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**CONCLUSIONS:** This study, the largest COVID-19+ tracheostomy series to date, suggests late tracheostomy can contribute to longer hospitalizations and delayed decannulation in critically ill patients with COVID-19 without improvement in mortality.

### Occult Traumatic Pneumomediastinum on CT Scan Is Not of Concern for Aerodigestive Injury



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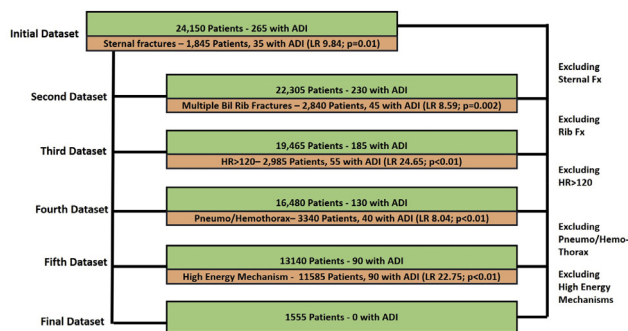
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**INTRODUCTION:** Pneumomediastinum (PM) after blunt chest trauma (BCT) is not uncommon with increased CT scanning of the chest. Often it can lead to other studies to rule out aerodigestive injury (ADI). The aim of this study was to identify variables that are high predictors of ADI and to determine when other studies are not required to rule out ADI.

**METHODS:** Retrospective analysis of the TQIP (2012-2016). We identified patients with BCT with PM. Regression analysis was performed to identify predictors of ADI. Recursive partitioning was performed excluding patients with each ADI predictor. In each subsequent dataset the likelihood ratio (LR) of ADI was calculated comparing patients with the next predictor vs those without it.

**RESULTS:** We identified 1,059,890 BCT patients. The incidence of PM was 24,150 (2.3%). Among patients with PM, mean  $\pm$  SD age was  $41 \pm 20$  years, 72% were male, and Injury Severity Score was 17 (range 9 to 29). The overall incidence of ADI was 1.1% of the patients with PM (13% tracheal, 36% bronchial, and 51% esophageal). On regression, the predictors of ADI were high-energy mechanism (odds ratio OR 4.17; 95% CI, 1.68 to 10.32), pneumo-/hemothorax (OR 3.31; 95% CI, 2.46 to 4.45), multiple bilateral rib fractures (OR 1.38; 95% CI, 1.23 to 1.93), sternal fracture (OR 2.10; 95% CI, 1.42 to 3.13), and heart rate  $> 120$  bpm (OR 1.75; 95% CI, 1.31 to 2.35). After patients with ADI predictors were excluded, there remained 1,555 patients with PM and none had ADI.

**CONCLUSIONS:** ADIs are rare in patients with PM occurring with high-energy mechanisms and concomitant severe chest trauma. Isolated or occult pneumomediastinum without severe thoracic injury might not require an ADI workup.



### Patient Reported Outcomes in Trauma and the Impact of the COVID-19 Pandemic



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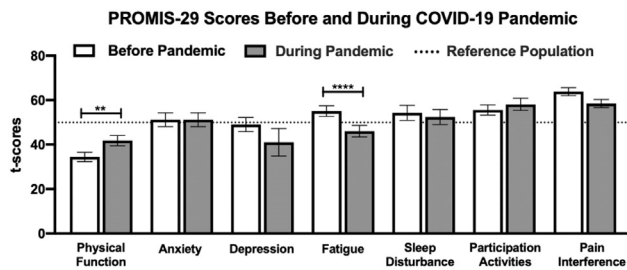
**INTRODUCTION:** Preadmission mental health (MH) and quality of life (QOL) impact post-injury outcomes. COVID-19 caused widespread social and economic stress, along with increased violent injury. We hypothesized that patients injured during the pandemic would report worse MH and QOL compared with a prepandemic cohort.

**METHODS:** We included patients admitted to a Level I trauma center between 7/1/2019 and 8/31/2020. Demographics, injury severity, employment, alcohol use, and relationship status were collected and patients screened for post-traumatic stress disorder. Preadmission MH and QOL were assessed via in-house administration of the Patient-Reported Outcomes Measurement Information System-29 (PROMIS-29) Survey. Patients were stratified by admission before March (before) vs May to August (during). PROMIS-29 scores were compared between groups and against a general reference population (mean  $\pm$  SD  $50 \pm 10$ ).

**RESULTS:** We included 179 before and 95 during patients. During patients were younger ( $41.6$  vs  $46.5$  years;  $p < 0.04$ ) but without difference in injury severity, employment, alcohol use, or relationship status. More during patients were injured by firearm ( $24.2\%$  vs  $15.6\%$ ) or motorcycle crash ( $11.6\%$  vs  $3.4\%$ ) and fewer by fall ( $24.1\%$  vs  $34.1\%$ ;  $p < 0.05$ );  $25.3\%$  during and  $28.5\%$  before patients screened positive for post-traumatic stress disorder.

( $p = 0.57$ ). Before patients scored worse on the PROMIS-29 than the reference in physical function, fatigue, and pain interference, and during patients scored better in physical function and fatigue than before (Fig. 1).

**CONCLUSIONS:** After injury, MH and QOL were poor, but patients presenting during the pandemic had no worse function than those before. Follow-up will identify the pandemic's impact on long-term recovery after trauma including detrimental vs protective factors.



**Figure 1.** PROMIS-29 Scores Before and During the COVID-19 Pandemic. Trauma patients were stratified by admission before or during the pandemic. PROMIS-29 Scores were compared between groups and to a general reference population of mean  $50 \pm 10$  SEM. Higher scores indicate worse outcomes in anxiety, depression, fatigue, sleep disturbance, and pain interference, while lower scores indicate worse outcomes in physical function and participation in activities.

### Racial and Ethnic Disparities in Withdrawal of Life-Sustaining Treatment after Non-Head Injury Trauma

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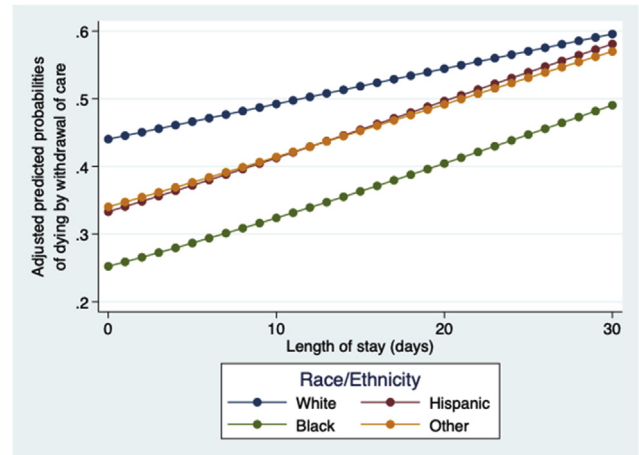
**INTRODUCTION:** Although racial and ethnic inequity exists in various aspects of care after traumatic injury, little is known about potential disparities in end-of-life care in trauma. We sought to examine the racial/ethnic differences in use of withdrawal of life-sustaining treatment in the non-head-injured trauma population.

**METHODS:** We conducted a retrospective analysis of the National Trauma Data Bank from 2017 to 2018. Patients aged 18 years and older and without head injury were included. We performed a bivariable analysis of all patients who died by withdrawal of life-sustaining treatment. Binomial regression analysis was then used to estimate the adjusted odds of utilization of withdrawal of care by racial/ethnic group and predicted probabilities were calculated.

**RESULTS:** A total of 1,084,887 were identified (68.3% White, 15.5% Black, 5.7% Hispanic, 1.7% Asian, 0.9% American Indian, and 0.2% Pacific Islander), of which 22,306 (2.1%) died. Of the patients who died, care was withdrawn in 29.9%. When adjusted for demographics, insurance status, hospital characteristics, mechanism, injury severity, shock index, and length of stay, Black (odds ratio [OR] 0.48; 95% CI, 0.41 to 0.57) and Hispanic patients (OR

0.71; 95% CI, 0.57 to 0.89) were significantly less likely to withdraw care than Whites. At 30 days into hospitalization, the predicted probability of withdrawing care in Black patients (OR 0.49; 95% CI, 0.42 to 0.56) remained lower than Whites (OR 0.59; 95% CI, 0.56 to 0.63) (Fig. 1).

**CONCLUSIONS:** Among non-head-injured dying trauma patients, Black and Hispanic patients are significantly less likely to use withdrawal of care than Whites. Further investigation into the sociocultural norms and institutional distrust influencing these differences is imperative.



**Figure 1.** Adjusted predicted probabilities of dying by withdrawal of care by race among all non-head injured trauma patients that have died.

### Removal of Lodged Bullets after Abdominal/Pelvic Gunshot Wounds Does Not Prevent Osteomyelitis

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**INTRODUCTION:** Abdominal gunshot wounds that penetrate hollow organs have been associated with a higher incidence of infection when the bullet perforates the colon compared with other abdominal organs. Despite this knowledge, few studies have examined the incidence of osteomyelitis in patients from gunshot wounds. Here we examine the association between organs traversed, antibiotics regimen, and incidence of osteomyelitis in patients with gunshot wounds.

**METHODS:** A retrospective analysis of adult patients from 2012 to 2020 who presented with traumatic orthopaedic injury after gunshot wounds to the abdomen/pelvis was performed. Patients were identified using an institutional trauma registry, and data were collected on site of injury, abdominal organs penetrated, and whether the projectile was lodged in bone.