Society of Medical Education & Research

2021, Volume 1, Page No: 139-151
ISSN: 3108-5059

Asian Journal of Ethics in Health and Medicine

Nurses' Decision-Making in Cardiopulmonary Resuscitation for Deceased Inpatients Without DNR Orders: Ethical Considerations and Defensive Practice

Thao Nguyen[1], Minh Tran[1]*, Lan Pham[2]

[1]Department of Medical Ethics, Faculty of Medicine, Hanoi Medical University, Hanoi, Vietnam.
[2]Department of Public Health Ethics, School of Medicine, Hue University, Hue, Vietnam.

***E-mail** ✉ minh.tran@outlook.com

Abstract

Nurses in hospital settings are frequently the first to notice when a patient experiences cardiorespiratory arrest and must make prompt decisions about whether to call a CODE BLUE and initiate cardiopulmonary resuscitation (CPR). In the Australian context, there is no legal or policy requirement to perform CPR when a patient shows clear and irreversible signs of death. Delivering CPR in circumstances where it cannot benefit the patient presents complex ethical and professional dilemmas. This study, grounded in empirical ethics, sought to examine how hospital nurses make decisions, perceive, and experience the initiation of CPR for patients who are clearly deceased but do not have an existing Do-Not-Resuscitate (DNR) directive. The research was conducted as a cross-sectional, descriptive survey across multiple hospital sites from October two thousand twenty-three to April two thousand twenty-four. Inpatient nurses were asked to respond to two hypothetical cases in which patients exhibited no detectable signs of life: one involved Mr. D, an eighty-four-year-old man with cancer, and the other Mr. G, a thirty-five-year-old man following a motor vehicle collision. All nurses working in inpatient units were eligible to participate. The collected data were analyzed using a combination of descriptive statistics, Chi-square or Fisher's exact tests, the McNemar test, and binomial logistic regression. The survey was completed by a total of five hundred thirty-one nurses. Regarding Mr. D, three hundred twenty-four nurses, representing sixty-one point five percent, reported they would call a CODE BLUE, while one hundred twenty-seven nurses, or twenty-four point one percent, indicated they would perform limited CPR. Only seventy-six nurses, equivalent to fourteen point four percent, stated they would confirm death. In contrast, for Mr. G, the majority—four hundred ninety-two nurses, or ninety-three point nine percent—would call a CODE BLUE; twenty-three nurses, or four point four percent, would perform limited CPR, and nine nurses, or one point seven percent, would confirm death. Nurses identified several key reasons for initiating a CODE BLUE: adherence to hospital policy, legal obligations, absence of a DNR order, and following their training. The majority of nurses reported they would initiate CPR in patients exhibiting unmistakable signs of death when no DNR order was in place. This tendency appears to stem from gaps in knowledge or misunderstanding of legal requirements, institutional policies, or the misapplication of professional norms. These findings raise significant questions about the factors shaping nurses' comprehension of and engagement with CPR. They also underscore ethical concerns surrounding the care of patients at the end of life and highlight the importance of examining ethical practice, professional agency, and accountability. Furthermore, the results support the need for reviewing policies, clinical practices, and educational initiatives related to ethical decision-making and end-of-life care.

Keywords: Nurse, Cardiopulmonary Resuscitation, DNR Orders, Ethical Considerations

Introduction

Access this article online https://smerpub.com/

Received: 04 August 2021; **Accepted:** 29 October 2021

How to cite this article: Nguyen T, Tran M, Pham L. Nurses' Decision-Making in Cardiopulmonary Resuscitation for Deceased Inpatients Without DNR Orders: Ethical Considerations and Defensive Practice. Asian J Ethics Health Med. 2021;1:139-51. https://doi.org/10.51847/K0nTCfJ9Y7

For over fifty years, cardiopulmonary resuscitation (CPR) has been a standard and widely promoted intervention for patients experiencing cardiac arrest [1]. While it can be life-saving in certain circumstances, such as following a heart attack, its success is much lower for patients with multiple serious health conditions, those who suffer cardiac arrest outside of a hospital, or those who have been in cardiac arrest for an extended period.

In cases of advanced illnesses, like widespread metastatic cancer, CPR is generally ineffective. Survival rates for in-hospital cardiac arrest are estimated at 13–18%, and fewer than 2% of patients with severe organ dysfunction or comorbidities survive beyond six months [2, 3]. Contributing to these poor outcomes is the inappropriate application of CPR in situations where it is unlikely to be beneficial. CPR can also lead to physical injuries, including rib or sternum fractures, collapsed lungs, and brain damage due to lack of oxygen [4]. Beyond these physical harms, it may also cause emotional or moral distress for family members, ethical discomfort for nurses and other healthcare providers, disrespect toward the deceased, and inefficient use of medical resources [5-8].

Many health systems have introduced advance care planning and directives such as Do Not Resuscitate (DNR) orders—also referred to as DNAR, DNACPR, or Not for Resuscitation (NFR) orders [1, 9]. Nevertheless, these directives are sometimes missing or incomplete at the time of cardiac arrest. In situations where CPR would clearly have no chance of success, such as when the patient has been dead for a significant period, DNR orders are essentially irrelevant.

When cardiac arrests are sudden or when patients' preferences regarding resuscitation are undocumented, healthcare staff face the responsibility of deciding whether to initiate a CODE BLUE and attempt CPR [10, 11]. In Australia, there is no legal or policy requirement to perform CPR if clear signs of death are present—for example, in cases of catastrophic trauma or when rigor mortis or postmortem lividity is evident [12, 13]. International guidance mirrors this: the Resuscitation Council UK advises against offering CPR when it would be futile, and the American Heart Association similarly recommends withholding resuscitation in the presence of unmistakable evidence of irreversible death [14, 15]. Authorities explicitly recognize that no duty of care exists in such cases, including for emergency medical personnel [7]. Australian policy documents also reinforce that CPR is not expected for patients who have been deceased for some time [7].

Despite these clear guidelines, reports indicate that futile CPR is sometimes performed, often because staff believe resuscitation must always be attempted [7]. Misconceptions driving this practice include misunderstandings of professional duty of care, overestimation of CPR's success, unfamiliarity with relevant laws and hospital policies, and defensive medical practices aimed at protecting staff or institutions from perceived liability [16-19].

In hospital settings, nurses are typically the first to identify a patient in cardiac arrest and must decide whether to activate a CODE BLUE and begin CPR [10, 16]. Nurses may occasionally implement "limited" resuscitation measures to navigate ethical tension when CPR is unlikely to benefit the patient, but the patient's wishes are unknown. Examples include "slow codes" (delivering CPR actions at a slower pace), "partial codes" (performing only selected resuscitation techniques), "chemical codes" (administering medications without chest compressions), and "show codes" (resuscitation performed mainly to satisfy observers rather than for the patient) [18, 20-22].

This study aimed to investigate how nurses make decisions about initiating CPR in patients who show unequivocal signs of death and lack a documented DNR order. It also explored how these decisions are shaped by institutional policies, professional norms, legal considerations, and nurses' personal experience.

Materials and Methods

Study design

This study was designed within an empirical ethics framework [23, 24], with the goal of drawing both normative and conceptual insights from an anonymous, online, cross-sectional survey conducted from October two thousand twenty-three to April two thousand twenty-four. Data collection was facilitated through the REDCap platform [25], and the study findings are presented in accordance with the STROBE reporting guidelines [26].

Setting

Participants who qualified for the study were nurses employed in adult medical and surgical inpatient wards across five public hospitals located in Sydney, Australia.

Study instrument

The questionnaire was designed following an extensive literature review and consultations with the research team. It consisted of 21 items divided into three main sections: the initial seven items collected demographic information from participants, covering gender, age, highest education level, current nursing role, clinical specialty, years of nursing experience, and previous cardiopulmonary resuscitation (CPR) training.

Next, respondents were given two hypothetical case scenarios, each depicting a patient displaying obvious signs of death (e.g., unresponsive, cold to touch, cyanosed, no pulse, and rigid) in the absence of a do-not-resuscitate (DNR) order. For each scenario, participants answered two questions regarding what action they would take and their rationale for that decision.

The remaining 12 items assessed participants' knowledge, personal experiences, and attitudes toward starting or withholding CPR. The survey combined multiple-choice (tick-box) and open-ended (free-text) response formats and was estimated to take about 10 minutes to complete (**Table 1**).

Before the main study began, the instrument was pilot-tested with six nurses who were not part of the research team to evaluate face and content validity. Feedback from the pilot indicated no modifications were necessary.

Table 1. Hypothetical scenarios used in the survey

Feature	Scenario 1: Mr D	Scenario 2: Mr G
Age / Background	84-year-old man with widely metastatic non-small-cell lung cancer	35-year-old previously healthy man involved in a motorcycle accident
Admission Reason	Severe back pain from a pathological pelvic fracture	Multiple fractures (rib, pelvis, femur) following trauma, post-surgery
Clinical Status During Admission	Experiencing progressive weakness and agitated delirium despite pain management	Recovering well post-surgery, tolerating oral diet, no major complications
Care Plan	Discharge planned for end-of-life care at home; DNR not yet documented; no Advance Care Directive	Routine recovery plan; standard monitoring; expected full recovery
Monitoring	Twice daily observations	Four hourly routine observations
Event	On day 12, found unresponsive, cold, cyanosed, pulseless, and stiff	On day 14, found unresponsive, cold, cyanosed, pulseless, and stiff

Recruitment

The survey was made available through REDCap, with access provided via internal hospital email communications. To increase awareness, flyers containing QR codes were distributed at staff meetings, posted on hospital social media, and placed in highly trafficked areas such as break rooms, educational spaces, and restrooms. Participants who scanned the QR code were directed to a survey that included an information sheet detailing the study and emphasizing that participation was entirely voluntary. Submission of the completed survey served as an indication of consent. Each hospital site kept the survey open for six weeks, during which two reminder prompts were issued every two weeks.

Ethical considerations

Ethical approval for this study was granted by the South Eastern Sydney Local Health District Human Research Ethics Committee (Reference: 2023_ETH01759). The research adhered to the ethical standards of the Declaration of Helsinki. Participants were informed that completing the survey would serve as their consent, as outlined in the provided information sheet.

Data analysis

Descriptive statistics were employed to summarize the demographics, experience, knowledge, and attitudes toward CPR among participants, as well as their responses to different scenarios. Comparative analyses of binary categorical variables were conducted using odds ratios (OR) with 95% confidence intervals, along with Pearson's Chi-square or Fisher's exact tests as appropriate. The McNemar test was applied to evaluate significant differences in participants' choices and reasoning for performing full CPR across scenarios. To account for potential confounding factors and identify independent predictors of the decision to initiate full CPR versus alternative actions (such as limited CPR or opting to confirm death), binomial logistic regression analyses were conducted.

A two-tailed P value of less than 0.05 was considered statistically significant. All analyses were performed using IBM SPSS Statistics (Version 28.0).

Interpretation of the findings was conducted collaboratively by the research team, informed by normative philosophy and the literature on professionalism, legal philosophy, and clinical reasoning, guided by the principles of wide reflective equilibrium [27].

Results and Discussion

Demographics

Out of the four thousand nine hundred and two nurses eligible, five hundred and thirty-one completed the questionnaire, accounting for ten point eight percent of the total population **(Figure 1).** Among those who responded, four hundred and sixty-six were female, representing eighty-eight point six percent. The majority held the position of Registered Nurse (fifty-five point five percent) and were aged between twenty-one and thirty years (forty point five percent). Almost half of the participants had a bachelor's degree as their highest educational qualification (forty-nine percent). More than half (fifty-eight point three percent) had been practicing as nurses for less than ten years, and Basic Life Support (BLS) was the highest level of CPR certification for sixty-two point nine percent of respondents **(Table 2).**

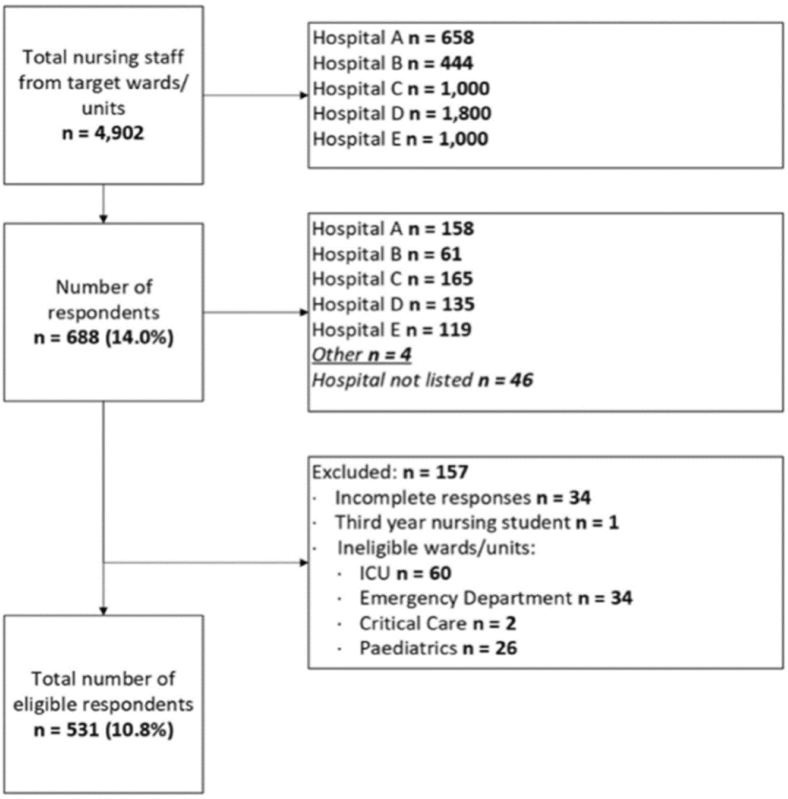

Figure 1. Study flowchart

Table 2. Participant demographics and knowledge of CPR outcomes

Characteristic	Category	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)	Under 30	218	41.4
	31–50	222	42.2
	Over 51	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
	Other specialties	123	23.2
Years of nursing experience (n = 528)	Less than 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	72	13.6
	Over 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 – ROSC (n = 388)	Less than 5%	72	18.6
	Less than 20%	56	14.4
	Less than 50%	52	13.4
	50–80%	63	16.2
	More than 80%	73	18.8
	Don't know	72	18.6
Knowledge of CPR outcomes – survival to discharge (n = 386)	Less than 5%	89	23.1
	Less than 20%	44	11.4
	Less than 50%	32	8.3
	50–80%	42	10.9
	More than 80%	38	9.8
	Don't know	141	36.5
Decision-maker for NOT commencing CPR in patients without signs of life (without a CPR order)	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

Knowledge, attitudes and experience of CPR

Almost three-quarters of the nurses (three hundred and ninety, 73.6%) reported having previously initiated a CODE BLUE. A large proportion of participants either overestimated the effectiveness of CPR or were uncertain about how often it leads to return of spontaneous circulation (ROSC) or results in patient discharge **(Table 2).**

When questioned about decisions to withhold CPR in the absence of a DNR order, more than ninety percent (four hundred and eighty-seven, 91.9%) indicated they had never made such a decision. Only thirty-eight participants (7.2%) had ever chosen not to initiate CPR, with twenty-nine (around three-quarters, 76.3%) doing so one to two times and nine (23.7%) reporting three to ten instances.

Among these thirty-eight participants, the majority (twenty-nine, 75.3%) received supportive feedback from colleagues or the patient's family, while a smaller number (six, 15.8%) reported receiving negative or critical responses.

When asked who should decide not to commence CPR in patients showing clear signs of death but without a DNR order, most respondents (four hundred and eighty, 90.6%) stated that this decision should rest with a doctor **(Table 2).**

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

When asked how they would respond to finding Mr D exhibiting clear signs of death, most respondents (three hundred and twenty-four, 61.5%) said they would initiate a CODE BLUE and perform full CPR. A smaller group (one hundred and twenty-seven, 24.1%) indicated they would carry out some form of limited CPR. Only seventy-six participants (14.4%) reported that they would verify death and contact the medical team to report it **(Figure 2).**

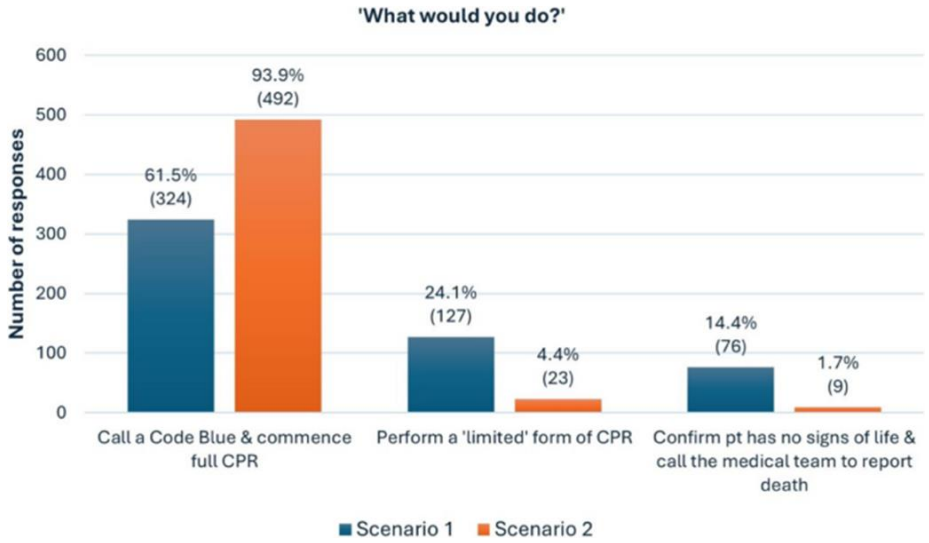

Figure 2. Illustrates participants' responses to the question "What would you do?" across both scenarios: Scenario 1 involved Mr D, an eighty-four-year-old man, and Scenario 2 involved Mr G, a thirty-five-year-old man (pt = patient; CPR = cardiopulmonary resuscitation).

Among the three hundred and twenty-four respondents who indicated they would initiate full CPR, the five most frequently reported reasons were as follows: nearly all (two hundred and ninety-four, 90.7%) stated that in the absence of a DNR order, CPR must be started; two hundred and twelve (65.4%) cited hospital policy requirements; one hundred and seventy-one (52.8%) noted legal obligations; one hundred and one (31.1%) indicated it reflected their training; and one hundred (30.8%) considered it a way to fulfil their duty of care to the patient **(Table 3).**

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

Reason for initiating CPR	Scenario 1: Mr D (n = 324)	Scenario 2: Mr G (n = 492)	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
Doing so would be respectful	7	2.16	57	11.59	9.42
Fulfils my duty of care to the patient	101	31.1	285	57.93	26.83
Required by hospital policy	212	65.43	301	61.18	-4.25
Required by law	171	52.78	233	47.36	-5.42
Important to "do something" even if likely futile	45	13.89	84	17.07	3.18
Expected/approved by colleagues	24	7.41	74	15.04	7.63
Expected/approved by supervisors/managers	50	15.43	99	20.12	4.69
Expected/approved by patient's family	20	6.17	138	28.05	21.88
Not legally permitted to certify death	113	34.88	125	25.41	-9.47
Not confident in determining death	18	5.56	28	5.69	-0.14
Usual practice for me and colleagues	28	8.64	81	16.46	7.82

Trained to do so	101	31.17	218	44.31	13.14
What the patient would want	5	1.54	108	21.95	20.41
What the family would want	7	2.16	96	19.51	17.35
No DNR order, must begin CPR	294	90.74	303	61.59	-29.16
What a good nurse would do	11	3.40	65	13.21	9.82
Important to feel like a good nurse	5	1.54	22	4.47	2.93

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

Among the two hundred and three participants (38.5%) who chose not to initiate full CPR, the five most commonly cited reasons were as follows: one hundred and twenty (59.1%) stated that performing CPR would compromise the patient's dignity; one hundred and eight (53.2%) felt it would be unethical; one hundred and five (51.7%) considered it futile; one hundred and two (50.2%) believed that starting CPR in this situation was not the right action; and eighty-nine (43.8%) indicated it would be disrespectful **(Table 4).**

Table 4. Reason for NOT commencing full CPR

Reason for Decision	Scenario 1: Mr D (n=203, 38.5%)	Scenario 2: Mr G (n=32, 6.1%)	Difference % (S2 – S1)	McNemar's Test	p value
Considered unethical	108 (53.2%)	8 (25%)	−28.2%	92.462	<0.001
Considered futile	106 (52.2%)	19 (59.4%)	7.2%	73.228	<0.001
Considered disrespectful	89 (43.8%)	6 (18.8%)	−25.1%	77.287	<0.001
Could cause moral harm to nurses	45 (22.2%)	6 (18.8%)	−3.4%	35.220	<0.001
Could harm patient's dignity	120 (59.1%)	12 (37.5%)	−21.6%	104.082	<0.001
No duty of care to start CPR	26 (12.8%)	8 (25%)	12.2%	11.115	<0.001
Not the right thing to do	103 (50.7%)	12 (37.5%)	−13.2%	78.641	<0.001
No legal obligation to start CPR	9 (4.4%)	2 (6.3%)	1.8%	3.273	0.065*
Hospital policy does not require CPR	5 (2.5%)	1 (3.1%)	0.7%	1.500	0.219*
Colleagues would expect/approve	8 (3.9%)	0 (0%)	−3.9%	6.125	0.008*
Supervisors/managers would expect/approve	4 (2.0%)	1 (3.1%)	1.2%	0.800	0.375*
Based on what patient would have wished	65 (32.0%)	0 (0%)	−32.0%	63.015	<0.001
Based on what patient's family would expect/approve	51 (25.1%)	0 (0%)	−25.1%	49.020	<0.001
Confident in determining death	48 (23.7%)	7 (21.9%)	−1.8%	39.024	<0.001
What colleagues usually do in this situation	4 (2.0%)	0 (0%)	−2.0%	2.250	0.125*
What I was trained to do	8 (3.9%)	2 (6.3%)	2.3%	2.500	0.109*
What a good nurse would do	16 (7.9%)	1 (3.1%)	−4.8%	13.067	<0.001*
Makes it easier to process patient death	5 (2.5%)	2 (6.3%)	3.8%	0.800	0.375*

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

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

When asked how they would respond to Mr G showing clear signs of death, almost all participants (four hundred and ninety-two, 93.9%) indicated they would call a CODE BLUE and initiate full CPR. A small portion (twenty three, 4.4%) said they would perform a limited form of CPR, while only nine respondents (1.7%) reported that they would verify death and inform the medical team **(Figure 2).**

Among those who chose to begin full CPR, the most commonly reported motivations were: lack of a DNR order leaving no alternative (three hundred and three, 61.5%); adherence to hospital policy (three hundred, 60.9%); fulfilling their duty of care to the patient (two hundred and eighty-three, 57.5%); legal requirements

(two hundred and thirty-two, 47.1%); and following their training (two hundred and eighteen, 44.3%) **(Table 3).**

For the thirty-two participants (6.1%) who opted not to initiate full CPR, the primary reasons cited included: CPR would be futile (nineteen, 59.3%); performing CPR would compromise the patient's dignity (twelve, 37.5%); it was not the right action in this situation (twelve, 37.5%); doing so would be unethical (eight, 25.0%); there is no duty of care for a patient who is already deceased (seven, 22.6%); and confidence in their ability to determine death (seven, 22.6%) **(Table 4).**

Associations and responses to scenarios

The analysis revealed that certain characteristics influenced nurses' decisions to perform full CPR. In Scenario Two (Mr G), being female was linked to a higher likelihood of choosing full CPR, with a P-value of zero point zero four two. For Scenario One (Mr D), nurses' years of experience, their highest educational attainment, and the clinical area in which they worked all significantly affected their decision. Specifically, differences were observed between those working in hematology, oncology, or palliative care compared with aged care and other specialties, with a P-value of less than zero point zero zero one. No meaningful connections were found between the decision to initiate full CPR and factors such as age, professional role, or prior experience with CPR **(Table 5).**

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

Demographics / Variable	**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 (61.8)	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 specialties*	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)				
Previous CPR experience (yes)	246 (63.1)	144 (36.9)	0.125	367 (94.1)	23 (5.9)	0.117

hi-squared analyses were conducted to assess associations, and Fisher's exact test was applied when expected cell frequencies were below five. Results shown in bold indicate statistical significance. The "all other specialties" group comprises Mental Health, Infectious Diseases/Immunology, Rehabilitation, Renal/Dialysis, Maternity, Education, and other unspecified areas.

Between scenario differences

To explore differences in participants' willingness to perform full CPR between the two scenarios, exact McNemar's chi-squared tests were applied. These analyses also examined whether the reasons provided for initiating or refraining from full CPR varied across scenarios. The proportion of participants opting for full CPR rose by roughly thirty-two percent from Scenario One to Scenario Two (P < 0.0005).

Significant differences between scenarios were observed for most reasons cited for performing full CPR. Exceptions to this were three reasons, which did not show statistical significance: "In the absence of a DNR order, there is no option but to begin CPR" (P = zero point five three eight), "I am not legally permitted to certify death" (P = zero point two one three), and "I am not confident I can determine if a patient is dead" (P = zero point zero seven eight) **(Table 3).**

For reasons given for not performing full CPR, differences between the two scenarios were generally not significant. However, because the group sizes were small, these results should be interpreted cautiously, as firm conclusions are difficult to draw **(Table 4).**

Regression analysis

To examine how factors such as gender, age, years of experience, highest education level, clinical specialty, professional role, CPR training level, and prior experience with CPR influenced nurses' decisions to initiate full CPR, a binomial logistic regression was conducted.

For Scenario One (Mr D), the regression model reached statistical significance, chi-square (eighteen) = fifty-nine point two seven one, P < 0.005. The model explained fourteen point seven percent of the variation in decisions to perform full CPR (Nagelkerke R^2) and accurately classified sixty-five percent of the cases where full CPR was chosen. Among the seven predictors, four were statistically significant: years of experience, education level, clinical specialty, and prior CPR experience. Nurses with more experience and higher educational qualifications were less likely to initiate full CPR compared with colleagues who had less experience (P = 0.002) or lower levels of education (P = 0.006). Those working in specialties such as surgery, cardiology, respiratory medicine, general medicine, neurology, aged care, and other areas were more inclined to perform full CPR than nurses in oncology, hematology, or palliative care (P < 0.001). Furthermore, nurses who had previous CPR experience were almost twice as likely to choose full CPR, with an odds ratio of one point nine six six **(Table 6).**

Table 6. Shows the factors influencing nurses' likelihood of performing full CPR,

Variable	**Scenario 1: Mr D**				**Scenario 2: Mr G**			
	OR	**95% CI Lower**	**95% CI Upper**	**p-value**	**OR**	**95% CI Lower**	**95% CI Upper**	**p-value**
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 specialties	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
Previous CPR experience (yes)	1.966	1.193	3.240	0.008	2.237	0.900	5.559	0.083

Two separate binomial logistic regression analyses were conducted, one for each clinical scenario. For Scenario 1, the model examined the influence of gender (female), age group, years of experience, education, clinical specialty,

professional role, highest level of CPR training (ALS), and prior experience performing CPR on the likelihood of initiating full CPR. Scenario 2 used the same set of predictors. Variables highlighted in bold indicate statistical significance.

In Scenario 2 (Mr G), the regression model was statistically significant, $\chi^2(18) = 30.603$, $P = 0.032$. The model accounted for 14.7% of the variance in decisions to perform full CPR (Nagelkerke R^2) and correctly classified 93.2% of cases where full CPR was chosen. Of all seven predictors, only one variable—holding a bachelor's degree as the highest educational qualification—was statistically significant **(Table 6).**

This study represents the first comprehensive exploration of how nurses make decisions about initiating CPR in patients who do not have a DNR order. Our results indicate that even when patients exhibit unmistakable signs of death, most nurses would still attempt CPR if a DNR is not documented. Decisions about whether to initiate resuscitation were influenced by a combination of factors, including beliefs about CPR's effectiveness, concerns about legal liability, institutional policies, professional norms, duty of care, and perceived expectations from colleagues. While nurses generally favored performing CPR across scenarios, they were slightly less inclined to do so for older patients with chronic illnesses, suggesting that age and perceived quality of life influenced decision-making. Other characteristics, such as gender, professional experience, education, and clinical specialty, also affected the likelihood of performing full CPR, irrespective of the patient's condition.

Although there is a substantial body of literature on nurses' involvement in advance care planning and their knowledge of CPR, this study is the first to thoroughly examine how nurses decide to initiate CPR in hospitalized patients lacking DNR orders. Our findings both support and extend prior smaller studies indicating that ethical and professional considerations play a role in nurses' decisions. They also align with evidence that nurses frequently overestimate the likelihood of CPR success.

However, these findings raise significant ethical, legal, and professional concerns. Many nurses indicated they would attempt CPR on patients who were clearly deceased—situations in which resuscitation offers no clinical benefit and may cause harm. From a legal perspective, CPR is unnecessary in these circumstances because deceased individuals are no longer owed a duty of care. Professionally, hospital policies may require resuscitation for unresponsive patients, but they do not mandate CPR for those who are obviously dead. These results call into question whether nurses consistently act in the best interests of their patients.

The data also suggest that, despite good intentions, nurses' decisions are often shaped by perceived professional duties and the pressures of institutional bureaucracy. Differences in responses to scenarios involving deceased patients of varying ages and comorbidity profiles suggest that ageism and

misconceptions about CPR efficacy may influence decision-making, even when resuscitation is futile and there is no legal, ethical, or professional obligation to intervene.

Finally, this study highlights broader issues regarding healthcare professionals' understanding of the law. Many nurses lack clear knowledge of legal requirements and misapply concepts such as duty of care, sometimes viewing legal rules as punitive rather than supportive. This combination of legal misunderstanding (nomoiagnosia) and fear of legal repercussions (nomoiphobia) may lead to defensive clinical practices, including interventions that are unnecessary or potentially harmful. Our findings illustrate how these factors can contribute to CPR decisions that are irrational and may negatively impact patient care.

Limitations

This study has a number of strengths. The survey was brief—taking under ten minutes—which likely encouraged more nurses to participate and reduced the burden of completion. Additionally, the large sample size increases confidence that the findings reflect nurses' perspectives on initiating CPR in patients with clear, unequivocal signs of death who lack a DNR order. The use of real-life case scenarios added depth and practical relevance, helping to capture the complexities involved in decision-making.

However, there are several limitations to consider. The response rate of 10.8%, though typical for surveys targeting nurses [28], may introduce sampling bias. Self-reported data on previous CPR experience may be affected by recall errors, and inaccuracies in classification could influence the results. The absence of data on respondents' ethnicity is another limitation, as cultural background can shape attitudes toward resuscitation. Furthermore, caution is needed when applying these findings to other regions or healthcare systems, given potential differences in laws, policies, and cultural norms.

The study underscores the importance of improving education and establishing policies that clarify when CPR is unlikely to be beneficial or appropriate, even if a patient does not have a DNR order. Future research should investigate the extent to which healthcare workers' fear of legal consequences affects their decisions and how such fears could be mitigated through policy changes and shifts in organizational culture. Qualitative approaches could provide valuable insight into nurses' ethical reasoning and the challenges they face in these situations. Clear, evidence-based guidance on when CPR should not be performed would support clinicians in making decisions that are both ethically responsible and legally sound.

Conclusion

The study underscores that many nurses would benefit from additional training on the legal and policy frameworks governing death determination and the use of CPR, as well as on the likely outcomes and appropriateness of resuscitative interventions in hospitalized patients. A thorough understanding of ethical and legal concepts, such as "duty of care," is also essential. Given that nurses are often the healthcare professionals most likely to encounter deceased patients in hospital settings, it is critical that both educational programs and institutional guidelines are designed to enhance their confidence and authority in making CPR-related decisions in complex clinical situations. Strengthening nurses' knowledge and support systems in this area could lead to significant improvements in end-of-life care, enabling them to make informed, ethically and legally sound decisions regarding whether to initiate or withhold CPR within their professional responsibilities.

Acknowledgments: We would like to sincerely thank the following people and groups for their support in undertaking this project: Wollongong Hospital: Bernadine O'Brien, Aaron Chadwick, Thomas Gillard, Madison Waters, Melissa Heufel Blacktown/Mount Druitt Hospitals: The Nursing Education team Prince of Wales Hospital: Karen Tuqiri. St George Hospital: Lauren Sturgess, Jodie Bancroft, LEaD Team Royal North Shore Hospital: Tracey Gray. We are grateful to all the nurses who took the time to complete our survey. We would also like to sincerely thank Dr Bradley Wakefield from the University of Wollongong for his consultations on the statistical analysis.

Conflict of Interest: None

Financial Support: None

Ethics Statement: 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.

References

1. Kapoor MC. The History and Evolution of Cardiopulmonary Resuscitation. Resuscitation. 2024;1(1):3–9.
2. Andersen LW, Holmberg MJ, Berg KM, Donnino MW, Granfeldt A. In-hospital cardiac arrest: a review. *JAMA*. 2019;321(12):1200-10. doi:10.1001/jama.2019.1696
3. Stapleton RD, Ehlenbach WJ, Deyo RA, Curtis JR. Long-term outcomes after in-hospital CPR in older adults with chronic illness. Chest. 2014;146(5):1214-25. doi:10.1378/chest.13-2110
4. Deliliga A, Chatzinikolaou F, Koutsoukis D, Chrysovergis I, Voultsos P. Cardiopulmonary resuscitation (CPR) complications encountered in forensic autopsy cases. BMC Emerg Med. 2019;19:23. doi:10.1186/s12873-019-0234-5
5. Thomas TA, McCullough LB. Resuscitations that never end: originat- ing from unresolved integrity-related moral distress. JAMA Pediatr. 2016;170(6):521–2.
6. Weill-Lotan D, Dekeyser-Ganz F, Benbenishty J. The relationship between departmental culture and resuscitation-related moral distress among inpatient medical departments physicians and nurses. Heart Lung. 2024;68:254–9.
7. Skowronski G, Kerridge I, Light E, McErlean G, Stewart C, Preisz A, et al. Raising the dead? limits of cpr and harms of defensive practices. Hastings Cent Rep. 2022;52(6):8-12. doi:10.1002/hast.1442
8. Taubert M, Baker JI. 'Do not attempt CPR' and the concept of harm. Medicine. 2020;48(10):651–2.
9. Lauridsen KG, Løfgren B, Brogaard L, Andreasen KL, Jensen MH, Holm CD, et al. Cardiopulmonary resuscitation training for healthcare professionals: a scoping review. Simul Healthc. 2022;17(3):170–82. doi:10.1097/SIH.0000000000000628
10. Guetterman TC, Kellenberg JE, Krein SL, Saint M, Bair EH, Pogorzelska-Maziarz M, et al. Nursing roles for in-hospital cardiac arrest response: higher versus lower performing hospitals. BMJ Qual Saf. 2019;28(11):916–24. doi:10.1136/bmjqs-2018-008417
11. Riley K, Middleton R, Wilson V, Mackenzie H, Petty J, Brewer ML, et al. Voices from the 'resus room': an integrative review of the resuscitation experiences of nurses. J Clin Nurs. 2022;31(9–10):1164–73. doi:10.1111/jocn.16120
12. Kerridge I, Lowe M, Stewart C. Ethics and law for the health professions. 4th ed. Sydney: federation press; 2013. p. 450
13. Australian and New Zealand Committee on Resuscitation (ANZCOR). Guidance Statement 10.5.1: legal issues related to responding to emergency situations and resuscitation [Internet]. 2024 [cited 2024 Oct 20]. Available from: https://www.anzcor.org/home/education-and-implementation/anzcor-guidance-statement-10-5-1-legal-issues-related-to-responding-to-emergency-situations-and-resuscitation/
14. Resuscitation Council UK. Ethics guidelines [Internet]. 2021 [cited 2024 Oct 20]. Available from: https://www.resus.org.uk/library/2021-resuscitation-guidelines/ethics-guidelines
15. EMS termination of resuscitation and pronouncement of death. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan [cited 2024 Oct 20]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK541113/
16. Peters R, Boyde M. Improving survival after in-hospital cardiac arrest: the Australian experience. Am J Crit Care. 2007;16(3):240–7. doi:10.4037/ajcc2007.16.3.240
17. Carroll AE. The high costs of unnecessary care. JAMA. 2017;318(18):1748–9. doi:10.1001/jama.2017.14648
18. Stokes F, Zoucha R. Nurses' participation in limited resuscitation: gray areas in end-of-life decision-making. AJOB Empir Bioeth. 2021;12(4):239–52. doi:10.1080/23294515.2021.1914957
19. Georgiou L, Georgiou A. A critical review of the factors leading to cardiopulmonary resuscitation as the default position of hospitalized patients in the USA regardless of severity of illness. Int J Emerg Med. 2019;12:1–9. doi:10.1186/s12245-019-0234-6
20. Gazelle G. The slow code—should anyone rush to its defense? N Engl J Med. 1998;338:467–469. doi:10.1056/NEJM199802193380712

21. Piscitello GM, Kapania EM, Kanelidis A, Foley C, McGrath B, Patel V, et al. The use of slow codes and medically futile codes in practice. J Pain Symptom Manage. 2021;62(2):326–35.e5. doi:10.1016/j.jpainsymman.2021.02.011
22. McLennan S, Bak M, Knochel K. Slow codes are symptomatic of ethically and legally inappropriate CPR policies. Bioethics. 2025. doi:10.1111/bioe.13396
23. Strong KA, Lipworth W, Kerridge I. The strengths and limitations of empirical bioethics. J Law Med. 2010;18(2):316–9.
24. Salloch S, Wascher S, Vollmann J, Schildmann J. The normative background of empirical-ethical research: first steps towards a transparent and reasoned approach in the selection of an ethical theory. BMC Med Ethics. 2015;16:20. doi:10.1186/s12910-015-0016-x
25. Harris PA, Taylor R, Minor BL, Elliott V, Fernandez M, O'Neal L, et al. The REDCap consortium: building an international community of software platform partners. J Biomed Inform. 2019;95:103208. doi:10.1016/j.jbi.2019.103208
26. Cuschieri S. The STROBE guidelines. Saudi J Anaesth. 2019;13(5):31–4. doi:10.4103/sja.SJA_543_19
27. Brandstedt E, Brännmark J. Rawlsian constructivism: a practical guide to reflective equilibrium. J Ethics. 2020;24:355–73. doi:10.1007/s10892-020-09273-1
28. Timmins F, Ottonello G, Napolitano F, Musio ME, Calzolari M, Gammone M, Catania G, Zanini M, Aleo G, Sasso L, Bagnasco A. The state of the science—the impact of declining response rates by nurses in nursing research projects. J Clin Nurs. 2023;32(7–8):e9–e11. doi:10.1111/jocn.1659