

Title: Evaluating associations between trauma-related characteristics and functional recovery in individuals with spinal cord injury

Objective: To determine the associations between trauma variables, acute phase-related variables, and patient-level characteristics with functional recovery during inpatient rehabilitation for individuals with spinal cord injury (SCI). The associations were evaluated by linking individuals' records between the Pennsylvania Trauma Systems Outcomes Study and the National SCI Model Systems databases.

Design: Retrospective cohort analysis.

Setting: Two SCI Model Centers in Pennsylvania, United States.

Methods: We used a record linkage toolkit in Python to link 735 individuals with traumatic SCI between the databases. The percentage for true-match and error were 92.0% and 0.1%, respectively. The functional recovery during inpatient rehabilitation was determined in 604 individuals with SCI by ordinary least squares regression (OLS) and gradient boosting regression (GBR) analyses.

Results: The OLS and GBR analyses indicated older age, greater impairment (SCI level combined with American Spinal Injury Association impairment scale), presence of diabetes mellitus, pulmonary complications during acute care, and longer length of stay at an inpatient rehabilitation facility were associated with lower functional recovery (OLS $R^2= 0.56$ and GBR $R^2= 0.58$).

Conclusions: Trauma and acute care variables in addition to patient characteristics were associated with functional recovery during inpatient rehabilitation in individuals with SCI. Further investigation is needed to understand the role of diabetes mellitus and pulmonary complications, which have not been previously associated with functional recovery in individuals with SCI.

Author(s): Shivayogi V. Hiremath¹, Ralph J. Marino², Donna L. Coffman³, Amol M. Karmarkar^{4,5}, Carole A. Tucker⁶

¹Department of Health and Rehabilitation Sciences, Temple University, Philadelphia, Pennsylvania, USA

²Department of Rehabilitation Medicine, Thomas Jefferson University, Philadelphia, Pennsylvania, USA

³Department of Epidemiology and Biostatistics, Temple University, Philadelphia, Pennsylvania, USA

⁴Department of Physical Medicine and Rehabilitation, Virginia Commonwealth University, Richmond, Virginia, USA

⁵Sheltering Arms Institute, Richmond, Virginia, USA

⁶Department of Nutrition, Metabolic and Rehabilitation Sciences, University of Texas Medical Branch-Galveston, Galveston, Texas, USA

Presenting Author: Shivayogi V. Hiremath

Association of Prehospital Needle Decompression with Mortality Among Injured Patients Requiring Emergency Chest Decompression

Daniel Muchnok, NRP¹, Allison Vargo, BS¹, Andrew-Paul Deeb, MD MSc¹, Francis X. Guyette, MD MPH², Joshua B. Brown, MD MSc¹

¹ Division of Trauma and General Surgery, Department of Surgery, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania 15213

² Department of Emergency Medicine, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania 15213

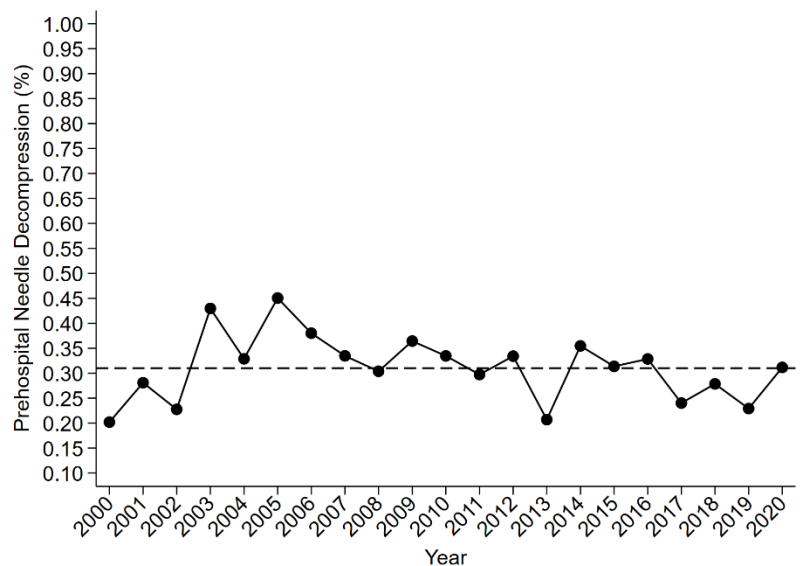
Presenting Author: Daniel Muchnok, NRP

Objectives: Prehospital needle decompression (PHND) is a rare but potentially life-saving procedure. Prior studies are small, limited to single institutions or emergency medical services (EMS) agencies, and lack appropriate comparator groups, making the effectiveness of this intervention uncertain. Our objective was to determine the impact of PHND on early mortality in patients requiring emergent chest decompression.

Methods: We performed a retrospective cohort study of the Pennsylvania Trauma Outcomes Study from 2000-2020 including patients aged >15years transported from the scene of injury. We compared patients undergoing PHND with patients without PHND but undergoing tube thoracostomy within 15minutes of trauma center arrival as a group that potentially would have benefitted from PHND. Mixed-effect logistic regression was used to determine the variability in PHND between patient and EMS agency factors, as well as the association between risk-adjusted 24-hour mortality and PHND, accounting for clustering by center and year. We performed propensity score matching within EMS agency, instrumental variable analysis using EMS agency-level PHND proportion, as well as several sensitivity analyses to address potential bias.

Results: A total of 8,469 patients were included with 1337 (11%) PHND patients. PHND rates were stable over the study period between 0.2% and 0.5% (Figure). Patient factors accounted for 43% of variation in PHND rates, while EMS agency accounted for 57% of variation. PHND was associated with 25% decrease in odds of 24-hour mortality (OR 0.75; 95%CI 0.61-0.94, p=0.01). We found similar results in patients that survived their ED stay (OR 0.68; 95%CI 0.52-0.89, p<0.01), excluding severe TBI (OR 0.65; 95%CI 0.45-0.95, p=0.03), and restricted to patients with severe chest injury (OR 0.72; 95%CI 0.55-0.93, p=0.01). PHND was also associated with lower odds of 24-hour mortality after propensity matching (OR 0.79; 95%CI 0.62-0.98, p=0.04), when restricting matches to the same EMS agency (OR 0.74; 95%CI 0.56-0.99, p=0.04), and in instrumental variable probit regression (coeff -0.60; 95%CI -1.04, -0.16, p<0.01).

Conclusion: PHND is associated with lower 24h mortality compared to emergent trauma center chest tube placement in scene trauma patients. Although performed rarely, PHND can be a life-saving intervention and should be reinforced in EMS education for appropriately selected trauma patients.



Routine Repeat Imaging is Unnecessary for Coagulopathic Patients Sustaining Head Trauma

Steadman Wang, MD; Mitchell Meagher, DO; Emma Mullin, BS; Catherine Brown, BS; Edward Skicki, DO

Abstract

Introduction

In trauma patients using warfarin, current guidelines recommend computed tomography of the brain (CTH), 24-hour observation, and repeat CTH to monitor for stability. Despite growing evidence of uncommon delayed hemorrhage, this remains standard practice even in mild traumatic brain injury without intracranial hemorrhage (ICH). Our study sought to determine the incidence and outcomes of delayed ICH (DICH) in trauma patients on supra-therapeutic warfarin without initial ICH.

Methods

A retrospective, single institutional study was performed of all adult trauma patients (>18 years old) who presented on prehospital warfarin with an international normalized ratio (INR) >3 and initial CTH that did not demonstrate ICH. Each of these patients underwent subsequent CTH within 24 hours and any DICH was identified. Those who demonstrated DICH were further examined to identify potential risk factors and outcomes such as need for further imaging or surgical intervention. Analyses were performed using Fisher's exact tests and Student's t-tests.

Results

225 patients were identified from January 2015 to April 2021 that met inclusion criteria. Of those identified, only 3 (1.33%) were found to develop any DICH on routine repeat CTH. Identified characteristics did not reach statistical significance due to the low number of DICH. None of the patients with DICH went on to require intervention.

Conclusion

In patients with identified traumatic injury on supra-therapeutic warfarin, an initial CTH without identified ICH alone is an adequate survey. DICH in these patients is uncommon and routine reimaging within 24 hours is unlikely to change clinical management in patients with intact neurologic status.

Ranking Injury Mechanisms affecting children using an Injury Prevention Priority Score to Assess our Community's Needs

Objective:

Trauma is a leading cause of morbidity and mortality in the pediatric population. Many traumatic injuries are preventable, and trauma centers play a major role in directing population-level injury prevention strategies. In addition, much of the data regarding prevalence and severity of pediatric injuries vary significantly by community and trauma center. Given the constraint of finite resources, calculating priorities for local injury prevention in an institution's community is essential. A method for calculating community-level trauma burden, the Injury Prevention and Priority Score (IPPS), was developed by Haider et al. This widely applicable tool is more robust than simple prevalence rankings and takes into account the severity of an injury – an important factor when developing prevention strategies. We applied the IPPS methodology to rank injury mechanisms among our institution's patient population.

Methods:

Institutional-specific Pennsylvania Trauma Outcome Study (PTOS) registry data was queried to evaluate pediatric trauma patients (21 years and younger, n=3918) that presented to this tertiary care center between July 2018 and June 2022. Causes of injury were categorized into injury mechanisms based on external cause codes, and the 13 most common injury mechanisms were examined. Ranked by frequency, "Fall" was the most prevalent injury mechanism in our population (n=1982) and was therefore further categorized as "ground-level fall" or "fall above ground level". The analysis was performed with these 14 most common injury mechanisms.

Causes of injury were ranked by both frequency and severity (based on mean Injury Severity Score, ISS). An IPPS was then calculated for each of the 14 injury mechanisms, based on the relative frequency and the mean ISS. The distributions of the observed frequency and mean ISS for each mechanism were standardized, resulting in two z-scores for each injury mechanism. The z-scores were then summed and transformed into a T-score (the IPPS) with a mean of 50 and SD of 10 across injury mechanisms. Following calculation of the IPPS for each injury mechanism, IPPS was used to sort the mechanisms in descending order to create a rank list, from most to least important injury mechanism for our trauma center's population.

Results:

The 14 injury mechanisms were first ranked by frequency alone, and "ground-level fall" and "fall above ground level" were first and second most prevalent injuries, respectively. The 3rd most prevalent category was "struck by, against" (n=715), encompassing assaults, child abuse, and collisions in sports.

When ranked by severity, the top injury mechanism was "pedestrian" (n=13, mean ISS=15), followed by "firearm" (n=95, mean ISS=11). These had been ranked 12th and 6th, respectively, by frequency. The third most severe mechanism was "motor vehicle traffic" (n=432, mean ISS=11).

An IPPS was calculated for each mechanism, balancing the influences of severity (mean ISS) and frequency. The overall rankings place “Fall above ground level” at the top, “ground-level fall” second, and “motor vehicle traffic” third.

Conclusion:

Computing the IPPS for each injury mechanism enables trauma centers to use their local data to better inform injury prevention efforts in their communities. Calculating rankings that take into account an injury mechanism’s relative frequency and severity allow a more robust understanding of their impact. The simplicity of this tool allows trauma centers to use data already collected as part of their registries to make informed decisions in directing injury prevention efforts.

IPPS Ranking of Injury Priorities for The Children’s Hospital of Philadelphia

Rank	Mechanism of Injury	n	IPPS*
1	Falls Above Ground-Level	1025	64.0
2	Ground-level Falls	968	63.0
3	MV traffic	434	61.8
4	Pedestrian, other	13	61.1
5	Struck by, against	716	59.7
6	Firearm	101	55.8
7	Transport, other	83	49.0
8	Fire/burn	75	47.6
9	Pedal cyclst, oth	168	46.8
10	Overexertion	79	43.3
11	Other	97	42.9
12	Cut/pierce	95	42.3
13	Bites and stings	76	39.4
14	Machinery	5	38.2
15	Drowning/submersion	1	35.2

*IPPS: Injury Prevention Priority Score, Mean =50, SD=10.

Presenting Author: Allison Mak

Authors: Allison Mak, Kevin Rix, Douglas Wiebe, Michael L. Nance

Allison Mak, MD

National Clinician Scholars Program, University of Pennsylvania
Research Fellow, The Children’s Hospital of Philadelphia

Kevin Rix, PhD, MPH

Department of Biostatistics, Epidemiology, and Informatics
Perelman School of Medicine, the University of Pennsylvania

Douglas Wiebe, PhD

Department of Biostatistics, Epidemiology, and Informatics

Perelman School of Medicine, the University of Pennsylvania

Michael L. Nance, MD FACS FAAP

Chief of the Division of Pediatric General, Thoracic and Fetal Surgery

Director of the Pediatric Trauma Program

The Children's Hospital of Philadelphia

“Examining Surgical Field Response Capabilities of Pennsylvania Trauma Centers”

Elise Heidorn, M.D.¹ (Presenting Author), Adrian Ong, M.D.¹, Shannon Foster, M.D.¹, Christopher Butts, PhD D.O., Alison Muller, M.S.P.H¹, Anthony Martin, R.N.¹, Thomas Geng, D.O.¹, and Michael Musso, D.O.¹

¹Department of Trauma and Acute Care Surgery, Reading Hospital, Tower Health, West Reading, PA

Introduction

The need for hospital-based trauma personnel to provide field assistance is rare, but often time-critical. A paucity of literature exists examining the development of trauma field response teams. Prior Emergency Medical Service studies examined a pre-hospital perspective, with none evaluating trauma center (TCs) preparedness for this unique situation. The aim of this study was to determine the current level of preparedness for Pennsylvania Trauma Systems Foundation (PTSF) Accredited Level 1 (L1TC) and Level 2 Trauma Centers (L2TC) for field deployment to coordinate and intervene in patient care.

Methods:

A 20-question survey evaluating preparedness for field deployment was sent to all PTSF L1TCs and L2TCs in Pennsylvania. The survey was emailed to the Trauma Program Managers. Reminder emails were sent two weeks and four weeks later. The survey examined TC demographic information (hospital size, surrounding population density, construct of trauma service, and proximity to next nearest TC) and prior field deployment experience (existence of policy or plan, number of past deployments, and interventions performed). The respondents had an option to select multiple answer choices.

Results:

15 of the 29 (52%) PTSF TCs completed the survey (5 L1TC; 10 L2TC). 66.7% (n=10) of TCs served a population of >500,000 residents while 33.3% (n=5) served a population of 250,000 residents or less. 5 centers were listed as urban, 7 were listed as suburban and 9 were listed as rural. The majority of TCs (86.67%) were 251-500 bed hospitals. 62.5% (n=10) of TCs reported another TC within 25 miles, while 18.75% (n=3) reported 25-50 miles, 12.5% (n=2) reported 50-100 miles and 6.25% (n=1) reported >100 miles to the nearest TC.

In the past five years, 47% (n=7) of the respondents have been deployed to a scene in the field at least once but less than five times. 71.4% (n=5) of the TCs utilized ground transportation while 28.6% (n=2) reported utilizing ground and/or air transportation. Three respondents reported being called to the scene of a motor vehicle collision, one to industrial/factory setting, one to farm/agricultural settings, two to wilderness or rural outdoor setting and one to a structural collapse or explosion. The interventions performed were reported as two providing blood administration, three performing invasive procedures, two providing resuscitation beyond the scope of the pre-hospital personnel, one performing patient triage and two providing on-scene direction.

Although seven respondents reported being deployed to a scene in the field, only 20% of the respondents (n=3) reported having a designated Trauma Field Recovery Team deployment protocol and personnel. All three reported that the Trauma or General Surgeon was the field responder. Only one of the three TCs with dedicated Trauma Field Recovery Teams engaged and/or trained in simulation exercised with EMS, fire or police departments for on-scene deployment. Three of twelve respondents reported having prepared “go-bags” with necessary equipment for immediate deployment.

Conclusions:

TC field deployment is an uncommon occurrence which often requires prompt response on the side of the TC. Given the uncommon nature of surgeon field response existence of a plan or policy can streamline intervention, direction, and response when called upon in these rare instances. Preparation for such events require familiarity with nontraditional patient care environments, equipment, and personnel. Most Pennsylvania TCs do not have formal teams and policies in place, leaving them unprepared for timely response. Given the small sample size, further multicenter investigation evaluating the practical application of a field-response team and its effect on patient care is prudent. Expanding the study to a more national query would allow for better understanding of regional preparedness and the effect of trauma center density field deployment.

Additionally, it will be important to evaluate the TCs that do employ this training and preparedness on the effectiveness. This information will be valuable in determining the resources and training necessary for field deployments as well as the overall effect on patient outcomes.

Longitudinal Patient Reported Outcomes in Trauma and the COVID-19 Pandemic

*Anna E. Garcia Whitlock MD, Justin S. Hatchimonji MD, Deborah Babalola, Katelyn Candido, Mark J. Seamon MD FACS, Elinore J. Kaufman MD MSHP.

*Presenting author

Division of Traumatology, Emergency Surgery, and Surgical Critical Care, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

INTRODUCTION: Trauma patients suffer mental health (MH) and quality of life (QOL) impairments that hinder recovery long after discharge. These challenges have been incompletely characterized, with most studies focusing on the immediate injury period itself. Further, the COVID-19 pandemic caused unprecedented social and economic stress, alongside increased violent injury - with unknown effects on longitudinal MH and QOL.

OBJECTIVES: This prospective cohort study combined our institution specific Pennsylvania Trauma Outcome Study registry data with survey results from the Patient-Reported Outcomes Measurement Information System-29 (PROMIS-29) Survey to evaluate longitudinal MH and QOL outcomes in patients admitted before and after the COVID-19 Pandemic. We hypothesized that patients admitted during the pandemic would exhibit worse MH and QOL outcomes at baseline and 6 months later compared to a pre-pandemic cohort.

METHODS: We recruited patients admitted to our Level 1 Trauma Center between 7/1/2019 and 8/31/2020 to complete the PROMIS-29 survey while admitted and 6 months later. This survey evaluates quality of life across 7 domains with results translated to t-scores and reported as means (SD) compared to a US reference population of 50 +/- 10. High scores in negatively worded domains (i.e. anxiety) reflect poor outcomes and vice-versa for positively worded domains. Patients were also queried about employment, relationship status, living situation, alcohol use, and drug use. Results were integrated with registry data for each patient including age, gender, race, and admission history (mechanism of injury, injury severity score (ISS), hospital length of stay (LOS), and ICU LOS.) Patients were then stratified for analysis based on admission relative to the pandemic i.e. before March of 2020 (BEFORE) versus May through August 2020 (DURING). PROMIS-29 scores were compared between groups and against a reference population at baseline and 6 months later.

RESULTS: 270 patients completed the COVID-19 survey at baseline including 174 BEFORE and 96 DURING patients. DURING patients tended to be younger ($p<0.01$) and male ($p<0.05$). Both had comparable ISS scores however DURING patients tended to be more likely to suffer a gunshot wound or motorcycle accident as opposed to a fall ($p=0.068$). Patients admitted during the pandemic had a shorter LOS including a trend toward less likely to be admitted to ICU ($p=0.051$, 35.4% vs. 47.7%). DURING patients were less likely to have a full-time job (32.3% vs. 47.7%, $p<0.01$) and more likely to engage in drug use ($p<0.05$). Both scored worse than the reference in nearly every domain including physical function, anxiety, sleep disturbance, participation in social activities, and pain interference, while BEFORE patients scored worse than DURING patients in physical function and fatigue (Figure 1A). Six-month surveys were completed by 66 BEFORE patients and 33 DURING patients. Now at 6 months, both were similarly without full-time jobs (27.7% and 30.3%, $p=0.889$) while DURING patients engaged more in drugs and alcohol ($p<0.05$ for both). BEFORE patients continued to score worse than the reference in physical function, sleep disturbance, and pain interference, while DURING patients exhibited worse scores in physical function and anxiety (Figure 1B). When compared, BEFORE patients tended to score worse in physical function ($p=0.05$) while DURING patients had increased anxiety. Pair-wise comparison of t-scores from the same patients revealed that DURING patients improved in physical function and pain interference ($p=0.07$ and $p<0.01$) but their anxiety still tended to increase ($p=0.06$, Figure 2).

CONCLUSION: Patient reported MH and QOL outcomes immediately after trauma were poor, especially compared to the reference population, and continued to suffer for 6 months after injury. Interestingly, outside of having increased anxiety at 6 months, patients admitted during the pandemic did not exhibit worse MH and QOL outcomes, but rather exhibited improved scores in physical function and fatigue that are intriguing given their decreased LOS. The findings not only highlight the need to focus on physical function, sleep disturbance and pain interference when creating programs to help trauma patients reintegrate into society, but that COVID-19 era programs should address challenges rooted in anxiety, unemployment, and substance abuse.

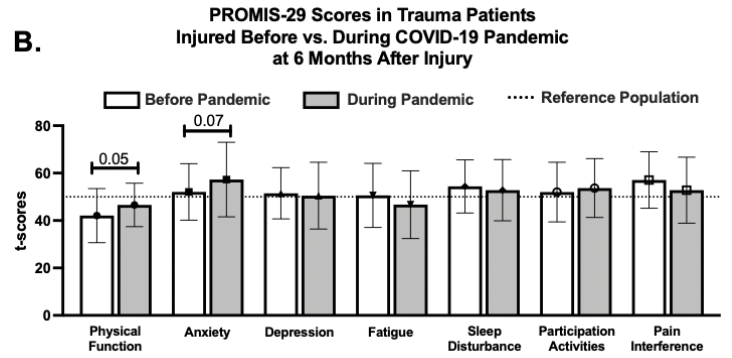
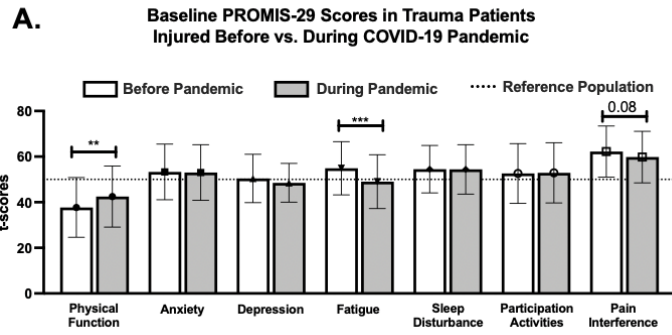


Figure 1, A-B. PROMIS-29 Scores in patients admitted before versus during the COVID-19 Pandemic compared to each other and a reference population at baseline and at 6 months after injury.

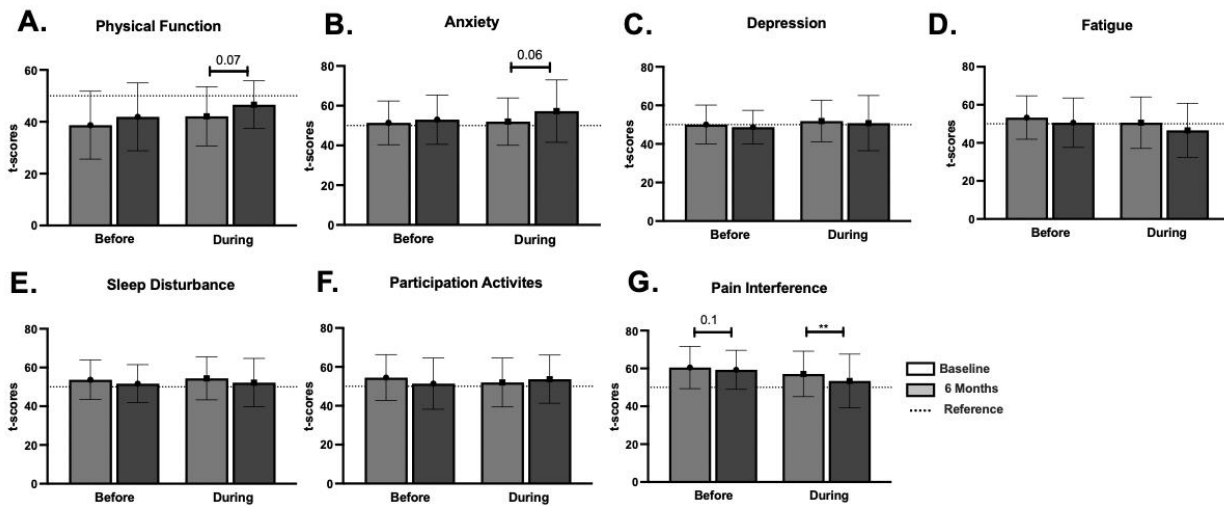


Figure 2. A-G Pairwise comparison of t-scores at baseline versus 6 months among patients admitted after traumatic injury before versus during the COVID-19 pandemic.

The Penn Trauma Violence Intervention Program: The First Year

Presenting author: Rodney Babb

Additional authors: Sunny Jackson MSN, RN, TSCRN, Jamie Song MPH, Kristen Chreiman, MSN, RN, Christina Jacovides MD, Jeremy Cannon MD, Pat Reilly MD, Elinore Kaufman MD MSHP

Program Leaders: Sunny Jackson, Elinore Kaufman

Organizational affiliates: Penn Trauma

Program summary:

Background: More than 90% of victims of interpersonal violence who reach the hospital survive, but many struggle to achieve physical, emotional, and social recovery. After providing life-saving care, trauma centers often discharge vulnerable survivors to the environment where their injuries occurred. Half of patients develop post-traumatic stress disorder or depression. Up to 40% are reinjured within 5 years, and up to 20% perpetrate violence within months after their injury, in the context of retaliation or as a downstream consequence of impaired mental and social health.

Hospital-based violence intervention programs (HVIPs) can bridge the gap between patients in need and the support, services, and opportunities that that can help them recover and thrive. HVIPs rely on trained paraprofessionals who use shared background and experiences to connect with patients, provide support, and navigate healthcare and social services to meet individual patients' goals. HVIPs can prevent recurrent injury, reduce violence perpetration, misdemeanors, aggression, and substance use, improve mental health and self-efficacy, and reduce costs.

Program establishment: Recognizing this unmet need, Penn Trauma secured funding from the Pennsylvania Commission on Crime and Delinquency to establish the Penn Trauma Violence Intervention Program (PTVIP) in 2021. Our dedicated Violence Recovery Specialist joined our staff and began providing dedicated support to survivors in August 2021. Staff have received formal and *ad hoc* training from the Healthcare Alliance for Violence Intervention, Healing Hurt People, and The Children's Hospital of Philadelphia Violence Intervention Program.

Who benefited? To date, we have enrolled 54 patients for services, and 17 have completed the program by meeting their individualized goals. Median age of participants is 23 (range 16-38), 85% are male, 93% are Black, and 89% were injured by gunshot wound. An additional 30 patients have received brief bedside support and resources. Early results are encouraging. The program has had an enthusiastic reception from patients, staff, our health system, and community partners.

Program impact: The most frequent needs identified are mental health (52%), housing (48%), and employment (30%). To address these needs, we collaborate closely with community partner agencies to connect patients to mental health care, relocation resources, employment opportunities, community services, and victim's compensation. We have secured additional funding to launch a patient emergency fund which supports rides, meals, and other needs for our

participants. PTVIP also participates in the city-wide HVIP coalition to establish and share best practices.

Future Plans: Our reach is limited by the capacity of a single Violence Recovery Specialist. Our first goal is to expand our staff to reach all admitted patients recovering from violent injury. Next, we hope to extend the program to reach patients discharged from the Emergency Department or trauma bay after violent injury. Finally, mental health care is another top priority for our patients since our patients have significant unmet needs and community providers have long wait lists. We hope to engage a trauma psychologist to provide invaluable assistance for our recovering patients.

Pina Templeton Injury Prevention Research Award Abstract 2022

Category: Injury Prevention Program

Title: Suicide Awareness, Prevention and Referral – Implementing an evidence-based targeted program in the community

Organizational Affiliation: Main Line Health – Paoli Hospital and Regional Trauma Center

Program Presenter: Lisa M. Eckenrode, DNP, RN, NRP, TCRN – Trauma Injury Prevention and Outreach Coordinator

Program Leaders/Team:

Katie Dabrow, LCSW – Main Line Health Behavioral Health Therapist

Lisa M. Eckenrode, DNP, RN, NRP, TCRN – Trauma Injury Prevention and Outreach Coordinator

Maureen A. Hennessey, Ed.D., MPA -Manager, Community Health and Outreach

Kerry P. Larkin, MSN, RN, CEN – Trauma Program Manager

Background:

Paoli Hospital is a Level II trauma center located in Paoli, Pennsylvania serving Chester County and the surrounding communities within Delaware and Montgomery Counties. In 2019 and 2020, Paoli's Trauma program treated fourteen (2019) and twenty (2020) patients related to suicide. Of note, these numbers only represent the population which are listed in the hospital's trauma registry due to a traumatic self-harm injury and/or resultant death. It does not reflect other potential mechanisms utilized such as poisoning/overdose, or other deliberate high-risk behavior resulting in injury or death.

Suicide is a major contributor to premature mortality as it ranks as the second leading cause of death for ages 10–34 and the fourth leading cause for ages 35–54. Unresolved trauma, neglect, loss, and isolation are among the most common underlying factors. Despite national goals to lower the suicide rate, several recent reports have documented a steady increase in suicide rates in recent years. In 2019, 12 million adults aged 18 or older reported having serious thoughts of suicide, and 1.4 million adults attempted suicide during the past year¹. In 2020, Chester County had 53 reported suicide deaths (12%, rate per 100,000 residents), with an additional 14 that were undetermined deaths². Recent research has identified the rate of suicide ideations during the pandemic is higher than that of the general populations prior to the pandemic and may result in higher suicide rates moving forward. It is anticipated that these numbers will only increase due to the emotional toll related to the COVID-19 pandemic³.

Objectives:

- Educate community members on how to recognize the warning signs of suicide and to effectively communicate concerns of potential self-harm using evidence-based programming.
- Educate community members on available resources and methods for suicide interruption and referral.

Pina Templeton Injury Prevention Research Award Abstract - Continued

Suicide Awareness, Prevention and Referral – Implementing an evidence-based targeted program in the community

Methods:

- Program identification: Question, Persuade, Refer© (QPR) is an evidence-based program listed in the Best Practices Registry funded by the Substance Abuse and Mental Health Services Administration (SAMSHA).
- Educator identification: Two trained facilitators of the Question, Persuade, Refer© (QPR) program were identified by knowledge, interest, willingness, and ability to provide community education both in-person and virtually due to potential COVID-19 impact.
- Training dates were determined to cover a seven-month timeframe of October 2021 to April 2022
- Targeted community reach-outs and marketing were initiated to internal and external partners between September 2021 and April 2022.

Results/Outcome:

- Five programs were provided virtually as COVID-19 infection rates in the county prohibited in person trainings.
- A total of 53 community members were provided QPR education.
- Reported understanding about suicide and suicide prevention PRIOR to the training based on a High, Somewhat High, Medium, Somewhat Low and Low scale was the following:
 - 0 High; 5 Somewhat High; 12 Medium; 26 Somewhat Low; 10 Low
- Reported understanding about suicide and suicide prevention AFTER to the training based on a High, Somewhat High, Medium, Somewhat Low and Low scale was the following:
 - 26 High; 22 Somewhat High; 4 Medium; 1 Somewhat Low; 0 Low
- Self-reported knowledge/newly acquired skills related to suicide facts, awareness, ability to questions and refer individuals who may be experiencing suicidal thoughts was overwhelmingly positive @ 90.5% (48 out of 53).

Summary/Conclusion:

While this population size was relatively small, therefore being a limitation to the overall evaluative long-term impact, the team felt it provided needed community outreach and education given the current mental health environment our region is experiencing. Each participant gained additional knowledge and comfort with recognizing and discussing suicide with others and an increased knowledge of mental health resources/referral options available in the county and their local communities. Anecdotal feedback from some of the participants identified a preference for in person training. This feedback will be considered when scheduling additional programming to encourage that delivery mode in accordance with County Department of Health directives.

The impact of this data supports the need to grow the program further in our county, as well as surrounding counties in our catchment area, and to partner more with our system hospitals and government partners to improve the program's reach and impact.

References

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Title of Program: The Hospital-Based Violence Intervention Program Coalition

Program Leaders: Ruth Abaya, MD, MPH¹, Christina Mancheno, MPH², Loren Adams, MPH³, Danny Galpern, MPH⁴, Bernadette Hohl, PhD, MPH⁵

Affiliations:

1 Philadelphia Department of Public Health Injury Prevention Division, Children’s Hospital of Philadelphia

2 ,3,4,5 Philadelphia Department of Public Health Injury Prevention Division

Beneficiaries of Program: The Hospital-Based Violence Intervention Program (HVIP) Coalition consists of all city HVIPs located in the six level-1 trauma centers throughout the county of Philadelphia, PA. These programs provide trauma-informed care to children, adolescents, and adult victims of violent injury who present to one of the participating hospitals for care. The primary purpose of the coalition is to support and enhance the efforts of the member HVIPs towards the common goal of improving outcomes for nonfatal firearm victims and reducing future victimization throughout Philadelphia.

Program Summary: The coalition is a partnership among the Philadelphia Department of Public Health (PDPH) and all six level-1 trauma centers in Philadelphia County, with the aim of establishing, leading, and improving city-wide hospital-based violence intervention programs. HVIPs provide needed services to individuals who have been violently injured including securing compensation, housing, legal support, employment, and mental health services among others. HVIPs provide support from the hospital to the community, with healthcare providers and violence intervention specialists delivering trauma-informed and multi-disciplinary care as well as comprehensive case management. Although HVIPs provide personalized support to victims of many types of violent injury, this coalition’s focus is on victims of non-fatal firearm injuries. As a member of the coalition, each program has committed to sharing data such as: enrollment procedures, participant demographics, defined catchment area, inclusion/exclusion criteria, full range of services provided, referral partners, duration of engagement and follow-up, common reasons for attrition, outcomes, and the percentage of HVIP participants that were victims of firearm violence. Additionally, coalition members have committed a staff representative to attend monthly planning meetings, participate in data sharing and contribute to the development of final white papers. The activities of the coalition include setting internal goals and milestones for improving the efficacy of their trauma centers’ HVIPs and the city-wide impact of these programs on non-fatal firearm victims.

Program Impact: The coalition has been meeting monthly since July of 2021 for a total of 10 meetings. These standing meetings have about 25 invitees that include representatives from each HVIP program as well as some members of the community. At these meetings, the coalition sets and prioritizes goals. The coalition informed the creation of an informational report on the active HVIP programs in Philadelphia and stakeholder recommendations on how to create an effective program. It is also designing a guaranteed basic income pilot study for HVIP participants to determine if providing short-term financial assistance to help them meet their basic needs would increase their capacity to engage with HVIPs’ treatment and healing services. In addition, the coalition has invited community members as part of a community advisory board who are paid to provide engagement through their attendance with monthly meetings, providing their perspectives on the issues that are relevant to them and their communities. Our member programs have great potential to change the lives of those affected by violence. One participant said “The program did more than motivate me. It remade me.”. Recognizing the potential for this type of impact, the coalition has provided funding and support that has enabled programs to

expand their violence intervention specialist and data management roles. The coalition has also provided a forum for programs to share best practices and strategies to address barriers. Programs in general had over 1,000 interactions with participants in the year 2021 and future work will enable the coalition to determine engagement, reach and utilization of services with more specificity.

Recommendations for Future Work:

We distributed a report that provides recommendations for hospital systems, healthcare providers, violence prevention organizations and lawmakers that want to create their own HVIPs or support the work of HVIPs in their communities. Some key recommendations for hospital systems are to get buy-in from staff, security and administration prior to starting their HVIP, incorporate their program into already existing institutional and community frameworks, meet clients where they are when it comes to providing basic needs and train staff in culturally competent and trauma informed care. Healthcare providers need to become knowledgeable about their local HVIP, provide feedback to program leaders and recognize that trauma-informed care is the responsibility of *all* providers, not just the primary care doctor. Furthermore, we would recommend that violence prevention organizations partner with local hospitals and find a champion within the hospital system to promote their program. In the future, we want to encourage lawmakers to provide more funding for these efforts so that they can be sustainable and to re-examine criteria that might create barriers for victims of violence seeking compensation or help. Some barriers to engagement with HVIPs that need to be addressed are limited funding and resources, enrollment restrictions, backlog on services and peoples' immediate and basic financial needs. The overarching barrier to quality and equitable care is structural racism and future HVIP initiatives should bear that in mind when designing these programs for their communities. Clients of HVIPs should recognize that their trauma responses are normal and can be treated. They should also provide feedback to HVIPs and the services that they offer so the program can improve and better meet their needs.