



Key statistics from the
National Cardiac Arrest Audit:
Paediatric arrests
April 2017 to March 2022

Data collection scope (NCAA Version 1.4)

NCAA data are collected on any resuscitation event commencing in-hospital where an individual receives chest compression(s) and/or defibrillation and is attended by the hospital-based resuscitation team (or equivalent) in response to a 2222 call.

Note: The data collection scope changed on 1 April 2018

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:

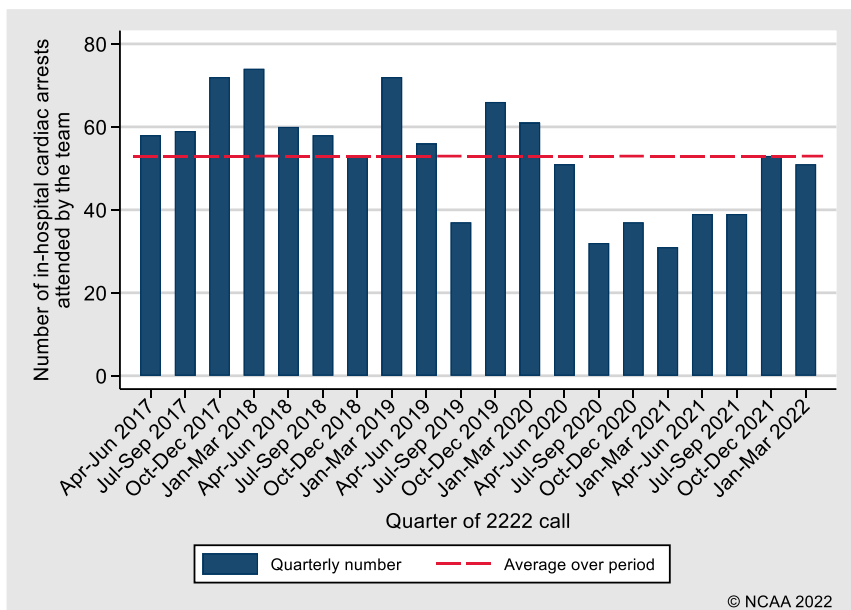
- Team visits taking place in specialist or non-acute hospitals
- Team visits to adults aged 16 years and above
- Team visits (meeting the scope of NCAA) in response to pre-hospital cardiac arrests

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 2017 – March 2022	16	499	186	560
April 2021 – March 2022	16	82	162	100
April 2020 – March 2021	16	77	160	74
April 2019 – March 2020	16	98	165	122
April 2018 – March 2019	16	122	176	121
April 2017 – March 2018	15	120	173	143

Note: Number of hospitals participating in NCAA includes those submitting data for all or part of the specified period

Note that results may be affected by the COVID-19 pandemic.

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



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

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Patient characteristics

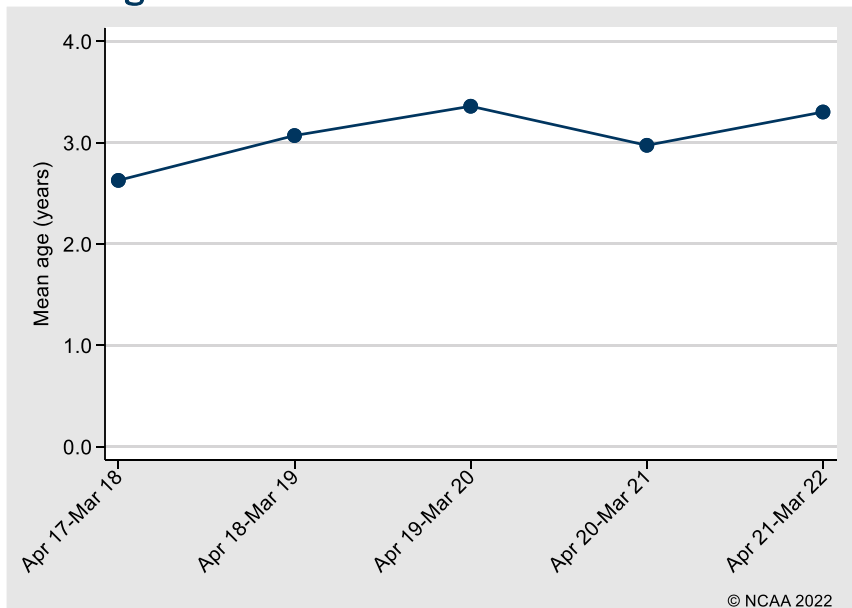
Age (years), n (%)	
<1	509 (48.1)
1-4	282 (26.6)
5-10	142 (13.4)
11-15	126 (11.9)
Mean (SD)	3.0 (4.5)
Median (IQR)	1 (0, 5)
Sex, n (%)	
Female	462 (43.6)
Male	597 (56.4)
Reason for admission to/attendance at/visit to your hospital, n (%)	
Patient - trauma	24 (2.3)
Patient - medical	888 (83.9)
Patient - elective/scheduled surgery	75 (7.1)
Patient - emergency/urgent surgery	62 (6.9)
Patient - obstetric	1 (0.1)
Outpatient	6 (0.6)
Visitor	3 (0.3)

IQR, interquartile range; SD, standard deviation.

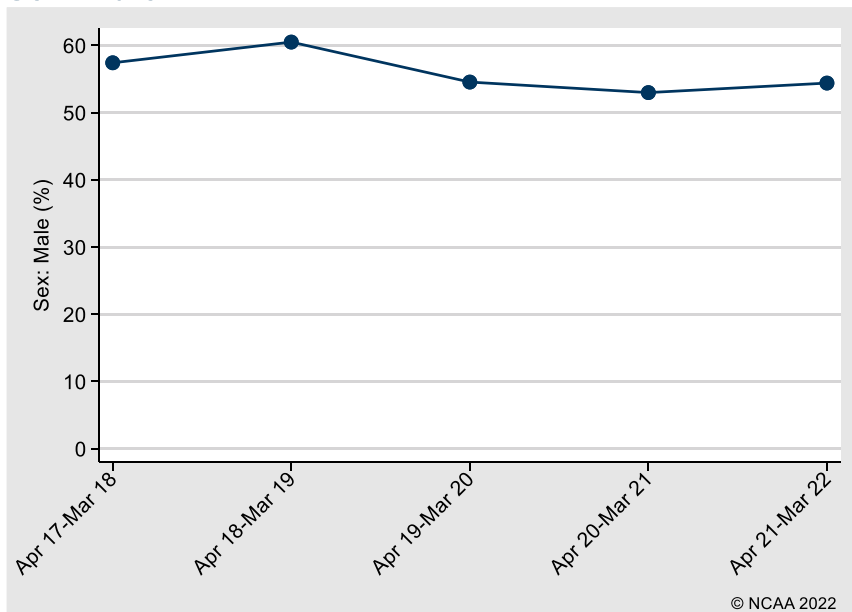
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Trends in patient characteristics

Mean age

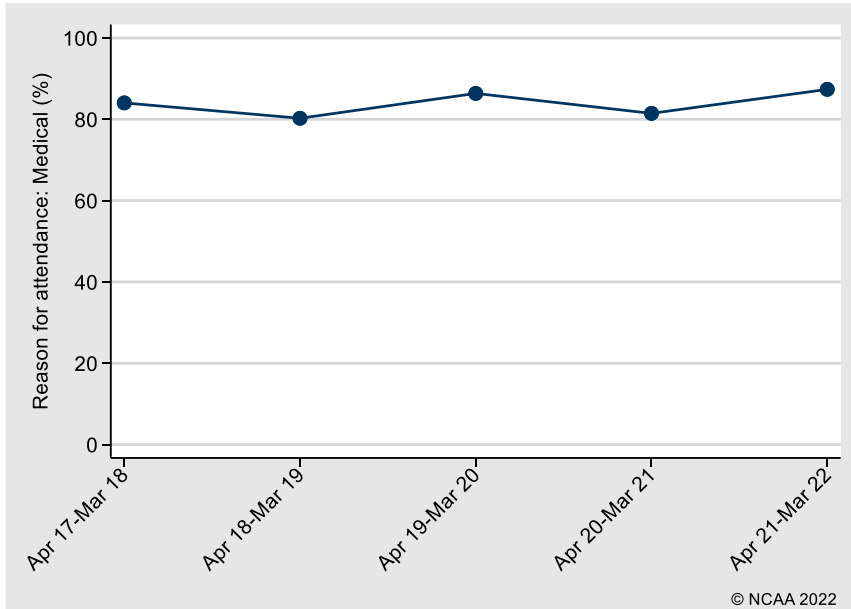


Sex: Male



Note that results may be affected by the COVID-19 pandemic.

Reason for attendance: Medical



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Team visit characteristics

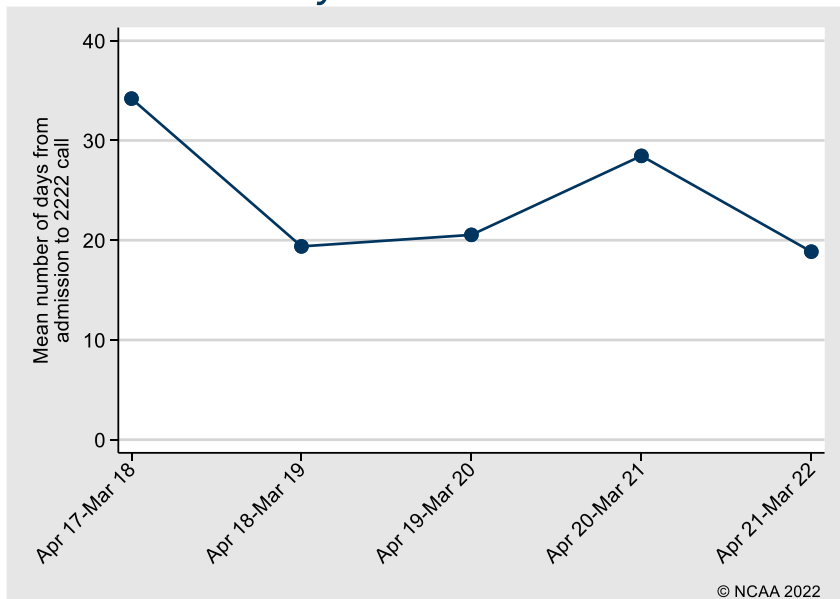
Number of days from admission to 2222 call, n (%)	
0	433 (40.9)
1	134 (12.7)
2-7	188 (17.8)
8-30	114 (10.8)
>30	190 (17.9)
Mean (SD)	24.5 (62.6)
Median (IQR)	1 (0, 14)
Location of arrest, n (%)	
Emergency department	287 (27.1)
Emergency admissions unit	16 (1.5)
Theatre & recovery	54 (5.1)
Imaging department	13 (1.2)
Cardiac catheter laboratory	10 (0.9)
Specialist treatment area	2 (0.2)
ICU or ICU/HDU	11 (1.0)
HDU	31 (2.9)
PICU	195 (18.4)
PHDU	70 (6.6)
Coronary care unit	2 (0.2)
Other intermediate care area	4 (0.4)
Ward	355 (33.5)
Other internal location	1 (0.1)
Clinic	4 (0.4)
Non-clinical area	4 (0.3)
Status at team arrival, n (%)	
Dead - resuscitation stopped	0 (0.0)
Resuscitation ongoing	737 (69.6)
ROSC achieved before team arrival	173 (16.3)
Deteriorating (not yet arrested)	149 (14.1)
Presenting/first documented rhythm, n (%)	
Shockable - VF	40 (3.8)
Shockable - VT	17 (1.6)
Shockable - unknown rhythm	3 (0.3)
Non-shockable - asystole	198 (18.7)
Non-shockable - PEA	339 (32.0)
Non-shockable - bradycardia	283 (26.7)
Non-shockable - unknown rhythm	47 (4.4)
Never determined	64 (6.0)
Unknown	68 (6.4)

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.

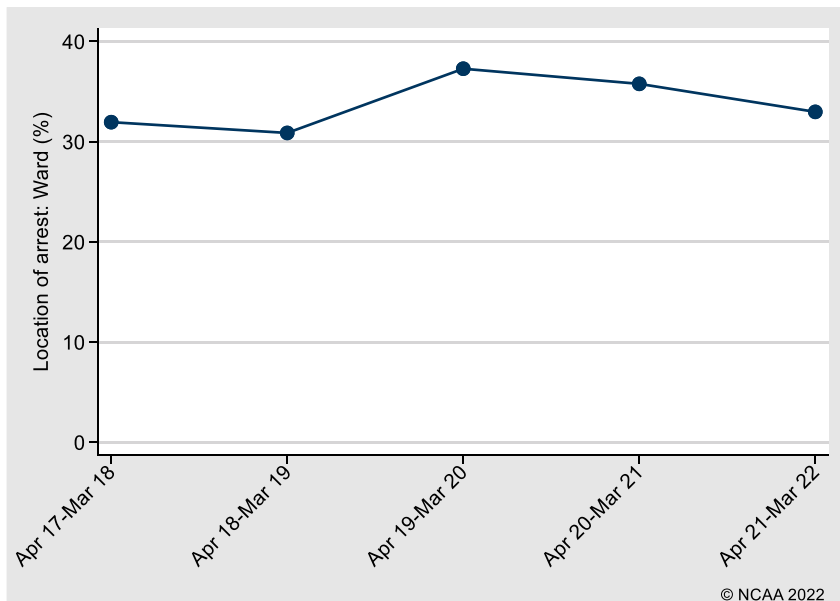
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Trends in team visit characteristics

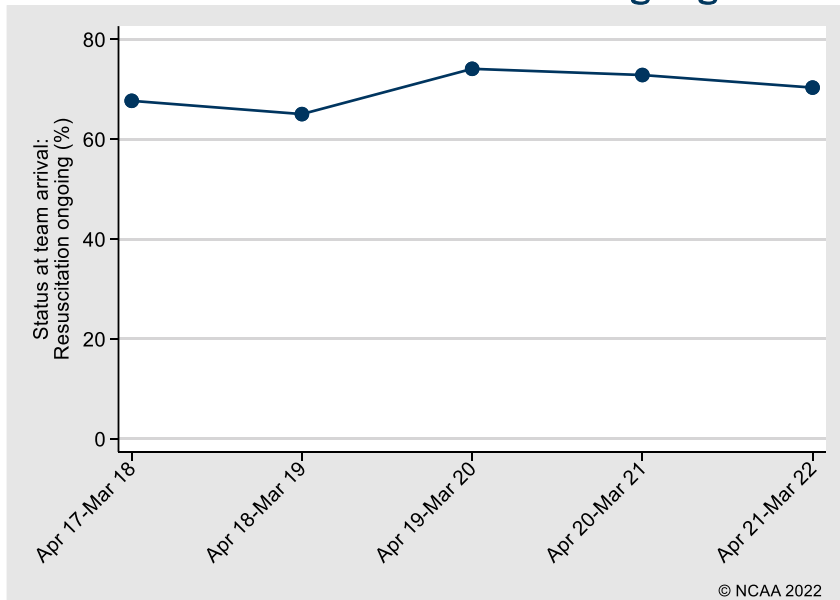
Mean number of days from admission to 2222 call



Location of arrest: Ward

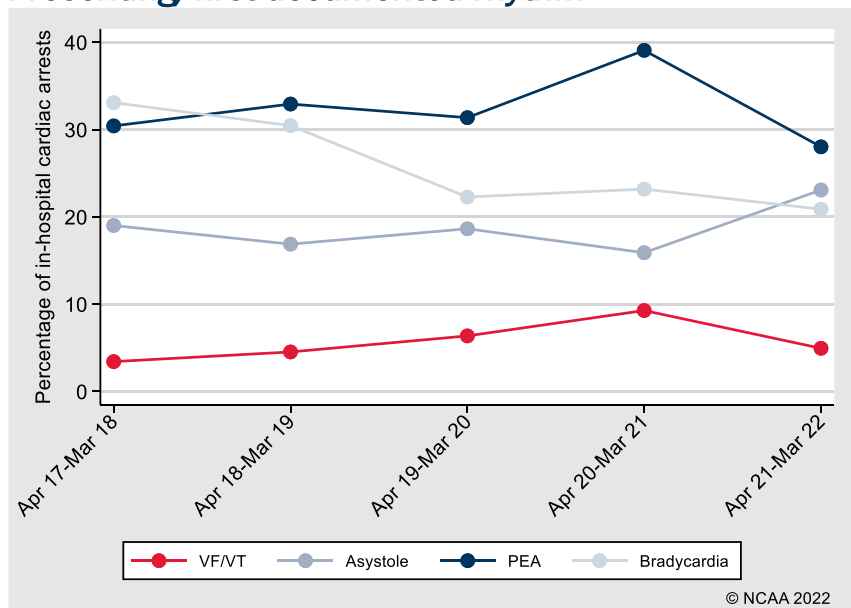


Status at team arrival: Resuscitation ongoing



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Presenting/first documented rhythm



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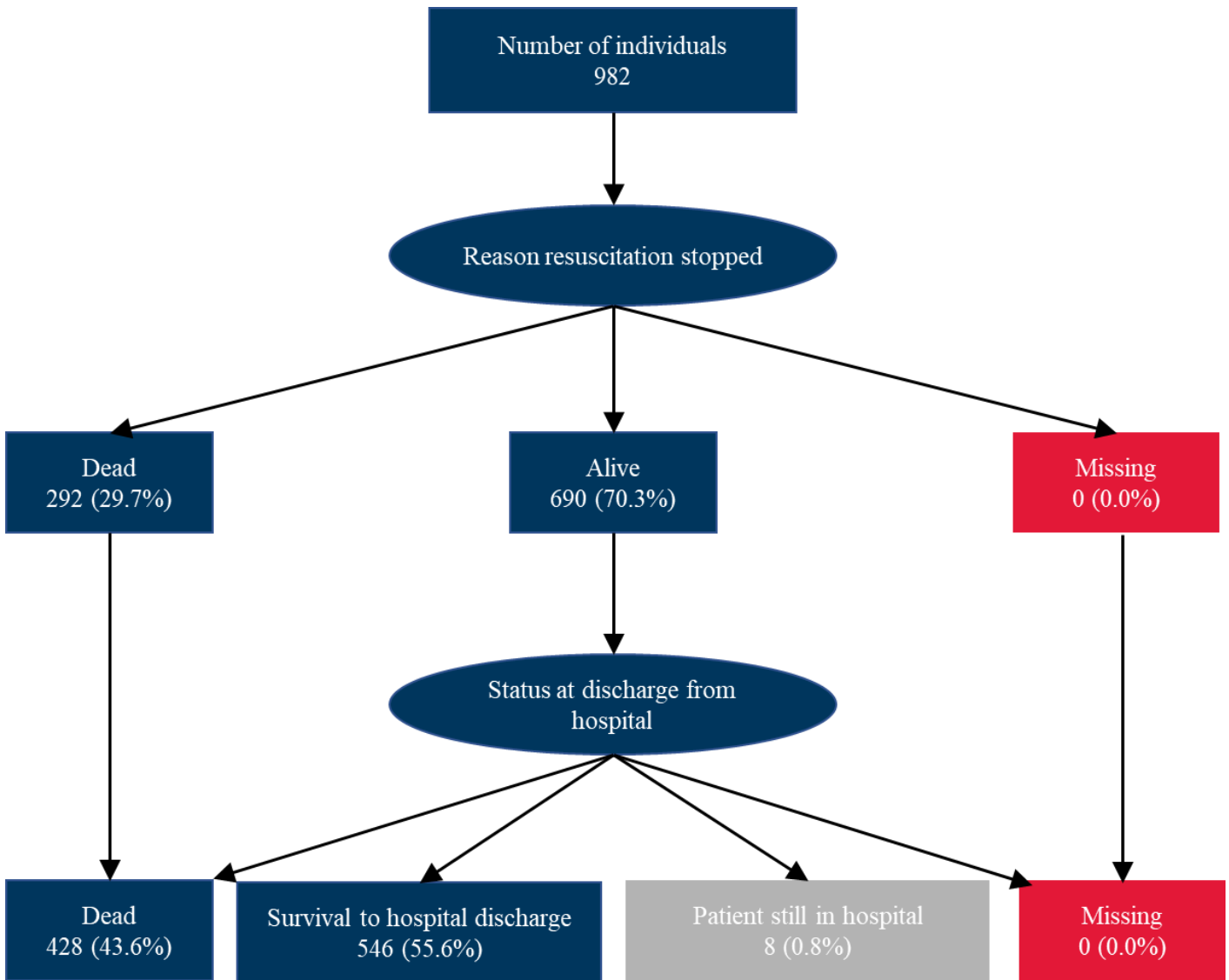
Outcomes

Reason resuscitation stopped at end of team visit, n (%)	
Alive - ROSC > 20 minutes	757 (71.5)
Dead - ROSC < 20 minutes	27 (2.5)
Dead - no ROSC	263 (24.8)
Dead - DNACPR	2 (0.2)
Dead - futility	10 (0.9)
Post-arrest location, n (% of ROSC > 20 minutes)	
Emergency admissions unit	5 (0.7)
ICU or ICU/HDU	47 (6.2)
HDU	25 (3.3)
PICU	352 (46.5)
PHDU	43 (5.7)
CCU	8 (1.1)
Other intermediate care area	3 (0.4)
Obstetrics area	0 (0.0)
Ward	71 (9.4)
Other internal location	0 (0.0)
Mortuary	14 (1.8)
Other hospital	187 (24.7)
Not in hospital	2 (0.3)
Paediatric CPC at hospital discharge, n (% of survivors)	
1	109 (30.8)
2	33 (9.3)
3	25 (7.1)
4	11 (3.1)
5	50 (14.1)
Missing	126 (35.6)

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.

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Outcome flow

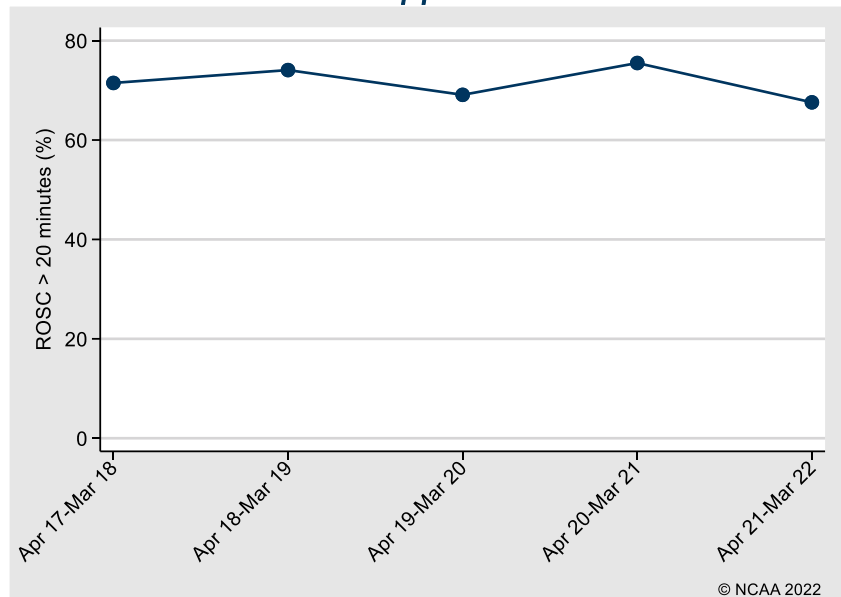


All percentages are reported as the percentage of all individuals (N=982).

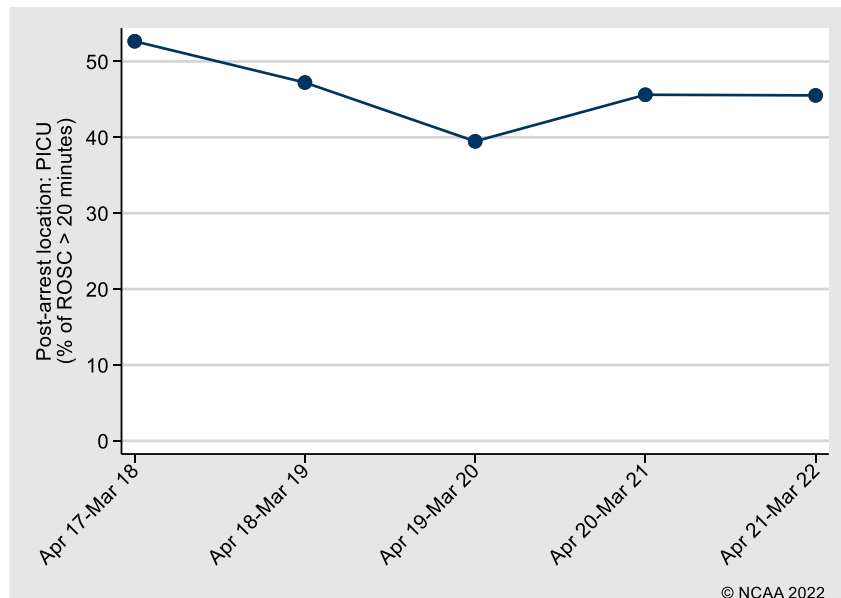
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Trends in outcomes

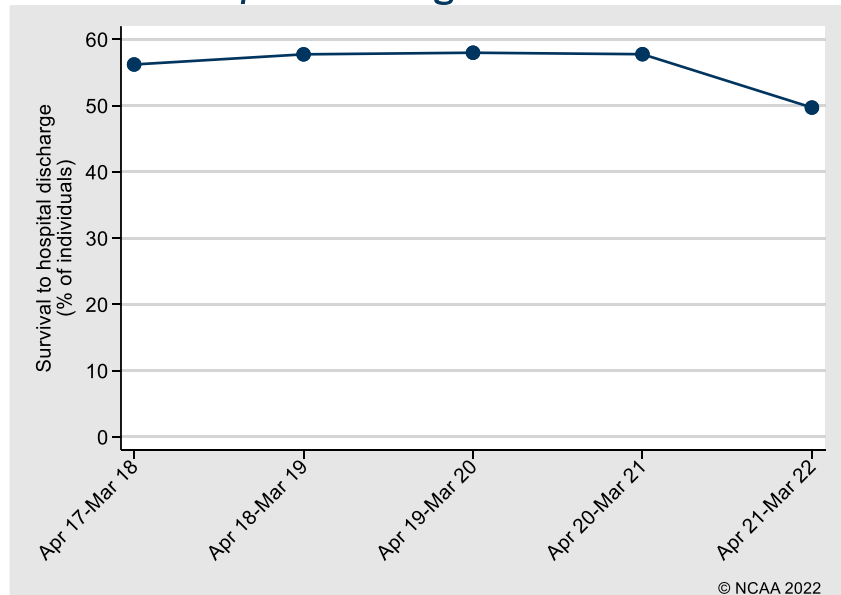
Reason resuscitation stopped: ROSC > 20 minutes



Post-arrest location: PICU

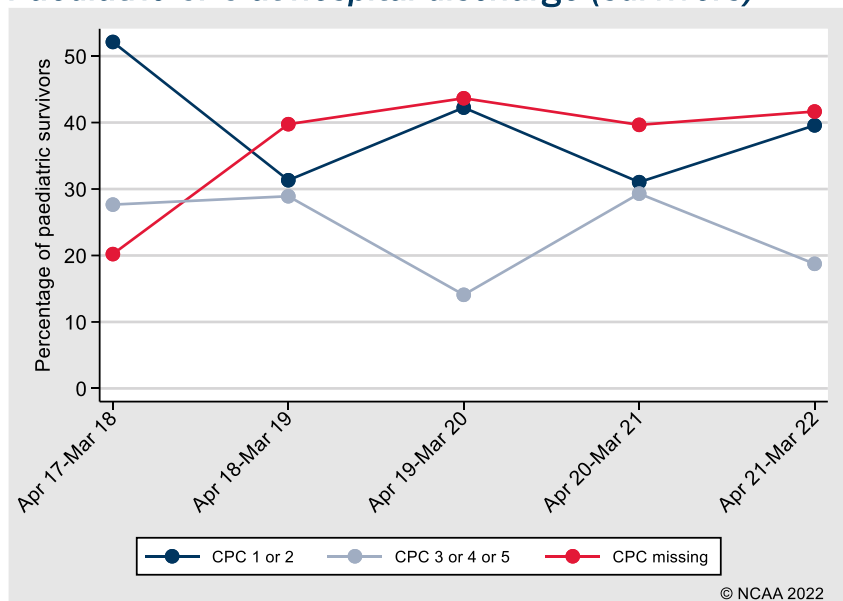


Survival to hospital discharge



Note that results may be affected by the COVID-19 pandemic.

Paediatric CPC at hospital discharge (survivors)



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Outcomes by patient subgroups

ROSC > 20 minutes

Subgroup	Number of in-hospital cardiac arrests	Number with ROSC > 20 min	Percentage (95% confidence interval)
Overall	1,059	757	71.5 (68.7, 74.1)
By presenting rhythm:			
Shockable - VF/VT	57	42	73.7 (61.0, 83.4)
Non-shockable - asystole	198	71	35.9 (29.5, 42.7)
Non-shockable - PEA	339	233	68.7 (63.6, 73.4)
Non-shockable - bradycardia	283	255	90.1 (86.1, 93.1)
By age group (years):			
<1	509	390	76.6 (72.8, 80.1)
1-4	282	193	68.4 (62.8, 73.6)
5-10	142	94	66.2 (58.1, 73.5)
11-15	126	80	63.5 (54.8, 71.4)

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	974	546	56.1 (52.9, 59.1)
By presenting rhythm:			
Shockable - VF/VT	50	29	58.0 (44.2, 70.6)
Non-shockable - asystole	191	45	23.6 (18.1, 30.1)
Non-shockable - PEA	320	162	50.6 (45.2, 56.1)
Non-shockable - bradycardia	249	185	74.3 (68.5, 79.3)
By age group (years):			
<1	450	266	59.1 (54.5, 63.6)
1-4	265	149	56.2 (50.2, 62.1)
5-10	138	72	52.2 (43.9, 60.3)
11-15	121	59	48.8 (40.0, 57.6)

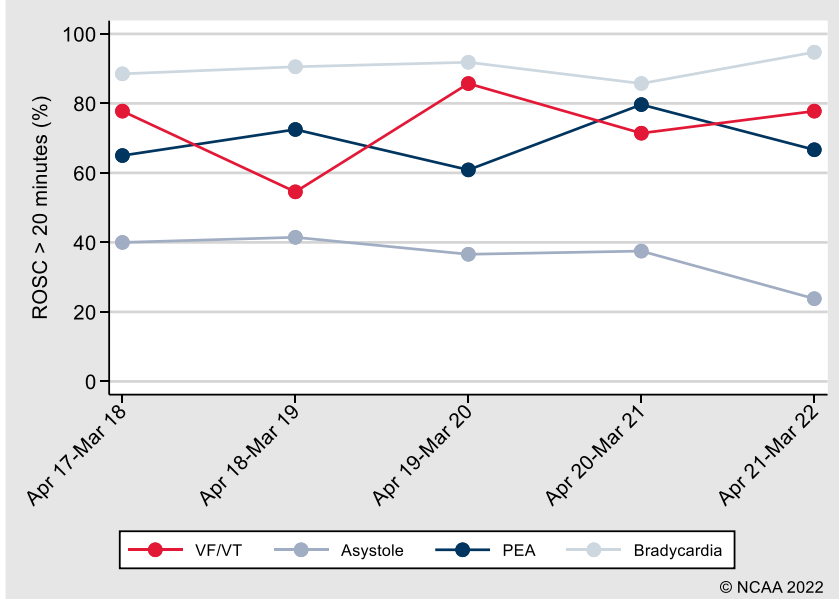
PEA, pulseless electrical activity; VF, ventricular fibrillation; VT, ventricular tachycardia.

* Excluding individuals still in hospital (N=8)

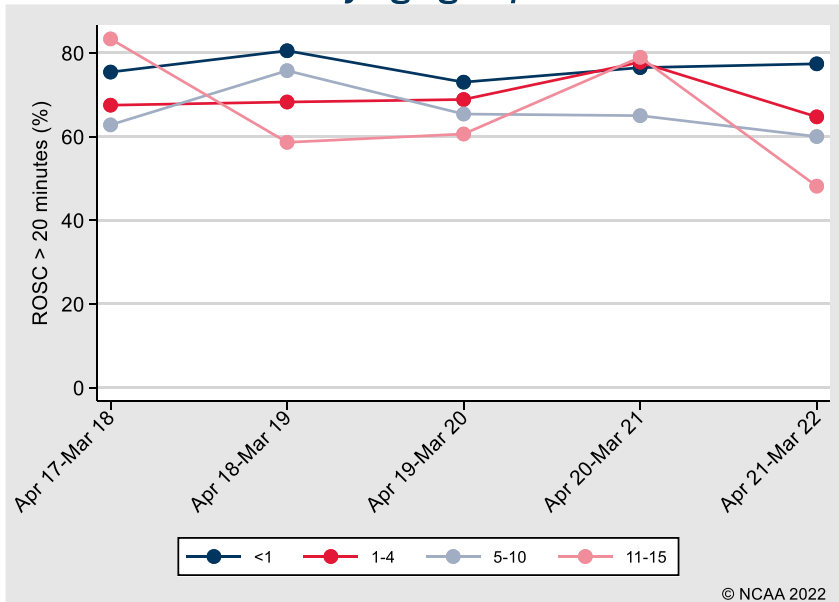
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Trends in outcomes by patient subgroups

ROSC > 20 minutes by presenting/first documented rhythm

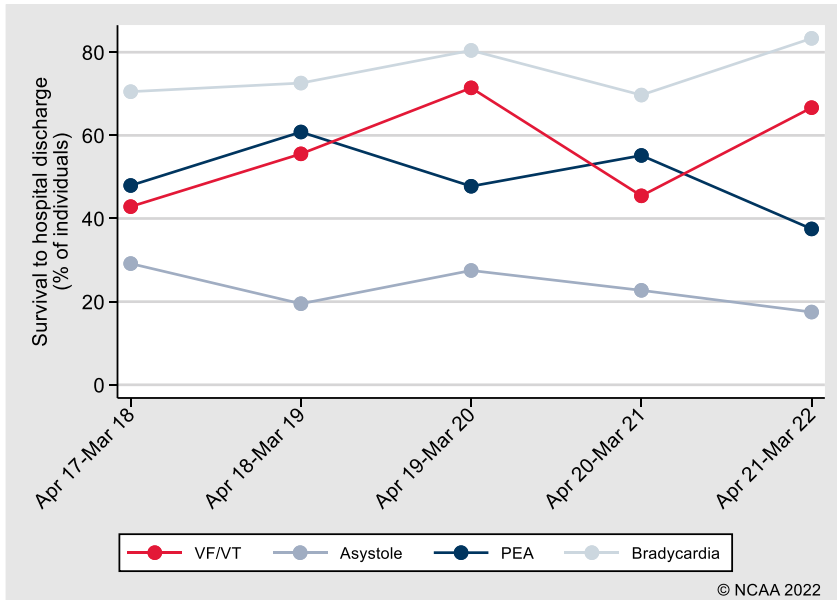


ROSC > 20 minutes by age group

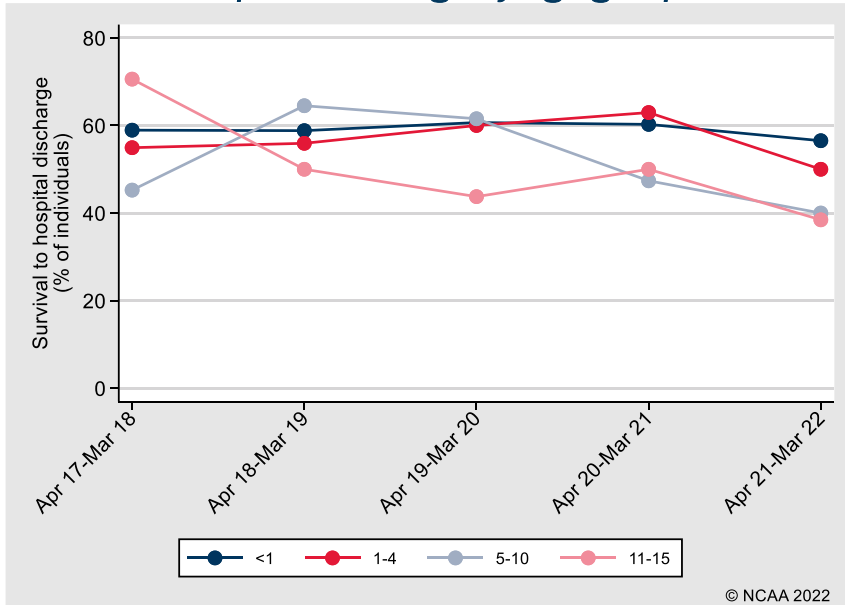


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Survival to hospital discharge by presenting/first documented rhythm



Survival to hospital discharge by age group



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