



Key statistics from the  
National Cardiac Arrest Audit:  
*Paediatric arrests*  
*April 2014 to March 2019*

## 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

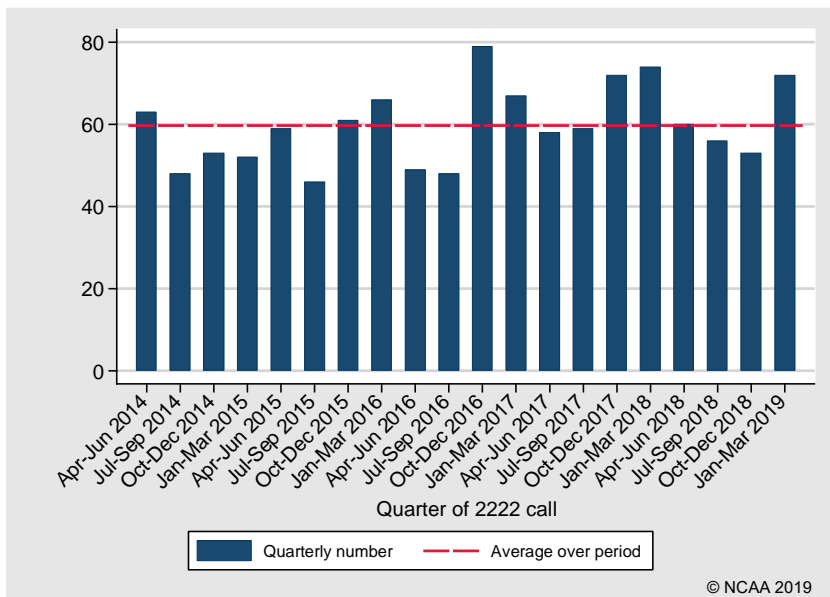
This report is based on data for in-hospital cardiac arrests of children aged less than 16 years in NHS paediatric and acute general hospitals. The following team visits were therefore excluded:

- 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
<b>April 2014 – March 2019</b>	<b>16</b>	<b>570</b>	<b>195</b>	<b>625</b>
April 2018 – March 2019	16	120	176	121
April 2017 – March 2018	15	120	173	143
April 2016 – March 2017	15	120	173	123
April 2015 – March 2016	14	112	178	120
April 2014 – March 2015	13	98	163	118

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

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



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

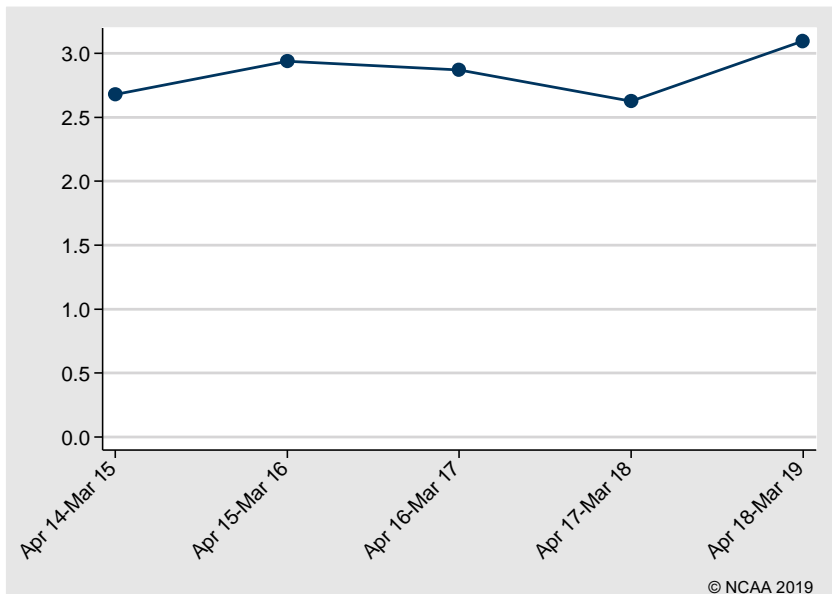
## Patient characteristics

Age (years), n (%)	
<1	586 (49.0)
1-4	325 (27.2)
5-10	164 (13.7)
11-15	120 (10.0)
Mean (SD)	2.8 (4.3)
Median (IQR)	1 (0, 4)
Sex, n (%)	
Female	483 (40.4)
Male	712 (59.6)
Reason for admission to/attendance at/visit to your hospital, n (%)	
Patient - trauma	20 (1.7)
Patient - medical	975 (81.6)
Patient - elective/scheduled surgery	98 (8.2)
Patient - emergency/urgent surgery	91 (7.6)
Outpatient	9 (0.8)
Visitor	2 (0.2)

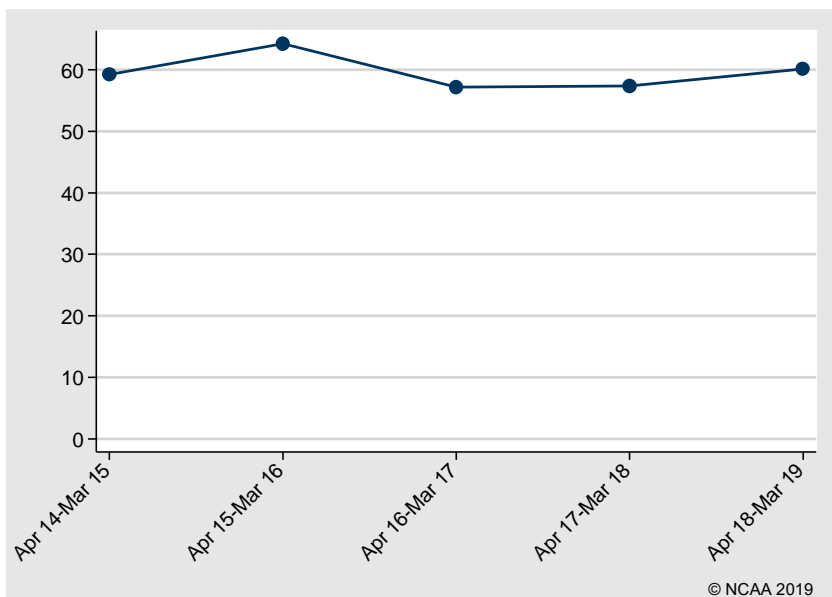
IQR, interquartile range; SD, standard deviation.

## Trends in patient characteristics

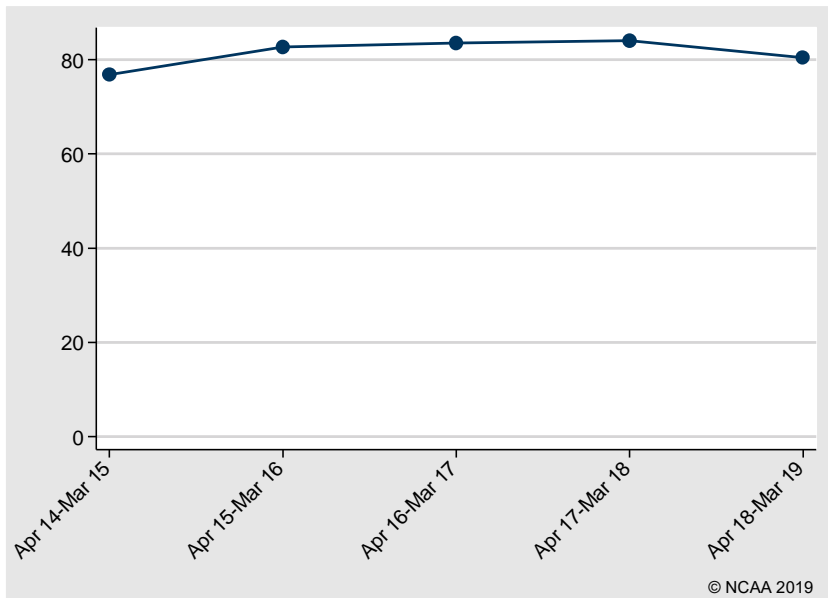
### Mean age



### Sex: Male



**Reason for attendance: Medical**



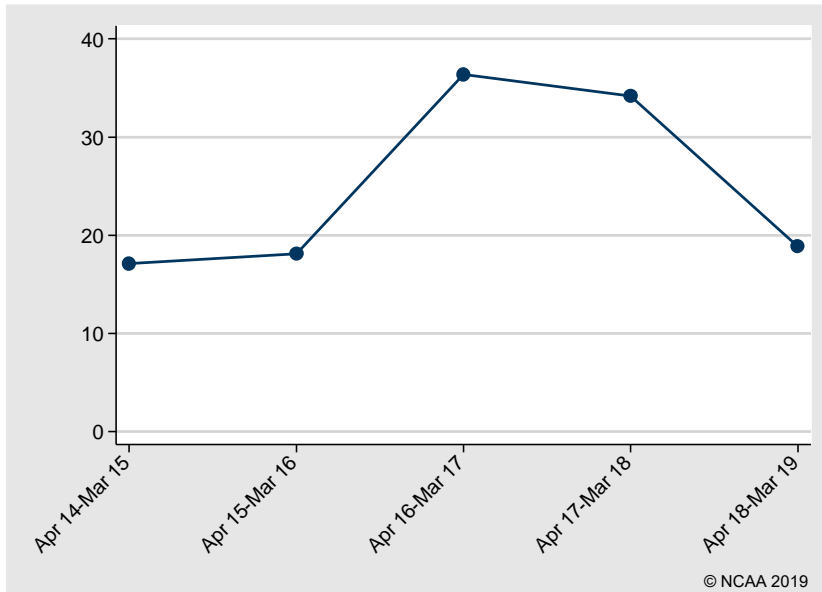
## Team visit characteristics

Number of days from admission to 2222 call, n (%)	
0	490 (41.0)
1	151 (12.6)
2-7	189 (15.8)
8-30	138 (11.5)
>30	227 (19.0)
Mean (SD)	25.3 (67.6)
Median (IQR)	1 (0, 15)
Location of arrest, n (%)	
Emergency department	326 (27.3)
Emergency admissions unit	14 (1.2)
Theatre & recovery	54 (4.5)
Imaging department	22 (1.8)
Cardiac catheter laboratory	9 (0.8)
Specialist treatment area	4 (0.3)
ICU or ICU/HDU	28 (2.3)
HDU	21 (1.8)
PICU	206 (17.2)
PHDU	101 (8.5)
Coronary care unit	2 (0.2)
Other intermediate care area	10 (0.8)
Ward	389 (32.6)
Other internal location	1 (0.1)
Clinic	5 (0.4)
Non-clinical area	3 (0.3)
Status at team arrival, n (%)	
Dead - resuscitation stopped	2 (0.2)
Resuscitation ongoing	835 (69.9)
ROSC achieved before team arrival	194 (16.2)
Deteriorating (not yet arrested)	164 (13.7)
Presenting/first documented rhythm, n (%)	
Shockable - VF	28 (2.3)
Shockable - VT	19 (1.6)
Shockable - unknown rhythm	3 (0.3)
Non-shockable - asystole	237 (19.8)
Non-shockable - PEA	370 (31.0)
Non-shockable - bradycardia	362 (30.3)
Non-shockable - unknown rhythm	48 (4.0)
Never determined	53 (4.4)
Unknown	75 (6.3)

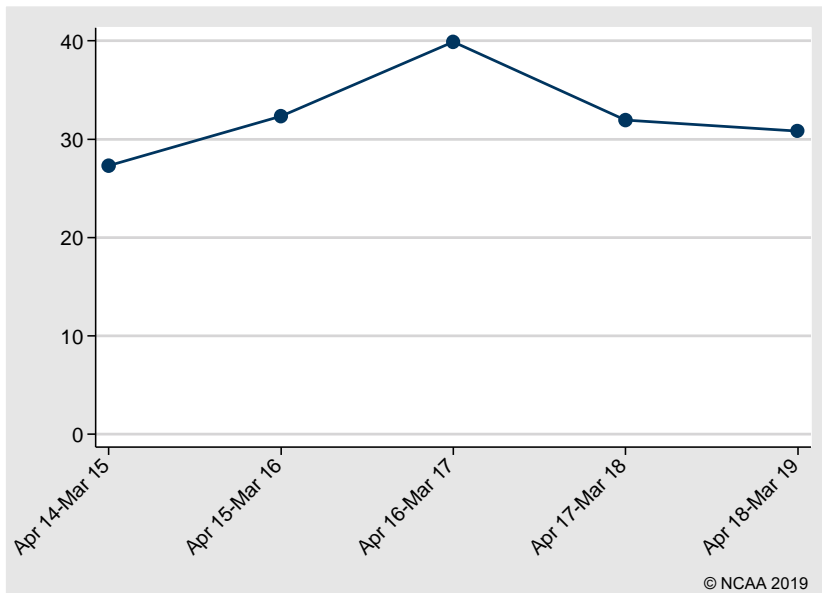
HDU, high dependency unit; ICU, intensive care unit; IQR, interquartile range; PEA, pulseless electrical activity; PHDU, paediatric high dependency unit; PICU, paediatric intensive care unit; ROSC, return of spontaneous circulation; SD, standard deviation; VF, ventricular fibrillation; VT, ventricular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

## Trends in team visit characteristics

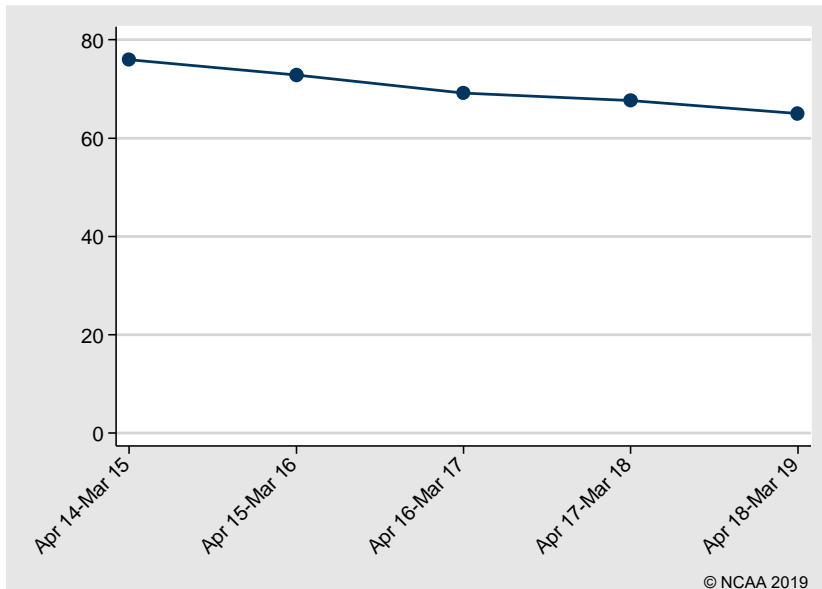
### Mean number of days from admission to 2222 call



### Location of arrest: Ward

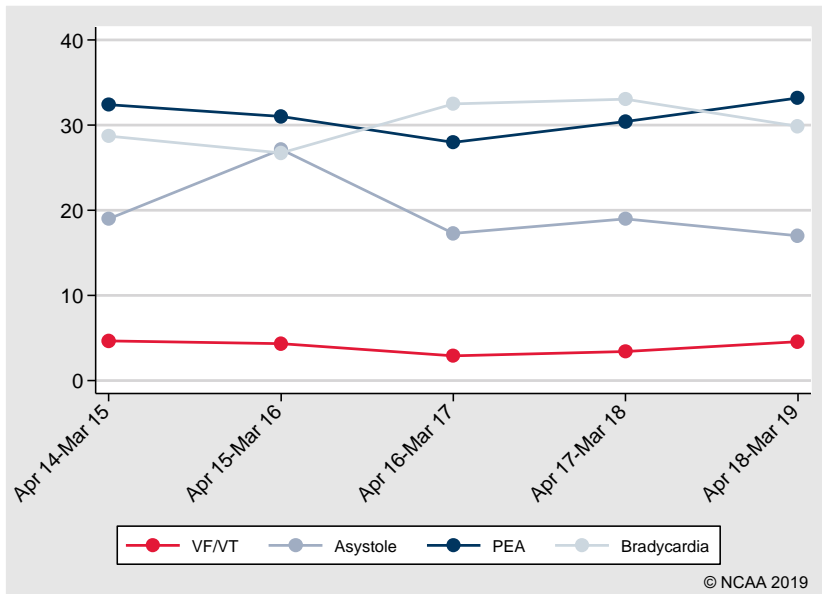


### Status at team arrival: Resuscitation ongoing





### Presenting/first documented rhythm

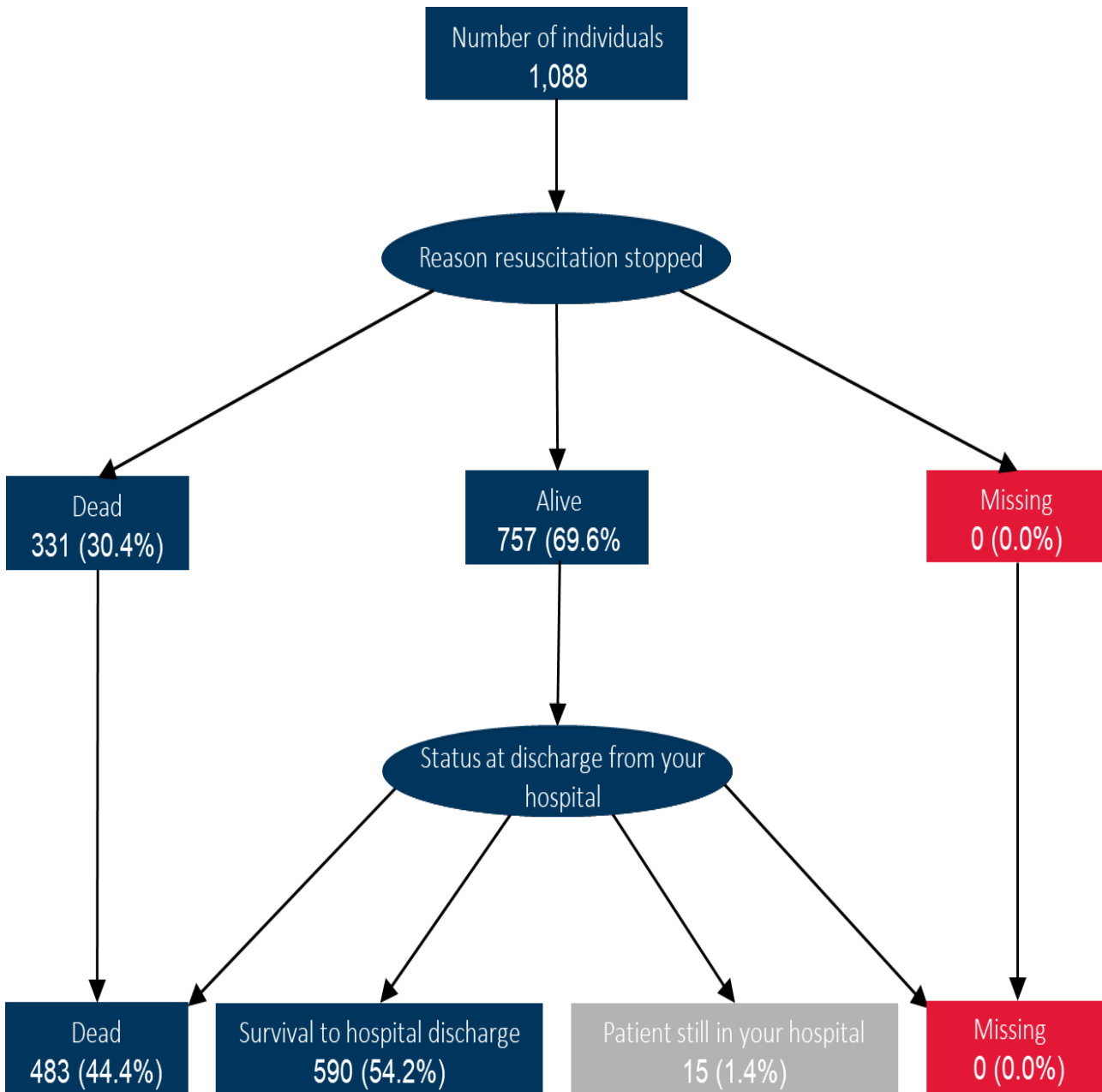


## Outcomes

Reason resuscitation stopped at end of team visit, n (%)	
Alive - ROSC > 20 minutes	854 (71.5)
Dead - ROSC < 20 minutes	33 (2.8)
Dead - no ROSC	290 (24.3)
Dead - DNACPR	5 (0.4)
Dead - futility	13 (1.1)
Post-arrest location, n (% of ROSC > 20 minutes)	
Emergency admissions unit	4 (0.5)
ICU or ICU/HDU	67 (7.8)
HDU	20 (2.3)
PICU	385 (45.1)
PHDU	60 (7.0)
CCU	4 (0.5)
Other intermediate care area	7 (0.8)
Obstetrics area	1 (0.1)
Ward	100 (11.7)
Other internal location	1 (0.1)
Mortuary	20 (2.3)
Other hospital	185 (21.7)
Paediatric CPC at hospital discharge, n (% of survivors)	
1	164 (41.3)
2	43 (10.8)
3	21 (5.3)
4	21 (5.3)
5	47 (11.8)
Missing	101 (25.4)

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.

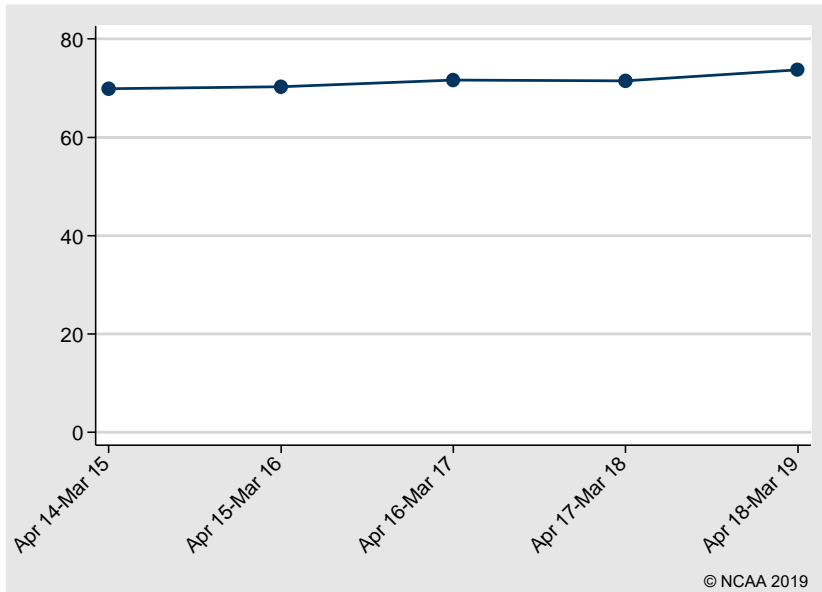
## Outcome flow



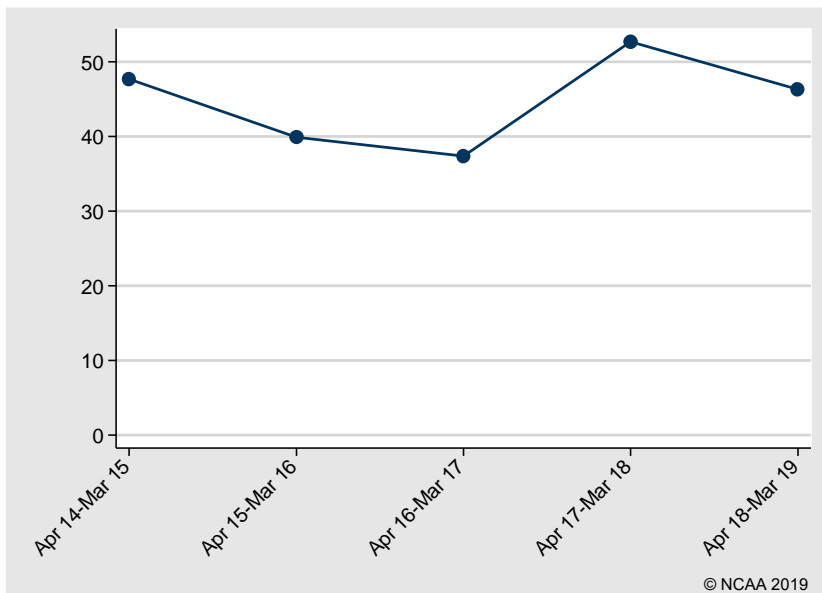
All percentages are reported as the percentage of all individuals (N=1088).

## Trends in outcomes

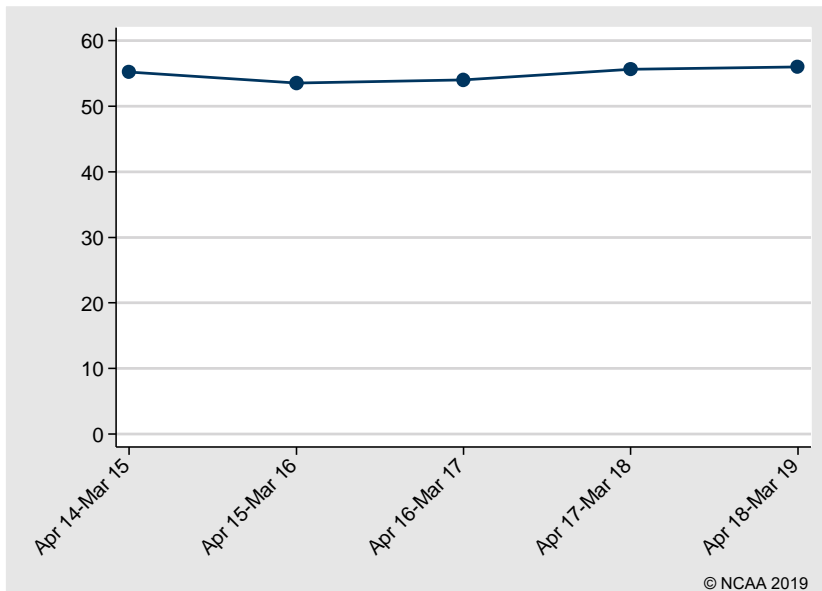
### Reason resuscitation stopped: ROSC > 20 minutes



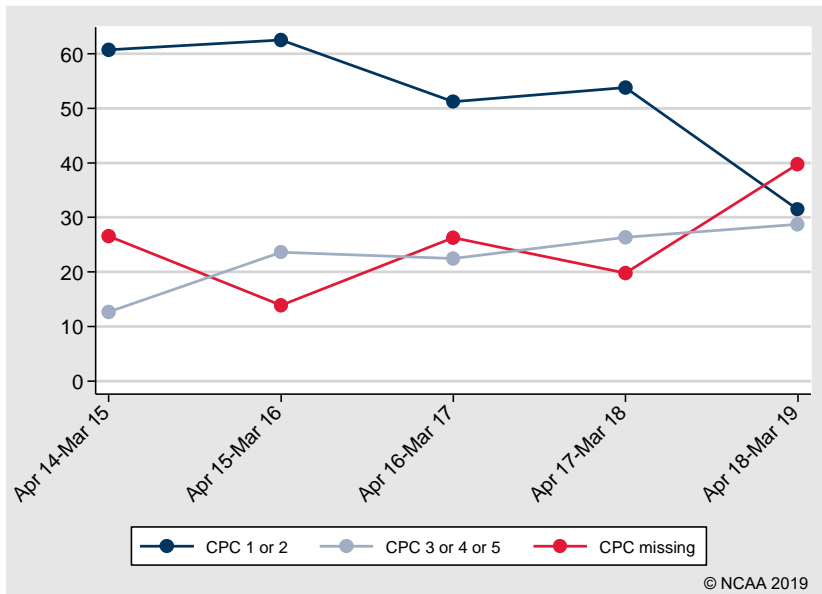
### Post-arrest location: PICU



### 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	1,195	854	71.5 (68.8, 74.0)
By presenting rhythm:			
Shockable - VF/VT	47	33	70.2 (56.0, 81.3)
Non-shockable - asystole	237	101	42.6 (36.5, 49.0)
Non-shockable - PEA	370	245	66.2 (61.3, 70.8)
Non-shockable - bradycardia	362	323	89.2 (85.6, 92.0)
By age group (years):			
<1	586	461	78.7 (75.2, 81.8)
1-4	325	206	63.4 (58.0, 68.4)
5-10	164	111	67.7 (60.2, 74.4)
11-15	120	76	63.3 (54.4, 71.4)

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

### Survival to hospital discharge

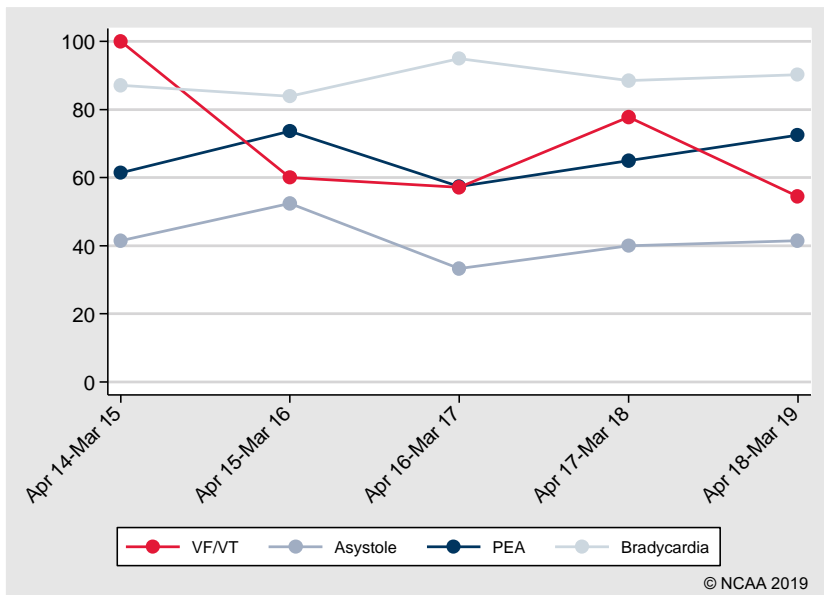
Subgroup	Number of individuals*	Number of hospital survivors	Percentage (95% confidence interval)
Overall	1,073	590	55.0 (52.0, 57.9)
By presenting rhythm:			
Shockable - VF/VT	40	24	60.0 (44.6, 73.7)
Non-shockable - asystole	228	66	28.9 (23.4, 35.1)
Non-shockable - PEA	339	168	49.6 (44.3, 54.9)
Non-shockable - bradycardia	299	211	70.6 (65.2, 75.4)
By age group (years):			
<1	503	309	61.4 (57.1, 65.6)
1-4	302	150	49.7 (44.1, 55.3)
5-10	155	75	48.4 (40.7, 56.2)
11-15	113	56	49.6 (40.5, 58.6)

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

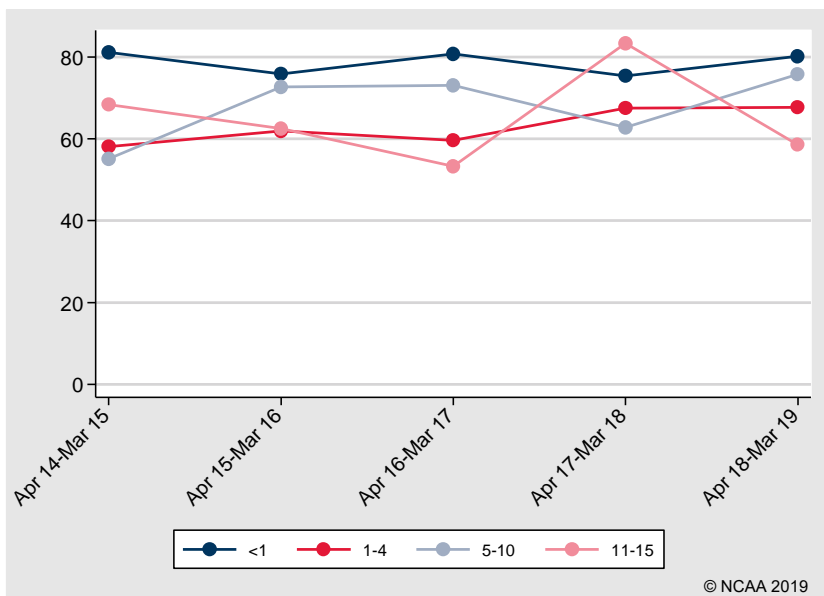
\* Excluding individuals still in hospital (N=15)

## Trends in outcomes by patient subgroups

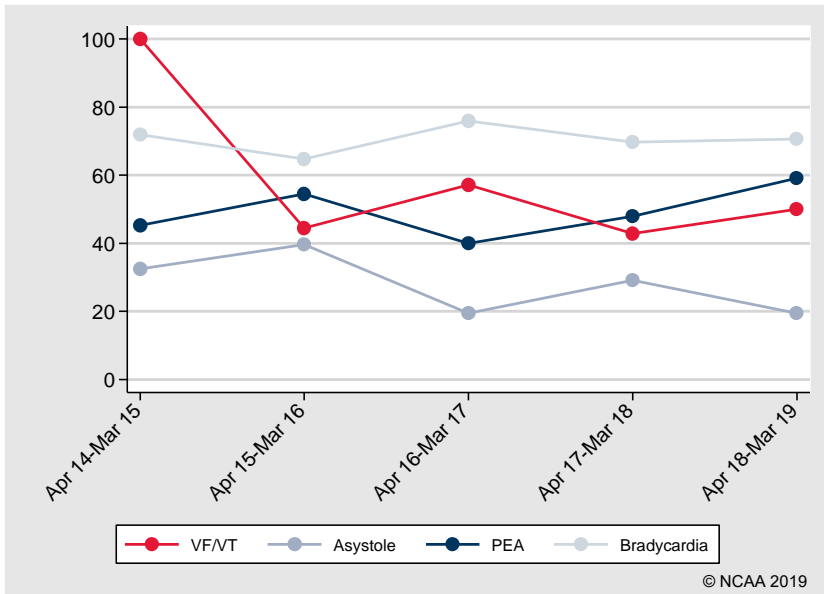
### ROSC > 20 minutes by presenting/first documented rhythm



### ROSC > 20 minutes by age group



### Survival to hospital discharge by presenting/first documented rhythm



### Survival to hospital discharge by age group

