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Supporting Information

Supplementary methods

Appendix to: Way TL, Tarrant SM, Balogh ZJ. Social restrictions during COVID-19 and major trauma volume at a level 1 trauma centre. *Med J Aust* 2021; doi: 10.5694/mja2.50843.

Supplementary methods:

Study Design:

This retrospective observational study utilised the prospectively collected data extracted from the John Hunter Hospital trauma registry and real-time prospective data during the pandemic. This study was reviewed by the Hunter New England Human Research Ethics Committee and did not require ethics approval (authorisation number: AU202004-17).

Sample:

We studied all trauma-related admissions for the period of March-May from 2011 to 2020 at the John Hunter Hospital. The John Hunter Hospital is a state designated, Royal Australasian College of Surgeons verified Level-1 trauma centre and is the only major tertiary referral hospital for the Hunter New England and Mid North Coast area. The John Hunter Hospital is also the designated COVID-19 hospital within the Hunter New England area. Our catchment area for major trauma is approximately 141,000 square kilometres and has a mixed rural and metropolitan population of approximately 1.1 million people.

Data Source/Study Participants:

Data were extracted from the New South Wales Trauma Registry and included date of hospital admission, basic demographics, mechanism of injury, Injury Severity Score (ISS), operative procedures, intensive care length of stay (ICU LOS), ventilator requirements, hospital length of stay (LOS) and in-hospital mortality. Patients with isolated head injuries from low energy mechanisms (i.e. falls <1m) were excluded.

The “COVID-19 cohort” consisted of patients admitted to John Hunter Hospital in the three month period between March 1 2020 and May 31 2020. The “control cohort” consisted of patients admitted to John Hunter Hospital during the same period in the previous 9 years. The COVID-19 cohort was further stratified as “March” (from no restrictions to restrictions), “April” (complete month with same restrictions) and “May” (from restrictions to less restrictions”)

Primary outcomes consisted of differences between the COVID-19 cohort and the control cohort in hospital admissions.

Secondary outcomes consisted of differences in number of operative cases, intensive care admissions, ventilator requirements, ISS and inpatient mortality.

Statistical Analysis:

Continuous data were assessed for distribution and presented as mean and standard deviation, or median and interquartile ranges. Categorical data are presented as a count and percentage. For normally distributed continuous data independent t tests were used to compare the entire pre-COVID cohort with the COVID cohort for age. One sample t-tests were used for comparing the singular values of the COVID period with the annual values during the pre-COVID period of admissions, ISS>12 patients, operation patients, ICU admissions, ventilated patients and inpatient mortality rate. A Mann-Whitney U test was employed for non-normal distributions of ISS, ventilator days, ICU length of stay and acute length of stay between the pre-COVID cohort and the COVID cohort. A Chi-square test was used for categorical values. These were sex, blunt injury and the mechanism of injury. Alpha value was set at 0.05. Statistical analyses were programmed using Stata v13.0 (StataCorp LP, College Station, TX, USA).

Table 1. Primary and secondary outcomes, by month

	Control (Mar–May, 2011–2019)	COVID-19 period (Mar–May, 2020)	*P*
Admissions, monthly mean (SD)*			
March	130 (27)	80	0.001
April	114 (28)	92	0.044
May	125 (25)	87	0.002
Patients requiring surgery, monthly mean (SD)*			
March	47 (12)	33	0.009
April	44 (9.8)	39	0.18
May	46 (8.4)	30	< 0.001
Intensive care admissions, monthly mean (SD)*			
March	19 (4.7)	14	0.014
April	19 (6.5)	10	0.005
May	18 (5.2)	11	0.003
Ventilation required, monthly mean (SD)*			
March	13 (5.6)	9	0.049
April	11 (6.0)	9	0.30
May	10 (4.4)	5	0.008
Inpatient deaths, monthly mean (SD)*			
March	4.1 (2.3)	0	0.001
April	3.7 (2.6)	3	0.46
May	3.3 (1.1)	1	< 0.001
Severely injured patients (ISS scores > 12), monthly mean (SD)*			
March	83 (16)	56	0.001
April	80 (19)	65	0.05
May	80 (16)	61	0.010

SD = standard deviation. * For COVID-19 period: number.