



Key statistics from the
National Cardiac Arrest Audit:
Paediatric arrests
April 2012 to March 2017

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.

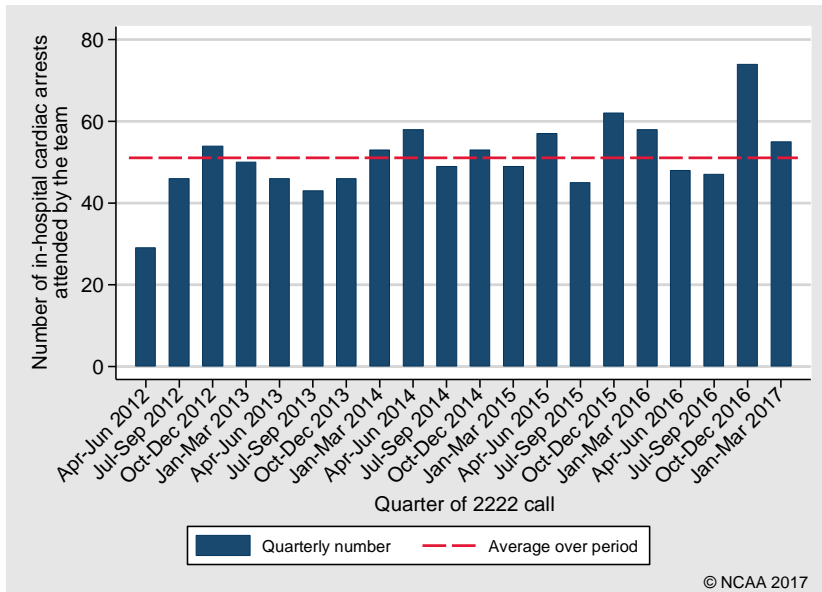
Available data

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 2012 – March 2017	15	427	192	595
April 2016 – March 2017	15	103	173	121
April 2015 – March 2016	15	101	180	121
April 2014 – March 2015	14	93	164	116
April 2013 – March 2014	14	62	151	126
April 2012 – March 2013	13	68	128	111

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



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

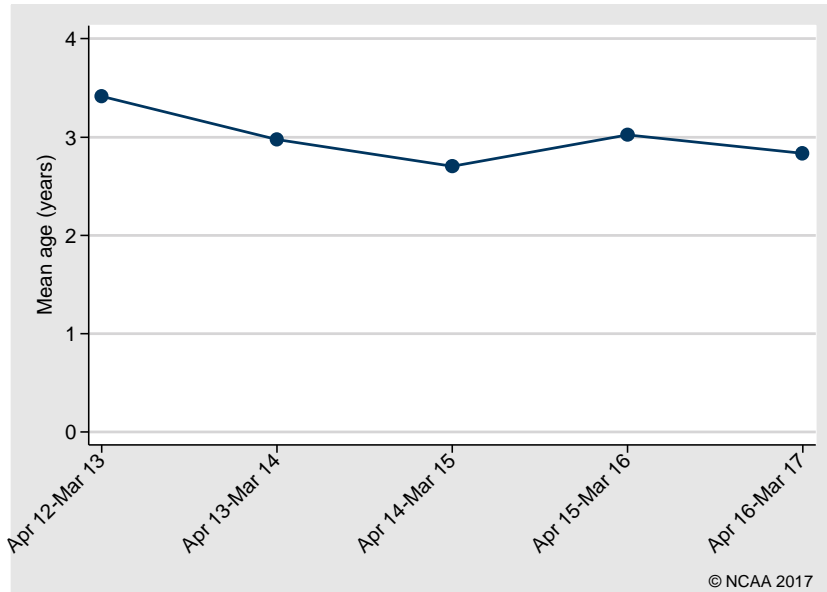
Patient characteristics

Age (years), n (%)	
<1	487 (47.7)
1-4	276 (27.0)
5-10	155 (15.2)
11-15	104 (10.2)
Mean (SD)	3 (4.4)
Median (IQR)	1 (0, 5)
Sex, n (%)	
Female	445 (43.5)
Male	577 (56.5)
Reason for admission to/attendance at/visit to your hospital, n (%)	
Patient - trauma	21 (2.1)
Patient - medical	835 (81.7)
Patient - elective/scheduled surgery	73 (7.1)
Patient - emergency/urgent surgery	85 (8.3)
Outpatient	8 (0.8)

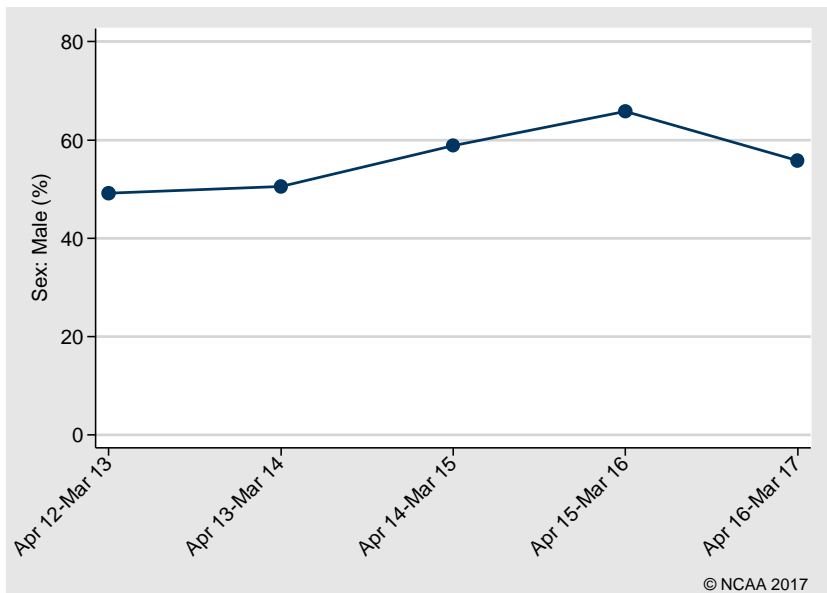
IQR, interquartile range; SD, standard deviation.

Trends in patient characteristics

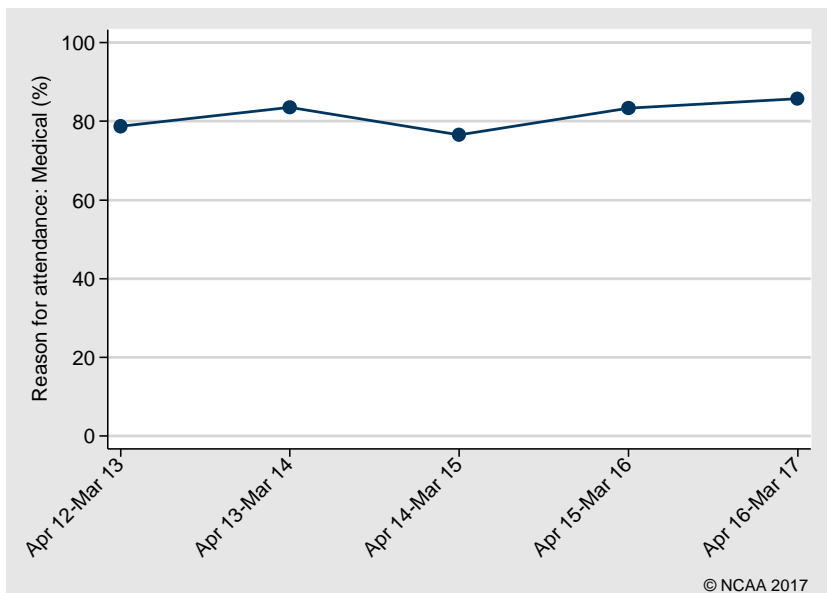
Mean age



Sex: Male



Reason for attendance: Medical



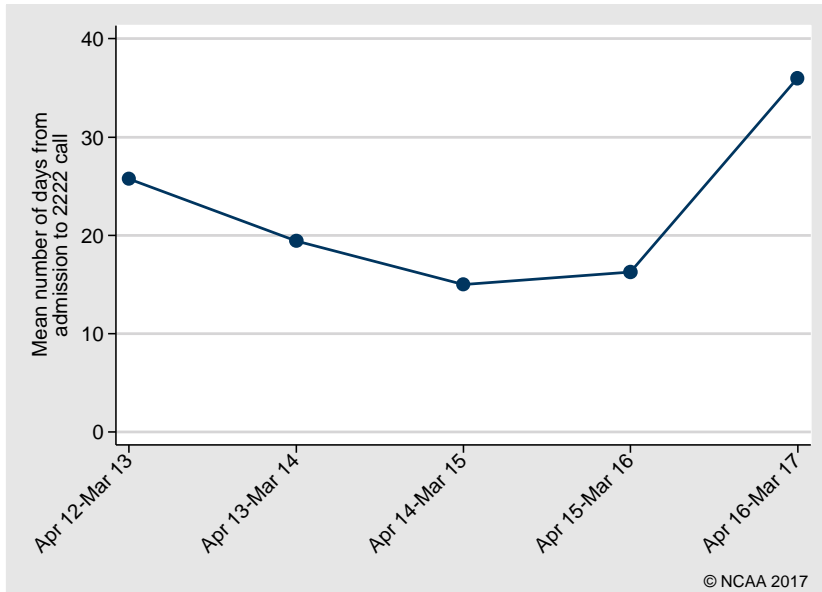
Team visit characteristics

Number of days from admission to 2222 call, n (%)	
0	443 (43.3)
1	121 (11.8)
2-7	170 (16.6)
8-30	130 (12.7)
>30	158 (15.5)
Mean (SD)	22.6 (84.1)
Median (IQR)	1 (0, 11)
Location of arrest, n (%)	
Emergency department	297 (29.1)
Emergency admissions unit	10 (1.0)
Theatre & recovery	45 (4.4)
Imaging department	19 (1.9)
Cardiac catheter laboratory	6 (0.6)
Specialist treatment area	5 (0.5)
ICU or ICU/HDU	30 (2.9)
HDU	8 (0.8)
PICU	164 (16.0)
PHDU	89 (8.7)
Coronary care unit	1 (0.1)
Other intermediate care area	7 (0.7)
Obstetrics area	1 (0.1)
Ward	330 (32.3)
Other internal location	1 (0.1)
Clinic	5 (0.5)
Non-clinical area	3 (0.3)
Missing	1 (0.1)
Status at team arrival, n (%)	
Dead - resuscitation stopped	6 (0.6)
Resuscitation ongoing	752 (73.6)
ROSC achieved before team arrival	152 (14.9)
Deteriorating (not yet arrested)	112 (11.0)
Presenting/first documented rhythm, n (%)	
Shockable - VF	21 (2.1)
Shockable - VT	20 (2.0)
Shockable - unknown rhythm	4 (0.4)
Non-shockable - asystole	245 (24.0)
Non-shockable - PEA	314 (30.7)
Non-shockable - bradycardia	281 (27.5)
Non-shockable - unknown rhythm	39 (3.8)
Never determined	34 (3.3)
Unknown	64 (6.3)

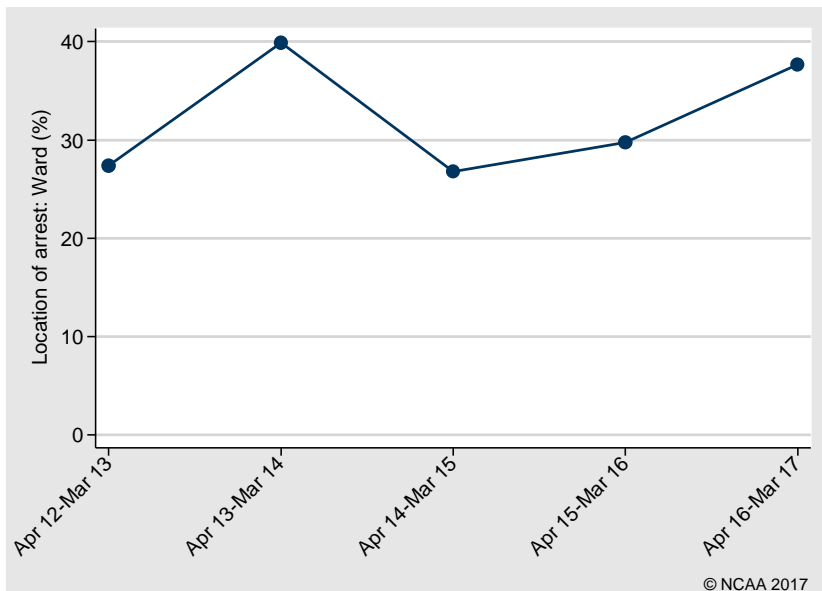
HDU, high dependency unit; ICU, intensive care unit; IQR, interquartile range; PEA, pulseless electrical activity; PHDU, paediatric high dependency unit; PICU, paediatric intensive care unit; ROSC, return of spontaneous circulation; SD, standard deviation; VF, ventricular fibrillation; VT, ventricular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

Trends in team visit characteristics

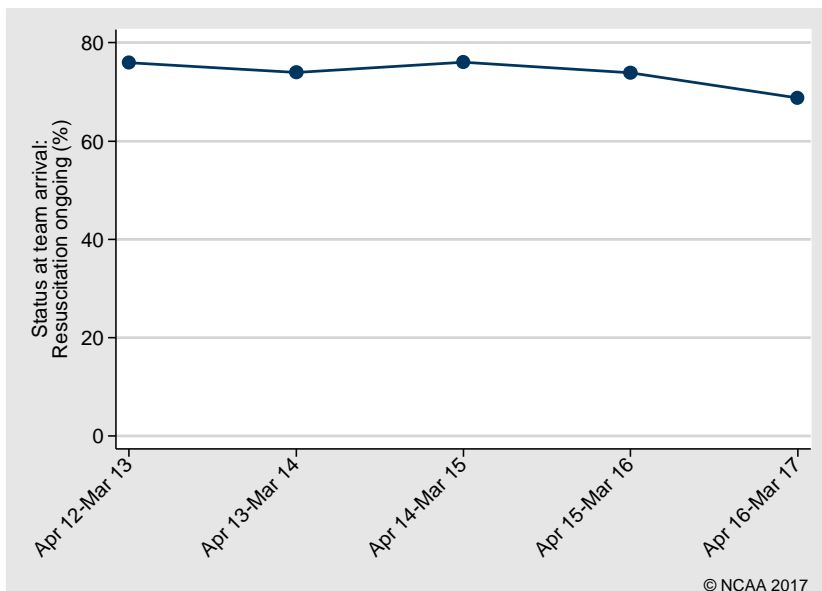
Mean number of days from admission to 2222 call



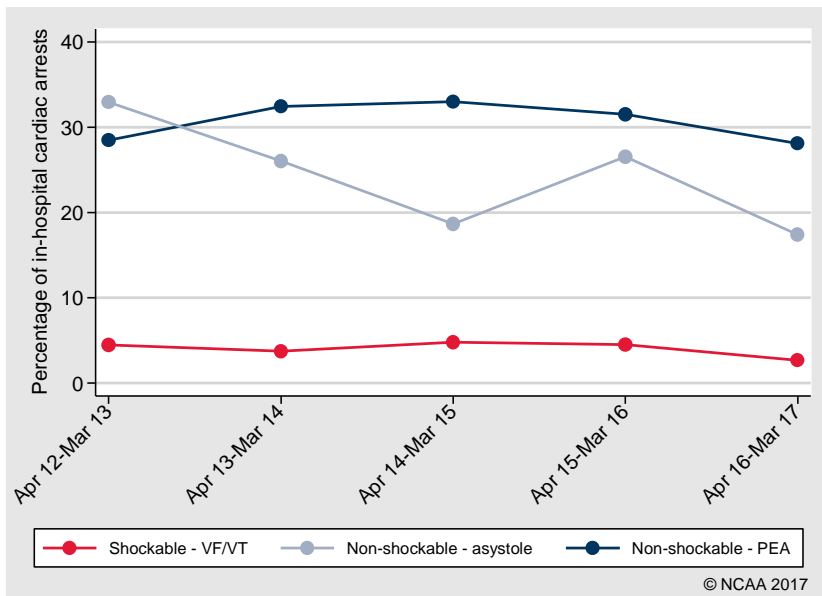
Location of arrest: Ward



Status at team arrival: Resuscitation ongoing



Presenting/first documented rhythm

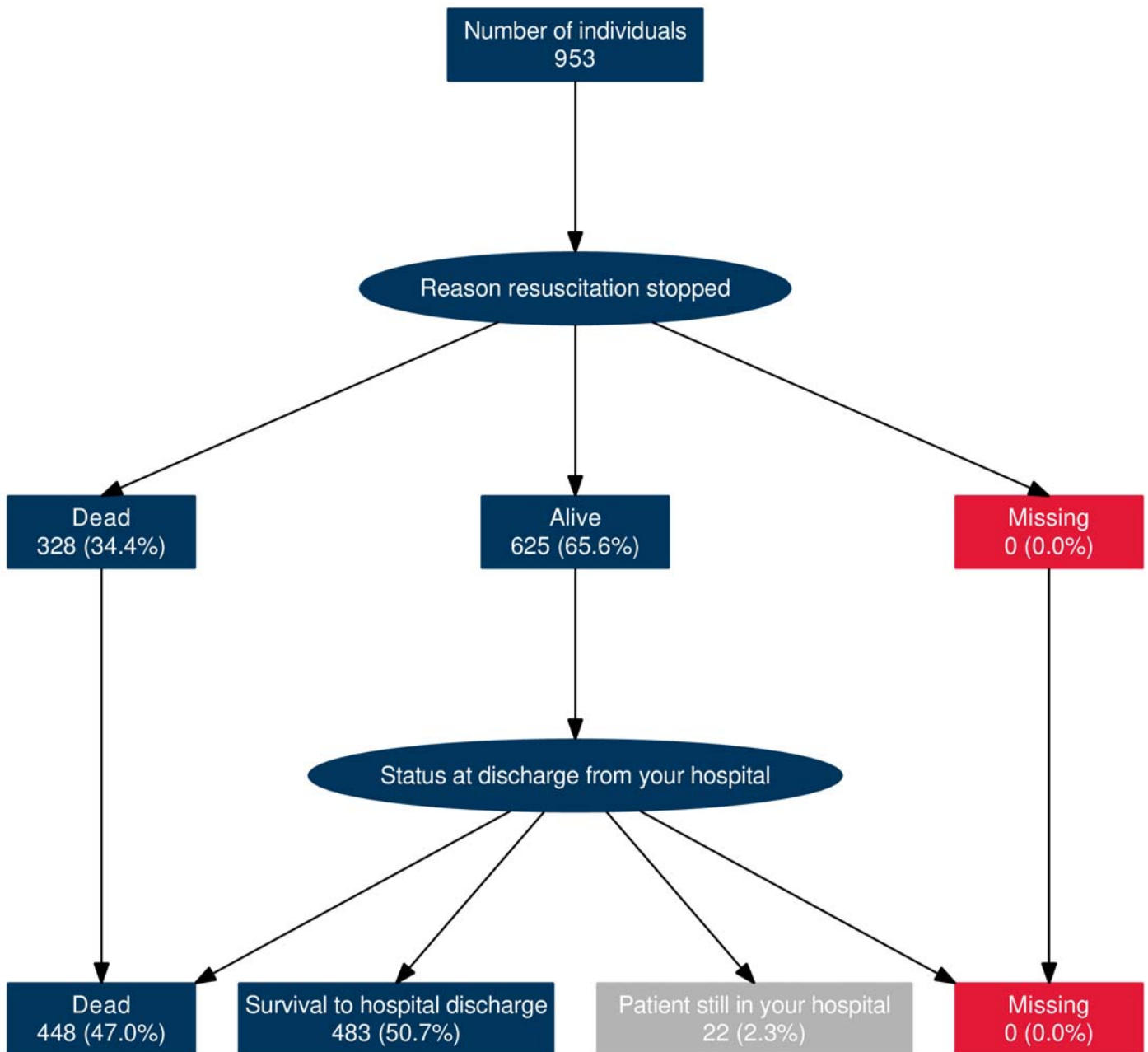


Outcomes

Reason resuscitation stopped at end of team visit, n (%)	
Alive - ROSC > 20 minutes	690 (67.5)
Dead - ROSC < 20 minutes	28 (2.7)
Dead - no ROSC	263 (25.7)
Dead - DNACPR	7 (0.7)
Dead - futility	34 (3.3)
Post-arrest location, n (% of ROSC > 20 minutes)	
Emergency admissions unit	2 (0.3)
ICU or ICU/HDU	59 (8.6)
HDU	8 (1.2)
PICU	297 (43.0)
PHDU	54 (7.8)
CCU	3 (0.4)
Other intermediate care area	5 (0.7)
Obstetrics area	2 (0.3)
Ward	89 (12.9)
Other internal location	1 (0.1)
Mortuary	14 (2.0)
Other hospital	156 (22.6)
Paediatric CPC at hospital discharge, n (% of survivors)	
1	192 (60.6)
2	32 (10.1)
3	19 (6.0)
4	15 (4.7)
5	19 (6.0)
Missing	40 (12.6)

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.

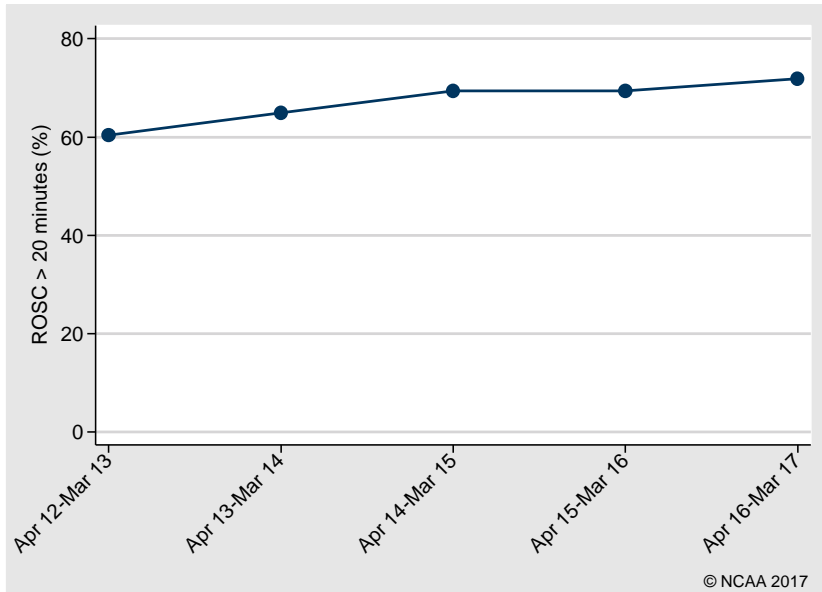
Outcome flow



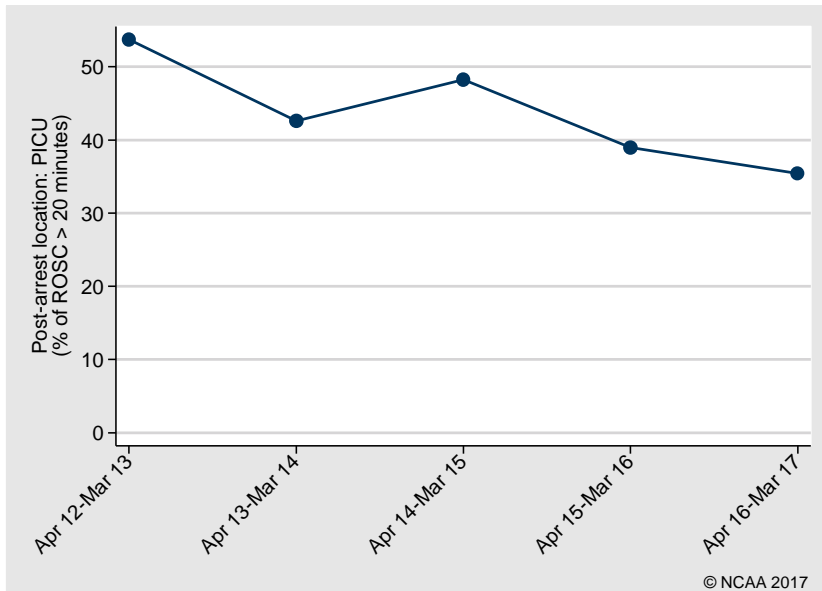
All percentages are reported as the percentage of all individuals (N=953).

Trends in outcomes

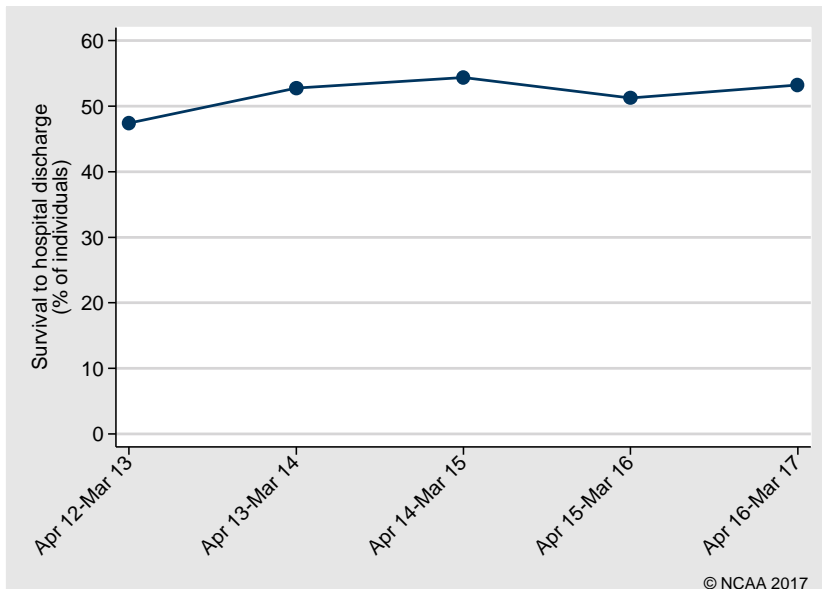
Reason resuscitation stopped: ROSC > 20 minutes



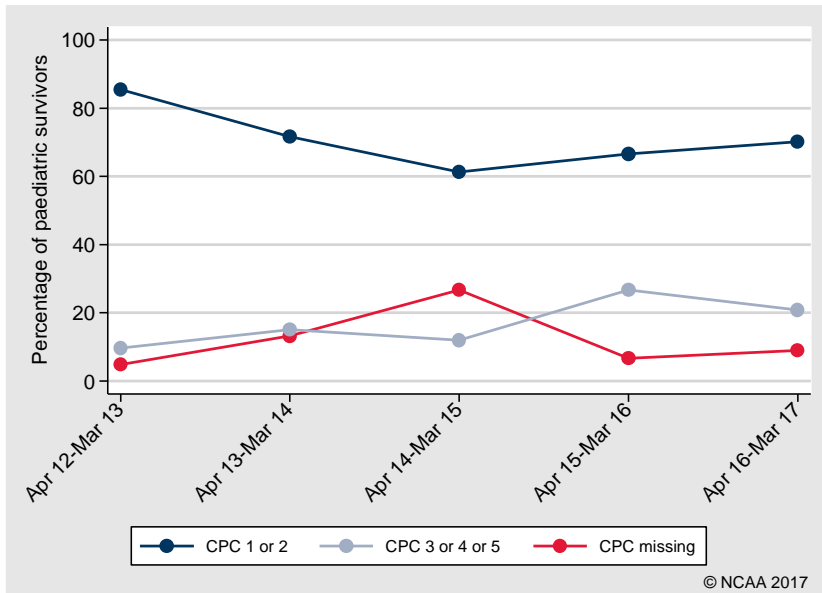
Post-arrest location: PICU



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	1,022	690	67.5 (64.6, 70.3)
By presenting rhythm:			
Shockable - VF/VT	41	31	75.6 (60.7, 86.2)
Non-shockable - asystole	245	92	37.6 (31.7, 43.8)
Non-shockable - PEA	314	204	65.0 (59.5, 70.0)
By age group (years):			
<1	487	361	74.1 (70.1, 77.8)
1-4	276	177	64.1 (58.3, 69.6)
5-10	155	89	57.4 (49.5, 64.9)
11-15	104	63	60.6 (51.0, 69.4)

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

Survival to hospital discharge

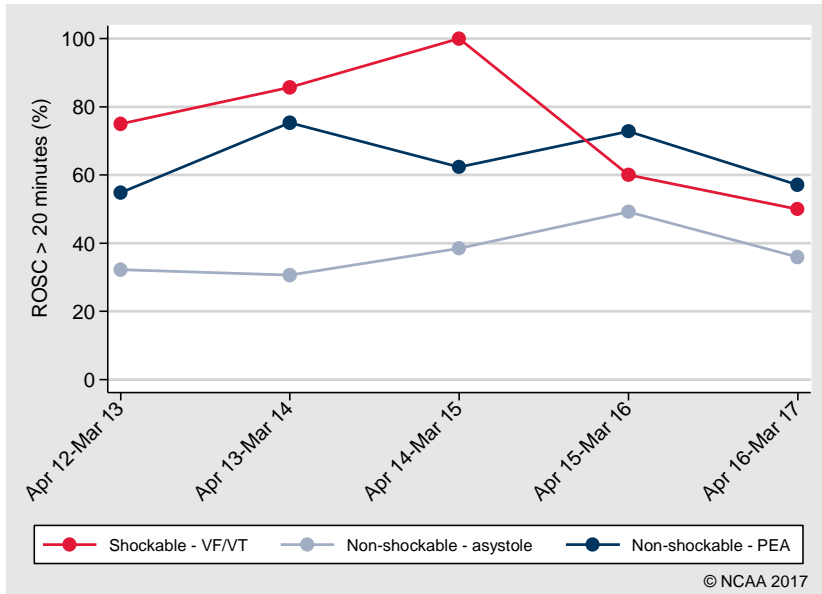
Subgroup	Number of individuals*	Number of hospital survivors	Percentage (95% confidence interval)
Overall	931	483	51.9 (48.7, 55.1)
By presenting rhythm:			
Shockable - VF/VT	37	26	70.3 (54.2, 82.5)
Non-shockable - asystole	235	58	24.7 (19.6, 30.6)
Non-shockable - PEA	290	130	44.8 (39.2, 50.6)
By age group (years):			
<1	426	252	59.2 (54.4, 63.7)
1-4	258	128	49.6 (43.6, 55.7)
5-10	150	61	40.7 (33.1, 48.7)
11-15	97	42	43.3 (33.9, 53.2)

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

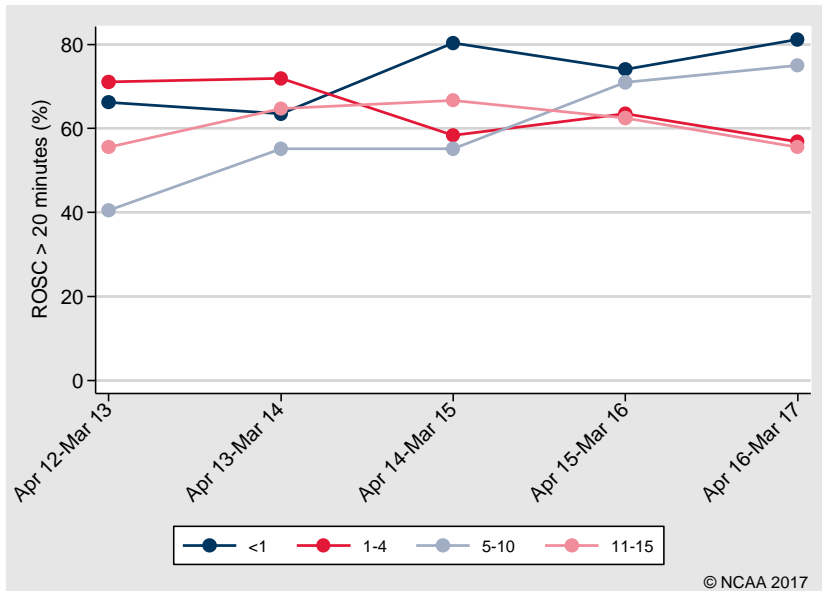
* Excluding individuals still in hospital (N=22)

Trends in outcomes by patient subgroups

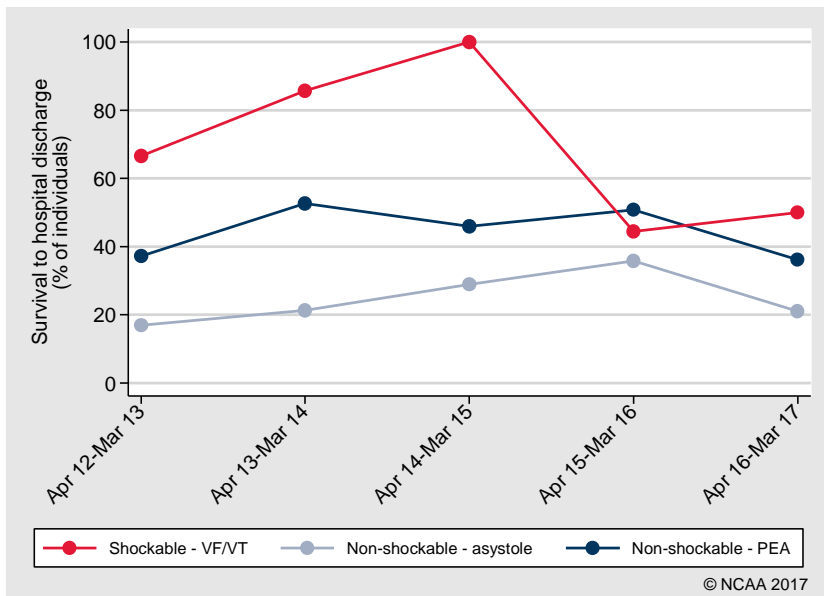
ROSC > 20 minutes by presenting/first documented rhythm



ROSC > 20 minutes by age group



Survival to hospital discharge by presenting/first documented rhythm



Survival to hospital discharge by age group

