

APPENDIX E1.

Table E1. Trauma registry characteristics and criteria by site.

Characteristic/Criteria	Site							
	1	2	3	4	5	6	7	8
Trauma registry characteristics								
Traumatic intracranial hemorrhage/y	200	678	279	131	164	164	194	354
Trauma registry inclusion/exclusion criteria								
ICD-9 criteria*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transfers in/out of hospital included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Discharged from ED included	Yes	Yes	Yes, if transfer in or out of hospital or >12-h ED length of stay	Yes	Yes	Yes	Yes	Yes
Additional inclusion criteria	Trauma team evaluation	Trauma team evaluation	Trauma team evaluation	Trauma team evaluation	Trauma team evaluation	Trauma team evaluation	Trauma team evaluation	Trauma team evaluation
Exclusion criteria	None	Isolated hip fractures	Isolated hanging, drowning, or poisoning without ICD-9 criteria*	None	None	Isolated hanging, drowning, or poisoning without ICD-9 criteria*	None	Isolated hip fractures

*Patients meet ICD-9 criteria if at least 1 of their codes is from 800 to 959.9 (excluding late effects of injury [905 to 909.9] and foreign bodies [930 to 939.9]).

Table E2. Analysis of interrater reliability between registry and manual reabstraction.

Variable	κ	Agreement, %
Age	0.8	83
ED disposition	0.8	91
Initial ED GCS score	0.8	84
Mortality	1.0	100
Presence of critical care intervention	0.6	78
Presence of traumatic intracranial hemorrhage	1.0	100

Table E3. Missing variables.

Variable	Missing, n	Missing, %
A, GCS score of 15 and ISS less than 16, n=1,429		
Site	0	0
Age	0	0
Sex	0	0
Initial ED systolic blood pressure	5	0.35
ALS, head	212	10
Mortality	0	0
Procedure code	0	0
ED disposition	17	1.2
Hospital disposition	5	0.35
Hospital length of stay	1	0.07
B, Entire cohort, n=11,240		
Site	0	0
Age	0	0
Sex	7	0.06
Initial ED systolic blood pressure	186	1.7
Initial ED GCS score	671	6.0
ALS, head	1,702	15
ISS	105	0.93
Mortality	11	0.1
Procedure code	0	0.0
ED disposition	75	0.67
Hospital disposition	69	0.61
Hospital length of stay	15	0.13

Table E4. A, Comparison of patient characteristics between patients with missing initial ED GCS score or ISS and patients included in analysis.*

Variable	Missing, n=771	Included in Analysis, n=1,412
Age, mean (SD), y	51 (21)	48 (20)
Men, % (95% CI)	68 (65–72)	67 (65–70)
Initial ED SBP, mean (SD)	138 (34)	140 (24)
Initial ED GCS score (IQR)	14 (13, 15)	15 (15, 15)
Initial ED GCS score of 15, % (95% CI)	49 (39–59)	100
ISS, median (IQR)	21 (17, 27)	10 (9, 11)
ISS 16 or greater, % (95% CI)	81 (78–84)	0
AIS, head, median (IQR)	4 (3, 5)	3 (3, 3)
Mortality, % (95% CI)	16 (14–19)	0.21 (0.04–0.62)
ED disposition, home, % (95% CI)	0.44 (0.09–1.3)	1.8 (1.2–2.6)
ED disposition, observation unit, % (95% CI)	0.44 (0.09–1.3)	4.0 (3.0–5.1)
ED disposition, floor, % (95% CI)	16 (13–19)	31 (29–34)
ED disposition, ICU, % (95% CI)	83 (80–86)	63 (60–65)

*Initial ED GCS score 15 and ISS less than 16.

Table E4. B, Distribution of patients with missing ED disposition (n=17).*

Variable	Site							
	1	2	3	4	5	6	7	8
Patients, n	0	1	11	0	0	1	0	4
Patients included in analysis, n*	155	312	264	45	198	69	32	337
Proportion of missing patients to patients included in analysis, %	0	0.3	4.2	0	0	1.4	0	1.2

*Initial ED GCS score of 15 and ISS less than 16.

Table E4. C, Comparison of patient characteristics between patients with Abbreviated Injury Score of 2, 3 or more, or missing.*

Variable	AIS Score 2, n=173	AIS Score 3 or More, n=1,018	AIS Score Missing, n=221
Age, mean (SD), y	49 (20)	48 (20)	46 (20)
Men, % (95% CI)	68 (60–75)	67 (64–70)	69 (62–75)
Initial ED SBP, mean (SD)	136 (25)	143 (25)	135 (21)
Mortality, % (95% CI)	0 (0–2.1) [†]	0.10 (0–0.55)	0.90 (0.11–3.2)
ED disposition, home, % (95% CI)	2.3 (0.63–5.8)	1.9 (1.1–2.9)	0.90 (0.11–3.2)
ED disposition, observation unit, % (95% CI)	9.2 (5.3–15)	2.6 (1.5–3.5)	7.2 (4.2–11)
ED disposition, floor, % (95% CI)	36 (29–44)	31 (29–34)	27 (21–34)
ED disposition, ICU, % (95% CI)	52 (44–60)	64 (61–67)	65 (58–71)

*Initial ED GCS 15 and ISS less than 16.

[†]One-sided, 97.5% CI.

Table E4. D, ED disposition by site, No. (%).

Variable	Site							
	1	2	3	4	5	6	7	8
Patients with minor tICH (% of total tICH)*	350 (32)	817 (23)	389 (25)	181 (25)	n/a	152 (37)	66 (6.2)	622 (32)
Discharged home	1 (0.27)	24 (2.9)	2 (0.51)	1 (0.55)	n/a	6 (3.9)	0	2 (0.32)
Admitted to observation unit	0	0	37 (9.5)	5 (2.8)	n/a	14 (9.2)	0	0
Admitted to the ward	93 (27)	169 (21)	100 (26)	4 (2.2)	n/a	29 (19)	1 (1.5)	274 (44)
Admitted to the ICU	256 (73)	624 (76)	250 (64)	171 (94)	n/a	103 (68)	65 (98)	346 (56)

*Addition of 2 groups: (1) GCS score of 15 and ISS less than 16; and (2) GCS score of 15, ISS less than 25, and AIS, head of 4.

Table E4. E, ED disposition by site, No. (%).

Variable	Site							
	1	2	3	4	5	6	7	8
Patients with mild tICH (% of total tICH)*	770 (72)	2,040 (63)	758 (22)	399 (64)	582 (62)	300 (76)	546 (61)	1,045 (65)
Discharged home	1 (0.13)	32 (1.6)	2 (0.26)	5 (1.3)	0	6 (2.0)	0	2 (0.19)
Admitted to observation unit	0	0	52 (6.9)	9 (2.3)	24 (4.1)	17 (5.7)	0	0
Admitted to the ward	166 (22)	468 (23)	148 (20)	10 (2.5)	136 (23)	46 (15)	7 (1.3)	340 (33)
Admitted to the ICU	603 (78)	1,540 (75)	556 (73)	375 (94)	422 (73)	231 (77)	539 (99)	703 (67)

*GCS score of 13 to 15.

Table E5. Patient characteristics by site (all patients with tICH, n=11,240).

Variable	Site							
	1	2	3	4	5	6	7	8
Patients, n	1,101	3,562	1,534	722	900	410	1,066	1,945
Age, mean (SD), y	49 (22)	55 (22)	46 (19)	49 (22)	48 (22)	61 (22)	51 (22)	43 (18)
Men, % (75% CI)	69 (67–72)	64 (63–66)	75 (73–77)	65 (61–68)	69 (66–72)	66 (61–70)	71 (69–74)	745(73–77)
Initial ED SBP, mean (SD)	131 (33)	144 (28)	126 (40)	149 (31)	132 (30)	141 (29)	141 (39)	146 (41)
Initial ED GCS score, median (IQR)	14 (11, 15)	15 (6, 15)	14 (3, 15)	15 (14, 15)	14 (3, 15)	14 (13, 15)	14 (9, 15)	14 (3, 15)
Mild GCS score, % (95% CI)	72 (71–73)	64 (64–65)	58 (57–59)	84 (83–86)	65 (63–66)	76 (74–77)	62 (60–63)	59 (57–61)
Moderate GCS score, % (95% CI)	6 (6–7)	6 (6–6)	6 (6–7)	5 (5–6)	5 (5–6)	7 (6–8)	15 (14–16)	4 (3–5)
Severe GCS score, % (95% CI)	21 (20–22)	30 (29–30)	36 (35–37)	11 (10–12)	30 (29–31)	17 (16–19)	23 (22–24)	37 (35–40)
GCS score 15, % (95% CI)	47 (46–48)	49 (48–50)	42 (41–43)	55 (53–56)	46 (45–48)	49 (47–51)	25 (23–26)	48 (46–50)
AIS head, median (IQR)	4 (3, 4)	4 (4, 5)	4 (3, 5)	4 (4, 4)	3 (2, 4)	4 (3, 4)	3 (3, 4)	4 (3, 4)
ISS, median (IQR)	17 (14, 26)	26 (17, 30)	22 (16, 30)	19 (17, 26)	17 (10, 25)	17 (14, 26)	25 (17, 30)	22 (16, 29)
Mortality, % (95% CI)	11 (10–13)	13 (12–13)	15 (14–17)	14 (14–15)	14 (12–16)	14 (11–18)	21 (19–24)	16 (15–18)