

# A Tale of Two Traumas: Social Determinants of Health Outcomes for Patients with Severe Mental Illness and Traumatic Brain Injury, a Case Series

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## Introduction

- Traumatic brain injury (TBI) and severe mental illness (SMI) have a bidirectional relationship, with TBI commonly presenting with psychiatric sequelae and patients with SMI more likely to suffer TBIs.<sup>1,2</sup>
- Amongst medical/surgical inpatients, mental illness is associated with prolonged medical hospitalizations and poor outcomes.<sup>3</sup>
- We present two cases of patients with pre-existing SMI who were treated at the same large, tertiary hospital at Chicago, IL following TBIs.
- These cases aim to highlight the social determinants of health and structural inequities uniquely impacting the care of patients with comorbid SMI and TBI.

## Two Patient Cases

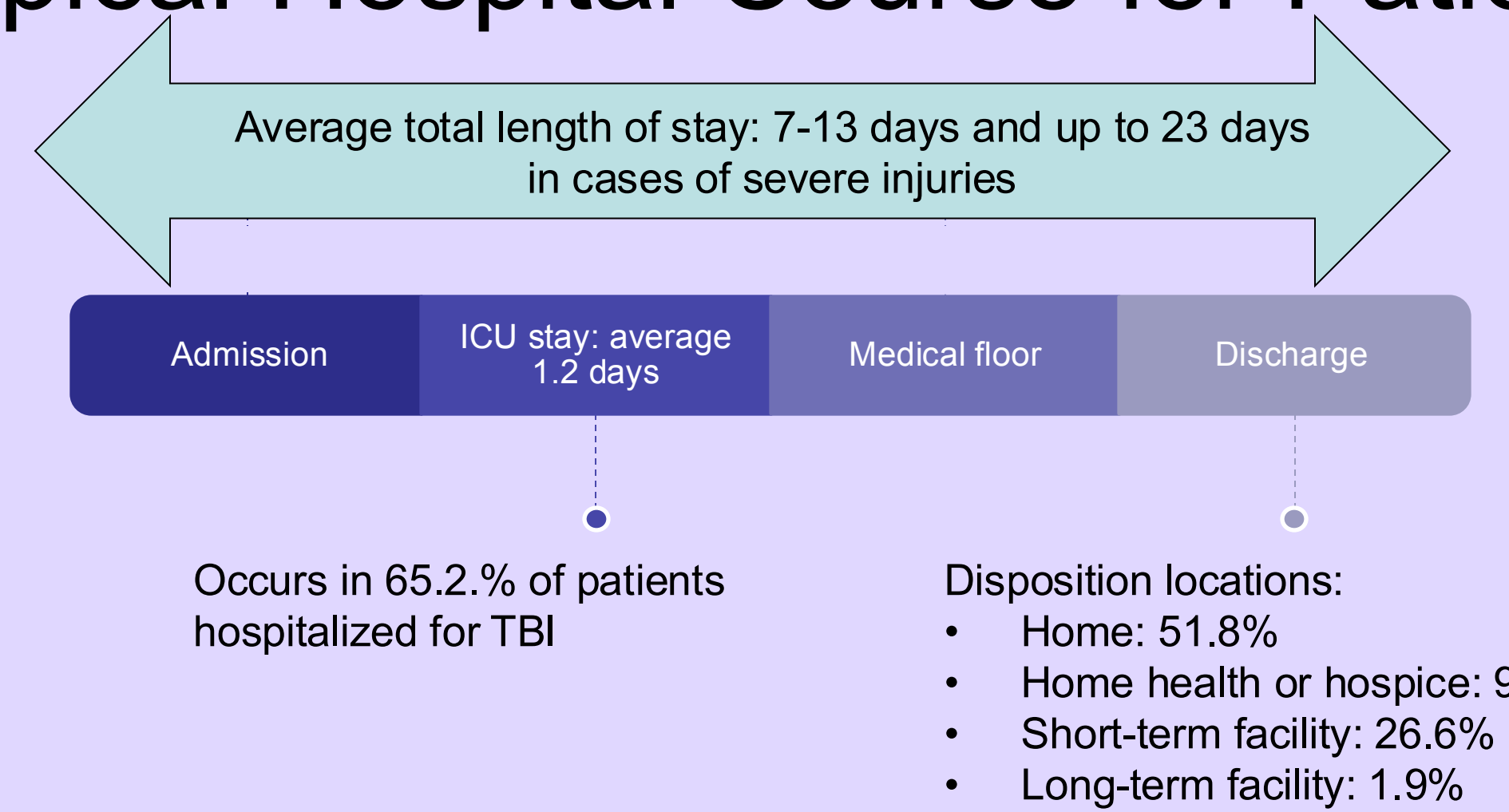
### Patient 1

19-year-old white, domiciled, cisgendered man with a history of bipolar I disorder and borderline personality traits admitted for polytrauma after being hit by a train in a suicide attempt during a manic episode. Consult-liaison (CL) psychiatry was consulted for possible suicide attempt and agitation.

### Patient 2

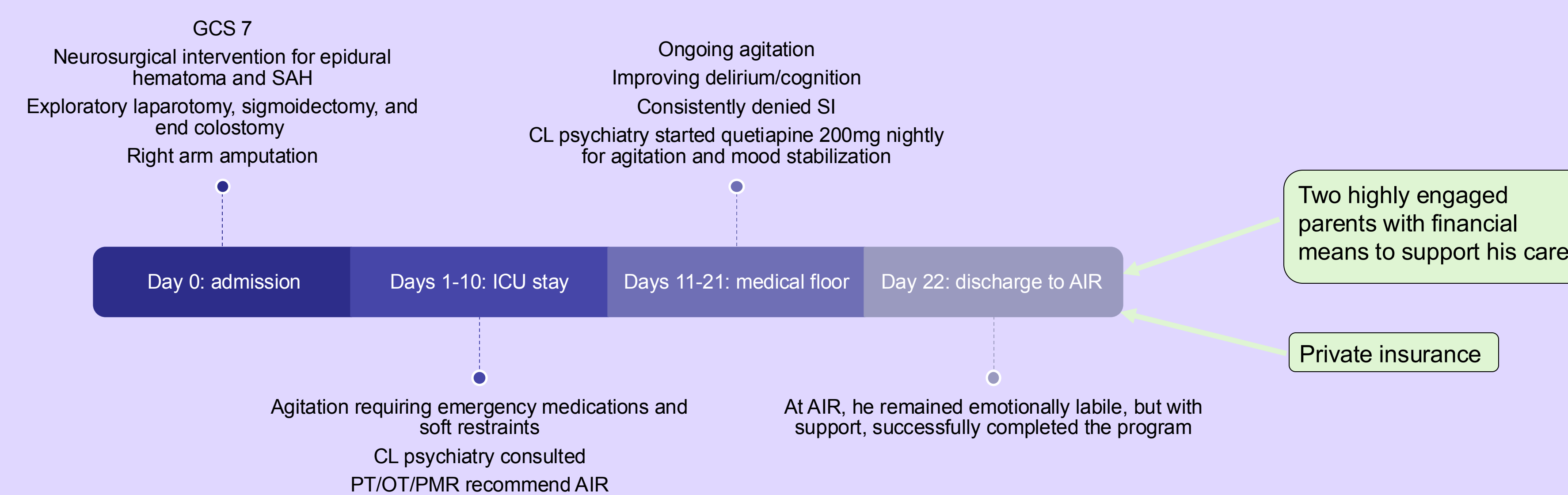
32-year-old black, undomiciled, transgender woman with a history of schizoaffective disorder complicated by numerous psychiatric hospitalizations and medication trials including clozapine admitted for polytrauma after falling onto the train tracks in a suspected suicide attempt. CL psychiatry was consulted for agitation in setting of delirium and TBI.

### Figure 1. Typical Hospital Course for Patients with TBI



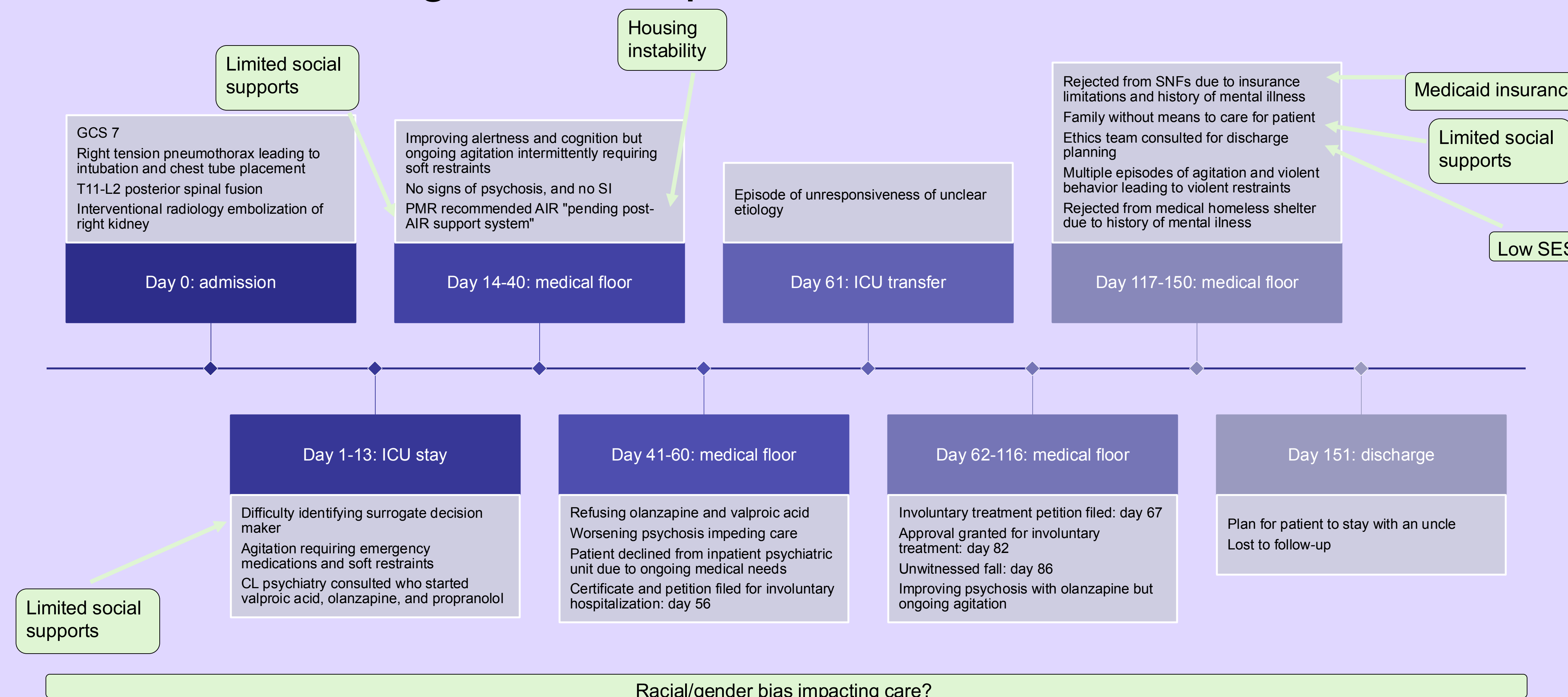
Average length of hospital stay, percent of TBI patients requiring ICU stay, average ICU length of stay, and frequency of various dispositions were determined from the Center for Disease Control's 2016 National Health Statistics Reports and a multicenter retrospective cohort study conducted on TBI patients in Canada.<sup>4-6</sup>

### Figure 2. Hospital Course for Patient 1



Patient 1 was hospitalized for 22 days. Hospitalization was complicated by delirium, agitation, and periods of affective dysregulation. Green arrows/text boxes indicate relevant psychosocial factors impacting his care. GCS=Glasgow Coma Scale, AIR=acute inpatient rehabilitation, PT=physical therapy, OT=occupational therapy, PMR=physical medicine and rehabilitation, SAH=subarachnoid hemorrhage.

### Figure 3. Hospital Course for Patient 2



Patient 2 was hospitalized for 151 days. Hospitalization was complicated by delirium, agitation requiring both non-violent and violent restraints, psychosis requiring involuntary treatment, delays in care related to no clear surrogate decision maker, mechanical fall, episode of non-responsiveness, and moral distress/ethical concerns from staff. GCS=Glasgow Coma Scale, PMR=physical medicine and rehabilitation, SI=suicidal ideation, AIR=acute inpatient rehabilitation, SNF=skilled nursing facility, SES=socioeconomic status.

## Discussion

- Factors contributing to poor outcomes in patient 2 include severity of pre-existing psychiatric illness, degree of agitation and use of violent restraints contributing to placement difficulties, limited family support, housing instability, lower SES, and potentially racial/gender bias.
- Literature suggests that low SES, government insurance, severity of injuries, and discharge destination are the greatest predictors of extended hospital stays in TBI, aligning with our two cases.<sup>5-7</sup>
- A 2023 review highlighted several racial inequities in TBI care, potentially impacting patient 2: non-white patients face longer emergency room wait times, decreased rates of diagnostic procedures, longer hospital stays, increased complications, lower rates of discharge to AIR, and lower amounts of follow-up interventions.<sup>8</sup>
- Patient 2's case also highlights challenges related to the siloing of mental and physical health, as she was felt to be too psychiatrically acute for AIR, SNF, or even a medical homeless shelter and too medically acute for inpatient psychiatric treatment.

## Conclusions

- Understanding predictive factors for adverse health outcomes including prolonged hospitalizations in patients with TBI can lead to early awareness and intervention programs, such as involvement of complex discharge teams.
- As SMI and TBI are highly comorbid, patients would benefit from integrated healthcare systems that address medical, psychiatric, and psychosocial needs concurrently.

## References

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