Table 1: Definition of CPR, language, documentation and decision-making framework from five countries' national cardiac arrest databases compared with New Zealand.

Country	CPR definition	Phraseology	Form	Decision-making framework
US	Chest compressions and rescue breaths as intermediary measures sufficient to maintain cerebral perfusion while definitive treatment is being sought.	Cardiopulmonary resuscitation and resuscitation	Medical Order for Life-Sustaining Treatment (MOLST form)	Patient/family consent required—state-led legislature
UK	Chest compressions, defibrillation, artificial ventilation, drugs	DNACPR	DNACPR forms, advance directives or Recommended Summary Plan for Emergency Care and Treatment (ReSPECT form)	Clinician-led within a shared decision-making framework
Japan	Chest compressions and rescue breaths as intermediary measures sufficient to maintain cerebral perfusion while definitive treatment is being sought.	DNAR	Code confirmation or advance directive	Clinician-led within a shared decision-making framework
Denmark	Chest compressions and rescue breaths	Do-not-resuscitate, do-not-intubate		Clinician-led within a shared decision-making framework
New Zealand	Chest compressions and rescue breaths	DNACPR	Shared goals of care form	Clinician-led within a shared decision-making framework

CPR = cardiopulmonary resuscitation; DNACPR = do-not-attempt cardiopulmonary resuscitation; UK = United Kingdom; US = United States of America.

Table 2: Cause of cardiac arrest as determinant of outcome.

	Year	N	Study population	Condition	Outcome measure	Outcome
Nolan[1]	2014	23,554	IHCA >16 years	VT/VF	Survival to discharge (%)	49.0%
				PEA		11.4%
				Asystole		8.7%
Tian[10]	2010	49,656	First CPA in ICU	VT/VF	Survival to hospital discharge (%)	30.7/34.2%
				PEA		10.9%
				Asystole		11.1%
Bergum[11]	2015	302	IHCA >18 years of age receiving CPR +/- defibrillation	Cardiac cause	Survival to discharge (%)	30%
				Hypoxic cause		37%
				Thrombosis/PE		27%
				Cardiac tamponade		7%
				PEA		13%
				Asystole		17%
				VF		54%
				VT		53%
Wallmuller[8]	2012	1,041	IHCA in ED	Acute STEMI/NSTEMI	6-month survival + CPC 1–2 (%)	49/46%
				Adverse drug reaction/ intoxication		60%
				Accidental hypothermia		44%
				Metabolic		35%
				Pulmonary		24%
				Exsanguination		13%
				Cerebral		14%
				Sepsis		5%
				Aortic dissection/ rupture		3%
Sulzgruber[9]	2019	51	ICHA with TTE within 2 months prior to event	Aortic stenosis of any severity	Survival/adjusted odds ratio survival to discharge	19%/0.14 (0.04–0.48)

CPA = cardiopulmonary arrest; CPC = cerebral performance category; CPC 1- = good cerebral performance (normal life); CPC 2- = moderate cerebral disability (disabled but independent); CPR = cardiopulmonary resuscitation; DNAR = do-not-attempt-resuscitation; ED = emergency department; ICU = intensive care unit; IHCA = in-hospital cardiac arrest; NSTEMI = non-ST elevation myocardial infarction; PE = pulmonary embolus; PEA = pulseless electrical activity; STEMI = ST-elevation myocardial infarction; TTE = transthoracic echocardiogram; VF = ventricular fibrillation; VT = ventricular tachycardia.

Table 3: Data from the five countries with national in-hospital cardiac arrest databases.

Author Year Country	Incidence	Witnessed	Monitored	Shockable	Condition	RoSC	Survival
Tsao[12] 2022 US (n=33,874)	4.0/1,000 admissions (all cardiac arrest)		56.2%	13.7%	Overall		22.4%* (to discharge)
Peberdy[15] 2003 US (n=14,720)		86%		25%	Overall	44%	17% (to discharge)
					VT/VF	63/58%	35/34%
					Asystole	35%	10%
					PEA	39%	10%
Andersen[16] 2019 Denmark (n=4,069)		77%		18%	Overall	53.8%	27.8% (30 day)
					Shockable	81.7%	57.6%
					Non-shockable	41.8%	16.1%
Nolan[1] 2014 UK (n=22,628)	1.6/1,000 admissions (only cardiac arrest attended by team†)		44%	16.9%	Overall	45%	18.4% (to discharge)
					VT/VF	76%	49%
					Asystole	26.2%	8.7%
					PEA	40.9%	11.4%
Ohbe[17] 2022 Japan (n=274,664)	5.1/1,000 (all cardiac arrest)				Overall		12.7% (to discharge)
					Patients with defibrillation		23.3%
					Patients without defibrillation		10.5%
Hessulf[4] 2018 Sweden (n=18,069)	1.7/1,000 all cardiac arrest	81%	50%	32%			28.5% (30 day)
Adielsson[5] 2020 Sweden (n=23,186)		79.3%		26.3%	Overall	52.2%	30% (30 day)
					Shockable	79.4%	60.6%
					Non-shockable	38.2%	16.9%

RoSC = Return of Spontaneous Circulation; PEA = pulse electrical activity; UK = United Kingdom; US = United States of America; VT = ventricular tachycardia; VF = ventricular fibrillation.
*First decline in in-hospital cardiac arrest survival since records began reflecting the COVID-19 pandemic.
†UK registry data excludes episodes treated by base teams such as those in coronary care or operating theatres.

Figure 1: Kaplan–Meier curves for survival after cardiac arrest, stratified by calendar year at the time of arrest and on the basis of the monitoring level of the ward.

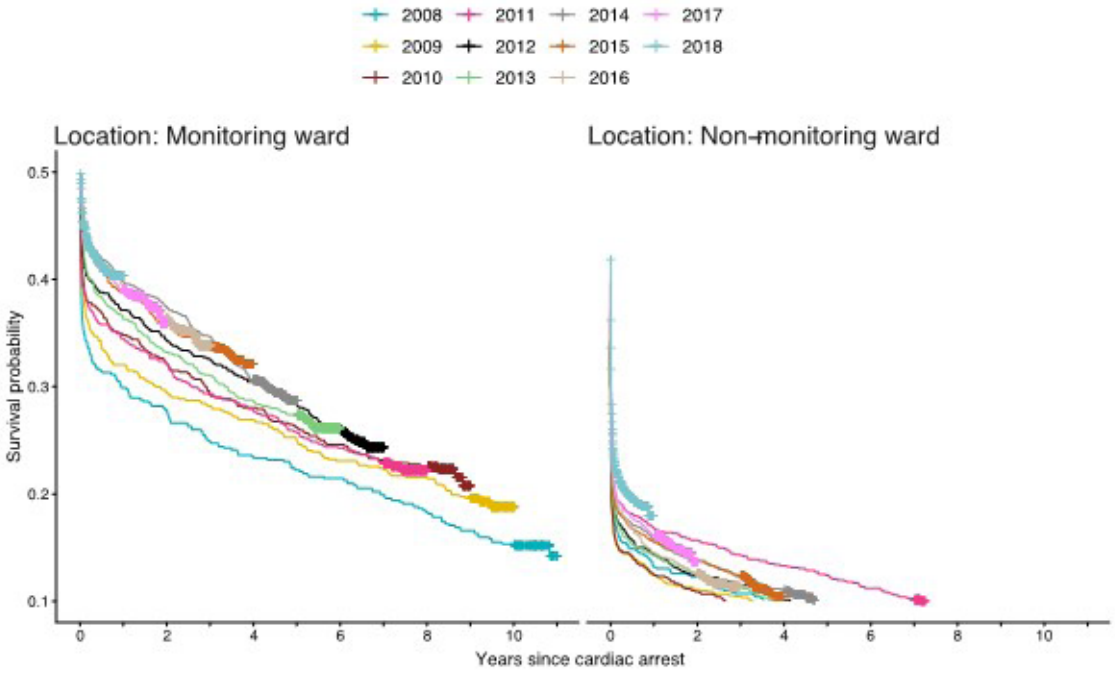

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Table 4: Patient factors associated with survival after in-hospital cardiac arrest.

	Study population	Condition	Outcome measure	Outcome
Smith[22] 2019 (n=318)	All IHCA cardiac arrests in tertiary centre	Hospital Frailty Risk score ≥5	% Discharged home (unadjusted OR, 95% CI)	4% (OR 0.13, 0.04–0.41, p<0.001)
		Previous hospital admission		15% (OR 0.54, 0.31–0.95, p=0.03)
		Unplanned admission		16% (OR 0.41, 0.25–0.67, p<0.001)
Hirlekar[23] 2017 (n=11,396)	IHCA >70 Swedish CPR register	70–79 years	% 30-day survival	28%
		80–89 years	% 30-day survival	20%
		>90 years	% 30-day survival	14%
		Prior HF	Unadjusted OR 30-day survival	OR 0.71 (0.65–0.78)
		Prior diabetes		OR 0.87 (0.78–0.96)
		Prior respiratory failure		OR 0.49 (0.43–0.55)
		Prior malignancy		OR 0.7 (0.62–0.79)
		Prior renal dysfunction		OR 0.54 (0.49–0.59)

CPA = cardiopulmonary arrest; CPR = cardiopulmonary resuscitation; HF = heart failure; ICU = intensive care unit; IHCA = in-hospital cardiac arrest.