

The Impact of Stay-at-Home Orders on Volume and Mechanism of Injury in US-based facilities

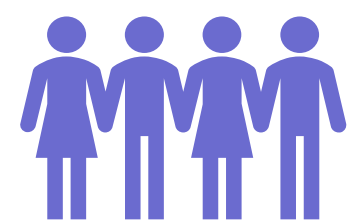
Introduction

- COVID-19 Pandemic had numerous negative effects on the US healthcare system in 2020.
- To mitigate viral spread, the US imposed protective measures such as social distancing, banning unnecessary travel, and instituting stay-at-home orders.
- Objective 1:** Assess the change in injury mechanism in 2020 compared to previous years
- Objective 2:** Assess the change in trauma center volume after the implementation of stay-at-home orders compared to previous years

Methods



Retrospective analysis from January 2018-September 2020



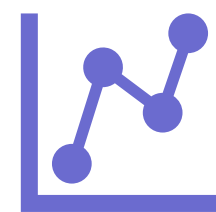
All patients admitted for serious injury, N=877,323 in 504 Centers



Stay-at-home order dates obtained for 43 states (474 centers)



Standardized differences for comparative analysis



Average Trauma Volume analyzed by harmonic regression modeling

Results

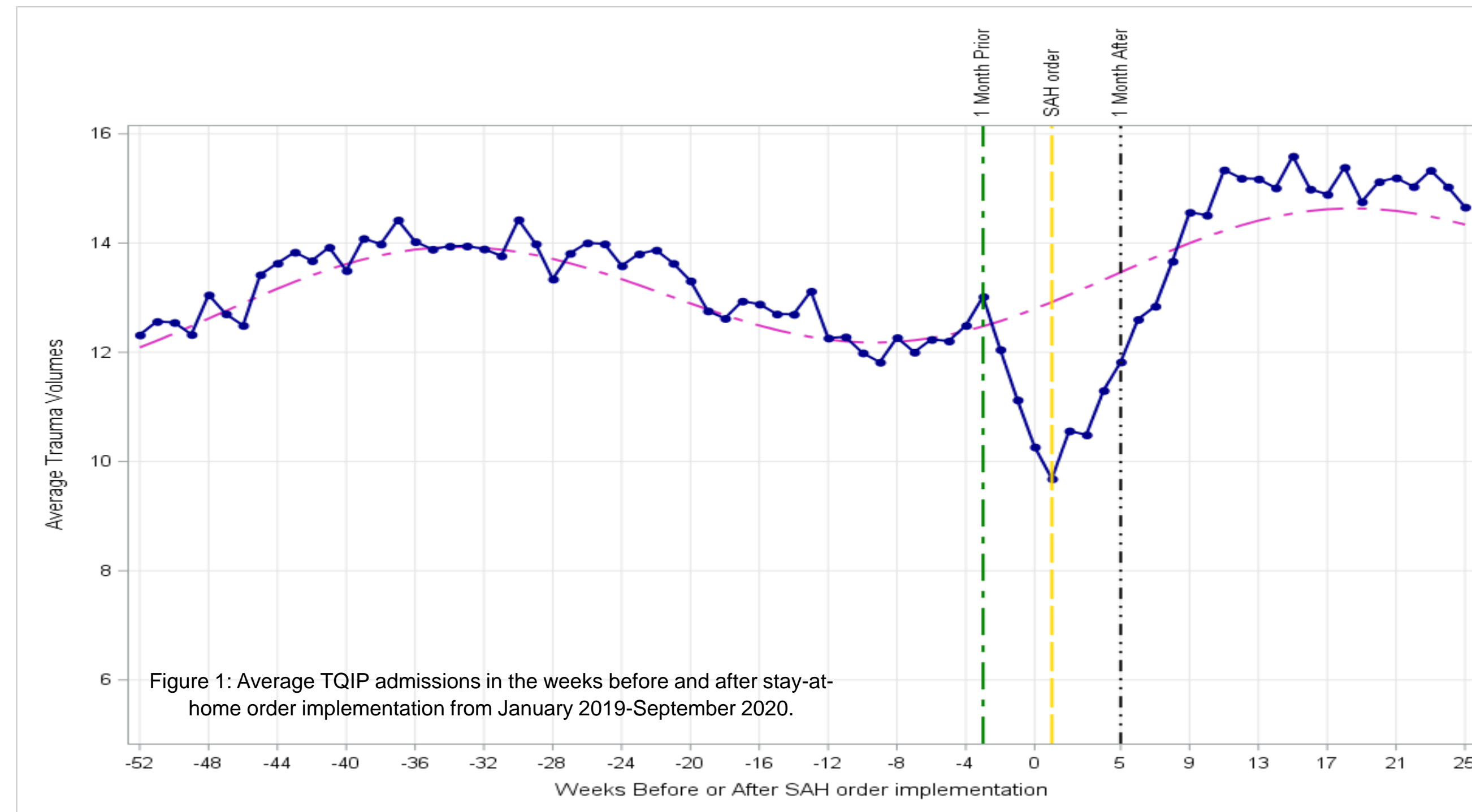


Figure 1: Average TQIP admissions in the weeks before and after stay-at-home order implementation from January 2019-September 2020.

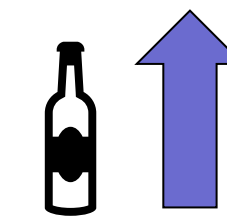
	2018-19 Average (n=160,962)	2020 (n=166,773)	Standardized Differences
Age	54.2 (21.9)	52.8 (22.0)	-0.06
Comorbidities			
Alcohol	10,440 (6.6)	13,611 (8.3)	0.07
Substance Abuse	12,243 (7.8)	14,736 (9.0)	0.04
Race			
Black	23,007 (14.6)	28,176 (17.3)	0.07
White	118,638 (75.1)	117,753 (72.2)	-0.07
Hispanic	17,468 (11.3)	18,561 (11.6)	0.01
Asian	3,324 (2.1)	3,021 (1.9)	-0.02
Other	1,739 (2.9)	1,747 (1.1)	0.1

Table 1: Sociodemographic Characteristics presenting after stay-at-home order compared to corresponding time period

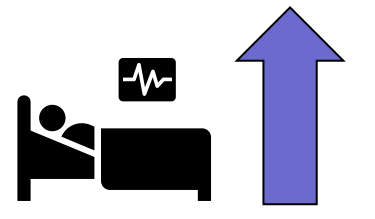
	2018-19 Average (n=160,962)	2020 (n=166,773)	Standardized Differences
Intent			
Unintentional	141,139 (88.2)	144,070 (86.4)	-0.05
Self-Inflicted	2,284 (1.4)	2,355 (1.4)	-0.002
Assault	15,605 (9.8)	19,056 (11.4)	0.06
Undetermined	722 (0.5)	1,035 (0.6)	0.02
Mechanism			
Fall	70,213 (43.6)	70,639 (42.4)	-0.03
Firearm	10,316 (6.4)	14,246 (8.5)	0.08
MVC	35,660 (22.2)	35,387 (21.2)	-0.02
Motorcycle	12,337 (7.7)	12,779 (7.7)	0.001
Pedestrian [€]	12,070 (7.5)	12,058 (7.2)	-0.01
Stab	4,433 (2.8)	5,038 (3.0)	0.02
Struck	8,138 (5.1)	7,493 (4.5)	-0.03

Table 2: Injury characteristics presenting after stay-at-home order compared to corresponding time period

Percent changes in 2020 based on expected numbers from 2018-2019



26% increase in pre-existing condition of alcoholism



17% increase in assaults



33% increase in firearm injury

Limitations

- Hospital based study focused on ACS verified Level I and II Trauma Centers which may limit generalizability

Conclusions

- Volume decreased in the weeks leading up to implementation of the SAH order and increased steadily in the weeks following.
- Overall, there were 9,537 excess admissions for serious injury over the course of 7.25 months than would have been predicted based on 2018-2019 volumes.
- After the SAH orders were issued in 2020, there was an increase in penetrating injury from assaults compared to the same period in the two previous years.