



# Key statistics from the National Cardiac Arrest Audit *2016/17*

## 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

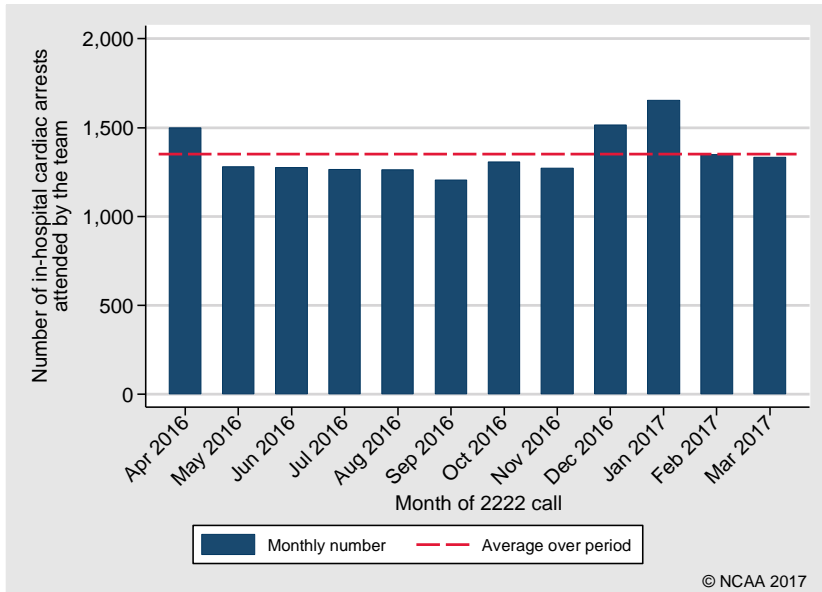
This report is based on data for in-hospital cardiac arrests in NHS acute hospitals. The following team visits were therefore excluded:

- Team visits taking place in specialist or non-acute hospitals
- Team visits taking place in paediatric hospitals
- Team visits (meeting the scope of NCAA) in response to pre-hospital cardiac arrests

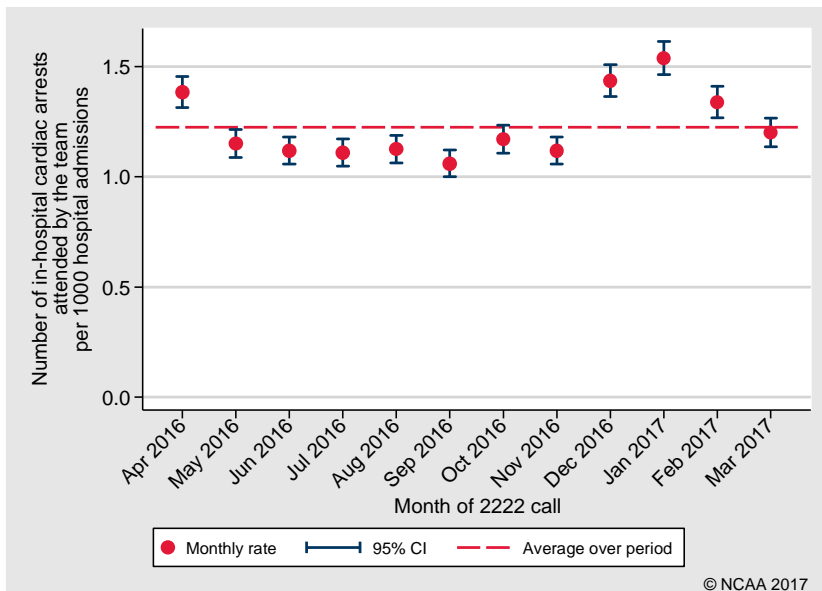
Year	Number of hospitals participating in NCAA	Total number of admissions to hospital	Total number of reported in-hospital cardiac arrests	Total number of individuals
<b>April 2016 – March 2017</b>	<b>183</b>	<b>13,234,408</b>	<b>16,210</b>	<b>15,645</b>
April 2015 – March 2016	191	12,730,623	16,945	16,312
April 2014 – March 2015	174	11,297,994	16,092	15,517
April 2013 – March 2014	161	9,706,474	14,140	13,643
April 2012 – March 2013	137	8,647,963	13,867	13,351

# Incidence of in-hospital cardiac arrests attended by the team

Number of in-hospital cardiac arrests attended by the team

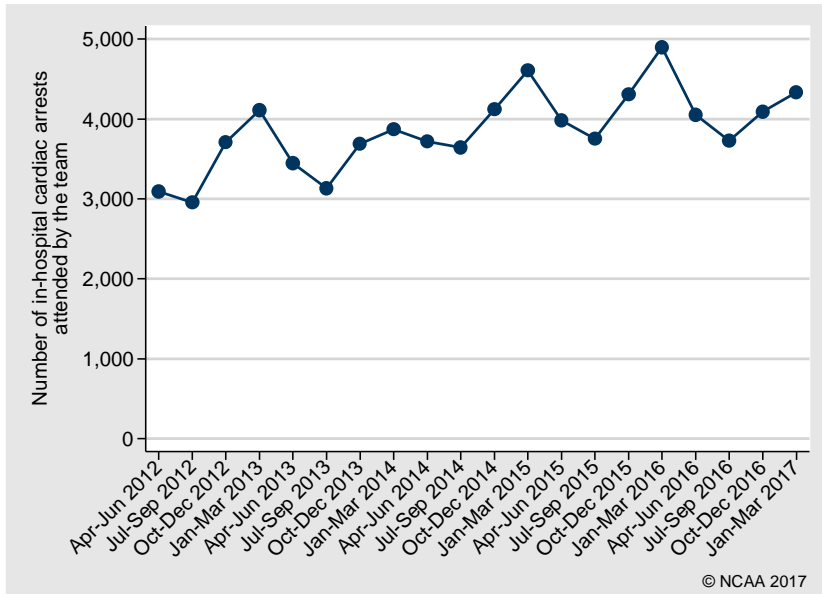


Rate of in-hospital cardiac arrests per 1000 hospital admissions



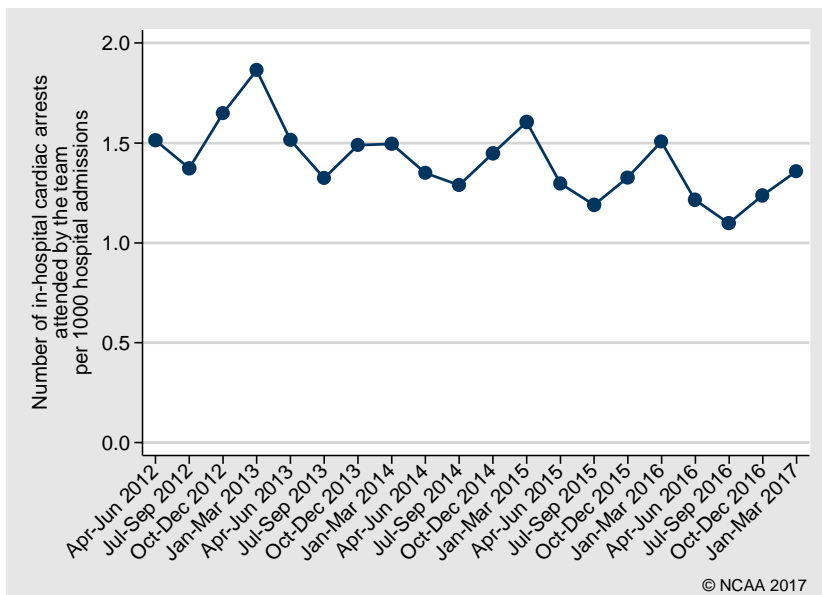
## Trends in incidence of in-hospital cardiac arrests attended by the team

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



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

*Rate of in-hospital cardiac arrests per 1000 hospital admissions*



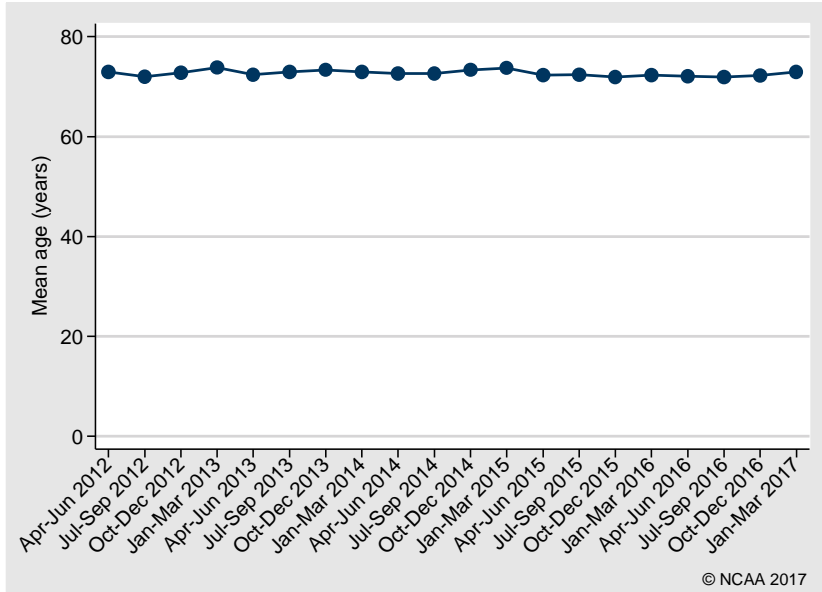
## Patient characteristics

Age (years), n (%)	
0-15	161 (1.0)
16-64	3,795 (23.4)
65-74	3,671 (22.6)
75-84	5,073 (31.3)
85+	3,510 (21.7)
Mean (SD)	72.3 (15.9)
Median (IQR)	76 (65, 83)
Sex, n (%)	
Female	6,711 (41.4)
Male	9,499 (58.6)
Reason for admission to/attendance at/visit to your hospital, n (%)	
Patient - trauma	478 (2.9)
Patient - medical	13,722 (84.7)
Patient - elective/scheduled surgery	746 (4.6)
Patient - emergency/urgent surgery	1,021 (6.3)
Patient - obstetric	27 (0.2)
Outpatient	166 (1.0)
Staff	9 (0.1)
Visitor	39 (0.2)
Missing	2 (0.0)

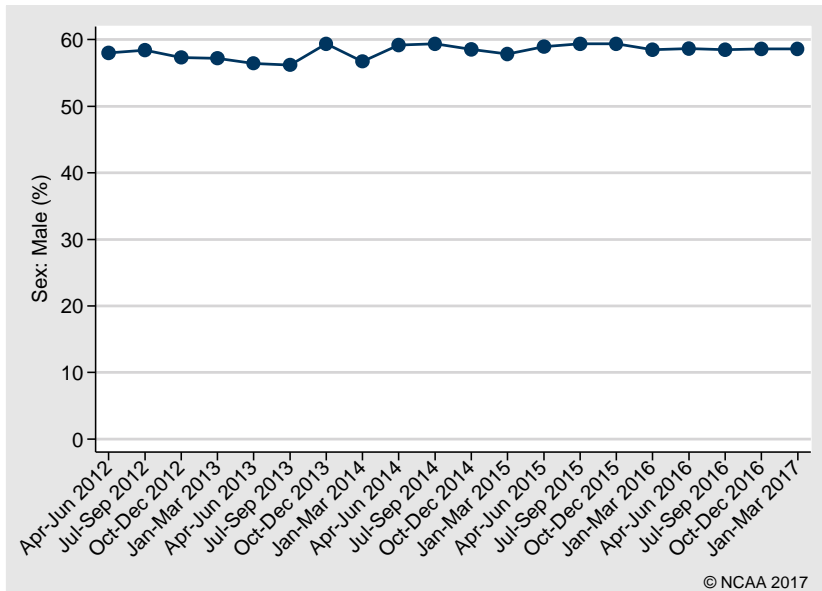
IQR, interquartile range; SD, standard deviation.

## Trends in patient characteristics

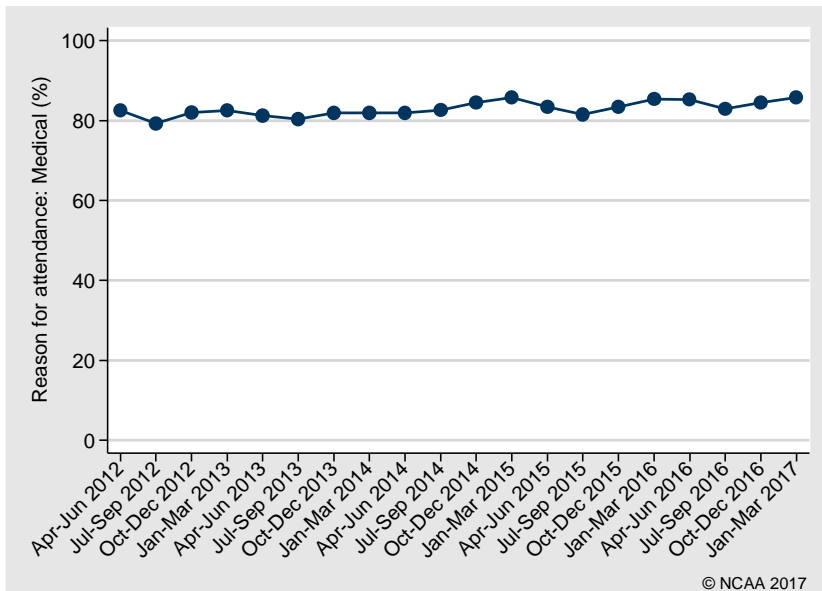
### Mean age



### Sex: Male



### Reason for attendance: Medical



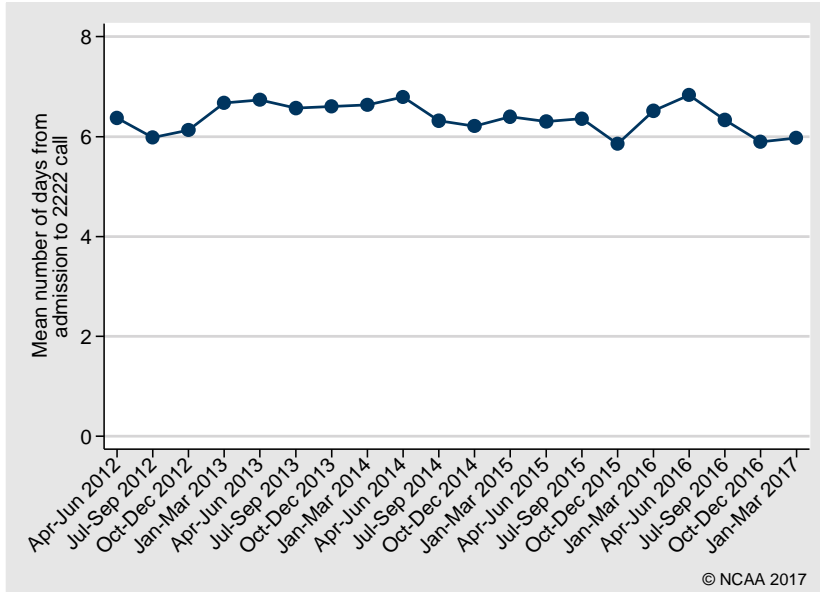
## Team visit characteristics

Number of days from admission to 2222 call, n (%)	
0	4,252 (26.2)
1	2,836 (17.5)
2-7	5,387 (33.2)
8-30	3,122 (19.3)
>30	612 (3.8)
Missing	1 (0.0)
Mean (SD)	6.3 (13.4)
Median (IQR)	2 (0, 7)
Location of arrest, n (%)	
Emergency department	1,543 (9.5)
Emergency admissions unit	1,258 (7.8)
Theatre & recovery	248 (1.5)
Imaging department	248 (1.5)
Cardiac catheter laboratory	520 (3.2)
Specialist treatment area	220 (1.4)
ICU or ICU/HDU	891 (5.5)
HDU	219 (1.4)
PICU	27 (0.2)
PHDU	15 (0.1)
Coronary care unit	1,605 (9.9)
Other intermediate care area	21 (0.1)
Obstetrics area	21 (0.1)
Ward	9,187 (56.7)
Other internal location	17 (0.1)
Clinic	63 (0.4)
Non-clinical area	106 (0.7)
Missing	1 (0.0)
Status at team arrival, n (%)	
Dead - resuscitation stopped	155 (1.0)
Resuscitation ongoing	13,714 (84.6)
ROSC achieved before team arrival	1,468 (9.1)
Deteriorating (not yet arrested)	857 (5.3)
Missing	16 (0.1)
Presenting/first documented rhythm, n (%)	
Shockable - VF	1,713 (10.6)
Shockable - VT	815 (5.0)
Shockable - unknown rhythm	72 (0.4)
Non-shockable - asystole	3,318 (20.5)
Non-shockable - PEA	8,551 (52.8)
Non-shockable - bradycardia	70 (0.4)
Non-shockable - unknown rhythm	294 (1.8)
Never determined	801 (4.9)
Unknown	576 (3.6)

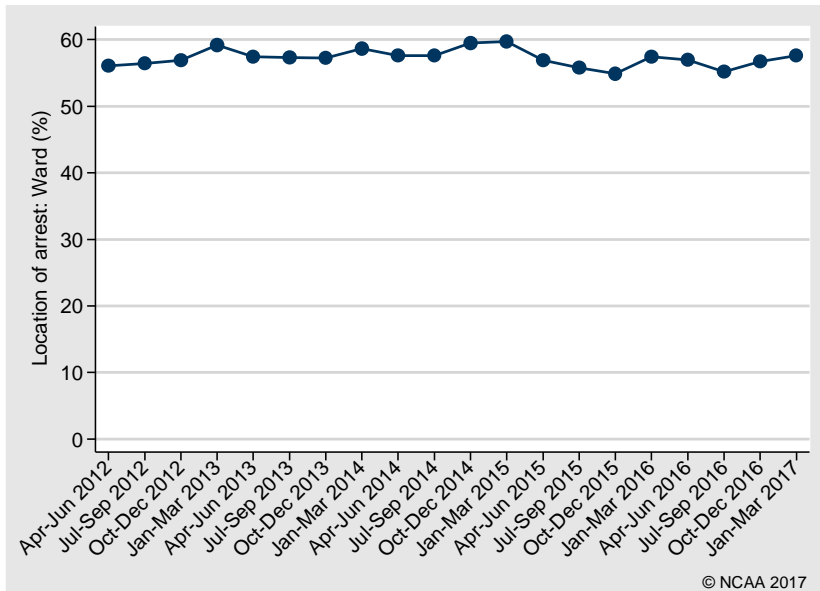
HDU, high dependency unit; ICU, intensive care unit; IQR, interquartile range; PEA, pulseless electrical activity; PHDU, paediatric high dependency unit; PICU, paediatric intensive care unit; ROSC, return of spontaneous circulation; SD, standard deviation; VF, ventricular fibrillation; VT, ventricular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

## Trends in team visit characteristics

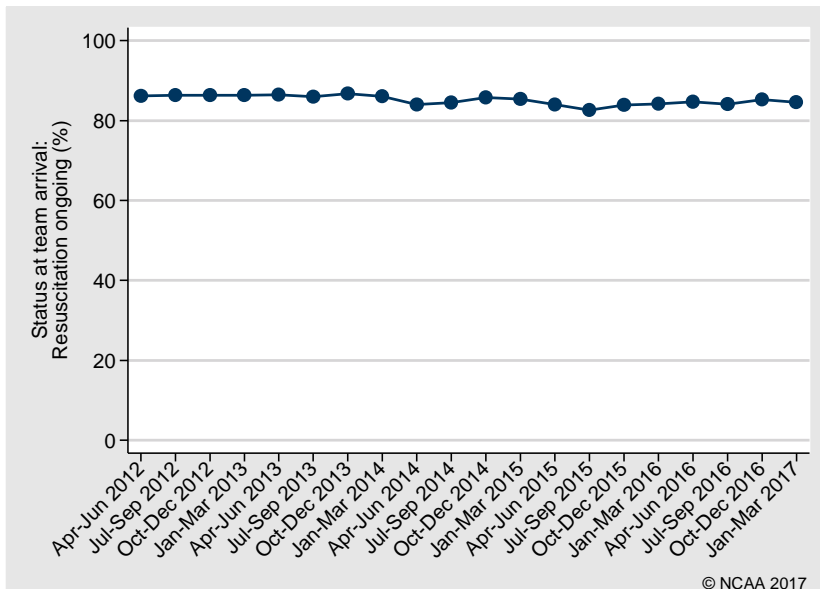
### Mean number of days from admission to 2222 call



### Location of arrest: Ward

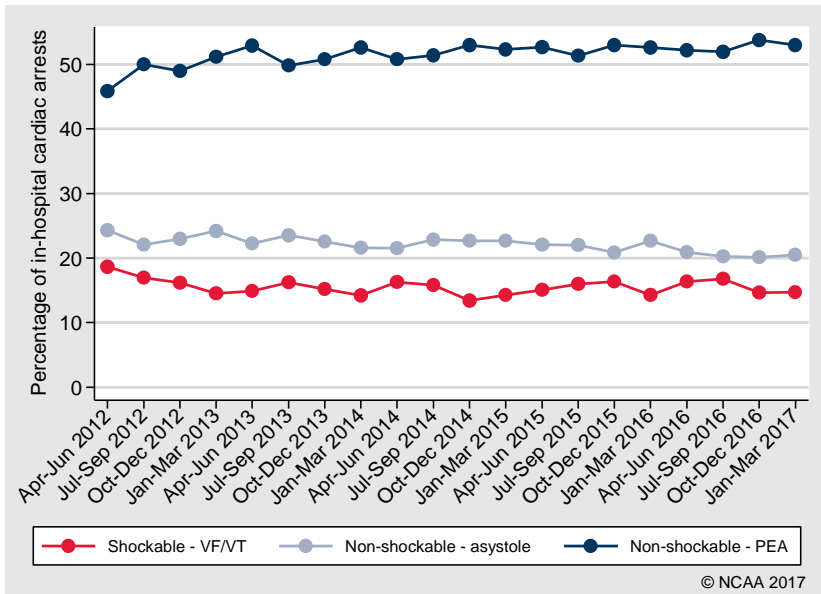


### Status at team arrival: Resuscitation ongoing





### Presenting/first documented rhythm

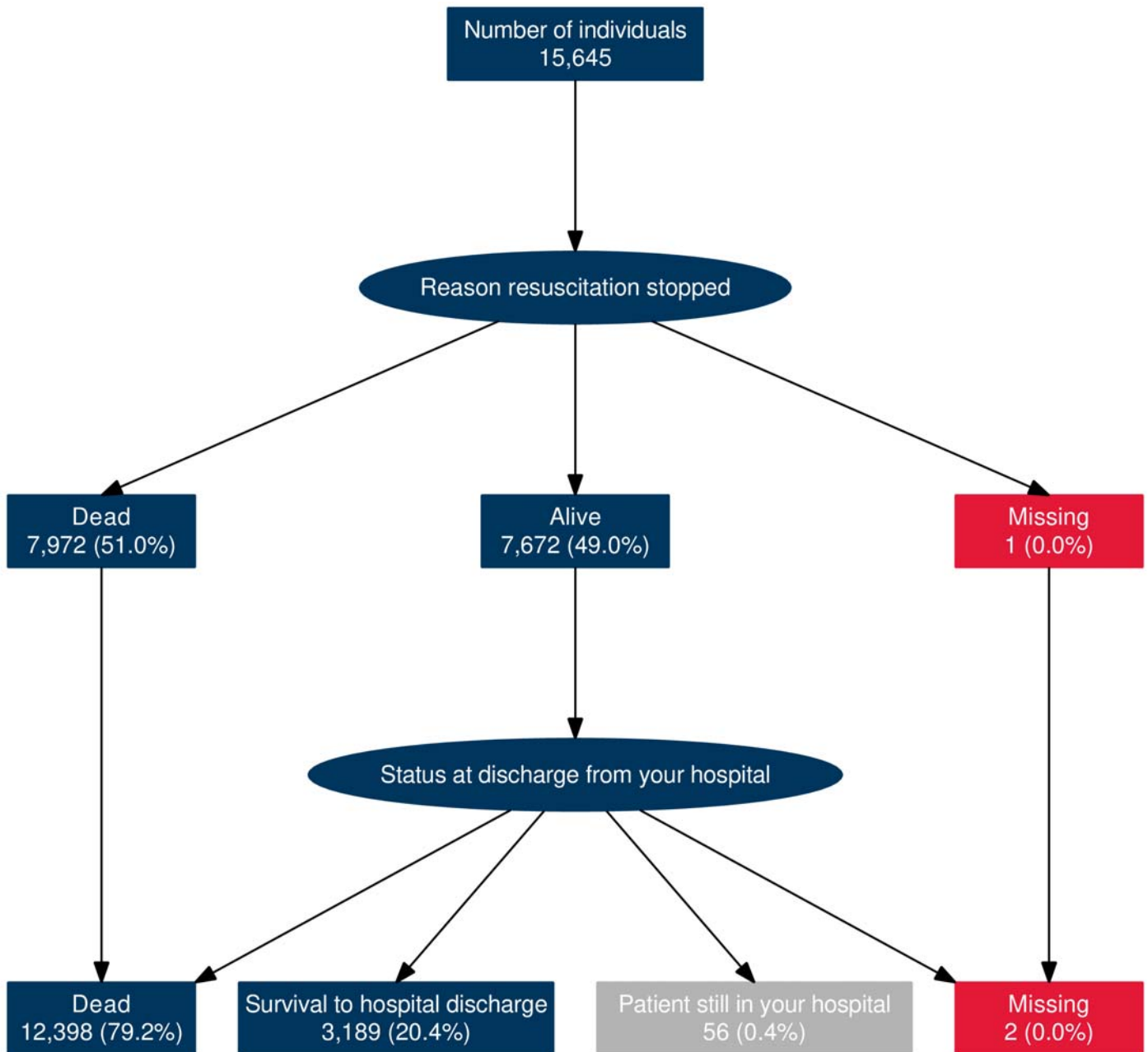


## Outcomes

Reason resuscitation stopped at end of team visit, n (%)	
Alive - ROSC > 20 minutes	8,082 (49.9)
Dead - ROSC < 20 minutes	1,002 (6.2)
Dead - no ROSC	5,857 (36.1)
Dead - DNACPR	383 (2.4)
Dead - futility	885 (5.5)
Missing	1 (0.0)
Post-arrest location, n (% of ROSC > 20 minutes)	
Emergency admissions unit	268 (3.3)
ICU or ICU/HDU	2,782 (34.4)
HDU	171 (2.1)
PICU	38 (0.5)
PHDU	8 (0.1)
CCU	1,497 (18.5)
Other intermediate care area	19 (0.2)
Obstetrics area	2 (0.0)
Ward	1,809 (22.4)
Other internal location	7 (0.1)
Mortuary	1,161 (14.4)
Other hospital	292 (3.6)
Not in hospital	27 (0.3)
Missing	1 (0.0)
CPC at hospital discharge, n (% of adult survivors)	
1	2,676 (85.0)
2	309 (9.8)
3	85 (2.7)
4	11 (0.3)
Missing	68 (2.2)

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.

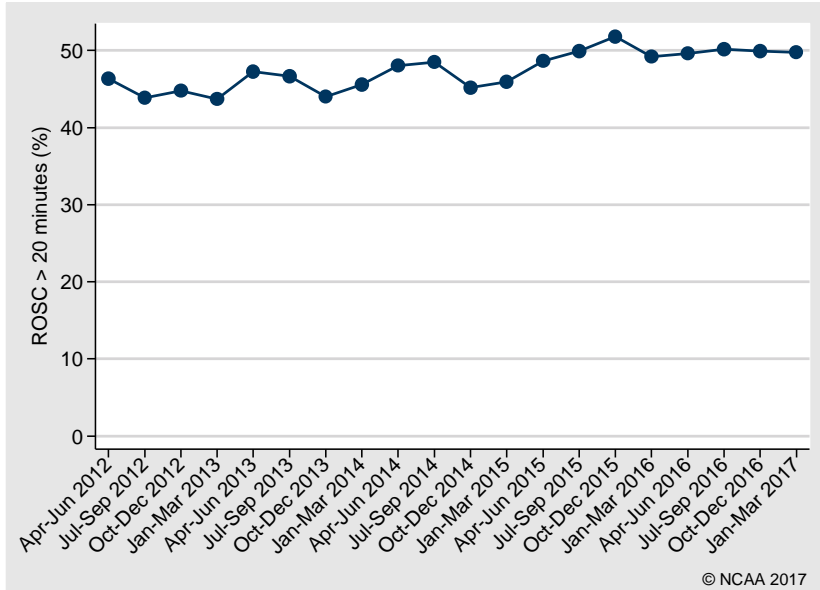
## Outcome flow



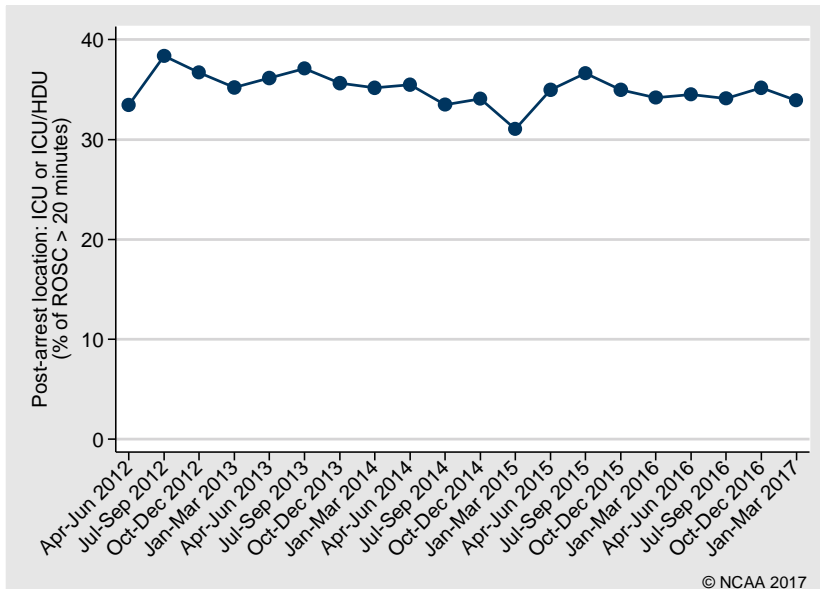
All percentages are reported as the percentage of all individuals (N=15,645).

## Trends in outcomes

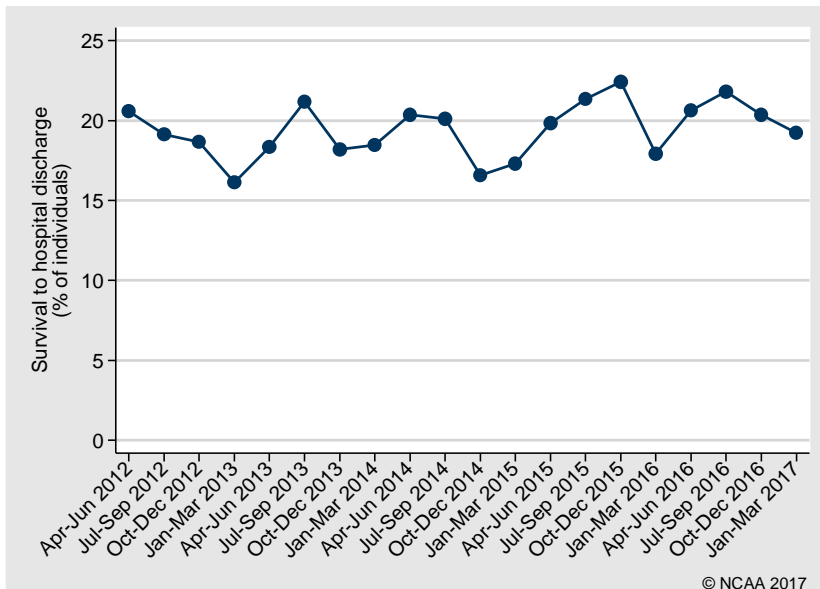
### Reason resuscitation stopped: ROSC > 20 minutes



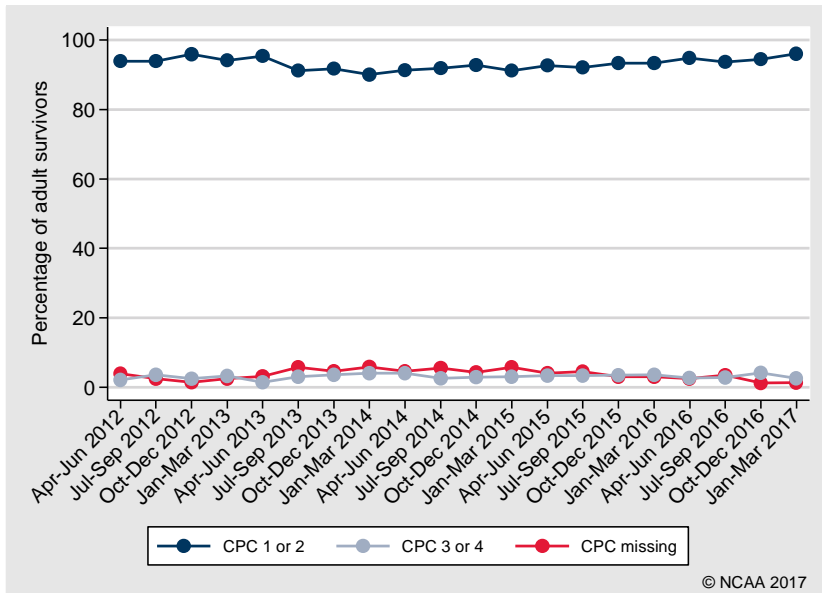
### Post-arrest location: ICU or ICU/HDU



### Survival to hospital discharge



### CPC at hospital discharge (adult 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	16,209	8,082	49.9 (49.1, 50.6)
By presenting rhythm:			
Shockable - VF/VT	2,528	1,968	77.8 (76.2, 79.4)
Non-shockable - asystole	3,318	983	29.6 (28.1, 31.2)
Non-shockable - PEA	8,551	3,947	46.2 (45.1, 47.2)
By age group (years):			
0-15	161	103	64.0 (56.3, 71.0)
16-64	3,795	2,232	58.8 (57.2, 60.4)
65-74	3,670	1,926	52.5 (50.9, 54.1)
75-84	5,073	2,423	47.8 (46.4, 49.1)
85+	3,510	1,398	39.8 (38.2, 41.5)

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

\* Excluding arrests missing reason resuscitation stopped (N=1).

### Survival to hospital discharge

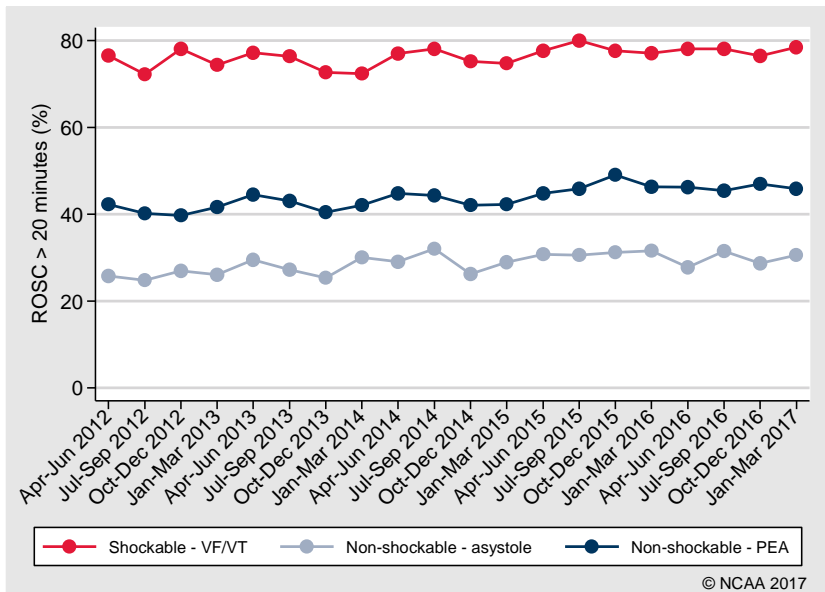
Subgroup	Number of individuals*	Number of hospital survivors	Percentage (95% confidence interval)
Overall	15,587	3,189	20.5 (19.8, 21.1)
By presenting rhythm:			
Shockable - VF/VT	2,313	1,151	49.8 (47.7, 51.8)
Non-shockable - asystole	3,236	270	8.3 (7.4, 9.3)
Non-shockable - PEA	8,268	1,089	13.2 (12.5, 13.9)
By age group (years):			
0-15	147	74	50.3 (42.4, 58.3)
16-64	3,591	1,108	30.9 (29.4, 32.4)
65-74	3,502	770	22.0 (20.6, 23.4)
75-84	4,896	838	17.1 (16.1, 18.2)
85+	3,451	399	11.6 (10.5, 12.7)

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

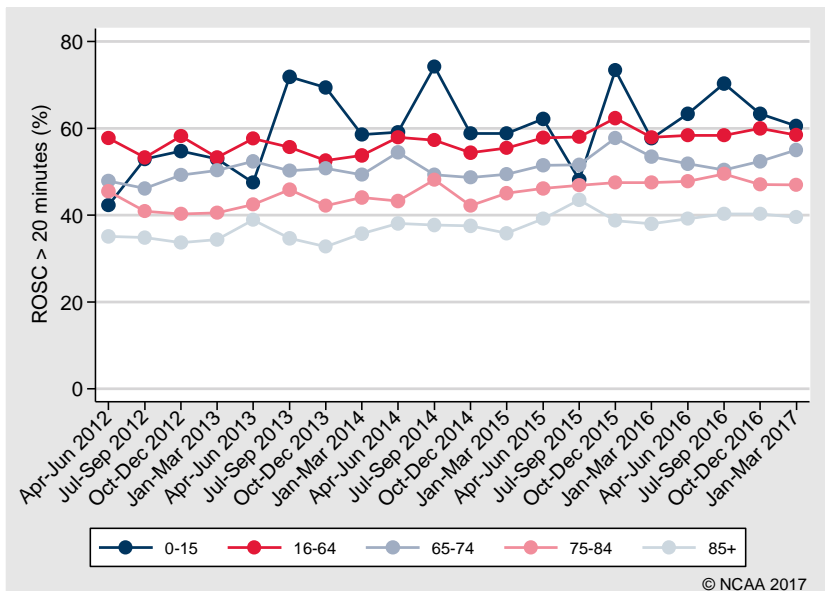
\* Excluding individuals still in hospital (N=56) or missing hospital survival (N=2).

## Trends in outcomes by patient subgroups

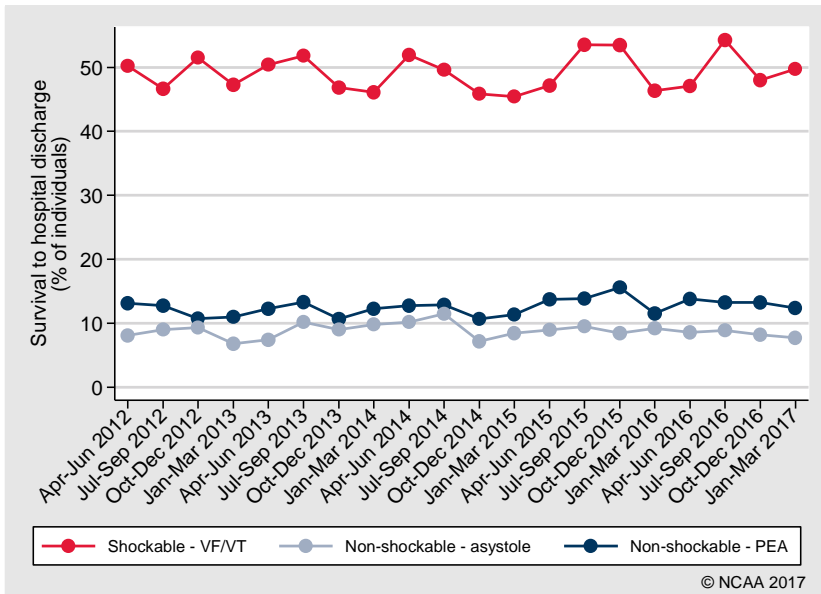
### ROSC > 20 minutes by presenting/first documented rhythm



### ROSC > 20 minutes by age group



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



### Survival to hospital discharge by age group

