



Key statistics from the
National Cardiac Arrest Audit:
Paediatric arrests
April 2013 to March 2018

Data collection scope (NCAA Version 1.3)

NCAA data are collected for all individuals (excluding neonates) receiving chest compression(s) and/or defibrillation and attended by the hospital-based resuscitation team (or equivalent) in response to a 2222 call.

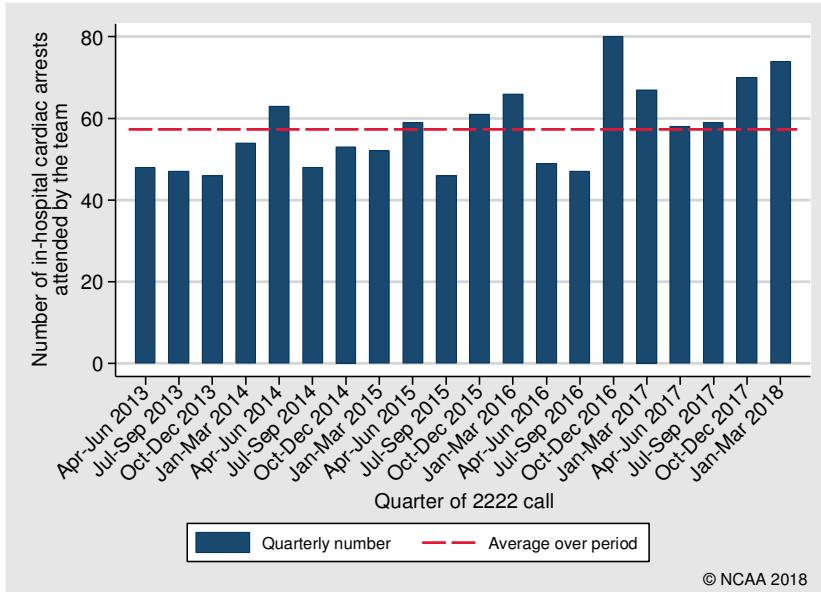
Available data

This report is based on data for in-hospital cardiac arrests of children aged less than 16 years in NHS paediatric and acute general hospitals. The following team visits were therefore excluded:

- Team visits taking place in specialist or non-acute hospitals
- Team visits to adults aged 16 years and above
- Team visits (meeting the scope of NCAA) in response to pre-hospital cardiac arrests

Time period	Children's hospitals		Acute general hospitals	
	Number of children's hospitals participating in NCAA	Total number of reported paediatric in-hospital cardiac arrests	Number of acute general hospitals participating in NCAA	Total number of reported paediatric in-hospital cardiac arrests
April 2013 – March 2018	15	512	190	635
April 2017 – March 2018	15	117	190	144
April 2016 – March 2017	15	117	187	126
April 2015 – March 2016	15	111	192	121
April 2014 – March 2015	14	97	176	119
April 2013 – March 2014	14	70	165	125

Number of paediatric in-hospital cardiac arrests attended by the team



Note: number of hospitals participating in NCAA has increased over time

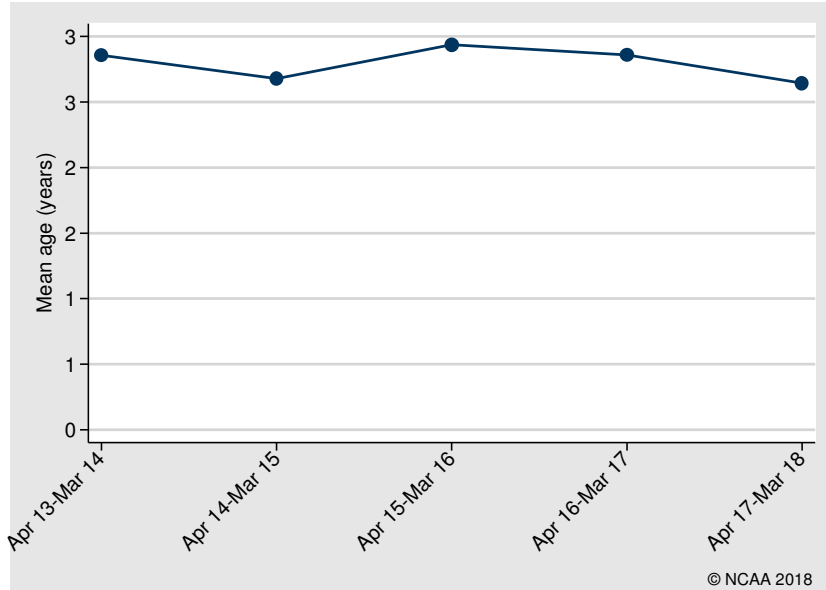
Patient characteristics

Age (years), n (%)	
<1	562 (49.0)
1-4	317 (27.6)
5-10	160 (13.9)
11-15	108 (9.4)
Mean (SD)	2.8 (4.3)
Median (IQR)	1 (0, 4)
Sex, n (%)	
Female	481 (41.9)
Male	666 (58.1)
Reason for admission to/attendance at/visit to your hospital, n (%)	
Patient - trauma	21 (1.8)
Patient - medical	940 (82.0)
Patient - elective/scheduled surgery	89 (7.8)
Patient - emergency/urgent surgery	90 (7.8)
Outpatient	7 (0.6)

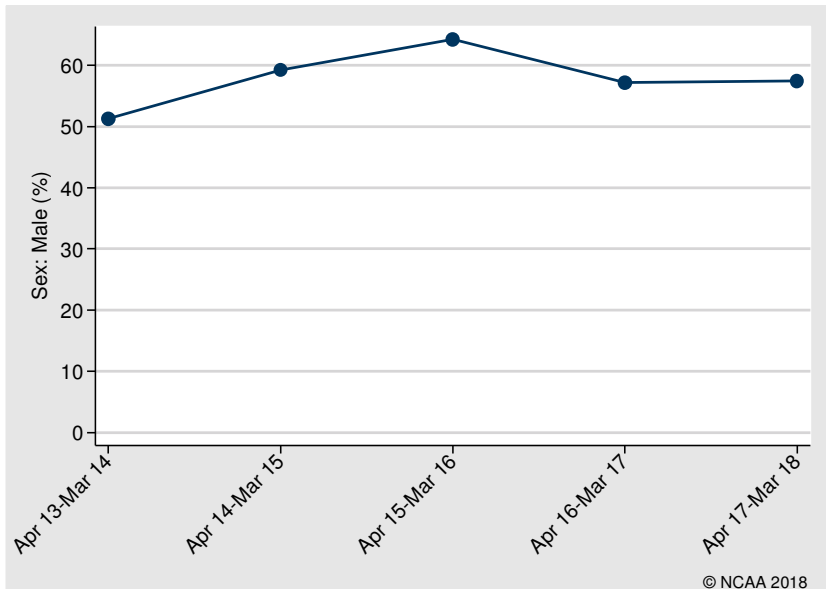
IQR, interquartile range; SD, standard deviation.

Trends in patient characteristics

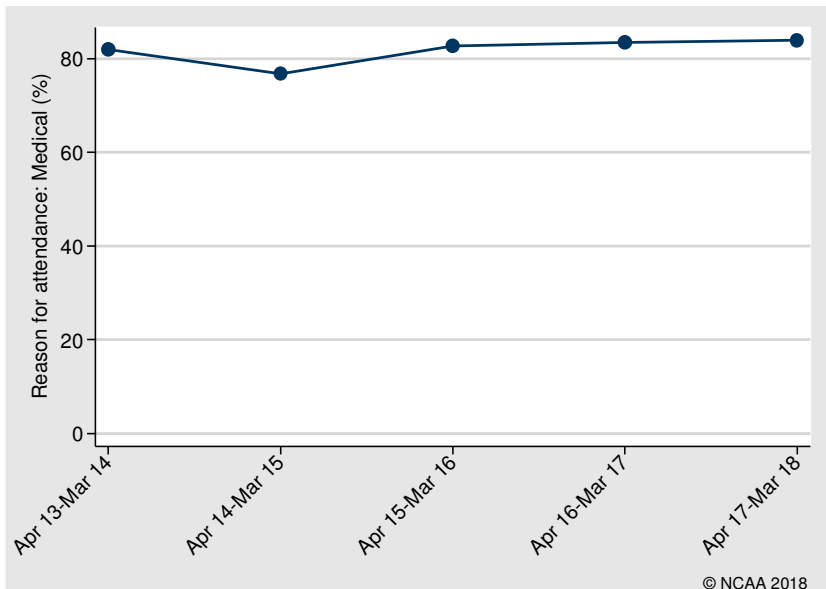
Mean age



Sex: Male



Reason for attendance: Medical



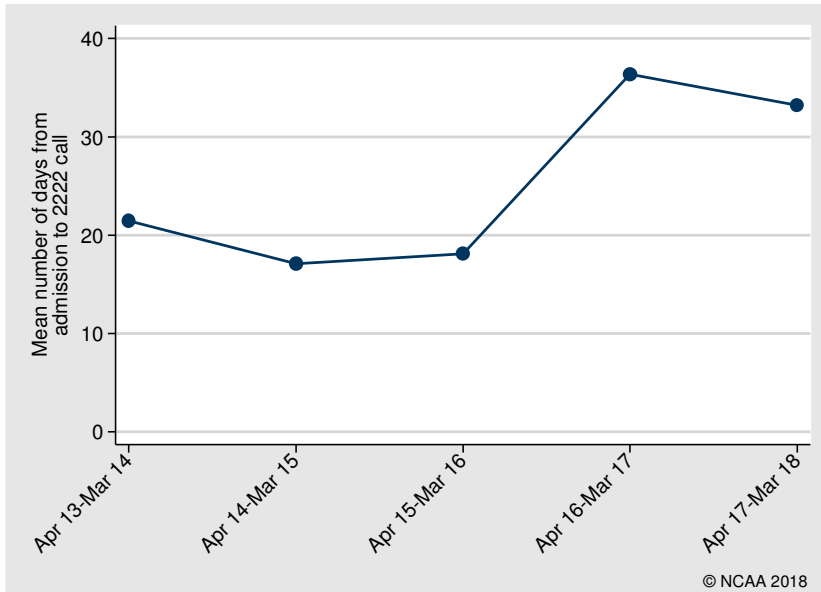
Team visit characteristics

Number of days from admission to 2222 call, n (%)	
0	467 (40.7)
1	137 (11.9)
2-7	190 (16.6)
8-30	138 (12.0)
>30	215 (18.7)
Mean (SD)	25.8 (74.4)
Median (IQR)	1 (0, 15)
Location of arrest, n (%)	
Emergency department	314 (27.4)
Emergency admissions unit	11 (1.0)
Theatre & recovery	47 (4.1)
Imaging department	20 (1.7)
Cardiac catheter laboratory	8 (0.7)
Specialist treatment area	5 (0.4)
ICU or ICU/HDU	29 (2.5)
HDU	19 (1.7)
PICU	186 (16.2)
PHDU	96 (8.4)
Coronary care unit	1 (0.1)
Other intermediate care area	9 (0.8)
Obstetrics area	1 (0.1)
Ward	392 (34.2)
Other internal location	1 (0.1)
Clinic	5 (0.4)
Non-clinical area	2 (0.2)
Missing	1 (0.1)
Status at team arrival, n (%)	
Dead - resuscitation stopped	4 (0.3)
Resuscitation ongoing	824 (71.8)
ROSC achieved before team arrival	181 (15.8)
Deteriorating (not yet arrested)	138 (12.0)
Presenting/first documented rhythm, n (%)	
Shockable - VF	23 (2.0)
Shockable - VT	20 (1.7)
Shockable - unknown rhythm	3 (0.3)
Non-shockable - asystole	248 (21.6)
Non-shockable - PEA	350 (30.5)
Non-shockable - bradycardia	345 (30.1)
Non-shockable - unknown rhythm	43 (3.7)
Never determined	43 (3.7)
Unknown	72 (6.3)

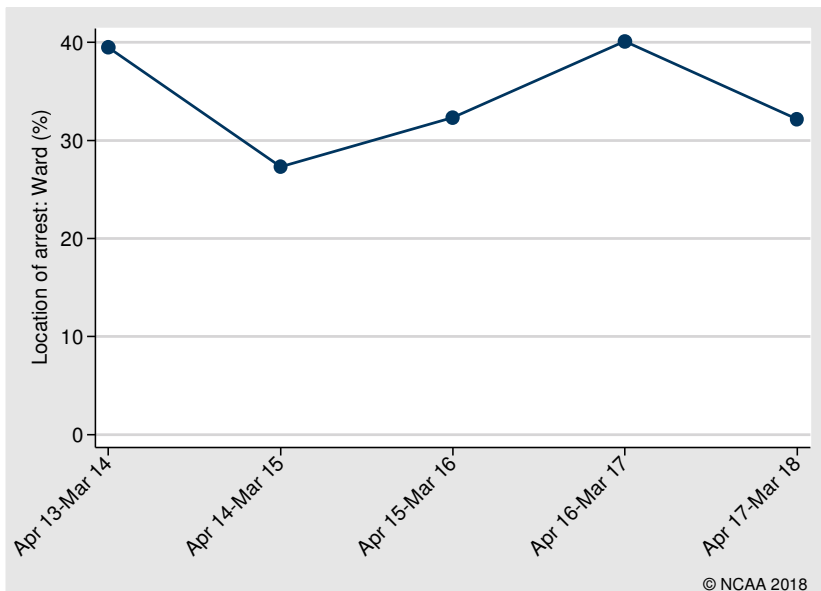
HDU, high dependency unit; ICU, intensive care unit; IQR, interquartile range; PEA, pulseless electrical activity; PHDU, paediatric high dependency unit; PICU, paediatric intensive care unit; ROSC, return of spontaneous circulation; SD, standard deviation; VF, ventricular fibrillation; VT, ventricular tachycardia.

Trends in team visit characteristics

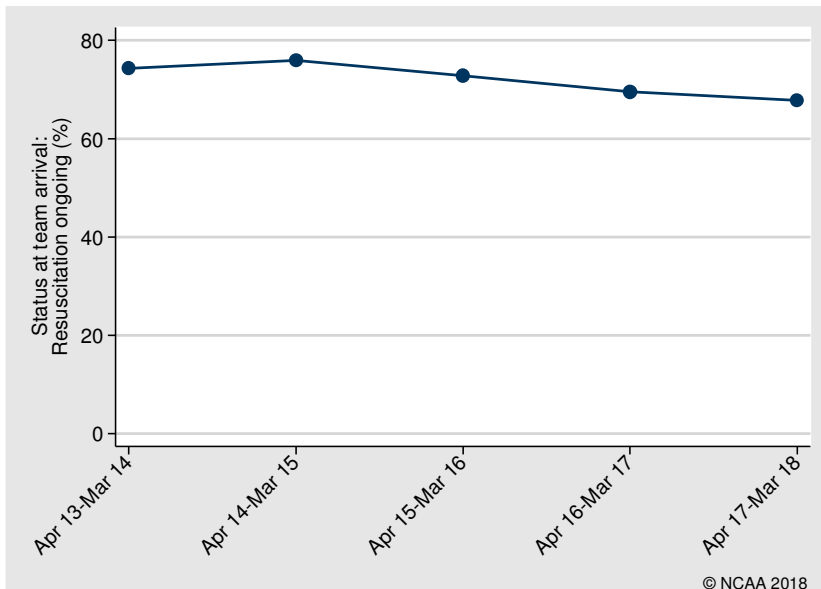
Mean number of days from admission to 2222 call



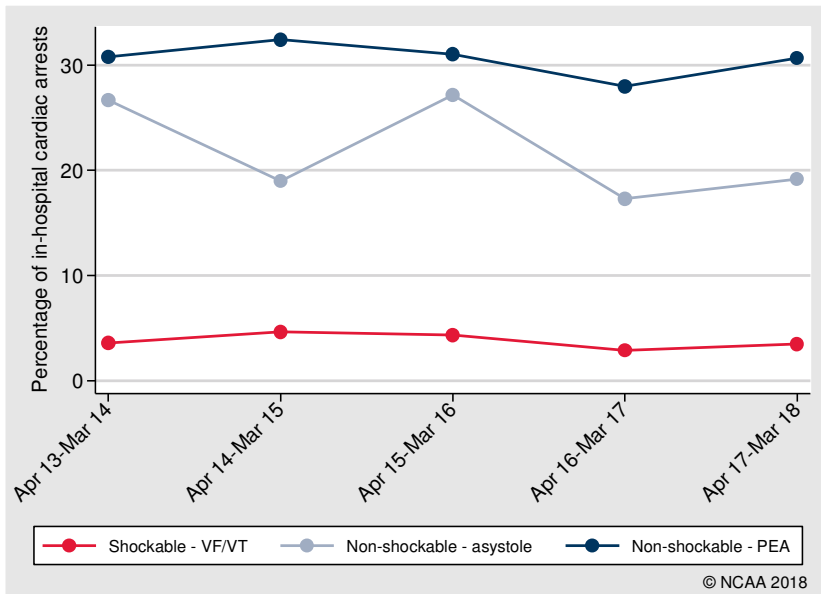
Location of arrest: Ward



Status at team arrival: Resuscitation ongoing



Presenting/first documented rhythm

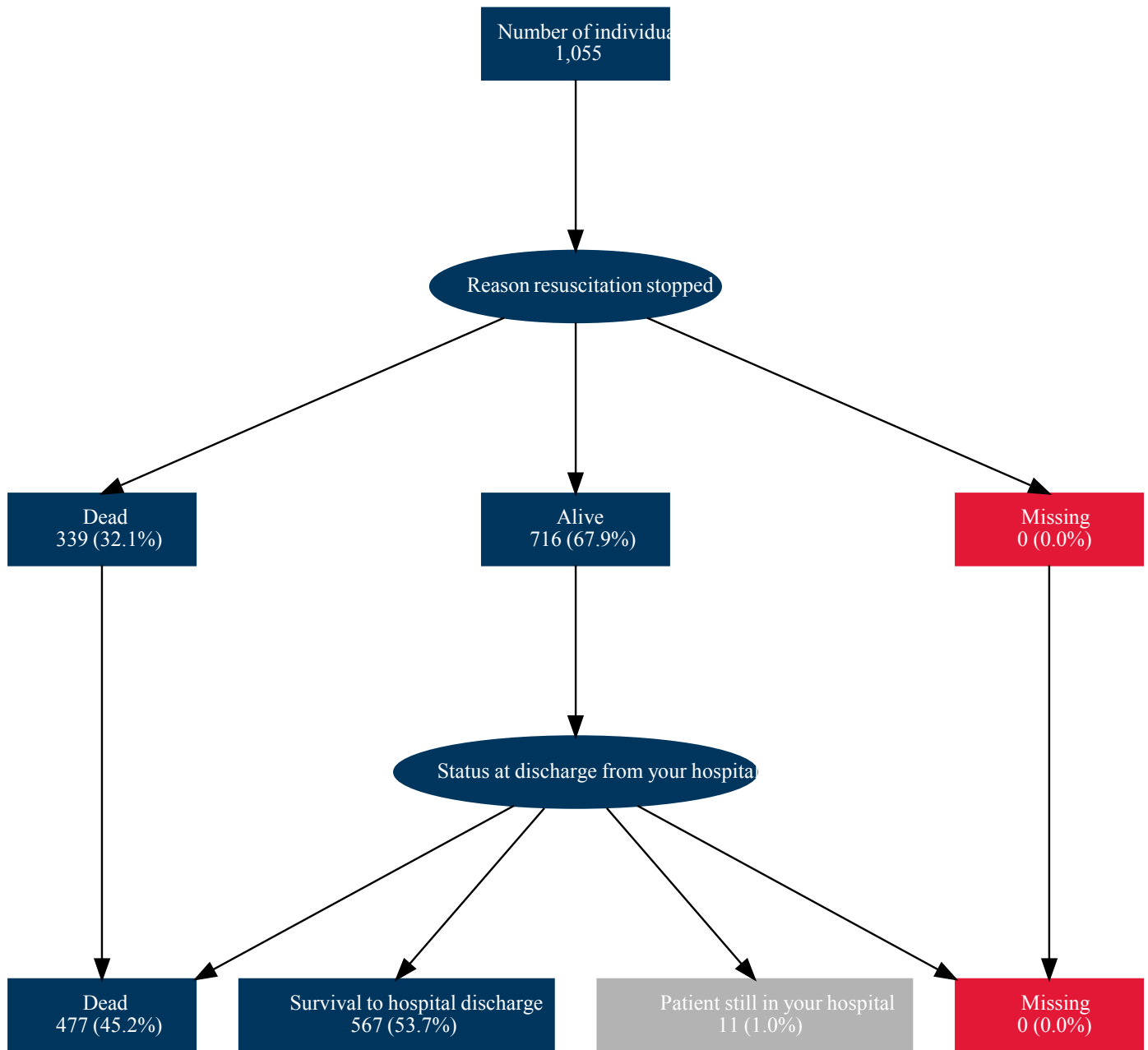


Outcomes

Reason resuscitation stopped at end of team visit, n (%)	
Alive - ROSC > 20 minutes	801 (69.8)
Dead - ROSC < 20 minutes	32 (2.8)
Dead - no ROSC	285 (24.8)
Dead - DNACPR	6 (0.5)
Dead - futility	23 (2.0)
Post-arrest location, n (% of ROSC > 20 minutes)	
Emergency admissions unit	2 (0.2)
ICU or ICU/HDU	66 (8.2)
HDU	15 (1.9)
PICU	355 (44.3)
PHDU	56 (7.0)
CCU	1 (0.1)
Other intermediate care area	7 (0.9)
Obstetrics area	2 (0.2)
Ward	98 (12.2)
Other internal location	1 (0.1)
Mortuary	17 (2.1)
Other hospital	181 (22.6)
Paediatric CPC at hospital discharge, n (% of survivors)	
1	175 (46.3)
2	47 (12.4)
3	20 (5.3)
4	24 (6.3)
5	37 (9.8)
Missing	75 (19.8)

CPC, cerebral performance category; DNACPR, do not attempt cardiopulmonary resuscitation; HDU, high dependency unit; ICU, intensive care unit; PHDU, paediatric high dependency unit; PICU, paediatric intensive care unit; ROSC, return of spontaneous circulation.

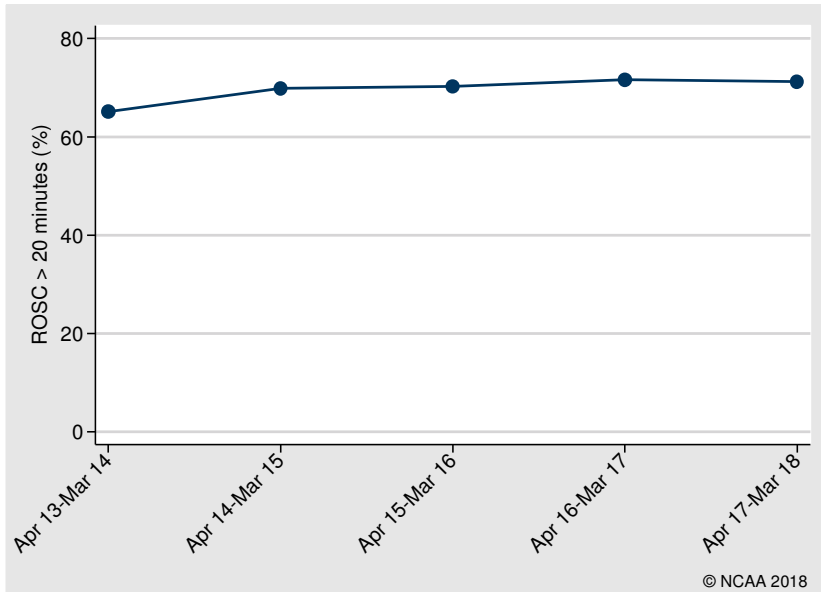
Outcome flow



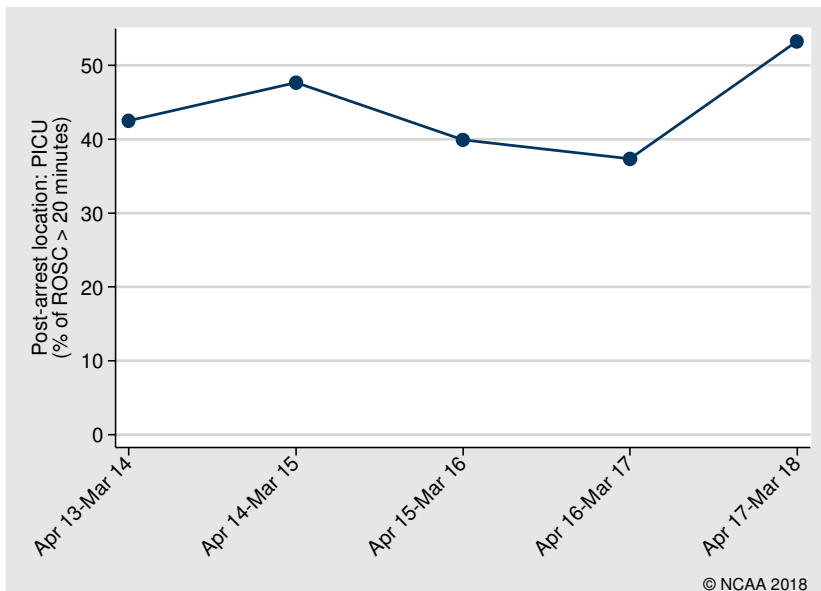
All percentages are reported as the percentage of all individuals (N=1055).

Trends in outcomes

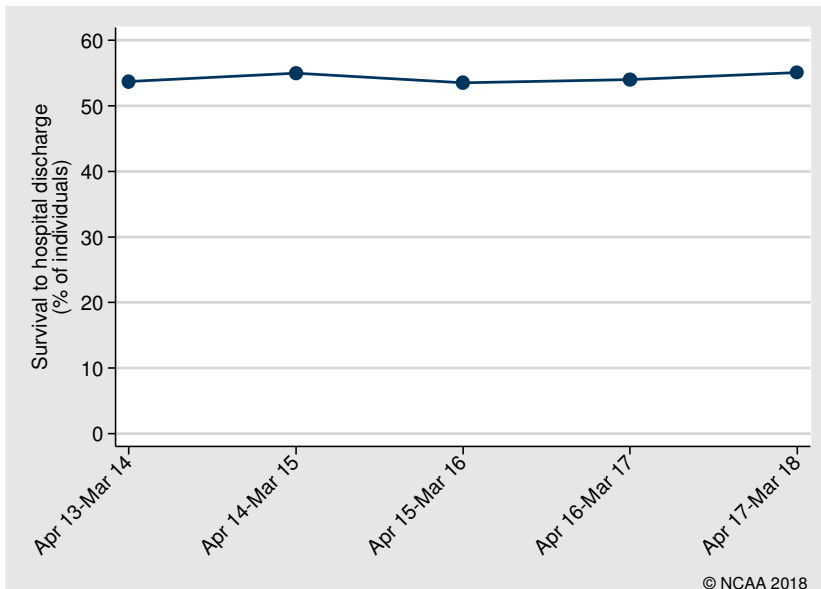
Reason resuscitation stopped: ROSC > 20 minutes



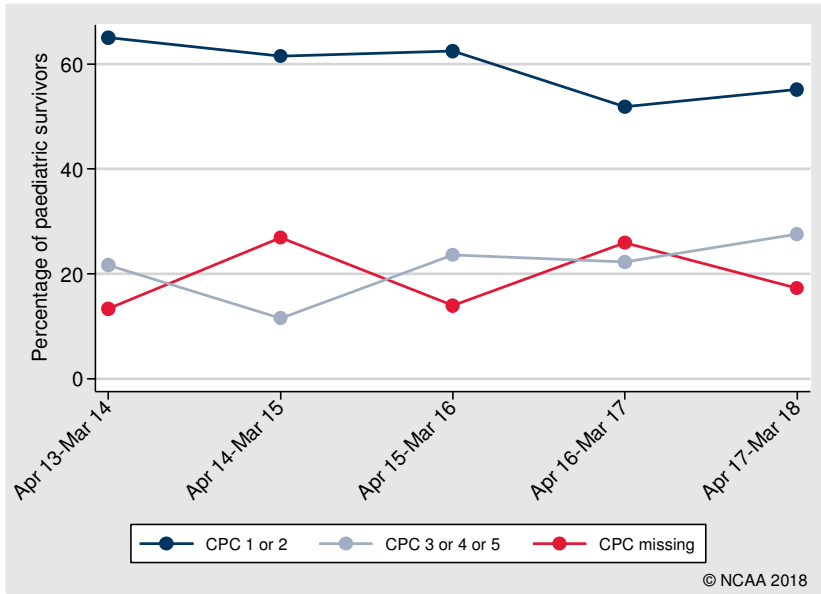
Post-arrest location: PICU



Survival to hospital discharge



Paediatric CPC at hospital discharge (survivors)



Outcomes by patient subgroups

ROSC > 20 minutes

Subgroup	Number of in-hospital cardiac arrests*	Number with ROSC > 20 min	Percentage (95% confidence interval)
Overall	1,147	801	69.8 (67.1, 72.4)
By presenting rhythm:			
Shockable - VF/VT	43	33	76.7 (62.3, 86.8)
Non-shockable - asystole	248	100	40.3 (34.4, 46.5)
Non-shockable - PEA	350	232	66.3 (61.2, 71.0)
By age group (years):			
<1	562	427	76 (72.3, 79.3)
1-4	317	202	63.7 (58.3, 68.8)
5-10	160	102	63.8 (56.1, 70.8)
11-15	108	70	64.8 (55.4, 73.2)

PEA, pulseless electrical activity; ROSC, return of spontaneous circulation; VF, ventricular fibrillation; VT, ventricular tachycardia.

Survival to hospital discharge

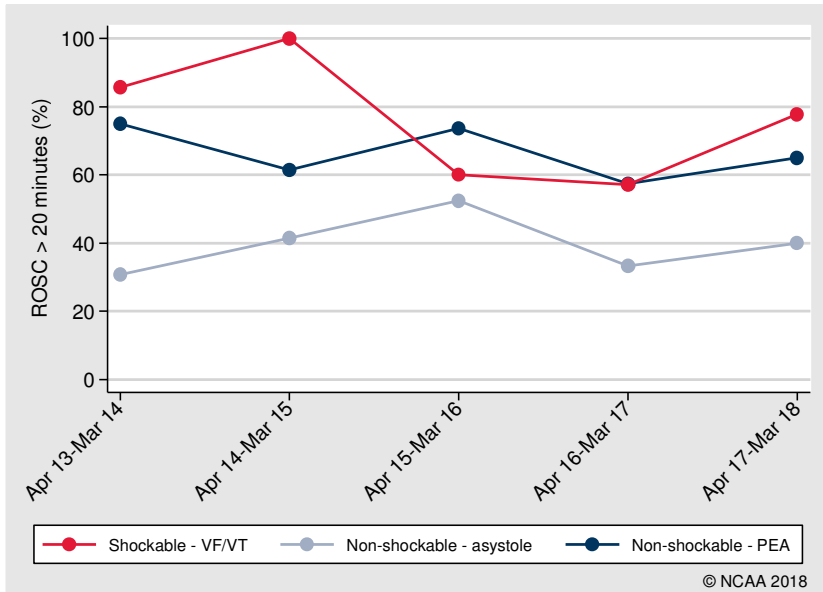
Subgroup	Number of individuals*	Number of hospital survivors	Percentage (95% confidence interval)
Overall	1,044	567	54.3 (51.3, 57.3)
By presenting rhythm:			
Shockable - VF/VT	39	26	66.7 (51.0, 79.4)
Non-shockable - asystole	236	68	28.8 (23.4, 34.9)
Non-shockable - PEA	323	154	47.7 (42.3, 53.1)
By age group (years):			
<1	496	302	60.9 (56.5, 65.1)
1-4	294	146	49.7 (44.0, 55.3)
5-10	154	69	44.8 (37.2, 52.7)
11-15	100	50	50 (40.4, 59.6)

PEA, pulseless electrical activity; VF, ventricular fibrillation; VT, ventricular tachycardia.

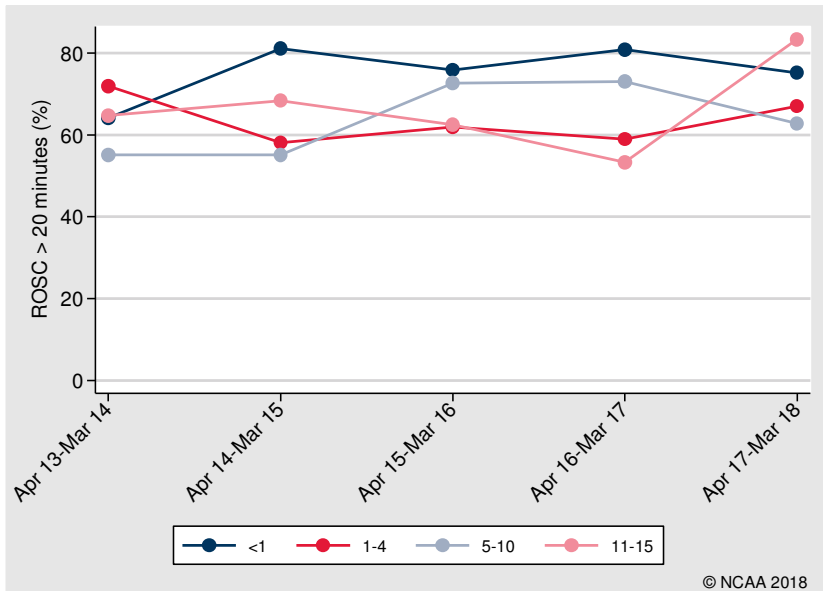
* Excluding individuals still in hospital (N=11)

Trends in outcomes by patient subgroups

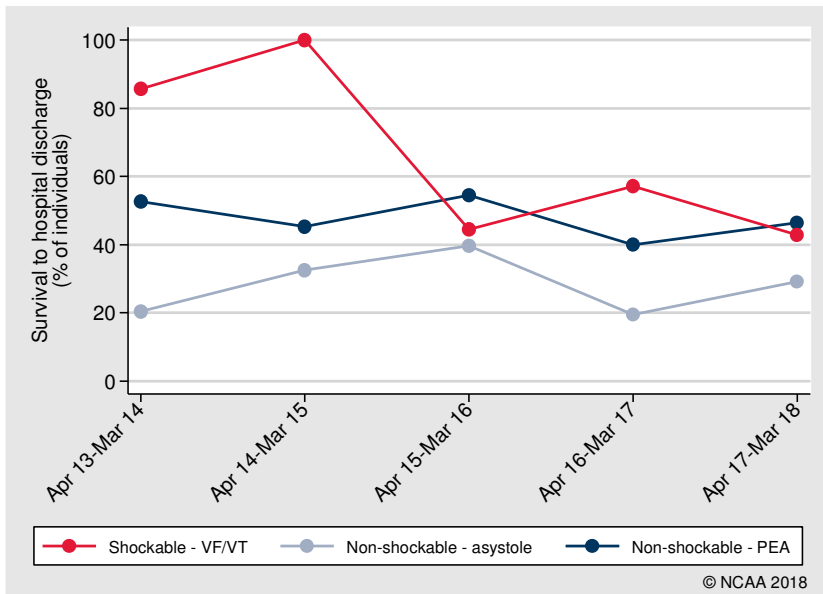
ROSC > 20 minutes by presenting/first documented rhythm



ROSC > 20 minutes by age group



Survival to hospital discharge by presenting/first documented rhythm



Survival to hospital discharge by age group

