Resources and Tools

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MidMichigan Medical Center-Midland

Michigan Trauma Coalition

mitrauma.org

Objectives

- User will be able to identify resources available for trauma program development.

- User will gain an understanding of tools useful for basic trauma program administration.

RESOURCES

State of Michigan

- RTN information
- Designation Criteria
- State Registry
- State Trauma FAQ

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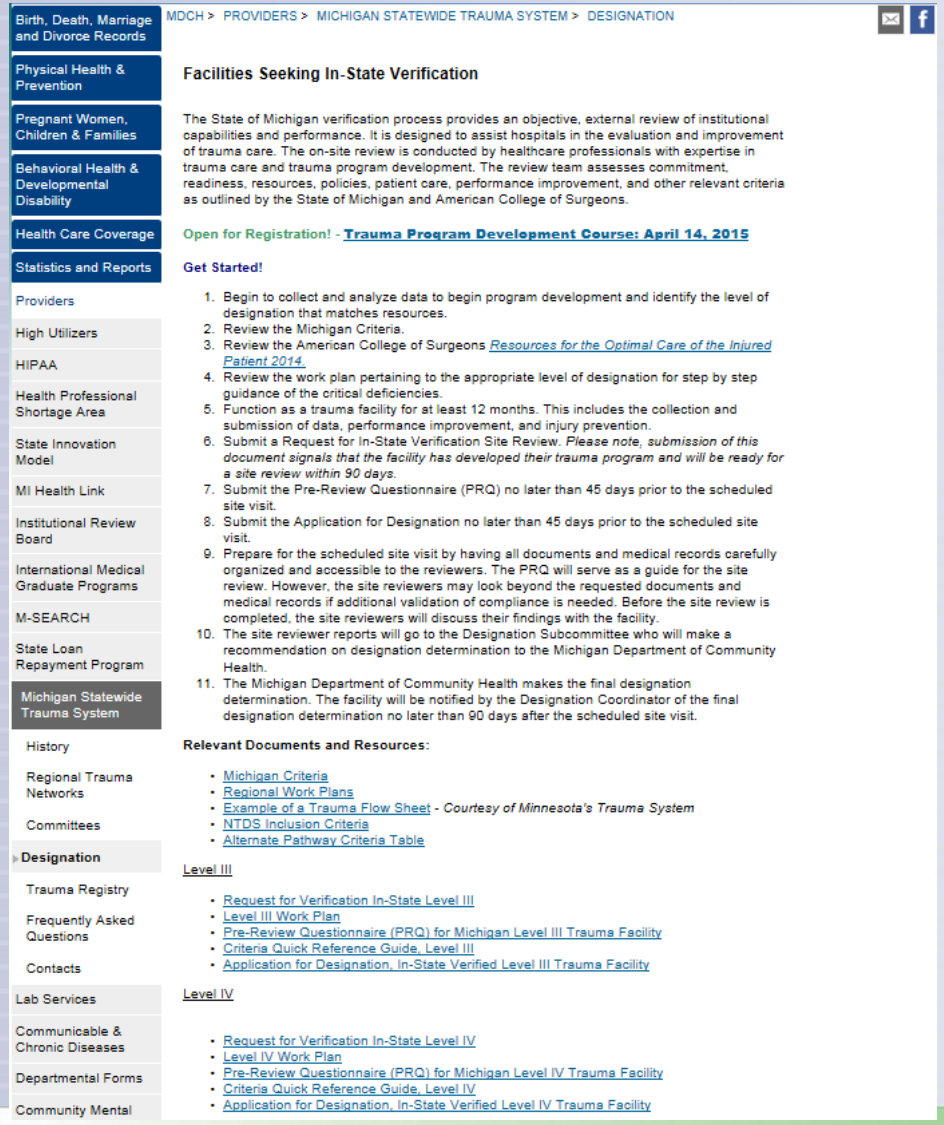
State of Michigan - Designation



Birth, Death, Marriage and Divorce Records
Physical Health & Prevention
Pregnant Women, Children & Families
Behavioral Health & Developmental Disability
Health Care Coverage
Statistics and Reports
Providers
High Utilizers
HIPAA
Health Professional Shortage Area
State Innovation Model
MI Health Link
Institutional Review Board
International Medical Graduate Programs
M-SEARCH
State Loan Repayment Program
Michigan Statewide Trauma System
History
Regional Trauma Networks
Committees
Designation
Trauma Registry
Frequently Asked Questions
Contacts
Lab Services
Communicable & Chronic Diseases
Departmental Forms
Community Mental

MDCH > PROVIDERS > MICHIGAN STATEWIDE TRAUMA SYSTEM > DESIGNATION

Facilities Seeking In-State Verification

The State of Michigan verification process provides an objective, external review of institutional capabilities and performance. It is designed to assist hospitals in the evaluation and improvement of trauma care. The on-site review is conducted by healthcare professionals with expertise in trauma care and trauma program development. The review team assesses commitment, readiness, resources, policies, patient care, performance improvement, and other relevant criteria as outlined by the State of Michigan and American College of Surgeons.

Open for Registration! - **Trauma Program Development Course: April 14, 2015**

Get Started!

1. Begin to collect and analyze data to begin program development and identify the level of designation that matches resources.
2. Review the Michigan Criteria.
3. Review the American College of Surgeons *Resources for the Optimal Care of the Injured Patient 2014.*
4. Review the work plan pertaining to the appropriate level of designation for step by step guidance of the critical deficiencies.
5. Function as a trauma facility for at least 12 months. This includes the collection and submission of data, performance improvement, and injury prevention.
6. Submit a Request for In-State Verification Site Review. *Please note, submission of this document signals that the facility has developed their trauma program and will be ready for a site review within 90 days.*
7. Submit the Pre-Review Questionnaire (PRQ) no later than 45 days prior to the scheduled site visit.
8. Submit the Application for Designation no later than 45 days prior to the scheduled site visit.
9. Prepare for the scheduled site visit by having all documents and medical records carefully organized and accessible to the reviewers. The PRQ will serve as a guide for the site review. However, the site reviewers may look beyond the requested documents and medical records if additional validation of compliance is needed. Before the site review is completed, the site reviewers will discuss their findings with the facility.
10. The site reviewer reports will go to the Designation Subcommittee who will make a recommendation on designation determination to the Michigan Department of Community Health.
11. The Michigan Department of Community Health makes the final designation determination. The facility will be notified by the Designation Coordinator of the final designation determination no later than 90 days after the scheduled site visit.

Relevant Documents and Resources:

- Michigan Criteria
- Regional Work Plans
- Example of a Trauma Flow Sheet - *Courtesy of Minnesota's Trauma System*
- NTDS Inclusion Criteria
- Alternate Pathway Criteria Table

Level III

- Request for Verification In-State Level III
- Level III Work Plan
- Pre-Review Questionnaire (PRQ) for Michigan Level III Trauma Facility
- Criteria Quick Reference Guide, Level III
- Application for Designation, In-State Verified Level III Trauma Facility

Level IV

- Request for Verification In-State Level IV
- Level IV Work Plan
- Pre-Review Questionnaire (PRQ) for Michigan Level IV Trauma Facility
- Criteria Quick Reference Guide, Level IV
- Application for Designation, In-State Verified Level IV Trauma Facility

Everything you need to know about designation!

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State of Michigan – Trauma Regions

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Michigan Statewide Trauma System
History

Regional Trauma Systems

The regional trauma system structure is described in the amended Administrative Rules by authority conferred on the Department of Community Health by Michigan Compiled Laws (MCL) 333.9227 and 333.20910 of 1978 Public Act 368; 2004 Public Act 580, 581, and 582.

A Regional Trauma Network (RTN) is an organized group of local Medical Control Authorities (MCA). MCA's are hospitals who operate 24/7 per statute, which integrate into existing preparedness regions. RTN's are responsible for appointing a Regional Trauma Advisory Council (RTAC), a Regional Professional Standards Review Organization (RPSRO), and creating a regional trauma plan.

The Regional Trauma Advisory Committee is a committee established by the RTN and is comprised of MCA personnel, EMS personnel, life support agency representatives, healthcare facilities representatives, physicians, nurses, and consumers. The functions of the RTAC are to provide leadership and direction on matters related to trauma system development in their region, including, but not limited to, the review of trauma deaths and preventable complications.

The RPSRO is a committee established by the RTN for the purpose of improving the quality of trauma care within a recognized trauma region.

Regions

Region 1

Region 2 North

Region 2 South

Region 3

Region 5

Region 6

Region 7

Region 8

MDCH > PROVIDERS > MICHIGAN STATEWIDE TRAUMA SYSTEM > REGIONAL TRAUMA NETWORKS

Birth, Death, Marriage and Divorce Records
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Region 3

Region 3 is a highly diverse area, ranging from medium sized cities and agricultural areas to very sparsely populated areas. The fourteen counties that make up Region 3 are: Alcona, Arenac, Bay, Genesee, Gladwin, Huron, Iosco, Lapeer, Midland, Ogemaw, Oscoda, Saginaw, Sanilac, and Tuscola. There are four significant urban areas: Flint, Saginaw, Bay City, and Midland. The region has 24 hospitals, 11 Medical Control Authorities, 126 EMS agencies, and 10 Health Departments.

The Region 3 Resource Guide contains information about demographics, facilities, Medical Control Authorities, Regional Trauma Network membership, and more. Click on the link below to access the resource guide.

Region 3 Resource Guide

The Region 3 application and work plan contains information about regional injury prevention and regional performance improvement. Trauma facilities interested in applying for designation can access this information and use it to develop their plans to participate in regional performance improvement and injury prevention SMART objectives. Click on the link below to access the application and work plan.

Region 3 Network Application Work Plan

2015 Trauma Network Meeting Schedule

State of Michigan - Registry

Birth, Death, Marriage and Divorce Records
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Pregnant Women, Children & Families
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State Trauma Registry - ImageTrend®

Participation in the statewide trauma registry is an essential component of a regionalized, accountable and coordinated trauma system. Designation as a trauma facility in Michigan requires that hospitals participate in the state trauma registry. ImageTrend®, Inc. provides the data collection software for the Michigan Trauma Registry and the Michigan EMS Information System (Mi-EMSIS).

Data Collection Responsibilities:

The following documents outline the roles and responsibilities related to data collection:

- MDCH Authorities and Obligations (Updated 11/19/13)
- Data Use and Non-Disclosure Agreement (Updated 11/19/13)
- User Agreement (Updated 11/19/13)

Using the State Trauma Registry:

The National Trauma Data Bank (NTDB) elements are the minimum data set required to be entered into the registry. The Michigan Criteria considers non-participation in the registry a Type 1 critical deficiency for designation.

- Required Data Bank Elements - National Trauma Data Bank

A username and password is required in order to access the registry in ImageTrend®. See the following document on how to obtain a username and password:

- Obtaining a password for ImageTrend

Trauma facilities may directly enter trauma data into ImageTrend® at no cost or download NTDB data into ImageTrend®.

- ImageTrend website

Access the document below which details data download or entry into ImageTrend® and directs users to ImageTrend University for tutorials on data entry.

- Adding data to ImageTrend

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Michigan Trauma Coalition

- www.mitrauma.org
- Non-profit, membership organization
- 50+ member hospitals

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MTC

- Resources available through MTC:
  - Networking with other trauma managers throughout the State.
  - Reduced rates for education courses
  - Leadership and Program Development
  - Advocacy

MTC

Michigan Trauma Coalition

Dedicated to reducing traumatic injuries while developing better care and treament of trauma patients in Michigan.

Home | About | Membership/Committees | Education/Events | Legislative | MI Trauma System | Resources | Sitemap

Toolbox

The total one-year treatment cost of adult major trauma cases in the US is approximately $27 billion annually

Source: Weir, Salkever, Rivara, Jurkovich, Nathens, and Mackenzie, "Expert Review of Pharmacoeconomics and Outcomes Research," 2010

The following links are to PDFs of documents you may find useful in your committees, or for background information on the MTC.

Financial and Service Line

Finding resources on trauma finance and managing a trauma service line can be challenging for new trauma program managers. Here is one example: It's a presentation on Trauma-Service-Line-MCOT-2013

ICD-10 Update

ICD-10 PowerPoint presentation – ICD-10 Intro MTB 102013 1.3
ICD-10-CM Index 2014
IDC-10-CM External Cause-Index 2014
ICD-10-PCS Index and Tabular 2014
ICD-10-CM Tabular 2014

Injury Prevention

Here are some links with useful injury prevention for Michigan Trauma Programs:

- Michigan SAFE KIDS
- Booster Seat Law in Michigan – Michigan State Police information
- Snowmobile Safety in Michigan

Pediatric Trauma Guidelines

Pediatric Massive Transfusion Guidelines

Trauma Activation

SBIRT

1) Challenges in Delivering SBIRT
2) SBIRT at a Level II Adult Trauma Center
3) SBIRT Guideline
4) SBIRT Log (Template)
5) SBIRT Dashboard (Template)
6) SBIRT Dashboard (Example)
7) NIAAA Guidebook
8) SBIRT at a Level III Trauma Center
9 HDVCH Substance Abuse Pediatric Trauma Guideline
10) HDVCH Pediatric SBIRT Reference List
11) MTC SBIRT 2014 HDVCH Pediatric SBIRT
12) MTC MTQIP Trauma Topics March 27

Taxonomy Review Form

Taxonomy Review Form

TOPIC

Conceptual Framework algorithm

Full report link for those who want to see the entire document with the how's and why's of its development.

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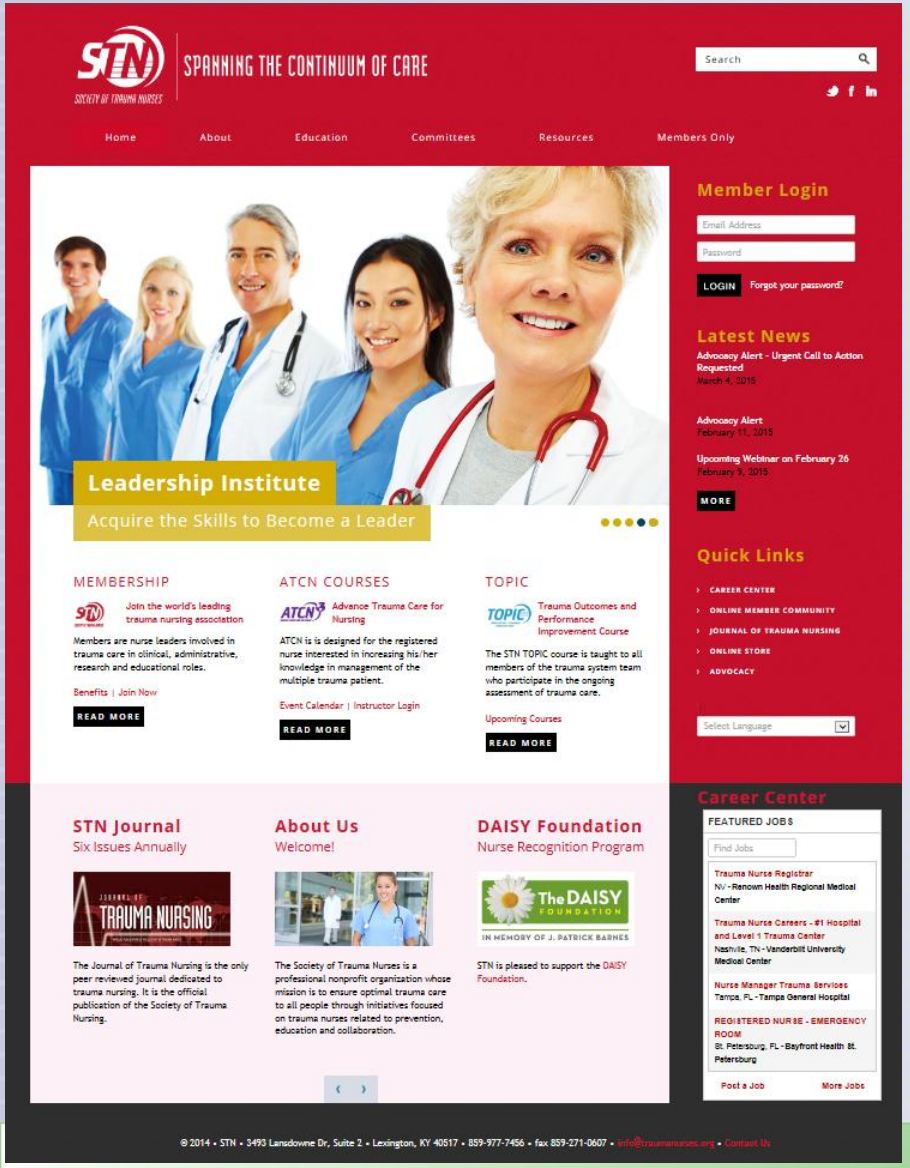
Society of Trauma Nurses



- Journal of Trauma Nursing
- STN Open Forum
- Resource Library
- Courses
  - TOPIC
  - ATCN

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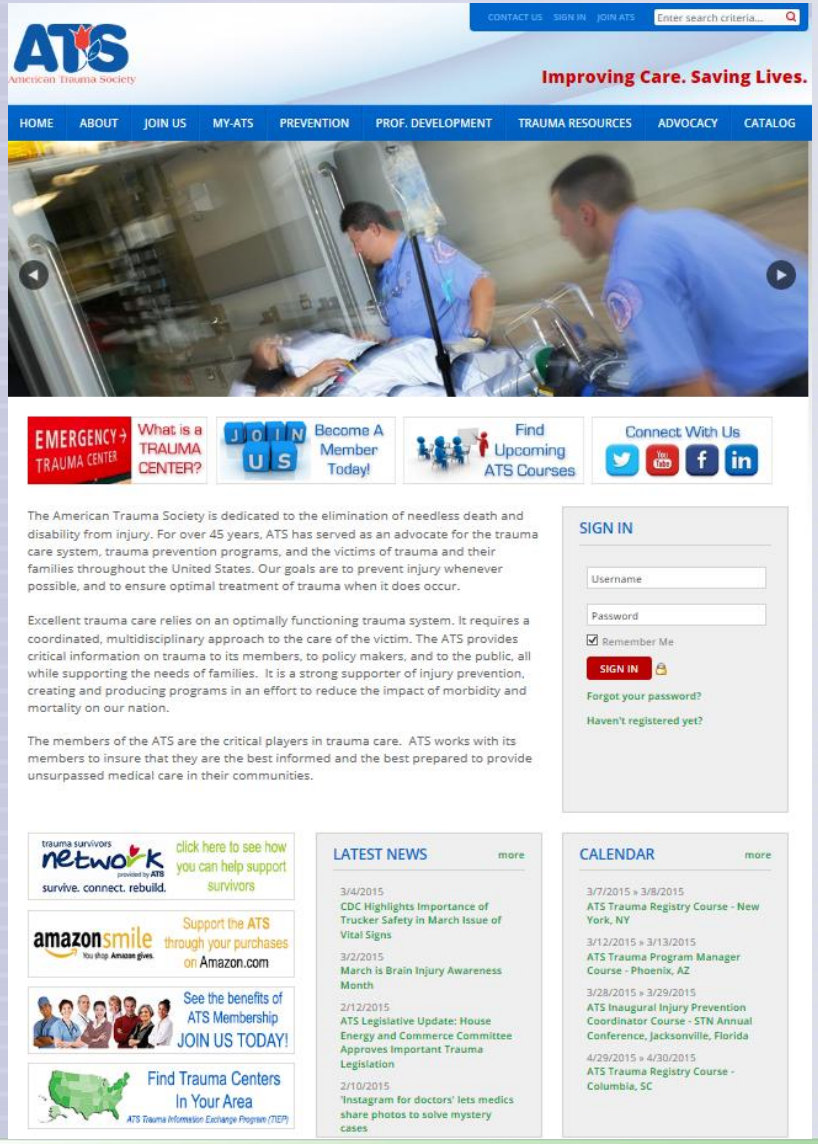
Discussion Posts

50 per page | Post New Message

Thread Subject	Replies	Last Post	Community Name
Practice Questions for ACS Survey	1	2 hours ago by Angela Basham-Salf	Open Forum
???? Professional Development of Trauma Nurses ???	7	23 hours ago by Philip Angelo	Open Forum
Trauma Process in the ED	4	yesterday by Philip Angelo	Open Forum
Registry Inclusion	4	4 days ago by Nathan Christopherson	Open Forum
Communication checklist	2	6 days ago by Dawn-Mala Simmons	Open Forum
Yearly Performance ScoreCard	0	7 days ago by Kathy Mocek	Open Forum
ICU RN ratios	0	7 days ago by Robert Spivey	Open Forum
OR Availability Level I & II Centers (Orange Book Guidelines)	2	7 days ago by Tabitha Uitenbroek	Open Forum
Propofol	1	7 days ago by Dusty Lynn	Open Forum
r-TEG in Trauma Order Set	2	8 days ago by Sharon Perry	Open Forum
Code and Critical Care coverage of ED docs with new orange book	2	8 days ago by Lori Bauman	Open Forum
Community handouts	2	8 days ago by Donna Lee	Injury Prevention
Community handouts	1	8 days ago by Naomi Benjamin	Open Forum
ITLS	2	8 days ago by Dawn-Mala Simmons	Open Forum
Propofol	0	8 days ago by Shakeva Swain	Pediatric Trauma
SBIRT charges	0	9 days ago by Kim Muramoto	Open Forum
It's not too late- pediatric focused TOPIC course	2	9 days ago by Christine McKenna	Open Forum
Formal ICU plan for Emergency coverage	0	9 days ago by Dolores LaDuke	Open Forum
Pediatric - specific PI filters	0	9 days ago by Lynn Eastes	Open Forum
Definition for Failed Non- Op Management	0	10 days ago by Anjenette Juracek	Open Forum
Trauma Diversion Policy	1	10 days ago by Renae Jacobson	Open Forum
Level III Facility Peer Review/Morbidity + Mortality	1	10 days ago by Matthew Gulick	Open Forum
What are the educational requirements for you adult trauma ICUs? Do you require ongoing tncc? And/or tcar? Is this a requirement prior to start or do you pay for this within the first year? Any other requirements?	8	10 days ago by Matthew Gulick	Open Forum
24/7 OR staffing	0	12 days ago by Tabitha Uitenbroek	Open Forum
Trauma Course	12	13 days ago by Marty Collins	Open Forum
IV warmers in ED	5	14 days ago by Beverly Gottula	Open Forum
SBIRT	2	14 days ago by Leeann Johnson	Open Forum

American Trauma Society



- Training courses
  - TPM course
  - Registrar course
    - Certification
  - Injury Prevention course

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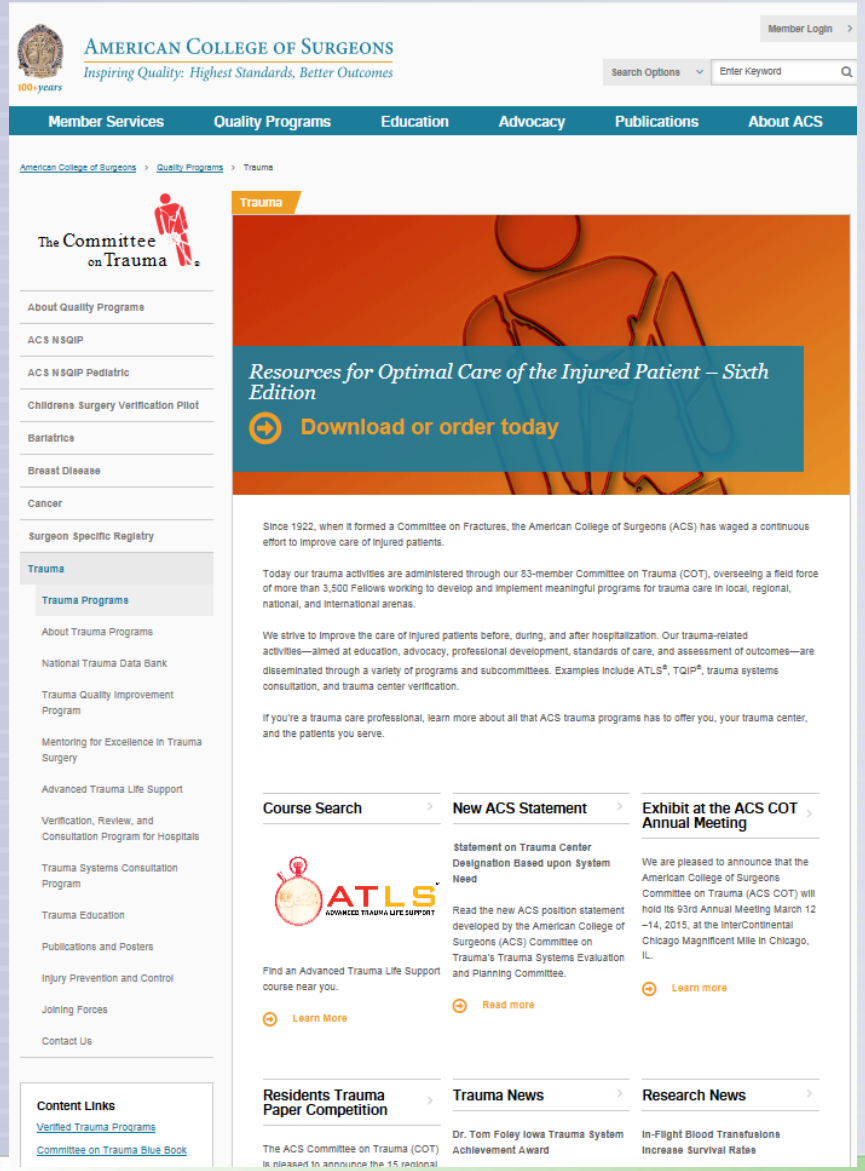
American College of Surgeons



- The Orange Book
- ATLS
  - ATLS Course search
- National Trauma Data Bank

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mitrauma.org

NTDB / NTDS

- NTDS website: www.ntdsdictionary.org
- NTDB website: www.ntdbdatacenter.com

- Level 3s
  - Must collect to NTDS Standard
  - Must submit to NTDB and State Registry

- Level 4s
  - Must collect to NTDS Standard
  - Must submit to State Registry

NTDS

The NTDS defines all the standard elements that need to be collected on trauma patients.

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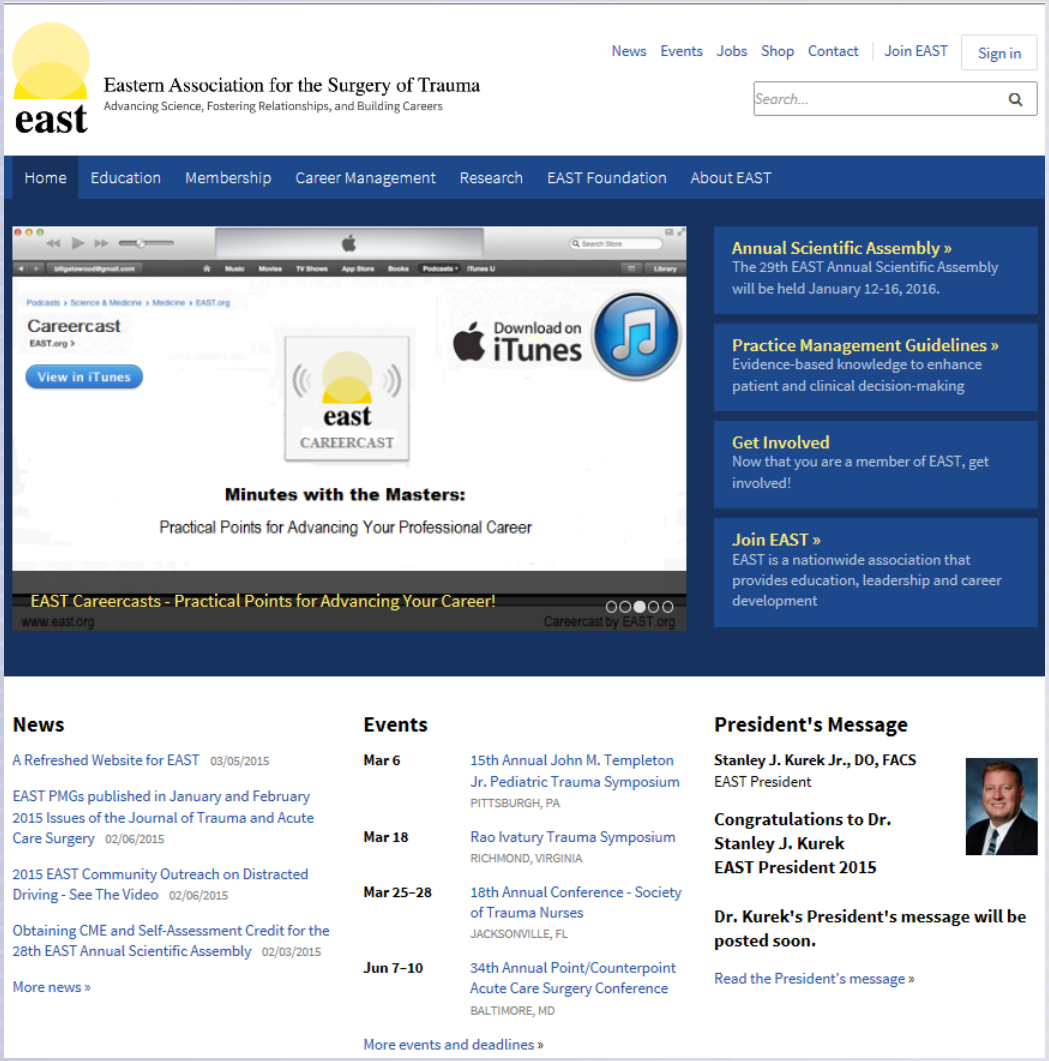
EAST



- www.east.org

- Great resource for practice management guidelines.

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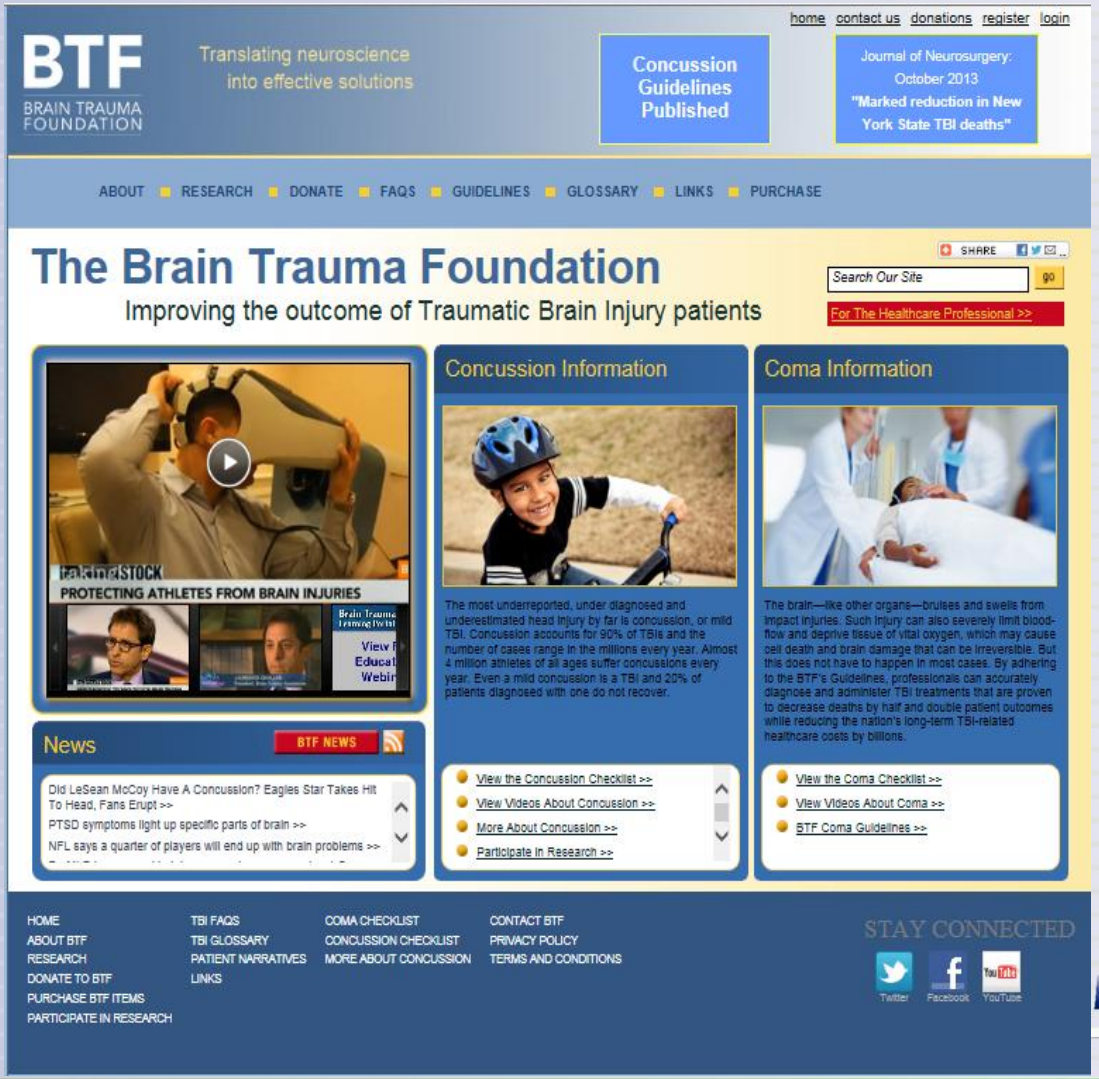
Brain Trauma Foundation



- www.braintrauma.org

- Guidelines for pre-hospital, ED, OR, and post-op management of TBI.

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mitrauma.org

Other Websites

- Trauma Center Association of America
  - www.traumacenters.org
- Society of Critical Care Medicine
  - www.sccm.org
- Emergency Nurses Association (TNCC & ENPC)
  - www.ena.org
- The Trauma Professional's Blog
  - www.regionstraumapro.com

Tools

Trauma Flow Sheets

- Can be on paper or built into EMR
- Provide consistent charting during trauma resuscitation that captures critical PI elements.
- Helps ensure ATLS / TNCC is followed during resuscitation.

Trauma Flow Sheets

Trauma Resuscitation

Emergency Department

Page 1 of 4

☐ MidMichigan Medical Center-Clare ☐ MidMichigan Medical Center-Gratiot ☐ MidMichigan Medical Center-Gladwin ☐ MidMichigan Medical Center-Midland

Time:	Pulse:	B/P:	RR:	SpO2:	Temp:	Height	Weight

Age:_____ Sex: ☐ Male ☐ Female

Allergies:_____

Trauma Code ☐ I ☐ II Paged:_____

Patient Arrival Time:_____

Trauma Sign-In

	Name (Please Print)	Time of Arrival
*Trauma Surgeon		
*ED Attending		
*Anesthesia / CRNA		
*Primary Nurse		
*Scribe Nurse 1		
ED Tech		
Secondary Nurse		
Trauma PA		
Laboratory		
Respiratory		
Radiology		
Security		
Other:		
Other:		

* Mandatory for Code I

Mechanism of Injury

Time of Injury:_____

☐ Auto Accident ☐ Auto vs. ☐ Bicycle ☐ Pedestrian

☐ Other_____ Speed_____

☐ Driver ☐ Passenger Seatbelt: ☐ Yes ☐ No ☐ Airbag

☐ Frontseat ☐ Backseat ☐ Ejected ☐ Rollover

☐ Motorcycle vs._____ Helmet: ☐ Yes ☐ No

☐ Bicycle vs._____ Helmet: ☐ Yes ☐ No

☐ Assault ☐ Blunt ☐ Penetrating ☐ Stabbing ☐ Gunshot

Weapon_____

☐ Fall (Distance)_____

☐ Other (Narrative)_____

Pre-Hospital

Mode Arrival: ☐ EMS ☐ Air ☐ Private Auto

Transfer: ☐ Yes ☐ No From:_____

O2 ☐ NC ☐ NRB ☐ Airway ☐ Bagged ☐ CPR

☐ ET #_____

☐ Cervical Collar ☐ Backboard

☐ Splint ☐ IV site/gauge

Tetanus: ☐ Unknown ☐ Up to date

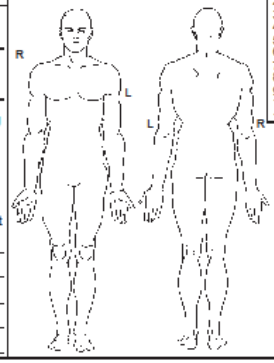
☐ ETOH use ☐ Drug use_____

Medications ☐ None

Past Medical Hx

☐ No significant Hx

Identify by Number



1. Laceration
2. Abrasion
3. Hematoma
4. Bruise
5. Deformity
6. Open Fracture
7. GSW
8. Stab
9. Burn
10. Amputation
11. Pain

Distribution: Original - Medical Record; (Duplex and stapled)

Rev. 12/12/2014

EMR03855

ED Nursing Notes

Trauma Resuscitation - Emergency Department, Continued

Page 2 of 4

A = Airway ☐ Patent ☐ ETT ☐ NC ☐ NRB ☐ Simple Mask

☐ O2_____ L/Min O2 SAT %_____

B = Breathing

☐ Normal ☐ Labored ☐ Abnormal

C = Circulation

Pulse ☐ Normal ☐ Absent Location_____

☐ CPR

Cap Refill ☐ Normal ☐ Delayed ☐ None

☐ External Hemorrhage, Location_____

Additional Notes_____

D = Disability Loss of Consciousness + / - PERRLA_____

Pupil Status Key - mm Scale R_____ **L**_____

Best Eye Opening:	
Eyes open spontaneously	4
Eyes open in response to voice	3
Eyes open in response to pain	2
No eye opening response	1
Best Verbal Response:	
Orientated (e.g., to person, place, time)	5
Confused, speaks but is disoriented	4
Inappropriate, but comprehensible words	3
Incomprehensible sounds but no words are spoken	2
None	1
Best Motor Response:	
Obeys command to move	6
Localizes painful stimulus	5
Withdraws from painful stimulus	4
Flexion, abnormal posturing of extremities	3
Extension, abnormal posturing of extremities	2
No movement or posturing	1
Total	

E = Expose and Warm

☐ Clothes Removed Time:_____

Warming: ☐ Blankets ☐ Bair Hugger ☐ Radiant Heat

Time Started:_____ ☐ Warm Fluid

G = Give comfort, notify / bring in family

Family Notified: ☐ Yes ☐ No

Contact Name/Relation_____ Time:_____

Family Present: ☐ Yes ☐ No Who?_____

H = Head to toe assessment Head / Neck

☐ Normal ☐ Ear / Nose Drainage

☐ Deviated Trachea: ☐ R ☐ L

H = Head to toe assessment, Cont.

☐ JVD ☐ Distracting Injury: ☐ Yes ☐ No

☐ Other_____

☐ C. Collar Applied Time:_____

Chest

☐ Normal ☐ Labored

☐ Symmetrical ☐ Asymmetrical

☐ SubQ Emphysema ☐ Flail

☐ Other_____ (wounds)

Lung Sounds ☐ Clear to Auscultation

☐ Equal Bilaterally

☐ Diminished: ☐ R ☐ L

☐ Absent: ☐ R ☐ L

☐ Other_____

Heart Tones

☐ Normal ☐ Distant/Muffled

Abdomen

☐ Normal ☐ Rigid ☐ Distended ☐ Tender

☐ Flank Pain: ☐ R ☐ L

☐ Bowel Sounds: ☐ Present ☐ Absent

Skin

☐ Warm ☐ Cool ☐ Pink ☐ Pale ☐ Dry

☐ Dusky ☐ Diaphoretic ☐ Cyanotic ☐ Clammy

Extremities

☐ Moves all Extremities

☐ Deformities:_____

☐ Unable to assess deformities

Pulses: (✓ at least one central & one peripheral)

	Present	Absent	Strength	Side
Central				
Carotid	☐	☐		☐ R ☐ L
Femoral	☐	☐		☐ R ☐ L
Peripheral				
Radial	☐	☐		☐ R ☐ L
Posterior Tibial	☐	☐		☐ R ☐ L
Pedal	☐	☐		☐ R ☐ L

I = Inspect Posterior - Log roll time:_____

☐ Normal ☐ Deformities_____

☐ Rectal Tone: ☐ Deferred ☐ Normal ☐ Decreased ☐ Absent

☐ Step Offs:_____

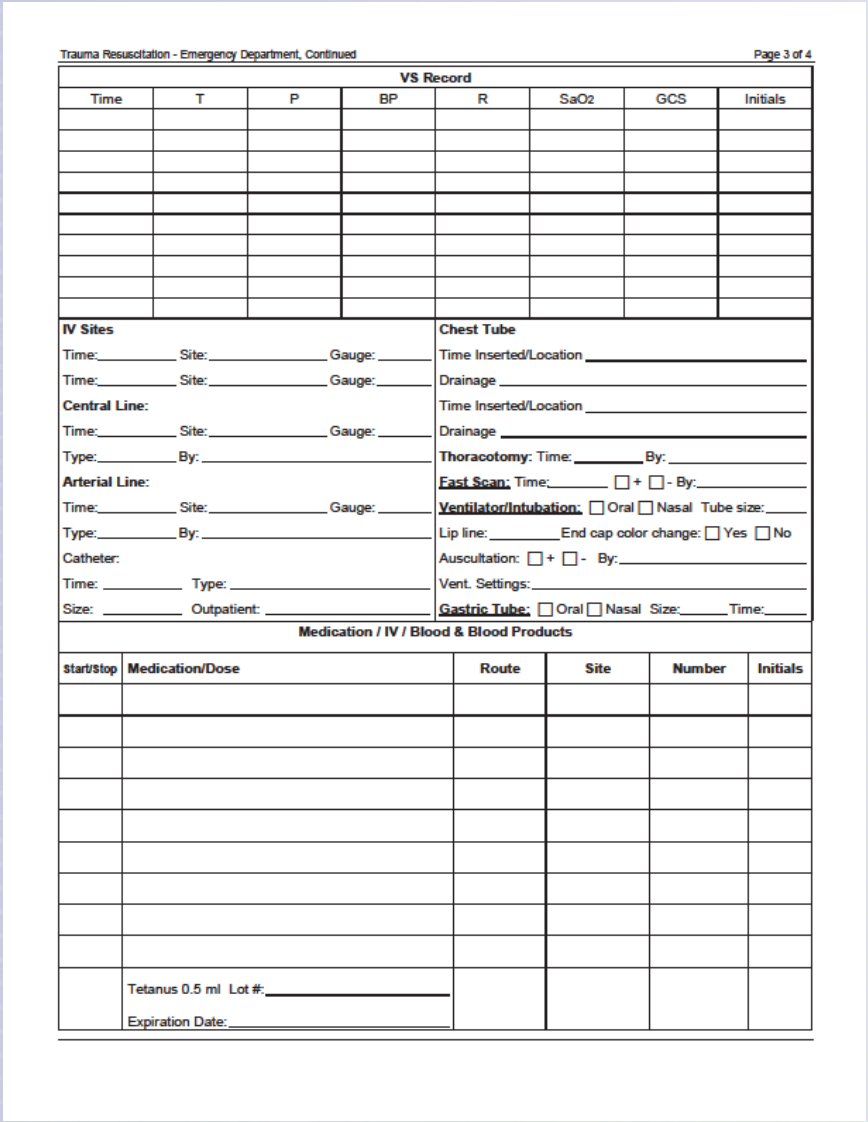
☐ Backboard Removed by_____

Time_____

☐ C-Collar Removed by_____

Time_____

Trauma Flow Sheets



Trauma Resuscitation - Emergency Department, Continued — Page 3 of 4

VS Record

Time	T	P	BP	R	SaO2	GCS	Initials

IV Sites

Time:____ Site:____ Gauge:____

Time:____ Site:____ Gauge:____

Central Line:

Time:____ Site:____ Gauge:____

Type:____ By:____

Arterial Line:

Time:____ Site:____ Gauge:____

Type:____ By:____

Catheter:

Time:____ Type:____

Size:____ Outpatient:____

Chest Tube

Time Inserted/Location____

Drainage____

Time Inserted/Location____

Drainage____

Thoracotomy: Time:____ By:____

Fast Scan: Time:____ ☐ + ☐ - By:____

Ventilator/Intubation: ☐ Oral ☐ Nasal Tube size:____

Lip line:____ End cap color change: ☐ Yes ☐ No

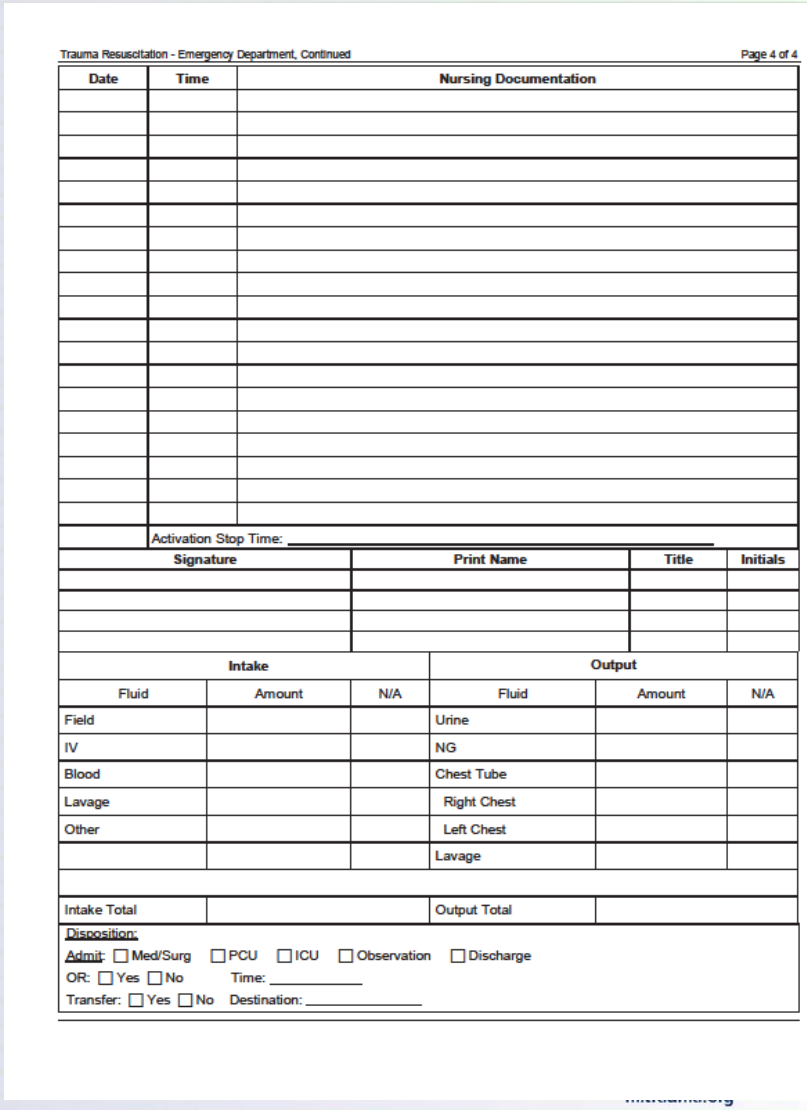
Auscultation: ☐ + ☐ - By:____

Vent. Settings:____

Gastric Tube: ☐ Oral ☐ Nasal Size:____ Time:____

Medication / IV / Blood & Blood Products

Start/Stop	Medication/Dose	Route	Site	Number	Initials
	Tetanus 0.5 ml Lot #:____ Expiration Date:____				



Trauma Resuscitation - Emergency Department, Continued — Page 4 of 4

Date	Time	Nursing Documentation
	Activation Stop Time:____	

Signature	Print Name	Title	Initials

Intake			Output		
Fluid	Amount	N/A	Fluid	Amount	N/A
Field			Urine		
IV			NG		
Blood			Chest Tube		
Lavage			Right Chest		
Other			Left Chest		
			Lavage		
Intake Total			Output Total		

Disposition:

Admit: ☐ Med/Surg ☐ PCU ☐ ICU ☐ Observation ☐ Discharge

OR: ☐ Yes ☐ No Time:____

Transfer: ☐ Yes ☐ No Destination:____

Trauma Activation Criteria

Trauma Code I Criteria:

Trauma Code I **MUST** be called for a patient with **ANY** of the following criteria:

1. **Confirmed** systolic blood pressure <90 at any time in adults, and age-specific hypotension in children, with mechanism attributable to trauma.
2. Gunshot wounds to the neck, chest, abdomen, or extremities proximal to elbow or knee.
3. GCS < 8 with mechanism attributable to trauma.
4. Trauma patients transferred from other hospitals who are receiving blood to maintain vital signs.
5. Any trauma patient intubated on scene whether arriving from scene of injury or transferring facility.
6. Trauma patients with respiratory compromise or obstruction:
    a. **Includes:** intubated patients who are transferred from another facility with ongoing respiratory compromise.
    b. **Excludes:** patients intubated at another facility that are currently stable from a respiratory stand point.
7. Hanging victims that meet any of the other 6 criteria listed above.
8. Trauma patients who have had cardiac arrest at any point prior to their arrival at MidMichigan Medical Center-Midland.

A Trauma Code I may be activated for additional reasons not listed above by the Emergency Department Physician and/or the Trauma/General Surgeon.

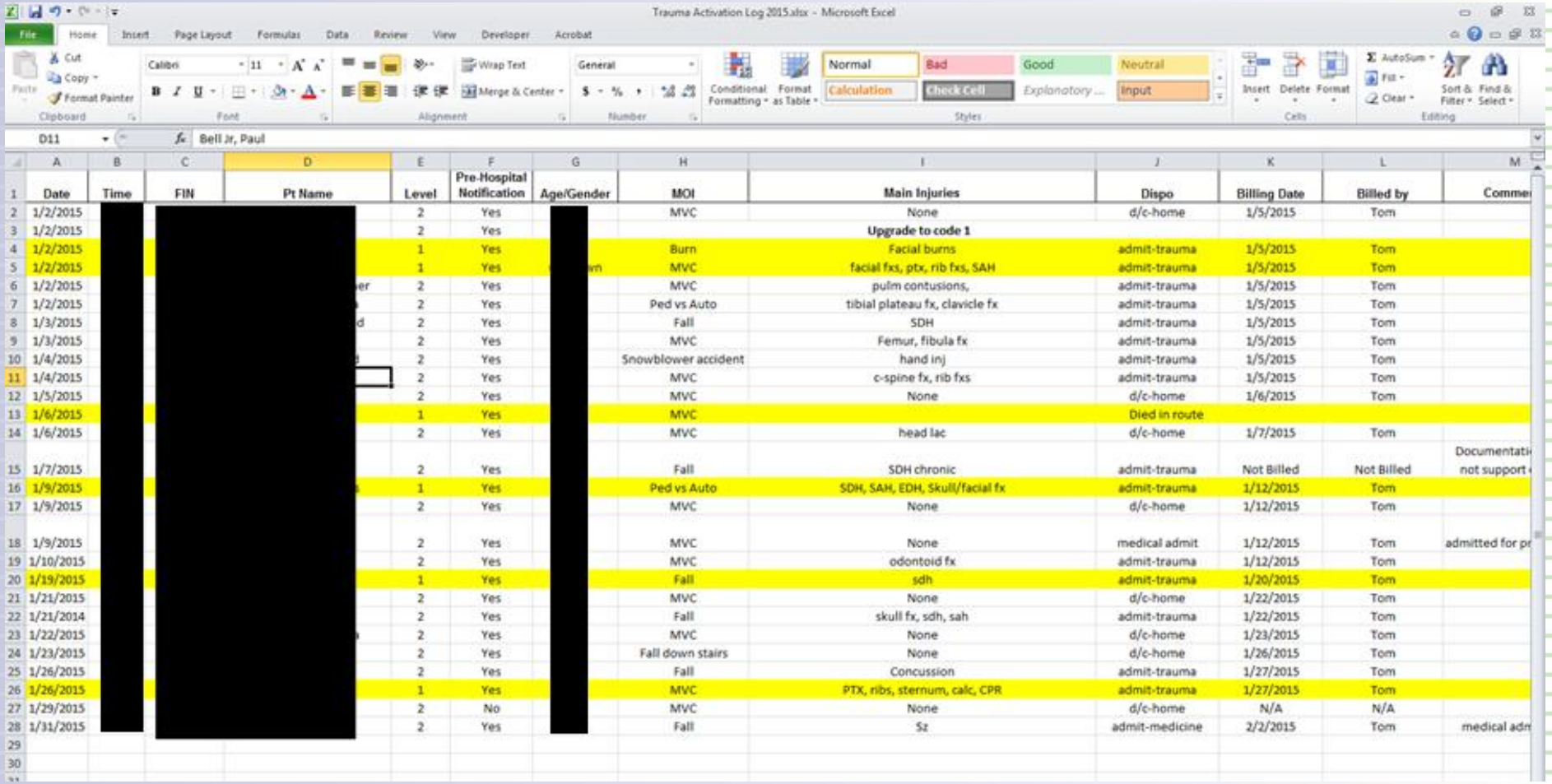
Trauma Code II Criteria:

A Trauma Code II Activation **MUST** be called for a patient who meets **ANY** of the following criteria:

1. Patients who met trauma code 1 criteria upon arrival to a referring facility that no longer meet code 1 criteria upon transfer to Midland.
2. Ejection from any motorized vehicle or animal.
3. Severe burns TBSA >9% with or without additional trauma.
4. Amputation, degloving, or crush injury proximal to wrist or ankle.
5. New onset paralysis s/p traumatic injury.
6. Mechanism suspicious for severe injury (examples: MVC > 35mph, MVC with extensive vehicle damage)
7. Auto vs Motorcycle
8. Auto vs Pedestrian
9. Auto vs. Bicycle
10. Fall from >15 feet
11. Fall down flight of stairs with high suspicion of injury
12. Death of passenger in same compartment of vehicle.
13. 2 or more proximal extremity fractures, open fractures, and/or pelvic fractures
14. Electrical burns (including lightning injuries)
15. Suspicion of inhalation injury
16. Geriatric patients with multi-system injuries (≥ 65 years old)
17. Anticoagulant patient falls with altered mentation from baseline
    a. At physician discretion if baseline mentation is unknown.
18. Positive seatbelt sign.

A Trauma Code II may be activated for additional reasons not listed above by the Emergency Department Physician and/or the Trauma/General Surgeon.

Activation Log



Trauma Activation Log 2015.xlsx - Microsoft Excel

D11: Bell Jr, Paul

	Date	Time	FIN	Pt Name	Level	Pre-Hospital Notification	Age/Gender	MOI	Main Injuries	Dispo	Billing Date	Billed by	Comme
2	1/2/2015	[redacted]	[redacted]	[redacted]	2	Yes	[redacted]	MVC	None	d/c-home	1/5/2015	Tom	
3	1/2/2015				2	Yes			**Upgrade to code 1**				
4	1/2/2015				1	Yes		Burn	Facial burns	admit-trauma	1/5/2015	Tom	
5	1/2/2015				1	Yes		MVC	facial fxs, ptx, rib fxs, SAH	admit-trauma	1/5/2015	Tom	
6	1/2/2015				2	Yes		MVC	pulm contusions,	admit-trauma	1/5/2015	Tom	
7	1/2/2015				2	Yes		Ped vs Auto	tibial plateau fx, clavicle fx	admit-trauma	1/5/2015	Tom	
8	1/3/2015				2	Yes		Fall	SDH	admit-trauma	1/5/2015	Tom	
9	1/3/2015				2	Yes		MVC	Femur, fibula fx	admit-trauma	1/5/2015	Tom	
10	1/4/2015				2	Yes		Snowblower accident	hand inj	admit-trauma	1/5/2015	Tom	
11	1/4/2015				2	Yes		MVC	c-spine fx, rib fxs	admit-trauma	1/5/2015	Tom	
12	1/5/2015				2	Yes		MVC	None	d/c-home	1/6/2015	Tom	
13	1/6/2015				1	Yes		MVC		Died in route			
14	1/6/2015				2	Yes		MVC	head lac	d/c-home	1/7/2015	Tom	
15	1/7/2015				2	Yes		Fall	SDH chronic	admit-trauma	Not Billed	Not Billed	Documentati not support
16	1/9/2015				1	Yes		Ped vs Auto	SDH, SAH, EDH, Skull/facial fx	admit-trauma	1/12/2015	Tom	
17	1/9/2015				2	Yes		MVC	None	d/c-home	1/12/2015	Tom	
18	1/9/2015				2	Yes		MVC	None	medical admit	1/12/2015	Tom	admitted for p
19	1/10/2015				2	Yes		MVC	odontoid fx	admit-trauma	1/12/2015	Tom	
20	1/19/2015				1	Yes		Fall	sdh	admit-trauma	1/20/2015	Tom	
21	1/21/2015				2	Yes		MVC	None	d/c-home	1/22/2015	Tom	
22	1/21/2014				2	Yes		Fall	skull fx, sdh, sah	admit-trauma	1/22/2015	Tom	
23	1/22/2015				2	Yes		MVC	None	d/c-home	1/23/2015	Tom	
24	1/23/2015				2	Yes		Fall down stairs	None	d/c-home	1/26/2015	Tom	
25	1/26/2015				2	Yes		Fall	Concussion	admit-trauma	1/27/2015	Tom	
26	1/26/2015				1	Yes		MVC	PTX, ribs, sternum, calc, CPR	admit-trauma	1/27/2015	Tom	
27	1/29/2015				2	No		MVC	None	d/c-home	N/A	N/A	
28	1/31/2015				2	Yes		Fall	Sz	admit-medicine	2/2/2015	Tom	medical adm

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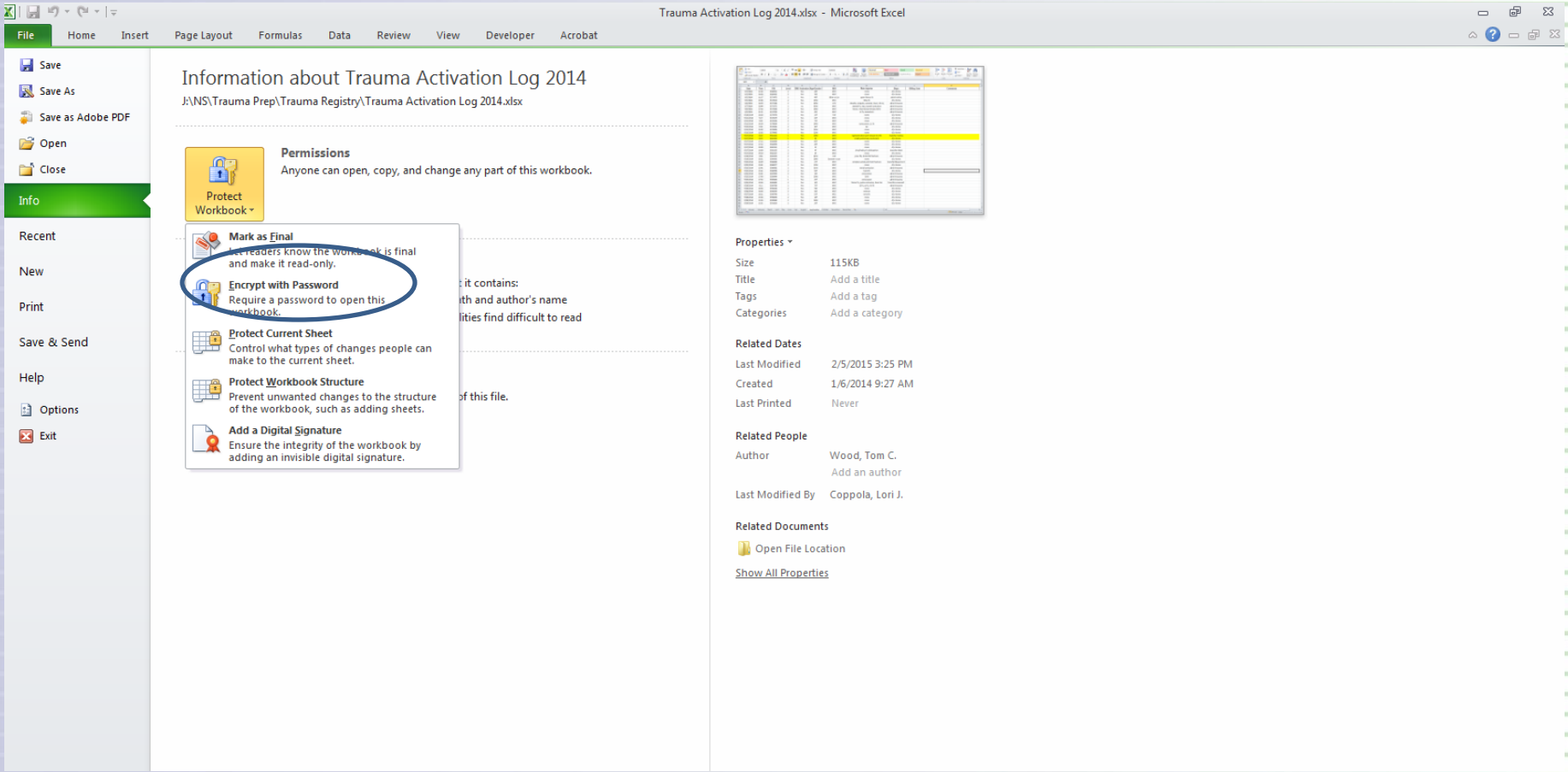
Protecting Information



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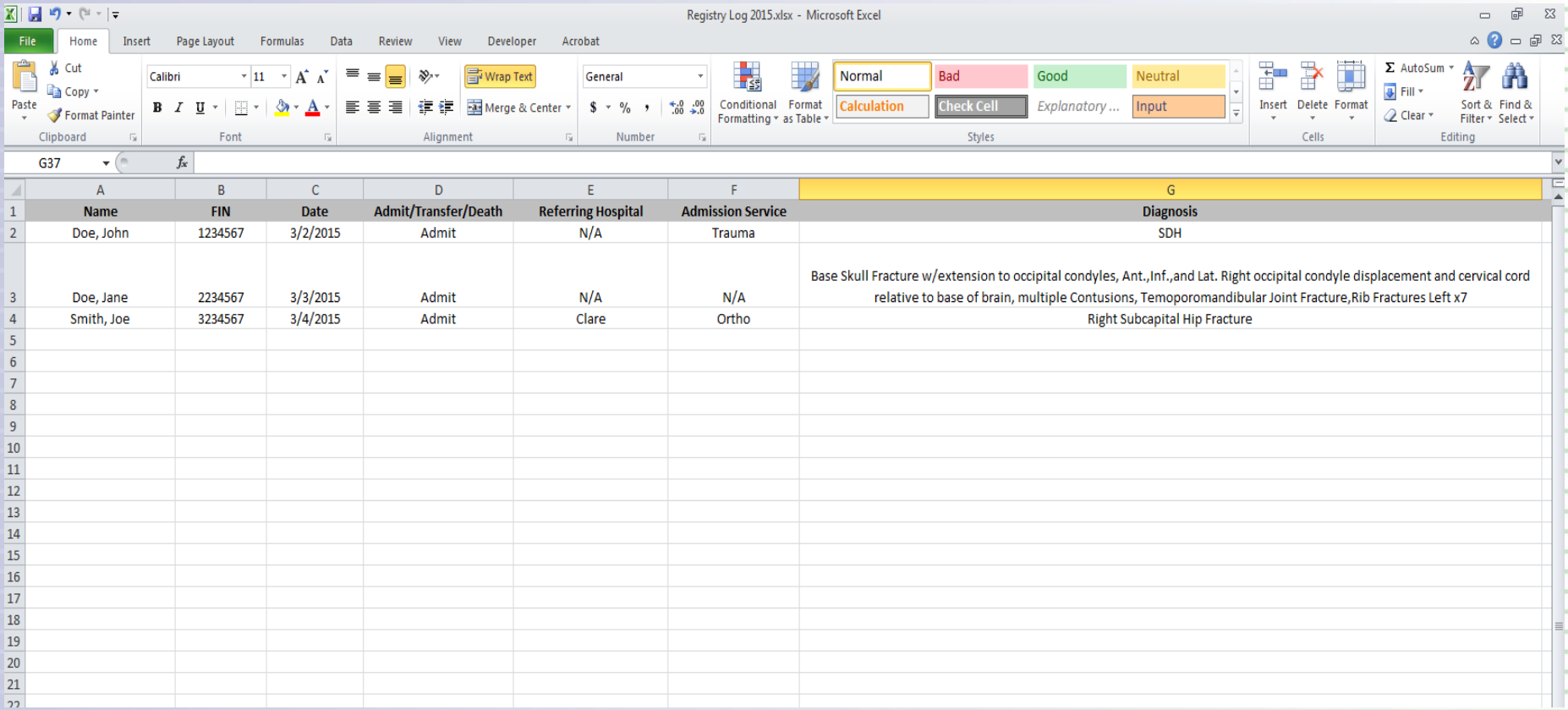
Registry Log



	A	B	C	D	E	F	G
1	**Name**	**FIN**	**Date**	**Admit/Transfer/Death**	**Referring Hospital**	**Admission Service**	**Diagnosis**
2	Doe, John	1234567	3/2/2015	Admit	N/A	Trauma	SDH
3	Doe, Jane	2234567	3/3/2015	Admit	N/A	N/A	Base Skull Fracture w/extension to occipital condyles, Ant.,Inf.,and Lat. Right occipital condyle displacement and cervical cord relative to base of brain, multiple Contusions, Temoporomandibular Joint Fracture,Rib Fractures Left x7
4	Smith, Joe	3234567	3/4/2015	Admit	Clare	Ortho	Right Subcapital Hip Fracture
5							
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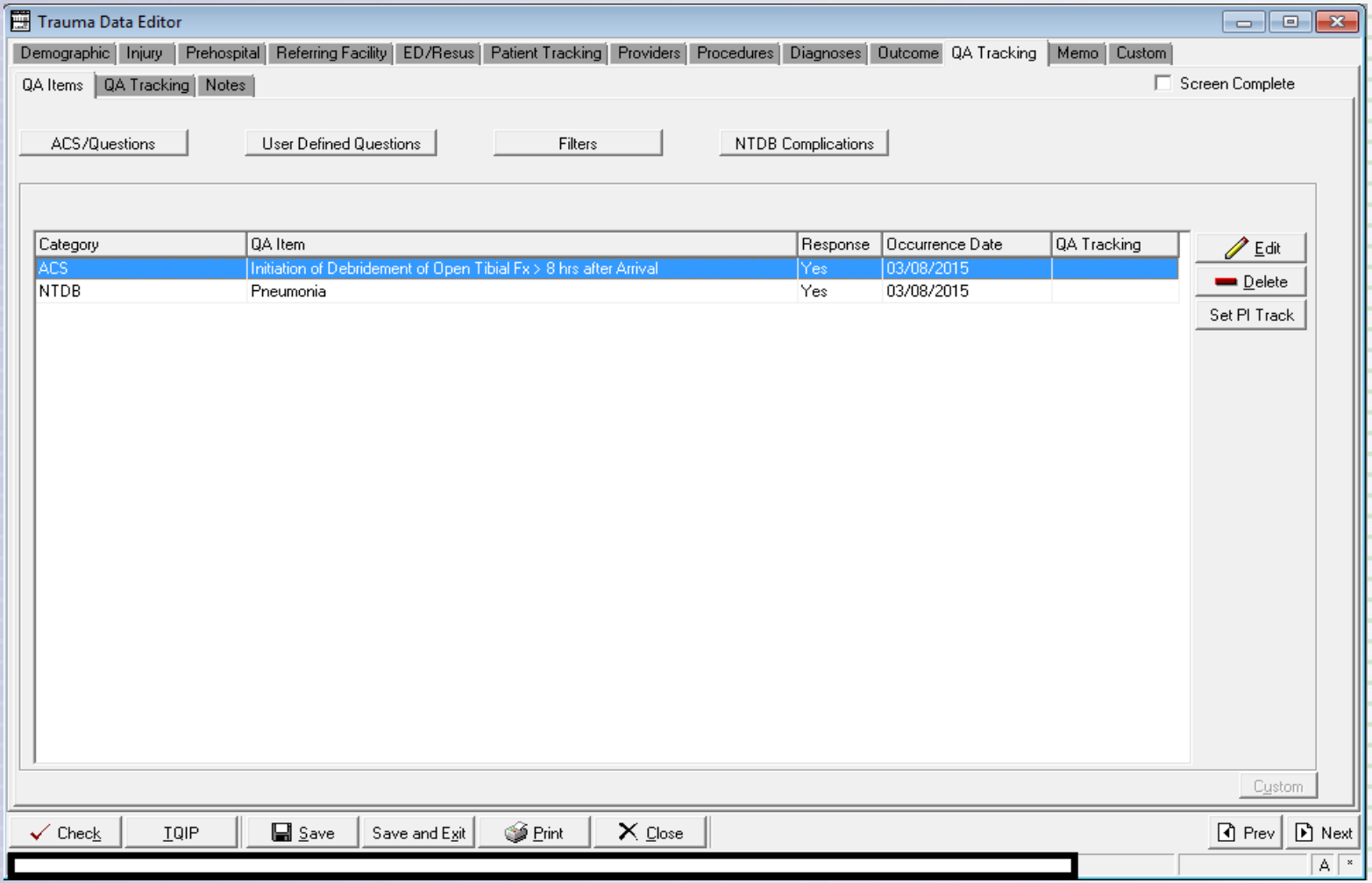
21							
22							

Performance Improvement Tracking

- Two main methods of PI tracking:
  - Home grown method (example: excel)
  - Registry method

- Goal is accurate and thorough tracking of all PI issues.

PI Tracking: Registry



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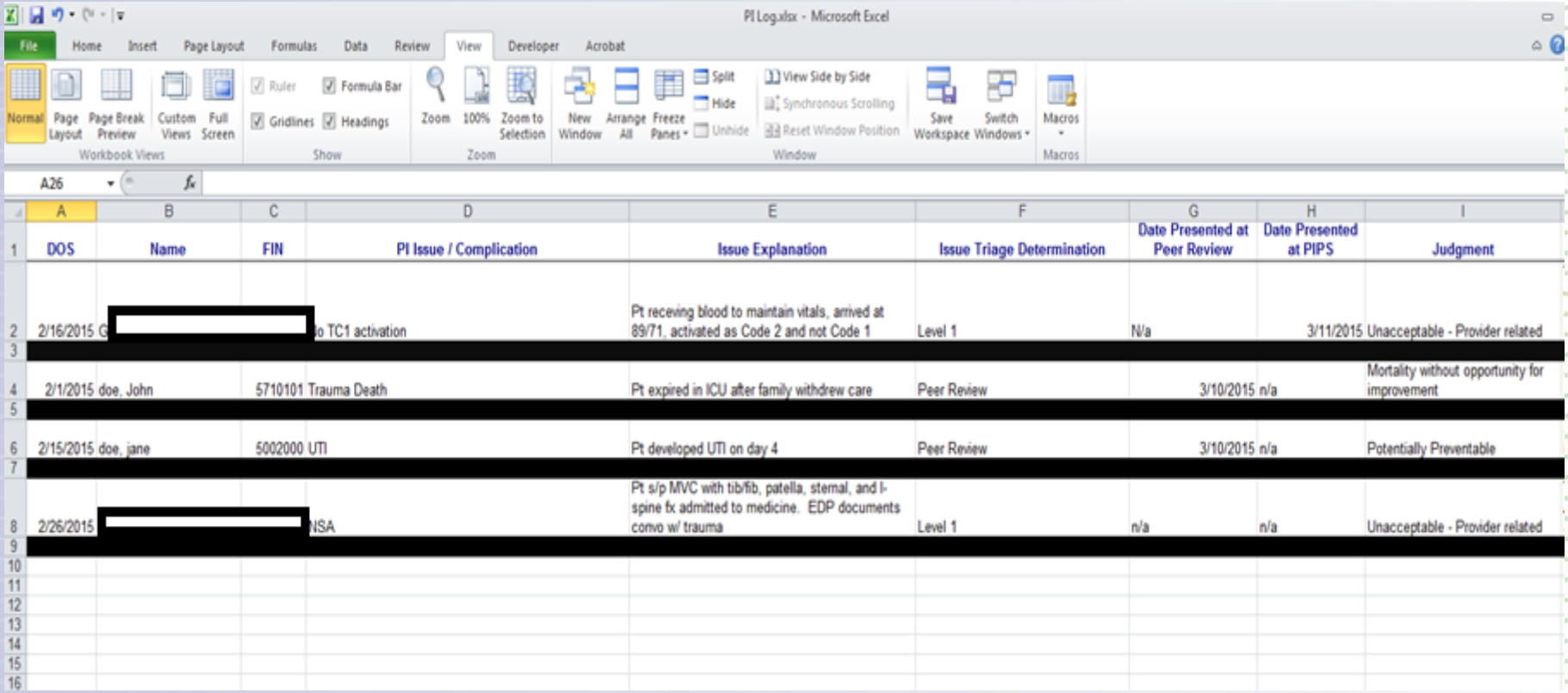
PI Tracking : Excel



PI Log.xlsx - Microsoft Excel

File | Home | Insert | Page Layout | Formulas | Data | Review | View | Developer | Acrobat

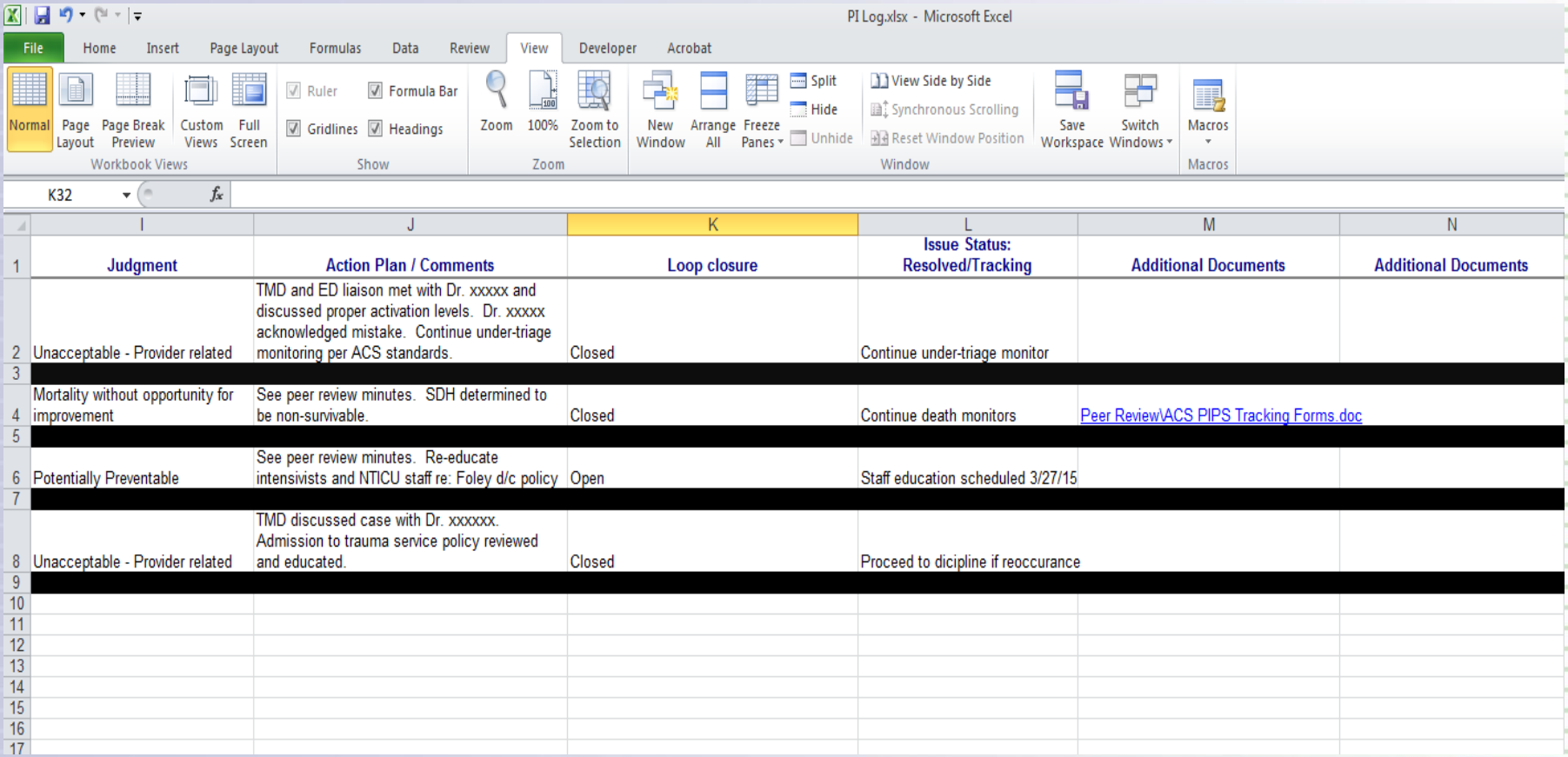
Normal | Page Layout | Page Break Preview | Custom Views | Full Screen | Ruler | Gridlines | Formula Bar | Headings | Zoom | 100% | Zoom to Selection | New Window | Arrange All | Freeze Panes | Split | Hide | Unhide | View Side by Side | Synchronous Scrolling | Reset Window Position | Save Workspace | Switch Windows | Macros

Workbook Views | Show | Zoom | Window | Macros

A26

	A	B	C	D	E	F	G	H	I
1	DOS	Name	FIN	PI Issue / Complication	Issue Explanation	Issue Triage Determination	Date Presented at Peer Review	Date Presented at PIPS	Judgment
2	2/16/2015 G	[redacted]		o TC1 activation	Pt receving blood to maintain vitals, arrived at 89/71, activated as Code 2 and not Code 1	Level 1	N/a	3/11/2015	Unacceptable - Provider related
3	[redacted]								
4	2/1/2015 doe, John		5710101	Trauma Death	Pt expired in ICU after family withdrew care	Peer Review	3/10/2015	n/a	Mortality without opportunity for improvement
5	[redacted]								
6	2/15/2015 doe, jane		5002000	UTI	Pt developed UTI on day 4	Peer Review	3/10/2015	n/a	Potentially Preventable
7	[redacted]								
8	2/26/2015	[redacted]		NSA	Pt s/p MVC with tib/fib, patella, sternal, and l-spine fx admitted to medicine. EDP documents convo w/ trauma	Level 1	n/a	n/a	Unacceptable - Provider related
9	[redacted]								
10									
11									
12									
13									
14									
15									
16									

PI Tracking: Excel


PI Log.xlsx - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Acrobat

Normal Page Layout Page Break Preview Custom Views Full Screen — Workbook Views
Ruler Formula Bar Gridlines Headings — Show
Zoom 100% Zoom to Selection — Zoom
New Window Arrange All Freeze Panes Split Hide Unhide View Side by Side Synchronous Scrolling Reset Window Position — Window
Save Workspace Switch Windows — Macros

K32

	I	J	K	L	M	N
1	**Judgment**	**Action Plan / Comments**	**Loop closure**	**Issue Status: Resolved/Tracking**	**Additional Documents**	**Additional Documents**
2	Unacceptable - Provider related	TMD and ED liaison met with Dr. xxxxx and discussed proper activation levels. Dr. xxxxx acknowledged mistake. Continue under-triage monitoring per ACS standards.	Closed	Continue under-triage monitor		
3						
4	Mortality without opportunity for improvement	See peer review minutes. SDH determined to be non-survivable.	Closed	Continue death monitors	Peer Review\ACS PIPS Tracking Forms.doc	
5						
6	Potentially Preventable	See peer review minutes. Re-educate intensivists and NTICU staff re: Foley d/c policy	Open	Staff education scheduled 3/27/15		
7						
8	Unacceptable - Provider related	TMD discussed case with Dr. xxxxxx. Admission to trauma service policy reviewed and educated.	Closed	Proceed to dicipline if reoccurance		
9						
10						
11						
12						
13						
14						
15						
16						
17						

PI Tracking : Excel

K4

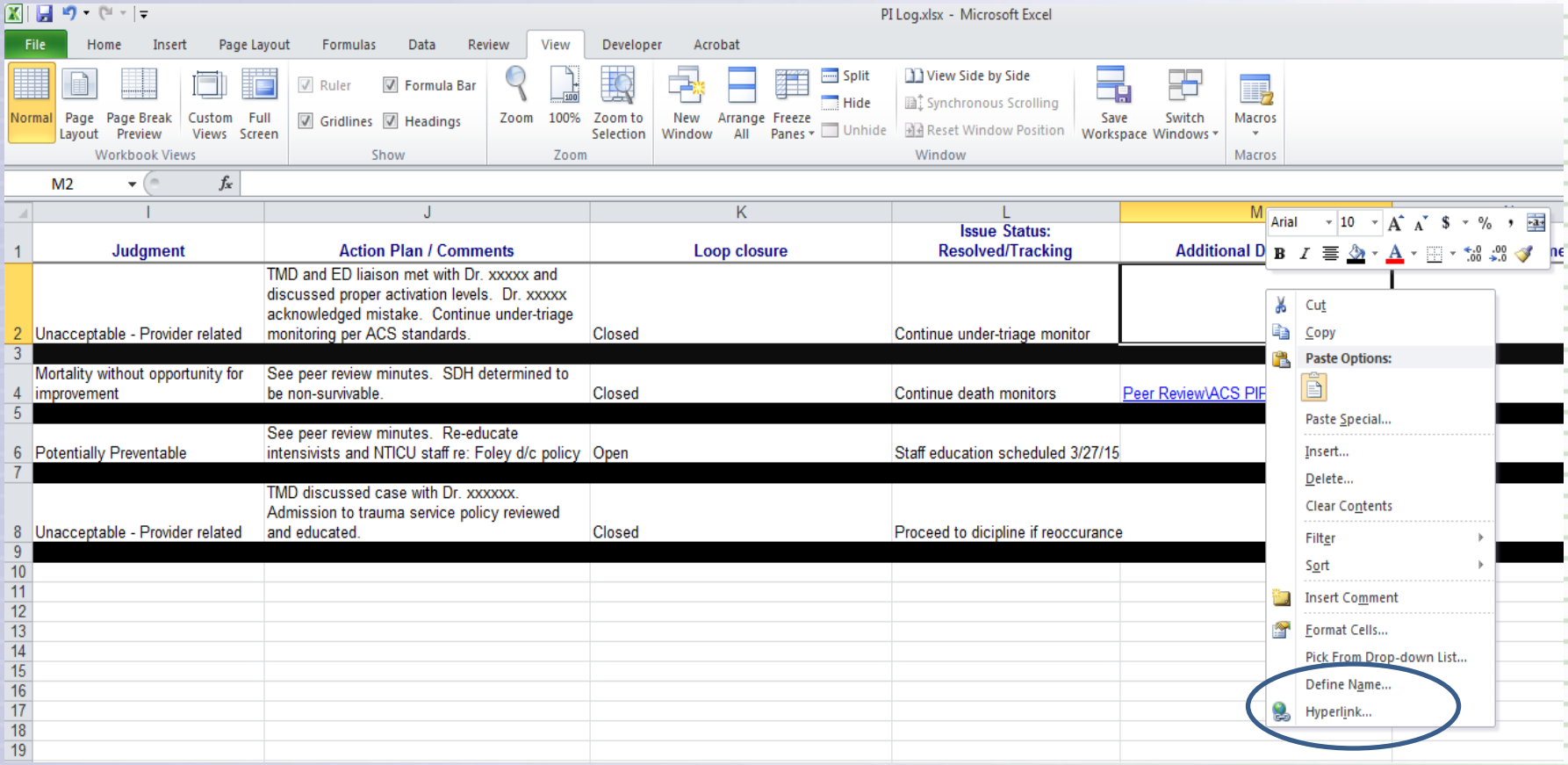
System PI Tracking

PI Issue	Date introduced	Where Introduced	Classifications	Discussion and Mitigation	Follow-up Date	Notes / Date instituted / Outcome	Re-evaluation/ Loop Closure
Questions regarding weaning protocol after patient still on sedation when weaning expected to occur.	6/1/14	NP brought to TPM, meeting established with respiratory dept	Impact: No harm Type: communication incompl info; airway management; delegation of tasks Domain: ICU care; therapeutic; phys/resid/MLP System: communication of guidelines Human: practitioner knowledge base	6/25 Meeting held with respiratory care director and supervisor to review guideline and establish alterations for trauma patients. Also discussed types of services available, those desired as program grows. Includes start of use of EndoClear product to clear ETT of secretions, availability of using volume targeted therapy, use of ETCO2 monitoring, BALs and Vigeleo.	Oct-14	Revised weaning protocol approved by critical care committee and training of respiratory care staff began.	Nov 14, new protocol fully implemented for trauma patients.

Peer Review Tracking

Pt ID	PI Issue	Date introduced	Where Introduced	Classifications	Discussion and Mitigation	Follow-up Date	Notes / Date instituted / Outcome	Re-evaluation/ Loop Closure
XXXXXXX	ETOH referrals	6/12/2014	Wkly PI	Type: communication	1. Order required for SW to see patients. Need to include this info in resident trauma orientation packet. 2. Hospital policy on nursing documentation requires dependent habits questions. If positive they initiate CIWA but consult is not automatic order	7/14	Automatic order for SW triggers with elevated CIWA score. Re-education of nursing staff by unit managers.	Ongoing

Adding materials to Excel



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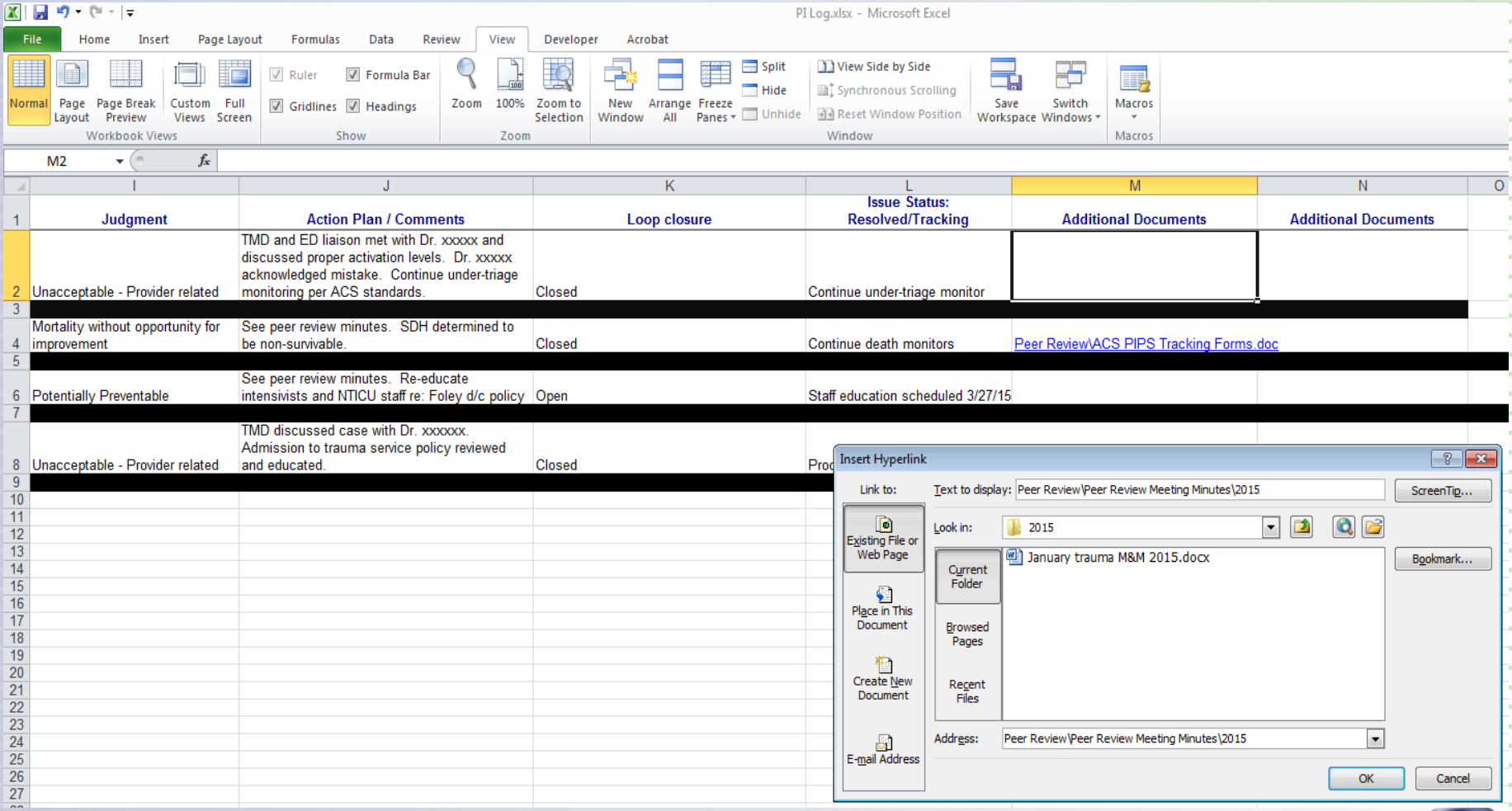
Adding materials to Excel



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Systems Committee Agenda

Trauma PIPS
February 11th, 2015

1. Call to Order
2. Trauma Dashboard Review
3. Prevention and Outreach Update: Kelli Jankens
4. Old Business
    a. Trauma Doe Registration Process
5. Discussion Topics
    a. PI Project: Door to HCT in anticoagulated head trauma
        i. Door to INR reversal for positive HCT findings
    b. MTQIP PI project: Unplanned intubation reduction
    c. MTQIP quarterly meeting updates
    d. Review of Activation criteria
    e. Trauma Skills Days
        i. ED June 8 2015
        ii. OR June 9 2015
        iii. ICU June 10 2015
        iv. Floors June 11 2015
6. Questions and Open Discussion
7. Next meeting April 8th, 8am, H1224
8. Adjournment

Peer Review Documents

2. Patient: __, __- year-old male **MR #_____ / Trauma #_____**
Date of admit: **Date of death:**
ISS: TRISS: **Autopsy:**
Donor: **MOI:**

Motor vehicle accident on (date) resulting in multiple fractures including comminuted, spiral left femoral, sternum with retrosternal hematoma, left scapula, sacrum, and left 4-7 ribs. Pt was initially seen in Big City, USA. Due to lack of resources at their hospital, he was transfer to hospital X. This patient has an extensive medical history including: HTN, atrial fibrillation, hypothyroidism & dyslipedemia. Home meds: aspirin 81 mg p.o. daily, B12 injection monthly, levothyroxine 50 mcg 1 daily, simvastatin 40 mg 1 daily, and diclofenac 75 mg p.r.n. Pt was admitted to the SICU. Cardiology was consulted d/t orthopedic surgery required for this femur fracture. They did clear him for OR; however, the anesthesia attending did not think he would survive the case and it was canceled. Anesthesiology did relay/discuss this information with the Orthopedic Attending and the patient's family. The Trauma Attending was not made aware of this decision. Pt was taken to the OR 3 days later for repair of the femur fracture. During the OR case his renal status declined and his base deficit went from 0.9 to 6.1. He ended up required CRRT and his renal failure was resolved on (date).

PI Issues	Discussion	Determination	*Recommendations / Action & Loop Closure Status
1. Lack of pre-hospital immobilization (9901)	Rural community hospital did not have the resources needed for a patient of this body habitus. The transferring provider did have the proper equipment for immobilization.	Unacceptable provider related.	***Loop Closure:*** **Spoke to ED staff post peer review, ED staff provider did use towel rolls, for neck just forgot to document.* ***Closed.***
2. Pneumonia (3008)	Patient has significant pulmonary history, including recurrently pneumonia. The patient was being treated for this prior to admission.	Non-preventable, disease related	***Loop Closure:*** **No action required* ***Closed.***
3. Respiratory failure (3015)	Poor mobility due to body habitus. Pt admitted with preexisting pneumonia. Patient was given "On-Q pump" to management rib fracture pain thereby increasing ease of breathing.	Potentially preventable, provider related.	***Loop Closure:*** ** Create Bariatric PMG to include each body system.* *Pending.*

9. Decubitus Ulcer (stage 2) (6503)	Right heel. Wound Team was consulted and recommendation carried out. He was placed in a off-lifting boot. This pressure wound did not advance.	Preventable, provider related	***Loop Closure:*** ** Create Bariatric PMG and include proper bed, skin assessment and early intervention.* *Pending.*

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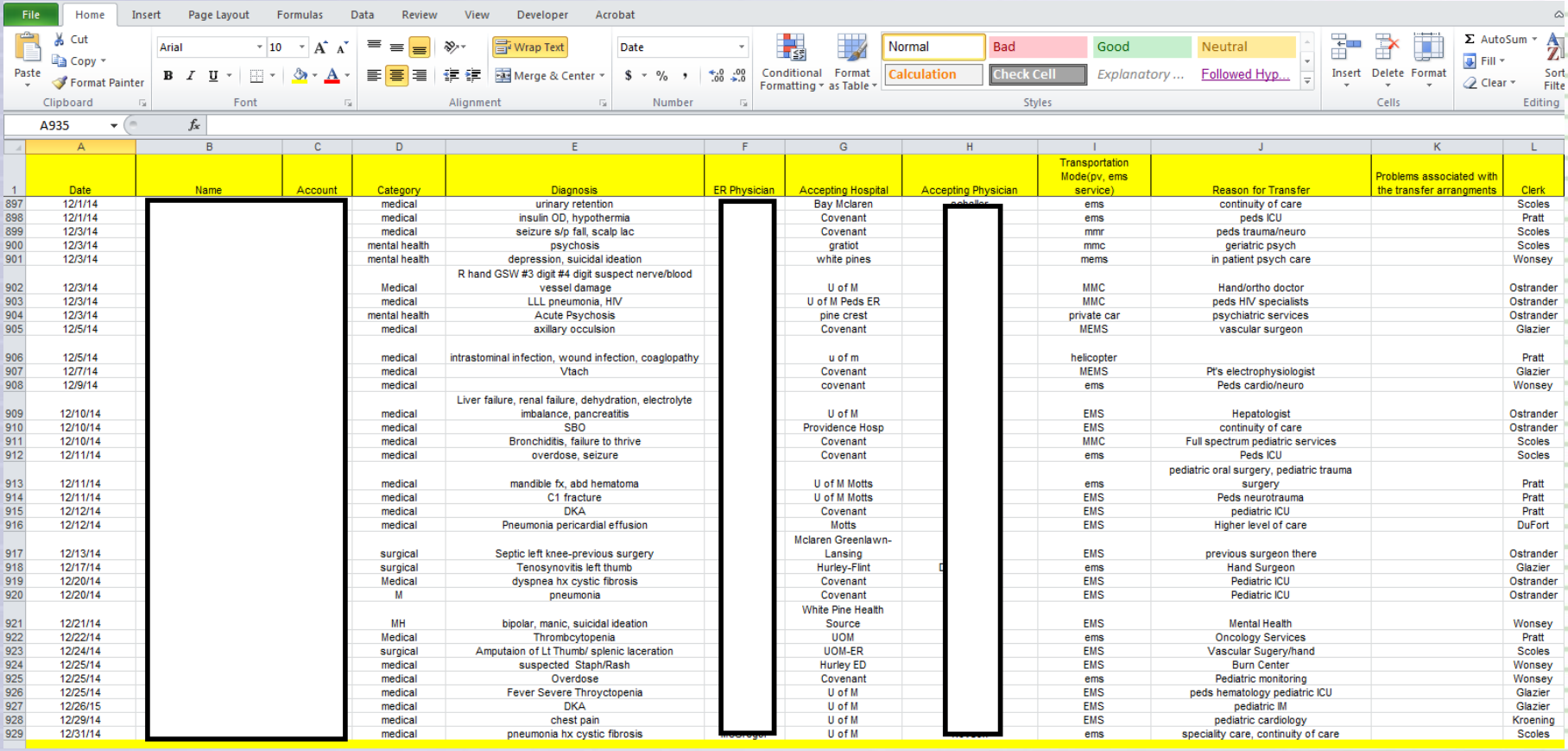
Transfer Logs



	A	B	C	D	E	F	G	H	I	J	K	L
1	Date	Name	Account	Category	Diagnosis	ER Physician	Accepting Hospital	Accepting Physician	Transportation Mode(pv, ems service)	Reason for Transfer	Problems associated with the transfer arrangments	Clerk
897	12/1/14	[redacted]		medical	urinary retention	[redacted]	Bay Mclaren	[redacted]	ems	continuity of care		Scoles
898	12/1/14			medical	insulin OD, hypothermia		Covenant		ems	peds ICU		Pratt
899	12/3/14			medical	seizure s/p fall, scalp lac		Covenant		mmr	peds trauma/neuro		Scoles
900	12/3/14			mental health	psychosis		gratiot		mmc	geriatric psych		Scoles
901	12/3/14			mental health	depression, suicidal ideation		white pines		mems	in patient psych care		Wonsey
902	12/3/14			Medical	R hand GSW #3 digit #4 digit suspect nerve/blood vessel damage		U of M		MMC	Hand/ortho doctor		Ostrander
903	12/3/14			medical	LLL pneumonia, HIV		U of M Peds ER		MMC	peds HIV specialists		Ostrander
904	12/3/14			mental health	Acute Psychosis		pine crest		private car	psychiatric services		Ostrander
905	12/5/14			medical	axillary occulsion		Covenant		MEMS	vascular surgeon		Glazier
906	12/5/14			medical	intrastominal infection, wound infection, coaglopathy		u of m		helicopter			Pratt
907	12/7/14			medical	Vtach		Covenant		MEMS	Pt's electrophysiologist		Glazier
908	12/9/14			medical			covenant		ems	Peds cardio/neuro		Wonsey
909	12/10/14			medical	Liver failure, renal failure, dehydration, electrolyte imbalance, pancreatitis		U of M		EMS	Hepatologist		Ostrander
910	12/10/14			medical	SBO		Providence Hosp		EMS	continuity of care		Ostrander
911	12/10/14			medical	Bronchiditis, failure to thrive		Covenant		MMC	Full spectrum pediatric services		Scoles
912	12/11/14			medical	overdose, seizure		Covenant		ems	Peds ICU		Socles
913	12/11/14			medical	mandible fx, abd hematoma		U of M Motts		ems	pediatric oral surgery, pediatric trauma surgery		Pratt
914	12/11/14			medical	C1 fracture		U of M Motts		EMS	Peds neurotrauma		Pratt
915	12/12/14			medical	DKA		Covenant		EMS	pediatric ICU		Pratt
916	12/12/14			medical	Pneumonia pericardial effusion		Motts		EMS	Higher level of care		DuFort
917	12/13/14			surgical	Septic left knee-previous surgery		Mclaren Greenlawn-Lansing		EMS	previous surgeon there		Ostrander
918	12/17/14			surgical	Tenosynovitis left thumb		Hurley-Flint	[redacted]	ems	Hand Surgeon		Glazier
919	12/20/14			Medical	dyspnea hx cystic fibrosis		Covenant		EMS	Pediatric ICU		Ostrander
920	12/20/14			M	pneumonia		Covenant		EMS	Pediatric ICU		Ostrander
921	12/21/14			MH	bipolar, manic, suicidal ideation		White Pine Health Source		EMS	Mental Health		Wonsey
922	12/22/14			Medical	Thrombcytopenia		UOM		ems	Oncology Services		Pratt
923	12/24/14			surgical	Amputaion of Lt Thumb/ splenic laceration		UOM-ER		EMS	Vascular Sugery/hand		Scoles
924	12/25/14			medical	suspected Staph/Rash		Hurley ED		EMS	Burn Center		Wonsey
925	12/25/14			medical	Overdose		Covenant		ems	Pediatric monitoring		Wonsey
926	12/25/14			medical	Fever Severe Throyctopenia		U of M		EMS	peds hematology pediatric ICU		Glazier
927	12/26/15			medical	DKA		U of M		EMS	pediatric IM		Glazier
928	12/29/14			medical	chest pain		U of M		EMS	pediatric cardiology		Kroening
929	12/31/14			medical	pneumonia hx cystic fibrosis		U of M		ems	speciality care, continuity of care		Scoles

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OR and Anesthesia Log

OPERATING ROOM & ANESTHESIA SERVICES CALL LOG FOR URGENT AND EMERGENT SURGERIES
Time called and arrived need to be noted for all procedures done during on-call hours (nights & weekends) including non-elective add-ons.

DATE	*REASON* L1 – Level 1 Activ L2 – Level 2 Activ Add-on	NAME (printed)	Signature	Time called or pager went off	TIME ARRIVED	Response Time	Surg? Yes No	If Surgery OR Start Time
		Nurse						
		Anesthesiologist						
		Anesth Resid						
		Nurse						
		Anesthesiologist						
		Anesth Resid						
		Nurse						
		Anesthesiologist						
		Anesth Resid						
		Nurse						
		Anesthesiologist						
		Anesth Resid						
		Nurse						
		Anesthesiologist						
		Anesth Resid						

Trauma Newsletter

MidMichigan Health
UNIVERSITY OF MICHIGAN HEALTH SYSTEM

Trauma Program Newsletter

MidMichigan Medical Center-Midland

Issue 3 Spring 2014

The Initial Management of Severe Traumatic Brain Injury

Thomas J. Veverka, MD, FACS
Trauma Medical Director

In This Issue:

As we progress in our development into a more mature trauma center, we all need to become more knowledgeable and comfortable with our initial management of patients with severe traumatic brain injury. As we all know, these injuries frequently involve the young, and aggressive and thorough management can help to optimize the neurologic function of the patient for years to come.

There are approximately 1.7 million TBI per year in the U.S., 75% of which are considered mild. Fifty-two thousand die each year from TBI and 275,000 are hospitalized. TBI is a contributing factor in 30.5% of all injury-related deaths and total costs (direct medical and indirect societal) was estimated at $76.5 billion for the year 2000 in the U.S.

As with all injured patients arriving in our emergency department, ATLS provides an excellent framework for initial evaluation and management. For a patient with a GCS of 3-8, immediate intubation is required. In this scenario, obvious severe primary structural damage to the brain has already occurred, and the entire focus moving forward is to avoid secondary injury. These secondary insults, hypotension, hypoxemia, hypocarbia, fever, and hyperglycemia have all been shown to worsen long-term outcomes. In addition, data suggests that ongoing agitation will trigger subsequent programmed neuronal cell death, so adequate sedation (without inducing hypotension) is a key element of care.

After establishing a stable airway and initiating resuscitation, a thorough patient evaluation searching for concomitant injuries, especially those involving ongoing blood loss thus threatening hemodynamic stability, must be carried out. Obviously, physical examination will have its limitations and full radiologic assessment is almost always necessary, but a patient with hypotension unresponsive to resuscitative efforts is assumed to be hemorrhaging and belongs in the OR for hemorrhage control. The patient with hemoperitoneum and a ruptured spleen can get a head CT post-operatively. As referenced in last

quarter's newsletter, reversal of anticoagulation can't be emphasized strongly enough. And early and consistent communication with the neurosurgeon on call is vital as well as with whomever is running the trauma service/critical care.

For the patient who has been stabilized and thoroughly evaluated and is now being admitted to the neurotrauma intensive care unit, close attention to a few details can prove critical. First of all, do not over-resuscitate with isotonic crystalloid solutions. Consider 3% NaCl where appropriate. Hyponatremia will only worsen brain swelling. If intracranial pressure (ICP) monitoring has been established, discuss a target cerebral perfusion pressure (CPP = MAP - ICP) with the neurosurgeon as well as measures to minimize cerebral edema (elevating the head of the bed, osmotic diuretics, etc.) On the other hand, if ICP monitoring has not been initiated, I will initially assume an ICP of 20 (normal < 10), and to maintain a CPP of 60 the mean arterial pressure will need to be maintained at 80. If you have determined that fluid resuscitation has been adequate, the addition of a vasopressor may be appropriate to reach the target MAP. I prefer norepinephrine. An arterial line is extremely helpful.

Ventilator management requires close scrutiny over the first 24 hours due to a large flux in physiologic demands in the patient. Neurosurgical guidelines recommend keeping the PaO_2 > 100 over the first 24-48 hours, and I usually target the $PaCO_2$ at 35. The amount of minute ventilation needed (tidal volume times rate) to maintain a $PaCO_2$ of 35 will change considerably over the first 12 hours as the patient's physiologic demands settle down after the acute trauma. This will require frequent ABG's or end-tidal CO_2 monitoring to avoid hyperventilation as a low $PaCO_2$ results in cerebral vasoconstriction and poor perfusion to already-injured brain.

If the patient develops a fever, be aggressive with providing acetaminophen, ibuprofen, and cooling blankets to bring the temperature down to 98.6 F. And sedate, sedate, sedate. I find that Fentanyl has much less hemodynamic effect (hypotension) than Propofol, although both may be needed. Remember, neuromuscular blockade is rarely indicated and should never be initiated without adequate sedation. Monitor and control blood sugars but do not overtreat and cause hypoglycemia. Keeping the blood sugar less than 180 is fine.

This article is only a bare outline of the issues we need to watch closely and address in our patients. I again stress the importance of coordinating care with the neurosurgeon, and I definitely expect a call if I am running the service regardless of the hour.

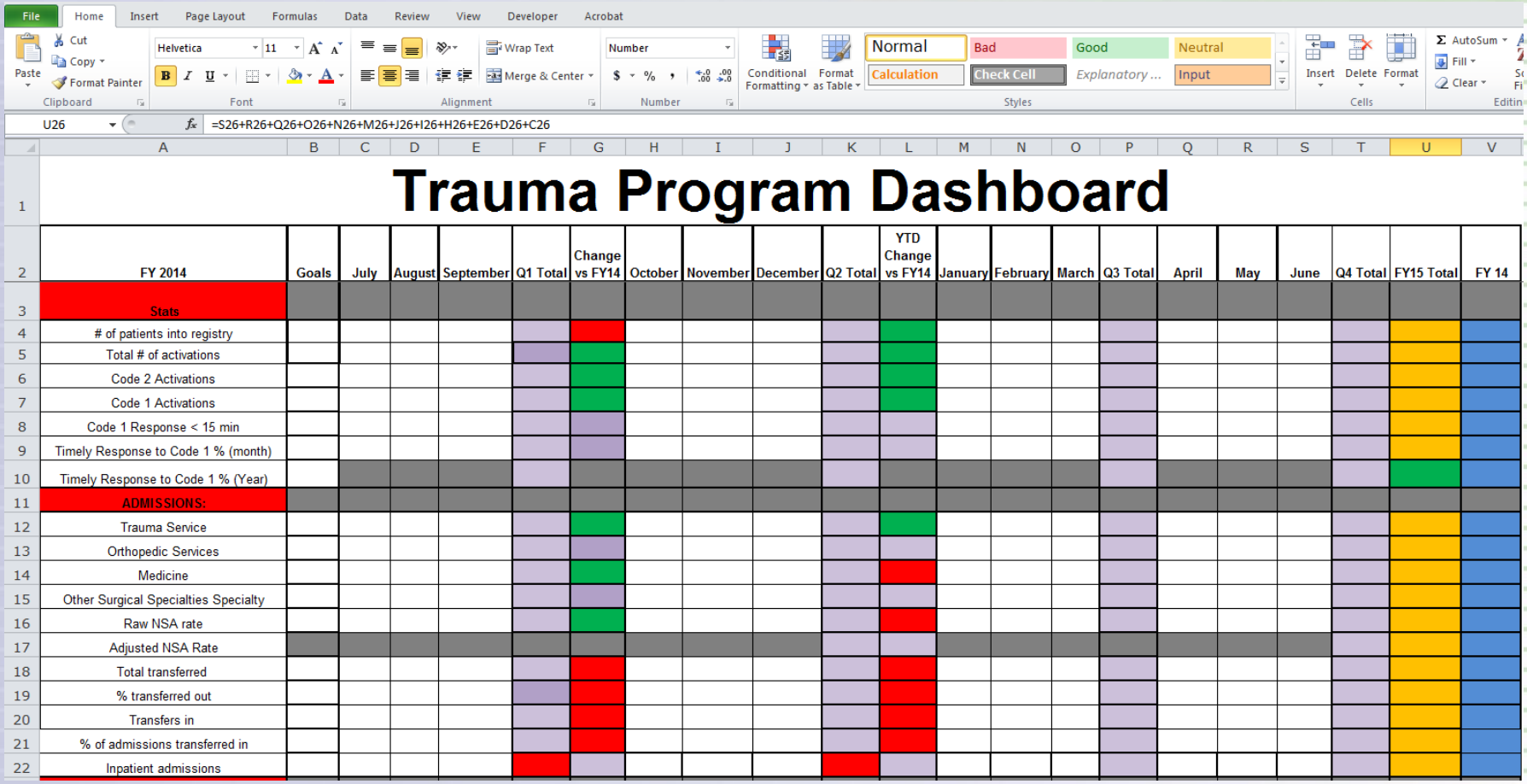
Click to view:

Midland Daily News article announcing our trauma verification

Midland Daily News article about seat belt usage

Clip of WMCU interview with Tom Wood about trauma verification

Trauma Dashboard



Trauma Program Dashboard

FY 2014	Goals	July	August	September	Q1 Total	Change vs FY14	October	November	December	Q2 Total	YTD Change vs FY14	January	February	March	Q3 Total	April	May	June	Q4 Total	FY15 Total	FY 14
Stats																					
# of patients into registry																					
Total # of activations																					
Code 2 Activations																					
Code 1 Activations																					
Code 1 Response < 15 min																					
Timely Response to Code 1 % (month)																					
Timely Response to Code 1 % (Year)																					
ADMISSIONS:																					
Trauma Service																					
Orthopedic Services																					
Medicine																					
Other Surgical Specialties Specialty																					
Raw NSA rate																					
Adjusted NSA Rate																					
Total transferred																					
% transferred out																					
Transfers in																					
% of admissions transferred in																					
Inpatient admissions																					

Michigan Trauma Coalition

mitrauma.org

Questions