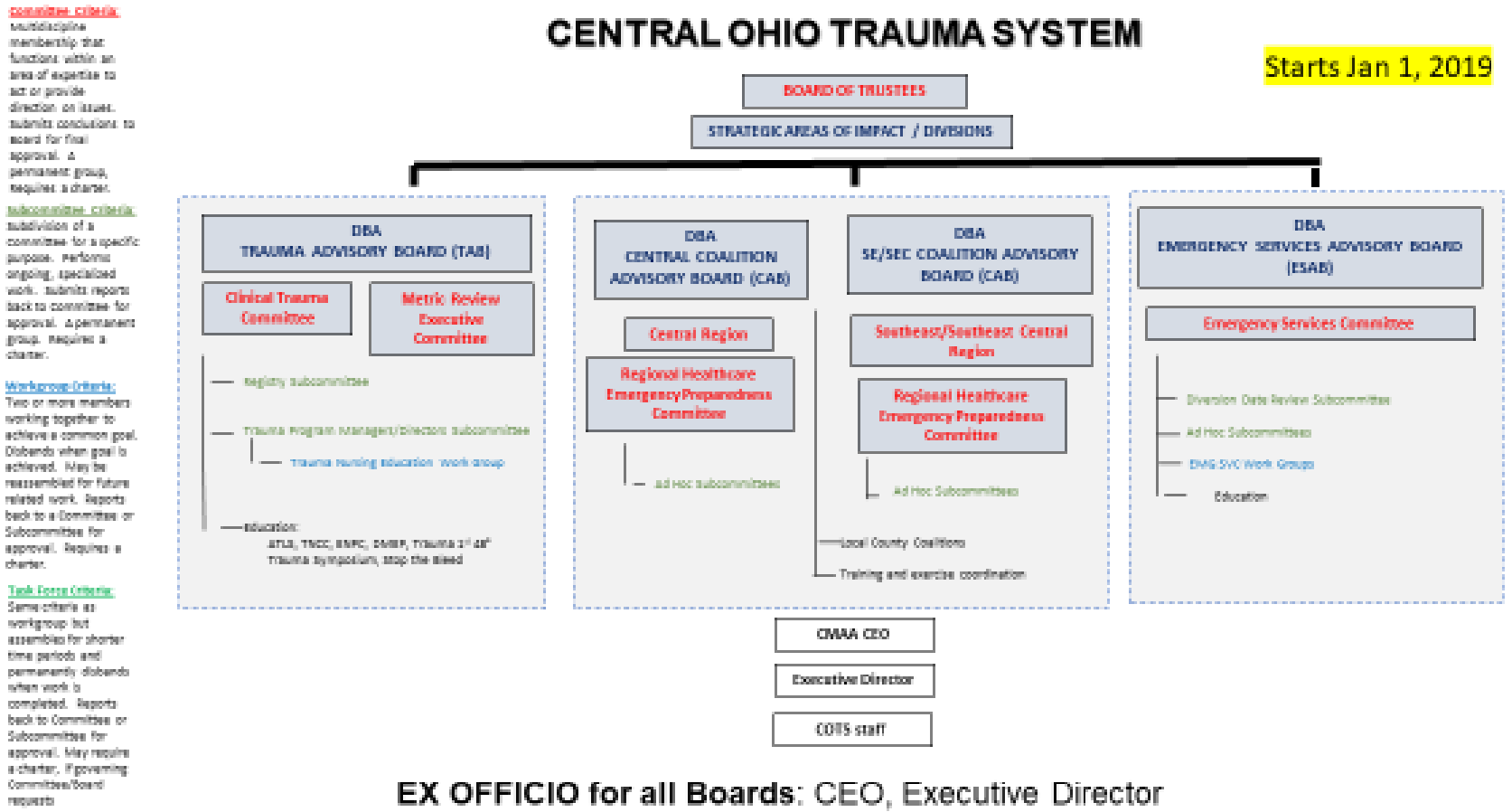
A COTS member hospital may request their hospital's data by following the Central Ohio Trauma System Registry Data Request Policy. Event resolution of benchmarking data is hospital-driven.

Approved by COTS Board 12/02*; Updated 2/*2012; 11/15/2016; 08/28/18

ADDENDUMS

A – Organizational Chart COTS Boards
B – Flowsheet of Trauma Registry Inclusion/Exclusion Criteria
C – Limited Data Set
D – Trauma metrics
E – Taxonomy

Addendum A



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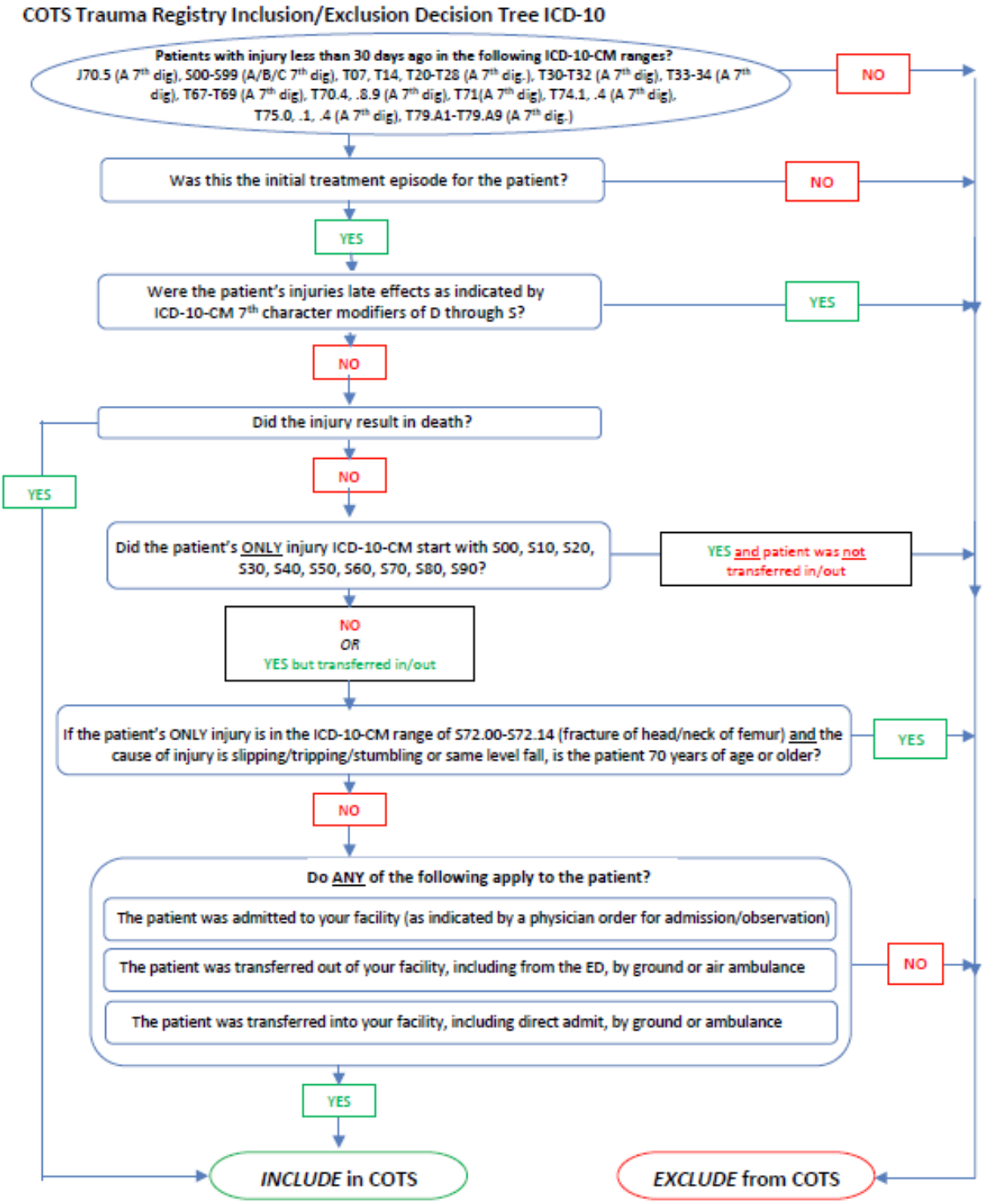
Addendum B – MREC – Trauma Registry Inclusion/Exclusion Criteria



Addendum C

Definition of Limited Data Set
June 2017 Content Created by the Office of Civil Rights
https://www.hhs.gov/hipaa/for-professionals/special-topics/emergency-preparedness/limited-data-set/index.html

'A "limited data set" is a limited set of identifiable patient information as defined in the Privacy Regulations issued under the Health Insurance Portability and Accountability Act, better known as "HIPAA". A "limited data set" of information may be disclosed to an outside party without a patient's authorization if certain conditions are met. First, the purpose of the disclosure may only be for research, public health or health care operations. Second, the person receiving the information must sign a data use agreement. This agreement has specific requirements which are discussed below.

A "limited data set" is information from which "facial" identifiers have been removed. Specifically, as it relates to the individual or his or her relatives, employers or household members, **all the following identifiers must be removed in order for health information to be a "limited data set":**

- names;
- street addresses (other than town, city, state and zip code);
- telephone numbers;
- fax numbers;
- e-mail addresses;
- Social Security numbers;
- medical records numbers;
- health plan beneficiary numbers;
- account numbers;
- certificate license numbers;
- vehicle identifiers and serial numbers, including license plates;
- device identifiers and serial numbers;
- Web universal resource locators (URL)s;
- Internet protocol (IP) address numbers;
- biometric identifiers (including finger and voice prints); and
- full face photos (or comparable images).

The health information that may remain in the information disclosed includes:

- dates such as admission, discharge, service, DOB, DOD;
- city, state, five digit or more zip code; and
- ages in years, months or days or hours.

It is important to note that this information is still protected health information or "PHI" under HIPAA. It is not de-identified information and is still subject to the requirements of the Privacy Regulations.

Addendum D

Metric report for - 2020

Report	Report to Committee(s)	Due Date or Time	Action	Event resolution
Helicopter from Scene in Injury Counties in Disaster Region 7 & 8, Transported to Non-Level III Trauma Centers (All patients) 2016-2019	MREC	June 2020		
Helicopter Scene transports (adults) 2016-2019	MREC	June 2020		
Mortalities to trauma centers: Falls, Penetration and MVC.	MREC	April 2019		
Trauma Quality Improvement Bi-Annual report - Results and Actions TBD	MREC	June/November		

Report Title	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec
MREC Data		X		X		X		X		X		X
Dashboard for TAB										X		
Trauma Registry State Deadline			X(4)			X(1)			X(2)			X(3)
Mortalities to trauma centers.				X								
TQIP Report						X					X	

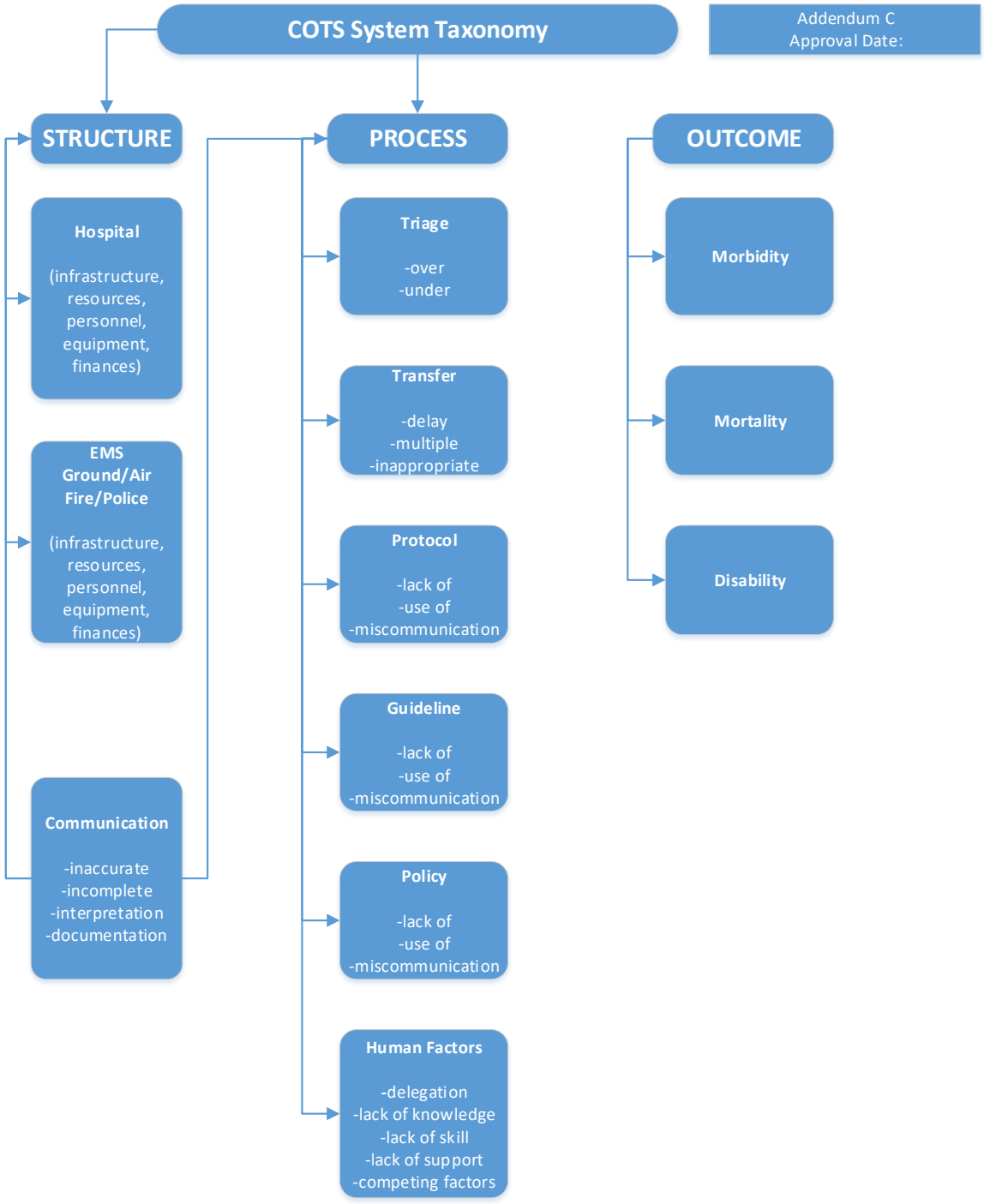
The committee will:

- Identify any actionable items from the report
- Identify responsible person to follow-up
- Identify responsible committees to notify
- Identify acceptable rate of compliance to close the issue and trend yearly.

Approved by Trauma Advisory Board: 5/7/2020

Approved by BOT: 5/26/2020

Addendum E – Taxonomy



This document will be used by MREC committee to evaluate system issues. Internal hospital and EMS issues will be referred to those agencies for management and event resolution. See back for event resolution.

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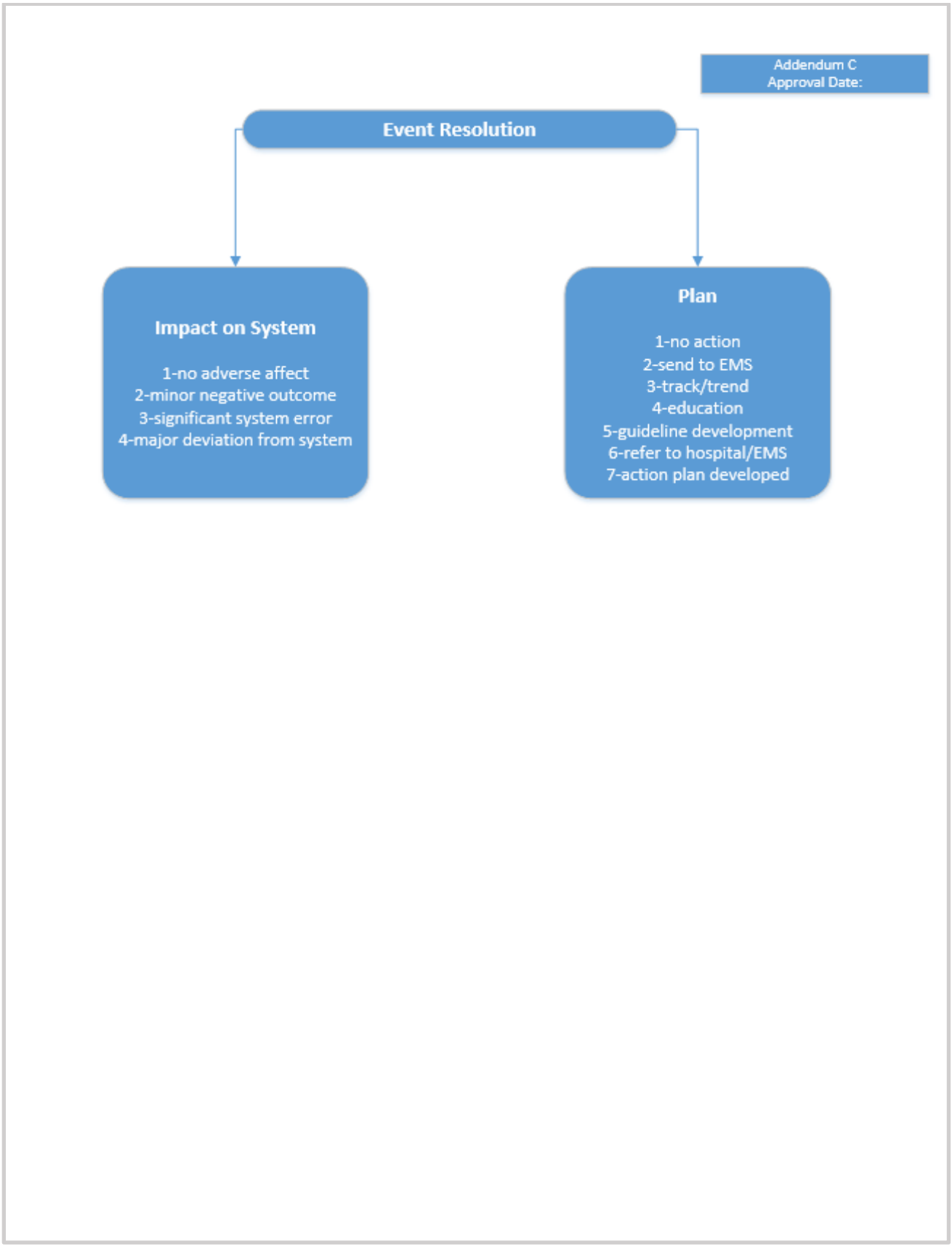
Addendum C
Approval Date:
Event Resolution
Impact on System
1-no adverse affect
2-minor negative outcome
3-significant system error
4-major deviation from system
Plan
1-no action
2-send to EMS
3-track/trend
4-education
5-guideline development
6-refer to hospital/EMS
7-action plan developed

References

- Central Ohio Trauma System Registry, Data Dictionary, 2019 admissions
- National Trauma Data Standard Data Dictionary 2016, National Trauma Data Bank, July, 2015.
- Ohio Trauma Registry Trauma Acute Care Registry (TACR) Data Dictionary, Ohio Department of Public Safety, EMS Division, 2015.
- Resources for the Optimal Care of the Injured Patient: 2016, Committee on Trauma, American College of Surgeons, © 2016
- Trauma System Consultative Report, State of Ohio, 2013
- Society of Trauma Nurses TOPIC Course, 2015 Edition
- Approved by COTS Board of Trustees February 2018
- Limited Data Set List (HIPAA)
- HIPAA Johns Hopkins Office of Human Subjects Research – IRB definition
- Per ORC Sec. 3727.09; ORC 4765.06;) allows health consortiums to conduct protected peer review PI activities (ORC Sec. 2305.252);

Approved by COTS Board 12/02*; Updated 2/*2012; 11/15/2016; 08/28/18