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Ethics, orthodoxies and defensive practice: a cross-sectional survey of nurse's decision-making surrounding CPR in deceased inpatients without Do Not Resuscitate orders

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Abstract

Background In hospital, nurses are often the first to identify patients in cardiorespiratory arrest and must decide whether to call a CODE BLUE and commence cardiopulmonary resuscitation (CPR). In Australia, there are no legal or policy obligations to commence CPR when unequivocal signs of death are present. The use of CPR where it cannot provide any benefit to a patient raises profound questions about decision-making and ethical practice. The aim of this empirical ethics study was to describe hospital-based nurses' decision-making, perspectives, and experiences of initiating CPR in hospitalised patients who have unequivocal signs of death but lack a Do-Not-Resuscitate (DNR) order.

Methods The study was a multisite cross-sectional descriptive survey conducted between October 2023—April 2024. Nurses were presented with two clinical scenarios in which patients were found to have no signs of life: Mr. D, an 84-year-old male with cancer, and Mr. G, a 35-year-old male post-motor vehicle accident. Eligible participants were all nurses working in in-patient units. Descriptive statistics, Pearson Chi-square or Fisher's exact tests, McNemar test, and binomial logistic regression were used to analyse the data.

Results 531 nurses completed the survey. For Mr D, 61.5% ($n=324$) would call a CODE BLUE, 24.1% ($n=127$) would perform limited CPR. Only 14.4% ($n=76$) would confirm death. For Mr G, 93.9% ($n=492$) would call a CODE BLUE, 4.4% ($n=23$) would perform limited CPR, and 1.7% ($n=9$) would confirm death. The major reasons why nurses initiate a CODE BLUE were 'In the absence of an DNR order, there is no option but to begin CPR', 'I am required by hospital policy to do so', 'I am required by law to do so' and 'It is what I was trained to do'.

Conclusions Most nurses would commence CPR in patients with clear signs of death in the absence of a DNR order. This seems most likely related to ignorance or misunderstanding of law, policy and/or the misapplication or professional norms. These results raise important questions about the drivers of nurses understanding of and engagement with CPR. This highlights ethical concerns for care and treatment of patients at the end of their life and underscores

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the need to examine ethical practice, agency, and professionalism and supports review of policy, practices and education regarding ethical end-of-life decision making and care.

Keywords Cardiopulmonary resuscitation, Cross-Sectional studies, Decision making, Defensive medicine, Ethics, Nursing, Resuscitation orders

Introduction

Cardiopulmonary resuscitation (CPR) has been a universally taught and widely advocated treatment for cardiorespiratory arrest for more than half a century [1]. It can be highly effective in some patient populations, such as following acute myocardial infarction. However, CPR is less effective where patients have multiple or severe comorbidities, experience out-of-hospital cardiac arrest, or have experienced prolonged asystole, and generally ineffective in cases of where patients have severe life limiting conditions such as metastatic carcinoma. For in-hospital cardiac arrest, survival until discharge has been estimated to be within the range of 13% to 18%, while less than 2% of patients with organ failure or significant comorbidity survive six months or more [2, 3]. The use of CPR in inappropriate clinical settings is a likely contributor to these poor results. CPR may also be associated with a range of complications, including rib and sternal fractures, pneumothorax, and hypoxic brain injury [4]. Additionally, CPR may cause other 'moral' harms including psychological and emotional harm to family members, moral distress in healthcare workers, particularly nurses, disrespect towards the deceased person, and misuse of resources [5–8].

While advance care planning and do not resuscitate (DNR) orders, variously known as Do Not Attempt Resuscitation (DNAR), Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) or Not for Resuscitation (NFR) orders, have been implemented in most health systems [1, 9], these may be non-existent or incomplete when cardiac arrest occurs. DNR orders are also irrelevant where CPR would be unequivocally futile, such as when a patient has suffered an unwitnessed arrest and shows clear signs of having been dead for some time.

In situations where cardiac arrest is unexpected and/or where patients have not formally documented their preferences regarding CPR, health care professionals need to determine whether a cardiac arrest call (a 'CODE BLUE') should be made, and CPR initiated [10, 11].

In Australia, there are no legal or institutional policy obligations to commence CPR when clear signs of death are present, such as in cases of non-survivable trauma or when rigor mortis and postmortem lividity are evident [12, 13]. The same is true in many other countries, with Resuscitation Council UK Guidelines stating that clinicians should 'not offer cardiopulmonary resuscitation in cases where resuscitation would be futile'; and the American Heart Association recommending not to initiate resuscitation if there are 'overt clinical signs of irreversible death' [14, 15]. Many authorities expressly recognize that there is no duty of care and allow for CPR to be withheld by healthcare workers, including emergency medical system personnel [7] when clinically obvious signs of death are present. Moreover, there are numerous health policy documents in Australia that explicitly recognize that there is no duty to commence CPR on patients who have been dead for some time [7]. Nonetheless, there is anecdotal evidence that futile CPR is sometimes conducted and that healthcare workers commonly believe that CPR must routinely be attempted [7]. Such beliefs may result from professional misconceptions about the 'duty of care', an overestimation of the benefits of CPR, ignorance of relevant laws and policies, and defensive clinical practice (which refers to clinical actions taken by health practitioners to protect themselves or their institutions against some adverse outcome) [16–19] In the hospital setting, nurses are often the first to identify a patient in cardiorespiratory arrest and must decide whether to call a CODE BLUE and initiate CPR [10, 16]. In these settings, nurses may also make a decision to initiate 'limited' CPR as a way of dealing with the moral dissonance that arises when CPR is understood to be futile, but the patient's wishes are uncertain or undocumented. This includes 'slow codes' (performing all required CPR actions in slow motion),'partial codes'(selective use of CPR techniques),'chemical codes'(administering lifesaving medications without chest compressions), and'show codes'(initiating resuscitation efforts for the benefit of others rather than the patient) [18, 20–22].

This study aimed to explore and describe nurses decision-making about the initiation of CPR in patients with clear and unequivocal signs of death and no documented DNR order using hypothetical clinical scenarios. It also sought to understand how their decisions are shaped by policy, institutional culture, professional norms, the law and their experience.

Methods

Study design

This was an empirical ethics study [23, 24] that sought to derive normative and conceptual insights from results of an anonymous online cross-sectional survey

undertaken between October 2023 and April 2024. Data were collected using REDCap [25]. The results have been reported following the STROBE guidelines [26].

Setting

Eligible participants were nurses working in adult medical and surgical in-patient units in five public hospitals in Sydney, Australia.

Study instrument

The survey instrument was developed based on a review of the literature and in discussion with the research team. It comprised 21 questions; the first seven questions explored participant demographics including gender, age, education level, professional role, area of practice, years of experience, and prior CPR training. Participants were then presented with two hypothetical clinical scenarios that each described a patient with clear signs of death (e.g. unresponsive, cold, cyanosed, pulseless, and stiff) and no DNR order. Respondents were then asked two questions about how they would respond and the reasons behind their decisions. The final twelve questions explored participants' knowledge, experiences and attitudes regarding the initiation and non-initiation of CPR. The survey used tick-box and free-text responses and took approximately 10 min to complete (Table 1 and Appendix A). Prior to commencing the study, the survey was pilot tested with 6 nurses external to the research team who reviewer it for face and content validity. No changes to the survey were required following pilot testing.

Recruitment

The survey was distributed via REDCap, with the link shared through internal hospital emails. Study flyers containing QR codes were also circulated during staff meetings, posted on hospital social media platforms, and displayed in high-visibility areas within the hospitals, such as staff rooms, education areas, and restrooms.

The QR code directed participants to the survey, which included a participant information sheet explain the study and outlining the voluntary nature of participation. By completing the survey, participants provided their implied consent to take part in the research. The survey remained open at each site for 6 weeks, during which two reminders were sent at two-weekly intervals.

Ethical considerations

The study protocol was approved by the South Eastern Sydney Local Health District (SESLHD) Human Research Ethics Committee (HREC) (Reference: 2023_ETH01759), and was conducted in accordance with the Declaration of Helsinki. Participants were advised via the Participant Information Sheet that completion of the survey constituted implied informed consent as per ethics approval.

Data analysis

Descriptive statistics were used to describe the study sample demographics, experience, knowledge and attitudes toward CPR, and scenario responses. Odds ratios (OR) and 95% confidence limits, and Pearson Chi-square test or Fisher's exact tests were used for comparative analysis of dichotomous categorical variables. The McNemar test was used to assess for significant differences in the choice and reasons to perform full CPR between scenarios. Binomial logistic regression analyses were used to adjust for confounders and to ascertain independent associations of explanatory variables with the decision to commence full CPR versus not commencing full CPR (e.g. limited CPR and those who chose to confirm death).

A two-tailed P value < 0.05 was used as the level of statistical significance. Statistical analysis was performed using IBM Statistical Package for the Social Sciences (SPSS©, Version 28.0).

Philosophical reflection on the results was conducted by the entire team drawing on normative philosophy, and literatures of professionalism, legal philosophy, and

Table 1 Hypothetical scenarios used in the survey

Scenario 1: Mr D is an 84-year-old man who was admitted to your ward with severe back pain from a pathological fracture of the pelvis, due to widely metastatic non-small-cell lung cancer. He has been given appropriate pain relief by the palliative care team, but has continued to deteriorate, experiencing agitated delirium, and becoming progressively weaker. Following discussion of his prognosis with the patient and his family, plans have been made for Mr D to be discharged for end-of-life care at home. However, a formal DNR order has not been documented, pending the arrival of interstate relatives. He has no Advance Care Directive (ACD). In preparation for discharge, he is on twice daily observations
On the twelfth day of his admission, you enter Mr D's room after handover, to find him unresponsive, cold, cyanosed, pulseless, and stiff

Scenario 2: Mr G is a previously well, 35-year-old man, admitted after a motor bike accident, with multiple rib fractures, a pelvic fracture, and a femoral shaft fracture, for which he has had surgery (undergone internal fixation). After 4 days in Intensive Care Unit (ICU), he is transferred to your ward for his ongoing treatment. He has been managed with appropriate pain relief, thromboembolic deterrent (TED) stockings, and deep-vein thrombosis (DVT) prophylaxis. He is tolerating an oral diet, and there have been no major concerns raised about him. He is expected to make a good recovery and has been on routine four hourly observations
On the fourteenth day of his admission, you enter Mr G's room after handover, to find him unresponsive, cold, cyanosed, pulseless, and stiff

clinical reasoning, and the principles of wide reflective equilibrium [27].

Results

Demographics

Five hundred and thirty-one nurses completed the questionnaire, representing 10.8% of the eligible population (n = 4,902) (Fig. 1). Of those respondents, 466 (88.6%) were female, and the majority were Registered Nurses (RNs) (55.5%) aged between 21 and 30 years (40.5%). The highest level of education for most was a bachelor's degree (49%). Most participants (58.3%) had < 10 years of experience as a nurse, with Basic Life Support (BLS) certification as the highest level of CPR training (62.9%) (Table 2).

Knowledge, attitudes and experience of CPR

Almost three quarters of respondents (390, 73.6%) had experience in initiating a CODE BLUE. The majority of respondents overestimated the likely success of CPR or professed to not knowing how often CPR was effective at achieving return of spontaneous circulation (ROSC) or enabling patients to be discharged home (Table 2).

When respondents were asked if they had ever made a decision NOT to commence CPR in the absence of a DNR order, more than 90% (487, 91.9%) indicated they had never made such a decision. Only 7.2% (n = 38) had ever made decision not to commence CPR. Of these 29 (76.3%) had done so 1–2 times, and 9 (23.7%) had done so 3–10 times.

Of the 38 who reported that they had made a decision not to commence CPR, the majority 75.3% (n = 29) reported receiving supportive comments from colleagues and the patient's family/friends with fewer receiving critical/negative responses (6, 15.8%).

When asked who respondents thought should make decisions about NOT commencing CPR in patients clear signs of death but without a DNR order, 90.6% (n = 480) thought this should be a doctor (Table 2).

Responses to Scenario 1, Mr D, an 84yo man with metastatic prostate cancer

When respondents were asked what they would do upon finding Mr D with clear signs of death, 61.5% (n = 324) indicated they would call a CODE BLUE and commence full CPR, while 24.1% (n = 127) would perform a form of 'limited CPR'. Only 14.4% (n = 76) indicated they would

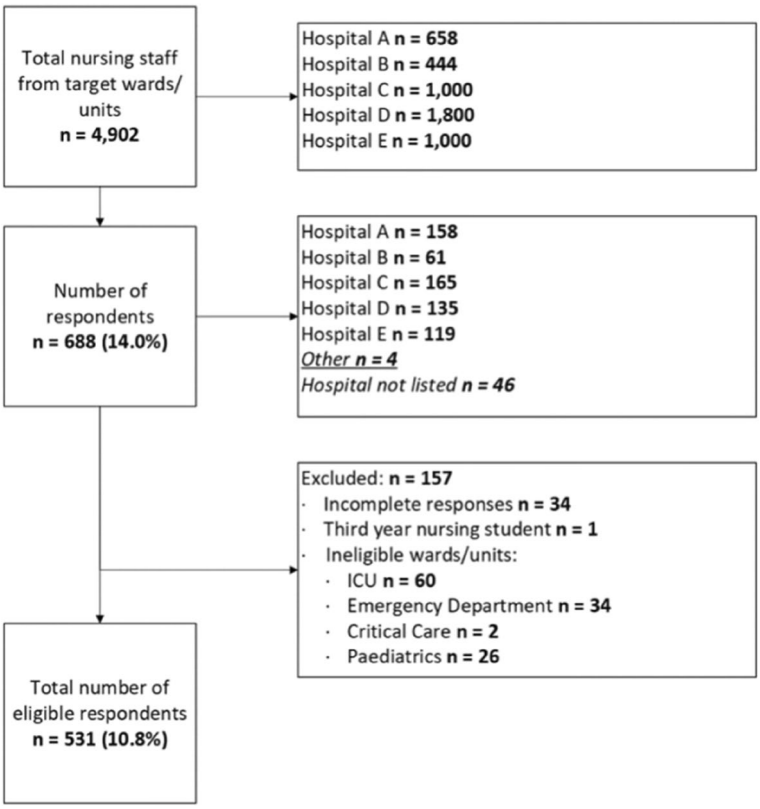

Fig. 1 Study Flowchart

Table 2 Participant demographics and knowledge of CPR Outcomes

	n	%
Gender *(n = 526)*		
Female	466	88.6
Male	54	10.3
Non-binary	2	0.4
Prefer not to say	4	0.8
Age group (years) *(n = 526)*		
< 30 years old	218	41.4
31–50 years old	222	42.2
> 51 years old	86	16.3
Professional designation/title *(n = 528)*		
Pre-Registration (e.g. Assistant in Nursing/Enrolled Nurse)	44	8.3
Registered Nurse/Midwife	379	71.8
Advanced Practice Nurse	105	19.9
Highest level of Education *(n = 525)*		
Technical college	42	8.0
Bachelor's degree	257	49.0
Postgraduate degree	226	43.0
Area of practice *(n = 531)*		
Surgery	165	31.1
Cardiology/respiratory	81	15.3
General Medicine/Aged care/Neurology	108	20.3
Oncology/haematology/palliative care	54	10.2
All other specialities	123	23.2
Years of experience in nursing *(n = 528)*		
< 2 years	78	14.8
2–5 years	117	22.2
6–10 years	114	21.6
11–20 years	101	19.1
21–30 years old	72	13.6
> 30 years	46	8.7
Highest level of CPR training *(n = 506)*		
Basic life support	318	62.8
Advanced life support	188	37.2
Ever initiated CPR *(n = 526)*		
Yes	390	74.1
No	136	25.9
Knowledge of CPR outcomes		
% of CPR attempts that achieve ROSC *(n = 388)*		
< 5% of the time	72	18.56
< 20% of the time	56	14.43
< 50% of the time	52	13.40
50–80% of the time	63	16.24
> 80% of the time	73	18.81
I don't know	72	18.56
% of CPR attempts that result in the patient being discharged from hospital *(n = 386)*		
< 5% of the time	89	23.06
< 20% of the time	44	11.40
< 50% of the time	32	8.29
50–80% of the time	42	10.88

Table 2 (continued)

	n	%
> 80% of the time	38	9.84
I don't know	141	36.53
Who do you think should make the decision NOT to commence CPR in people without signs of life but without a CPR order? *(multiple responses were possible)*		
Doctor	480	90.6
Senior Nurse	132	24.9
Other (including next of kin)	42	7.9

CPR cardiopulmonary resuscitation, *ROSC* return of spontaneous circulation

confirm that Mr D was dead and call the medical team to report death (Fig. 2).

Of the 324 respondents who indicated they would commence full CPR, when asked to indicate their reasons for doing so, the top five reasons selected were: 'In the absence of an DNR order, there is no option but to begin CPR (294, 90.7%), 'I am required by hospital policy to do so' (212, 65.4%), 'I am required by law to do so' (171, 52.8%), 'It is what I was trained to do' (101, 31.1%) and 'Doing so enables me to fulfil my duty of care to the patient' (100, 30.8%) (Table 3).

Of the 203 (38.5%) who choose not to commence full CPR, the five most frequent reasons for not doing so were: 'Doing this would cause harm to the patient's dignity' (120, 59.1%), 'Doing so would be unethical' (108, 53.2%), 'Doing so would be futile' (105, 51.7%), 'Commencing CPR in this situation is not the right thing to do' (102, 50.2%) and 'Doing so would be disrespectful' (89, 43.8%) (Table 4).

Responses to Scenario 2, Mr G, a 35yo man post-surgery after motor vehicle accident

When respondents were asked what they would do upon finding Mr G with clear signs of death, 93.9% ($n=492$) indicated they would call a CODE BLUE and commence full CPR, 4.4% ($n=23$) indicated they would perform a 'limited' form of CPR, and only 1.7% ($n=9$) indicated they would confirm that Mr G had no signs of life and call the medical team to report death (Fig. 2).

Of the 492 respondents who indicated they would commence full CPR, when asked to indicate their reasons for doing so, the top five reasons selected were: 'In the absence of an DNR order, there is no option but to begin CPR' (303, 61.5%), 'I am required by hospital policy to do so' (300, 60.9%), 'Doing so enables me to fulfil my duty of care to the patient' (283, 57.5%). 'I am required by law to do so' (232, 47.1%), and 'It is what I was trained to do' (218, 44.3%) (Table 3).

Of the 32 (6.1%) who choose not to commence full CPR, the most frequent reasons for not doing so were:

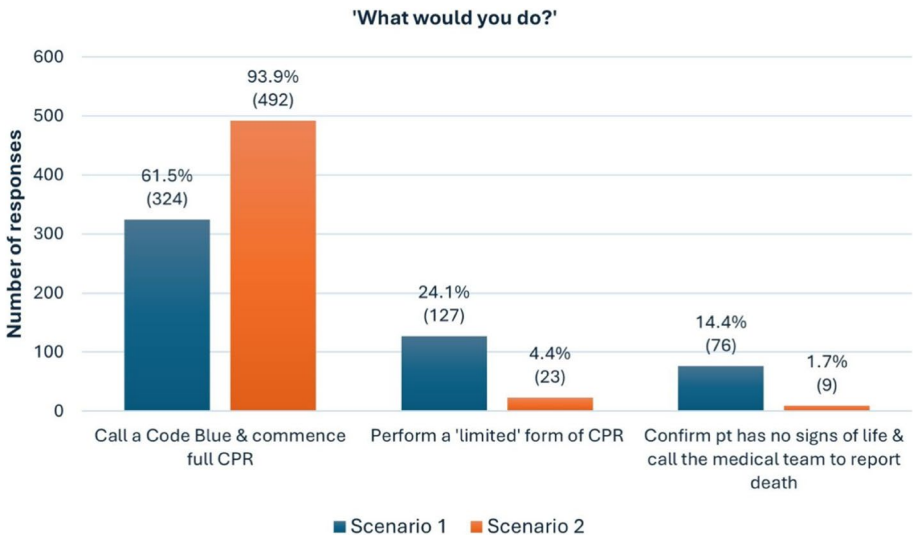

Fig. 2 Responses to 'What would you do?' for both scenarios. Scenario 1 = Mr D, an 84 yo man, Scenario 2 = Mr G, a 35yo man, pt = patient, CPR = cardiopulmonary resuscitation

Table 3 Reason for commencing Full CPR in the absence of a DNR order

	Scenario 1, Mr D (*n* = 324, 61.5%)		Scenario 2, Mr G (*n* = 492, 93.9%)		Difference % (S2—S1)	McNemar's Test Statistic	*p* value
	n	%	*n*	%			
It is the ethical thing to do	61	18.83	199	40.45	21.62	111.720	< 0.001
Doing so would be respectful	7	2.16	57	11.59	9.42	42.875	< 0.001
Doing so enables me to fulfil my duty of care to the patient	101	31.1	285	57.93	26.75	150.581	< 0.001
I am required by hospital policy to do so	212	65.43	301	61.18	−4.25	54.922	< 0.001
I am required by law to do so	171	52.78	233	47.36	−5.42	35.104	< 0.001
It is important to'do something'- even if it is likely to be futile	45	13.89	84	17.07	3.18	15.527	< 0.001
It is what my colleagues would expect/approve of	24	7.41	74	15.04	7.63	37.516	< 0.001
It is what my supervisors/managers would expect/approve of	50	15.43	99	20.12	4.69	33.391	< 0.001
It is what the patient's family would expect/approve of	20	6.17	138	28.05	21.88	105.300	< 0.001
I am not legally permitted to certify death	113	34.88	125	25.41	−9.47	1.551	0.213
I am not confident I can determine if a patient is dead	18	5.56	28	5.69	−0.14	3.115	0.078
It is what I and my colleagues usually do in this situation	28	8.64	81	16.46	7.82	37.041	< 0.001
It is what I was trained to do	101	31.17	218	44.31	13.14	82.552	< 0.001
It is what the patient would want	5	1.54	108	21.95	20.41	94.450	< 0.001
It is what the family would want	7	2.16	96	19.51	17.35	78.2232	< 0.001
In the absence of a DNR order, there is no option but to begin CPR	294	90.74	303	61.59	−29.16	0.379	0.538
It is what a good nurse would do	11	3.40	65	13.21	9.82	45.306	< 0.001
It is important to me to feel like a good nurse	5	1.54	22	4.47	2.93	34.388	< 0.001*

* Exact *p* value calculated, *CPR* cardiopulmonary resuscitation, *DNR* do not resuscitate

'Doing so would be futile' (19, 59.3%), 'Doing this would cause harm to the patient's dignity' (12, 37.5%), 'Commencing CPR in this situation is not the right thing to do' (12, 37.5%), 'Doing so would be unethical' (8, 25.0%), and 'There is no duty of care to commence CPR in a patient who is already dead' (7, 22.6%), and 'I am confident I can determine when a patient is dead' (7, 22.6%) (Table 4).

Associations and responses to scenarios

Associations were found between the decision to commence Full CPR and gender (female) (Mr G, $P = 0.042$), years of experience (Mr D, $P = 0.006$), highest level of education (Mr D, $P = 0.004$), and area of practice (haematology/oncology/palliative care vs aged care vs all other specialities) (Mr D, $P = < 0.001$). No such associations were found for age, professional title, or previous experience with initiating CPR (Table 5).

Between scenario differences

Exact McNemar's χ^2 tests were run to determine if there was a difference in the proportion of participants who would perform full CPR in Scenario 1 compared to Scenario 2, and if there were differences in the reasons respondents choose (or not) to do full CPR between scenarios. The proportion of people who would perform full CPR increased by 32.1% between Scenario 1 and Scenario 2 ($P < 0.0005$). There were statistically significant differences between scenarios for all reasons in choosing to commence full CPR with the exception of: 'In the absence of a DNR order, there is no option but to being CPR' ($P = 0.538$),'I am not legally permitted to certify death' ($P = 0.213$), and 'I am not confident I can determine if a patient is dead' ($P = 0.078$) (Table 3). There were many non-statistically significant reasons for NOT commencing full CPR between scenarios, however as groups were smaller, it is more difficult to make any conclusions about this (Table 4).

Regression analysis

A binomial logistic regression analysis was performed to ascertain the effects of gender, age, years of experience, highest level of education, area of practice, professional role, highest level of CPR training and previous experience with initiating CPR on the decision to commence full CPR.

For Scenario 1, Mr D the logistical regression model was statistically significant, χ^2 (18) = 59.271, $P < 0.005$. The model explained 14.7% (Nagelkerke R^2) of the

Table 4 Reason for NOT commencing full CPR

	Scenario 1, Mr D (*n* = 203, 38.5%)		Scenario 2, Mr G (*n* = 32, 6.1%)		Difference % (S2—S1)	McNemar's Test Statistic	*p* value
	n	%	*n*	%			
Doing so would be unethical	108	53.20	8	25	−28.21	92.462	< 0.001
Doing so would be futile	106	52.22	19	59.38	−0.16	73.228	< 0.001
Doing so would be disrespectful	89	43.84	6	18.75	−25.09	77.287	< 0.001
Doing so would cause (moral) harm to nursing staff	45	22.17	6	18.75	−3.42	35.220	< 0.001
Doing this would cause harm to the patient's dignity	120	59.11	12	37.5	21.61	104.082	< 0.001
There is no duty of care to commence CPR in a patient who is already dead	26	12.81	8	25	12.19	11.115	< 0.001
Commencing CPR in this situation is not the right thing to do	103	50.74	12	37.5	−13.24	78.641	< 0.001
There is no legal obligation to commence CPR in situations like this	9	4.43	2	6.25	1.82	3.273	0.065*
Hospital policy does not require commencing CPR in situations like this	5	2.46	1	3.13	0.66	1.500	0.219*
It is what my colleagues would expect/approve of	8	3.94	0	0	−3.94	6.125	0.008*
It is what my supervisors/managers would expect/approve of	4	1.97	1	3.13	1.15	0.800	0.375*
It is what the patient would have wished	65	32.02	0	0	−32.02	63.015	< 0.001
It is what the patient's family would expect/approve of	51	25.12	0	0	−25.12	49.020	< 0.001
I am confident I can determine when a patient is dead	48	23.65	7	21.88	−1.77	39.024	< 0.001
It is what my colleagues and I usually do in this situation	4	1.97	0	0	−1.97	2.250	0.125*
It is what I was trained to do	8	3.94	2	6.25	2.31	2.500	0.109*
It is what a good nurse would do	16	7.88	1	3.13	−4.76	13.067	< 0.001*
It would make it easier for me to process a patient's death	5	2.46	2	6.25	3.79	0.800	0.375*

* Exact *p* value calculated, *CPR* cardiopulmonary resuscitation, *DNR* do not resuscitate

variance in the decision to commence full CPR, and correctly classified 65.0% of full CPR decisions. Of seven predictive variables four were statistically significant: years of experience, highest level of education, specialty, and previous experience with initiation CPR (Table 6). More experienced and more educated nurses were less likely to commence full CPR than less experienced ($P=0.002$) and less educated nurses ($P=0.006$). Nurses working in surgery, cardiology, respiratory, general medicine, aged care, neurology, and all other specialities were more likely to commence full CPR than those nurses who work in oncology, haematology and palliative care ($P=<0.001$). Previous experience with commencing CPR increased the odds of commencing full CPR 1.966 times (Table 6).

For Scenario 2, Mr G, the logistical regression model was also statistically significant, χ^2 (18) = 30.603, $P=<0.032$. The model explained 14.7% (Nagelkerke R^2) of the variance in the decision to commence full CPR, and correctly classified 93.2% of full CPR decisions. Of seven predictive variables one was statistically significant: hving a bachelors degree as the highest level of education (Table 6).

Discussion

This study is the first to explore nurses' decision-making regarding the initiation of CPR in people without DNR orders. Our results show that even in patients with clear and unequivocal signs of death, in the absence of a DNR order, the vast majority of nurses would commence CPR. The reasons nurses made this decision were influenced by a multitude of factors including perceptions about the efficacy of CPR, beliefs about legal liability, institutional policy, professional obligations and norms, duty of care, and concerns about scrutiny by peers. While in all situations, the majority of respondents favoured initiation of CPR, nurses reported being less likely to initiate CPR if the patient was elderly and had chronic illness, suggesting that they believed that age was a determinant of outcome and that quality-of-life concerns were relevant to decision making about CPR. Nurses' gender, years of experience, education level, and area of speciality was also associated with their decision to commence full CPR regardless of the clinical status of the patient.

While there is an immense literature on nurse's views and involvement in advance care planning and about nurses' knowledge of and attitudes to CPR [28, 29,

Table 5 Associations between demographics and CPR decision-making of participants

Demographics		Scenario 1, Mr D			Scenario 2, Mr G		
		Full CPR n (%)	Limited-No CPR n (%)	*p* value	Full CPR n (%)	Limited- No CPR n (%)	*p* value
Gender (female)		286 (61.4)	180 (38.6)	0.685	436 (93.6)	30 (6.4)	**0.042**
Age group							
	< 30 years	138 (63.3)	80 (36.7)	0.286	206 (94.5)	12 (5.5)	0.321
	31—50 years	137 (61.7)	85 (28.3)		204 (91.9)	18 (8.1)	
	> 51 years	49 (53.9)	42 (46.2)		82 (90.1)	9 (9.9)	
Years of nursing experience							
	< 2 years	47 (60.3)	31 (39.7)	**0.006**	71 (91.0)	7 (9.0)	0.555
	2–5 years	75 (64.1)	42 (35.9)		111 (94.9)	6 (5.1)	
	6–10 years	84 (73.7)	30 (26.3)		109 (95.6)	5 (4.4)	
	11–20 years	55 (54.5)	46 (45.5)		91 (90.1)	10 (9.9)	
	21—30 years	42 (58.3)	30 (41.7)		66 (91.7)	6 (8.3)	
	> 30 years	20 (43.5)	26 (56.5)		43 (93.5)	3 (6.5)	
Highest level of education							
	Technical College	41 (97.6)	1 (2.4)	**0.004**	41 (97.6)	1 (2.4)	0.454
	Bachelor's degree	171 (66.5)	86 (33.5)		239 (93.0)	18 (7.0)	
	Postgraduate degree	119 (52.7)	107 (47.3)		207 (91.6)	19 (8.4)	
Area of practice							
	Surgery	102 (6.8)	63 (38.2)	**< 0.001**	156 (94.5)	9 (5.5)	**0.003**
	Cardiology/respiratory	53 (65.4)	28 (34.6)		81 (100.0)	0 (0)	
	Oncology/Haematology/Palliative care	18(33.3)	36 (66.7)		46 (85.2)	8 (14.8)	
	General Medicine/Aged care/Neurology	75 (69.4)	33 (30.6)		98 (90.7)	10 (9.3)	
	All other specialities*	76 (61.8)	47 (38.2)		111 (90.2	12 (9.8)	
Professional title							
	Pre-registration	29 (65.9)	15 (34.1)	0.258	40 (90.9)	4 (9.1)	0.810
	Registered Nurse/Midwife	236 (62.3)	143 (37.7)		353 (93.1)	26 (3.9)	
	Advanced Practice Nurse	57 (54.3)	48 (45.7)		98 (93.3)	7 (6.7)	
Highest level of CPR Training							
	Basic Life Support	199 (62.6)	119 (37.4)	0.414	291 (59.1)	201 (40.9)	0.239
	Advanced Life Support	125 (58.7)	88 (41.3)				
Experience of CPR (yes)		246 (63.1)	144 (36.9)	0.125	367 (94.1)	23 (5.9)	0.117

Chi-squared tests of association were performed. Fishers exact test used where cell sizes < 5. Bold = statistically significant. *All other specialities include: Mental health, infectious diseases/immunology, rehabiliation, renal/dialysis, maternity, education and 'other'

31–33], this study is the first comprehensive exploration of nurses' decision-making regarding the initiation of CPR in hospitalized patients without a DNR order. Our study is consistent with but extends upon small, single institution studies that suggest that nurses take ethical and professional considerations into account in the context of CPR [29, 31, 32]. Our results are also consistent with studies demonstrating that nurses' views regarding CPR are influenced by overestimates of the likely success of CPR [32]. At the same time, the results of our study raise serious questions about the concept of nurses as patients advocates and about the basis of nurses' decision making about CPR in hospital. In the scenarios presented in this study, the vast majority of nurses indicated they would perform CPR on an obviously dead patient, a striking finding given that CPR would provide no benefit but impose harms. Initiating CPR in such circumstances is also legally problematic as it is not required by law as a dead person is no longer owed any legal duty of care [12]. Finally decisions to routinely initiate CPR in these situations is also professionally problematic as, while relevant policies may require resuscitation to be provided to unresponsive patients, they do not require resuscitation of obviously dead ones [34–36]. Our findings, therefore, raise serious ethical, legal and professional questions about whether nurses consistently act in, and advocate for, their patient's best interests.

Table 6 Odds of respondents choosing to perform Full CPR

		Scenario 1, Mr D				Scenario 2, Mr G			
		OR	CI		*p* value	OR	CI		*p* value
			Lower	Upper			Lower	Upper	
Gender *(female)*		1.356	0.757	2.432	0.306	2.538	0.989	6.511	0.053
Age group									
	< 30 years				*0.246*				*0.876*
	31–50 years	2.182	0.839	5.671	0.109	0.649	0.109	3.859	0.629
	> 51 years	1.418	0.664	3.027	0.367	0.717	0.186	2.763	0.629
Years of experience									
	< 2 years				***0.002***				*0.722*
	2–5 years	0.177	0.047	0.665	**0.010**	0.793	0.071	8.922	0.851
	6–10 years	0.199	0.059	0.664	**0.009**	0.510	0.052	4.998	0.563
	11–20 years	0.109	0.035	0.338	**< 0.001**	0.675	0.082	5.545	0.714
	21–30 years	0.360	0.129	1.008	0.052	1.607	0.244	10.583	0.622
	> 30 years	0.392	0.156	0.986	**0.047**	1.294	0.238	7.048	0.766
Education									
	Technical College				***0.006***				*0.129*
	Bachelor's Degree	0.266	0.088	0.804	**0.019**	0.068	0.005	0.948	**0.046**
	Postgraduate Degree	0.527	0.326	0.852	**0.009**	0.791	0.331	1.890	0.597
Specialty									
	Surgery				***< 0.001***				*0.361*
	Cardiology/Respiratory	1.242	0.735	2.099	*0.570*	0.940	0.351	2.519	0.902
	General Medicine/Aged care/Neurology	1.078	0.563	2.064	*0.860*	0.000	0.000		0.997
	Oncology/Haematology/Palliative care	0.825	0.458	1.485	*0.520*	1.128	0.402	3.164	0.819
	All other specialities	3.895	1.896	8.003	***< 0.001***	0.940	0.351	2.519	0.902
Professional role									
	Pre-registration				0.425				*0.180*
	Registered Nurse/Midwife	2.168	0.680	6.923	0.191	6.654	0.890	49.724	0.065
	Advanced Practice Nurse	1.191	0.692	2.050	0.528	1.579	0.545	4.579	0.400
Highest level of CPR training		0.879	0.569	1.3159	0.562	1.402	0.600	3.276	0.435
Experience of CPR (yes)		1.966	1.193	3.240	**0.008**	2.237	0.900	5.559	0.083

Two binomial logistic regression models were performed, one for each scenario. Specifically, Scenario 1: Full CPR ~ predictors (gender(female) + age group + years of experience + Education + Speciality + Professional role + Highest level of CPR training (ALS) + Experience of CPR (yes)). Scenario 2: Full CPR ~ predictors (gender(female) + age group + years of experience + Education + Speciality + Professional role + Highest level of CPR training (ALS) + Experience of CPR(Yes)). Bold = statistically significant

Our data suggests that while the desire to initiate resuscitation may be well-intentioned, decisions to initiate CPR may be influenced by, perceptions of regulatory and professional "duty", the imperatives of institutional bureaucracy and managerialism. Differences in nurses responses to two scenarios where a patient was found with no signs of life but differed in regards to their age and co-morbidity also suggest that the decision to initiate CPR may also be influenced by ageism [37, 38] and misperception or overestimation of the benefits of CP [19, 39–42]. This is true even in situations where the patient has clear and unequivocal signs of death and CPR will simply not work, and when there is in fact no legal, policy, ethical, or professional obligation to do so.[12]Importantly our data is consistent with concerns that the law is generally misunderstood by healthcare professionals, that healthcare professionals inappropriately apply concepts such as 'duty of care' to their work, and often view the legal system as coercive rather than as facilitative [43–45]. This is significant because ignorance about what the law *actually* requires, and how the law works (*nomoagnosia*), may lead to fear of law (*nomophobia*) and, in turn, to defensive clinical practice, including behaviours that are harmful and/or wasteful [46–48]. The results of this study illustrate how *nomoagnosia* and *nomophobia*may contribute to CPR decision-making that is fundamentally irrational and may be harmful [17, 19, 48].

Limitations

Our study has several strengths. Firstly, the short survey duration (less than 10 min) encouraged participation and minimized respondent burden. The large sample size also makes it likely that these results provide a representative account of nurses' knowledge, attitudes, and beliefs regarding initiation of CPR in patients with clear and unequivocal signs of death and no DNR order. The inclusion of real-world case studies provided nuanced and practically relevant insights into nurse decision-making. However, the study also has several limitations. The 10.8% response rate, while consistent with similar nurse-focused research [48], introduces potential sampling bias. Self-reported data in relation to previous CPR experience may suffer from recall bias, impacting internal validity, and misclassification biases could affect findings. The failure to collect data on the ethnicity of nurse respondents is also a potential limitation as this may shape attitudes toward resuscitation preferences. Caution should also be exercised with generalising the results of this study to other jurisdictions due to the potential confounding influence of other healthcare systems, policies, laws and cultural norms.

This study emphasises the need for enhanced education and policy reforms on when CPR would be deemed ineffective or inappropriate, even in the absence of DNR orders. Moving forward, additional research is needed to assess the scope of healthcare professionals' fears of legal repercussions and to explore how such fears may be alleviated through cultural shifts and policy changes. This should include qualitative studies aimed at exploring nurses' ethical reasoning and the specific concerns they face. Establishing clear, evidence-based policies on the non-initiation of CPR would support health professionals in making legally sound decisions that incorporates ethical practice into patient care.

Conclusion

The study makes clear that many nurses need further education about laws and policies surrounding the determination of death and CPR, about the appropriateness and success rate of resuscitative efforts on hospitalised inpatients, and about important ethical and legal concepts including the 'duty of care'. Finally, given that nurses are almost invariably the healthcare professionals most likely to encounter deceased patients in hospital settings, it is essential that educational programs and institutional policies are in place to increase nurses' agency around CPR decision-making in these complex scenarios. End of life care could be significantly improved if nurses are educated, empowered and supported to make informed decisions to initiate or not initiate CPR within their scope of practice.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12910-025-01224-2.

Additional file 1.

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Authors' contributions

GM conceived and conceptualized the project, performed the investigation, curated and analysed the data, provided resources, software, project administration, and supervision. GM, SB, JC, EL, WL, AP, LS, GS, CS, and IK conceptualized the study, as well as developed the methodology and wrote the original draft. SM, EM, SSL, JKT, MW, and SZ assisted with conceptualisation, and investigation. GM, HH, AM, and JKT assisted with data curation and analysis. All authors made substantial intellectual contributions to the contents of this paper and have reviewed and approved the final version for submission.

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Data availability

The datasets generated and analysed during this study are not publicly available due to the ethical approval restrictions, but will be available upon reasonable request from the corresponding author.

Declarations

Ethics approval and consent to participate

The study protocol was approved by the South Eastern Sydney Local Health District (SESLHD) Human Research Ethics Committee (HREC) (Reference: 2023_ETH01759) and was conducted in accordance with the Declaration of Helsinki. All participants were advised via the Participant Information Sheet (PIS) that completion of the survey constituted implied informed consent as per the ethics approval.

Consent for publication

All participants gave implied informed consent for participation and for all data to be reported in publications as per the ethics approval.

Competing interests

The authors declare no competing interests.

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