

Supplementary Table 1: Characteristics of those rib fracture patients identified by the sensitivity analysis, that started with a daily oral morphine equivalent (OME) dose above the median (>20 OME) and had an increased OME end-dose, compared with the total rib fracture cohort dispensed opioids during the follow-up period.

	All Rib Fracture Patients with opioids during follow-up (N=2,630)	Flail injuries, commenced on OME above the Median (>20 OME) and had an Increased end dose (N=17)	No further admissions, commenced on OME above the Median (>20 OME) and had an Increased end dose (N=41)
	N (Col %)	N (Col %)	N (Col %)
DEMOGRAPHIC CHARACTERISTICS			
Sex			
Female	773 (29.4)	5 (29.4)	18 (43.9)
Male	1,857 (70.6)	12 (70.6)	23 (56.1)
Age groups			
18-44	735 (27.9)	##	7 (17.1)
45-64	1,005 (38.2)	7 (41.2)	14 (34.1)
65+	890 (33.8)	7 (41.2)	20 (48.8)
Place of Residence (ARIA) ^a			
Urban	1,584 (60.2)	9 (52.9)	23 (56.1)
Rural	992 (37.7)	7 (41.2)	18 (43.9)
Remote	54 (2.1)	##	##
Pre-injury opioid dispensing			
No	2,249 (85.5)	11 (64.7)	16 (39.0)
Yes	381 (14.5)	6 (35.3)	25 (61.0)
INJURY CHARACTERISTICS			
Rib Fracture Group			
Single Rib	591 (22.5)	##	13 (31.7)
Multiple Ribs	1,848 (70.3)	##	23 (56.1)
Flail	191 (7.3)	17 (100.0)	5 (12.2)
Concurrent Injuries			
Isolated	734 (26.9)	##	16 (39.0)
Other injuries	1,996 (73.1)	16 (94.1)	25 (61.0)
Mechanism of Injury			
Fall	1,146 (43.6)	##	26 (63.4)
Transport related	1,203 (45.7)	11 (64.7)	9 (22.0)

Other	281 (10.7)	##	6 (14.6)
Injury Severity (ICISS)			
Low threat to life (SRR>0.941)	1,657 (63.0)	##	21 (51.2)
High threat to life (SRR≤0.941)	973 (37.0)	13 (76.5)	20 (48.8)
INDEX HOSPITALISATION CHARACTERISTICS			
Length of Stay (LOS) in days			
≤ 21 days	2,379 (90.5)	13 (76.5)	34 (82.9)
> 21 days	251 (9.5)	##	7 (17.1)
Surgery performed			
No	2,172 (82.6)	11 (64.7)	35 (85.4)
Yes	458 (17.4)	6 (35.3)	6 (14.6)
ICU Admission			
No	2,395 (91.1)	12 (70.6)	38 (92.7)
Yes	235 (8.9)	5 (29.4)	##
FOLLOW-UP PERIOD CHARACTERISTICS			
Number of Hospitalisations (all cause)			
0	1,096 (41.7)	5 (29.4)	41 (100.0)
1	630 (24.0)	##	##
2-4	623 (23.7)	6 (35.3)	##
5+	281 (10.7)	##	##
Died (all cause)			
No	2,449 (93.1)	17 (100.0)	32 (78.1)
Yes	181 (6.9)	##	9 (21.9)

^a ARIA - Accessibility/Remoteness Index of Australia

Information suppressed where cell counts < 5.