

Enhancing the Commonwealth's Trauma System





TABLE OF CONTENTS

- Background & Message from the Board Chair and Executive Director 1
- Mission, Vision and Values 3
- Board Membership & Nominating Organizations 4
- Foundation Staff 5
- Levels of Trauma Accreditation 6
- Accredited Trauma Centers 8
- Annual Trauma System Development Update 10
- Annual PA-TQIP Update 12
- Committees & Committee Roster 16
- Trauma Injury Prevention Summary Report 17
- Trauma Research 18
- Annual PTOS Data Summary 20
- Trauma Center Injuries & Deaths by County 21

BACKGROUND

The Pennsylvania Trauma Systems Foundation (PTSF) was created by the combined efforts of the Pennsylvania Medical Society and the Hospital and Healthsystem Association of Pennsylvania along with the Pennsylvania Nurses Association, the Pennsylvania Emergency Health Services Council and the Pennsylvania Department of Health.

The Commonwealth of Pennsylvania first recognized PTSF in December 1984 when Governor Thornburg signed Act 209 into law. Act 209 expired in June 1985. A comprehensive Emergency Medical Services Act (Act 45) was signed into law in July 1985, which again recognized the PTSF and established its mandate.

A MESSAGE FROM THE BOARD CHAIR AND EXECUTIVE DIRECTOR

This annual report for 2019 highlights the activities of the Pennsylvania Trauma Systems Foundation (PTSF) as it celebrates its 34th year of service in advancing the care of injured patients in Pennsylvania. In 1985, PTSF was developed by a group of committed organizations and incorporated into the EMS Act to assure the highest level of trauma care possible. This care involves a comprehensive network of services starting with emergency care at the time of the injury to the commitment of a trauma center in providing 24-hour availability of clinical experts and resources to make the difference in saving lives. As the accrediting body for trauma centers in Pennsylvania, PTSF has the task of assuring the public that a trauma center meets the rigorous criteria necessary to care for the most severely injured patients.

In this report, we celebrate the achievements of PTSF and its partners as we continue to build an inclusive trauma system that provides the highest level of care to injured patients across the continuum from pre-hospital through post-discharge phases of care. This report will showcase how PTSF continues to move forward with its strategic priority of optimizing clinical outcomes of injured patients in Pennsylvania.

Key accomplishments include:

- Finalization of recommendations for legislative change to optimize trauma center volumes and fund rural Level 4 trauma centers. Legislation was signed into law by Governor Tom Wolf on July 2, 2019.
- Growth of our trauma system in rural areas through the accreditation of an additional Level 4 trauma center:
 - St. Luke's University Health Network – St. Luke's Hospital Monroe Campus, Stroudsburg, PA
- Continued grant funding by the HRSA Medicare Rural Hospital Flexibility/Critical Access Hospital (CAH) Program through the PA Office of Rural Health to enhance care of injured patients in CAH's.
- Continued development of the Pennsylvania Trauma Quality Improvement Program (TQIP) Collaborative that brings trauma centers together to determine opportunities for improvement based on statewide benchmarking scores and sharing of best practices.

Thank you for your ongoing support. Because of you, we continue to elevate the quality of trauma care throughout Pennsylvania and beyond.

Sincerely,

Patrick M. Reilly, MD, FCCP, FACS
Chair, Board of Directors

Juliet Altenburg, MSN, RN
Executive Director



Patrick M. Reilly, MD, FCCP, FACS



Juliet Altenburg, MSN, RN



49,564

lives saved in 2019



970,505

total count 1985 - 2019



MISSION

Optimal outcomes for every injured patient.

VISION

We are committed to Zero Preventable Deaths from injury in Pennsylvania.

VALUES STATEMENT

EXCELLENCE

We promote and support quality results and optimal outcomes through continuous performance improvement, education and collaboration.

INNOVATION

We seek and support research and best practices that standardize and shape the future of trauma care.

INTEGRITY

We are committed to honesty, fairness and transparency.

TEAMWORK

We encourage respectful, multidisciplinary collaboration to develop standards, solve problems and achieve common goals.

VALUE PROPOSITION

THROUGH OUR UNIQUE:

- Expert team of accreditation, performance improvement and trauma registry professionals;
- Advanced technology for the acquisition of trauma center data and performance improvement;
- Committees comprised of trauma center staff focusing on patient outcomes, trauma registry data, standards of accreditation and research;
- Relationships with state and national trauma organizations;
- Streamlined trauma center accreditation process; and
- Board of Directors comprised of administrators, legislators, nurses and physicians who are leaders in their field.

WE WILL DELIVER VALUE TO THE TRAUMA CENTERS AND CUSTOMERS WE SERVE BY:

- Providing quality education to hospitals;
- Educating the public and legislators on the value of trauma centers/systems;
- Providing data to support clinical and trauma system research;
- Participating in national trauma center/system forums to advance trauma care statewide and nationally; and
- Developing strategic initiatives to provide the highest caliber of trauma center care in the country.



51,447

total patients 2019



96.34%

% survivors 2019

BOARD MEMBERSHIP & NOMINATING ORGANIZATIONS

BOARD CHAIRMAN | PATRICK M. REILLY, MD, FCCP, FACS
Chief, Division of Traumatology, Surgical Critical Care and Emergency Surgery, Penn Medicine, Penn Presbyterian Medical Center, Philadelphia, Pennsylvania

Representing the Pennsylvania Medical Society

BOARD VICE CHAIRMAN | MEG ASHTON, MHA, BSN, RN, CEN
Trauma Program Manager
St. Mary Medical Center, Langhorne, Pennsylvania

Representing the Pennsylvania State Nurses Association

BOARD SECRETARY – TREASURER | PHILIP E. PANDOLPH
President & Chief Executive Officer
Meadville Medical Center, Meadville, Pennsylvania

Representing the Hospital & Healthsystem Association of Pennsylvania

RONALD J. ANDRO, MS, BSN, HSM
President & Chief Executive Officer
West Penn Hospital, Pittsburgh, Pennsylvania

Representing the Hospital & Healthsystem Association of Pennsylvania

CHARLES BARBERA, MD, MBA, FACEP, FAAEM
Vice President, Pre-Hospital and Unscheduled Care
Chair, Department of Emergency Medicine
Reading Hospital – Tower Health, Reading, Pennsylvania

Representing the Pennsylvania College of Emergency Physicians

HENRY BOATENG, MD
Orthopedic Surgeon
PennState Health Milton S. Hershey Medical Center
Hershey, Pennsylvania

Representing the Pennsylvania Medical Society

THE HONORABLE MICHELLE BROOKS
Pennsylvania Senate, 50th Senatorial District
Majority Chair, Senate Health & Human Services Committee

DEBORAH CHAPPEL, MSN, RN, CCRN-K
Director, Trauma Program
Allegheny General Hospital – Allegheny Health Network, Pittsburgh, Pennsylvania

Representing the Pennsylvania Trauma Nurse Advisory Council

THE HONORABLE BRYAN CUTLER
Majority Leader, The Pennsylvania House of Representatives, 100th Legislative District
Representing the Majority Chair of the House Health Committee

THE HONORABLE DAN B. FRANKEL
Pennsylvania House of Representatives, 23rd Legislative District
Minority Chair, House Health Committee

LISA GOLDEN, MHA, BSN, RN, ACM
Chief Operating Officer
Geisinger Health Plan, Danville, Pennsylvania
Representing the Hospital & Healthsystem Association of Pennsylvania

THE HONORABLE ART HAYWOOD
Pennsylvania Senate, 4th Senatorial District
Minority Chair, Senate Health & Human Services Committee

DOUGLAS G. HOCK
Executive Vice President & Chief Operating Officer
Children's Hospital of Philadelphia, Philadelphia, PA
Representing the Hospital & Healthsystem Association of Pennsylvania

JACK JALLO, MD, PHD, FACS
Vice Chair for Academic Services, Department of Neurological Surgery
Director, Division of Neurotrauma and Critical Care
Thomas Jefferson University Hospital, Philadelphia, Pennsylvania

Representing the Pennsylvania Medical Society

DOUGLAS KUPAS, MD, FACEP
Commonwealth EMS Medical Director
Pennsylvania Department of Health, Bureau of Emergency Medical Services
Representing the Secretary of the Pennsylvania Department of Health

SIMON LAMPARD, MD, FACS
Trauma Program Medical Director
UPMC Altoona
Representing the Pennsylvania Medical Society

JOHN MCCARTHY, DO, FACEP, EMT
Medical Director
Lehigh Valley Health Network MedEvac, Allentown, Pennsylvania
Representing the Pennsylvania Emergency Health Services Council

JO ANN MILLER, MSN, FNP-C, CCRN, TCRN
Trauma Program Manager
Penn Medicine – Lancaster General Health, Lancaster General Hospital, Lancaster, Pennsylvania
Representing the Pennsylvania State Nurses Association

DAVID W. SCAFF, DO, MBA, FACS
Trauma Program Medical Director
Lehigh Valley Health Network – Lehigh Valley Hospital Pocono, East Stroudsburg, Pennsylvania
Representing the Pennsylvania Medical Society

SUSAN L. WILLIAMS, MD
Chief Medical Officer
Conemaugh Health System, Johnstown, Pennsylvania
Representing the Hospital & Healthsystem Association of Pennsylvania



Pictured from left: (standing) D. Kupas, C. Barbera, J. Miller, J. Jallo, D. Chappel, H. Boateng, S. Lampard; (seated) S. Williams, M. Ashton, P. Reilly, L. Golden, R. Andro. Not pictured: M. Brooks, B. Cutler, D. Frankel, A. Haywood, D. Hock, J. McCarthy, P. Pandolph, D. Scaff.



Pictured from left: (standing) S. Radzevick, D. Adams, J. Altenburg, K. Burd, L. Diehl; (seated) D. Gondell, L. Stamey, G. Wenger, A. Krichten. Not pictured: D. Bradley, T. Snavely.

FOUNDATION STAFF

DOR ADAMS | FINANCE SPECIALIST

dadams@ptsf.org
717-857-7381

JULIET ALTENBURG, MSN, RN | EXECUTIVE DIRECTOR

jaltenburg@ptsf.org
717-857-7382

DAVE BRADLEY, BS, NRP | MANAGER OF TRAUMA CENTER DEVELOPMENT

KEVIN BURD | DIRECTOR OF OPERATIONS

kburd@ptsf.org
717-857-7384

LYNDSEY DIEHL, RHIA, CHDA, CSTR | DIRECTOR OF DATA QUALITY

ldiehl@ptsf.org
717-857-7385

DARLENE GONDELL, MSN, RN, CRNP, ACNP-BC, CCRN, CNRN, TCRN | MANAGER OF ACCREDITATION

dgondell@ptsf.org
717-857-7392

AMY KRICHTEN, MSN, RN, CEN, TCRN | DIRECTOR OF ACCREDITATION

akrichten@ptsf.org
717-857-7383

STEPHANIE RADZEVICK, CPC | TRAUMA DATA ANALYST

sradzevick@ptsf.org
717-857-7389

TERRY SNAVELY, MSN, RN, TCRN | MANAGER OF TRAUMA PERFORMANCE IMPROVEMENT

LINDA STAMEY | ADMINISTRATIVE ASSISTANT

lstamey@ptsf.org
717-857-7380

GABRIELLE WENGER, RHIT, CPC, CAISS, CSTR | TRAUMA REGISTRY AUDITOR

gwenger@ptsf.org
717-857-7390



12,423

injuries in rural counties

LEVELS OF TRAUMA ACCREDITATION

"Levels" of accreditation identify the specific capabilities of trauma centers. Dual accreditation can exist for hospitals that seek accreditation as both a pediatric and adult trauma center. Trauma center accreditation applies to an entire hospital, not just the emergency department of the hospital. In Pennsylvania, there are four levels of trauma centers:

- Level 1 Trauma Center, Adult and/or Pediatric
- Level 2 Trauma Center, Adult and/or Pediatric
- Level 3 Trauma Center, Adult
- Level 4 Trauma Center, Adult

GENERAL CHARACTERISTICS

LEVEL 1 TRAUMA CENTERS

- Multidisciplinary treatment and comprehensive care, including specialized resources for the most severe trauma patients
- Trauma research
- Surgical residency program
- Surgically directed Intensive Care Unit
- Volume requirement for critically injured patients

LEVEL 2 TRAUMA CENTERS

- The same spectrum of care as a level 1 trauma center
- Surgically co-directed Intensive Care Unit
- Lower volume requirement for critically injured patients

Effective July 2, 2019, Level 1 and Level 2 volumes became equal

LEVEL 3 TRAUMA CENTERS

- Smaller, community hospitals that care for patients with moderate injuries and have the ability to stabilize the severe trauma patient in preparation for transport to a higher-level trauma center
- Surgical specialist requirements are Trauma/General and Orthopedic Surgery

LEVEL 4 TRAUMA CENTERS

- Provide enhanced trauma services with a focus on optimizing trauma care within the Emergency Department
- Provide initial care and stabilization of traumatic injury while arranging transfer to a higher level of trauma care



ACCREDITED TRAUMA CENTERS

COMBINED LEVEL 1 ADULT & LEVEL 1 PEDIATRIC TRAUMA CENTERS

- 1 PennState Health
Milton S. Hershey Medical Center

COMBINED LEVEL 1 ADULT & LEVEL 2 PEDIATRIC TRAUMA CENTERS

- 2 Lehigh Valley Health Network
Lehigh Valley Hospital Cedar Crest

- 3 Geisinger Medical Center

LEVEL 1 ADULT TRAUMA CENTERS

- 4 Allegheny Health Network
Allegheny General Hospital

- 5 Conemaugh Memorial Medical Center
Conemaugh Health System

- 6 Einstein Medical Center Philadelphia
Einstein Healthcare Network

- 7 Hahnemann University Hospital
Serving the greater Philadelphia community since 1848, Hahnemann University Hospital was an accredited trauma center since September 30, 1986. The hospital closed in September 2019.

- 8 Penn Medicine
Penn Presbyterian Medical Center

- 9 Reading Hospital – Tower Health

- 10 St. Luke's University Health Network,
St. Luke's University Hospital – Bethlehem

- 11 Temple Health
Temple University Hospital

- 12 Thomas Jefferson University Hospital
Jefferson Health

- 13 UPMC Mercy

- 14 UPMC Presbyterian

- 15 WellSpan York Hospital
WellSpan Health

LEVEL 1 PEDIATRIC TRAUMA CENTERS

- 16 Children's Hospital of Philadelphia

- 17 St. Christopher's Hospital for Children – a
Partnership of Tower Health & Drexel University

- 18 UPMC Children's Hospital of Pittsburgh

LEVEL 2 ADULT TRAUMA CENTERS

- 19 Abington Hospital
Jefferson Health

- 20 Allegheny Health Network
Forbes Hospital

- 21 Crozer-Chester Medical Center
Crozer-Keystone Health System

- 22 Geisinger Community Medical Center

- 23 Geisinger Holy Spirit

- 24 Geisinger Wyoming Valley Medical Center

- 25 Guthrie Robert Packer Hospital

- 26 Jefferson Torresdale Hospital
Jefferson Health

- 27 Penn Medicine-Lancaster General Health
Lancaster General Hospital

- 28 Lankenau Medical Center
Mainline Health

- 29 Paoli Hospital
Mainline Health

- 30 St. Mary Medical Center
Trinity Health Mid-Atlantic

- 31 UPMC Altoona

- 32 UPMC Hamot

- 33 Wilkes-Barre General Hospital
Commonwealth Health

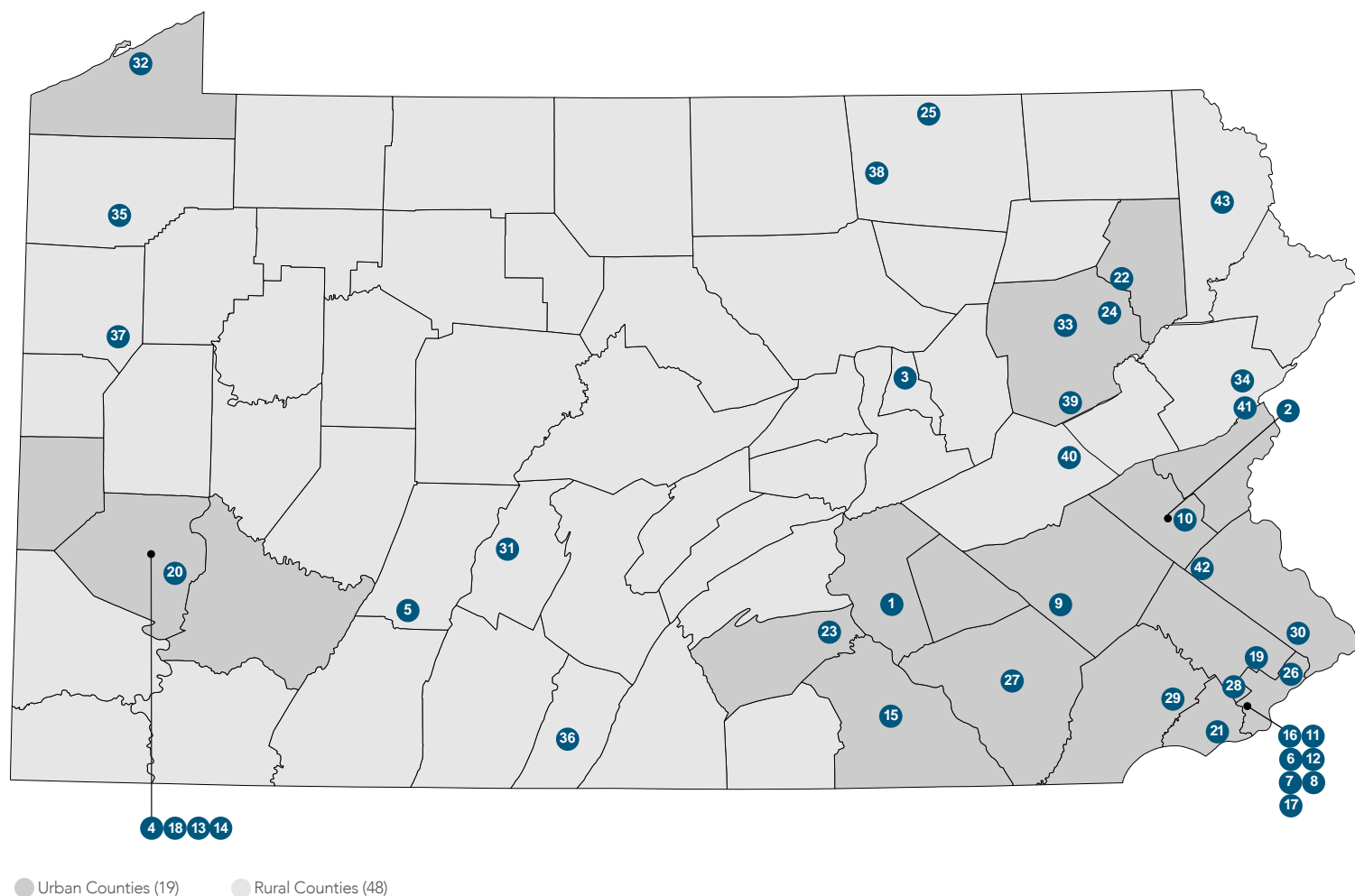
LEVEL 3 ADULT TRAUMA CENTERS

- 34** Lehigh Valley Health Network
Lehigh Valley Hospital Pocono
- 35** Meadville Medical Center

LEVEL 4 ADULT TRAUMA CENTERS

- 36** Fulton County Medical Center
- 37** Grove City Medical Center
- 38** Guthrie Troy Community Hospital
- 39** Lehigh Valley Health Network – Lehigh Valley
Hospital Hazleton
- 40** St. Luke's University Health Network –
St. Luke's Hospital Miners Campus
- 41** St. Luke's University Health Network –
St. Luke's Hospital Monroe Campus
- 42** St. Luke's University Health Network –
St. Luke's Hospital Upper Bucks Campus
- 43** Wayne Memorial Hospital

PENNSYLVANIA COUNTY MAP



ANNUAL TRAUMA SYSTEM DEVELOPMENT UPDATE

2019 Strategic Plan Accomplishments

TRAUMA SYSTEM DEVELOPMENT AND ENHANCEMENT

- **Optimize Trauma Center Placement in Pennsylvania**

In 2016 the National Academies of Science, Engineering and Medicine published a document titled, “A National Trauma Care System: Integrating Military and Civilian Trauma Systems to Achieve Zero Preventable Deaths.” This document was the result of a yearlong collaboration between the U.S. Department of Defense, trauma professional organizations and emergency medical services organizations. One area of best practice discussed in the report, and released as a position statement by the American College of Surgeons, was how the lead trauma/EMS agency should take ownership of creating a needs-based process for trauma center development that focuses on optimizing care of injured patients and avoids over proliferation of higher-level trauma centers. Research has shown that Level 1 and 2 trauma centers located in close proximity to one another can lead to diminished trauma patient volumes which can negatively impact patient outcomes.

As a result of this report and the PTSF board strategic planning process, a PTSF Trauma System Development Committee formed in 2017 to create a vision for future trauma center placement in PA that would serve to optimize care in rural underserved areas of the state and avoid over-proliferation of trauma centers in urban areas of PA. The work of that committee resulted in creating a proposal approved by the PTSF Board of Directors for revising legislation that:

- Increased volume requirements for level 2 trauma centers to equal requirement of level 1 trauma centers.
- Prevented future accreditation of level 1, 2 and 3 trauma centers in close proximity to one another.
- Provided funding for level 4 trauma centers in rural counties of Pennsylvania.

July 2, 2019—Governor Tom Wolf signed HB786 into law; highlights include:

- *Level 2 trauma centers will be required to have an annual volume of 600 PTOS patients.*
- *Hospitals pursuing level 1, 2 and 3 trauma center accreditation will be required to be 25 miles away from the closest level 1, 2 and 3 trauma centers. Hospitals less than 25 miles away can apply to PTSF for a waiver that will be granted if PTOS volumes of level 1 and 2 trauma centers within 25 miles of their locale are double the required volume for the level of accreditation.*
- *Level 4 trauma centers in rural counties will receive funding based on unallocated funds remaining from the funding pool for level 3 trauma centers.*

- **Promote Appropriate Trauma Care Coverage in Geographically Underserved Areas**

- Level 4 accreditation: One hospital was accredited as a level 4 trauma center in a rural county of Pennsylvania: St. Luke’s University Health Network – St. Luke’s Hospital Monroe Campus, Stroudsburg, PA.



▸ Critical Access Hospital Funding

- Grant funding was provided for the 10th consecutive year to PTSF through the Federal Medicare Rural Hospital Flexibility/Critical Access Hospital (CAH) Program. Funding was used to:
 - Waive PTSF fees to CAHs to cover education and software costs during trauma center accreditation pursuits.
 - Complete a 3-year CAH Trauma Recognition Pilot Program (TRPP).
- Trauma Care Enhancement in Rural Areas of Pennsylvania.
 - A 3-year CAH TRPP was finalized aimed at enhancing trauma care delivery in rural areas. PTSF staff coached participant hospitals with staff education, clinical management guideline development, and performance improvement efforts. Chief accomplishments of the program included:
 - Improved relationship with local EMS agencies—education was provided to EMS agencies regarding the need for expeditious patient transfer.
 - Facility Trauma Focused Education—education conducted including the Rural Trauma Team Development Course® (RTTDC), trauma related articles and trauma nurse course.
 - Public Trauma Focused Education—TRPP facilities provided trauma focused education in their communities including: Stop the Bleed, fall prevention and bike safety.
 - Enhanced Communication—TRPP facilities worked with receiving Level 1 & 2 trauma centers to improve communication including rapid acceptance of a transfer patient and clinical care guidance.
 - Trauma Patient Transfer Process—TRPP facilities relayed an increased understanding in the importance of identifying the need to transfer quickly, facilitate a prompt and safe transfer, and doing only the necessary diagnostic studies.
 - TRPP Mentoring Tool—a tool was developed for use by Pennsylvania Level 1 and 2 trauma centers to support the mentoring of referring facilities.
 - Halo Effect—TRPP facilities reported a hospital-wide appreciation regarding care of the injured patient. Areas included education, performance improvement, radiology and lab study completion times, and radiology and lab read times.

Next steps are to educate accredited trauma centers on the principle of the program so they can appropriately mentor receiving hospitals on how to enhance care of injured patients. Congratulations to Conemaugh Meyersdale Medical Center, Meyersdale, PA and Titusville Area Hospital, Titusville, PA for completing the Trauma Recognition Pilot Program.



Conemaugh Meyersdale Medical Center—pictured from left: David Bradley (PTSF), Heather Smith, Chief Executive Officer, Pam Swansboro, Chief Nursing Officer, and Ryan Weaver, Quality/Risk Manager.



Titusville Area Hospital—pictured from left: David Bradley (PTSF), Brenda Burnett, Vice President/Chief Nursing Officer, and Kim Combs, Emergency Department Director.

ANNUAL PA-TQIP UPDATE

Optimizing Analysis of Key Data through TQIP and Performance Improvement Databases



813

patients 100+ years



114

oldest age

BACKGROUND

In 2008, the American College of Surgeons (ACS) created the national Trauma Quality Improvement Program (TQIP) that was aimed at enhancing clinical outcomes of trauma patients by creating a risk adjusted benchmarking system for use by individual trauma centers and states as a whole. Several years later the ACS created TQIP “Collaboratives”. These Collaboratives are groups of trauma centers enrolled in TQIP which work together to review benchmarking information and share best practices to improve care.

Beginning in January 2017, the PTSF Board of Directors approved that all accredited level 1, 2 and 3 trauma centers in Pennsylvania must enroll in TQIP making Pennsylvania one of only two states in the country at that time to require TQIP participation from all trauma centers. (Prior to this time half of PA trauma centers voluntarily participated.) PTSF also required that all TQIP centers must submit data for use by the Pennsylvania TQIP Collaborative.

PA-TQIP COLLABORATIVE JOURNEY

In 2019 the PA-TQIP Collaborative dataset grew from 11 participating PA trauma programs to 36 trauma programs. By requiring all level 1, 2, and 3 trauma centers to participate, more comprehensive risk adjusted benchmarking reports are now available with information on high and low performance throughout the state. The PA-TQIP Collaborative also continues to offer exciting opportunities to share best practices and clinical care challenges with the goal of ensuring equitable, high level trauma care across the Commonwealth. As trust and transparency grows, sharing of both successes and failures will continue to benefit all members. Starting in 2020, the PTSF Board of Directors will use a trauma center’s TQIP report as one of several criteria to decide if the site survey cycle can be extended to 4-years.

HIGHLIGHTS

- Fall 2019 TQIP Collaborative Report included 29 PA trauma programs with 17,838 cases vs. 493 TQIP centers nationally submitting 291,636 cases.
- High performance shown for risk adjusted mortality overall and in elderly which represents an improvement from previous report.
- High performance remains with acute kidney injury and surgical site infections cohorts
- Projects instituted based on underperforming areas noted on TQIP report and within Collaborative:

■ Reducing Unplanned ICU Admissions

- ◆ Past reports showed potential for improvement
- ◆ 20 scenarios identified regarding reasons for unplanned ICU admissions
 - ⊙ Three areas of incongruencies:
 - Virtual upgrade
 - Perioperative/post-procedural care
 - Medical upgrades in care
- ◆ Sought assistance for definition clarity
- ◆ Teamwork required to determine whether unplanned ICU admission occurs
- ◆ No longer a major complication!

■ Reducing Venous Thromboembolism

- ◆ TQIP Performance shows PA is a low performer

- ◆ VTE Work Groups established
 - ⊙ Multi-disciplinary: trauma surgeons, Trauma Program Managers, PI coordinators, pharmacists, subspecialists
- ◆ Factors contributing to issue
 - ⊙ Timing of prophylaxis
 - ⊙ Dosing- weight based
 - ⊙ Checking levels
 - ⊙ Subspecialty support
- ◆ Next Steps: Best Practice Paper from PA centers

■ Overcoming Barriers for sharing of outcomes between trauma centers

- ◆ Challenges remain with trauma centers being willing to share their reports with one another. Reasons as expressed by participants include:
 - ⊙ Lack of hospital administrative support to share data
 - ⊙ Skepticism regarding accuracy of data submitted and whether reports are valid.
 - ⊙ Fear of retribution during site survey
 - ⊙ Fear that a competing hospital will use outcomes against them
- ◆ Future Vision
 - ⊙ Openly share data- ~70% of centers currently willing to do it
 - ⊙ Control the data set- do drill downs for the whole state- save time for the centers
 - ⊙ Pair high performing centers with low performing centers

■ Geriatric Trauma Care Best Practices

- ◆ Although PA is a high performer as reflected in the TQIP Collaborative report, there remains a high number of geriatric complications within the PTOS statewide registry.
- ◆ Future vision
 - ⊙ Implement a geriatric frailty score with the PTOS statewide registry to assist trauma centers in identifying patients at risk for functional decline.
 - ⊙ Complete best practice guideline
 - ⊙ Examine PTOS, TQIP, and Outcomes Central Site repositories for themes.

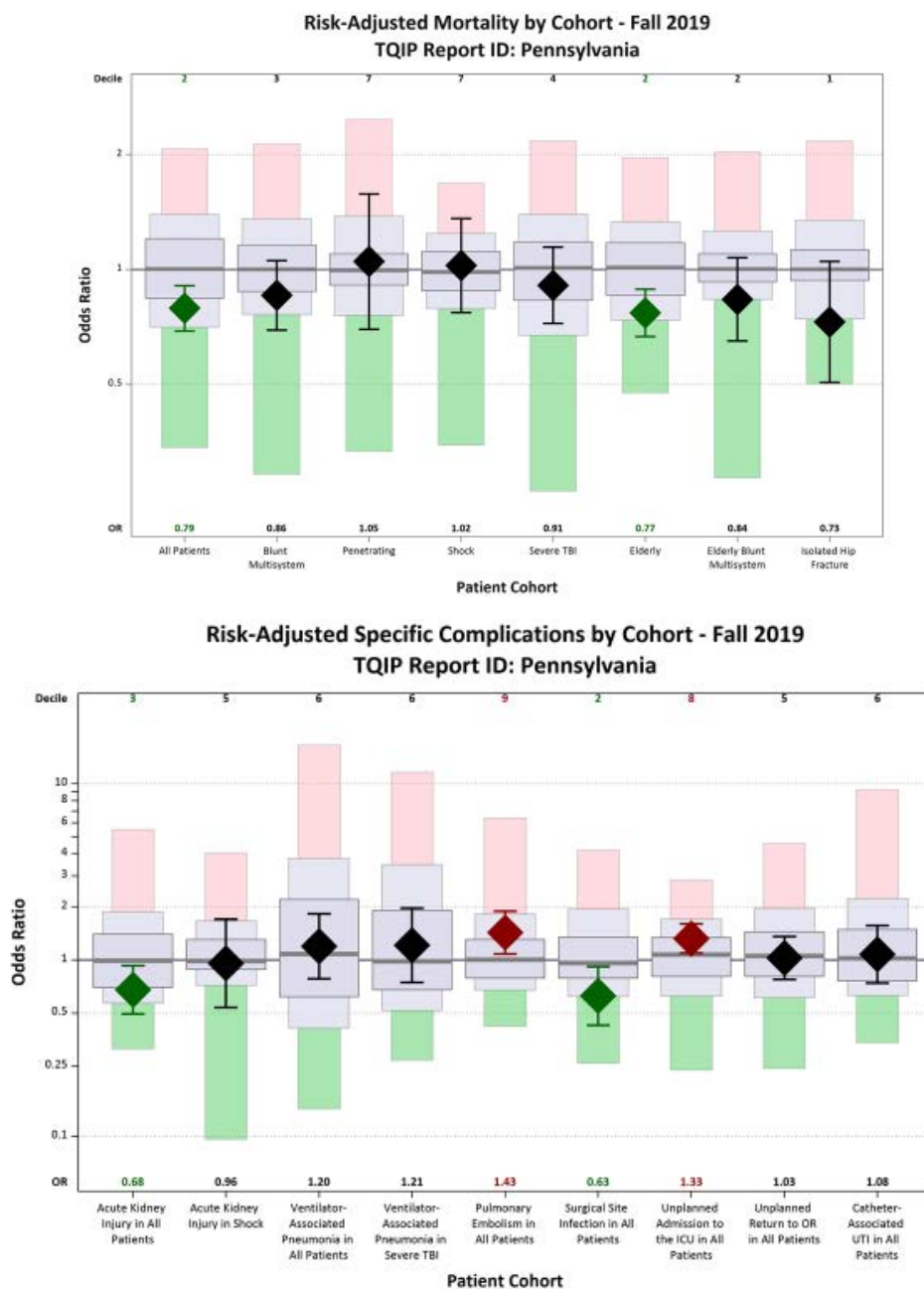
■ Proposal for Using TQIP to reduce frequency of Accreditation Surveys starting 2020

- ◆ Criteria for eligibility to increase site survey cycle to 4-years:
 - ⊙ Program must have received a prior full three years of accreditation without any significant issues that are listed below.
 - ⊙ Program may not be applying for an upgrade in level of Trauma Center
 - ⊙ Program must receive at a minimum a full three-year accreditation on this cycle without any of the significant issues listed below.
 - ⊙ Any program that has lost both the TPM and TPMD positions within the 12 months prior to accreditation survey will not be eligible for the 4-year accreditation
 - ⊙ TQIP Metrics for consideration: All Patient Mortality and All Patient Complications: Trauma Center's most recent report compared to national (not limited to PA Collaborative comparison). Must not be statistically significant low performer (red diamond)

- Any program that received one of the following significant issues would not qualify for a four-year accreditation. These significant issues are thought to affect patient outcomes.

- Administration - Institutional Commitment
- Clinical Care
 - Clinical Care in resuscitative phase including ATLS principles and/or Emergency Physician involvement
 - Physician Response to trauma team activations
 - Suboptimal clinical care
 - Performance Improvement
- Registry Timeliness and accuracy

Figures 1 and 2: Red diamonds show areas representing opportunities for improvement in Pennsylvania trauma centers; green diamonds show high performance.





COMMITTEES & COMMITTEE ROSTER

The PTSF Board of Directors recognized the contributions of 12 committees in 2019; five were comprised only of PTSF board members. Every accredited trauma center within the Commonwealth had representation within these committees.

CONFLICT OF INTEREST (BOARD)

Henry Boateng, MD—Chair
Deborah Chappel, RN
Doug Kupas, MD
Simon Lampard, MD
Philip Pandolph
Patrick Reilly, MD
David Scaff, DO

EXECUTIVE COMMITTEE (BOARD)

Patrick Reilly, MD, Committee Chair
Meg Ashton, RN—Board Vice Chair
Charles Barbera MD—Standards Committee Chair
Lisa Golden, RN—Board appointed
Simon Lampard, MD—Registry Committee Chair
Jo Ann Miller, RN—Policy & Procedure Committee Chair
Philip Pandolph—Board Secretary/Treasurer

FINANCE COMMITTEE (BOARD)

Philip Pandolph—Chair
Meg Ashton, RN
Charles Barbera, MD
Lisa Golden, RN
Douglas Hock
Patrick Reilly, MD
Susan Williams, MD

NOMINATING COMMITTEE (BOARD)

Philip Pandolph—Chair
Meg Ashton, RN
Jack Jallo, MD
Simon Lampard, MD
Jo Ann Miller, RN
Patrick Reilly, MD
Susan Williams, MD

OUTCOMES COMMITTEE

Denise Torres, MD—Chair
Forrest Fernandez, MD—Vice Chair
Louis Alarcon, MD
Amy Bollinger, RN
Linda DiBello, RN
John Gallagher, RN
Sandra Garrett, RN
Leda Heidenreich, RN
Marcin Jankowski, MD
Lisa LaRock, RN
JoAnn Miller, RN
Matthew Mowry, RN
Patrick Reilly, MD—Ex-Officio
Rovinder Sandhu, MD
Karen Schaeffer
Shannon Shoemaker
Lars Sjöholm, MD

Samantha Smith, RN
Peter Thomas, DO
Donna Titus, RN

PIPS COMMITTEE

Sandra Garrett, RN—Chair
Denise Torres, MD—Vice Chair
Amanda Alberico, RN
Cynthia Anthony, RN
Meg Ashton, RN
Marie Campbell, RN
Amy Clontz, RN
Kristen DiFiore, RN
Susan Eckert, RN
Michael Fong, RN
Colleen Fries, RN
Melinda Gallagher, RN
Renee Gorba
Kimberlee Hettel, RN
Jennifer Hudson, RN
Amy Iskra, RN
Gregory Jelliff, RN
Alfred Kennedy, MD
Susan Lampariello, RN
Cheryl Lansenderfer, RN
Kerry Larkin, RN
Ann Lewis, RN
Richard Lopez, DO
Cathy McCloskey, RN
Virginia Miller, RN
Kimberly Shoff, RN
Mary Wenger, RN

POLICY & PROCEDURE COMMITTEE (BOARD)

Jo Ann Miller, RN—Chair
Ronald Andro, RN
Meg Ashton, RN
Charles Barbera, MD
Deborah Chappel, RN
Lisa Golden, RN
Patrick Reilly, MD

STANDARDS OF ACCREDITATION COMMITTEE

Charles Barbera, MD—Chair
Eric Bradburn, DO
Alain Corcos, MD
M. Hassan Budeir, MD
Daniel Carney, MD
Julie Donnelly, RN
Russell Dumire, MD
Michelle Dunstan, RN
Brett Engbrecht, MD
Alexandra Evans, RN
Brian Frank, MD
Larissa Glowinski, RN
Jason Granet, MD
Patrick Kim, MD
Cheryl MacDonald-Sweet, RN
Sarah Mattocks, RN
Dee Nicholas, RN

Diane Perks, CRNP
Allan Philp, MD
Z. Trevor Ritz, DO
Ehyal Shweiki, MD
Joseph Stirparo, MD
Michael Taramelli, RN
Jill Volgraf, RN
Rebecca Wilde-Onia, RN

TRAUMA INJURY PREVENTION COMMITTEE

Deb Erdman, RN—Chair
Kathryn Bommer, RN
Florastine Byarms, RN
Thomas Causer, RN
Teresa Cranston, RN
Shannon DePatto
Gina Duchossois
Lisa Eckenrode, RN
Judy Egly
Loreen Evans
James Fairlie, RN
Stephanie Felke
Trisha Ford, RN
Sunny Goodyear, RN
Nora Kramer, RN
Gail Malloy, RN
Cathy Markey, RN
Janet McMaster, RN
William McQuilken
Susan Miksch
Andrea Nesfeder
Mary Ann O'Connell
Patricia Palubinsky, RN
Melissa Ross, RN
Emmy Sasala
Stephanie Stiles
Rochelle Thompson
Chris Vitale, RN
Reda Willis, RN
Lucille Young, RN
Sarah Zelazny
Adam Zwislewski, RN

TRAUMA REGISTRY COMMITTEE

Simon Lampard, MD—Chair
Deborah Chappel, RN—Vice Chair
Susan Bank-Miksch
Gail Blinstrub, RN
Nicole Bolig
Roxanne Chandler, RHIA
Ronda Clifton
Paul Defibaugh
Alicia DiLeonardo
Sandra Durgin
Harsh Grewal, MD
Amanda Litz
Linda Nitka-Moyer, RN
Jennifer Rondeau, RN
Tammy Shaffer
Alicia Stoner

Hannah Thomas
Christina VanBrunt
Donna Vernon
Holly Weber

TRAUMA RESEARCH COMMITTEE

Niels Martin, MD—Chair
Stanislaw Stawicki, MD—Vice-Chair
Robert Behm, MD
Joshua Brown, MD
Gregory English, MD
Joseph Hess, RN
Dan Holena, MD
Eileen Houseknecht, RN
Paige Jordan, RN
George Koenig, DO
John McCarthy, DO
Frederick Rogers, MD
Mark Sharrah
Jay Strain, MD
Marie Timinski

TRAUMA SYSTEMS DEVELOPMENT COMMITTEE (AD HOC COMMITTEE)

Fred Rogers, MD—Chair
Meg Ashton, RN
Charles Barbera, MD
Bryan Cutler
William Hoff, MD Ex-Officio
Douglas Kupas, MD
John McCarthy, DO
Andy Peitzman, MD
J. Spence Reid, MD
C. William Schwab, MD
Doug Trostle, MD
Jami Zipf, RN



TRAUMA INJURY PREVENTION

2019 SUMMARY REPORT

CATEGORIES OF PREVENTION

FALL PREVENTION

35	Number of Matter of Balance classes completed
391	Number of Matter of Balance class participants
5	Number of Matter of Balance Coach classes completed
56	Number of Matter of Balance coaches trained
82	Number of Healthy Steps classes completed
903	Number of Healthy Steps participants
855	Number of Other Fall Prevention programs including screenings and lectures
4362	Number of Other Fall Prevention program participants

SENIOR DRIVING SAFETY

14	Number of Car Fit events completed
130	Number of Car Fit event participants
0	Number of Car Fit Technician trainings
0	Number of Car Fit Technicians trained
9	Number of Other Senior Driving Safety programs including lectures
102	Number of Other Senior driving safety program participants

CHILD PASSENGER SAFETY (CPS)

205	Number of Car Seat Check-up Events
1832	Total number of Seats Checked
110	Number of Child Passenger Safety programs including lectures
3332	Number of Child Passenger Safety program participants
8	Number of CPS Technician trainings hosted
118	Number of CPS Technicians trained
2913	Number of CPS Restraints distributed by your trauma program

TEEN DRIVING SAFETY

15	Number of ImPACT Teen Driving Safety programs provided
368	Number of ImPACT Teen Driving Safety participants
130	Number of Other Teen Driving programs provided
17,362	Number of Other Teen Driving program participants including staff and students

BIKE SAFETY PROGRAMS

96	Number of Bike Safety programs provided
10,641	Number of Bike Safety program participants
4284	Number of Bike Helmets distributed by your trauma program

CONCUSSION/TBI PROGRAMS

85	Number of Concussion Education programs
9473	Number of Concussion Education program participants
14	Number of Healthcare Provider Concussion trainings

DRUG & ALCOHOL AWARENESS

81	Number of Drug and Alcohol Awareness programs
5860	Number of Drug and Alcohol Awareness program participants

VIOLENCE PREVENTION

103	Number of Violence Prevention programs
1765	Number of Violence Prevention program participants
12	Number of Healthcare Provider Violence Prevention programs
359	Number of Healthcare Provider Violence Prevention program participants

STOP THE BLEED (STB)

309	Number of Stop the Bleed Community programs
7349	Number of Stop the Bleed Community participants
107	Number of Stop the Bleed Healthcare Provider trainings
2494	Number of Stop the Bleed Healthcare Providers trained
68	Number of Stop the Bleed Law Enforcement trainings
1563	Number of Stop the Bleed Law Enforcement Personnel trained
205	Number of Stop the Bleed School trainings
12,138	Number of Stop the Bleed School Staff and Students trained
398	Number of Stop the Bleed kits distributed in your community



OTHER COMMUNITY PROGRAMS*

837	Number of Burn Prevention programs
4871	Number of Burn Prevention program participants
791	Number of Drowning Prevention programs
1675	Number of Drowning Prevention program participants
826	Number of Pediatric Home Safety programs
6743	Number of Pediatric Home Safety program participants
8	Number of Farm Safety programs
670	Number of Farm Safety program participants
15	Number of Sports Safety programs
80	Number of Sports Safety program participants
727	Number of Poison Prevention programs
1522	Number of Poison Prevention program participants
97	Number of Expos/Health Fairs

SUMMARY DATA WAS COMPILED BY THE TRAUMA INJURY PREVENTION COMMITTEE, HIGHLIGHTING THE PREVENTION EFFORTS AT THE FOLLOWING TRAUMA CENTERS THAT ELECTED TO REPORT DATA:

Abington Hospital—Jefferson Health, Children's Hospital of Philadelphia, Conemaugh Memorial Medical Center, Crozer-Chester Medical Center, Geisinger Community Medical Center, Geisinger Holy Spirit, Geisinger Medical Center, Geisinger Janet Weis Children's Hospital, Geisinger Wyoming Valley Medical Center, Lehigh Valley Health Network – Lehigh Valley Hospital Cedar Crest, Paoli Hospital—Mainline Health, PennState Health Milton S. Hershey Medical Center, Reading Hospital—Tower Health, St. Christopher's Hospital for Children—a Partnership of Tower Health & Drexel University, St. Luke's University Health Network – St. Luke's University Hospital Bethlehem, Thomas Jefferson University Hospital, UPMC Children's Hospital of Pittsburgh, WellSpan York Hospital – WellSpan Health, and Wilkes-Barre General Hospital –Commonwealth Health.

TRAUMA RESEARCH

Trauma Research is the cornerstone of PTSF's current strategic plan as we continue to promote clinical and trauma systems research utilizing PTSF's statewide trauma registry called "PTOS". PTOS is known nationally for the quality of its data and is a repository of data abstracted from every patient meeting PTOS criterion from Pennsylvania accredited trauma centers since 1986. This section highlights research performed by Pennsylvania's Trauma Centers much of which was made possible by utilizing data from the statewide PTOS trauma registry.

RESEARCH GRANTS & AWARDS

During the 23rd Annual Fall Conference & Meeting, the Trauma Research Committee recognized PA trauma center researchers at the "PTOS Trauma Registry & Trauma Research" session. This was the third year that grants and awards were given to PA trauma center researchers. Money used for awards is received from the state of Ohio as part of contractual work performed by the PTSF Research Committee. The committee scores Ohio research proposals that are used to award Ohio researchers money that is received from moving traffic violations.

PTSF RESEARCH GRANT AWARD:



Elinore Kaufman, MD was the winner of the Best PTOS Data Request Award. The title of her study using the PTOS dataset was, "Changes in Pennsylvania Trauma Outcomes Over Time."

Dr. Kaufman is a Fellow (PGY-7) in Trauma & Surgical Critical Care at the University of Pennsylvania, Penn Medicine – Penn Presbyterian Medical Center, Philadelphia, Pa.

2019 PTOS DATA REQUESTS

67 including:

- › 48 requests for internal use (PTSF Board of Directors, Committees and staff)
- › 16 requests from PA trauma centers and pursuing hospitals
- › 3 requests from statewide organizations

PTSF BEST COMPLETED RESEARCH AWARD:

This award is given to trauma center researchers who utilize the PTOS statewide trauma registry data base to conduct their research.

Winners of the competition were:



From left: D. Holena, J. Brown, M. Horst

First Place – *"The Geriatric Trauma Patient: A Neglected Individual in a Mature Trauma System."* Presenter: Michael Horst, PhD, Penn Medicine – Lancaster General Health, Lancaster General Hospital, Lancaster, Pa.

Second Place – *"The Impact of Inter-hospital Transfer on Mortality Benchmarking at Level III and IV Trauma Centers: A Step Toward Shared Mortality Attribution in a Statewide System."* Presenter: Daniel Holena, MD, MSCE, University of Pennsylvania, Penn Medicine – Penn Presbyterian Medical Center, Philadelphia, Pa.

Third Place – *"Defining Geographic Emergency Medical Services Coverage in Trauma Systems."* Presenter: Joshua Brown, MD, MSC, University of Pittsburgh Medical Center, (UPMC Presbyterian), Pittsburgh, Pa.

2018-2019 COMPLETED RESEARCH USING PTOS STATEWIDE REGISTRY

1. **Stop The Bleed: Report on a State-wide Bleeding Control Program for the Pennsylvania State Police.** Juliet Altenburg MSN, Matthew Neal MD, Brian Frank MD, Kim Everett MA, Tom Wasser Ph.D., Andrew Peitzman MD. *PTSF Research Committee, UPMC Presbyterian Medical Center, Geisinger CMC.*
2. **"The Impact of Interhospital Transfer on Mortality Benchmarking at Level 3 and 4 Trauma Centers: A Step Towards Shared Mortality Attribution in a Statewide System."** Daniel N Holena MD MSCE^{1,2}, Elinore J Kaufman MD MSHP¹, Justin Hatchimonji MD^{1,2}, Brian P Smith MD¹, Ruiying Xiong, MS², Thomas E Wasser PhD MEd³, M Kit Delgado MD MS^{4,2}, Douglas J Wiebe PhD², Brendan G Carr MD MSHP⁵, Patrick M Reilly MD¹, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA, Pennsylvania Trauma Systems Foundation, Harrisburg, PA, Kimmel School of Medicine at the Thomas Jefferson University, Philadelphia, PA
3. **"Defining Geographic Emergency Medical Services Coverage in Trauma Systems."** Brown, Joshua B. MD, MSc; Rosengart, Matthew R. MD, MPH; Peitzman, Andrew B. MD; Billiar, Timothy R. MD; Sperry, Jason L. MD, MPH. (Published in JOT, July 2019/ 2019 EAST podium paper.) University of Pittsburgh Medical Center, Pittsburgh, PA, Division of Trauma and General Surgery, Department of Surgery
4. **"Outcome Differences in Adolescent Blunt Severe Polytrauma Patients Managed at Pediatric Versus Adult Trauma Centers."** Frederick B. Rogers MD, MS, MA, FACS^{*1}; Tawnya M. Vernon BA¹; Barbara A. Gaines, MD²; Scott B. Armen MD, FACS, FCCP, FCCM³; Brian W. Gross BS⁴; Eric H. Bradburn DO, MS, FACS¹, ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²University of Pittsburgh, Department of Surgery- Pittsburgh, PA, ³Penn State Health Milton S. Hershey Medical Center- Hershey, PA, ⁴Robert Larner College of Medicine University of Vermont- Burlington, VT
5. **"High Performance Trauma Centers in Pennsylvania: Big Saves or Marginal Gains?"** Justin S. Hatchimonji MD MBE¹, Elinore J. Kaufman MD MSHP², Andrew Young MD², Brian P. Smith MD², Ruiying Xiong MS³, Patrick M. Reilly MD², Daniel N. Holena MD MSCE^{2,3}, ¹Department of Surgery, Hospital of the University of Pennsylvania, Phila., PA, ²Division of Traumatology, Emergency Surgery, and Surgical Critical Care, Hospital of the University of Pennsylvania, Philadelphia, PA, ³Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania, Philadelphia, PA
6. **"Should the Spleen Go in the Bucket? Comparing Management Outcomes of Patients with TBI and Blunt Splenic Injury."** Jordan M. Kirsch, DO; Mark Sharrah, MS; Daniel Carney, MD; Shabnam Hafiz, MD. WellSpan – York Hospital
7. **"The Geriatric Trauma Patient: A Neglected Individual in a Mature Trauma System."** Michael Horst PhD¹; Tawnya Vernon BA¹; Eric Bradburn DO, MS, FACS¹; Alan Cook MD², FACS; Tamer Shtayyeh DO¹, Frederick Rogers MD, MS, MA, FACS^{*1}, ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²University of Texas Health Science Center Tyler- Tyler, TX
8. **Venous Thromboembolism Following Penetrating Femoral and Popliteal Artery Injuries: An Opportunity for Increased Prevention.** Asanthi Ratnasekera DO FACOS, Odessa Pulido DO, Alicia Lozano MS, Danielle Sienko MS, Sandra Durgin RN, MSN, Sharon Nichols CRNP, Niels Martin MD, Crozer Keystone Health System, Upland PA and Penn Presbyterian Medical Center, Philadelphia PA.
9. **Octogenarians and Older Trauma Patients with Dementia on Anticoagulation.** Taylor Santor, Dale Dangleben, Jennifer Hudson, Kristine Rosancrans,, Geisinger Holy Spirit, Camp Hill PA
10. **Co-Morbidities Negatively Impact Outcome of Traumatic Injury Following Motorcycle Crashes.** Fahim A Habib, MD MPH, Olivia Haile BS, Akhtar Khan MD, Jehangir Badar, MD, Mike Taramelli RN MBA/HCM, Richard Nahouraii MD, Forbes Hospital
11. **Is Pre-Hospital Point of Care Ultrasound Able to Identify Non-Compressible Traumatic Hemorrhagic Shock to Allow for Directed Resuscitation in a Hybrid Operating Room in a Level 2 Trauma Center?** Richard A. Lopez, DO, Samuel Slimmer, MD, Kelly Slimmer, RN, Richard Davis, DO, Bo Zhu MD, Robert Strony, DO, MBA, Geisinger Wyoming Valley
12. **Where Should the Kids Go? A Comparison of Sub-Specialty Operative Adolescent Patient Outcomes in Adult and Pediatric Trauma Centers.** Dane Scantling DO, MPH^{1,2}, Margaret Butchy², Samuel Brimmer², Thomas Wasser PhD, MEd³, Rosmold Castillo MD^{1,2}, Robert Weiss MD^{1,2}, Marcin Jankowski DO¹, ¹Hahnemann University Hospital, ²The Drexel University College of Medicine, ³The Pennsylvania Trauma Systems Foundation
13. **Development of Clinical Tracheostomy Score to Identify Cervical Spinal Cord Injury Patients Requiring Prolonged Ventilator Support.** Dane Scantling DO, MPH^{1,2}, Janeway Granche³, John Williamson MD^{1,2}, Edward Gracely PhD³, Darshak Thosani MD^{1,2}, Brendan McCracken MD^{1,2}, ¹Hahnemann University Hospital, Philadelphia, PA 1910, ²Drexel University College of Medicine, Philadelphia, PA 19102, ³The Dornsife School of Public Health of Drexel University, Department of Epidemiology and Biostatistics, Philadelphia, PA 19104
14. **Development of Rib/Sternal Fracture Protocol to Decrease Intensive Care Unit Bouncebacks.** Eric Bradburn DO, MS, FACS^{*1}; Shreya Jammula MD², ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²Geisinger Health System- Danville, PA
15. **A Preliminary Analysis of Level 4 Trauma Centers within an Organized Trauma System.** Tawnya Vernon¹, Alan Cook², Brian Gross³, Eric Bradburn¹, Shreya Jammula⁴, Juliet Altenburg⁵, David Bradley⁵, Frederick Rogers^{*1}, ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²University of Texas Health Science Center Tyler- Tyler, TX, ³Robert Larner College of Medicine at The University of Vermont- Burlington, VT, ⁴Geisinger Health System- Danville, PA, ⁵Pennsylvania Trauma System Foundation- Mechanicsburg, PA
16. **An Analysis of Overtriage and Undertriage by Advanced Life Support Transport in a Mature Trauma System.** Eric H. Bradburn^{*1}; Tawnya M. Vernon¹; Brian W. Gross²; Alan D. Cook³; Frederick B. Rogers¹, ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²Robert Larner College of Medicine at The University of Vermont- Burlington, VT, ³University of Texas Health Science Center Tyler- Tyler, TX
17. **An Evaluation of Pediatric Transfer Over-triage in a Mature Trauma System.** Frederick B. Rogers^{*1}, Eric H. Bradburn¹, Tawnya M. Vernon¹, Michael A. Horst¹, Austin Yoder¹, Ting Brown¹, Alan Cook¹, ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²University of Texas Health Science Center Tyler- Tyler, TX
18. **Do Adolescent Patients with Penetrating Trauma Have Better Outcomes at Pediatric Trauma Centers Versus Adult Trauma Centers?** Frederick B. Rogers MD, MS, MA, FACS^{*1}; Tawnya M. Vernon BA¹; Barbara A. Gaines, MD²; Scott B. Armen MD, FACS, FCCP, FCCM³; ; Brian W. Gross BS⁴; Eric H. Bradburn DO, MS, FACS¹, ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²University of Pittsburgh, Department of Surgery- Pittsburgh, PA, ³Penn State Health Milton S. Hershey Medical Center- Hershey, PA, ⁴Robert Larner College of Medicine University of Vermont- Burlington, VT
19. **An Analysis of Pediatric Under-triage in a Mature Trauma System.** Michael A. Horst, PhD¹; Tawnya M. Vernon, BA¹; Shreya Jammula, MD²; Amelia Rogers, MD³; Barbara A. Gaines, MD⁴; Eric H. Bradburn, DO, FACS¹; Frederick B. Rogers, MD, FACS^{*1}, ¹Penn Medicine Lancaster General Health- Lancaster, PA, ²Geisinger Health System- Danville, PA, ³University of Louisville, Department of Surgery- Louisville, KY, ⁴University of Pittsburgh, Department of Surgery- Pittsburgh, PA

ANNUAL PTOS DATA SUMMARY

	Total PTOS Patients	Total Deaths	Percent Mortality
1986-1995	165,489	11,048	6.676%
1996-2005	233,533	15,260	6.534%
2006-2015	377,839	17,429	4.613%
2016	43,907	1,771	4.000%
2017	45,347	1,879	4.100%
2018	50,019	1,924	3.800%
2019	51,447	1,883	3.700%



47,148

GSWs 1985 - 2019



1,839

GSWs 2019

	Average Hospital Length of Stay (Days)	Average Age	Average ISS
1986-1995	9.042	38.840	12.454
1996-2005	6.364	41.577	12.432
2006-2015	5.394	48.134	10.960
2016	4.846	52.275	9.911
2017	4.850	53.413	9.915
2018	4.884	54.827	9.703
2019	4.901	55.744	9.818

	Total Driver or Passenger MVA	Total Wearing a Seatbelt	Total Not Wearing a Seatbelt	Percentage Not Wearing a Seatbelt
1986-1995	53,205	15,453	37,752	71.0%
1996-2005	65,969	26,062	39,907	60.5%
2006-2015	67,950	33,970	33,980	50.0%
2016	9,545	3,692	5,853	61.30%
2017	9,636	3,742	5,894	61.16%
2018	9,951	4,211	5,740	57.68%
2019	9,986	3,989	5,997	60.05%

- Pennsylvania Trauma Outcomes Study (PTOS) is Pennsylvania's statewide trauma registry
- All accredited trauma centers are required to submit data on their trauma patients who meet PTOS inclusion criteria
- Injury Severity Scores (ISS) range from 0–75. An ISS score greater than 15 is considered significant trauma
- 41 accredited trauma centers submitted PTOS data in 2019

TRAUMA CENTER INJURIES & DEATHS BY COUNTY

County of Injury	Total Patients	# Deaths	% Deaths	County of Injury	Total Patients	# Deaths	% Deaths
Adams	241	7	2.905	Luzerne	1831	66	3.605
Allegheny	4938	184	3.726	Lycoming	111	3	2.703
Armstrong	193	9	4.663	McKean	52	4	7.692
Beaver	410	15	3.659	Mercer	398	5	1.256
Bedford	195	8	4.103	Mifflin	146	6	4.11
Berks	1651	64	3.876	Monroe	993	22	2.216
Blair	524	23	4.389	Montgomery	1940	65	3.351
Bradford	283	9	3.18	Montour	120	11	9.167
Bucks	2168	60	2.768	Northhampton	1281	30	2.342
Butler	554	22	3.971	Northumberland	383	20	5.222
Cambria	629	20	3.18	Perry	116	4	3.448
Cameron	9	0	0	Philadelphia	6893	456	6.615
Carbon	428	5	1.168	Pike	140	5	3.571
Centre	243	10	4.115	Potter	27	2	7.407
Chester	1048	22	2.099	Schuylkill	661	30	4.539
Clarion	102	3	2.941	Snyder	113	3	2.655
Clearfield	296	14	4.73	Somerset	316	11	3.481
Clinton	54	5	9.259	Sullivan	26	0	0
Columbia	316	8	2.532	Susquehanna	93	1	1.075
Crawford	212	4	1.887	Tioga	79	4	5.063
Cumberland	627	16	2.552	Union	126	7	5.556
Dauphin	678	22	3.245	Venango	160	3	1.875
Delaware	1799	55	3.057	Warren	98	2	2.041
Elk	111	3	2.703	Washington	577	31	5.373
Erie	905	43	4.751	Wayne	271	10	3.69
Fayette	257	5	1.946	Westmoreland	1027	48	4.674
Forest	15	0	0	Wyoming	101	6	5.941
Franklin	213	13	6.103	York	1529	57	3.728
Fulton	91	2	2.198	DATA OUTSIDE OF THE COMMONWEALTH INCLUDING:			
Greene	36	3	8.333	Delaware	120	3	2.5
Huntingdon	135	4	2.963	Maryland	92	2	2.174
Indiana	197	5	2.538	New Jersey	927	24	2.589
Jefferson	134	5	3.731	New York	610	26	4.262
Juniata	69	2	2.899	Ohio	375	13	3.467
Lackawanna	655	24	3.664	West Virginia	210	4	1.905
Lancaster	1839	91	4.948	Other State	70	3	4.286
Lawrence	191	5	2.618	Virginia	10	0	0
Lebanon	380	12	3.158	Other Country	46	0	0
Lehigh	1625	48	2.954	Not Valued	5038	52	1.032

p e n n s y l v a n i a
TRAUMA
SYSTEMS
f o u n d a t i o n



Celebrating the PAST.
Advancing the FUTURE.

MAILING ADDRESS | 275 Cumberland Parkway, #234, Mechanicsburg, PA 17055

PHYSICAL ADDRESS | Slate Hill Business Center, 3907 Hartzdale Drive, Suite 702 | Camp Hill, PA 17011

Phone: 717-697-5512 | FAX: 717-972-0598

patrauma@ptsf.org | www.ptsf.org