

Outcomes of paediatric patients who are not transported to hospital by Emergency Medical Services: a data linkage study

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Supplementary appendix

Supplementary Table 1: Age-specific vital sign derangement criteria

Age	Heart Rate (beats/min)	Respiratory Rate (breath/min)	Systolic Blood Pressure (mmHg)	Glasgow Coma Scale	Oxygen Saturation (%)
Newborn (<24 hours)	<110 or >170	<25 or >60	<60	<15	<96
Small infant (<3 months)	<110 or >170	<25 or >60	<60	<15	<96
Large infant (3-12 months)	<105 or >165	<25 or >55	<65	<15	<96
Small child (1-4 years)	<85 or >150	<20 or >40	<70	<15	<96
Medium child (5-11 years)	<70 or >135	<16 or >34	<80	<15	<96
12-17 years	>120	>30	<90	<13 (<15 if age <16)	<90

Supplementary Table 2: Hospital outcomes for admitted patients or those who presented to the ED

	Transport not required	Transport via other means	Referred to GP	Transport refused
ED Outcomes	n=1,503	n=5,107	n=846	n=905
ED length of stay (minutes), median (Q1, Q3)	151 (96, 228)	150 (94, 223)	174 (107, 241)	154 (95, 228)
ED Discharge status, n (%)				
Home	1,050 (69.9)	3,660 (71.7)	573 (67.7)	607 (67.1)
Ward	185 (12.3)	503 (9.8)	111 (13.1)	102 (11.3)
Short Stay Unit	140 (9.3)	454 (8.9)	112 (13.2)	113 (12.5)
Other	128 (8.5)	490 (9.6)	50 (5.9)	83 (9.2)
Primary hospital diagnosis, n (%)	n=1,437	n=4,742	n=830	n=855
Infectious disease	156 (10.8)	475 (10.0)	127 (15.3)	84 (9.8)
Neoplastic disease	0	1 (0.02)	0	0
Blood disease	3 (0.2)	12 (0.3)	4 (0.5)	0
Endocrine disease	5 (0.4)	28 (0.6)	3 (0.4)	10 (1.2)
Mental / behavioural disorder	52 (3.6)	68 (1.4)	20 (2.4)	17 (2.0)
Neurological disorder	16 (1.1)	53 (1.1)	12 (1.5)	13 (1.5)
Eye and ear disorders	14 (1.0)	38 (0.8)	9 (1.1)	8 (0.9)
Cardiovascular disorder	13 (0.9)	22 (0.5)	7 (0.8)	5 (0.6)
Respiratory disorder	273 (19.0)	1,256 (26.5)	183 (22.0)	225 (26.3)
Gastrointestinal disorder	23 (1.6)	78 (1.6)	18 (2.2)	17 (2.0)
Dermatological disorder	15 (1.0)	64 (1.4)	8 (1.0)	21 (2.4)
Musculoskeletal problem	23 (1.6)	50 (1.1)	14 (1.7)	10 (1.2)
Genitourinary disorder	20 (1.4)	45 (1.0)	15 (1.8)	7 (0.8)
Pregnancy / childbirth-related	0	2 (0.04)	1 (0.1)	0
Perinatal condition	16 (1.1)	21 (0.4)	3 (0.4)	6 (0.7)
Symptoms not otherwise classified	269 (18.7)	816 (17.2)	173 (20.8)	168 (19.7)
Injury	491 (34.2)	1,639 (34.6)	218 (26.3)	247 (28.9)
Factors influencing health status	48 (3.3)	74 (1.6)	15 (1.8)	17 (2.0)

Supplementary Table 3: ED outcomes for patients transported by EMS on re-attendance

n=759	
ED length of stay (minutes), median (Q1, Q3)	203 (132, 295)
ED discharge status, n (%)	
Home	382 (50.3)
To ward	183 (24.1)
Short Stay Unit	151 (19.9)
Other	43 (5.7)
Primary diagnosis, n (%)	
Symptoms not otherwise classified	197 (26.8)
Respiratory disorder	158 (21.5)
Injury	111 (15.1)
Mental / behavioural disorder	76 (10.3)
Neurological disorder	64 (8.7)
Infectious disease	53 (7.2)
Other	77 (10.5)
Missing (%)	3.0

Supplementary Table 4: Multivariable analyses of factors associated with patient outcomes within 48 hours of the emergency call among paramedic-initiated non-transport

		Recontact	ED presentation	Hospital admission
		OR (95% CI)	OR (95% CI)	OR (95% CI)
Male gender		1.10 (0.95, 1.26)	1.06 (0.97, 1.16)	1.05 (0.87, 1.27)
Patient age	0-11 months	Ref	Ref	Ref
	1-4 years	0.97 (0.75, 1.27)	0.80 (0.70, 0.92)	0.54 (0.42, 0.69)
	5-11 years	1.12 (0.86, 1.47)	0.57 (0.49, 0.67)	0.31 (0.23, 0.43)
	12-17 years	1.53 (1.17, 2.02)	0.68 (0.58, 0.79)	0.31 (0.22, 0.44)
Hour of day	Midnight-4am	1.31 (1.02, 1.70)	0.93 (0.79, 1.11)	0.77 (0.54, 1.11)
	4am-8am	1.16 (0.85, 1.59)	1.17 (0.97, 1.40)	1.56 (1.11, 2.21)
	8am-12pm	1.21 (0.95, 1.55)	1.12 (0.96, 1.29)	1.32 (0.97, 1.79)
	12pm-4pm	Ref	Ref	Ref
	4pm-8pm	1.26 (1.01, 1.57)	1.01 (0.89, 1.16)	0.99 (0.74, 1.33)
	8pm-Midnight	1.19 (0.95, 1.49)	0.94 (0.82, 1.08)	0.62 (0.45, 0.85)
Weekend		1.03 (0.89, 1.20)	1.01 (0.92, 1.11)	0.93 (0.75, 1.15)
Remoteness Index	Major city	0.78 (0.66, 0.91)	0.87 (0.78, 0.96)	0.85 (0.68, 1.06)
Case dispatch code	Time-critical	0.76 (0.65, 0.88)	0.90 (0.82, 0.99)	0.92 (0.75, 1.12)
Case nature	Medical	1.71 (1.41, 2.09)	1.42 (1.25, 1.61)	2.27 (1.70, 3.04)
Paramedic diagnosis	No problem identified	Ref	Ref	Ref
	Mental health/social/behavioural issue or alcohol/drug related	2.05 (1.58, 2.65)	0.91 (0.73, 1.14)	2.01 (1.27, 3.20)
	Respiratory condition	1.19 (0.88, 1.60)	1.55 (1.29, 1.87)	1.81 (1.26, 2.60)
	Neurological condition	2.01 (1.52, 2.66)	0.91 (0.71, 1.17)	0.99 (0.58, 1.69)
	Infection	1.52 (1.16, 1.99)	2.12 (1.79, 2.50)	2.28 (1.63, 3.19)
	Gastrointestinal / genitourinary condition	1.28 (0.89, 1.84)	1.93 (1.54, 2.40)	2.43 (1.60, 3.69)
	Other medical condition	0.88 (0.64, 1.21)	1.29 (1.07, 1.56)	1.31 (0.87, 1.97)
	Musculoskeletal issue / traumatic injury	0.66 (0.46, 0.95)	2.90 (2.45, 3.42)	2.10 (1.38, 3.20)
	Pain	0.57 (0.37, 0.87)	2.64 (2.18, 3.19)	2.50 (1.58, 3.97)
Unknown problem	1.16 (0.75, 1.79)	1.60 (1.23, 2.07)	1.96 (1.16, 3.31)	
Paramedic treatment provided		1.19 (0.91, 1.55)	1.40 (1.21, 1.61)	1.77 (1.29, 2.44)
Abnormal vital sign		0.95 (0.80, 1.13)	1.05 (0.95, 1.17)	1.13 (0.91, 1.39)
Documented no-transport reason	Transport not required	Ref	Ref	Ref
	Referred to GP / another provider	1.21 (1.03, 1.42)	1.34 (1.21, 1.47)	1.13 (0.92, 1.39)
Highest experience level of crew (per year)		1.00 (0.99, 1.01)	1.00 (1.00, 1.01)	1.00 (0.99, 1.01)