

Supplementary Materials

Feasibility of a Cluster Randomised Trial on the Effect of Trauma Life Support Training: A Pilot Study

Table of Contents

Table S1. Extended sample characteristics	3
Results with 95% confidence intervals (CI)	8
Table S2. Outcomes in all patients during the entire study period, by treatment arm(95% CI)	8
Table S3. Outcomes in all patients before training, by treatment arm(95% CI).....	11
Table S4. Outcomes in all patients after training, by treatment arm(95% CI)	14
Table S5. Absolute change from baseline for all outcomes, comparing the period after training with the period before training, by treatment arms(95% CI).....	17
Table S6. Relative change from baseline for all outcomes, comparing the period after training with the period before training, by treatment arms(95% CI).....	20
Table S7. Absolute and relative differences in outcomes after training, comparing standard care with ATLS(95% CI)	23
Table S8. Absolute and relative differences in outcomes after training, comparing standard care with PTC(95% CI).....	26
Table S9. Absolute and relative differences in outcomes after training, comparing ATLS with PTC(95% CI).....	29
Table S10. Absolute and relative differences in changes from baseline for all outcomes, comparing standard care with ATLS(95% CI).....	32
Table S11. Absolute and relative differences in changes from baseline for all outcomes, comparing standard care with PTC(95% CI)	36
Table S12. Absolute and relative differences in changes from baseline for all outcomes, comparing ATLS with PTC(95% CI)	40
S13 Protocol Deviations	44
Trial Registration.....	44
Outcomes across subgroups	44
Number of Participating Centres	44
Resident Participants.....	44
Periodic surveys of residents	44
Follow up of residents	44

Data collection from records	44
Selection of units for training.....	44
Timing of resident consent.....	44
Analysis level of feasibility outcomes	45

Table S1. Extended sample characteristics

Characteristic	Before training				After training				Overall N = 376 ¹
	Standard care N = 41 ¹	ATLS N = 16 ¹	PTC N = 57 ¹	Overall N = 114 ¹	Standard care N = 161 ¹	ATLS N = 28 ¹	PTC N = 73 ¹	Overall N = 262 ¹	
Age, years	32 (23, 46)	46 (30, 61)	30 (22, 38)	33 (23, 46)	35 (26, 47)	37 (30, 55)	30 (22, 38)	34 (25, 45)	33 (24, 46)
Elderly (Age ≥ 65 years)	3 (7%)	3 (19%)	3 (5%)	9 (8%)	12 (7%)	3 (11%)	2 (3%)	17 (6%)	26 (7%)
Sex									
Male	36 (88%)	10 (63%)	44 (77%)	90 (79%)	124 (77%)	23 (82%)	53 (73%)	200 (76%)	290 (77%)
Female	5 (12%)	6 (38%)	13 (23%)	24 (21%)	37 (23%)	5 (18%)	20 (27%)	62 (24%)	86 (23%)
Dominating injury type									
Penetrating	3 (7%)	2 (13%)	0 (0%)	5 (4%)	10 (6%)	1 (4%)	1 (1%)	12 (5%)	17 (5%)
Blunt	38 (93%)	14 (88%)	57 (100%)	109 (96%)	151 (94%)	27 (96%)	72 (99%)	250 (95%)	359 (95%)
Blunt multisystem trauma	0 (0%)	1 (6%)	3 (5%)	4 (4%)	2 (1%)	1 (4%)	3 (4%)	6 (2%)	10 (3%)
Severe traumatic brain injury	3 (8%)	0 (0%)	3 (5%)	6 (5%)	7 (4%)	1 (4%)	2 (3%)	10 (4%)	16 (4%)
Missing	1	0	0	1					1
Shock (SBP < 90 mmHg)	0 (0%)	1 (7%)	0 (0%)	1 (1%)	4 (3%)	1 (4%)	4 (6%)	9 (4%)	10 (3%)
Missing	3	1	1	5	4	2	3	9	14
Respiratory rate, breaths per minute	20 (18, 21)	22 (20, 24)	21 (19, 23)	20 (18, 22)	20 (18, 22)	21 (19, 24)	22 (20, 25)	21 (19, 23)	20 (19, 23)
Missing	4	0	3	7	3	0	2	5	12
Oxygen saturation, %	98 (98, 99)	98 (96, 99)	98 (97, 98)	98 (97, 99)	98 (97, 99)	98 (97, 99)	98 (98, 99)	98 (98, 99)	98 (97, 99)
Missing	1	1	0	2					2
Heart rate, beats per minute	86 (80, 97)	94 (74, 106)	90 (79, 104)	88 (80, 100)	85 (80, 95)	86 (73, 97)	90 (74, 105)	86 (78, 100)	86 (78, 100)
Missing	1	0	1	2	0	1	0	1	3
Systolic blood pressure, mmHg	126 (116, 130)	128 (113, 150)	123 (115, 138)	124 (115, 133)	123 (112, 136)	124 (113, 130)	120 (110, 136)	123 (111, 136)	123 (112, 135)
Missing	3	1	1	5	4	2	3	9	14
Glasgow Coma Scale	15 (15, 15)	15 (15, 15)	15 (15, 15)	15 (15, 15)	15 (15, 15)	15 (15, 15)	15 (15, 15)	15 (15, 15)	15 (15, 15)
Missing	1	1	0	2	1	0	0	1	3
Injury Severity Score	1 (1, 4)	4 (1, 25)	4 (2, 16)	4 (1, 14)	4 (1, 9)	4 (1, 4)	4 (1, 5)	4 (1, 6)	4 (1, 8)

Characteristic	Before training				After training				Overall N = 376 ¹
	Standard care N = 41 ¹	ATLS N = 16 ¹	PTC N = 57 ¹	Overall N = 114 ¹	Standard care N = 161 ¹	ATLS N = 28 ¹	PTC N = 73 ¹	Overall N = 262 ¹	
Missing	5	2	18	25	32	3	17	52	77
In-hospital mortality	2 (5%)	0 (0%)	4 (7%)	6 (5%)	19 (12%)	1 (4%)	3 (4%)	23 (9%)	29 (8%)
Missing					2	1	0	3	3
30 day mortality	1 (3%)	0 (0%)	5 (10%)	6 (6%)	22 (16%)	1 (4%)	3 (5%)	26 (12%)	32 (10%)
Missing	3	2	8	13	26	2	12	40	53
24 hour mortality	1 (2%)	0 (0%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0%)
Missing	0	2	5	7	7	2	8	17	24
Self-ambulatory at discharge	37 (95%)	11 (92%)	47 (96%)	95 (95%)	135 (99%)	24 (100%)	68 (97%)	227 (98%)	322 (97%)
Missing	2	4	8	14	24	4	3	31	45
Return to work	12 (41%)	5 (83%)	31 (74%)	48 (62%)	56 (53%)	11 (58%)	40 (70%)	107 (59%)	155 (60%)
Missing	12	10	15	37	56	9	16	81	118
Pulmonary complication	0 (0%)	0 (0%)	1 (2%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0%)
Missing	2	6	11	19	33	5	10	48	67
Septic complication	1 (3%)	0 (0%)	2 (4%)	3 (3%)	1 (1%)	0 (0%)	2 (3%)	3 (1%)	6 (2%)
Missing	1	6	12	19	33	5	10	48	67
Renal failure									
No	40 (100%)	11 (100%)	46 (100%)	97 (100%)	129 (100%)	23 (100%)	63 (100%)	215 (100%)	312 (100%)
Missing	1	5	11	17	32	5	10	47	64
Coagulopathy	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (4%)	0 (0%)	1 (0%)	1 (0%)
Missing	1	6	12	19	32	5	10	47	66
Need for reexploration or resurgery	0 (0%)	0 (0%)	1 (2%)	1 (1%)	3 (3%)	0 (0%)	1 (2%)	4 (2%)	5 (2%)
Missing	1	4	10	15	42	6	10	58	73
Failure of conservative management	0 (0%)	0 (0%)	1 (2%)	1 (1%)	2 (2%)	2 (8%)	1 (2%)	5 (2%)	6 (2%)
Missing	2	10	11	23	44	3	12	59	82
EQ-5D mobility at discharge									
I have no problems in walking	24 (62%)	8 (67%)	34 (83%)	66 (72%)	73 (62%)	16 (89%)	55 (92%)	144 (73%)	210 (73%)
I have some problems in walking	7 (18%)	1 (8%)	5 (12%)	13 (14%)	22 (19%)	2 (11%)	3 (5%)	27 (14%)	40 (14%)

Characteristic	Before training				After training				Overall N = 376 ¹
	Standard care N = 41 ¹	ATLS N = 16 ¹	PTC N = 57 ¹	Overall N = 114 ¹	Standard care N = 161 ¹	ATLS N = 28 ¹	PTC N = 73 ¹	Overall N = 262 ¹	
I am confined to bed	8 (21%)	3 (25%)	2 (5%)	13 (14%)	23 (19%)	0 (0%)	2 (3%)	25 (13%)	38 (13%)
Missing	2	4	16	22	43	10	13	66	88
EQ-5D self-care at discharge									
I have no problems with self-care	23 (59%)	7 (58%)	33 (80%)	63 (68%)	59 (50%)	12 (67%)	51 (85%)	122 (62%)	185 (64%)
I have some problems bathing or dressing myself	6 (15%)	2 (17%)	5 (12%)	13 (14%)	36 (31%)	2 (11%)	5 (8%)	43 (22%)	56 (19%)
I am unable to bathe or dress myself	10 (26%)	3 (25%)	3 (7%)	16 (17%)	23 (19%)	4 (22%)	4 (7%)	31 (16%)	47 (16%)
Missing	2	4	16	22	43	10	13	66	88
EQ-5D usual activities at discharge									
I have no problems in performing my usual activities	21 (54%)	6 (50%)	31 (76%)	58 (63%)	55 (47%)	11 (61%)	51 (85%)	117 (60%)	175 (61%)
I have some problems in performing my usual activities	11 (28%)	3 (25%)	6 (15%)	20 (22%)	45 (38%)	4 (22%)	5 (8%)	54 (28%)	74 (26%)
I am unable to perform my usual activities	7 (18%)	3 (25%)	4 (10%)	14 (15%)	18 (15%)	3 (17%)	4 (7%)	25 (13%)	39 (14%)
Missing	2	4	16	22	43	10	13	66	88
EQ-5D pain/discomfort at discharge									
I have no pain or discomfort	13 (33%)	4 (33%)	14 (34%)	31 (34%)	30 (25%)	9 (50%)	39 (65%)	78 (40%)	109 (38%)
I have moderate pain or discomfort	16 (41%)	8 (67%)	26 (63%)	50 (54%)	41 (35%)	9 (50%)	18 (30%)	68 (35%)	118 (41%)
I have extreme pain or discomfort	10 (26%)	0 (0%)	1 (2%)	11 (12%)	47 (40%)	0 (0%)	3 (5%)	50 (26%)	61 (21%)
Missing	2	4	16	22	43	10	13	66	88
EQ-5D anxiety/depression at discharge									
I am not anxious or depressed	31 (79%)	6 (50%)	30 (73%)	67 (73%)	108 (92%)	15 (83%)	57 (95%)	180 (92%)	247 (86%)
I am moderately anxious or depressed	7 (18%)	6 (50%)	10 (24%)	23 (25%)	8 (7%)	3 (17%)	3 (5%)	14 (7%)	37 (13%)

Characteristic	Before training				After training				Overall N = 376 ¹
	Standard care N = 41 ¹	ATLS N = 16 ¹	PTC N = 57 ¹	Overall N = 114 ¹	Standard care N = 161 ¹	ATLS N = 28 ¹	PTC N = 73 ¹	Overall N = 262 ¹	
I am extremely anxious or depressed	1 (3%)	0 (0%)	1 (2%)	2 (2%)	2 (2%)	0 (0%)	0 (0%)	2 (1%)	4 (1%)
Missing	2	4	16	22	43	10	13	66	88
EQ-5D mobility at 30 day follow-up									
I have no problems in walking	20 (65%)	4 (67%)	39 (91%)	63 (79%)	79 (77%)	16 (80%)	57 (98%)	152 (84%)	215 (83%)
I have some problems in walking	4 (13%)	1 (17%)	3 (7%)	8 (10%)	17 (17%)	4 (20%)	0 (0%)	21 (12%)	29 (11%)
I am confined to bed	7 (23%)	1 (17%)	1 (2%)	9 (11%)	6 (6%)	0 (0%)	1 (2%)	7 (4%)	16 (6%)
Missing	10	10	14	34	59	8	15	82	116
EQ-5D self-care at 30 day follow-up									
I have no problems with self-care	22 (71%)	5 (83%)	39 (91%)	66 (83%)	81 (79%)	16 (80%)	56 (97%)	153 (85%)	219 (84%)
I have some problems bathing or dressing myself	2 (6%)	1 (17%)	2 (5%)	5 (6%)	15 (15%)	2 (10%)	0 (0%)	17 (9%)	22 (8%)
I am unable to bathe or dress myself	7 (23%)	0 (0%)	2 (5%)	9 (11%)	6 (6%)	2 (10%)	2 (3%)	10 (6%)	19 (7%)
Missing	10	10	14	34	59	8	15	82	116
EQ-5D usual activities at 30 day follow-up									
I have no problems in performing my usual activities	22 (71%)	6 (100%)	39 (91%)	67 (84%)	83 (81%)	15 (75%)	55 (95%)	153 (85%)	220 (85%)
I have some problems in performing my usual activities	6 (19%)	0 (0%)	2 (5%)	8 (10%)	12 (12%)	3 (15%)	1 (2%)	16 (9%)	24 (9%)
I am unable to perform my usual activities	3 (10%)	0 (0%)	2 (5%)	5 (6%)	7 (7%)	2 (10%)	2 (3%)	11 (6%)	16 (6%)
Missing	10	10	14	34	59	8	15	82	116
EQ-5D pain/discomfort at 30 day follow-up									
I have no pain or discomfort	23 (74%)	4 (67%)	33 (77%)	60 (75%)	81 (79%)	16 (80%)	50 (86%)	147 (82%)	207 (80%)
I have moderate pain or discomfort	8 (26%)	2 (33%)	9 (21%)	19 (24%)	19 (19%)	4 (20%)	8 (14%)	31 (17%)	50 (19%)

Characteristic	Before training				After training				Overall N = 376 ¹
	Standard care N = 41 ¹	ATLS N = 16 ¹	PTC N = 57 ¹	Overall N = 114 ¹	Standard care N = 161 ¹	ATLS N = 28 ¹	PTC N = 73 ¹	Overall N = 262 ¹	
I have extreme pain or discomfort	0 (0%)	0 (0%)	1 (2%)	1 (1%)	2 (2%)	0 (0%)	0 (0%)	2 (1%)	3 (1%)
Missing	10	10	14	34	59	8	15	82	116
EQ-5D anxiety/depression at 30 day follow-up									
I am not anxious or depressed	30 (97%)	6 (100%)	37 (86%)	73 (91%)	97 (95%)	17 (85%)	56 (97%)	170 (94%)	243 (93%)
I am moderately anxious or depressed	1 (3%)	0 (0%)	5 (12%)	6 (8%)	4 (4%)	3 (15%)	2 (3%)	9 (5%)	15 (6%)
I am extremely anxious or depressed	0 (0%)	0 (0%)	1 (2%)	1 (1%)	1 (1%)	0 (0%)	0 (0%)	1 (1%)	2 (1%)
Missing	10	10	14	34	59	8	15	82	116
Patient satisfaction									
Very satisfied	26 (67%)	9 (64%)	37 (73%)	72 (69%)	97 (70%)	19 (79%)	66 (94%)	182 (78%)	254 (76%)
Somewhat satisfied	9 (23%)	5 (36%)	8 (16%)	22 (21%)	20 (14%)	3 (13%)	4 (6%)	27 (12%)	49 (15%)
Somewhat dissatisfied	3 (8%)	0 (0%)	2 (4%)	5 (5%)	13 (9%)	1 (4%)	0 (0%)	14 (6%)	19 (6%)
Very dissatisfied	1 (3%)	0 (0%)	4 (8%)	5 (5%)	8 (6%)	1 (4%)	0 (0%)	9 (4%)	14 (4%)
Missing	2	2	6	10	23	4	3	30	40
Number of hospitalizations for this injury	0 (0%)	1 (17%)	3 (6%)	4 (4%)	6 (5%)	0 (0%)	0 (0%)	6 (3%)	10 (3%)
Missing	2	10	8	20	34	3	11	48	68
EQ-5D health state at discharge	50 (3, 90)	60 (40, 90)	80 (60, 90)	75 (40, 90)	50 (4, 80)	65 (50, 80)	90 (79, 100)	70 (5, 90)	70 (10, 90)
Missing	10	5	16	31	48	10	19	77	108
EQ-5D health state at 30 day follow-up	10 (7, 100)	100 (60, 100)	100 (89, 100)	99 (70, 100)	83 (9, 100)	83 (70, 100)	100 (95, 100)	100 (45, 100)	100 (50, 100)
Missing	14	10	15	39	61	8	17	86	125
Cost of treatment	14,000 (500, 53,000)	7,000 (0, 14,000)	2,025 (500, 11,000)	3,000 (500, 15,000)	2,500 (500, 25,000)	5,000 (0, 15,000)	1,500 (200, 3,000)	2,000 (299, 13,000)	2,000 (500, 14,000)
Missing	23	14	18	55	90	21	21	132	187

¹Median (Q1, Q3); n (%)

Results with 95% confidence intervals (CI)

Table S2. Outcomes in all patients during the entire study period, by treatment arm(95% CI)

Outcome	ATLS, N = 44	PTC, N = 130	Standard care, N = 202
30 day mortality			
Yes	2.5 (0, 15)	7.3 (2.9, 13)	13 (7.49, 17)
No	98 (85, 100)	93 (86, 96)	87 (81, 91)
Missing	4 (1, 9)	20 (12, 29)	29 (19, 40)
24 hour mortality			
Yes			0.5 (0, 1.6)
No			99 (98, 99)
Missing	4 (1, 9)	13 (6, 20)	7 (3, 12)
In-hospital mortality			
Yes	2.3 (0, 13.39)	5.4 (2.1, 10)	11 (6.67, 15)
No	98 (86, 100)	95 (90, 98)	90 (85, 93)
Missing	1 (0, 3)		2 (0, 5)
Self-ambulatory at discharge			
Yes	97 (81, 100)	97 (91, 99)	98 (93.35, 99)
No	2.8 (0, 17.91)	3.4 (0.9, 8.11)	2.3 (0.6, 6)
Missing	8 (3, 13.73)	11 (5, 17)	26 (16, 35)
Return to work			
Yes	64 (40.57, 80)	72 (62, 80)	51 (42, 59)
No	36 (18, 57)	28 (18, 36)	49 (39, 56)
Missing	19 (11, 27)	31 (21, 42)	68 (53, 82)
Pulmonary complication			
Yes		0.9 (0, 3.5)	
No		99 (95, 100)	
Missing	11 (5, 18)	21 (13, 30)	35 (24, 46)
Septic complication			
Yes		3.7 (0.9, 8.3)	1.2 (0, 3.7)
No		96 (90, 98)	99 (94, 99)
Missing	11 (5, 18)	22 (13, 31)	34 (23, 45)
Renal failure			
Yes			
No			
Missing	10 (4, 16)	21 (13, 30)	33 (21.57, 43)
Coagulopathy			
Yes	3 (0, 16)		

Outcome	ATLS, N = 44	PTC, N = 130	Standard care, N = 202
No	97 (84, 100)		
Missing	11 (5, 18)	22 (14, 32)	33 (21.57, 43)
Need for reexploration or resurgery			
Yes		1.8 (0, 5.6)	1.9 (0, 5.16)
No		98 (93, 99)	98 (94, 99)
Missing	10 (5, 16.51)	20 (12, 28)	43 (31, 55)
Failure of conservative management			
No	94 (79, 100)	98 (92, 99)	99 (95, 99)
Yes	6.5 (0, 20)	1.9 (0, 6.09)	1.3 (0, 4.1)
Missing	13 (7, 20)	23 (14, 32)	46 (33, 58)
EQ-5D mobility at discharge			
I have no problems in walking	80 (58, 91)	88 (77, 93)	62 (54, 69)
I have some problems in walking	10 (2.8, 27.13)	7.9 (3.66, 15)	18 (11, 23)
I am confined to bed	10 (2.8, 25)	4 (1.1, 9.95)	20 (13, 26)
Missing	14 (7.11, 22)	29 (19, 39)	45 (33, 57)
EQ-5D self-care at discharge			
I have no problems with self-care	63 (42, 78.24)	83 (74, 88)	52 (43, 59)
I have some problems bathing or dressing myself	13 (3.1, 27.28)	9.9 (4.95, 16)	27 (19.37, 33)
I am unable to bathe or dress myself	23 (8.05, 39)	6.9 (3, 13)	21 (14, 27)
Missing	14 (7.11, 22)	29 (19, 39)	45 (33, 57)
EQ-5D usual activities at discharge			
I have no problems in performing my usual activities	57 (36.2, 74)	81 (72, 87)	48 (39, 54.34)
I have some problems in performing my usual activities	23 (8.3, 40)	11 (5.13, 17)	36 (29, 43)
I am unable to perform my usual activities	20 (6.75, 37)	7.9 (3.7, 14.71)	16 (9.88, 21)
Missing	14 (7.11, 22)	29 (19, 39)	45 (33, 57)
EQ-5D pain/discomfort at discharge			
I have no pain or discomfort	43 (26, 61.31)	52 (41, 60)	27 (20, 33)
I have moderate pain or discomfort	57 (36.59, 72)	44 (34, 53.16)	36 (28, 43)
I have extreme pain or discomfort		4 (1, 9.38)	36 (27.04, 43)
Missing	14 (7.11, 22)	29 (19, 39)	45 (33, 57)
EQ-5D anxiety/depression at discharge			
I am not anxious or depressed	70 (50, 85)	86 (77.13, 91)	89 (83, 93)
I am moderately anxious or depressed	30 (13, 47)	13 (6.92, 19)	9.6 (5.84, 15)
I am extremely anxious or depressed		1 (0, 4.37)	1.9 (0, 4.7)
Missing	14 (7.11, 22)	29 (19, 39)	45 (33, 57)
EQ-5D mobility at 30 day follow-up			
I have no problems in walking	77 (55.4, 89)	95 (88, 97)	74 (65, 80)
I have some problems in walking	19 (6.39, 38)	3 (0.9, 8.4)	16 (9.25, 22)

Outcome	ATLS, N = 44	PTC, N = 130	Standard care, N = 202
I am confined to bed	3.8 (0, 23.3)	2 (0, 6.18)	9.8 (5.6, 16)
Missing	18 (10, 26)	29 (19, 39)	69 (54, 83)
EQ-5D self-care at 30 day follow-up			
I have no problems with self-care	81 (58, 92.79)	94 (85.78, 97)	77 (68, 82)
I have some problems bathing or dressing myself	12 (0, 29.99)	2 (0, 7.22)	13 (7.2, 19)
I am unable to bathe or dress myself	7.7 (0, 24.36)	4 (1, 9.3)	9.8 (5.7, 16)
Missing	18 (10, 26)	29 (19, 39)	69 (54, 83)
EQ-5D usual activities at 30 day follow-up			
I have no problems in performing my usual activities	81 (60, 93)	93 (85, 96)	79 (70, 85)
I have some problems in performing my usual activities	12 (3.4, 31.69)	3 (0.9, 8.5)	14 (8.4, 20)
I am unable to perform my usual activities	7.7 (0, 24.36)	4 (1, 9.3)	7.5 (3.8, 14)
Missing	18 (10, 26)	29 (19, 39)	69 (54, 83)
EQ-5D pain/discomfort at 30 day follow-up			
I have no pain or discomfort	77 (57, 91)	82 (73, 88)	78 (69, 84)
I have moderate pain or discomfort	23 (7.7, 42)	17 (9.3, 24)	20 (13, 26)
I have extreme pain or discomfort		1 (0, 4.3)	1.5 (0, 5.1)
Missing	18 (10, 26)	29 (19, 39)	69 (54, 83)
EQ-5D anxiety/depression at 30 day follow-up			
I am not anxious or depressed	88 (65, 96)	92 (84, 95)	95 (88, 97)
I am moderately anxious or depressed	12 (3.4, 31.69)	6.9 (2.9, 14)	3.8 (1.5, 9)
I am extremely anxious or depressed		1 (0, 4.3)	0.8 (0, 4.3)
Missing	18 (10, 26)	29 (19, 39)	69 (54, 83)
Patient satisfaction			
Very satisfied	74 (57, 86.02)	85 (77, 90)	69 (60, 74)
Somewhat satisfied	21 (8.8, 34)	9.9 (5, 16)	16 (10, 20)
Somewhat dissatisfied	2.6 (0, 13)	1.7 (0, 5.15)	9 (5.1, 14)
Very dissatisfied	2.6 (0, 12.43)	3.3 (0.8, 7.71)	5.1 (2.3, 9.06)
Missing	6 (2, 11)	9 (3, 15)	25 (15, 34)
Number of hospitalizations for this injury			
Missing	13 (7, 20)	19 (11, 27)	36 (25, 47)
EQ-5D health state at discharge	60 (50, 60)	80 (79, 79)	50 (4, 50)
Missing	15 (8, 23)	35 (25, 47)	58 (44, 72)
EQ-5D health state at 30 day follow-up	88 (80, 100)	100 (99, 99)	80 (9, 90)
Missing	18 (10, 26)	32 (22, 44)	75 (59, 90)
Cost of treatment	5000 (0, 14000)	2000 (1040.14, 2499)	3000 (1000, 8000)
Missing	35 (24, 48)	39 (29, 51.46)	113 (96, 130)

Table S3. Outcomes in all patients before training, by treatment arm(95% CI)

Outcome	ATLS, N = 16	PTC, N = 57	Standard care, N = 41
30 day mortality			
Yes		10 (2.32, 20)	2.6 (0, 14.5)
No		90 (78.57, 96)	97 (81, 100)
Missing	2 (0, 5)	8 (3, 14)	3 (0, 7)
24 hour mortality			
Yes			2.4 (0, 11.05)
No			98 (88, 100)
Missing	2 (0, 5)	5 (1, 9)	
In-hospital mortality			
Yes		7 (1.9, 16)	4.9 (0, 17)
No		93 (81.7, 97)	95 (81, 98)
Missing			
Self-ambulatory at discharge			
Yes	92 (55.29, 100)	96 (84, 98)	95 (78.8, 100)
No	8.3 (0, 42.23)	4.1 (0, 13.82)	5.1 (0, 17)
Missing	4 (1, 8)	8 (3, 13.13)	2 (0, 5)
Return to work			
Yes	83 (0, 100)	74 (58, 85)	41 (23, 58)
No	17 (0, 70.86)	26 (12, 39)	59 (37.73, 75)
Missing	10 (4, 16)	15 (8, 22)	12 (6, 19)
Pulmonary complication			
Yes		2.2 (0, 11.73)	
No		98 (88, 100)	
Missing	6 (2, 11)	11 (5, 18)	2 (0, 5)
Septic complication			
Yes		4.4 (0, 14)	2.5 (0, 16.45)
No		96 (85.26, 100)	98 (83, 100)
Missing	6 (2, 11)	12 (6, 19)	1 (0, 3)
Renal failure			
Yes			
No			
Missing	5 (1, 10)	11 (5, 18)	1 (0, 3)
Coagulopathy			
Yes			
No			
Missing	6 (2, 11)	12 (6, 19)	1 (0, 3)
Need for reexploration or resurgery			

Outcome	ATLS, N = 16	PTC, N = 57	Standard care, N = 41
Yes		2.1 (0, 11.23)	
No		98 (86, 100)	
Missing	4 (1, 8)	10 (4, 16)	1 (0, 3)
Failure of conservative management			
No		98 (85, 100)	
Yes		2.2 (0, 14.13)	
Missing	10 (4, 16)	11 (5, 17)	2 (0, 5)
EQ-5D mobility at discharge			
I have no problems in walking	67 (30.53, 89)	83 (66.74, 92)	62 (44, 75)
I have some problems in walking	8.3 (0, 36.88)	12 (2.6, 24)	18 (7.1, 31.39)
I am confined to bed	25 (0, 56)	4.9 (0, 16.18)	21 (9.3, 35)
Missing	4 (1, 8)	16 (8, 24)	2 (0, 5)
EQ-5D self-care at discharge			
I have no problems with self-care	58 (25, 87.2)	80 (64, 90)	59 (41, 73.74)
I have some problems bathing or dressing myself	17 (0, 50)	12 (2.97, 24)	15 (4.97, 27.42)
I am unable to bathe or dress myself	25 (0, 56)	7.3 (2.2, 20)	26 (13, 40)
Missing	4 (1, 8)	16 (8, 24)	2 (0, 5)
EQ-5D usual activities at discharge			
I have no problems in performing my usual activities	50 (17, 75)	76 (61, 87)	54 (38, 69)
I have some problems in performing my usual activities	25 (0, 54.17)	15 (5.7, 28)	28 (14, 42)
I am unable to perform my usual activities	25 (0, 56)	9.8 (2.7, 23)	18 (7.1, 32)
Missing	4 (1, 8)	16 (8, 24)	2 (0, 5)
EQ-5D pain/discomfort at discharge			
I have no pain or discomfort	33 (8.3, 63)	34 (20, 50)	33 (19, 48.33)
I have moderate pain or discomfort	67 (30.09, 89)	63 (44.05, 76)	41 (24, 56)
I have extreme pain or discomfort		2.4 (0, 13)	26 (14, 40.01)
Missing	4 (1, 8)	16 (8, 24)	2 (0, 5)
EQ-5D anxiety/depression at discharge			
I am not anxious or depressed	50 (17, 75)	73 (57, 85)	79 (62.02, 89)
I am moderately anxious or depressed	50 (14, 75)	24 (11, 38)	18 (6.97, 32)
I am extremely anxious or depressed		2.4 (0, 13)	2.6 (0, 14)
Missing	4 (1, 8)	16 (8, 24)	2 (0, 5)
EQ-5D mobility at 30 day follow-up			
I have no problems in walking	67 (0, 100)	91 (77.53, 97)	65 (46.25, 81)
I have some problems in walking	17 (0, 70.43)	7 (2.02, 19)	13 (3.12, 27)
I am confined to bed	17 (0, 70.86)	2.3 (0, 13.05)	23 (9.02, 39)
Missing	10 (4, 16)	14 (7, 21)	10 (4, 17)
EQ-5D self-care at 30 day follow-up			
I have no problems with self-care	83 (0.05, 100)	91 (79.35, 97)	71 (53, 85)

Outcome	ATLS, N = 16	PTC, N = 57	Standard care, N = 41
I have some problems bathing or dressing myself	17 (0, 70.43)	4.7 (0, 16)	6.5 (0, 31.44)
I am unable to bathe or dress myself		4.7 (0, 15.32)	23 (11, 40)
Missing	10 (4, 16)	14 (7, 21)	10 (4, 17)
EQ-5D usual activities at 30 day follow-up			
I have no problems in performing my usual activities		91 (79.35, 97)	71 (52.15, 85)
I have some problems in performing my usual activities		4.7 (0, 16)	19 (6.7, 35)
I am unable to perform my usual activities		4.7 (0, 15.32)	9.7 (2.46, 25.76)
Missing	10 (4, 16)	14 (7, 21)	10 (4, 17)
EQ-5D pain/discomfort at 30 day follow-up			
I have no pain or discomfort	67 (0, 100)	77 (61.95, 88)	74 (52.26, 85)
I have moderate pain or discomfort	33 (0, 75)	21 (8.6, 33)	26 (12, 44.69)
I have extreme pain or discomfort		2.3 (0, 12.93)	
Missing	10 (4, 16)	14 (7, 21)	10 (4, 17)
EQ-5D anxiety/depression at 30 day follow-up			
I am not anxious or depressed		86 (71.41, 94)	97 (81, 100)
I am moderately anxious or depressed		12 (2.9, 24.57)	3.2 (0, 18.59)
I am extremely anxious or depressed		2.3 (0, 12.93)	
Missing	10 (4, 16)	14 (7, 21)	10 (4, 17)
Patient satisfaction			
Very satisfied	64 (33.23, 87)	73 (60, 83)	67 (49, 79)
Somewhat satisfied	36 (11, 63)	16 (6.66, 27)	23 (11, 35.02)
Somewhat dissatisfied		3.9 (0, 13)	7.7 (2.2, 21)
Very dissatisfied		7.8 (2.1, 18.06)	2.6 (0, 17)
Missing	2 (0, 5)	6 (2, 11)	2 (0, 5)
Number of hospitalizations for this injury			
Missing	10 (4, 16)	8 (3, 14)	2 (0, 5)
EQ-5D health state at discharge	60 (40, 81.8)	80 (60, 80)	50 (3, 80)
Missing	5 (1, 10)	16 (8, 24)	10 (4, 17)
EQ-5D health state at 30 day follow-up	100 (55, 100)	100 (90, 100)	10 (8, 100)
Missing	10 (4, 16)	15 (8.11, 23)	14 (8, 22)
Cost of treatment	7000 (0, 14000)	2025 (600, 6000)	14000 (500, 35000)
Missing	14 (7, 22)	18 (11, 26)	23 (14.12, 33)

Table S4. Outcomes in all patients after training, by treatment arm(95% CI)

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
30 day mortality			
Yes	3.8 (0, 20.98)	4.9 (0, 13)	16 (9.28, 21)
No	96 (78, 100)	95 (84, 98)	84 (77, 89)
Missing	2 (0, 5)	12 (6, 19)	26 (17, 36)
24 hour mortality			
Yes			
No			
Missing	2 (0, 5)	8 (3, 14)	7 (3, 12)
In-hospital mortality			
Yes	3.7 (0, 20.68)	4.1 (0, 11)	12 (6.43, 16)
No	96 (79, 100)	96 (87.42, 99)	88 (81, 91)
Missing	1 (0, 3)		2 (0, 5)
Self-ambulatory at discharge			
Yes		97 (86, 99)	99 (94, 100)
No		2.9 (0, 9.08)	1.5 (0, 5.59)
Missing	4 (1, 8)	3 (0, 7)	24 (14, 32.64)
Return to work			
Yes	58 (33, 78)	70 (55, 80)	53 (43, 61.06)
No	42 (21, 66.95)	30 (18, 42.29)	47 (36, 56)
Missing	9 (4, 15)	16 (9, 24)	56 (43, 69.34)
Pulmonary complication			
Yes			
No			
Missing	5 (1, 9)	10 (5, 17)	33 (22, 43)
Septic complication			
Yes		3.2 (0, 11)	0.8 (0, 4)
No		97 (88, 100)	99 (96, 99)
Missing	5 (1, 9)	10 (5, 17)	33 (22, 43)
Renal failure			
Yes			
No			
Missing	5 (1, 9)	10 (5, 17)	32 (21, 42)
Coagulopathy			
Yes	4.3 (0, 22.71)		
No	96 (77, 100)		
Missing	5 (1, 9)	10 (5, 17)	32 (21, 42)
Need for reexploration or resurgery			

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
Yes		1.6 (0, 9.21)	2.5 (0, 7)
No		98 (90, 100)	97 (92, 98)
Missing	6 (2, 11)	10 (5, 17)	42 (30.18, 54)
Failure of conservative management			
No	92 (71, 100)	98 (90, 100)	98 (93, 99)
Yes	8 (0, 24.44)	1.6 (0, 7.99)	1.7 (0, 5.8)
Missing	3 (0, 6)	12 (6, 19.14)	44 (32, 56)
EQ-5D mobility at discharge			
I have no problems in walking	89 (60, 100)	92 (80.1, 97)	62 (52, 70)
I have some problems in walking	11 (0, 33)	5 (1.5, 13.83)	19 (12, 27)
I am confined to bed		3.3 (0, 11)	19 (11, 26)
Missing	10 (4, 17)	13 (6, 21)	43 (30.04, 54)
EQ-5D self-care at discharge			
I have no problems with self-care	67 (34.68, 87)	85 (72, 92)	50 (40, 58)
I have some problems bathing or dressing myself	11 (0, 33.5)	8.3 (2.56, 17.71)	31 (22, 39)
I am unable to bathe or dress myself	22 (4.52, 44)	6.7 (1.76, 16)	19 (11, 25)
Missing	10 (4, 17)	13 (6, 21)	43 (30.04, 54)
EQ-5D usual activities at discharge			
I have no problems in performing my usual activities	61 (33, 82.01)	85 (72, 92)	47 (38, 56)
I have some problems in performing my usual activities	22 (5.6, 50)	8.3 (2.56, 17.71)	38 (28, 45)
I am unable to perform my usual activities	17 (0, 39.02)	6.7 (1.76, 16)	15 (8.29, 21)
Missing	10 (4, 17)	13 (6, 21)	43 (30.04, 54)
EQ-5D pain/discomfort at discharge			
I have no pain or discomfort	50 (25, 71)	65 (52, 76)	25 (16.01, 32)
I have moderate pain or discomfort	50 (22, 69)	30 (18, 41)	35 (27, 44)
I have extreme pain or discomfort		5 (1.5, 14)	40 (31, 48)
Missing	10 (4, 17)	13 (6, 21)	43 (30.04, 54)
EQ-5D anxiety/depression at discharge			
I am not anxious or depressed	83 (57, 95.75)	95 (84.84, 98)	92 (85, 96)
I am moderately anxious or depressed	17 (0, 41)	5 (0.6, 13)	6.8 (3.4, 13)
I am extremely anxious or depressed			1.7 (0, 5.3)
Missing	10 (4, 17)	13 (6, 21)	43 (30.04, 54)
EQ-5D mobility at 30 day follow-up			
I have no problems in walking	80 (53, 93.32)	98 (90, 100)	77 (67, 83.81)
I have some problems in walking	20 (5.9, 44)		17 (9.4, 24)
I am confined to bed		1.7 (0, 8.79)	5.9 (2.1, 12)
Missing	8 (3, 14)	15 (8, 23)	59 (46, 72.14)
EQ-5D self-care at 30 day follow-up			
I have no problems with self-care	80 (56, 94)	97 (88, 100)	79 (68.15, 85)

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
I have some problems bathing or dressing myself	10 (0, 31)		15 (8.23, 23)
I am unable to bathe or dress myself	10 (0, 31.74)	3.4 (0, 12)	5.9 (2.13, 12)
Missing	8 (3, 14)	15 (8, 23)	59 (46, 72.14)
EQ-5D usual activities at 30 day follow-up			
I have no problems in performing my usual activities	75 (50, 91)	95 (83.7, 98)	81 (70, 87)
I have some problems in performing my usual activities	15 (4.2, 38)	1.7 (0, 7.68)	12 (6.3, 19)
I am unable to perform my usual activities	10 (0, 31.74)	3.4 (0, 12)	6.9 (2.9, 13)
Missing	8 (3, 14)	15 (8, 23)	59 (46, 72.14)
EQ-5D pain/discomfort at 30 day follow-up			
I have no pain or discomfort	80 (56.42, 94)	86 (73, 93)	79 (69, 85)
I have moderate pain or discomfort	20 (5.3, 41.4)	14 (5.3, 23.93)	19 (11, 27)
I have extreme pain or discomfort			2 (0, 8.07)
Missing	8 (3, 14)	15 (8, 23)	59 (46, 72.14)
EQ-5D anxiety/depression at 30 day follow-up			
I am not anxious or depressed	85 (60.19, 95)	97 (88.33, 100)	95 (87, 97)
I am moderately anxious or depressed	15 (4.2, 38)	3.4 (0, 11)	3.9 (1, 9.9)
I am extremely anxious or depressed			1 (0, 4.95)
Missing	8 (3, 14)	15 (8, 23)	59 (46, 72.14)
Patient satisfaction			
Very satisfied	79 (57, 93)	94 (83, 97)	70 (61, 76)
Somewhat satisfied	13 (3.29, 32)	5.7 (1.5, 13)	14 (8.04, 19)
Somewhat dissatisfied	4.2 (0, 20.59)		9.4 (5.58, 16)
Very dissatisfied	4.2 (0, 20.74)		5.8 (2.2, 10)
Missing	4 (1, 8)	3 (0, 7)	23 (13, 31)
Number of hospitalizations for this injury			
Missing	3 (0, 6)	11 (5, 18)	34 (23.34, 46)
EQ-5D health state at discharge	65 (50, 80)	90 (80, 90)	50 (4, 50)
Missing	10 (4, 17)	19 (11, 28)	48 (35, 61)
EQ-5D health state at 30 day follow-up	83 (70, 100)		83 (10, 100)
Missing	8 (3, 14)	17 (9, 25.63)	61 (47, 74)
Cost of treatment	5000 (0, 15000)	1500 (250, 1600)	2500 (1000, 8000)
Missing	21 (12, 30)	21 (12.87, 30)	90 (74, 106)

Table S5. Absolute change from baseline for all outcomes, comparing the period after training with the period before training, by treatment arms(95% CI)

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
30 day mortality			
Yes	3.8 (0, 20.98)	-5.1 (-16.57, 4.76)	13.4 (3, 20)
No	-4 (-22, 0)	5 (-6, 14)	-13 (-20, -3)
Missing	0 (-4.9, 3)	4 (-5, 12)	23 (14, 34)
24 hour mortality			
Yes			-2.4 (-12, 0)
No			2 (0, 7)
Missing	0 (-4.9, 3)	3 (-4, 10)	7 (3, 12)
In-hospital mortality			
Yes	3.7 (0, 20.68)	-2.9 (-12.79, 4.2)	7.1 (-4, 13.3)
No	-4 (-21, 0)	3 (-5, 11)	-7 (-14, 2)
Missing	1 (0, 3)		2 (0, 5)
Self-ambulatory at discharge			
Yes	8 (0, 37)	1 (-6, 8)	4 (-2, 14)
No	-8.3 (-44.67, 0)	-1.2 (-9.5, 4.8)	-3.6 (-14.56, 1.5)
Missing	0 (-7, 4)	-5 (-13.26, 0)	22 (12, 30)
Return to work			
Yes	-25 (-56, 21)	-4 (-24, 12)	12 (-10, 30)
No	25 (-27.41, 55)	4 (-15, 21)	-12 (-35, 7)
Missing	-1 (-11, 6)	1 (-10.1, 11)	44 (29, 58)
Pulmonary complication			
Yes		-2.2 (-12, 0)	
No		2 (0, 7)	
Missing	-1 (-9, 4)	-1 (-11, 7)	31 (19, 41)
Septic complication			
Yes		-1.2 (-10.31, 5.5)	-1.7 (-11.72, 1.6)
No		1 (-6, 8.2)	1 (-2, 7)
Missing	-1 (-9, 4)	-2 (-12, 6)	32 (21, 42)
Renal failure			
Yes			
No			
Missing	0 (-7, 5)	-1 (-11, 7)	31 (20, 41)
Coagulopathy			
Yes	4.3 (0, 22.71)		
No	-4 (-23, 0)		

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
Missing	-1 (-9, 4)	-2 (-12, 5)	31 (20, 41)
Need for reexploration or resurgery			
Yes		-0.5 (-8.44, 3.3)	2.5 (0, 7)
No		0 (-5.44, 4)	-3 (-8, -2)
Missing	2 (-5, 7)	0 (-9, 8)	41 (29, 54)
Failure of conservative management			
No	-8 (-29, 0)	0 (-6.06, 4)	-2 (-7, -1)
Yes	8 (0, 24.45)	-0.6 (-9.45, 3.2)	1.7 (0, 5.8)
Missing	-7 (-16.47, -2)	1 (-8, 10)	42 (29, 54)
EQ-5D mobility at discharge			
I have no problems in walking	22 (-12, 56)	9 (-5, 23)	0 (-17, 19.83)
I have some problems in walking	2.7 (-23.17, 20)	-7 (-19.12, 4.99)	1 (-16.13, 14)
I am confined to bed	-25 (-60.74, -7.1)	-1.6 (-11.5, 5.8)	-2 (-22, 10)
Missing	6 (-2, 12)	-3 (-14, 7)	41 (29, 53)
EQ-5D self-care at discharge			
I have no problems with self-care	9 (-31.87, 47.44)	5 (-11, 20)	-9 (-27, 8)
I have some problems bathing or dressing myself	-6 (-39.79, 15)	-3.7 (-16.9, 8.16)	16 (0, 29.13)
I am unable to bathe or dress myself	-3 (-42.58, 26.36)	-0.6 (-11.51, 10)	-7 (-25.46, 6)
Missing	6 (-2, 12)	-3 (-14, 7)	41 (29, 53)
EQ-5D usual activities at discharge			
I have no problems in performing my usual activities	11 (-30.58, 46)	9 (-9, 23.11)	-7 (-26, 11)
I have some problems in performing my usual activities	-3 (-37, 28.8)	-6.7 (-21.53, 4.5)	10 (-7.49, 26)
I am unable to perform my usual activities	-8 (-43, 21)	-3.1 (-15.5, 7.7)	-3 (-20, 8.18)
Missing	6 (-2, 12)	-3 (-14, 7)	41 (29, 53)
EQ-5D pain/discomfort at discharge			
I have no pain or discomfort	17 (-23, 51)	31 (9, 47)	-8 (-26.97, 6)
I have moderate pain or discomfort	-17 (-52, 20)	-33 (-52.63, -12)	-6 (-24, 13)
I have extreme pain or discomfort		2.6 (-4.7, 9.7)	14 (-6.34, 27)
Missing	6 (-2, 12)	-3 (-14, 7)	41 (29, 53)
EQ-5D anxiety/depression at discharge			
I am not anxious or depressed	33 (-5.81, 64)	22 (7, 37)	13 (0, 29)
I am moderately anxious or depressed	-33 (-67, 3)	-19 (-35.39, -5.8)	-11.2 (-27.48, 0.4)
I am extremely anxious or depressed		-2.4 (-17, 0)	-0.9 (-10.47, 2.5)
Missing	6 (-2, 12)	-3 (-14, 7)	41 (29, 53)
EQ-5D mobility at 30 day follow-up			
I have no problems in walking	13 (-29.15, 61)	7 (-2, 17)	12 (-9, 30)
I have some problems in walking	3 (-50, 29)	-7 (-19.34, -2.1)	4 (-14, 15)

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
I am confined to bed	-17 (-100, 0)	-0.6 (-8.96, 3.82)	-17.1 (-36.1, -3.84)
Missing	-2 (-12, 5)	1 (-10, 11)	49 (34, 63)
EQ-5D self-care at 30 day follow-up			
I have no problems with self-care	-3 (-28.6, 53)	6 (-4, 16)	8 (-11, 26)
I have some problems bathing or dressing myself	-7 (-64.7, 16.07)	-4.7 (-17.2, 0)	8.5 (-5, 18)
I am unable to bathe or dress myself	10 (0, 31.59)	-1.3 (-10.45, 5.7)	-17.1 (-35.9, -4.9)
Missing	-2 (-12, 5)	1 (-10, 11)	49 (34, 63)
EQ-5D usual activities at 30 day follow-up			
I have no problems in performing my usual activities	-25 (-50, -9)	4 (-8, 13)	10 (-8.1, 28.5)
I have some problems in performing my usual activities	15 (4.2, 38)	-3 (-14, 2.1)	-7 (-24.6, 6)
I am unable to perform my usual activities	10 (0, 31.59)	-1.3 (-10.45, 5.7)	-2.8 (-17.58, 6.4)
Missing	-2 (-12, 5)	1 (-10, 11)	49 (34, 63)
EQ-5D pain/discomfort at 30 day follow-up			
I have no pain or discomfort	13 (-30, 62)	9 (-8, 23)	5 (-10, 23)
I have moderate pain or discomfort	-13 (-65, 28)	-7 (-23.4, 8)	-7 (-27, 7)
I have extreme pain or discomfort		-2.3 (-16, 0)	2 (0, 8.07)
Missing	-2 (-12, 5)	1 (-10, 11)	49 (34, 63)
EQ-5D anxiety/depression at 30 day follow-up			
I am not anxious or depressed	-15 (-39.72, -5)	11 (0, 24)	-2 (-8, 8)
I am moderately anxious or depressed	15 (4.2, 38)	-8.6 (-22, 1.02)	0.7 (-13.46, 5.3)
I am extremely anxious or depressed		-2.3 (-16, 0)	1 (0, 4.95)
Missing	-2 (-12, 5)	1 (-10, 11)	49 (34, 63)
Patient satisfaction			
Very satisfied	15 (-15, 45)	21 (8, 32)	3 (-14, 19)
Somewhat satisfied	-23 (-54, 4)	-10.3 (-22.87, 0)	-9 (-25.8, 3)
Somewhat dissatisfied	4.2 (0, 20.59)	-3.9 (-13, 0)	1.7 (-11.7, 9.2)
Very dissatisfied	4.2 (0, 20.74)	-7.8 (-20, -2.28)	3.2 (-8, 7.6)
Missing	2 (-3, 6)	-3 (-10, 2)	21 (11, 30)
Number of hospitalizations for this injury	0 (-1, 0)		
Missing	-7 (-16.47, -2)	3 (-6, 12)	32 (21, 44)
EQ-5D health state at discharge	5 (-30, 30)	10 (-10, 10)	0 (-68.09, 55)
Missing	5 (-3.48, 11)	3 (-9, 14)	38 (22, 52)
EQ-5D health state at 30 day follow-up	-17 (-33.16, 20)		73 (-13, 92)
Missing	-2 (-12, 5)	2 (-10, 12)	47 (30, 61.57)
Cost of treatment	-2000 (-14000, 13000)	-525 (-4922.65, 1000)	-11500 (-49000, 2250)
Missing	7 (-7, 17)	3 (-10, 14)	67 (45.64, 86)

Table S6. Relative change from baseline for all outcomes, comparing the period after training with the period before training, by treatment arms(95% CI)

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
30 day mortality			
Yes		0.49 (0, 2.31)	6.15 (2.62, 10.91)
No	0.96 (0.78, 1)	1.06 (0.95, 1.2)	0.87 (0.8, 0.97)
Missing	1 (0, 4)	1.5 (0.56, 4)	8.67 (2.89, 27.17)
24 hour mortality			
Yes			
No			1.02 (1, 1.08)
Missing	1 (0, 4)	1.6 (0.5, 6)	
In-hospital mortality			
Yes		0.59 (0, 2.89)	2.45 (0.77, 6.19)
No	0.96 (0.79, 1)	1.03 (0.95, 1.15)	0.93 (0.86, 1.03)
Missing			
Self-ambulatory at discharge			
Yes	1.09 (1, 1.59)	1.01 (0.95, 1.1)	1.04 (0.98, 1.17)
No		0.71 (0, 4)	0.29 (0, 1.52)
Missing	1 (0, 3.5)	0.38 (0, 1.57)	12 (3.73, 29)
Return to work			
Yes	0.7 (0.41, 1.42)	0.95 (0.73, 1.2)	1.29 (0.85, 2.24)
No	2.47 (1.11, 7.14)	1.15 (0.61, 2.48)	0.8 (0.55, 1.2)
Missing	0.9 (0.29, 2.25)	1.07 (0.5, 2.25)	4.67 (2.52, 9)
Pulmonary complication			
Yes			
No		1.02 (1, 1.08)	
Missing	0.83 (0.14, 2.67)	0.91 (0.36, 2.5)	16.5 (5.11, 39)
Septic complication			
Yes		0.73 (0, 3.81)	0.32 (0, 1.62)
No		1.01 (0.94, 1.1)	1.01 (0.98, 1.08)
Missing	0.83 (0.14, 2.67)	0.83 (0.33, 2)	33 (12.33, 44.32)
Renal failure			
Yes			
No			
Missing	1 (0.11, 3)	0.91 (0.36, 2.5)	32 (11.5, 42)
Coagulopathy			
Yes			
No	0.96 (0.77, 1)		
Missing	0.83 (0.14, 2.67)	0.83 (0.33, 2.07)	32 (11.5, 42)

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
Need for reexploration or resurgery			
Yes		0.76 (0, 4.47)	
No		1 (0.95, 1.04)	0.97 (0.92, 0.98)
Missing	1.5 (0.26, 6)	1 (0.36, 2.5)	42 (16.32, 55.43)
Failure of conservative management			
No	0.92 (0.71, 1)	1 (0.94, 1.04)	0.98 (0.93, 0.99)
Yes		0.73 (0, 4.65)	
Missing	0.3 (0, 1.21)	1.09 (0.47, 2.6)	22 (6.82, 51)
EQ-5D mobility at discharge			
I have no problems in walking	1.33 (0.88, 2.47)	1.11 (0.96, 1.33)	1 (0.77, 1.42)
I have some problems in walking	1.33 (0.27, 5.5)	0.42 (0, 2.49)	1.06 (0.48, 3.01)
I am confined to bed		0.67 (0, 4.06)	0.9 (0.42, 1.87)
Missing	2.5 (0.62, 8)	0.81 (0.37, 1.85)	21.5 (7.3, 50)
EQ-5D self-care at discharge			
I have no problems with self-care	1.16 (0.63, 2.62)	1.06 (0.88, 1.31)	0.85 (0.62, 1.22)
I have some problems bathing or dressing myself	0.65 (0, 3.36)	0.69 (0.14, 2.77)	2.07 (1, 6.19)
I am unable to bathe or dress myself	0.88 (0.09, 3.72)	0.92 (0.18, 4.6)	0.73 (0.37, 1.38)
Missing	2.5 (0.62, 8)	0.81 (0.37, 1.85)	21.5 (7.3, 50)
EQ-5D usual activities at discharge			
I have no problems in performing my usual activities	1.22 (0.58, 2.89)	1.12 (0.93, 1.37)	0.87 (0.63, 1.31)
I have some problems in performing my usual activities	0.88 (0.17, 3.75)	0.55 (0.11, 1.75)	1.36 (0.86, 2.72)
I am unable to perform my usual activities	0.68 (0, 3.3)	0.68 (0.12, 3.59)	0.83 (0.38, 2.01)
Missing	2.5 (0.62, 8)	0.81 (0.37, 1.85)	21.5 (7.3, 50)
EQ-5D pain/discomfort at discharge			
I have no pain or discomfort	1.52 (0.6, 4.73)	1.91 (1.2, 3.22)	0.76 (0.45, 1.36)
I have moderate pain or discomfort	0.75 (0.35, 1.49)	0.48 (0.28, 0.77)	0.85 (0.57, 1.54)
I have extreme pain or discomfort		2.08 (0.65, 6.54)	1.54 (0.87, 2.73)
Missing	2.5 (0.62, 8)	0.81 (0.37, 1.85)	21.5 (7.3, 50)
EQ-5D anxiety/depression at discharge			
I am not anxious or depressed	1.66 (0.94, 3.8)	1.3 (1.1, 1.65)	1.16 (1.01, 1.51)
I am moderately anxious or depressed	0.34 (0, 1.29)	0.21 (0, 0.75)	0.38 (0.13, 1.23)
I am extremely anxious or depressed			0.65 (0.14, 2.38)
Missing	2.5 (0.62, 8)	0.81 (0.37, 1.85)	21.5 (7.3, 50)
EQ-5D mobility at 30 day follow-up			
I have no problems in walking	1.19 (0.7, 3.16)	1.08 (0.99, 1.22)	1.18 (0.9, 1.62)
I have some problems in walking	1.18 (0.42, 4)		1.31 (0.5, 4.52)
I am confined to bed		0.74 (0, 4.24)	0.26 (0.07, 0.87)
Missing	0.8 (0.23, 2)	1.07 (0.5, 2.25)	5.9 (3.16, 12.8)
EQ-5D self-care at 30 day follow-up			

Outcome	ATLS, N = 28	PTC, N = 73	Standard care, N = 161
I have no problems with self-care	0.96 (0.71, 2.58)	1.07 (0.97, 1.21)	1.11 (0.89, 1.47)
I have some problems bathing or dressing myself	0.59 (0.12, 3.12)		2.31 (0.72, 6.54)
I am unable to bathe or dress myself		0.72 (0, 4)	0.26 (0.08, 0.77)
Missing	0.8 (0.23, 2)	1.07 (0.5, 2.25)	5.9 (3.16, 12.8)
EQ-5D usual activities at 30 day follow-up			
I have no problems in performing my usual activities	0.75 (0.5, 0.91)	1.04 (0.93, 1.18)	1.14 (0.91, 1.53)
I have some problems in performing my usual activities		0.36 (0, 3.19)	0.63 (0.28, 1.97)
I am unable to perform my usual activities		0.72 (0, 4)	0.71 (0.17, 2.61)
Missing	0.8 (0.23, 2)	1.07 (0.5, 2.25)	5.9 (3.16, 12.8)
EQ-5D pain/discomfort at 30 day follow-up			
I have no pain or discomfort	1.19 (0.71, 3.32)	1.12 (0.92, 1.37)	1.07 (0.89, 1.42)
I have moderate pain or discomfort	0.61 (0.16, 2.41)	0.67 (0.23, 1.91)	0.73 (0.34, 1.53)
I have extreme pain or discomfort			
Missing	0.8 (0.23, 2)	1.07 (0.5, 2.25)	5.9 (3.16, 12.8)
EQ-5D anxiety/depression at 30 day follow-up			
I am not anxious or depressed	0.85 (0.6, 0.95)	1.13 (1.02, 1.35)	0.98 (0.92, 1.09)
I am moderately anxious or depressed		0.28 (0, 1.71)	1.22 (0.37, 3.33)
I am extremely anxious or depressed			
Missing	0.8 (0.23, 2)	1.07 (0.5, 2.25)	5.9 (3.16, 12.8)
Patient satisfaction			
Very satisfied	1.23 (0.84, 2.13)	1.29 (1.09, 1.52)	1.04 (0.83, 1.36)
Somewhat satisfied	0.36 (0, 1.64)	0.36 (0.07, 1.12)	0.61 (0.29, 1.23)
Somewhat dissatisfied			1.22 (0.38, 3.91)
Very dissatisfied			2.23 (0.78, 4.78)
Missing	2 (0.19, 7)	0.5 (0, 2)	11.5 (3.67, 28)
Number of hospitalizations for this injury			
Missing	0.3 (0, 1.21)	1.38 (0.5, 3.64)	17 (5.33, 41)
EQ-5D health state at discharge	1.08 (0.67, 1.75)	1.12 (0.89, 1.12)	1 (0.08, 15)
Missing	2 (0.5, 6)	1.19 (0.6, 2.45)	4.8 (2.38, 11)
EQ-5D health state at 30 day follow-up	0.83 (0.67, 1.33)		8.3 (0.74, 11.14)
Missing	0.8 (0.23, 2)	1.13 (0.53, 2.27)	4.36 (2.43, 7.75)
Cost of treatment	0.71 (0.14, 5)	0.74 (0.2, 2.69)	0.18 (0.04, 4)
Missing	1.5 (0.66, 2.75)	1.17 (0.6, 2.22)	3.91 (2.37, 6.04)

Table S7. Absolute and relative differences in outcomes after training, comparing standard care with ATLS(95% CI)

Outcome	Absolute difference	Relative difference
30 day mortality		
Yes	12.2 (-8.05, 23.3)	4.21 (1.36, 15.71)
No	-12 (-23, 6)	0.88 (0.75, 1.1)
Missing	24 (15.57, 39)	13 (5.33, 40)
24 hour mortality		
Yes		
No		
Missing	5 (0, 13)	3.5 (1.6, 14)
In-hospital mortality		
Yes	8.3 (-5.9, 18)	3.24 (0.63, 13.64)
No	-8 (-18, 5)	0.92 (0.82, 1.07)
Missing	1 (-3.52, 5)	2 (0.5, 5)
Self-ambulatory at discharge		
Yes	-1 (-9, 2)	0.99 (0.93, 1.03)
No	1.5 (-2.2, 8.92)	
Missing	20 (-23, 35)	6 (0.1, 33)
Return to work		
Yes	-5 (-30, 29)	0.91 (0.6, 1.64)
No	5 (-30, 30)	1.12 (0.44, 2.41)
Missing	47 (30, 63)	6.22 (4.55, 53)
Pulmonary complication		
Yes		
No		
Missing	28 (5, 49)	6.6 (4.33, 43)
Septic complication		
Yes	0.8 (-4.5, 8.26)	
No	-1 (-11, 2)	0.99 (0.9, 1.03)
Missing	28 (1, 50)	6.6 (4.25, 43)
Renal failure		
Yes		
No		
Missing	27 (4, 48)	6.4 (4.11, 42)
Coagulopathy		
Yes	-4.3 (-16, 0)	
No	4 (0, 16)	1.04 (1, 1.19)
Missing	27 (4, 48)	6.4 (4.11, 42)

Outcome	Absolute difference	Relative difference
Need for reexploration or resurgery		
Yes	2.5 (0, 7.8)	
No	-3 (-8, -2)	0.97 (0.92, 0.98)
Missing	36 (-3.47, 56)	7 (4.22, 48)
Failure of conservative management		
No	6 (2, 26)	1.07 (1.02, 1.36)
Yes	-6.3 (-26, -2.4)	0.21 (0, 2.28)
Missing	41 (30, 56)	14.67 (8.42, 55)
EQ-5D mobility at discharge		
I have no problems in walking	-27 (-44, 31)	0.7 (0.55, 1.52)
I have some problems in walking	8 (-18.1, 23.91)	1.73 (0.08, 12.79)
I am confined to bed	19 (1.6, 30)	
Missing	33 (-23, 50)	4.3 (2.38, 20.5)
EQ-5D self-care at discharge		
I have no problems with self-care	-17 (-46.52, 43)	0.75 (0.48, 1.93)
I have some problems bathing or dressing myself	20 (-24.9, 36.87)	2.82 (0.2, 20.26)
I am unable to bathe or dress myself	-3 (-26.15, 19.7)	0.86 (0.07, 7.29)
Missing	33 (-23, 50)	4.3 (2.38, 20.5)
EQ-5D usual activities at discharge		
I have no problems in performing my usual activities	-14 (-49, 47)	0.77 (0.45, 2.14)
I have some problems in performing my usual activities	16 (-36.56, 39.71)	1.73 (0.1, 12.04)
I am unable to perform my usual activities	-2 (-24.06, 14.32)	0.88 (0, 5.17)
Missing	33 (-23, 50)	4.3 (2.38, 20.5)
EQ-5D pain/discomfort at discharge		
I have no pain or discomfort	-25 (-52, 49)	0.5 (0.25, 3.07)
I have moderate pain or discomfort	-15 (-49, -3)	0.7 (0.26, 1.03)
I have extreme pain or discomfort	40 (29.7, 55)	
Missing	33 (-23, 50)	4.3 (2.38, 20.5)
EQ-5D anxiety/depression at discharge		
I am not anxious or depressed	9 (2, 36)	1.11 (1.03, 1.68)
I am moderately anxious or depressed	-10.2 (-39.9, -3.9)	0.4 (0, 1.24)
I am extremely anxious or depressed	1.7 (-1.5, 6.4)	
Missing	33 (-23, 50)	4.3 (2.38, 20.5)
EQ-5D mobility at 30 day follow-up		
I have no problems in walking	-3 (-28, 30)	0.96 (0.71, 1.43)
I have some problems in walking	-3 (-29, 22)	0.85 (0, 5.21)
I am confined to bed	5.9 (0.97, 15)	
Missing	51 (34, 69)	7.38 (5.4, 53)
EQ-5D self-care at 30 day follow-up		

Outcome	Absolute difference	Relative difference
I have no problems with self-care	-1 (-25, 27)	0.99 (0.74, 1.39)
I have some problems bathing or dressing myself	5 (-20, 22)	1.5 (0.83, 4.17)
I am unable to bathe or dress myself	-4.1 (-29, 1.5)	0.59 (0, 2.6)
Missing	51 (34, 69)	7.38 (5.4, 53)
EQ-5D usual activities at 30 day follow-up		
I have no problems in performing my usual activities	6 (-21, 31)	1.08 (0.79, 1.58)
I have some problems in performing my usual activities	-3 (-20.77, 16.16)	0.8 (0, 11.66)
I am unable to perform my usual activities	-3.1 (-29, 5)	0.69 (0, 3.76)
Missing	51 (34, 69)	7.38 (5.4, 53)
EQ-5D pain/discomfort at 30 day follow-up		
I have no pain or discomfort	-1 (-18, 17)	0.99 (0.8, 1.24)
I have moderate pain or discomfort	-1 (-20, 13)	0.95 (0.25, 2.7)
I have extreme pain or discomfort	2 (-1, 8.8)	
Missing	51 (34, 69)	7.38 (5.4, 53)
EQ-5D anxiety/depression at 30 day follow-up		
I am not anxious or depressed	10 (3, 36)	1.12 (1.03, 1.58)
I am moderately anxious or depressed	-11.1 (-35.8, -2.9)	0.26 (0, 1.11)
I am extremely anxious or depressed	1 (-0.9, 5.1)	
Missing	51 (34, 69)	7.38 (5.4, 53)
Patient satisfaction		
Very satisfied	-9 (-31, 30)	0.89 (0.67, 1.46)
Somewhat satisfied	1 (-15.8, 15.15)	1.08 (0.09, 6.5)
Somewhat dissatisfied	5.2 (-13, 15)	2.24 (1, 4.12)
Very dissatisfied	1.6 (-9.3, 9.53)	1.38 (0.81, 3.95)
Missing	19 (-21, 34.53)	5.75 (0.11, 31.03)
Number of hospitalizations for this injury		
Missing	31 (21, 47)	11.33 (6.8, 48)
EQ-5D health state at discharge	-15 (-84, 75.14)	0.77 (0.06, 9.82)
Missing	38 (24, 53)	4.8 (3.23, 23)
EQ-5D health state at 30 day follow-up	0 (-60, 50)	1 (0.37, 2)
Missing	53 (40, 73)	7.62 (5.5, 53)
Cost of treatment	-2500 (-33500, 250)	0.5 (0, 1.5)
Missing	69 (-68, 98)	4.29 (0.25, 9.3)

Table S8. Absolute and relative differences in outcomes after training, comparing standard care with PTC(95% CI)

Outcome	Absolute difference	Relative difference
30 day mortality		
Yes	11.1 (-5.3, 22.33)	3.27 (0.61, 18.82)
No	-11 (-22.46, 4)	0.88 (0.78, 1.05)
Missing	14 (-24.07, 32)	2.17 (0, 12)
24 hour mortality		
Yes		
No		
Missing	-1 (-16, 4)	0.88 (0, 3.33)
In-hospital mortality		
Yes	7.9 (-3.66, 16)	2.93 (0.74, 17.86)
No	-8 (-24, 2)	0.92 (0.8, 1.03)
Missing	2 (-1, 6)	
Self-ambulatory at discharge		
Yes	2 (-1, 12)	1.02 (1, 1.14)
No	-1.4 (-12, 0.7)	
Missing	21 (-1, 45)	8 (1.25, 46)
Return to work		
Yes	-17 (-41, -4)	0.76 (0.42, 0.98)
No	17 (1, 41)	1.57 (1.05, 6.48)
Missing	40 (-36, 64)	3.5 (0.18, 12.99)
Pulmonary complication		
Yes		
No		
Missing	23 (-22, 40)	3.3 (0.12, 14.65)
Septic complication		
Yes	-2.4 (-8.7, 0)	
No	2 (0, 9)	1.02 (1, 1.1)
Missing	23 (-20, 41)	3.3 (0.13, 15)
Renal failure		
Yes		
No		
Missing	22 (-20, 39.08)	3.2 (0.13, 14.5)
Coagulopathy		
Yes	0 (-17.31, 4.2)	
No	0 (-17, 0)	1 (0.83, 1)
Missing	22 (-20, 39.08)	3.2 (0.13, 14.5)

Outcome	Absolute difference	Relative difference
Need for reexploration or resurgery		
Yes	0.9 (-5.32, 4.2)	
No	-1 (-5, 4)	0.99 (0.95, 1.04)
Missing	32 (-21.3, 51.96)	4.2 (0.17, 17.75)
Failure of conservative management		
No	0 (-22, 8)	1 (0.77, 1.09)
Yes	0.1 (-8.4, 22)	1.06 (0.26, 17)
Missing	32 (-35.17, 54)	3.67 (0, 20.5)
EQ-5D mobility at discharge		
I have no problems in walking	-30 (-50, -1.99)	0.67 (0.5, 1)
I have some problems in walking	14 (0.84, 33)	3.8 (2.06, 16.11)
I am confined to bed	15.7 (-15.7, 28)	
Missing	30 (-10, 51)	3.31 (0.35, 13.38)
EQ-5D self-care at discharge		
I have no problems with self-care	-35 (-52, -23)	0.59 (0.44, 0.73)
I have some problems bathing or dressing myself	22.7 (0, 41)	3.73 (1.21, 20.62)
I am unable to bathe or dress myself	12.3 (-5.5, 44.8)	2.84 (0.88, 20)
Missing	30 (-10, 51)	3.31 (0.35, 13.38)
EQ-5D usual activities at discharge		
I have no problems in performing my usual activities	-38 (-61, -23)	0.55 (0.35, 0.69)
I have some problems in performing my usual activities	29.7 (17, 46.5)	4.58 (2.2, 26.47)
I am unable to perform my usual activities	8.3 (-6, 33)	2.24 (0.76, 18.12)
Missing	30 (-10, 51)	3.31 (0.35, 13.38)
EQ-5D pain/discomfort at discharge		
I have no pain or discomfort	-40 (-62, -22)	0.38 (0.21, 0.57)
I have moderate pain or discomfort	5 (-16, 45)	1.17 (0.69, 4.46)
I have extreme pain or discomfort	35 (-36.75, 49)	
Missing	30 (-10, 51)	3.31 (0.35, 13.38)
EQ-5D anxiety/depression at discharge		
I am not anxious or depressed	-3 (-40, 10)	0.97 (0.59, 1.13)
I am moderately anxious or depressed	1.8 (-11.4, 39.6)	1.36 (0.43, 19.33)
I am extremely anxious or depressed	1.7 (0, 6.4)	
Missing	30 (-10, 51)	3.31 (0.35, 13.38)
EQ-5D mobility at 30 day follow-up		
I have no problems in walking	-21 (-50, -14)	0.79 (0.5, 0.86)
I have some problems in walking	17 (5, 50)	
I am confined to bed	4.2 (-3.7, 12)	
Missing	44 (-43.29, 69)	3.93 (0.16, 15.75)
EQ-5D self-care at 30 day follow-up		

Outcome	Absolute difference	Relative difference
I have no problems with self-care	-18 (-39, -10)	0.81 (0.61, 0.9)
I have some problems bathing or dressing myself	15 (7.4, 33)	
I am unable to bathe or dress myself	2.5 (-7, 25.9)	1.74 (0.58, 11.76)
Missing	44 (-43.29, 69)	3.93 (0.16, 15.75)
EQ-5D usual activities at 30 day follow-up		
I have no problems in performing my usual activities	-14 (-46, 1)	0.85 (0.52, 1.03)
I have some problems in performing my usual activities	10.3 (-1, 41.2)	7.06 (4.78, 23.89)
I am unable to perform my usual activities	3.5 (-5.6, 24.9)	2.03 (0.84, 11.76)
Missing	44 (-43.29, 69)	3.93 (0.16, 15.75)
EQ-5D pain/discomfort at 30 day follow-up		
I have no pain or discomfort	-7 (-28, 6)	0.92 (0.72, 1.09)
I have moderate pain or discomfort	5 (-10, 26.65)	1.36 (0.61, 14.5)
I have extreme pain or discomfort	2 (0, 8.8)	
Missing	44 (-43.29, 69)	3.93 (0.16, 15.75)
EQ-5D anxiety/depression at 30 day follow-up		
I am not anxious or depressed	-2 (-42, 7)	0.98 (0.57, 1.09)
I am moderately anxious or depressed	0.5 (-11, 42.2)	1.15 (0.31, 27.27)
I am extremely anxious or depressed	1 (0, 5.1)	
Missing	44 (-43.29, 69)	3.93 (0.16, 15.75)
Patient satisfaction		
Very satisfied	-24 (-39, -17)	0.74 (0.6, 0.84)
Somewhat satisfied	8.3 (-1.09, 35.6)	2.46 (1.09, 19.33)
Somewhat dissatisfied	9.4 (4, 17)	
Very dissatisfied	5.8 (0, 13)	
Missing	20 (-1, 44)	7.67 (1.25, 45)
Number of hospitalizations for this injury		
Missing	23 (-27, 42.97)	3.09 (0, 15.5)
EQ-5D health state at discharge	-40 (-89, -25)	0.56 (0.06, 0.83)
Missing	29 (-32, 53)	2.53 (0.18, 8.62)
EQ-5D health state at 30 day follow-up	-17 (-91, 5)	0.83 (0.09, 1.1)
Missing	44 (-47, 69.25)	3.59 (0.14, 14.75)
Cost of treatment	1000 (-5000, 27188.83)	1.67 (0.4, 26.67)
Missing	69 (-5, 98.46)	4.29 (0.78, 10.67)

Table S9. Absolute and relative differences in outcomes after training, comparing ATLS with PTC(95% CI)

Outcome	Absolute difference	Relative difference
30 day mortality		
Yes	-1.1 (-22, 11.22)	0.78 (0, 4.44)
No	1 (-12, 22)	1.01 (0.88, 1.28)
Missing	-10 (-37, 9)	0.17 (0, 3.17)
24 hour mortality		
Yes		
No		
Missing	-6 (-15, -4)	0.25 (0, 0.88)
In-hospital mortality		
Yes	-0.4 (-17, 9.31)	0.9 (0, 3.94)
No	0 (-11, 15)	1 (0.89, 1.19)
Missing	1 (-2, 6)	
Self-ambulatory at discharge		
Yes	3 (0, 14)	1.03 (1, 1.16)
No	-2.9 (-14, -1.4)	
Missing	1 (-28, 25)	1.33 (0, 13)
Return to work		
Yes	-12 (-40, 7)	0.83 (0.42, 1.16)
No	12 (-9, 40)	1.4 (0.86, 4.93)
Missing	-7 (-59, 9)	0.56 (0.05, 2.11)
Pulmonary complication		
Yes		
No		
Missing	-5 (-42, 5)	0.5 (0, 2.2)
Septic complication		
Yes	-3.2 (-8.2, -0.8)	
No	3 (0, 8)	1.03 (1, 1.09)
Missing	-5 (-41, 5)	0.5 (0, 2.2)
Renal failure		
Yes		
No		
Missing	-5 (-39, 5)	0.5 (0, 2.2)
Coagulopathy		
Yes	4.3 (0, 16)	
No	-4 (-16, 0)	0.96 (0.84, 1)
Missing	-5 (-39, 5)	0.5 (0, 2.2)

Outcome	Absolute difference	Relative difference
Need for reexploration or resurgery		
Yes	-1.6 (-7.7, 0)	
No	2 (0, 8)	1.02 (1, 1.09)
Missing	-4 (-46, 5)	0.6 (0, 2.4)
Failure of conservative management		
No	-6 (-26, -1)	0.94 (0.73, 0.99)
Yes	6.4 (0.9, 26.4)	5 (2.6, 27.14)
Missing	-9 (-52, 9)	0.25 (0, 3)
EQ-5D mobility at discharge		
I have no problems in walking	-3 (-37.88, 35.16)	0.97 (0.61, 1.59)
I have some problems in walking	6 (-14, 25.04)	2.2 (0.45, 14.67)
I am confined to bed	-3.3 (-26, 3.6)	
Missing	-3 (-51, 9)	0.77 (0.11, 2.25)
EQ-5D self-care at discharge		
I have no problems with self-care	-18 (-57, 21)	0.79 (0.41, 1.49)
I have some problems bathing or dressing myself	2.7 (-30, 29.35)	1.33 (0, 8)
I am unable to bathe or dress myself	15.3 (4, 42.8)	3.28 (1.16, 20)
Missing	-3 (-51, 9)	0.77 (0.11, 2.25)
EQ-5D usual activities at discharge		
I have no problems in performing my usual activities	-24 (-63, 10.64)	0.72 (0.28, 1.39)
I have some problems in performing my usual activities	13.7 (-21.15, 56)	2.65 (0.74, 23.16)
I am unable to perform my usual activities	10.3 (-1, 50.3)	2.54 (1.09, 18.33)
Missing	-3 (-51, 9)	0.77 (0.11, 2.25)
EQ-5D pain/discomfort at discharge		
I have no pain or discomfort	-15 (-53, 33.45)	0.77 (0.3, 2.35)
I have moderate pain or discomfort	20 (3, 49)	1.67 (1.12, 4.46)
I have extreme pain or discomfort	-5 (-49, 5.8)	
Missing	-3 (-51, 9)	0.77 (0.11, 2.25)
EQ-5D anxiety/depression at discharge		
I am not anxious or depressed	-12 (-43, -4)	0.87 (0.55, 0.96)
I am moderately anxious or depressed	12 (1.7, 42.8)	3.4 (1.17, 22.31)
I am extremely anxious or depressed	0 (-6.8, 0)	
Missing	-3 (-51, 9)	0.77 (0.11, 2.25)
EQ-5D mobility at 30 day follow-up		
I have no problems in walking	-18 (-55, -4)	0.82 (0.45, 0.98)
I have some problems in walking	20 (11.9, 55)	
I am confined to bed	-1.7 (-12, 1.7)	
Missing	-7 (-65, 8)	0.53 (0.05, 2.14)
EQ-5D self-care at 30 day follow-up		

Outcome	Absolute difference	Relative difference
I have no problems with self-care	-17 (-38, -8)	0.82 (0.61, 0.94)
I have some problems bathing or dressing myself	10 (-6, 30)	
I am unable to bathe or dress myself	6.6 (2.4, 24.3)	2.94 (1.65, 13.89)
Missing	-7 (-65, 8)	0.53 (0.05, 2.14)
EQ-5D usual activities at 30 day follow-up		
I have no problems in performing my usual activities	-20 (-46, -12)	0.79 (0.53, 0.88)
I have some problems in performing my usual activities	13.3 (5, 38)	8.82 (9.31, 21.11)
I am unable to perform my usual activities	6.6 (1.8, 24)	2.94 (1.7, 13.89)
Missing	-7 (-65, 8)	0.53 (0.05, 2.14)
EQ-5D pain/discomfort at 30 day follow-up		
I have no pain or discomfort	-6 (-29, 7)	0.93 (0.69, 1.11)
I have moderate pain or discomfort	6 (-8, 28)	1.43 (0.67, 12)
I have extreme pain or discomfort	0 (-6.6, 0)	
Missing	-7 (-65, 8)	0.53 (0.05, 2.14)
EQ-5D anxiety/depression at 30 day follow-up		
I am not anxious or depressed	-12 (-34, -3)	0.88 (0.65, 0.98)
I am moderately anxious or depressed	11.6 (-0.06, 34.4)	4.41 (0.87, 23.75)
I am extremely anxious or depressed	0 (-4.8, 0)	
Missing	-7 (-65, 8)	0.53 (0.05, 2.14)
Patient satisfaction		
Very satisfied	-15 (-35, 8)	0.84 (0.65, 1.16)
Somewhat satisfied	7.3 (-2.4, 26.7)	2.28 (0.93, 12.14)
Somewhat dissatisfied	4.2 (-7.79, 15.31)	
Very dissatisfied	4.2 (-3, 17)	
Missing	1 (-27.21, 24)	1.33 (0, 13)
Number of hospitalizations for this injury		
Missing	-8 (-44, 8)	0.27 (0, 2.75)
EQ-5D health state at discharge	-25 (-85, 15)	0.72 (0.06, 1.39)
Missing	-9 (-55, 10)	0.53 (0.08, 1.92)
EQ-5D health state at 30 day follow-up	-17 (-91, 0)	0.83 (0.09, 1)
Missing	-9 (-67, 9)	0.47 (0.04, 2.25)
Cost of treatment	3500 (0, 33000)	3.33 (1, 55.56)
Missing	0 (-95.49, 70)	1 (0.11, 4.45)

Table S10. Absolute and relative differences in changes from baseline for all outcomes, comparing standard care with ATLS(95% CI)

Outcome	Absolute difference	Relative difference
30 day mortality		
Yes	9.6 (-25.64, 31.44)	
No	-9 (-31, 26)	
Missing	23 (-9.51, 43)	
24 hour mortality		
Yes	-2.4 (-9.8, 0)	
No	2 (-3, 10)	
Missing	7 (-1, 18)	
In-hospital mortality		
Yes	3.4 (-16.6, 21.53)	
No	-3 (-22, 16)	
Missing	1 (-3.52, 5)	2 (0.5, 5)
Self-ambulatory at discharge		
Yes	-4 (-38, 4)	
No	4.7 (-3.7, 38)	
Missing	22 (-31, 39.93)	
Return to work		
Yes	37 (18, 86)	
No	-37 (-86, -19)	
Missing	45 (-39, 71)	
Pulmonary complication		
Yes	0 (-12, 0)	
No	0 (-10, 2)	
Missing	32 (-33, 51.17)	
Septic complication		
Yes	-1.7 (-12.85, 5.17)	
No	1 (-8, 10)	
Missing	33 (-36, 53.18)	
Renal failure		
Yes		
No		
Missing	31 (-34, 50.16)	
Coagulopathy		
Yes	-4.3 (-16, 0)	

Outcome	Absolute difference	Relative difference
No	4 (0, 16)	
Missing	32 (-34, 51.29)	
Need for reexploration or resurgery		
Yes	2.5 (-3.8, 10.29)	
No	-3 (-11, 1)	
Missing	39 (-43, 63.27)	20.5 (7.8, 58)
Failure of conservative management		
No	6 (0, 26)	
Yes	-6.3 (-26, -1.5)	
Missing	49 (33, 66)	
EQ-5D mobility at discharge		
I have no problems in walking	-22 (-78, -6)	
I have some problems in walking	-1.7 (-26.99, 20.5)	
I am confined to bed	23 (7.18, 63)	
Missing	35 (-51.8, 60.45)	
EQ-5D self-care at discharge		
I have no problems with self-care	-18 (-56, 6)	
I have some problems bathing or dressing myself	22 (-5, 59)	
I am unable to bathe or dress myself	-4 (-42.7, 17.31)	
Missing	35 (-51.8, 60.45)	
EQ-5D usual activities at discharge		
I have no problems in performing my usual activities	-18 (-64, 15)	
I have some problems in performing my usual activities	13 (-21.42, 46.56)	
I am unable to perform my usual activities	5 (-12.9, 45)	
Missing	35 (-51.8, 60.45)	
EQ-5D pain/discomfort at discharge		
I have no pain or discomfort	-25 (-66.11, 51)	
I have moderate pain or discomfort	11 (-43, 52.7)	
I have extreme pain or discomfort	14 (-8, 37.6)	
Missing	35 (-51.8, 60.45)	
EQ-5D anxiety/depression at discharge		
I am not anxious or depressed	-20 (-73, -4)	0.39 (-30, 1.56)
I am moderately anxious or depressed	21.8 (6, 68)	0.34 (-264, 1.29)
I am extremely anxious or depressed	-0.9 (-9.42, 5.6)	
Missing	35 (-51.8, 60.45)	
EQ-5D mobility at 30 day follow-up		
I have no problems in walking	-1 (-42, 28)	

Outcome	Absolute difference	Relative difference
I have some problems in walking	1 (-33, 27)	
I am confined to bed	-0.1 (-29.57, 36.4)	
Missing	51 (-40, 74)	
EQ-5D self-care at 30 day follow-up		
I have no problems with self-care	11 (-6, 59)	
I have some problems bathing or dressing myself	15.5 (-8.77, 58.1)	
I am unable to bathe or dress myself	-27.1 (-60.9, -19.65)	
Missing	51 (-40, 74)	
EQ-5D usual activities at 30 day follow-up		
I have no problems in performing my usual activities	35 (14, 76)	
I have some problems in performing my usual activities	-22 (-64, -9.9)	
I am unable to perform my usual activities	-12.8 (-38.4, -6.2)	
Missing	51 (-40, 74)	
EQ-5D pain/discomfort at 30 day follow-up		
I have no pain or discomfort	-8 (-74.56, 15)	
I have moderate pain or discomfort	6 (-18, 58.86)	
I have extreme pain or discomfort	2 (-6.57, 11.06)	
Missing	51 (-40, 74)	
EQ-5D anxiety/depression at 30 day follow-up		
I am not anxious or depressed	13 (-14, 45)	
I am moderately anxious or depressed	-14.3 (-39.4, 1.3)	
I am extremely anxious or depressed	1 (-5.8, 9.6)	
Missing	51 (-40, 74)	
Patient satisfaction		
Very satisfied	-12 (-45.57, 27)	
Somewhat satisfied	14 (3.16, 53.3)	0.39 (-27.05, 2.55)
Somewhat dissatisfied	-2.5 (-17.13, 10.9)	
Very dissatisfied	-1 (-21.48, 17.3)	
Missing	19 (-29, 36)	
Number of hospitalizations for this injury	0 (-1, -1)	
Missing	39 (29, 57)	
EQ-5D health state at discharge	-5 (-68.92, 60)	
Missing	33 (-38, 62.24)	
EQ-5D health state at 30 day follow-up	90 (86, 116)	
Missing	49 (-35, 77)	
Cost of treatment	-9500 (-74630.2, 10549.64)	
Missing	60 (-66, 95)	9.57 (0.05, 94)

Table S11. Absolute and relative differences in changes from baseline for all outcomes, comparing standard care with PTC(95% CI)

Outcome	Absolute difference	Relative difference
30 day mortality		
Yes	18.5 (14.1, 44.3)	
No	-18 (-44, -14)	
Missing	19 (-14.83, 37)	
24 hour mortality		
Yes	-2.4 (-9.8, 0)	
No	2 (0, 10)	
Missing	4 (-10, 12)	
In-hospital mortality		
Yes	10 (3.8, 25.8)	
No	-10 (-26, -5)	
Missing	2 (-1, 6)	
Self-ambulatory at discharge		
Yes	3 (-10, 40.7)	
No	-2.4 (-40.06, 10.2)	
Missing	27 (15.73, 49)	
Return to work		
Yes	16 (-61, 54)	
No	-16 (-56, 57.88)	
Missing	43 (-6, 69.51)	
Pulmonary complication		
Yes	2.2 (0, 10)	
No	-2 (-10, 0)	
Missing	32 (-3, 52)	
Septic complication		
Yes	-0.5 (-7.44, 7.44)	
No	0 (-9, 5)	
Missing	34 (-2, 55)	
Renal failure		
Yes		
No		
Missing	32 (-2, 51)	
Coagulopathy		
Yes	0 (-17.31, 4.2)	

Outcome	Absolute difference	Relative difference
No	0 (-17, 0)	
Missing	33 (-2, 52)	
Need for reexploration or resurgery		
Yes	3 (-0.1, 10.7)	
No	-3 (-11, -1)	
Missing	41 (-1, 64)	
Failure of conservative management		
No	-2 (-27, 4)	
Yes	2.3 (-4.1, 27.3)	
Missing	41 (-42, 64)	
EQ-5D mobility at discharge		
I have no problems in walking	-9 (-45, 37.2)	
I have some problems in walking	8 (-10.76, 43.6)	
I am confined to bed	-0.4 (-71.7, 22)	
Missing	44 (33, 74)	
EQ-5D self-care at discharge		
I have no problems with self-care	-14 (-67.77, 24)	
I have some problems bathing or dressing myself	19.7 (-9.7, 62.13)	
I am unable to bathe or dress myself	-6.4 (-47, 21)	
Missing	44 (33, 74)	
EQ-5D usual activities at discharge		
I have no problems in performing my usual activities	-16 (-72.97, 22)	
I have some problems in performing my usual activities	16.7 (-15, 65.46)	
I am unable to perform my usual activities	0.1 (-34, 32.74)	
Missing	44 (33, 74)	
EQ-5D pain/discomfort at discharge		
I have no pain or discomfort	-39 (-78.7, -13)	
I have moderate pain or discomfort	27 (0, 61)	
I have extreme pain or discomfort	11.4 (-3.77, 36.29)	
Missing	44 (33, 74)	
EQ-5D anxiety/depression at discharge		
I am not anxious or depressed	-9 (-45.55, 37.45)	0.59 (0, 9.18)
I am moderately anxious or depressed	7.8 (-42.26, 43.34)	0.59 (0.03, 12.41)
I am extremely anxious or depressed	1.5 (-2, 13.5)	
Missing	44 (33, 74)	
EQ-5D mobility at 30 day follow-up		
I have no problems in walking	5 (-35, 49)	

Outcome	Absolute difference	Relative difference
I have some problems in walking	11 (-16, 83)	
I am confined to bed	-16.5 (-82.9, 0)	
Missing	48 (-7, 76.59)	
EQ-5D self-care at 30 day follow-up		
I have no problems with self-care	2 (-65.02, 32)	
I have some problems bathing or dressing myself	13.2 (-14.34, 87.99)	
I am unable to bathe or dress myself	-15.8 (-44.79, 21.8)	
Missing	48 (-7, 76.59)	
EQ-5D usual activities at 30 day follow-up		
I have no problems in performing my usual activities	6 (-70, 32)	
I have some problems in performing my usual activities	-4 (-21.6, 47.5)	
I am unable to perform my usual activities	-1.5 (-17, 36.26)	
Missing	48 (-7, 76.59)	
EQ-5D pain/discomfort at 30 day follow-up		
I have no pain or discomfort	-4 (-61.12, 34.64)	
I have moderate pain or discomfort	0 (-48, 45)	
I have extreme pain or discomfort	4.3 (2.1, 12.9)	
Missing	48 (-7, 76.59)	
EQ-5D anxiety/depression at 30 day follow-up		
I am not anxious or depressed	-13 (-60, 8)	
I am moderately anxious or depressed	9.3 (-11.4, 60.2)	
I am extremely anxious or depressed	3.3 (2, 12.9)	
Missing	48 (-7, 76.59)	
Patient satisfaction		
Very satisfied	-18 (-66, 6)	
Somewhat satisfied	1.3 (-41.15, 30.03)	
Somewhat dissatisfied	5.6 (-3.77, 19.4)	
Very dissatisfied	11 (4.3, 25)	
Missing	24 (15, 48)	
Number of hospitalizations for this injury	0 (-1, -1)	
Missing	29 (-33.53, 52)	
EQ-5D health state at discharge	-10 (-90, 39)	
Missing	35 (-3, 59)	
EQ-5D health state at 30 day follow-up	73 (15, 114)	
Missing	45 (-8, 73.22)	
Cost of treatment	-10975 (-81672.96, 7582.31)	

Outcome	Absolute difference	Relative difference
Missing	64 (-2, 103)	

Table S12. Absolute and relative differences in changes from baseline for all outcomes, comparing ATLS with PTC(95% CI)

Outcome	Absolute difference	Relative difference
30 day mortality		
Yes	8.9 (-12.57, 32.12)	
No	-9 (-32.63, 12)	
Missing	-4 (-37, 7)	
24 hour mortality		
Yes	0 (-12, 0)	
No	0 (-11, 0)	
Missing	-3 (-15, 3)	
In-hospital mortality		
Yes	6.6 (-4.2, 24.9)	
No	-7 (-25, 2)	
Missing	1 (-2, 6)	
Self-ambulatory at discharge		
Yes	7 (0, 41)	
No	-7.1 (-41.1, -0.7)	
Missing	5 (-25, 33)	
Return to work		
Yes	-21 (-89, 10)	
No	21 (-12, 89)	
Missing	-2 (-66, 41)	
Pulmonary complication		
Yes	2.2 (0, 10)	
No	-2 (-10, 0)	
Missing	0 (-47, 36)	
Septic complication		
Yes	1.2 (-3.75, 13.86)	
No	-1 (-14, 3)	
Missing	1 (-44.28, 39)	
Renal failure		
Yes		
No		
Missing	1 (-41.9, 37)	
Coagulopathy		
Yes	4.3 (0, 16)	

Outcome	Absolute difference	Relative difference
No	-4 (-16, 0)	
Missing	1 (-42.61, 38)	
Need for reexploration or resurgery		
Yes	0.5 (-6.1, 5.2)	
No	0 (-5, 6)	
Missing	2 (-46, 49)	
Failure of conservative management		
No	-8 (-28, -2)	
Yes	8.6 (2.1, 28.5)	
Missing	-8 (-67, 9)	
EQ-5D mobility at discharge		
I have no problems in walking	13 (-12, 72)	
I have some problems in walking	9.7 (-7.7, 45)	
I am confined to bed	-23.4 (-57.5, -1.76)	
Missing	9 (-39, 51)	
EQ-5D self-care at discharge		
I have no problems with self-care	4 (-32.19, 58.2)	
I have some problems bathing or dressing myself	-2.3 (-50.44, 25.2)	
I am unable to bathe or dress myself	-2.4 (-38, 33)	
Missing	9 (-39, 51)	
EQ-5D usual activities at discharge		
I have no problems in performing my usual activities	2 (-36, 56.83)	
I have some problems in performing my usual activities	3.7 (-34.93, 48)	
I am unable to perform my usual activities	-4.9 (-51.52, 21)	
Missing	9 (-39, 51)	
EQ-5D pain/discomfort at discharge		
I have no pain or discomfort	-14 (-65.85, 40)	
I have moderate pain or discomfort	16 (-23, 70)	
I have extreme pain or discomfort	-2.6 (-30, 6.85)	
Missing	9 (-39, 51)	
EQ-5D anxiety/depression at discharge		
I am not anxious or depressed	11 (-15, 70)	1.5 (0.5, 35)
I am moderately anxious or depressed	-14 (-67.3, 8.2)	1.74 (0.56, 28.5)
I am extremely anxious or depressed	2.4 (0, 11.4)	
Missing	9 (-39, 51)	
EQ-5D mobility at 30 day follow-up		
I have no problems in walking	6 (-34, 57)	1.86 (0.3, 44)

Outcome	Absolute difference	Relative difference
I have some problems in walking	10 (-16, 87.6)	
I am confined to bed	-16.4 (-101.8, 2.94)	
Missing	-3 (-72, 40)	
EQ-5D self-care at 30 day follow-up		
I have no problems with self-care	-9 (-93, 16)	
I have some problems bathing or dressing myself	-2.3 (-39.42, 30.96)	
I am unable to bathe or dress myself	11.3 (-7.7, 62.3)	
Missing	-3 (-72, 40)	
EQ-5D usual activities at 30 day follow-up		
I have no problems in performing my usual activities	-29 (-66, 7)	
I have some problems in performing my usual activities	18 (-1.3, 44.9)	
I am unable to perform my usual activities	11.3 (1.1, 34.5)	
Missing	-3 (-72, 40)	
EQ-5D pain/discomfort at 30 day follow-up		
I have no pain or discomfort	4 (-39.62, 56.63)	
I have moderate pain or discomfort	-6 (-62.71, 31)	
I have extreme pain or discomfort	2.3 (0, 12)	
Missing	-3 (-72, 40)	
EQ-5D anxiety/depression at 30 day follow-up		
I am not anxious or depressed	-26 (-49, -17.47)	
I am moderately anxious or depressed	23.6 (12.2, 46)	
I am extremely anxious or depressed	2.3 (0, 11)	
Missing	-3 (-72, 40)	
Patient satisfaction		
Very satisfied	-6 (-47.26, 25)	
Somewhat satisfied	-12.7 (-57.2, 2.75)	
Somewhat dissatisfied	8.1 (0.9, 30)	
Very dissatisfied	12 (4.2, 26)	
Missing	5 (-22, 30)	
Number of hospitalizations for this injury	0 (-1, -0.5)	
Missing	-10 (-55, 11)	
EQ-5D health state at discharge	-5 (-78.91, 41.66)	
Missing	2 (-44.02, 42)	
EQ-5D health state at 30 day follow-up	-17 (-109, 20)	
Missing	-4 (-71, 18)	
Cost of treatment	-1475 (-33639.83, 29927.2)	

Outcome	Absolute difference	Relative difference
Missing	4 (-75, 76)	

S13 Protocol Deviations

Trial Registration

We intended to register our trial with Clinical Trials Registry - India and will do so with the full-scale trial.

Outcomes across subgroups

Because of small numbers in the pre-specified subgroups men, women, blunt multisystem trauma, penetrating trauma, shock, severe traumatic brain injury and elderly we decided to report only descriptive data on these subgroups.

Number of Participating Centres

We recruited seven centres instead of six and therefore assigned two centres each to the intervention arms and three centres to the control arm.

Resident Participants

We included emergency medicine residents in addition to surgical residents.

Periodic surveys of residents

We did not distribute periodic surveys to the participating residents but discussed challenges and suggestions that they had regarding the scheduling or implementation of the training programs.

Follow up of residents

We stated that resident participants would be followed up 30 days after training, but revised this to follow them up after the end of the study period.

Data collection from records

We decided to extract data from medical records only for a convenience sample of patients to reduce the research officers' workload.

Selection of units for training

We planned to use simple random sampling to select units if there were more than two eligible units in a hospital but instead the hospital principal investigator decided which units to train.

Timing of resident consent

We had initially planned to ask residents for consent before randomisation, but because of logistical issues the units were only finalised after the hospitals had been randomised. Residents were therefore approached for consent after randomisation but before training.

Analysis level of feasibility outcomes

We had planned to analyse feasibility outcomes on both an overall and individual cluster level, but we only analysed them on an overall level, because the sample sizes in individual clusters were too small to generate meaningful results.