

Thoughts about Tools and Tips



Trauma Performance Improvement

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What is Performance Improvement?

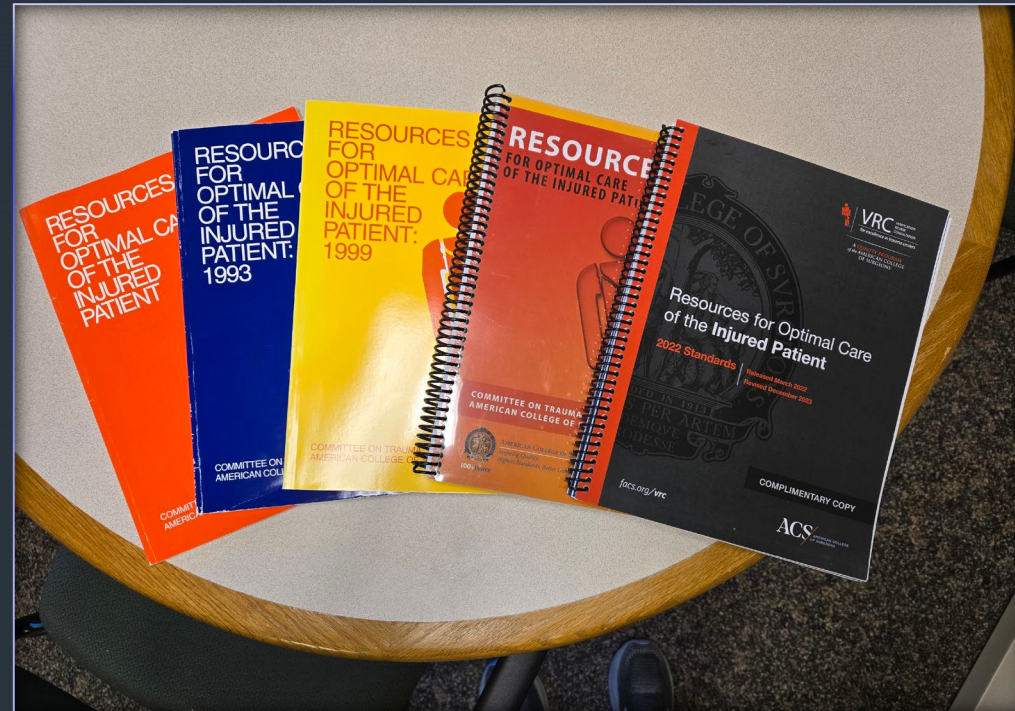


What is PI?

- Continuous systematic monitoring of the processes and outcomes of patient care
- Assures that care delivered is timely, appropriate, meets/exceeds quality standards
- Fosters an environment in which all care providers are competent and accountable
- Supports a culture of continuous learning, safety, and improvement across the entire continuum of care
- ***It is one of the most important elements of your program***
- ***Most common reason centers are cited during verification reviews***

The Evolution of Trauma PI

- Over the rainbow of standards books, the ACS provided guidance on PI process, definitions and expectations
- The Grey Book simply states expectations



PI is now an element of most of the 2022 ACS standards – highlighting the emphasis placed on the role of PI in your program



VRC VERIFICATION
REVIEW
CONSULTATION
for excellence in trauma centers

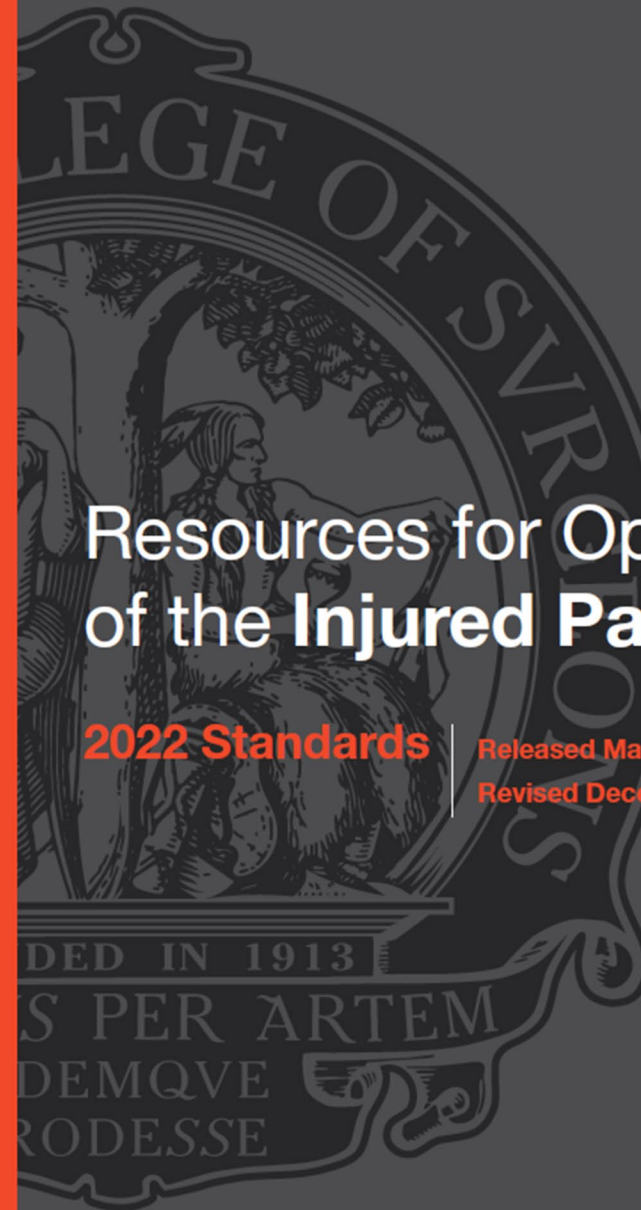
A **QUALITY PROGRAM**
of the AMERICAN COLLEGE
OF SURGEONS

Resources for Optimal Care of the **Injured Patient**

2022 Standards

Released March 2022

Revised December 2023

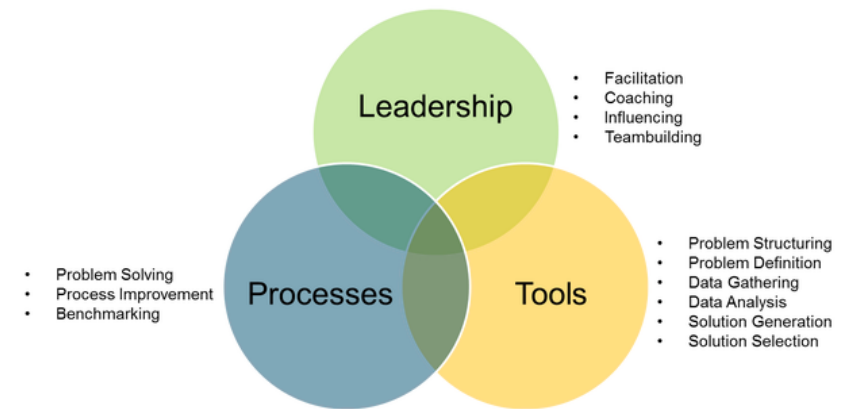


What Makes
PI
Challenging?



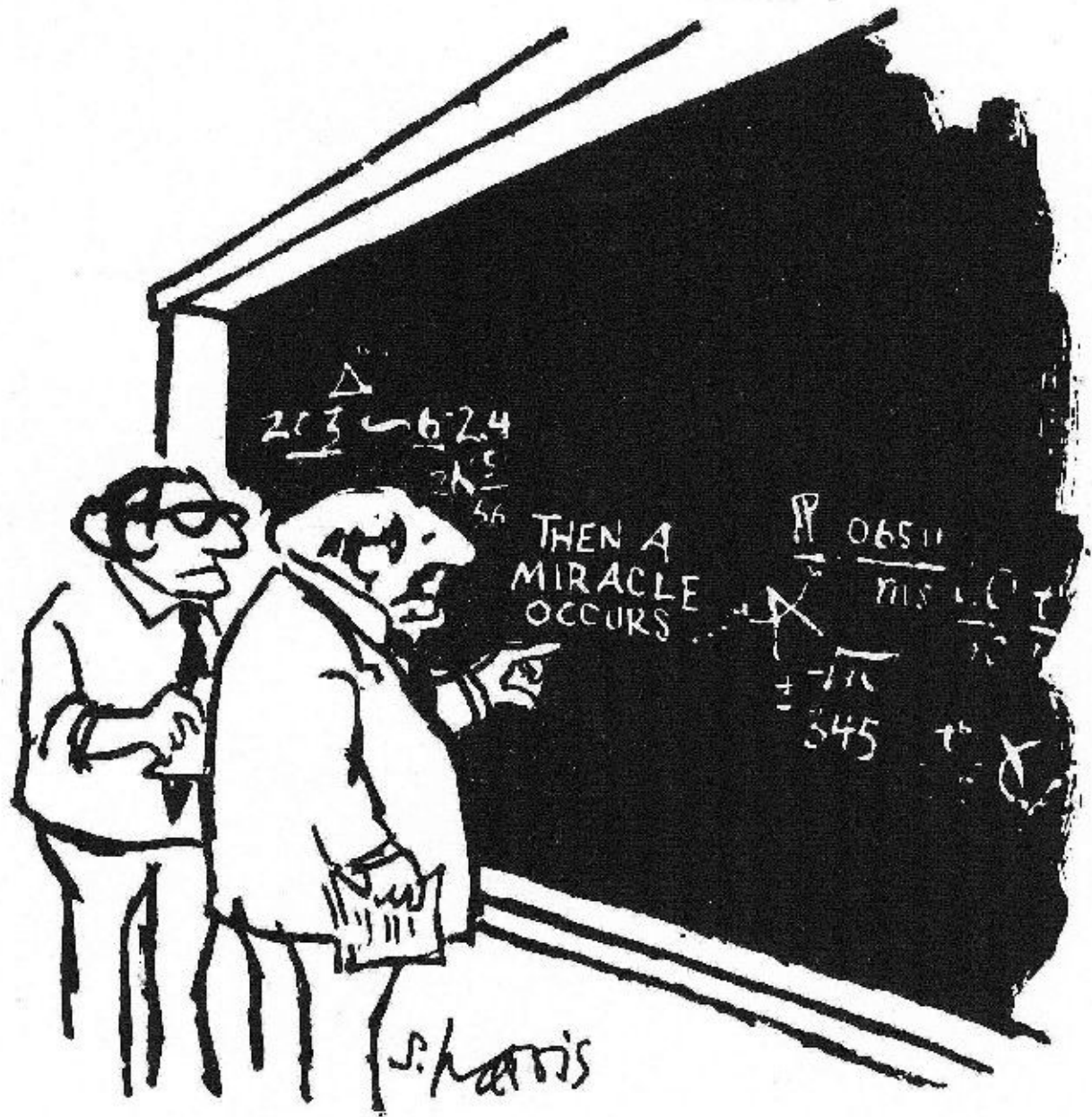
What Makes PI Challenging?

- Lack of a standardized systematic process and tools
- Knowledge deficits – PI process, clinical care
- Lack of training on process and tools
- No clearly defined roles and accountability
- No consistency for loop closure
- Unrealistic or inefficient processes
- Lack of focus – try to fix everything at once
- Inconsistent or absent attention to detail
- Ineffective physician and program leadership
- Insufficient stakeholder engagement
- Unwillingness to evolve it as your program grows





**HOPE IS
NOT A
STRATEGY**



"I think you should be more explicit here in step two."

What is in Your PI Toolbox?



Do
You
Have
Any of
These
Tools?

Written PI Plan

List of Audit Filters with definitions

Defined roles

Defined PI Committees

Review tools or forms

Process for reviewing compliance
with CPGs

Standard work for the review
process

Linkages with your Quality
Department



A GOAL
WITHOUT A PLAN
IS JUST A WISH



Develop a Written PI Plan and Use It

- Structure and processes
- Event/issue identification
- Audit filters, event and report review
- Levels of review – which cases, who reviews, close or further review
- Multidisciplinary PIPs committee
- Annual process for identifying priority areas

7.2 PIPS Plan—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have a written PIPS plan that:

- Outlines the organizational structure of the trauma PIPS process, with a clearly defined relationship to the hospital PI program
- Specifies the processes for event identification. As an example, these events may be brought forth by a variety of sources, including but not limited to: individual personnel reporting, morning report or daily sign-outs, case abstraction, registry surveillance, use of clinical guideline variances, patient relations, or risk management. The scope for event review must extend from prehospital care to hospital discharge.
- Includes a list of audit filters, event review, and report review that must include, at minimum, those listed in the Resources section
- Defines levels of review (primary, secondary, tertiary, and/or quaternary), with a listing for each level that clarifies:
 - Which cases are to be reviewed
 - Who performs the review
 - When cases can be closed or must be advanced to the next level
- Specifies the members and responsibilities of the trauma multidisciplinary PIPS committee
- Outlines an annual process for identification of priority areas for PI, based on audit filters, event reviews, and benchmarking reports

Additional Information

None

Measures of Compliance

PIPS plan that meets criteria outlined in this standard

Resources

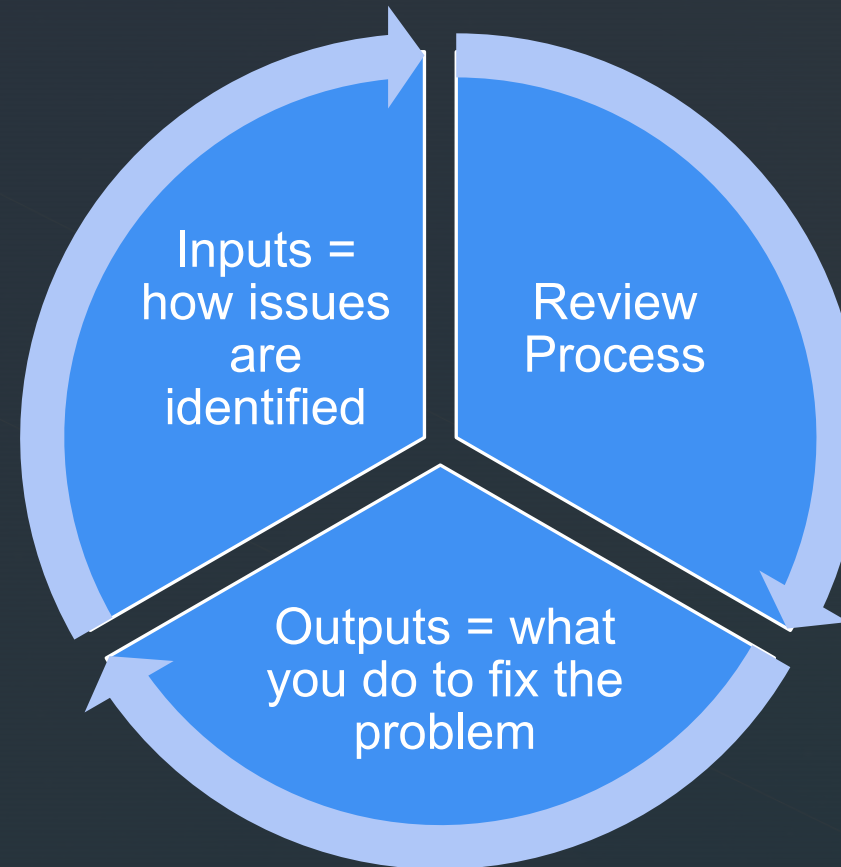
Audit filters, event or report reviews:

- Surgeon arrival time for the highest level of activation
- Delay in response for urgent assessment by the neurosurgery and orthopaedic specialists
- Delayed recognition of or missed injuries
- Compliance with prehospital triage criteria, as dictated by regional protocols
- Delays or adverse events associated with prehospital trauma care
- Compliance of trauma team activation, as dictated by program protocols
- Accuracy of trauma team activation protocols
- Delays in care due to the unavailability of emergency department physician (Level III)
- Unanticipated return to the OR
- Unanticipated transfer to the ICU or intermediate care
- Transfers out of the facility for appropriateness and safety
- All nonsurgical admissions (refer to Standard 7.8)
- Radiology interpretation errors or discrepancies between the preliminary and final reports
- Delays in access to time-sensitive diagnostic or therapeutic interventions
- Compliance with policies related to timely access to the OR for urgent surgical intervention
- Delays in response to the ICU for patients with critical needs
- Lack of availability of essential equipment for resuscitation or monitoring
- MTP activations
- Significant complications and adverse events
- Transfers to hospice
- All deaths: inpatient, died in emergency department (DIED), DOA
- Inadequate or delayed blood product availability
- Patient referral and organ procurement rates
- Screening of patients for psychological sequelae (LI/LII/PTCI/PTCII)
- Delays in providing rehab services
- Screening and intervention for alcohol misuse
- Pediatric admissions to nonpediatric trauma centers
- Neurotrauma care at Level III trauma centers
- Trauma and neurotrauma diversion
- Benchmarking reports

References

None

Elements of the Performance Improvement Process



Elements of the Performance Improvement Process

- Issue Identification – how you will identify issues?
- Issue evaluation/validation – how will you investigate or validate that the issue is real?
- Recommendation – what needs to happen next?
- Corrective action – how is the issue to be addressed?
- Re-evaluation – did the corrective action fix the issue?

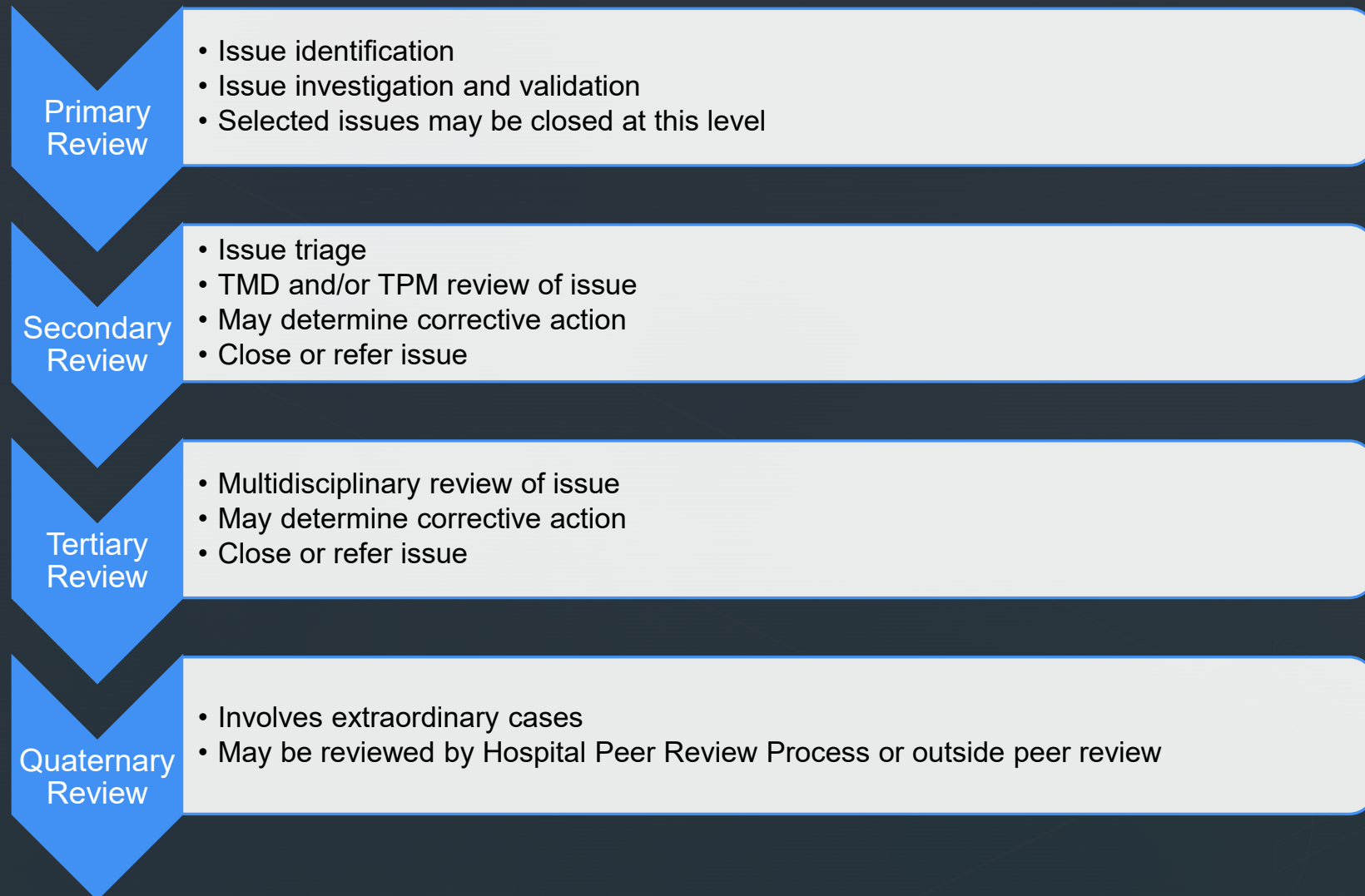
Sources of PI Input

Sources of
issue
identification

Combines
concurrent and
retrospective
methodologies



PI Levels of Review



Levels of Review

Define roles

Purpose of the level of review

Frequency of review

What can be closed at each level?

Trauma PI Process: Levels of Review

Primary Review (Daily)

Purpose: Issue Identification and Validation
Who: TPM, Trauma PI RNs, trauma registrars

Secondary Review (Weekly)

Purpose: Determine What Goes to Committee for Review
Who: TMD, TPM, and PI RNs

Tertiary Review (Bimonthly)

Purpose: Peer Review, Determine Accountability, Loop Closure Plan, Review Trended Data
Who: TMD, Physicians, TPM, and PI RNs

Strategies for Corrective Action:

- Guideline, protocol, or pathway development or revision
- Additional and/or enhanced resources
- Individual counseling
- Case presentation
- Charter a PIPs action team to address issue
- Targeted educational intervention
- External review or consultation
- Ongoing professional practice evaluation
- Recommend change in provider privileges
- Remove provider from Trauma Panel

Primary Review

- Determine if the issue needs further review
- Detailed documentation of the issue, its investigation, and resolution is essential
- Issues closed in primary review should be summarized and presented at your PI meeting to maintain transparency for the PI program
- Create a mechanism for tracking/trending



Define Your Audit Filters

Performance Improvement Audit Filter Tool – updated 10/2024					
PI Indicators, Definitions, Essential Elements for Case Discussion and Monitoring Parameters					
Indicator	Definition / Rationale for tracking	How to monitor and report / Elements to include for PI case discussion	Monitoring and Review	Origin of filter & NTDB complication	Primary / Secondary Closure guideline and associated documentation
Activation level	Definition: Incorrectly activated or failure to activate based on the Trauma Activation Algorithm	T&T monitoring will establish if there is a pattern (Greater than 5-7/month). Information to be included: ▪ Triage information including original category, correct category with rationale ▪ Include specific reason the patient met the activation level or didn't meet the activation level and document in registry	Request radio call and MICN follow up from Prehospital Coordinator Monthly audit- send to Prehospital Coordinator for review	SRMC	Close in primary review. Attach radio call and all loop closure.
Acute Renal Injury	NTDS Definition: Acute Kidney Injury, AKI (stage 3), is an abrupt decrease in kidney function. Onset of symptoms began after arrival to your ED/Hospital. KDIGO (Stage 3) Table: (SCr) 3 times baseline OR Increase in SCr to ≥ 4.0 mg/dl (≥ 353.6 $\mu\text{mol/l}$) OR Initiation of renal replacement therapy OR, in patients < 18 years, decrease in eGFR to <35 mL/min per 1.73 m^2 OR Urine output <0.3 mL/kg/h for ≥ 24 hours OR Anuria for ≥ 12 hours	Information to be included: ▪ Include renal dysfunction criteria of UO or GFR/Creatinine. ▪ Dialysis information includes hemodialysis and CVVH. ▪ Include medications that may contribute to AKI, Lovenox, Lasix, Ace inhibitors, Toradol, Abx, etc		NTDB/TQIP Complication	Submit for secondary review

Create a
Primary
Review Tool
that meets
your program
needs

Set
expectations
for how it is
completed

Retain it with
your PI
paperwork or
attach it to the
registry record

Trauma Primary PI Review										Admit / ISD		Registry:	
TQIP Complications Identified: None													
PI Issues Identified: None													
Name/Age/Gender:						MRN:		Admit Date/Time:					
Mechanism:								Transport: POV / Ground / Air					
Full / Limited / ED Trauma / Consult / Transfer / ED only													
Urgent Consults				TS Timely Y / N		ED MD Timely Y / N		NS Timely Y / N		ACOS Y / N		Anesthesia Timely Y / N	
Other Consults:													
ED Dispo: OR / ICU / Ward / Home / Transfer / Death Time:								Transfer Reason: Cardiac Bypass / Peds / Burns / Replant / Vascular / Insurance / Pt Request - If acute transfer, was TS involved or consulted? Y / N / NA					
Head / Neck			Face			Chest / TSpine			Abdomen / Pelvis / LSpine			Extremities	
Unit	In	Out	ETOH: None / NT			CAGE-AID			Vent Start			Vent Stop	
ICU / ward			Urine Tox: None / NT			RN / LCSW / MD			Date/Location Time		Date Time		
ICU / ward						SBIRT							
ICU / ward						RN / LCSW / MD							
ICU / ward						EM to SW for Ward Pts			Nutrition started - Timely Y / N		Route: Enteral / Oral / TPN		
DC Date/Time/Location:													
TQIP Co-morbid conditions 2020													
None													
AD limiting care / None													
ADHD													
Alcohol Use Disorder													
Angina pectoris													
Anticoagulant therapy (drug?)													
Bleeding disorder													
CVA/residual deficits													
COPD													
Chronic renal failure with dialysis													
Cirrhosis													
Congenital anomalies													
CHF													
Current smoker (w/in 12 months)													
Current chemo													
Dementia													
DM (on meds)													
Disseminated cancer													
Function dependent HS (feed/bathe/dress/walk/ toilet)													
HTN (meds)													
Mental Health/Personality disorder													
Myocardial infarction (w/in 6 mos of injury)													
Peripheral arterial disease													
Pregnancy													
Prematurity (< 37 weeks)													
Steroid use (oral/IV)													
Substance abuse disorder													
TBI Protocol Review				VTE Protocol Review				MTP Order:		Arrival Time:			
Highest GCS - CD after ED arrival	E	V	M	If trauma, per protocol? Y / N				MTP Review Ratio Y / N		Delays Y / N			
GCS assessment qualifier: Sedated/paralyzed / Obstruction to eye / Intubated / Valid GCS				Type	Date	Time	Documentation Complete Y / N						
Initial ED Pupils:				Lovenox			PRBC		FFP	Plts	Cryo		
Both reactive / One reactive / Neither reactive				UF Heparin			Total 1 st 4 hrs						
Midline shift: > 5mm MLS w/in 24 hours of injury Yes / No / Not imaged				Coumadin									
TBI Interventions: Mannitol / HTS - Timely Y / N				Xarelto									
ICP monitor / EVD placed - Timely Y / N				Eliquis									
ICP managed per protocol - Y / N				ASA									
Spleen Injury Protocol				Reversal Agents (Not TQIP)									
Blush on CT Y / N				TXA			Lowest SBP w/in 1 st hour for pts who get PRBC w/in 1 st 4 hrs						
Management: Non-op / IR / Operative				Vit K									
Timely - Y / N				PCC									
Vaccines Given: Y / N				FEIBA			1st 24 hrs (inc all units given above)						
H Flu / Meningococcal / Pneumococcal				Praxbind									
Open Fracture Protocol				MTP Protocol									
Antibiotics given Y / N				Procedure for hemorrhage control Y / N									
Tetanus Update Y / N				Angio: Abdominal / Pelvic / Embo / Timely Y / N									
Positive Cultures / Treatment - None				OR: Abdomen / Chest / Extremity / Timely Y / N									
				Withdraw Care: Y / N Date/Time									
				SDS Referral Y / N Donor Y / N									
				Blood UTD:									
Case Review Notes:										Timeline			

PI Review

PI Issue	Description	Action Taken
EMS		
ED/MICN		
Imaging Reviewed	No issues / X-Ray Discrepancy	
OR/IR		
ICU/Ward		
System Issues		
Provider Issues		
<u>TOIP Complications 2020 (MUST MEET DICTIONARY DEFINITION)</u> Acute kidney injury ARDS Alcohol withdrawal Cardiac arrest with CPR Catheter related UTI (CAUTI) Central line-associated blood stream infection (CLABSI) Deep surgical site infection Delirium DVT – UE DVT / LE DVT (treated) Extremity Compartment syndrome Myocardial Infarction Organ/space surgical site infection Osteomyelitis Pressure ulcer (stage 2-4 or unstageable) Pulmonary Embolism Severe sepsis Stroke/CVA Superficial surgical site infection Unplanned admit to ICU Unplanned intubation Unplanned return to OR Ventilator Associated Pneumonia (VAP)		<u>PI Filters</u> Prehospital airway Prehospital care Activation level (inappropriate) Met criteria, not activated Acute transfer No trauma consult No specialist consult Delay (provider) Delay (system) Delay in diagnosis/missed injury Error in judgement Error in diagnosis Protocol not followed Iatrogenic injury Loss of reduction/fixation Documentation deficiency X-Ray discrepancy Death Unplanned readmission Other system issue Other

Reviewer: Cheri White, RN

Review Complete:

Prehospital Phase of Care	No issues identified Registrar notes: EMS was having difficulty with the insertion of the tube due to copious amounts of bld in pts airway.
MICN/ED Phase of Care	No issues identified - 38 M. Hx smoker, poss substance abuse. BIBA s/p auto vs bike, full activation, GCS 4, arrive 2106, succinylcholine 100 mg, intubated 2110, OG 2114, FC attempt 2115, propofol started 2116, to CT 2119, W/U left clavicle fx, left SDH lg, right parenchymal hematoma, right temporal lobe hematoma, bilateral SAH, 11 mm MLS, subfalcine herniation, complex open skull fx: righth temporal bone, ext right frontal, parietal, temporal bone fxs, right parietal to left parietal fx, C1 lat mass fx, left C7 superior process fx into facet, left T1 lamina fx, right pterygoid plate fxs, right sphenoid sinus floor fx, left ethmoid bone fx, left orbit fx, post nasal septum fx, right sphenoid wing fx, bilateral sphenoid sinus fxs, right orbit floor fx, right lateral orbit wall fx, left frontal bone fx involving left frontal sinus fx, left scapula fx into base of coracoid process fx, mult right rib fxs: 3-7, aspiration, right pulm contusion, grade 3 - upgraded to grade 4 spleen laceration, right ICA dissection with occlusion at the cavernous and supraclinoid segment, BAL neg/UTox amphetamines, cannabis, ectasy, back to ED 2135, 2nd FC attempt 2137, Zosyn 2148, mannitol 88.8 gms 2149, art line 2150, NS note 2151, urology at BS to place FC 2201, FC placed 2217, to OR 2222 No issues identified
Imaging Reviewed OR/IR Phase of Care	No issues identified - 5/28/24: to OR 2222, 2235 cefazolin 2 gms, 2239 incision: left decompressive craniectomy, place left ICP, evacuate SDH, repair complex 25 cm scalp laceration, repair 10 cm facial laceration, place SD drain, significant cerebral edema and cerebral contusions, to TNICU post-op on MV 5/29/24: to OR for splenectomy, pericardial window (neg), 2 packs left, TAC, back to TNICU
ICU/Ward Phase of Care	No issues identified - to TNICU post-op on MV. 5/29 Levophed started by anesthesia for MAP support, TLC placed for IV access, FFP 1 0247 for INR 1.6, overbreathing the vent, RHCT shows left parafalcine SDH 11 mm ext along bilateral tentorium, right SDH 6 mm, SAH, bilat temporal lobe contusions, 1 CM MLS, loss of grey-white jcn r/t contusions or ischemia, hypotensive with drop in Hgb on rounds, to OR for splenectomy, pericardial window (neg), 2 packs left, TAC, back to TNICU, creat bump from 1.44 to 2.44, fluids and treat hyperkalemia, ACOS c/s, both fxs appear non-op will eval pt when more stable, left TLC rewired for Cordis and PA catheter, fluid bolus, SDS following the patient. 5/30 Repeat CTH 5/30: new acute L PCA infarction, acute multifocal L MCA infarctions, grossly stable intracranial hemorrhages, transfuse, PA catheter removed, ICP

Concurrent Primary Review for ICU Admits

System of Care	spikes, vecuronium 10 mg, fentanyl and propofol orders modified for ICP titration. 5/31 RHCT interval hemorrhagic transformation of left frontal lobe hypodense contusion or area of ischemia, increasing cerebral edema, MLS 1.2 cm, severe TBI complicated by strokes from BCI, no brainstem reflexes, EEG to r/o seizures, GOC discussion, NS feels no meaning recovery expected given numerous areas of infarct, family meeting 6/1 to discuss next steps, stop vasopressin and treat DI with DDAVP. 5/31 anticipate no meaningful recovery, cEEG, brain matter from right ear. 6/1 DNR, no escalation of care, family consented to donation, labs per SDS. 6/2 continue supportive care. 6/3 family plans to donate his organs, empiric Zosyn started. 6/4 bronchoscopy. 6/5 cont donation w/u, plan to donate 6/6. 6/6 transitioned to comfort care, extubated 1715, asystole at 2014, TOD 2015. Did not meet DCD donation timeframe, PCSO Coroner notified.
Provider Issues	No issues identified
Post-Discharge Issues	PI entry created - unplanned visit to OR - required RT OR for splenectomy
CPG Compliance Reviewed	No issues identified - did not meet timeframe for DCD donation VTE Prophylaxis - SCDs only TBI management - aggressive initial surgical management, non-survivable injury SBIT - unable to complete due to severe TBI Spleen injury management - required operative management, did not receive vaccinations d/t non-survivable TBI
Review Completed By	Blood given: 5/29: 0247 plasma 1, 0838 PRBC 1, 0922 PRBC 2. 5/30 1100 PRBC 3. 6/6 0200 PRBC 4.
Primary Review Complete Date	Cheri White
PI Issues	06/06/2024 Unplanned visit to the OR (NEW 2020) Death

Concurrent Primary Review for ICU Admits

Prehospital Phase of Care	Not applicable
MICN/ED Phase of Care	No issues identified - 68 F. Hx HTN, HLD, chronic pain, neuropathy. POV to ED, GLF while getting OOB, struck head on dresser, ED trauma, W/U scalp laceration (repaired), C1 ring fx (fx in 4 places), small prevertebral hematoma, traumatic occlusion right vertebral artery, alantoaxial ligamentous injury, ND S1 fx, BAL neg, trauma c/s, NS c/s -> Aspen collar, likely non-op fx, TNICU admit
Imaging Reviewed	No issues identified
OR/IR Phase of Care	No issues identified: 6/13 OR with NS: occiput to C2 fusion and instrumentation
ICU/Ward Phase of Care	No issues identified - TNICU admit, seen by NS who recs occipital to cervical fusion, pain issues. 6/13 CTA neck shows right VA injury, to OR with NS: occiput to C2 fusion and instrumentation. 6/14 stable exam, expected wound drainage per NS. FC DC, ASA started, needs tertiary exam. 6/15 NS cleared for DC, tertiary exam completed, DCP in evolution, home with HH vs SRI, addressing insurance barriers, pt/spouse uncomfortable with DC home, transferred to floor care, Lovenox DC. 6/16 stable, DC home with HH.
System of Care	No issues identified
Provider Issues	No issues identified
Post-Discharge Issues	No issues identified
CPG Compliance Reviewed	VTE Prophylaxis - Lovnox started 6/12, started on ASA 324 mg for BCVI NSA/Nelson Score: Nelson 5, trauma admit with NS c/s
Review Completed By	Cheri White
Primary Review Complete Date	06/16/2024
PI Issues	None

Primary Review

Examples of Issues that Might be Closed

- EMS care
- Level of activation
- ED nursing issues
- Staff documentation deficiencies
- System delays that do not negatively impact patient outcome
- Selected TQIP complications

Issues that Require Further Review

- All other TQIP complications
- All provider issues
- All system issues that negatively impact patient outcome
- Acute transfers
- All deaths

Closing a Primary Review Issue

PI Issue/Complication	Status	Date Identified	Location	Source	Primary Review Date								
ACTIVATION LEVEL	P	C	01/13/2020	ED	CASEREV	01/13/2020							
PR Date	PR Judgment	Mortality	System Related	Disease Related	Provider Related	Provider	Closed Date						
/ /		NOT APPLICABLE	NO	NO	NO	NOT APPLICABLE	01/15/2020						
Further Explanation/Comments				Action Plan									
ED trauma alert called, should have been a limited based on criteria. Radio call attached. 69 7 male, GCS 15, good skin signs, +SB pass - struck on his side, +AB, moderated damage with intrusion, c/o of chest pain, back pain, no deformity, neg SOB, VSS, spinal prec, IV, + thinners, neg LOC				Education, Radio Call Review Request follow up on 1/15/2020									
Refer To/Responsible				Loop Closure									
Prehospital Care Coordinator				Education provided to MICN 1/28/20 - EM attached. MICN feedback: I have reviewed the call and recollect consulting with two other MICNs after having some questions regarding the level of activation. However, I completely understand why it should have been called as a limited. I will know this for next time. Thank you!									
TMD Review Comments													
Closed in primary review													
TMD Review Date	TMD Determination												
/ /													
First				Previous		New		Next		Last		Tertiary Review	

Secondary Review

- Secondary Review = Issue Triage or Sorting
- Medical record review with written case narrative with event timeline and other relevant details is created
- Review by TMD and/or TPM
- Issues may be closed at this level, corrective action identified, or forwarded for additional review
- Issues closed in secondary review should be summarized and presented at your PI meeting to maintain transparency for the PI program: registry report on the consent agenda



Create a Secondary Review Tool that meets your program needs

- Set expectations for how it is completed (date for every issue)
- Style guide – standard abbreviations, inclusion of all issues closed in primary review for transparency to the TMD
- Retain it with your PI paperwork or attach it to the registry record

TRAUMA & ACUTE CARE SURGERY PERFORMANCE IMPROVEMENT SECONDARY REVIEW			
Registry:	Case Type:	MRN:	
Patient Name:		Admit Date:	
Age:		DC Date:	
ISS:		PS:	
Primary Review Completed:		PI RN Reviewer:	
Issues for Secondary Review	TMD Determination		
	☐ No OFI/Closed ☐ Track/Trend	☐ Tertiary Review (MDPR / Trauma ACS) ☐ Consent Agenda	☐ Refer ☐ Primary review findings noted
Comments			
	☐ No OFI/Closed ☐ Track/Trend	☐ Tertiary Review (MDPR / Trauma ACS) ☐ Consent Agenda	☐ Refer ☐ Primary review findings noted
Comments			
	☐ No OFI/Closed ☐ Track/Trend	☐ Tertiary Review (MDPR / Trauma ACS) ☐ Consent Agenda	☐ Refer ☐ Primary review findings noted
Comments			
	☐ No OFI/Closed ☐ Track/Trend	☐ Tertiary Review (MDPR / Trauma ACS) ☐ Consent Agenda	☐ Refer ☐ Primary review findings noted
Comments			
	☐ No OFI/Closed ☐ Track/Trend	☐ Tertiary Review (MDPR / Trauma ACS) ☐ Consent Agenda	☐ Refer ☐ Primary review findings noted
Comments			

TMD Signature: _____ Review Date: _____
☐ Edited

Case Narrative:		Timeline:		
Blood Totals	PRBC	FFP	PLTS	Cryo
1 st 4 hours				
1 st 24 hours				
Admission				
Waste				
Issues Reviewed and Closed in Primary Review				
Issue with Description		Action Taken/Loop Closure		

Closing a Secondary Review Issue

PI Issue/Complication	Status	Date Identified	Location	Source	Primary Review Date		
✓ ACUTE TRANSFER	✓ P	✓ 01/11/2024	✓ ED	✓ CASEREV	✓ 01/12/2024		
PR Date	PR Judgment	Mortality	System Related	Disease Related	Provider Related	Provider	Closed Date
✓ / /	✓ NOT APPL	✓ NOT APPLICABLE	✓ YES	✓ NO	✓ NO	✓ EMERGENCY MEDICINE	✓ 04/12/2024
Further Explanation/Comments				Action Plan			
✓ This is a 31-month-old female with no PMHx who fell from her crib on 1/11/24. She arrived to the ED via POV at 1958, GCS 15, favoring her left arm. Work up was significant for a displaced, angulated, left supracondylar humerus fracture. Her pain was treated with ibuprofen and a splint was applied. ACOS was consulted, transfer was recommended, and she was transferred to OSH at 2315. While there, no additional injury was identified. On 1/12 she was taken to the OR and underwent an open reduction, percutaneous pinning without issue				✓ PI/Case Review			
Refer To/Responsible				Loop Closure			
✓ Forward for TMD review				✓ Reviewed by TMD - no OFI			
TMD Review Comments							
✓ Appropriate transfer							
TMD Review Date	TMD Determination						
✓ 04/12/2024	✓ NO OFI						
		First	Previous	New	Next	Last	Tertiary Review

Tertiary Review

- Tertiary Review = structured review by a group
- Review, evaluate and discuss the quality of care and systems issues
- Provide peer review
- Assess system vs provider OFIs
- Assess team performance
- Identify contributing factors
- Recommend corrective action
- Close the loop on the issue



Tertiary Review

- Examples of PI Committees
 - Trauma ACS Multidisciplinary Peer Review
 - Trauma ACS Peer Review
 - Resident M&M
 - Trauma Operational Process Improvement Committee
 - Hospital PIPs Committee
 - Regional & Systems PIPs Committees
 - Prehospital PIPs Committee

What Types of Issues Are Forwarded for Peer Review?

- All deaths
 - Complications/issues based upon clinical significance
 - Unexpected outcomes
 - Significant system issues
 - Sentinel events
 - CPG non-compliance
 - Policy non-compliance
 - Acute transfers
 - Special populations
 - Opportunities for provider or team education
- Define the types of issues forwarded to Peer Review for your PI program
- Include in your PI Plan

Create a Tertiary Review Tool that meets your program needs

- Set expectations for how it is completed
- Retain it with your PI paperwork or attach it to the registry record
- Summary sheet – copy goes to Hospital Quality Department with meeting minutes
- Outcomes tracked for OPPE

TRAUMA & ACUTE CARE SURGERY PERFORMANCE IMPROVEMENT SUMMARY TERTIARY REVIEW

CONFIDENTIAL

Protected by 1156 & 1157 of the Evidence Code
Trauma Multidisciplinary Peer Review Committee

Registry Case Number:	MRN:
Primary Review Date:	Patient Name:
Secondary Review Date:	Age:
Tertiary Review Date:	Admit Date:
	DC Date:

PI Description	MD	REC	OFI	CF
		J, L		
		J, L		
		J, L		

DEATH	☐ Mortality with OFI	☐ Mortality without OFI
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Recommendation(s)	Opportunity for Improvement	Contributing Factors
A = No action Needed	OFI MM = OFI Medical Management	A = Equipment
B = Letter to MD involved from Chief Service	OFI D = OFI Documentation	B = Provider
C = Discussion w/MD involved by Chief Svc	OFI P = OFI Process of Care	C = Management System
D = Discussion / Education	OFI B = OFI Behavior	D = Pt Factors
E = Focus Audit	OFI E = OFI Education	E = Other Factors
F = Change Policy / Procedure		F = Cannot Determine
G = Documentation Deficiency		G = Disease Specific
I = Forward to _____		
J = Trend		
K = Other _____		
L = For Committee Review		

Notes:

- Case Summary – distributed in the meeting packet
- Cut and paste your secondary review narrative and timeline into the form
- Retain it with your PI paperwork or attach it to the registry record

CONFIDENTIAL

Protected by 1156 & 1157 of the Evidence Code

TRAUMA & ACUTE CARE SURGERY MULTIDISCIPLINARY PEER REVIEW TERTIARY REVIEW

Registry Case Number:	MRN:	
Tertiary Review Date:	ISS:	PS:
Injuries:		
Performance Improvement Issue		

Case Narrative:				Timeline:	
Blood Totals	PRBC	FFP	PLTS	Cryo	
1 st 4 hours					
1 st 24 hours					
Admission					
Waste					
Issues Reviewed and Closed in Primary Review					
Issue with Description			Action Taken/Loop Closure		

This case is being reviewed for the following issues:

Peer Review Judgement and Determination

- Each case reviewed by Trauma ACS Multidisciplinary Peer Review and Trauma ACS Peer Review has a peer review judgment regarding whether the care provided meets the standard of care
- If opportunities for improvement exist, they are identified, classified, and documented per Medical Staff guidelines
- Deaths are graded using the ACS guidelines: Mortality without OFI or Mortality with OFI

7.7 Trauma Mortality Review—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

References

None

Definition and Requirements

In all trauma centers, all cases of trauma-related mortality and transfer to hospice must be reviewed and classified for potential opportunities for improvement.

Deaths must be categorized as:

- Mortality with opportunity for improvement
- Mortality without opportunity for improvement

Additional Information

Mortalities include DOA, DIED, and patients who died after withdrawal of life-sustaining care.

The goal of reviewing events is to identify potential opportunities for improvement.

A death should be designated as “mortality with opportunity for improvement” if any of the following criteria are met:

- Anatomic injury or combination of severe injuries but may have been survivable under optimal conditions
- Standard protocols were not followed, possibly resulting in unfavorable consequence
- Provider care was suboptimal

Reviewing each mortality and transfer to hospice provides the greatest assurance that the trauma program will identify opportunities for improvement. Transfers to hospice require review to ensure there were no opportunities for improvement in care that might have significantly changed the clinical course that ultimately led to the decision for hospice care.

Closing a Tertiary Review Issue

PI Issue/Complication	Status	Date Identified	Location	Source	Primary Review Date		
UNPLANNED ADMISSION TO ICU	P	C	02/10/2020	FLOOR	CASEREV	02/24/2020	
PR Date	PR Judgment	Mortality	System Related	Disease Related	Provider Related	Provider	Closed Date
05/05/2020	NO OFI	NOT APPLICABLE	NO	NO	NO	NOT APPLICABLE	05/05/2020
Further Explanation/Comments				Action Plan			
Primary review form attached Secondary review form attached Tertiary review form attached				PI/Case Review			
Refer To/Responsible				Loop Closure			
Forward for TMD review				Trauma Multidisciplinary Peer Review 5/5/20 This case is being reviewed for the following issues: 1. Unplanned admission to the ICU on 2/10/20 for worsening oxygenation and enlarging hemothorax - No OFI Discussion/Conclusions: The management of this case was discussed with review of imaging. The trauma surgeon noted the decline in patient condition when he saw him the day after admission. The transfer to TNICU was appropriate. The chest CT from 2/13 was reviewed and the group noted that although the CT suggested the patient may need VATS, he did well without it.			
TMD Review Comments							
Tertiary review							
TMD Review Date		TMD Determination					
05/05/2020		TRAUMA PEER REVIEW					
First Previous New Next Last				Tertiary Review			

Corrective Action

- *When an opportunity for improvement is identified, appropriate corrective actions to mitigate or prevent similar future adverse events must be developed, implemented, and clearly documented by the trauma PIPS program.*

Options for Corrective Action

- Guideline, protocol, or pathway development or revision
- Additional and/or enhanced resources
- Individual counseling
- Peer review case presentation
- Charter a PIPs action team to address issue
- Targeted education (rounds, conferences, journal clubs, case study)
- External review or consultation
- Ongoing professional practice evaluation (OPPE)
- Recommend change in provider privileges

Corrective Action

- Be specific and document it
- *Targeted education* – what specifically will be taught or reviewed? How will you demonstrate that it occurred? How will you monitor for compliance?
- *Focused review* – review all a specific provider's patient management in the ED or all the triage decisions
- Interventions such as *reminding* or *speaking with* are weak examples of loop closure...and probably not effective – if used, you still need documentation that it occurred for loop closure

Loop Closure

- Effective performance improvement demonstrates that a corrective action has had the desired effect as determined by continuous monitoring and evaluation.
- This process is referred to as *closing the loop*.

RESOURCES

FOR OPTIMAL CARE
OF THE INJURED PATIENT

2014



COMMITTEE ON TRAUMA
AMERICAN COLLEGE OF SURGEONS



100+ years

AMERICAN COLLEGE OF SURGEONS

Inspiring Quality.
Highest Standards. Better Outcomes

Loop Closure

An effective performance improvement program demonstrates through *clear documentation that identified opportunities for improvement lead to specific interventions that result in an alteration in conditions such that similar adverse events are less likely to occur.*

The effectiveness of these interventions should be continuously reevaluated to determine if these revisions improved the process or outcomes in care.

7.3 Documented Effectiveness of the PIPS Program—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have documented evidence of event identification; effective use of audit filters; demonstrated loop closure; attempts at corrective actions; and strategies for sustained improvement measured over time.

Additional Information

None

Measures of Compliance

PIPS documentation including peer review minutes, loop closure documentation, monitoring of event rates, OPPE, benchmarking reports, or other relevant data to inform and evaluate PI

Loop Closure

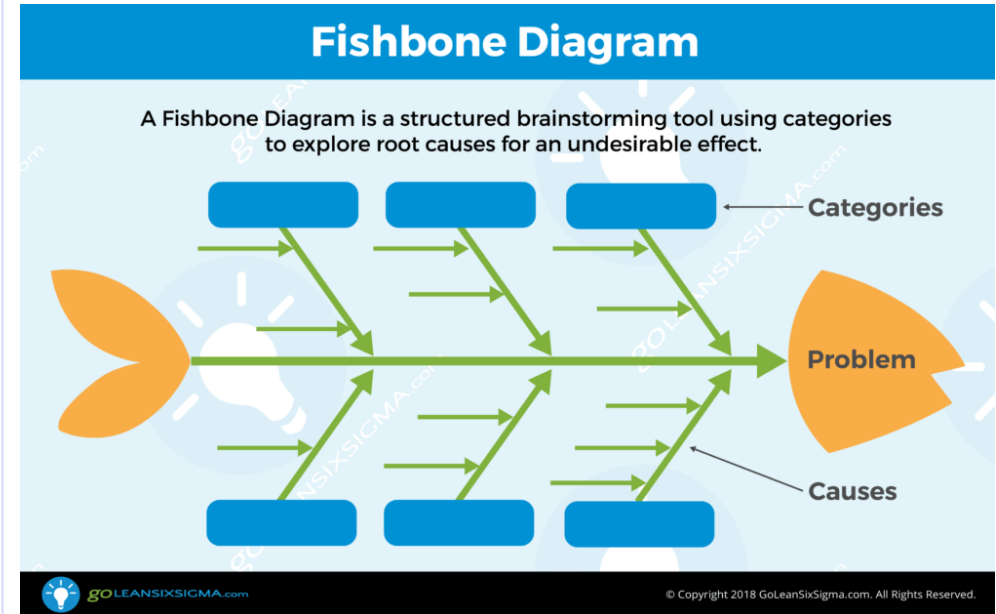
- Identify the issue(s)
- Correction – provide remediation
- Monitor – repeat the data collection and analyze it – *how long do you monitor for recurrence?*
- Document the entire process to demonstrate the problem was solved



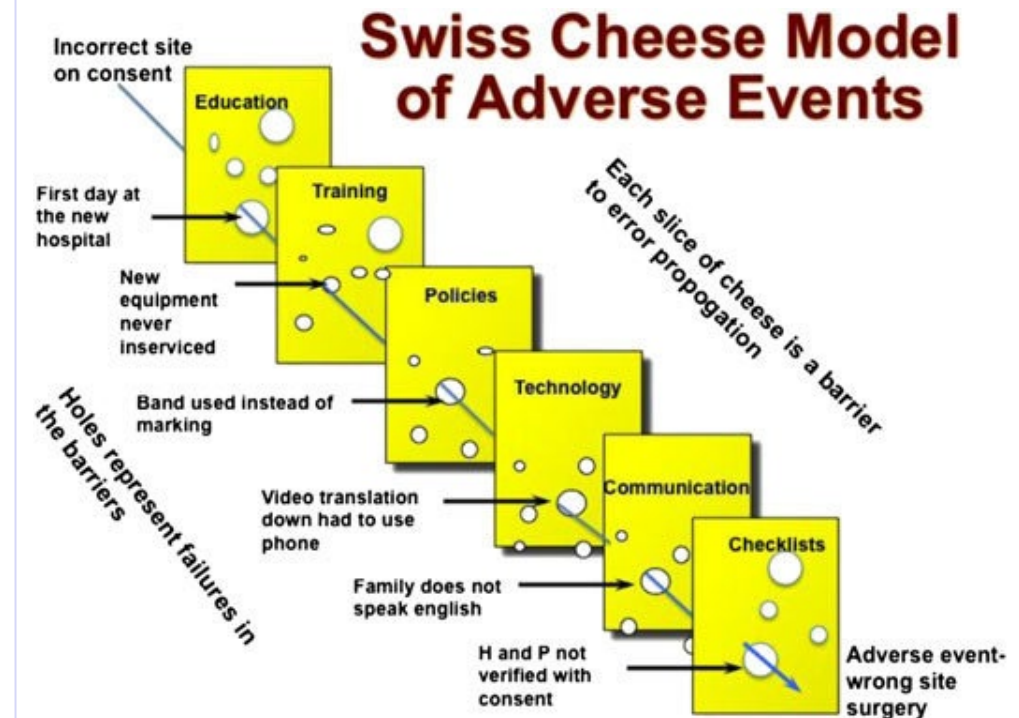
**KEEP
CALM
AND
CLOSE
THE LOOP**

Pitfalls in PI

- Trauma PI often focuses on case reviews
- Focusing on an isolated event only – changing a system based on 1 bad case can increase the risk of Type 1 error
 - *Making a change when we think something is wrong when it really isn't*
- Consider the single case within the context of the entire system
- Are there other contributing factors?



- Trauma PI events often result from a series of failures
- Each failure needs to be identified, investigated, and addressed



Pitfalls in PI

- Failure to look for patterns of problems
 - Dramatic increase in number of admits to non-surgical services
 - Delays in recognition of shock by a provider
 - Response delays by a particular specialist
 - Documentation errors by a particular nurse or group of nurses
- Develop an appropriate corrective action plan to address the issue – provider versus system intervention
- Monitor – repeat data collection to see if the correction action worked
- Maintain an audit trail of the entire process

Create PIPs Reports in Your Registry

- Complication trends
- Provider response times
- Compliance with VS protocols
- Timeliness of interventions or diagnostics
- Timeliness to OR
- SBIT compliance
- Under-over triage
- Non-surgical admits

Run the reports on a regular basis and report the results – monitor the trends

Using TQIP for PI



ACS TQIP BENCHMARK REPORT:

Spring 2020



AMERICAN COLLEGE OF SURGEONS
*Inspiring Quality:
Highest Standards, Better Outcomes*



COMMITTEE
ON TRAUMA
Release 1.0

		Patients ¹		VTE Prophylaxis			Time to VTE Prophylaxis (days)	Missing Time to VTE Prophylaxis	
Cohort	Group	N	N	%	No Prophylaxis (%)	Status Unknown (%)	Median (IQR)	N	%
All Patients	All Hospitals	277,455	182,291	65.7	34.3	0.0	2 (1-3)	413	0.2
	Your Hospital	559	213	38.1	61.9	0.0	3 (2-5)	0	0.0
Blunt Multisystem	All Hospitals	39,544	31,382	79.4	20.6	0.0	3 (2-4)	47	0.1
	Your Hospital	114	77	67.5	32.5	0.0	4 (2-7)	0	0.0
Penetrating	All Hospitals	13,206	10,449	79.1	20.9	0.0	2 (1-3)	14	0.1
	Your Hospital	12	4	33.3	66.7	0.0	4 (2.5-10)	0	0.0
Shock	All Hospitals	9,940	7,861	79.1	20.9	0.1	2 (1-4)	9	0.1
	Your Hospital	19	15	78.9	21.1	0.0	4 (4-6)	0	0.0
Severe TBI	All Hospitals	8,820	5,139	58.3	41.7	0.0	3 (2-5)	8	0.2
	Your Hospital	14	3	21.4	78.6	0.0	7 (4-9)	0	0.0
Elderly	All Hospitals	97,905	59,190	60.5	39.5	0.0	2 (1-3)	134	0.2
	Your Hospital	180	53	29.4	70.6	0.0	2 (2-4)	0	0.0
Elderly Blunt Multisystem	All Hospitals	9,388	6,931	73.8	26.2	0.0	2 (2-4)	13	0.2
	Your Hospital	21	11	52.4	47.6	0.0	4 (3-5)	0	0.0
Isolated Hip Fracture	All Hospitals	34,991	29,890	85.4	14.6	0.0	2 (1-2)	66	0.2
	Your Hospital	4	4	100.0	0.0	0.0	2 (1.5-2)	0	0.0

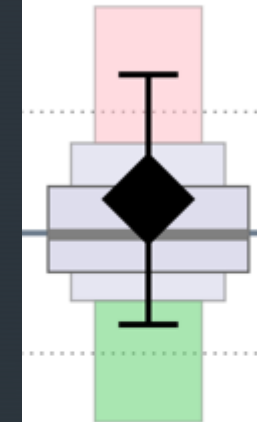
¹ Excluding deaths in the ED, deaths within the first 48 hours of arrival, and deaths with unknown time to death.

Large percentage of patients with no VTE chemoprophylaxis and protracted start time for selected populations

5 PE in 559 patients in Fall 2018 report

3 PE in 642 patients in Spring 2020 report

What types of patients were getting thromboembolic complications?



1.21

Pulmonary Embolism in All Patients

Trauma ACS DVT Prophylaxis Guideline

High risk patients are those anticipated to be hospitalized for > 24 hours and have 1 or more of the following risk factors:

- Anticipated immobilization > 24 hours
- Multiple system trauma
- History of venous thromboembolism (DVT/PE)
- History of hypercoagulable disease
- Traumatic brain injury with GCS <12
- Pelvic fracture
- Lower extremity long bone fracture
- Spinal fracture
- Major vascular injury to neck, thorax, abdomen, or extremities
- History of/current diagnosis of cancer
- Obesity (BMI >30)
- Multiple rib fractures
- Tobacco use within 1 month

Relative contraindications to INITIAL chemical VTE prophylaxis include

- Ongoing blood loss
- Coagulopathy
- Non-operative management of liver, spleen, and renal injuries
- Traumatic brain injury
- History of heparin induced thrombocytopenia

Medication Selection and Dosing

All high-risk patients who do not have a contraindication should be started on enoxaparin (1st line) or heparin (2nd line):

Enoxaparin	Standard dose	CrCl 30-80 mL/min	CrCl 10-29 mL/min	CrCl <10 mL/min (for dialysis refer to Lexicomp)
Prophylaxis	30 mg bid	No Change	30 mg q 24h	Do Not Use
	40 mg q 24h		30 mg q 24h	
	BMI 40-50kg/m ² : 40mg Q12h		BMI 40-50kg/m ² : 40mg Q24h	
	BMI >50kg/m ² : 60mg Q12h		BMI >50kg/m ² : 60mg Q24h	

Enoxaparin	Treatment (use a adjusted body weight in morbidly obese patients BMI >50kg/m ² . Check anti-Xa 4 hours after 3rd dose).		
Standard Dose	CrCl 30-80mL/min	CrCl 10-29mL/min	CrCl <10 mL/min (for dialysis refer to Lexicomp)
1 mg/kg q 12h		1 mg/kg q24h	Do Not Use

IVC Filters

Filters will be placed within 24 hours of time of consult in patients who meet the following criteria:

- The patient cannot receive prophylactic doses of anticoagulation for at least five days due to a traumatic injury.
- The bleeding risks of prophylactic heparin or Lovenox administration outweigh the benefits.
- At least one of the following criteria are present
 - ⇒ The patient is on the ventilator and/or has a GCS <8
 - ⇒ The patient has a spinal fracture
 - ⇒ The patient has a lower extremity fracture
 - ⇒ The patient has a pelvic fracture

Starting Chemical Prophylaxis and Filter Removal

When medically appropriate to start prophylactic doses of anticoagulation

- If there is no contraindication, perform a bilateral lower extremity venous duplex.
- If negative for DVT, schedule retrieval of the IVC filter during the same admission.

OR

If the patient is cleared for prophylactic doses for anticoagulation, but the doses are being held for frequent trips to the operating room, the IVC filter may be left in place.

- When the series of operations are complete, a bilateral lower extremity venous duplex should be performed.

Initiation of anticoagulation for at-risk patient populations Solid Organ Injury

In the non-operative management of liver, spleen and renal injuries, VTE prophylaxis may be initiated after

- 24 hours without ongoing blood loss for grade I/II injuries (stable Hct, no transfusions)
- 48 hours without ongoing blood loss for grade III/IV/V injuries

Traumatic Brain Injury

- Chemical VTE prophylaxis may be initiated 24 hours following stable head CT, and 48 hours after craniotomy.
- VTE prophylaxis does not need to be held for EVD/ICP monitor placement or removal.

Spinal fractures and Spinal Cord Injuries (SCI)

- Patients with spine fractures or SCI may be started on VTE prophylaxis once the spine surgeon has deemed that there is no emergent need for surgical decompression or stabilization
- If urgent surgery is planned, VTE prophylaxis will be held the night before operation, and resumed at 24 hours post-operatively.

Regional Anesthetic Catheter Placement for Pain Control

- Chemical VTE prophylaxis will be held for 12 hours prior to catheter placement.
- Chemical VTE prophylaxis may be started 4 hours after the catheter is placed.
- Chemical VTE prophylaxis will be held for 12 hours prior to catheter removal.
- Chemical VTE prophylaxis will be held for a minimum of 4 hours after removal.
- While the catheter is in place, the patient should be placed on either enoxaparin 40mg q24h or heparin 5000 units q8h depending on renal function – ideally, the dosing should start at night.

IX. Processes of Care: Venous Thromboembolism Prophylaxis

Table 24: Pharmacologic VTE Prophylaxis by Cohort

		Patients ¹		VTE Prophylaxis		Time to VTE Prophylaxis (days)	Unknown Time to VTE Prophylaxis
Cohort	Group	N	N (%)	No Prophylaxis (%)	Status Unknown (%)	Median (IQR)	N (%)
All Patients	All Hospitals	382,764	287,655 (75.2)	24.8	0.0	2 (2-3)	49 (0.0)
	Your Hospital	927	595 (64.2)	35.8	0.0	3 (2-3)	0 (0.0)
Blunt Multisystem	All Hospitals	54,373	46,693 (85.9)	14.1	0.1	3 (2-4)	6 (0.0)
	Your Hospital	109	88 (80.7)	19.3	0.0	3 (2.5-5)	0 (0.0)
Penetrating	All Hospitals	16,922	14,779 (87.4)	12.6	0.0	2 (2-3)	4 (0.0)
	Your Hospital	9	9 (100.0)	0.0	0.0	3 (2-4)	0 (0.0)
Shock	All Hospitals	13,944	11,775 (84.5)	15.5	0.0	3 (2-4)	2 (0.0)
	Your Hospital	16	14 (87.5)	12.5	0.0	3.5 (3-6)	0 (0.0)
Severe TBI	All Hospitals	21,190	15,200 (71.9)	28.1	0.2	4 (3-5)	2 (0.0)
	Your Hospital	38	31 (81.6)	18.4	0.0	4 (3-5)	0 (0.0)
Elderly	All Hospitals	160,050	116,010 (72.5)	27.5	0.0	2 (2-3)	19 (0.0)
	Your Hospital	513	294 (57.3)	42.7	0.0	3 (2-4)	0 (0.0)
Elderly Blunt Multisystem	All Hospitals	15,838	13,086 (82.7)	17.3	0.1	3 (2-4)	2 (0.0)
	Your Hospital	44	28 (63.6)	36.4	0.0	3 (2-4.5)	0 (0.0)
Isolated Hip Fracture	All Hospitals	63,858	57,210 (89.6)	10.4	0.0	2 (2-3)	14 (0.0)
	Your Hospital	299	273 (91.3)	8.7	0.0	3 (3-4)	0 (0.0)

¹ Excluding mortalities (1) in the ED, (2) within the first 48 hours of arrival, and/or (3) with unknown time to mortality

While we improved the overall use and timeliness of VTE chemoprophylaxis and saw improvement in the incidence of PE

		Odds Ratio									
Hospital Event	Cohort	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024
Pulmonary Embolism	All Patients	0.97	0.99	0.92	0.80	0.97	0.87	1.09	1.43	1.41	1.74

Case drill downs on 100% VTE events to look for other potential causative factors

- Holding of chemoprophylaxis in geriatric hip fracture patients with a Hgb drop
- Repeated starting and holding VTE chemoprophylaxis
- Delays in initiating or resuming VTE chemoprophylaxis
- Impact of TXA or PCC
- Orthopedic use of ASA instead of Lovenox or a DOAC
- Covid infection
- Primary pulmonary thrombosis

A MTP Performance Improvement Team was created to review and optimize the MTP Process to...

- Reduce care delays
- Assure patient safety practices are followed
- Improve communication
- Improve quality and ease of documentation for physicians and staff
- Minimize/eliminate product waste
- Assure balanced resuscitation is provided

PI to Address System Issues

Massive Transfusion Process

Performance Improvement Team



Issues identified and addressed by the PI project

Communication

BB notification to initiate MTP

Transitions of care

Ongoing continuation of MTP

BB notification to discontinue MTP

Product Management

Standard process for swapping/return of storage devices

Adherence to balanced resuscitation (1:1:1)

Transitions of care

Appropriate product management (temperature, storage device)

Documentation

Complete and accurate documentation on paper form and in Epic

Transitions of care



Need Emergency Blood Products or MTP?

- Call 11187 (No Vocera)
- State need:
 - MTP
 - Emergency blood products and # units needed
- Patient name
- MRN
- Gender
- Approximate age
- Ordering physician
- Patient location

Place Epic order for Emergency Blood Products or MTP



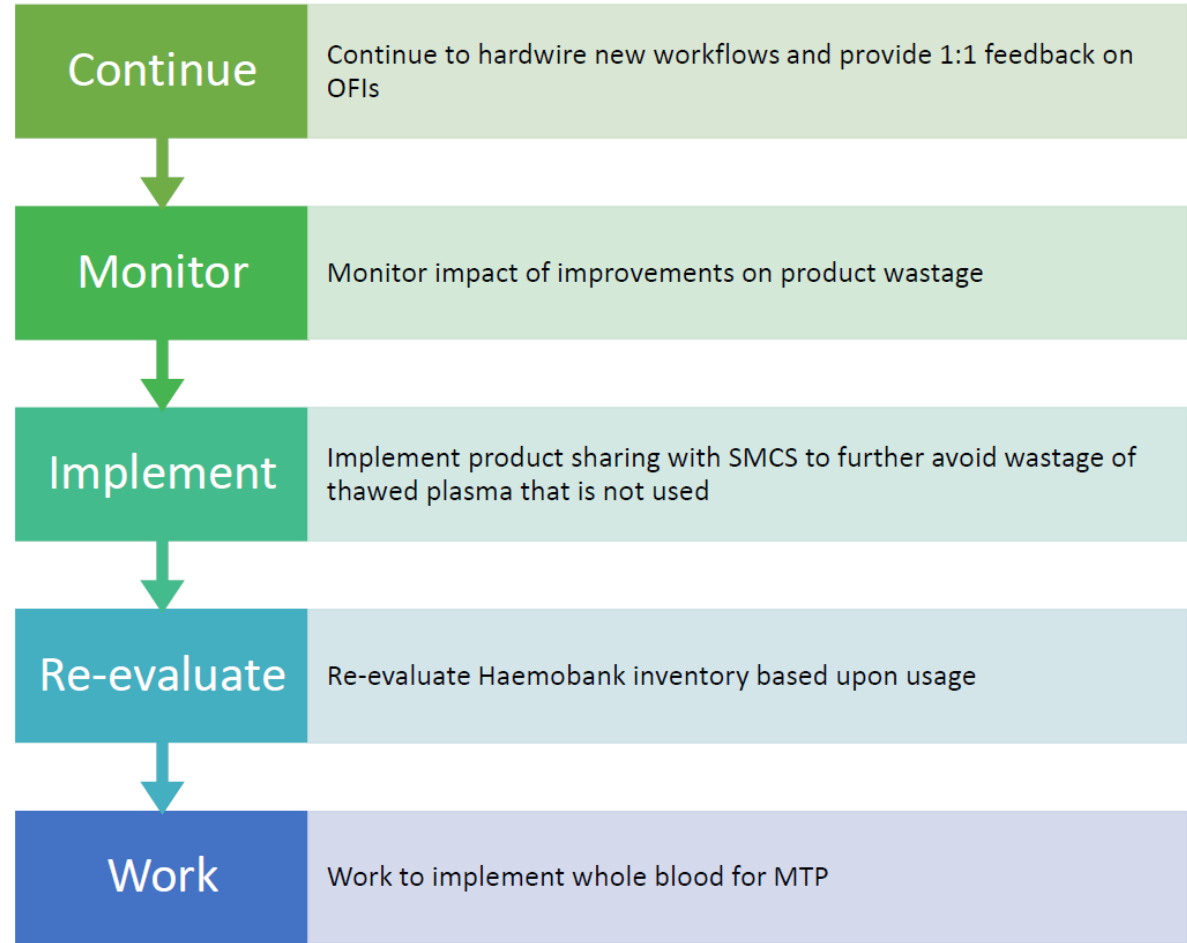
 Sutter Health		PATIENT LABEL	
MASSIVE TRANSFUSION PROTOCOL / UNCROSSMATCHED BLOOD DONATION			
Date:	Location:	ED / OR / IR / TN / ICU / LAB	
		Room / First Name & Last Name	
UNIT #	PRODUCT TYPE	RECEIVED BY First Name & Last Name	VERIFIED BY First Name & Last Name
1.	REC		
2.	PLASMA <i># product / units sent / date</i>		
3.	REC		
4.	PLASMA <i># product / units sent / date</i>		
5.	REC		
6.	PLASMA <i># product / units sent / date</i>		
7.	REC		
8.	PLASMA <i># product / units sent / date</i>		
9.	REC		
10.	PLASMA <i># product / units sent / date</i>		
11.	REC		
12.	PLASMA		
13. (if ordered)	PLT / Cryo <i>(unit sent)</i>		
14. (if ordered)	PLT / Cryo <i>(unit sent)</i>		
TOTAL # OF UNITS AND STANDARD VOLUME OF EACH TYPE – DOCUMENT THE TOTALS BELOW IN HERE			Last Unit End Time:
PTFC: units	= 425 mL	IR: PTFC	Transfusion reactions experienced: ☐ YES ☐ NO
# Plasma units	= 200 mL	IR: Plasma	Signs/Symptoms:
# Abo/Rh plasma units	= 425 mL	IR: Abo/Rh plasma	
# PLT units	= 125 mL	IR: PLT	
# Cryo units	= 160 mL	IR: Cryo	
			
DO NOT SEND THIS FORM WITH THE PATIENT – MUST STAY IN ELECTRONIC HEALTH RECORD			



Additional Work Completed



Next Steps

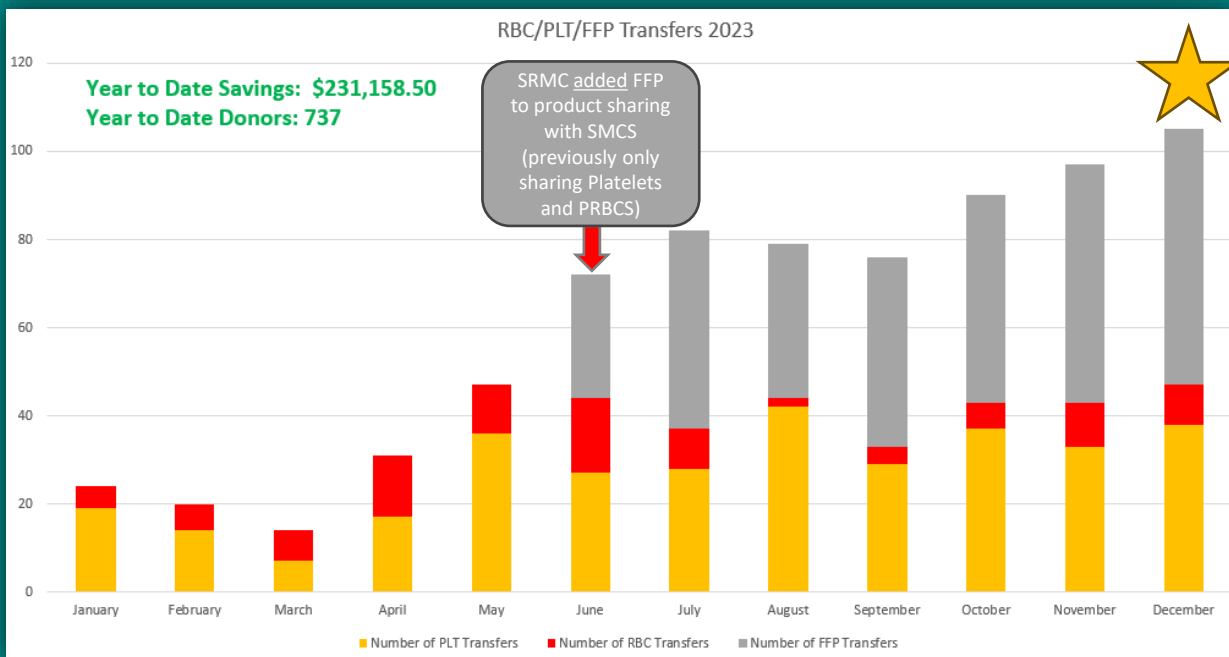




Blood Product Waste Reduction Project

In early 2023, SRMC identified that blood product wastage was increasing and exceeded the Sutter threshold. Additionally, in 2022, SRMC discarded 337 blood products, equating to 309 valuable donor contributions that did not reach the patient.

Methodology/Actions: The team analyzed blood product wastage by type, amount, financial impact and analyzed common themes for why products were wasted. Actions included adding FFP to the product sharing process with SMCS; focused on staff education to reduce preventable product waste; and increased physician engagement related to blood product ordering and specialty product use.

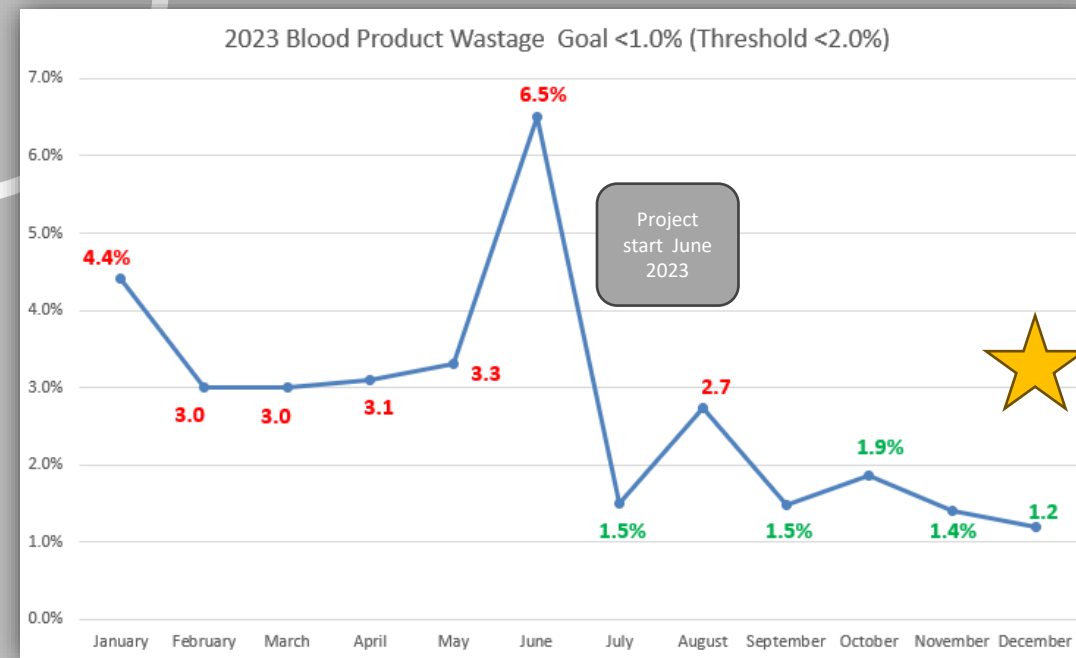


Project Owners:

Nadera Dashty, Christine Dutra – Transfusion Services

Barbara Todd – Quality

Project Period – June 2023 – December 2023



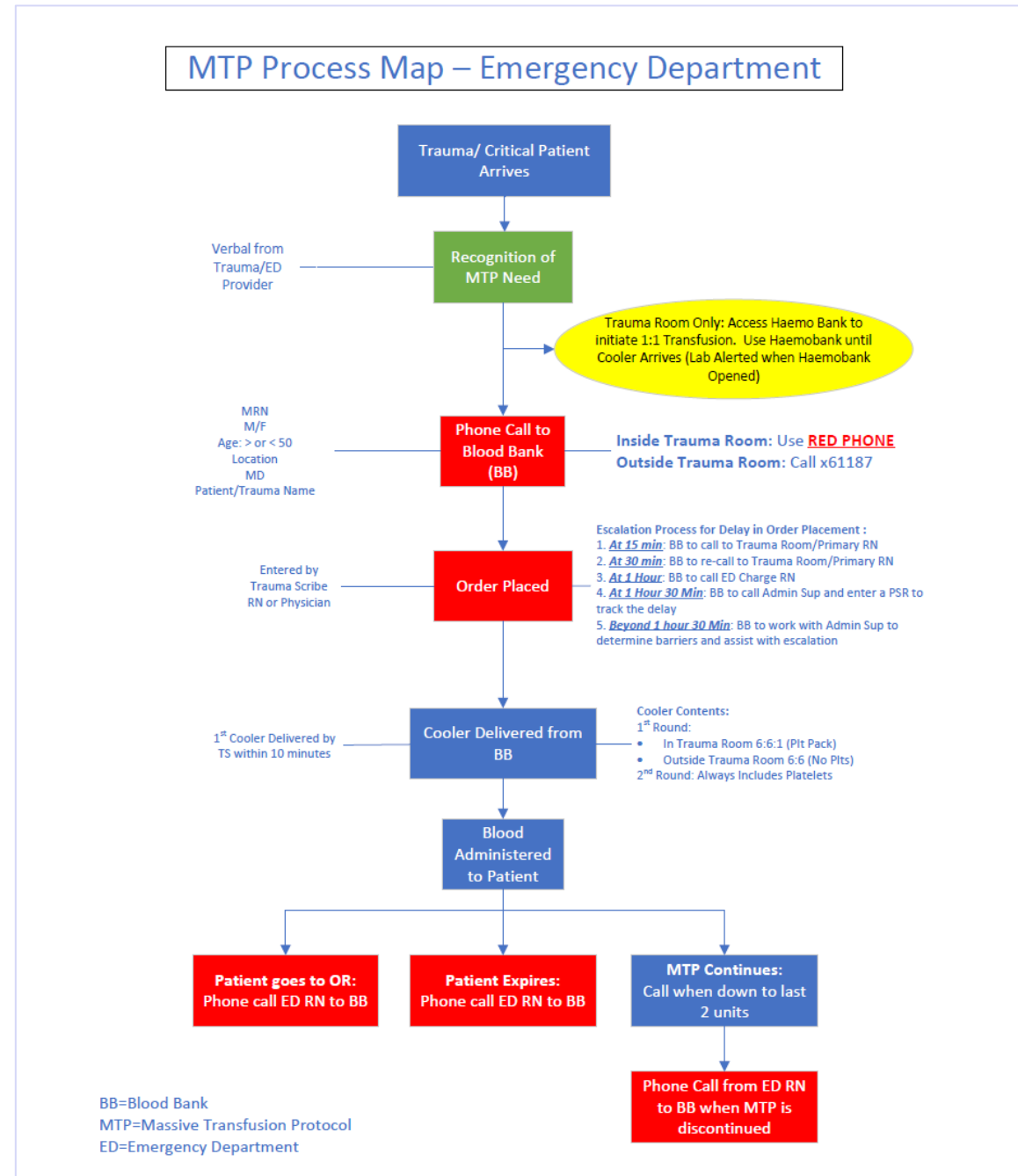
Conclusion:

With RBC, platelet and FFP transfers to SMCS, SRMC saved 737 donations in 2023 which equated to a savings of \$231,158.50. Through education and process improvements, SRMC was able to decrease the average wastage of products from 3.9% to 1.7% in 2023.

Blood products are a finite resource that are dependent on the donations from members of our local community. It is imperative that we honor and commit to transfuse these resources carefully and responsibly.

New issues arose after implementing the Haemobank in the Trauma Bay

- Use of Patient Safety Report (PSR) data to identify areas for improvement in the MTP process (FMEA)
- ED and Transfusion Services Communication
- Ordering issues by ED physicians: MTP versus Uncrossmatched Blood





MTP *or* Uncrossmatched Blood Requires....

1. **Immediate Phone call to Blood Bank**

- New Red Phone in the Trauma Room for DIRECT line between Blood Bank and the Trauma Room
- All ED rooms will have Blood Bank as a SPEED DIAL option

2. **Order placed in EPIC**

- ORDER MUST BE PLACED IN EPIC AS SOON AS POSSIBLE

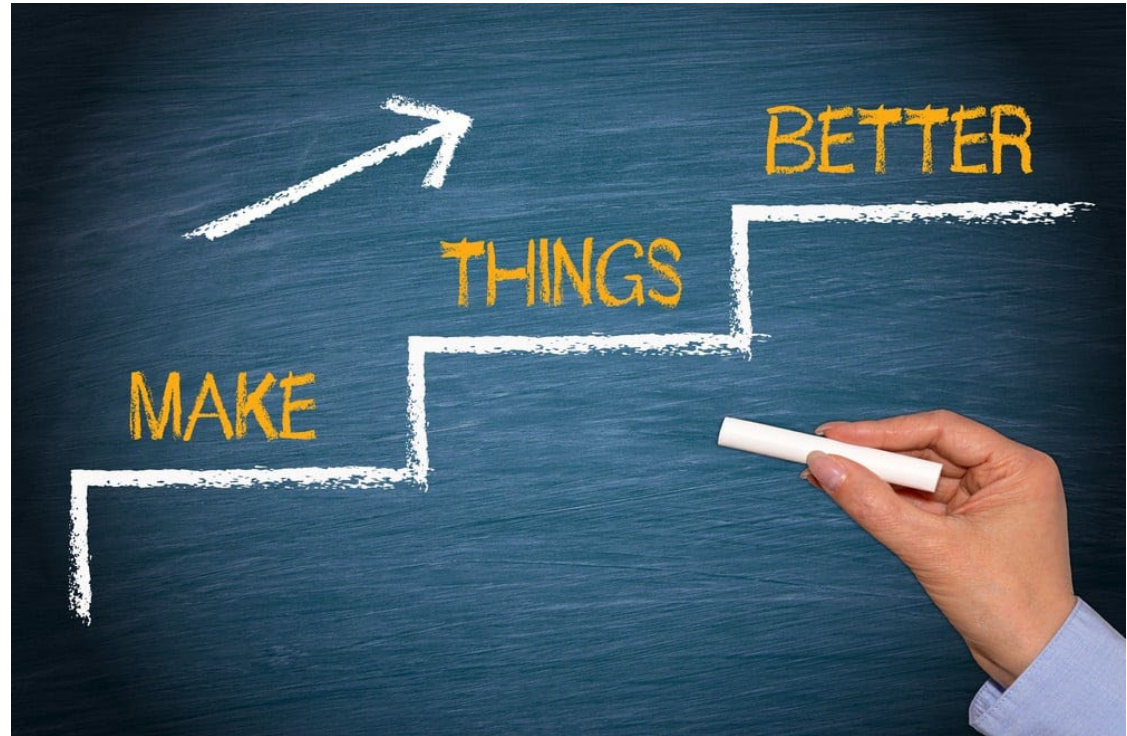
MTP vs Uncrossmatched Blood

MTP (MASSIVE TRANSFUSION PROTOCOL)	UNCROSSMATCHED/EMERGENCY RELEASE
• 6 RBC + 6 FFP + 1 PLT per round • Rounds replenished until discontinued 	• A la carte, smaller volumes ○ Commonly 1-4 RBC and/or 1-4 FFP ○ Volume per MD discretion • Not replenished automatically 
<i>Both MTP & uncrossmatched orders have the <u>same process & delivery time</u> of less than 10 minutes. The only difference between MTP & an order for uncrossmatched is the <u>volume</u> of products delivered.</i>	

The MTP being performed now directly affects the next MTP and the transfusions of other patients.

MTP Timeline Review

- 100% review of all MTP events for timeline
- Lack of adherence to standard work: notification call, Epic order
- Identification of any OFIs with real-time follow up and education



Closing thoughts.....

- Good PI takes work and persistence and a lot of documentation
- Create a PI plan, standard definitions for audit filters, and standard work for PI process and tools
- Define PI roles and include the registrar team
- Partner with your Quality Department
- It also requires skills: ability to objectively assess an issue and clinical acumen – a sense of knowing when something isn't right
- Know your data and create systems to assure it is valid
- Use your registry liberally
- Use the TQIP resources: benchmark report, online operational reports
- Implement an annual review process and actively engage your team

Other Resources

- American College of Surgeons
- <https://www.facs.org/quality-programs/trauma/quality/pips/>
- Agency for Healthcare Quality & Research
- Institute for Healthcare Improvement
- Trauma Center Association of America
- The Trauma Pro
- The Joint Commission



Trauma Outcomes & Performance Improvement Course

Sponsored by the Society of Trauma Nurses



The Society of Trauma Nurses offers the **Trauma Outcomes and Performance Improvement Course** to provide education and a better understanding of the Performance Improvement process in trauma care.

The TOPIC course is taught to all members of the trauma system team who participate in the ongoing assessment, evaluation and improvement of trauma care. TOPIC focuses on the ongoing assessment of the continuum of trauma care with a structured review of process and trauma patient outcomes.

The TOPIC course is taught in a one day interactive Modular Format. The course offers practical application for all Levels of trauma centers, from entry level to mature phase of program development. The Modules are taught with a focus on didactic, operational definitions, sample tools, case study examples and take home points.

Course Modules

- Trauma Performance Improvement Structure -PI Plan
- PI Indicators, Audit Filters, Practice Management Guidelines (PMG)
- PI Issue Identification
- Levels of PI Review
- Trauma PI Team Roles
- Data Management for PI – Trauma Registry/Trauma PI Databases
- PI Forums/Committee Structure
- Peer Review Judgment Determination
- PI Reports
- Action Plan Development/Implementation
- PI Documentation/Confidentiality
- PI Loop Closure
- Institutional/System Link to Trauma PI

For more information or to register for upcoming courses, visit the STN website.



