

Abstract 59 Table 2 Performance of mTBI discharge decision rule and BIG criteria

mTBI Risk Score			
N=961	Deteriorated	No deterioration	
Risk=0 (discharge ED)	0	34 (3.5%)	Sensitivity 100% (95% CI: 97% to 100%)
Risk>0 (Inpatient admission)	234	693	Specificity 4.7% (95% CI: 3.3% to 6.5%)
BIG Criteria			
N=921	Deteriorated	No deterioration	
BIG 1 (discharge ED)	12	93	Sensitivity 94% (95% CI: 90.5% to 97%)
BIG 2/3 (Inpatient admission)	210	606	Specificity 13.3% (95% CI: 10.9% to 16.1%)

none of whom deteriorated. The decision rule outperformed the BIG criteria, which is used to triage hospital admissions in the USA.

External validation shows our decision rule may be safe for routine use in clinical practice. The inclusion of biomarkers or other novel factors may improve the calibration of the model and the specificity of the decision rule.

Free papers

156

PREHOSPITAL DETERMINANTS OF SUCCESSFUL RESUSCITATION AFTER TRAUMATIC AND NON-TRAUMATIC OUT-OF-HOSPITAL CARDIAC ARREST

¹Ed Barnard, ¹Daniel Sandbach, ²Tracy Nicholls, ¹Alastair Wilson, ¹Ari Ercole. ¹East Anglian Air Ambulance; ²East of England Ambulance Service NHS Trust

10.1136/emj-2020-rcemabstracts.6

Aims/Objectives/Background Out-of-hospital cardiac arrest (OHCA) is prevalent in the UK. Reported survival is lower than in countries with comparable healthcare systems; a better understanding of outcome determinants may identify areas for improvement. Aim: to compare differential determinants of survival to hospital admission and survival to hospital discharge for traumatic (TCA) and non-traumatic cardiac arrest (NCTA).

Methods/Design An analysis of 9109 OHCA in East of England between 1 January 2015 and 31 July 2017. Univariate descriptives and multivariable analysis were used to understand the determinants of survival for NTCA and TCA. Two Utstein outcome variables were used: survival to hospital admission and hospital discharge. Data reported as number (percentage), number (percentage (95% CI)) and median (IQR) as appropriate. Continuous data have been analysed with a Mann-Whitney U test, and categorical data have been analysed with a χ^2 test. Analyses were performed using the R statistical programming language.

Results/Conclusions The incidence of OHCA was 55.1 per 100 000 population/year. The overall survival to hospital admission was 27.6% (95%CI 26.7% to 28.6%) and the

overall survival to discharge was 7.9% (95%CI 7.3% to 8.5%). Survival to hospital admission and survival to hospital discharge were both greater in the NTCA group compared with the TCA group: 27.9% vs 19.3% $p=0.001$, and 8.0% vs 3.8% $p=0.012$ respectively.

Determinants of NTCA and TCA survival were different, and varied according to the outcome examined. In NTCA, bystander cardiopulmonary resuscitation (CPR) was associated with survival at discharge but not at admission, and the likelihood of bystander-CPR was dependent on geographical socioeconomic status.

NTCA and TCA are clinically distinct entities with different predictors for outcome and should be reported separately. Determinants of survival to hospital admission and discharge differ in a way that likely reflects the determinants of neurological injury. Bystander CPR public engagement may be best focused in more deprived areas.

432

ESTABLISHING INJURY SURVEILLANCE IN EMERGENCY DEPARTMENTS IN NEPAL: EPIDEMIOLOGY AND BURDEN OF PAEDIATRIC INJURIES

¹Dan Magnus, ²Santosh Bhatta, ²Julie Mytton. ¹Bristol Royal Hospital for Children; ²University of the West of England (UWE Bristol)

10.1136/emj-2020-rcemabstracts.7

Aims/Objectives/Background Globally, injuries cause more than 5 million deaths annually. Children and young people are a particularly vulnerable group and injuries are the leading cause of death in people aged 5–24 years globally and a leading cause of disability.

In most low and middle-income countries where the majority of global child injury burden occurs, systems for routinely collecting injury data are limited. There is a continuing need for better data on childhood injuries and for injury surveillance.

The aim of our study was to introduce a hospital-based injury surveillance tool – the first of its kind in Nepal and explore its feasibility. We undertook prospective collection of data on all injuries/trauma presenting to 2 hospital emergency departments to describe the epidemiology of paediatric hospital injury presentations and associated risk factors.

Methods/Design A new injury surveillance system for use in emergency departments in Nepal was designed and used to collect data on patients presenting with injuries. Data were collected prospectively in two hospitals 24 h a day over 12 months (April 2019 - March 2020) by trained data collectors using tablet computers.

Results/Conclusions The total number of ED patients with injury in the study was 10,154.

2,696 were patients aged <18 years. Most injuries in children were unintentional and over half of children presenting with injuries were <10 years of age. Falls, animal bites/stings and road traffic injuries accounted for nearly 75% of all injuries with some (drowning, poisonings and burns) under-represented. Over half of injuries were cuts, bites and open wounds. The next most common injury types were superficial injuries (14.2%); fractures (11.1%); sprains/dislocations (9.0%). Child mortality was 1%.

This is the biggest prospective injury surveillance study in a low or middle country in recent years and supports the use

Abstract 432 Table 1 Socio-demographic profile and characteristics of injury among children attending emergency of hospitals in Makwanpur district, Nepal, April 2019 – March 2020 (N=2696)

Characteristics	Frequency
Gender	
Male	1778
Female	918
Age groups	
0–4 years	653
5–9 years	866
10–14 years	680
15–17 years	497
Median year (IRQ)	8 (5 – 13)
Ethnicity/caste	
Janajati	1384
Brahmin/Chhetri	892
Dalit	148
Madhesi	146
Muslim	74
Others	50
Unknown	2
Place where injury occurred	
Home/Compound	1576
Highway/road/street	636
School	233
Recreational area	138
Workplace	76
Other	37
Activities at the time injury occurred	
Leisure/Play	1889
Travelling (other than to/from school/work)	296
Work	202
Travelling (to/from school/work)	184
Education	42
Organised sports	11
Other	52
Unknown	20
Intent of injury	
Unintentional	2560
Intentional (self-harm)	61
Intentional (assault)	75
Unintentional (n=2560)	
Fall	912
Animal or insect related	728
Road traffic injury	356
Injured by a blunt force	201
Stabbed, cut or pierced	176
Fire, burn or scald	65
Poisoning	52
Suffocation/choking	36
Electrocution	12
Drowning and submersion	7
Other	13
Unknown	2
Self-harm (n=61)	
Poisoning	38
Hanging, strangulation, suffocation	12
Stabbed, cut or pierced	6
Injured by blunt object	4
Other	1
Assault (n=75)	
Bodily force (physical violence)	43

Injured by blunt object	18
Stabbed, cut or pierced	8
Pushing from a high place	2
Poisoning	2
Sexual assault	1
Other	1
Nature of injury (one most severe)	
Cuts, bites or open wound	1378
Bruise or superficial injury	383
Fracture	299
Sprain, strain or dislocation	243
Internal injury	124
Head Injury/Concussion	83
Burns	67
Other	115
Unknown	2
Not recorded	2
Severity of injury	
No apparent injury	125
Minor	1645
Moderate	813
Severe	111
Not recorded	2
Disposition	
Discharged	2317
Admitted to hospital	164
Transferred to another hospital	179
Died	21
Leave Against Medical Advice (LAMA)	11
Unknown	2
Not recorded	2

Note:
Not recorded = missing cases
95% CI calculated using one proportion test and normal approximation method in Minitab.

Abstract 432 Table 2 Distribution of injuries by age-group, sex and mechanism of injury among children attending emergency of hospitals in Makwanpur district, Nepal, April 2019 – March 2020

Age groups & Sex	0 - 4 years	5 - 9 years	10–14 years	15–17 years	Male	Female	Total
Intent & mechanisms	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Unintentional							
Fall	239 (26.2)	328 (36.0)	249 (27.3)	96 (10.5)	636 (69.7)	276 (30.3)	912 (100)
Animal or insect related	175 (24.0)	260 (35.7)	190 (26.1)	103 (14.1)	470 (64.6)	258 (35.4)	728 (100)
Road traffic injury	49 (13.8)	108 (30.3)	86 (24.2)	113 (31.7)	223 (62.6)	133 (37.4)	356 (100)
Injured by a blunt force	54 (26.9)	74 (36.8)	49 (24.4)	24 (11.9)	150 (74.6)	51 (25.4)	201 (100)
Stabbed, cut or pierced	20 (11.4)	56 (31.8)	49 (27.8)	51 (29.0)	127 (72.2)	49 (27.8)	176 (100)
Fire, burn or scald	42 (64.6)	10 (15.4)	9 (13.8)	4 (6.2)	27 (41.5)	38 (58.5)	65 (100)
Poisoning	33 (63.5)	6 (11.5)	5 (9.6)	8 (15.4)	26 (50.0)	26 (50.0)	52 (100)
Suffocation/choking	24 (66.7)	5 (13.9)	2 (5.6)	5 (13.9)	20 (55.6)	16 (44.4)	36 (100)
Electrocution	2 (15.7)	0 (0.0)	3 (25.0)	7 (58.3)	10 (83.3)	2 (16.7)	12 (100)
Drowning and submersion	1 (14.3)	1 (14.3)	3 (42.9)	2 (28.6)	3 (42.9)	4 (57.1)	7 (100)

Other	6 (46.2)	4 (30.8)	3 (23.1)	0 (0.0)	10 (76.9)	3 (23.1)	13 (100)
Unknown	2 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100)	2 (100)
Total	647 (25.3)	852 (33.3)	648 (25.3)	413 (16.1)	1702 (66.5)	858 (33.5)	2560 (100)
Self-harm							
Poisoning	0 (0.0)	0 (0.0)	6 (15.8)	32 (84.2)	7 (18.4)	31 (81.6)	38 (100)
Hanging	0 (0.0)	0 (0.0)	3 (25.0)	9 (75.0)	4 (33.3)	8 (66.7)	12 (100)
Stabbed, cut or pierced	0 (0.0)	0 (0.0)	2 (33.3)	4 (66.7)	1 (16.7)	5 (83.3)	6 (100)
Injured by blunt object	0 (0.0)	2 (50.0)	2 (50.0)	0 (0.0)	4 (100)	0 (0.0)	4 (100)
Other	0 (0.0)	0 (0.0)	0 (0.0)	1 (100)	1 (100)	0 (0.0)	1 (100)
Total	0 (0.0)	2 (3.3)	13 (21.3)	46 (75.4)	17 (27.9)	44 (72.1)	61 (100)
Assault							
Bodily force (physical violence)	3 (7.0)	1 (2.3)	11 (25.6)	28 (65.1)	37 (86.0)	6 (14.0)	43 (100)
Injured by blunt object	2 (11.1)	8 (44.4)	4 (22.2)	4 (22.2)	13 (72.2)	5 (27.8)	18 (100)
Stabbed, cut or pierced	1 (12.5)	0 (0.0)	2 (25.0)	5 (62.5)	7 (87.5)	1 (12.5)	8 (100)
Pushing from a high place	0 (0.0)	1 (50.0)	1 (50.0)	0 (0.0)	1 (50.0)	1 (50.0)	2 (100)
Poisoning	0 (0.0)	1 (50.0)	0 (0.0)	1 (50.0)	1 (50.0)	1 (50.0)	2 (100)
Sexual assault	0 (0.0)	0 (0.0)	1 (100)	0 (0.0)	0 (0.0)	1 (100)	1 (100)
Other	0 (0.0)	1 (100)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100)	1 (100)
Total	6 (8.0)	12 (16.0)	19 (25.3)	38 (50.7)	59 (78.7)	16 (21.3)	75 (100)

Abstract 432 Table 3 Association of injury location, nature and severity with age among children attending emergency of hospitals in Makwanpur district, Nepal, April 2019 – March 2020

Age groups	0 – 4 years	5 – 9 years	10–14 years	15–17 years	Total	Chi-Square
Injury characteristics	n (%)	n (%)	n (%)	n (%)	n (%)	P value
Location of injury sustained						
Home/Compound	537 (34.1)	504 (32.0)	319 (20.2)	216 (13.7)	1576 (100)	<0.001
Highway/road/street	85 (13.4)	196 (30.8)	190 (29.9)	165 (25.9)	636 (100)	
School	15 (6.4)	107 (45.9)	85 (36.5)	26 (11.2)	233 (100)	
Recreational area	9 (6.5)	44 (31.9)	55 (39.9)	30 (21.7)	138 (100)	
Workplace	1 (1.3)	4 (5.3)	19 (25.0)	52 (68.4)	76 (100)	
Other	6 (16.2)	11 (29.7)	12 (32.4)	8 (21.6)	37 (100)	
Total	653 (24.2)	866 (32.1)	680 (25.2)	497 (18.4)	2696 (100)	
Nature of injury						

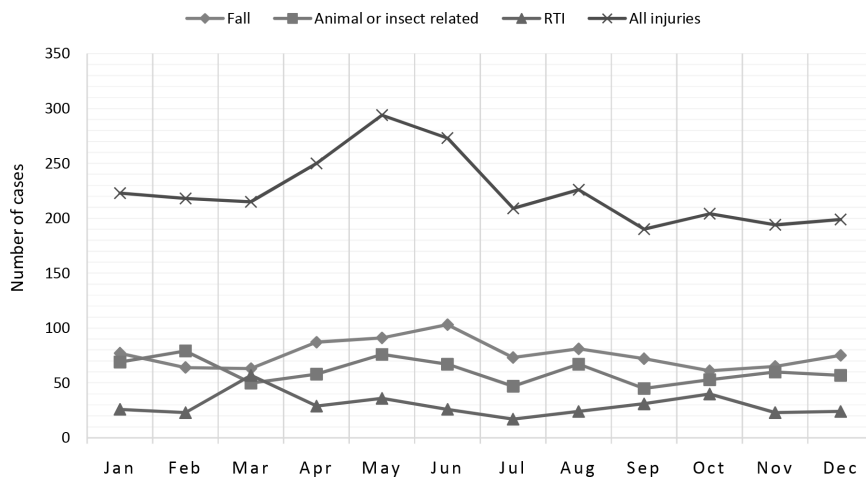
Cuts, bites or open wound	328 (23.8)	506 (36.7)	314 (22.8)	230 (16.7)	1378 (100)	<0.001
Bruise or superficial injury	81 (21.1)	99 (25.8)	118 (30.8)	85 (22.2)	383 (100)	
Fracture	48 (16.1)	101 (33.8)	112 (37.5)	38 (12.7)	299 (100)	
Sprain, strain or dislocation	48 (19.8)	78 (32.1)	72 (29.6)	45 (18.5)	243 (100)	
Internal injury	44 (35.5)	8 (6.5)	18 (14.5)	54 (43.5)	124 (100)	
Head Injury/ Concussion	18 (21.7)	26 (31.3)	18 (21.7)	21 (25.3)	83 (100)	
Burns	42 (62.7)	9 (13.4)	10 (14.9)	6 (9.0)	67 (100)	
Other	41 (35.7)	38 (33.0)	18 (15.7)	18 (15.7)	115 (100)	
Unknown	2 (100)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100)	
Total	652 (24.2)	865 (32.1)	680 (25.2)	497 (18.4)	2694 (100)	
Severity of injury						
No apparent injury	39 (31.2)	45 (36.0)	26 (20.8)	15 (12.0)	125 (100)	<0.001
Minor	419 (25.5)	535 (32.5)	406 (24.7)	285 (17.3)	1645 (100)	
Moderate	171 (21.0)	262 (32.2)	225 (27.7)	155 (19.1)	813 (100)	
Severe	23 (20.7)	23 (20.7)	23 (20.7)	42 (37.8)	111 (100)	
Total	652 (24.2)	865 (32.1)	680 (25.2)	497 (18.4)	2694 (100)	

Abstract 432 Table 4 Association of injury location, nature and severity with sex among children attending emergency of hospitals in Makwanpur district, Nepal, April 2019 – March 2020

Sex	Male	Female	Total	Chi-Square
Injury characteristics	n (%)	n (%)	n (%)	P value
Location of injury sustained				
Home/Compound	979 (62.1)	597 (37.9)	1576 (100)	<0.001
Highway/road/street	421 (66.2)	215 (33.8)	636 (100)	
School	176 (75.5)	57 (24.5)	233 (100)	
Recreational area	111 (80.4)	27 (19.6)	138 (100)	
Workplace	62 (81.6)	14 (18.4)	76 (100)	
Other	29 (78.4)	8 (21.6)	37 (100)	
Total	1778 (65.9)	918 (34.1)	2696 (100)	
Nature of injury				
Cuts, bites or open wound	959 (69.6)	419 (30.4)	1378 (100)	<0.001
Bruise or superficial injury	246 (64.2)	137 (35.8)	383 (100)	
Fracture	200 (66.9)	99 (33.1)	299 (100)	
Sprain, strain or dislocation	154 (63.4)	89 (36.6)	243 (100)	
Internal injury	50 (40.3)	74 (59.7)	124 (100)	
Head Injury/Concussion	59 (71.1)	24 (28.9)	83 (100)	
Burns	27 (40.3)	40 (59.7)	67 (100)	
Other	79 (68.7)	36 (31.3)	115 (100)	
Unknown	2 (100)	0 (0.0)	2 (100)	
Total	1776 (65.9)	918 (34.1)	2694 (100)	
Severity of injury				
No apparent injury	81 (64.8)	44 (35.2)	125 (100)	0.048
Minor	1102 (67.0)	543 (33.0)	1645 (100)	
Moderate	533 (65.6)	280 (34.4)	813 (100)	
Severe	60 (54.1)	51 (45.9)	111 (100)	
Total	1776 (65.9)	918 (34.1)	2694 (100)	

Abstract 432 Table 5 Distribution of injuries by outcome and mechanism of injury among children attending emergency of hospitals in Makwanpur district, Nepal, April 2019 – March 2020

Outcome of injury	Discharged	Admitted	Transferred	Died	LAMA	Unknown	Total
Intent & mechanisms	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Unintentional							
Fall	787 (86.5)	65 (7.1)	53 (5.8)	0 (0.0)	4 (0.4)	1 (0.1)	910 (100)
Animal/insect bite/sting	704 (96.7)	3 (0.4)	19 (2.6)	0 (0.0)	1 (0.1)	1 (0.1)	728 (100)
Road traffic injury	260 (73.0)	47 (13.2)	44 (12.4)	5 (1.4)	0 (0.0)	0 (0.0)	356 (100)
Injured by a blunt force	190 (94.5)	4 (2.0)	6 (3.0)	0 (0.0)	1 (0.5)	0 (0.0)	201 (100)
Stabbed, cut or pierced	165 (93.8)	8 (4.5)	3 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	176 (100)
Fire, burn or scald	52 (80.0)	12 (18.5)	1 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	65 (100)
Poisoning	30 (57.7)	4 (7.7)	16 (30.8)	1 (1.9)	1 (1.9)	0 (0.0)	52 (100)
Suffocation/choking/asphyxia	24 (66.7)	4 (11.1)	6 (16.7)	1 (2.8)	1 (2.8)	0 (0.0)	36 (100)
Electrocution	7 (58.3)	2 (16.7)	2 (16.7)	1 (8.3)	0 (0.0)	0 (0.0)	12 (100)
Drowning and submersion	4 (57.1)	0 (0.0)	0 (0.0)	3 (42.9)	0 (0.0)	0 (0.0)	7 (100)
Other	12 (92.3)	1 (7.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13 (100)
Unknown	2 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100)
Total	2237 (87.5)	150 (5.9)	150 (5.9)	11 (0.4)	8 (0.3)	2 (0.1)	2558 (100)
Self-harm							
Poisoning	5 (13.2)	8 (21.1)	23 (60.5)	0 (0.0)	2 (5.3)	0 (0.0)	38 (100)
Hanging	1 (8.3)	0 (0.0)	1 (8.3)	10 (83.3)	0 (0.0)	0 (0.0)	12 (100)
Stabbed, cut or pierced	6 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	6 (100)
Injured by blunt object	4 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (100)
Other	1 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100)
Total	17 (27.9)	8 (13.1)	24 (39.3)	10 (16.4)	2 (3.3)	0 (0.0)	61 (100)
Assault							
Bodily force (physical violence)	34 (79.1)	5 (11.6)	3 (7.0)	0 (0.0)	1 (2.3)	0 (0.0)	43 (100)
Injured by blunt object	18 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	18 (100)
Stabbed, cut or pierced	6 (75.0)	1 (12.5)	1 (12.5)	0 (0.0)	0 (0.0)	0 (0.0)	8 (100)
Pushing from a high place	2 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100)
Poisoning	1 (50)	0 (0.0)	1 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100)
Sexual assault	1 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100)
Other	1 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100)
Total	63 (84.0)	6 (8.0)	5 (6.7)	0 (0.0)	1 (1.3)	0 (0.0)	75 (100)



Abstract 432 Figure 1 Seasonal variation of injuries identified by the injury surveillance system over a year among children attending emergency of hospitals in Makwanpur district, Nepal, April 2019 – March 2020

of injury surveillance in Nepal for reducing child morbidity and mortality through improved data.

CHILD PAPER: RESULTS SECTION

Total number of ED patients: 33046

Total number of ED patient with injury: 10154 (adult=7458 & children=2696)

8.2% (n=2696) patients with injury were children aged <18 years

Hetauda hospital:

2274 (84.3%)

Chure hill hospital:

422 (15.7%)