Table A: Summary of unit types and patient groups

Study	Unit type/patient	Included cardiac	Other notes
	group	surgery?	
Smith et al. 1995	SICU	Ν	
Wallace et al. 2002	MICU in a Cancer centre	N	
Enohumah et al. 2006	Mixed	Ν	
Yi et al. 2006	NICU	N	
Galhorta et al. 2007	Mixed	N	
Maia et al. 2008	SICU	N	
Roessler et al. 2009	Mixed	N	
Gershengorn et al. 2012	Mixed*	Y	
Schmittinger et al. 2012	Mixed*	Y	Only reported surgical patients with cardiovascular failure treated with catecholamine vasopressors
Lee et al. 2013	Mixed	N	
Efendijev et al. 2014	Mixed*	Y	
Rozen et al. 2014	Mixed*	Y	
Haerkens et al.*** 2015	Mixed*	Y	
Flato et al. 2015	NR	NR	
Garcia Huertas et al. 2016	Mixed	N	
Chanthawong et al. 2016	SICU	N	
Perman et al. 2016	Mixed*	Y	
Miana et al. 2017	Mixed*	Y	
Cook and Thomas 2017	Mixed	N	
Quinn et al. 2017	Mixed*	Y	Only included unplanned post-operative admissions

SICU surgical ICU; MICU medical ICU; NICU neurosurgical ICU; NR not reported

Table B: Disease severity scores reported

Study	Severity score reported
Enohumah et al.	SAPS II
2006	
Gershengorn et al.	MPM0-III
2012	
Lee et al.	APACHE II

2013	
Efendijev et al.	SAPS II, APACHE II, SOFA, TISS
2014	
Rozen et al.	APACHE III
2014	
Chanthawong et al.	APACHE II, SOFA
2016	
Cook and Thomas	ICNARC
2017	

APACHE Acute Physiology, Age, Chronic Health Evaluation; SAPS Simplified Acute Physiology Score; ICNARC Intensive Care National Audit and Research Centre; SOFA Sequential Organ Failure Assessment; MPM Mortality Probability Model; TISS Therapeutic Intervention Scoring System.

Table C: Outcomes reported: survival beyond hospital discharge and neurological outcome

Study	Survival* – other	Neurological outcome*
Wallace et al. 2002	2 (28.6%) transferred to other hospitals and survived >6months; 1 (14.3%) to a rehabilitation facility and survived >2 years; 4 (57.1%) were discharged home, of whom 2 survived >3 years, others lost to follow- up	
Enohumah et		
al.		
2006		82.5% CPC 1-2; 17.5% CPC 3-4
Yi et al.		21.1% irreversibly unconscious; 10.5% persistent
2006	14 (73.7%) survived beyond 12 months	neurological deficit; 68.4% complete recovery
Gershengorn et al. 2012		20.1% of survivors functionally independent on discharge; 34.1% fully dependent
Lee et al.	32 (56.1%) of those surviving 24 hours still alive at 1	
2013	month; 27 (84.4%) of those were still alive at 3	At 3 months: 29.6% CPC 1; 18.5% CPC 2; 33.3% CPC
	months	3; 18.5% CPC 4
Chanthawong		
et al.	17 (60.7%) of those surviving 24 hours still alive at	
2016	28 days	40% CPC 1; 50% CPC 2; 0% CPC 3; 10% CPC 4
Miana et al. 2017		83.3% CPS 1-2; 16.7% CPS 3 (one was paraplegic beforehand)

*rates are of those discharged from hospital. CPC Cerebral Performance Category

Survival outcomes

The pooled 24-hour survival (n = 7) was 38.7% (95% CI 30.5-47.5 I^2 = 83.0%; *Figure A*) and ICU survival (n = 6) 26.2% (95% CI 11.3-49.8 I^2 = 96%; *Figure B*). When the centre with the lowest reported hospital and ICU survival rates, a cancer centre, was excluded the rates of ICU and hospital discharge were 37.7% (95% CI 24.6-52.9% I^2 = 87.3%) and 20.9% (95% CI 11.8-34.4% I^2 = 99.3%) respectively.

Study	24hr All	Patients	Events per 100 observations	%	95% CI
Smith 1995	23	55		41.82	[28.65; 55.89]
Wallace 2002	111	406		27.34	[23.06; 31.95]
Yi 2006	74	214	+	34.58	[28.23; 41.37]
Galhorta 2007	14	30		46.67	[28.34; 65.67]
Lee 2013	57	131		43.51	[34.88; 52.45]
Rozen 2014	24	36		66.67	[49.03; 81.44]
Chanthawong 2016	28	111		25.23	[17.46; 34.35]
Random effects mod Heterogeneity: $I^2 = 83\%$		983		38.67	[30.52; 47.50]
	,,	0	20 40 60 80	100	

Figure A: 24-hour survival across all studies

Study	ICU Survival All Pa	atients	Events per observati		%	95% CI
Wallace 2002 Enohumah 2006 Roessler 2009 Rozen 2014 Chanthawong 2016 Cook 2017	9 84 21 19 20 17	406 + 169 48 36 111 56	*		43.75 52.78 18.02	[1.02; 4.17] [41.93; 57.48] [29.48; 58.82] [35.49; 69.59] [11.37; 26.45] [18.78; 44.10]
Random effects mode Heterogeneity: $I^2 = 96\%$,		826 0	20 40 6	0 80	26.17	[11.25; 49.78]

Figure B: ICU survival across all studies

Study	Non-Shockable rhythm A	II Patients	Events p observ		%	95% CI
Enohumah 2006	104	169			61.54	[53.76; 68.91]
Yi 2006	137	199			68.84	[61.91; 75.21]
Maia 2008	0	1 '			0.00	[0.00; 97.50]
Lee 2013	108	131		- 1 -	82.44	[74.83; 88.53]
Rozen 2014	26	36			72.22	[54.81; 85.80]
Flato 2015	88	135			65.19	[56.51; 73.17]
Chanthawong 2016	113	126			89.68	[83.00; 94.39]
Perman 2016	40104	50514		+	79.39	[79.04; 79.74]
Miana 2017	203	230			88.26	[83.38; 92.12]
Random effects mode Heterogeneity: $I^2 = 90\%$,		51541			76.75	[69.93; 82.41]
······		C	0 20 40	60 80 10	00	

Figure C: Percentage non-shockable rhythm all studies

Study	ROSC AII	Patients	Events per 100 observations	%	95% C
Wallace 2002	150	406	-	36.95	[32.24; 41.85
Enohumah 2006	136	169			73.69; 86.16
Yi 2006	105	214			[42.19; 55.97
Galhorta 2007	25	30		- 83.33	[65.28; 94.36
Schmittinger 2012	4	4			[39.76; 100.00
Lee 2013	96	131			[64.85; 80.63
Rozen 2014	29	36		- 80.56	[63.98; 91.81
Haerkens 2015	21	50		42.00	[28.19; 56.79
Chanthawong 2016	42	111	_ .	37.84	[28.80; 47.54
Miana 2017	59	242	-		[19.11; 30.29
Random effects mod		1393		58.19	[43.68; 71.41
Heterogeneity: $I^2 = 95\%$,					[40.00, 71.41]

Figure D: Rates of return of spontaneous circulation (ROSC) in all studies

Study	Hospital Survival All Patie	Events per 100 ents observations	% 95% CI
Smith 1995 Wallace 2002 Enohumah 2006 Yi 2006 Galhorta 2007 Gershengorn 2012 Efendijev 2014 Rozen 2014 Chanthawong 2016 Miana 2017	1891 4 16 19	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$
Random effects mod Heterogeneity: <i>I</i> ² = 99%		998	16.99 [9.53; 28.46]

Figure E: Rates of hospital survival across all studies

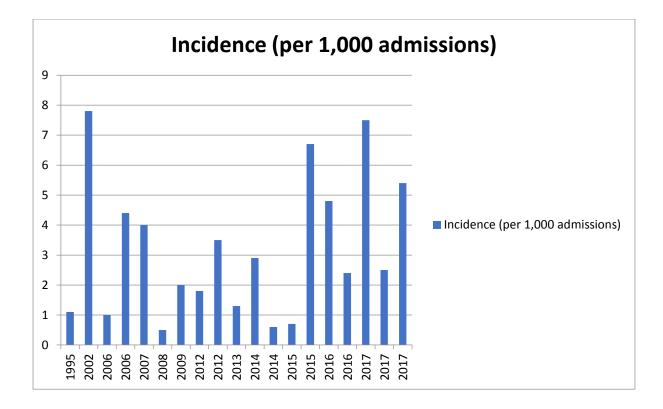


Figure F: Incidence of ICU-CA by year of reporting